

# Assessment of Knowledge and Practice of Self-Medication in a Nigerian University: Implication for Policy Action in Curbing the Increasing Practices of Self-Medication among Nigerian Undergraduates

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## Abstract

**Background:** Self-medication is taking drugs without a medical doctor's prescription. The practice occurs worldwide but differs from place-to-place and person-to-person with their resultant consequences like drug overdose, development of resistance, inadequate dosing, tolerance, and addiction.

**Objectives:** This study assessed the knowledge and practice of self-medication among undergraduates of a public university in South-South, Nigeria.

**Methods:** A descriptive cross-sectional study was carried out among 333 respondents using a multi-stage sampling technique. An interviewer-administered questionnaire was used for data collection. The questions covered knowledge, practice, reasons, and sources of information for self-medication. Chi-square test was used to test for the association; the level of significance was set as  $P < 0.05$ .

**Results:** The mean age (SD) of respondents was 21.59 +3.34 years. There was a slight male preponderance (52.8%). Over one-third of respondents (36.7%) had good knowledge, while 63.3% had fair to poor knowledge of self-medication. Amongst those who practice self-medication, 25.3%

had a high rate of use; 29.3% had a moderate rate while 17% have a low rate. The most common reasons for self-medication were the consideration of illness as being minor (71%) and low cost of drugs/ease of purchase (36.5%). Relatives, friends, and family (52.5%) were the highest source of information, while the highest source of the drug was patent medicine dealers (74.4%). There was a statistical significant relationship between the knowledge of respondents and the practice of self-medication with a P-value of <0.001.

**Conclusion:** A large proportion of the undergraduate students of the University practice self-medication. Their knowledge of self-medication was significantly associated with the level of practice.

**Keywords:** Knowledge, Practice, Self-medication, Nigerian University, Policy Action.

## Introduction

Self-medication is a significant and vital component of self-care. It involves the act of treating diseases or symptoms recognized by oneself without a formal consultation or prescription of a qualified health professional. Self-medication is expected to involve the use of medicines designed and labelled for use without a prescription and approved as safe and effective for such use. Responsible self-medication is taking drugs for ailments and conditions with medicines that are approved and available without a prescription and which are safe when used as directed. It is a significant health issue, especially in developing countries like Nigeria. Some of the reasons for self-medication may include mild illness, previous experience of treating similar illness, economic considerations, and a lack of availability of healthcare personnel. The most common medications used for self-medication are analgesics and antimicrobials.

In developing countries, where universal access to health care is yet to be achieved, self-medication is one of the common and preferred modes resorted to by patients. Studies have reported that self-medication might lead to delay in seeking proper care, which results in economic loss due to delay in the diagnosis of underlying conditions

and appropriate treatment. It has also been reported that drug use is influenced by the socio-demographic characteristics of drug consumers such as gender, morbidity, age, attitudes about life and health, stress, and social roles.

This study in a public University in South-South Nigeria is set to assess the contribution of knowledge of self-medications on the practices of self-medication among Nigerian students, with the hope of identifying and recommending interventions and strategies to promote safer uses of medicines among tertiary education students as well as recommending same for policymakers and regulatory authorities for the curbing of the menace of self-medication.

## Materials and Methods

A descriptive cross-sectional study was carried out between 1<sup>st</sup> September and 20<sup>th</sup> December 2017. A multistage sampling technique was used to select 333 undergraduate students of Ambrose Alli University (AAU) Ekpoma, Edo State. AAU is one of the public universities in Nigeria. The institution is located in the south-south geo-political zone of the country. The university has three campuses and twelve faculties. Respondents were recruited across four (4) faculties of the university.

Information was obtained from the study participants using interviewer-administered questionnaires after obtaining informed consent from each participant. Respondent's knowledge of self-medication was graded as follows: A score of less than 50% was rated as poor knowledge, 50% to 74% as fair knowledge, and 75% and above was rated as good knowledge. Determination of respondent's practice of self-medication involved the use of two questions each having four stems. Each question carried a score of 0 to 4, giving a total score of 8. A score of 0 was rated as no practice, 1-3 as low practice, 4-5 as moderate practice, and 6-8 as high practice. Variables were measured as nominal,

ordinal, and numerical variables. Frequencies and percentages were derived from the categorical variables. The level of significance – alpha ( $\alpha$ ) was set at 5%. All p-values were two-tailed and considered as statistically significant if  $< 0.05$ . Data were analysed using the statistical package for scientific solution (SPSS) version 21. Non-parametric statistical analysis, and the mean (standard deviation) of the univariates data was determined and represented in tables. The bivariate data analysed using the Chi-square test (or Fisher's exact test, where appropriate).

#### Results

The socio-demographic characteristics of the respondents are as shown in the Table 1 below.

Table 1: Socio-Demographic Characteristics of Respondents

Variable		Frequency (N= 333)	Percent (%)
<b>Age (Years)</b>	15 – 19	104	31.4
	20 – 24	170	51.1
	25 – 29	47	14.0
	...	12	3.5
	<b>Mean (SD)</b>	21.59(3.34)	
<b>Gender</b>	Female	157	47.2
	Male	176	52.8
<b>Marital status</b>	Single	318	95.6
	Married	15	4.4
<b>Ethnicity</b>	Benin	111	33.2
	Esan	123	37.1
	Afemai	63	18.8
	Igbo	16	4.8
	Yoruba	12	3.5
	Others*	8	2.5
<b>Religion</b>	Christianity	294	88.2
	Islam	38	11.4
	African traditional religion	1	0.4
<b>Faculty of respondents</b>	Basic Medical Sciences	97	28.8
	Education	76	22.7
	Engineering	89	27.1
	Technology		

Key: \*Urhobo- 5(1.5), Igala 3(0.9).

The age of the respondents ranged from 15 to 40 years. The majority of the respondents were in the 20 -24 years age group (51.1%). There were more males (52.8%); almost all the respondents were single (95.6%), while 88.2% and 11.8% of the respondents were Christians and Muslims, respectively. The respondents' ethnicity is dominated by Esan (37.1%) and Benin (33.2%) ethnic groups.

**Table 2: Self-Medication Information and Sources**

Variable	Frequency	Percent (%)
<b>Aware of Self-medication (N=333)</b>		
Yes	238	71.5
<b>Sources of information on Self-medication (n=238)</b>		
Family members/Friends	125	52.4
Health care workers	14	6.1
Drug advert/Internet	16	6.7
Chemist/Pharmacy	71	29.9
Drug leaflet	12	4.9

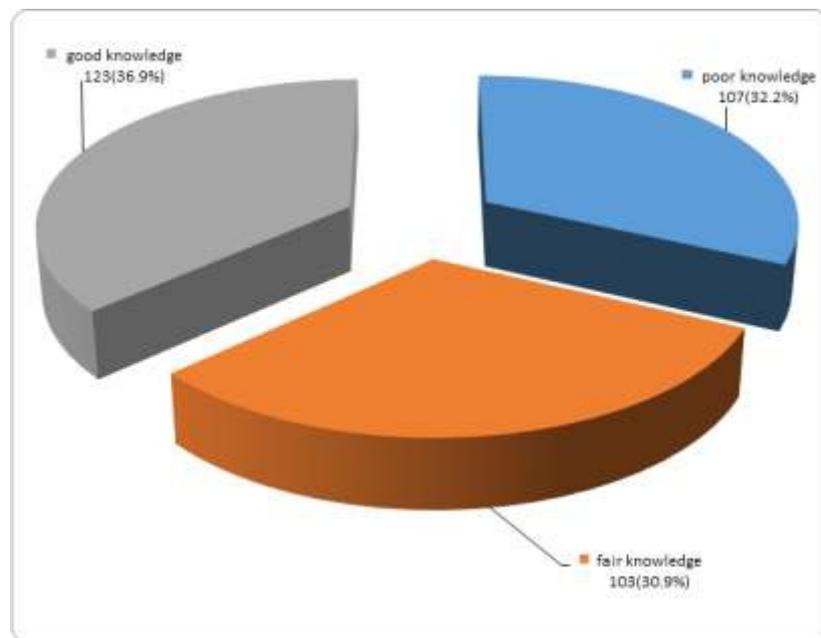
Relatives, friends, and family members were the highest sources of information (52.4%) for self-medication, while the least source was drug leaflets.

**Table 3: Participants' Knowledge of Self-Medication.**

Variable	Frequency N=333	Percent (%)
<b>Various definitions of self-medication given by respondents</b>		
Over the counter purchase	26	7.9
Use of non-prescribed drugs (Correct )	138	41.4
Homemade drugs and herbs	114	34.1
Prescribed drugs for Self-diagnosed Disease	32	9.6
Doctors prescribing at home/ outside health facility	23	7.0
<b>Necessary to consult a doctor before taking medication</b>		
Agreed	269	80.7
<b>Advantages of self-medication</b>		
Respondents identified at least one	115	34.6
<b>Various Advantages of Self-medication stated by respondents</b>		
Saves time	34	10.3
Less cost	28	8.3
Unavailability of doctors	34	10.3

Reduces the burden on the health system	19	5.7
<b>Disadvantages of self-medication</b>		
Respondents identified at least one	195	58.5
<b>Various Disadvantages of Self-medication stated by respondents</b>		
Overdose	86	25.8
Wrong drug	44	13.1

The number of respondents that knew the correct definition of self-medication was less than half [138 (41.4%)], 80.7% of respondents affirmed that it was necessary to consult a doctor before taking medication. Only 33.6% of respondents knew any advantage of self-medication, of which 10.3% each of them said that it saves time and that it can be useful when there is the unavailability of doctors. Fifty-six percent of respondents knew the disadvantages of self-medication, of which overdose was the most (25.8%) disadvantage mentioned.



**Figure 1: Distribution of knowledge of self-medication among respondents.**

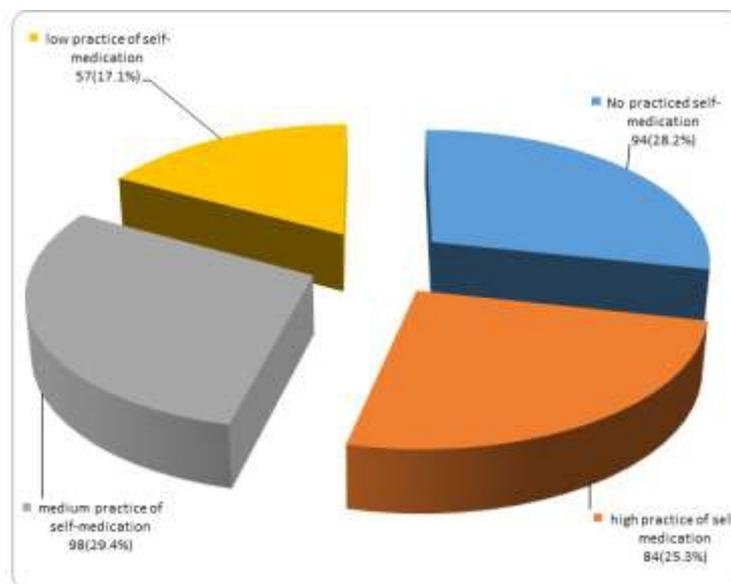
Knowledge of self-medication was rather low among the respondents. Thirty-one point nine percent (31.9%) of respondents have poor knowledge, while 30.9% and 36.9% have fair and good knowledge, respectively.

**Table 4: Practice of Self-medication among Respondents.**

Variable	Frequency	Percent (%)
<b>Ever Practiced self-medication (N=333)</b>		
Yes	239	71.8
<b>How often respondent practice self-medication (N=333)</b>		
Once awhile	79	23.6
Often	50	14.8

Variable	Frequency	Percent (%)
Seldom	68	20.5
Rarely	41	12.2
<b>Last time respondents had self-medication</b>		
Last one months	71	21.4
Last three months	41	12.2
Last six months	99	29.7
Last one year	27	8.3

A majority (71.8%) of the respondents practice self-medication, 23.6% do so once in a while, 21.4% have self-medicated in the past one month.



**Figure 2: The Distribution of the Level of Practice among Respondents.**

Seventy-one point eight percent of the respondents practice self-medication to various degrees. Twenty-five point three percent had high practice, 29.4% medium practice, while 17% had low practice amongst the respondents, respectively.

**Table 5: Reasons for Self-Medication volunteered by Respondents**

Variables	Frequency N=333	Percent (%)
<b>Reasons for self-medication*</b>		
Ailment minor	189	56.8
Less cost	122	36.5
long waiting period and shortage of doctors	102	30.5
dissatisfied with care in hospital	43	12.8
Previous knowledge from an old prescription	95	28.6
previous knowledge about the suspected ailment	181	54.3
ailment did not require western medicine	8	2.4

Variables	Frequency N=333	Percent (%)
suspected ailment requires rapid attention	30	9.1
Problem is a long-standing one	14	4.3
<b>Common Conditions Self-medication was used*</b>		
Headache	278	83.5
Malaria	244	73.3
Pains (stomach-ache, backache, and menstrual cramp)	190	57.0

Key:\*multiple response applicable.

The main reasons for the practice of self-medication as volunteered by the respondents were minor ailments (58%), **previous knowledge about the suspected ailment** (54.3%), lesser cost of self-purchased drugs (36.5%), prolonged hospital waiting time, and belief of the shortage of doctors in the hospitals (30.5%).

**Table 6: Association between Practice of Self-Medication and Socio-demographic Factors**

Socio-demographic factors	High practice (%)	Moderate (%)	Low practice (%)	No (%)	$\chi^2$	P-value
<b>Age range</b>						
15 – 19	28(26.77)	26(25.35)	16(15.45)	34(32.39)	5.116	0.824
20 – 24	37(22.03)	50(29.66)	27(16.10)	55(32.21)		
25 – 29	12(25.00)	18(37.50)	10(21.88)	7(15.62)		
>30	3(25.00)	3(25.00)	3(25.00)	3(25.00)		
<b>Gender</b>						
Male	38(21.48)	55(31.4)	26(14.87)	57(32.23)	2.344	0.504
Female	42(26.85)	42(26.85)	31(19.44)	42(26.85)		
<b>Marital status</b>						
Single	74(23.28)	93(29.22)	55(17.25)	96(30.14)	1.749	0.626
Married	6(40.00)	5(32.75)	1(7.25)	3(20.00)		
<b>Faculty of respondents</b>						
Basic Medical Sciences	24(24.24)	22(22.72)	26(27.27)	25(25.75)	10.476	0.313
Education	20(26.92)	23(30.76)	7(9.61)	25(32.69)		
Engineering Technology	24(27.42)	26(29.03)	13(14.52)	26(29.03)		
Management Sciences	12(16.33)	26(36.74)	10(14.29)	23(32.65)		
<b>Average monthly income</b>						
≤10000	25(31.25)	24(29.69)	6(7.81)	25(31.25)	8.341	0.214
>10000 – 20000	33(19.32)	53(31.93)	37(21.16)	49(28.57)		
>20000	21(26.09)	18(21.74)	18(21.74)	25(30.43)		

The 15-19 years age group has the highest percentage of high self-medication practice with 26.76%. However, this age group also has the highest percentage of respondents that do not practice self-medication 32.39%. Those of the age group 20-24 years have the lowest practice. Female has a higher level of practice than male, married more than singles. Other associations of practice and self-medication are well outlined; however, there was no statistical significance between self-medication and socio-demographic data of respondents.

**Table 7: Association between Knowledge and Practice of Self-Medication**

Variables		Ever Practiced Self-		$\chi^2$	p-value
		Yes (%)	No (%)		
Knowledge of the meaning and effects of self medication	Good	77(62.6)	46(37.4)	13.125	<0.001*
	Fair	69(67.0)	34(33.0)		
	Poor	45(42.1)	62(57.9)		

There is a statistically significant relationship between respondents' knowledge of the meaning and effects of self-medication and whether they ever practiced self-medication. The respondents with good knowledge seem to have practiced self-medication more than those that had poor knowledge of self-medication.

**Table 8: Association between Knowledge and Level of Practice of Self-Medication**

Variables		Level of Practice of Self-medication			$\chi^2$	p-value
		High (%)	Medium (%)	Low (%)		
Knowledge of the meaning and effects of self-medication	Good	10(13.0)	29(37.7)	38(49.4)	28.166s	<0.001*
	Fair	29(42.0)	32(46.4)	8(11.6)		
	Poor	21(47.1)	19(41.7)	5(11.2)		

There is a statistically significant relationship between respondents' knowledge of self-medication and their level of practice of self-medication. There seems to be an inverse relationship between respondents' knowledge and the level of practice of self-medication seen in this study.

### Discussion

In this study, the majority of the respondents were males (52.8%). The majority of the participants fell within the age group 20-24 years (51.1%), and almost all the respondents were single. Having almost all the respondents as single is expected for the ages of the populations

seen in the study, especially among those who are in school in the pursuit of more knowledge. Also, the male gender who contributed significantly to the number of single respondents in this study usually marries at a later age compared to their female counterparts. About one-third of respondents had poor knowledge, about

the same number of them had fair knowledge, and a slightly higher proportion of the respondents (36.7%) had good knowledge of self-medication. This may likely be due to the defective source of awareness of self-medication among the studied population. However, this finding is surprising given the volume of free information available through the internet and social media. This finding was similar to that of a study done by Kayalvlizhil *et al.* on the evaluation of perception, attitude, and knowledge about self-medication among business students in three selected cities in South India. Usually, information on public health issues gotten from an informal or untrained sources like from family members, peer group, and friends are defective of the real substance required for a positive behaviour communication change.

A high proportion of respondents volunteered information that they engaged in self-medication. Only about a third of the respondents did not practice self-medication. The proportion of the respondents who practiced self-medication obtained in this study was similar to the findings of other researchers. The reason for the high proportion of practice of self-medication among the study population as stated by the respondents in this study include minor ailments, previous knowledge about the suspected ailment, lesser cost of self-medication, prolonged hospital waiting period, and the belief of the shortage of doctors in the hospitals. Other possible reasons may be adducible to the carefree, risk-prone attitude of youths and the free access to information consistent with what has been documented by Gupta *et al.* in a previous study in India. This study found a relatively high proportion of the respondents who indulged in self-medication in both males (69.4%) and females (74.1%). These differences observed among the two groups could be a reflection

of the health-seeking behaviour of both genders.

On grading the level of practice of self-medication among respondents in this study, it was revealed that less than one third (28.4%) do not practice self-medication; however, the majority of the respondents were found to have practiced self-medication to various degrees. In general, about one-quarter (25.3%) of the respondents had high practice, about one-third (29.3%) had moderate practice, and about one-sixth (17%) of the respondents practiced self-medication less frequently. The frequency of self-medication was higher among the females, in which 26.85% have high practice as opposed to the males with 21.48%. This may be because the female who experiences dysmenorrhea tend to use analgesics for their pain relief. Otherwise, reasons given by the respondents for the practice of self-medication such as treatment of minor ailment (71%), lesser cost of self-medication (36.5%), avoidance of long waiting time in hospitals (30.5%) as well as perception of shortage of doctors to attend to their health needs are not gender-dependent.

The primary source of drugs used by the respondents in this study was the patent medicine store (74.4%). This is similar to patterns observed in previous studies carried out by Afolabi and Yusuf *et al.* These findings may be because the patent drug dealers are easily available and accessible to the community members, and perhaps, these patent medicine retailers sell their drugs at cheaper rates. The implication of this situation is immediately obvious as young people can very easily get their hands on all manner of drugs with predictable negative consequences for population health and even security. It may be reasonably difficult to ascertain the potency and genuineness of these cheap drugs sold over the counter, and thus poses urgent responsibility on health authorities

and Government on the need for stiffer regulation to prevent easy access to drugs by young persons. The primary presumed diseases and symptoms for self-medication in this study included malaria; 73.2%, headache; 83.5%, pains (stomach-ache, backache, and menstrual cramp); 57%.

Previous studies have also reported some of these diseases as reasons for self-medication. Management of common cold and cough, pains, headache, and ulcer by self-medication has been reported in a study by Banerjee and Bhadury. Unfortunately, some of these conditions were presumptive as a confirmatory diagnosis was not arrived at before the medications were taken. This could be a serious source of abuse of antimicrobial like anti-malarial, and the resultant consequences of this practice may be catastrophic on the population in general. Self-medication, particularly with antibiotics, has been widely reported and recognized as a leading cause of antimicrobial resistance.

The proportion of respondents who practice self-medication in this study is close to what was reported in other studies carried out in Nigeria, where a range of 38.8% - 53.5% of respondents were found to indulge in the practice of self-medication. Koushede et al. found that individuals in low socioeconomic status and high perceived stress have unique high demands for using over-the-counter drugs, especially the analgesic categories, which they commonly use for headache and musculoskeletal pain compared to those in high socioeconomic status or those with low perceived stress. Although this study did not probe the different categories of medicines that were self-purchased by the respondents, their level of income was below twenty thousand naira (N 20,000.00) per month in the majority of them (72.3%). This may not be a surprising finding as

public schools in Nigeria are attended mainly by the children of the lower and middle-income earners.

Generally, there was a strong association between the respondents' knowledge and their practice of self-medication. A higher proportion of the respondents with good knowledge of self-medication seems to have indulged more in self-medication in contrast to the proportion of respondents with poor knowledge of self-medication. This may be because to practice self-medication, knowledge on the subject matter especially on how to use these drugs may be required. Also, acquiring general knowledge on self-medication, the respondents may have gotten their information on the subject matter from the non-conventional sources. Conversely, a further probe into the level of practice of this act among those found to have indulged in self-medication, revealed an inverse association with knowledge of self-medication. Those respondents who indulged in the act who had good knowledge of self-medication were found to have practiced self-medication less frequently. On the contrary, those with poor knowledge among this group of respondents who indulged in self-medication practiced it more frequently. This paradoxical finding of knowledge with indulging in self-medication; and with the level of practice among those who indulged in the self-medication may have been as a result of their understanding of the possible complex mix between the knowledge of the advantages and disadvantages of self-medication. It can be inferred from this study that the respondents require knowledge to first indulge in self-medication but to continue in the practice, the respondents with more knowledge of self-medication are less likely to continue with the practice. This finding could imply that there would likely be a drastic

reduction in the level of practice of self-medication even among those who already indulged in the act when quality health education on self-medication is given to our university undergraduates. However, this study was a cross-sectional study and thus may limit the generalization of its findings.

### Conclusion and Recommendation

This study revealed that a large proportion of undergraduate students of Ambrose Alli University Ekpoma engaged in self-medication. Only about a third of the students had good knowledge of self-medication and was found to be inversely related to the level of practice of self-medication. It is therefore paramount that the school management, stakeholders, and government agencies institute measures such as health education programmes, awareness campaigns, curriculum design targeted at increasing the quality of knowledge on self-medication for the undergraduate students as a strategy for reducing the menace of self-medication practice in public universities in Nigeria.

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### Conflicts of interest

There are no conflicts of interest.

### Consent for publication

Not applicable

### Authors' contributions

EFO, EAO, and BAI conceived the study, developed the protocol. All authors were involved in data analysis and writing the manuscript.

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