Prevalence of Self Medication and Knowledge of its Associated Risks among Undergraduate Students of a State University in southwest Nigeria

ABSTRACT

Introduction: 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 the use of non-prescribed medicines by people on the basis of their own initiative.
Aim and purpose: This study assessed the prevalence of self-medication and knowledge of its associated risks among undergraduate students of Osun State University, Osogbo campus. The study determined reasons and factors influencing self-medication among the students.

Methodology: A descriptive cross-sectional design was adopted for the study. A researcher-developed questionnaire was used to collect data a convenient sample of 407 respondents. Data were analysed using Statistical Package for the Social Sciences (SPSS) version 25. Results were presented using tables, pie chart, frequency and percentages.

Results: This study shows a very young population of students (average age of 17±5.6 years; range – 16 to 27 years), with male making up over two-thirds (slightly over 64%). Prevalence is relatively high; 55.3% of students had used drugs without medical advice, with more than half of the respondents preferring to buy drugs from chemist or pharmacy shops rather than going to school clinic. Antibiotics are the most commonly self-medicated drug on the campus, with headache as the most frequent reported symptom. Factors such as high cost of consultation, urgency and degree of health problem, pressure of time explained why students self-medicate. Male gender appears absolute determinant (p=0.000) of self-medication; other socio-demographic variables were not significantly related to prevalence to self-medication.

Conclusion: Prevalence of self-medication is relatively high with good knowledge of its associated risks among students of Osun State University, Osogbo Campus. It is recommended that health promotion by health workers and university clinic has become paramount.

Keywords: Associated risks, Knowledge, Prevalence, Self-medication, University students.

INTR0DUCTION

Self-medication is a practice of treating any self-diagnosed disorder or symptom with the use of unprescribed drug or home remedies on patient's initiative without consulting a doctor (Darshana, 2015). It has been argued that self-medication empowers patients by giving them independence to choose in minor illness in case of over the counter (OTC) drugs. Factors like increase in availability of drug, costlier healthcare services and avoiding visiting doctors increase the practice of self-medication. Like each and every practice has pros and cons, similar is the

case with self medication. On one hand self-medication helps various health care facilities by decreasing the load on them and helps patients to save their time and money. Also, there are many studies that highlight the ill effect of self-medication like increase in drug resistance, adverse drug reactions, wrong diagnosis and dosage. Self-medication may vary among different populations and can be influenced by factors like age, gender, income, expenditure, education, medical knowledge and satisfaction perception of illness (Dawooda, Hassalia, & Saleem, 2017). Self-medication is often practiced by people as self-care of the health which is an unnecessary practice.The effect of self-medication and its impact on the overall health of people practicing self-medication have been variously studies but studies have been largely limited to the geographic and demographic span. Hence, it is important to conduct a detailed review of studies done in self-medication practices and factors affecting self-medication.

Self-medication can be considered as the potential capability of individuals to take medications on their own, based on the preventive, diagnostic and therapeutic activities that concern them. According to guidelines of national drug policies, World Health Organization promotes the practice of self-medication for effective and quick relief of symptoms without medical consultations and reduce burden on health care services, which are often understaffed and inaccessible in rural and remote areas. Researchers have argued that self-medication may resolve the issue without seeing a doctor or consultant and with minimum cost. Self-medication vary according to the person's personal situation, it can also be associated with the fear of medical diagnosis. However, self-medication comes with many risks such as misdiagnose, misguidance, inappropriate use of drug for self-medication can also have many other ill-effects like excessive use of drug dosage, prolonged usage interaction of medicines and poly-pharmacy (Mustafa, & Rohra, 2017). There are many studies that highlight various risks associated with self-medication like mixing of drugs which may lead to serious health concerns. In the worst case scenario, self-medication may lead to serious health issues or even death (Dayton, 2013). The effects of self-medication might be harmful and life threatening. Hence, promoters of self-medication due to affordability and inaccessibility of health services should also consider its adverse effects (Phalke, Phalke & Durgawale, 2011). Self-medication is largely found in lower educated people as it results in less awareness about the negative outcome of repeating prescribed drugs for same symptoms/disease or for another symptom/disease (Darshana, 2013). The type, extent and reason of self-medication may vary from country to country. The knowledge and drug information

obtained by the patient from family and friends or other sources can possibly lead to misinformation. To avoid the adverse effect of self-medication it is important to promote dispensing of exact number of tablets/drugs, patient education and by alerting the doctors not to prescribe drugs with minor ailments which can lead to self-medication. Preventing left over drugs can be a major way to avoid self-medication.

Despite the seriousness of the problem of self-medication and its far reaching consequences, this practice still remains high particularly in developing countries like Nigeria, where there is virtually unlimited access to most prescription drugs. Studies have shown that self-medication is practiced widely among undergraduates generally (Eke et al., 2014; Osemene and Lamikanra, 2012; Klemenc-Ketiset al., 2010; Sawalha, 2008; Zafaret al., 2008;), and is especially common among Pharmacy undergraduates than Medical students (Bolluet al., 2014). According to Barros et al (2009); Babatunde et al (2016), inappropriate self-medication can cause undesirable consequences and effects: iatrogenic diseases and mask progressive diseases. It can also results in wastage of resources, resistance to pathogen and generally entails serious health hazard. It therefore represents an important problem that has to be acknowledged and prevented. This study assessed the prevalence of self-medication and the knowledge of its associated risks of self medication; and to identify the most common drugs of self-medication and factors influencing self-medication among students of Osun State University, Osogbo Campus. The study is further guided by two hypotheses:

$H0_1$ - There is no significant relationship between the students' demographic characteristics and practice of Self medication

$H0_1$ - There is no significant relationship between the students' knowledge of associated risks related of self medication and the practice of self medication

RESEARCH METHODOLOGY

Research Design: The study adopted descriptive cross sectional design to assess the prevalence of self medication and knowledge of its associated risks among students of Osun State University Osogbo campus.

Research Setting: This study was conducted in Osun State University Osogbo campus, Osun State, southwest Nigeria. Osun State University (UNIOSUN) was established by Osun State Government pursuant to the University Establishment Law passed by the State House of Assembly in December, 2006 and signed into the law by His Excellency, Prince Olagunsoye Oyinlola. The site selected as the main campus of the University is Osogbo, housing the Central Administration, College of Health Sciences, College of Sciences, Engineering and Technology and Postgraduate College. Others campuses are housed in Ejigbo (College of Agriculture); Ifetedo (College of Law); Ikire (College of Humanities and Culture); Ipetu-Ijesha (College of Education); and Okuku (College of Management and Social Sciences). In addition to the aforementioned, there are the following academic and research centres in the university; Centre for Alternative Energy and Rural Technology, Centre for Climate Change and Environmental Research, Centre for Applied and Organizational Management, Centre for General studies, Centre for Pre-Degree Studies, Centre for Human Resource Development and Lifelong Learning.

Study Population and Sampling Procedure

The total target population of Osun State University, Osogbo campus is about 5000 students. The Taro Yamane method was then used in determining sample size. Consideration for attrition is 10%, therefore sample size = 370+37. Hence, 407 respondents will be adopted for this work. A Convenience sampling technique was adopted in the selection of 407 participants from nine departments (see Table 1).

Table 1: A Convenience sampling technique

S/No	Departments	Number
1	Nursing	127
2	Anatomy	93
3	Computer science	78
4	Civil engineering	20
5	Physics	45
6	Mathematics	15
7	Public health	10
8	Zoology	8
9	Chemistry	11

Instrumentation for Data Collection

Data was collected using questionnaire, divided into the following sections:

Section A: Demographic factors

Section B: Prevalence of practice of self medication.

Section C: Factors influencing self medication

Section D: Knowledge on the effects of self medication

The instrument was validated using face and content validity and necessary amendments were made before its final production and distribution to the respondents. Its reliability was also ensured after a pilot study, yielding a Cronbach alpha coefficient of 0.720.

Method of Data Collection: The questionnaire was distributed using personal contacts. The instrument was all in an official language (English) used on the campus, and was administered to students in nine departments of Osun State University, Osogbo Campus. All questionnaires administered were retrieved immediately and this helped to ensure 100% response rate.

Method for Data Analysis: The data was analysed using SPSS 25. Descriptive statistics of mean, frequencies, percentages and standard deviation were used to describe the study population in relation to relevant variables. Inferential statistical tools of chi square, univariate and multivariate logistic regression models ($p < 0.05$) were used to identify variables related to self-medication and associated risks and its factors.

RESULTS

Socio-demographic Characteristics

As Table 2 reveals the socio-demographic characteristics of the respondent more than half 216(53.1%) between age 21-23 years, on sex; more than half 264(64.9%) were males and 143(35.1%) were females, on department 127(31.2%) from nursing science, 93(22.9%) from anatomy, 78(19.2%) from computer science, 20(4.9%) from civil engineering, 45(11.1%) from physics, 15(3.7%) mathematics, 10(2.5%) public health , 8(2.0%) from chemistry and 11(2.7%)

from zoology. Level of education revealed 94(23.1%) 100level students, 117(28.7%) 200level, 155(38.1%) 300level, 17(4.2%) 400level and 24(5.9%) from 500level students.

Table 2: Socio-demographic Characteristics

Variables	Categories	Frequency (n=407)	Percent (%)
Age	15-17 years	86	21.1
	18 -20 years	84	20.6
	21-23 years	216	53.1
	24-26 years	20	4.9
	27 and above	1	0.2
Sex	Male	264	64.9
	Female	143	35.1
Department	Nursing	127	31.2
	Anatomy	93	22.9
	Computer science	78	19.2
	Civil engineering	20	4.9
	Physics	45	11.1
	Mathematics	15	3.7
	Public health	10	2.5
	Zoology	8	2.0
	Chemistry	11	2.7
Level	100 level	94	23.1
	200 level	117	28.7
	300level	155	38.1
	400level	17	4.2
	500 level	24	5.9
	Total(n)=407		

Prevalence of practice of Self Medication

As revealed in Table 3, more than half 225 (55.3%) of the students had used drugs without medical advice, majority 262 (64.4%) complied with prescription before taking any drugs, more than half 227 (55.8%) prefer buying drugs yourself rather than going to school clinic. A large majority 274 (67.3%) preferred to self-medicate when sick, 241(59.2%) self medicated when sick, majority 267(65.6%) have visited the hospital as a result of self medication

Table 3: Prevalence of practice of Self Medication

Variable	Categories	Frequency (n=407)	Percent (%)
Have you used any drugs without medical advice	Yes	225	55.3
	No	182	44.7
Comply With Prescription Before Taking Any Drugs	Yes	262	64.4
	No	145	35.6
prefer buying drugs yourself rather than going to school clinic	Yes	227	55.8
	No	180	44.2
prefer to self-medicate when sick	Yes	274	67.3
	No	133	32.7
self-medicate when you're sick	Yes	241	59.2
	No	166	40.8
Which symptoms make you self-medicate more	Headache	151	37.1
	Fever	116	28.5
	Pains	119	29.2
	Others	20	4.9
Have you ever visited the hospital as a result of self medication	Yes	267	65.6
	No	140	34.4

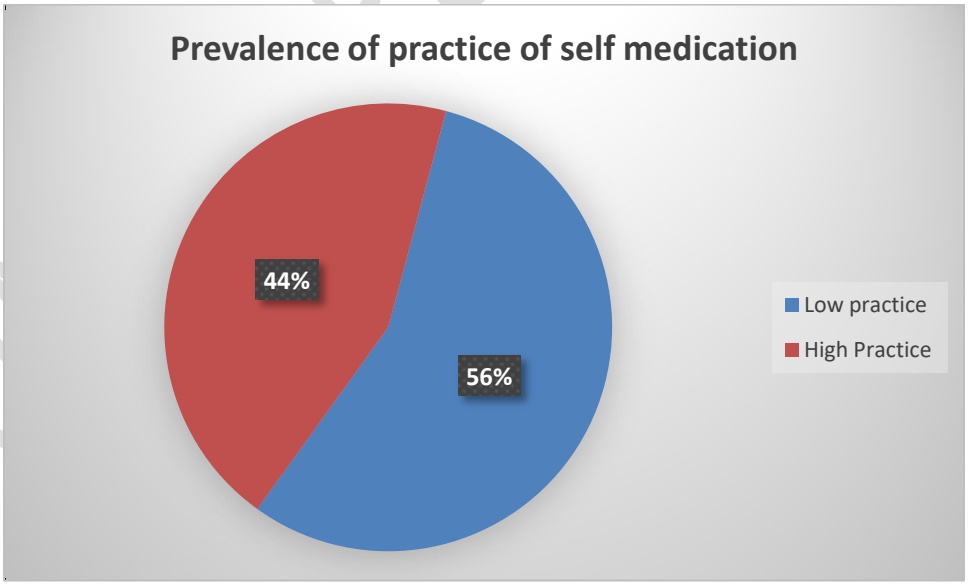

Figure 1: Overall prevalence of practice of self medication

Fig 1 shows that more than half 227(56%) had a low practice while less than half 180(44%) had a high practice of self-medication

Drugs mostly involved of self-medication

The common drugs that students use for self-medication include antibiotics (n=73; 43.5%), antimalarial (n=110; 27%), analgesics (n=108; 26.5%) and (n=14; 3.4%) decongestant (see Fig 2). The data shows that antibiotics are the most commonly self-medicated drugs by students in this campus.

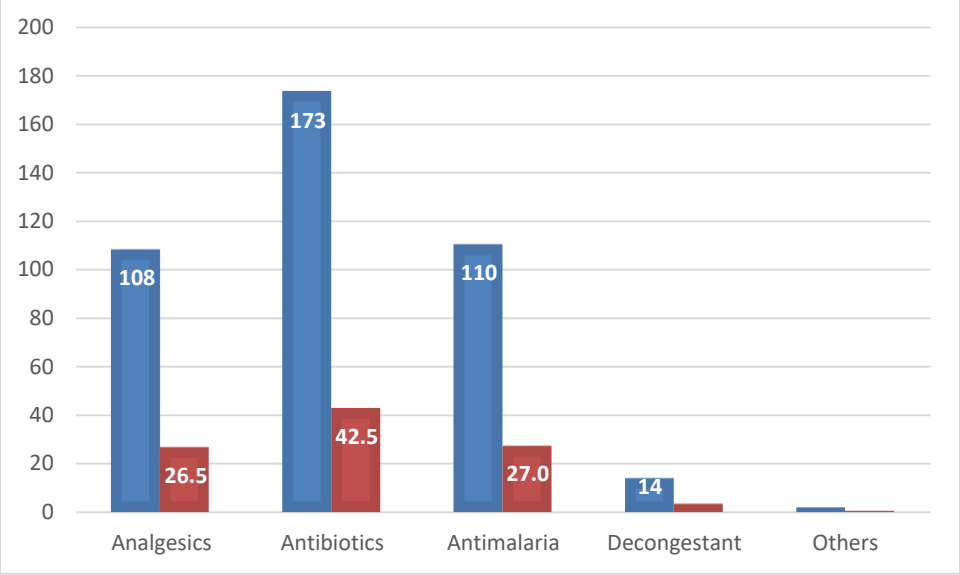

Figure 2: Drugs of self-medication

Several symptoms of ill-health prompt students to self-medicate. As revealed by Fig.3, these are mainly headache (n=151; 37.1%), , pains (n=119; 29.2%) and fever (n= 116; 28.5%).

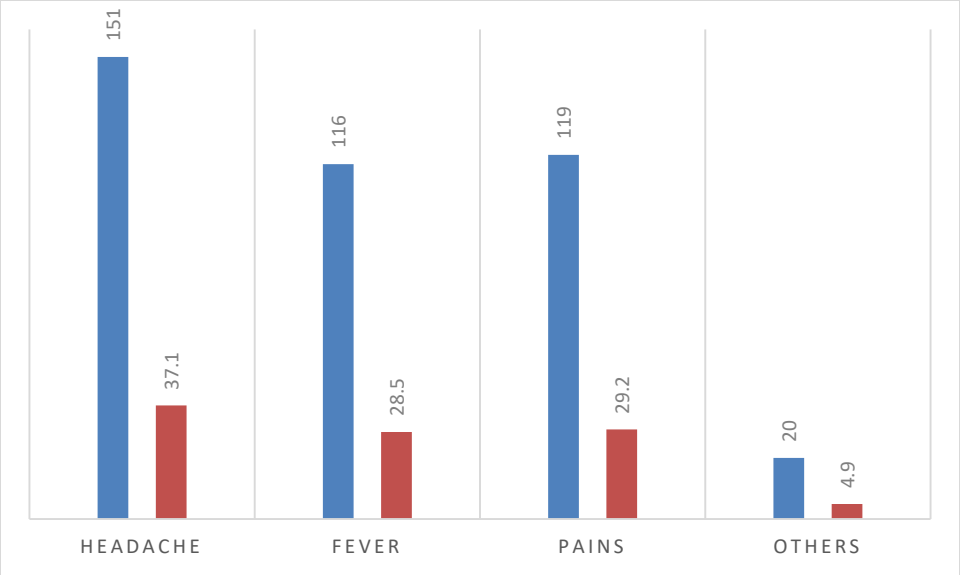

Figure 3: Symptoms leading to self-medication

Factors influencing self-medication

Table 4 shows the major factors influencing self-medication, which are high cost of consultation if they had to go to a clinic or hospital (n=267; 65.6%), previous experience they had with drugs taken at some other times (n=264; 64.9%) and 'medical advice' they got from friends (n=258; 63.4%). Other factors they reported were that if the problem or health situation they experience is seen as "too trivial" (n=242; 59.5%), or urgent (n=243; 59.7%), , convenience (n=214; 52.6%), and lack of time (n=229; 56.3%).

Table 4: Factors influencing self-medication

S/No	Factors	Frequency (N=407)	
		Yes	No
1	Previous experience	264(64.9%)	143(35.1%)
2	Problem too trivial	242(59.5%)	165(40.5%)
3	Urgency of problem	243(59.7%)	164(40.3%)
4	Advice from friend was enough	258(63.4%)	149(36.6%)
5	Convenience	214(52.6%)	193(47.4%)
6	Lack of time	229(56.3%)	178(43.7%)
7	High cost of consultation	267(65.6%)	140(34.4%)

Table 5: Knowledge on the effects of self-medication

S/No	Likely Effects of self-medication	Categories	
		Frequency(n=407)	Percent (%)
1	Self-medication can leads to wrong diagnosis	225(55.3%)	182(44.7%)
2	Self-medication can lead to wrong treatment	284(69.8%)	123(30.2%)
3	Self-medication can lead to drug dependence and addiction	265(65.1%)	142(34.9%)
4	Self-medication can cause organ damage e.g. Liver and Kidney	221(54.3%)	186(45.7%)
5	Death can result from self-medication	224(55%)	183(45%)

In Table 5, it is shown that more than half 225(55.3%) knew self-medication can lead to wrong diagnosis, majority 284(69.8%) knew self-medication can lead to wrong treatment, 265(65.1%) accepted self-medication can lead to drug dependence and addiction, more than half 221(54.3%) knew self-medication can cause organ damage e.g. liver and kidney, 224(55%) agreed death can result from self-medication. Overall more than half (n=240; 59.7%) had good knowledge of the likely effects of self-medication (see Figure 4).

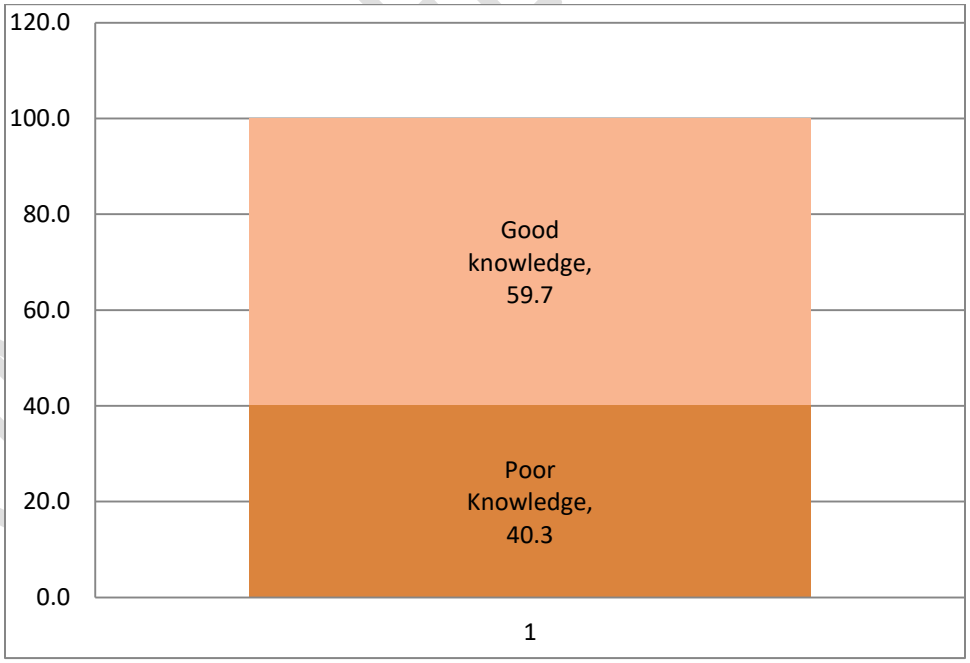

Figure 4: Overall knowledge on the effects of self-medication

TESTING OF RESEARCH HYPOTHESIS

Decision rule: If the P-value is less than 0.05 the null hypothesis, null hypothesis (HO) will be rejected and the alternative hypothesis (HI) will be accepted.

Hypothesis one

There is no significant relationship between the students' demographic characteristics and prevalence of Self medication

Table 6: Relationship between the students' demographic characteristics and practice of Self medication

Variables	Categories	Prevalence of self medication					
		Low prevalence	High prevalence	Total	X^2Cal	df	p-value
Age	15-17 years	80	6	86	.530[a]	4	0.971
	18 -20 years	79	5	84			
	21-23 years	200	16	216			
	24-26 years	18	2	20			
	27 and above	1	0	1			
Total		378	29	407			
Sex	Male	254	10	264	12.647[a]	1	0.000
	Female	124	19	143			
Total		378	29	407			
Department	Nursing	119	8	127	5.527[a]	8	0.700
	Anatomy	86	7	93			
	Computer science	75	3	78			
	Civil engineering	18	2	20			
	Physics	40	5	45			
	Mathematics	14	1	15			
	Public health	9	1	10			
	Zoology	8	0	8			
	Chemistry	9	2	11			
Total		378	29	407			

X^2= Pearsons` Chi square

Df-degree of freedom

Inference: From Table 6, the relationship between gender and the prevalence of self-medications shows a perfect statistical significance (X^2Cal=1`12.647[a,] *p*-value =0.000). However, there is no statistical significant relationship between age, the Students' Departments with the prevalence of self-medication (*p*=0.971 and *p*=0.700 respectively).

Hypothesis Two

There is no significant relationship between the students' knowledge of associated risks related of self-medication and the prevalence of self-medication.

Table 7: Relationship between the students' knowledge of effects of self-medication and the prevalence of self-medication

Variables	Categories	Prevalence of self medication		Total			
		Low prevalence	High prevalence		Value	df	p-value
Knowledge on the effect of self medication	Poor Knowledge	148	16	164	2.873[a]	1	0.090
	Good knowledge	230	13	243			
Total		378	29	407			

X^2= Pearsons` Chi square

Df-degree of freedom

Inference: Table 7 there is no statistical significant relationship between students' knowledge of likely effects of self-medication and prevalence of self-medication (p=0.090) tested at p<0.05 (X^2Cal=2.873[a], *p*-value =0.090).

DISCUSSION OF FINDINGS

This study assessed the prevalence, knowledge of its associated risks, and factors enhancing among students of Osun State University, Osogbo Campus. This study has shown the average age of the respondents to be 17±5.6 years, which ranges from 16 to 27 years.

This study has revealed that 55.3% had used drugs without medical advice, with majority preferring buying drugs rather than going to school clinic. This finding is however lesser than what had been reported in one study in Europe, the study revealed that Prevalence of self-

medication was around 25 % among older Europeans and Longstanding illness is associated with higher risk of self-medication but varied between higher and lower in some African countries.

In a Studies conducted in Kuwait, The overall prevalence of self-medication was 97.8%. The age was significantly inversely proportional to self-medication. There was a significant difference between male and female students in self-medication practice. In Sudan and Cameroun prevalence of 73.9% and 55.7% were observed respectively, while a study in Nigeria showed that 85% of participants practiced self-medication.

used drugs in this study are (26.5%) analgesics, (43.5%) use antibiotics, (27%) antimalarial, (3.4%) decongestant. Our finding corroborates with what was reported by Hilal and Abou-Elwafa (2017) where antibiotics and analgesics are most self-medicated drugs.

Findings from this study also revealed common ailments for self-medication which include (37.1%) headache, (28.5%) fever, (29.2%) pains and (4.9%) others. This is in line with a study in Greece showed that the most common ailment for which self-medication was practiced were throat symptom and bronchitis while main medication sources were pharmacies and medication leftovers from previous prescriptions. Another study in Uganda showed that fever, cough, abdominal pain accounted for most common ailment. Hilal and Abou-Elwafa (2017) also reported the most frequent conditions that are suitable for self-medication from the students' opinion were cold (70.1%), headache (58.9%), sore throat (35.8%), intestinal colic (32.2%), and then cramps (31%).

Factors influencing self-medication have been shown to include fear of high cost of consultation, past experience of use and the interpretation of the health problem as either minor or urgent, among other factors and reasons. Similar findings were reported by Albasheer *et al*., (2016). Although that study also reported other broad factors ready accessibility and lifestyle, the increased potential for likely adverse effects were also noted, as in this study. Recently, Esan *et al* (2018) in a study conducted in this same region of Nigeria (southwest Nigeria) identified the most common factor leading to self-medication among students were unfriendly attitude of health care workers at the school clinic (27.7%), busy schedule of students (lack of time to visit the clinic), distance of the school clinic to the hostel (15.3%), and perceived inefficacy of prescribed drug (15.3%).

The relatively good knowledge of the effects of self-medication including organ damage such the liver and kidney, death, among others, corroborates with what was reported by WHO (2018) in her publication on self-medication. The WHO reported that effects of self-medications include potential risks of self-medication practices include: incorrect self-diagnosis, delays in seeking medical advice when needed, infrequent but severe adverse reactions, dangerous drug interactions, incorrect manner of administration, incorrect dosage, incorrect choice of therapy, masking of a severe disease and risk of dependence and abuse.

Previous studies did not find relationship between prevalence of self-medication and socio-demographic characteristics and the between the students' knowledge of effects and the prevalence of self-medication. In this study, the male gender appears an absolute determinant of self-medication. Other factors do not seem to influence self-medication differently.

IMPLICATION TO NURSING PRACTICE

This study has shown many little which has conferred responsibilities on the nurse as nursing entails seeing to the optimal health of the community. This study shows that significant high number of students is involved in self-medication, despite knowledge of effects and dangers. Health promotion strategies for students by nurses on self-medication and other health issues should form a major task on the campus school he**alth programme. Nursing departments can collaboration with other stakeholders for advocacy.**

LIMITATION OF STUDY

This study is subjected to the following limitations: Firstly, there was no funding for this study. Financial constraint prevented the researchers to cover more population. Secondly, respondents' attitudes were a challenge. Many of the respondents showed negative attitudes towards participating in the study, particularly, in dedicating their time in filling the questionnaires. The researchers had to persuade persistently to have the cooperation of many of the participants to complete the questionnaire. Thirdly, the non-randomised, small size study will not allow for generalizability of the research study to other settings.

CONCLUSION

The prevalence of self-medication is relatively high among students, although within the range of previous studies. Students are also knowledgeable about the potential dangers of self-medication. Factors such as high cost of consultation, pressure of time, urgency and degree of the health problems are major factors influencing self-medication among students of Osun State University, Osogbo Campus. Male students are most likely to self-medicate than female students, while other socio-demographic variables are not likely determinants.

RECOMMENDATIONS

Based on the study findings and identified challenges, the following are suggested:

1. Health professionals should actively participate through counselling and public health education about problems that may arise from inappropriate use of medications
2. University administrations and health facilities on campus should intensify health education on dangers of self-medication:
3. Extant rules regarding pharmaceutical advertising and supply of medications without prescription should be adhered to by operators of drug sales; and
4. Further studies could be carried out using a randomised and larger subject population and locations.

Ethical Consideration and Consent: Ethical approval was obtained from the Ethical Committee of the Osun State University, Osogbo, while written informed consents were also obtained from all participants. Participation in the study was also voluntary. All participants were ethically protected.

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