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ASSESSMENT OF SELF-MEDICATION PRACTICES AMONG STUDENTS OF A TERTIARY INSTITUTION IN NORTH-EASTERN NIGERIA.

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ABSTRACT

Assessment of self-medication practices was done among students of Federal Polytechnic, Bauchi, North-Eastern Nigeria to describe their practices of self- medication and identify areas where interventions could be provided. Questionnaire with both closed and open ended questions was administered to 400 students using convenient sampling method. The questions covered prevalence, practice, reasons, sources of information, sources of drug, classes of drug and presumed illnesses and symptoms for self-medication. The data was analyzed using SPSS 20.0 for descriptive statistics. Presumed symptoms and diseases for self-medication included pains (18.75%) and malaria (28.72% while the most used classes of medication were analgesic (48.3%), antibiotics (23.9%) and antimalarial (19.6%). The commonest reasons for self-medication were consideration of illness as being minor (18.3%) and low cost (17.3%). Relatives, friends and family (21.5%) were the highest sources of information for self-medication followed by health workers (17.8%) while the highest source of drug was patient medicine dealers (37.5%). The study revealed strong influence of community in the practice of self-medication and use of prescription drugs for self-medication thus requiring interventional measures to promote responsible practice of self-medication.

KEYWORDS: Self-medication, Students, Prevalence, Practice.

INTRODUCTION

Self-medication is a major and important subset of self-care.[1] It involves the act of treating diseases or symptoms recognized by oneself without a formal consultation of a qualified health professional or assessments by one. A wide range of ailments had become increasingly managed by self-medication among a large proportion of people worldwide. [2] Self-medication is expected to involve the use of medicines designed and labeled for use without prescription and approved as safe and effective for such use.[3] It is an important health issue especially in developing countries like Nigeria.[4,5] 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 by the patients. Various studies reported that self-medication may lead to delay in care seeking which results in paradoxical economic loss due to delay in the diagnosis of underlying conditions and appropriate treatment. Also, it can lead to drug-drug interactions and adverse drug events which would be prevented, had the patient sought care from a licensed medical practitioner. Practicing self-medication for drugs like antibiotics might lead to drug resistance; and hence, there needs to be a check on these practices.[6,7]

Self-medication practices cannot be considered as entirely harmful. Drugs classified as "over the counter" can be purchased without prescription and might save time and money for the patients in some circumstances. The practice is sometimes encouraged by certain factors like inadequate access to health care occasioned by huge shortages of health care personnel. This is common in some geographically isolated areas like hilly and hard to reach localities.[8]

Few studies had been conducted on prevalence and practices of self-medication at community levels in Nigeria.[5,9] Also studies had been carried out among students population in Nigeria but predominantly among university and higher school students.[7,10] While this study has not been extensively and adequately studied among student population in Nigeria, there is paucity of information on the subject among the Polytechnic students which constitutes a significant proportion of students undergoing tertiary education in Nigeria. This study was therefore carried out among the students of Federal Polytechnic, Bauchi, North-eastern Nigeria to assess the prevalence and practices of self-medication in this population as an attempt to contribute to the existing body of knowledge on this subject among Nigerian

students with the hope of identifying possible areas of interventions to promote safer uses of medicines among tertiary education students and also factors that may help policy makers and regulatory authorities streamline the process of drug regulations, update the list of essential medicines and address more effectively the issues of safety of 'over the counter' medicines.

METHOD

Study setting

The study was carried out among the students of Federal Polytechnic, Bauchi, Nigeria. The institution is located in the North-east geopolitical zone of Nigeria. It is a Federal Government owned tertiary institution established in 1979 with currently a student population of about seven thousand in 23 departments under five schools. The institution has a staff strength of over 800 comprising both academic and non-academic staffs.

Sample size

Self-medication prevalence rate of 50% was used to determine the sample size for this study.[11] This was used to determine the minimum sample size for this study using the Cochran formula:

$$\frac{n = z^2 pq}{d^2}$$

Where n = minimum sample size z = 1.96 at 95% confidence interval obtained from standard statistical table of normal distribution p = estimated prevalence of non-adherence in a given population (50% or 0.5) q = precision i.e. prevalence of adherence in a given population (0.5) d = margin of error (0.05).

The minimum sample size was calculated to be 384; then the sample size was rounded up to 400.

Study design and study procedure

This was a cross sectional study that describes the pattern of self-medication practices among the study population with participants selected by convenient sampling method. The primary researcher assisted by some trained data collectors approached the students of this institution over a period of one month between 01/04/14 and 30/04/14 in their hostels which are situated in the neighborhood of the school. Students of the institution were identified by verifying their identity cards and consecutively students who consented verbally to participate in the study were interviewed using the designed questionnaire for the study. The exercise continued until a total number of 400 participants were recruited. The questionnaire was earlier pre-tested among students of a university different from the study population and necessary corrections were made as regards the grouping of social demographic factors, sources of information and drug for self-medication. Some options that were not included initially in the questionnaire were included while some items were removed as deemed necessary.

The study instrument

The study instrument was a questionnaire comprising of both open and close-ended questions. Participants responded to questions like demographic characteristics, practice of self-medication in the last one year, classes of drug taking together, ailments been treated, reasons for self-medication, sources of information for medicines and sources of the medicine

Ethical consideration

The consent of the participant were sought before administering the questionnaire and they were informed that all the information provided will be handled confidentially and anonymously.

Data analysis

The data obtained was entered into an IBM compatible computer and subsequently descriptive statistical analysis were done using Statistical Package for Social Sciences (SPSS) version 20.0 (SPSS Inc. Chicago IL).

RESULTS

Socio-demography of the Respondents

The socio-demographic characteristics of the respondents are as shown in Tables 1a and 1b. The age of the respondents ranged from 15 to 45 years, mostly in the 20 -25 years age group (49.5%). They were mostly males (60.3%), singles (81.4%) and predominantly in the Ordinary National Diploma classes (45.5% in OND 2 and 35.5% in OND1). 59% and 38.2% of the respondents are Christians and Muslims respectively. The ethnicity is dominated by other ethnic groups 55% apart from the three major ethnic groups of Hausa, Yoruba and Ibo. Other details are as shown in Tables 1.

Table 1: Socio-demographic characteristics of the respondents

Age	Frequency	Percentage (%)
15-20	IO9	27.3
21-25	198	49.5
26-30	73	18.3
31-35	6	1.5
36-40	13	3.0
41-45	1	0.3
Total	400	100
Sex		

Male	241	60.3
Female	159	39.8
Total	400	100
Marital status		
Single	326	81.5
Married	64	16
Divorced	5	1.3
Separated	5	1.3
Total	400	100
Educational status		
OND1	142	35.5
OND2	182	45.5
HND1	38	9.5
HND2	38	9.5
Religion		
Christianity	236	59
Islam	163	38.2
Traditional	4	1.0
Others	7	1.8
Total	400	100
Ethnicity		
Hausa	108	27
Igbo	29	7.3
Yoruba	43	10.8
Others	220	55
Total	400	100

Practice of Self-Medication Prevalence of self-medication was 73.25% among the student population studied while 26.75% claimed they don't practice self-medication. The prevalence and frequency of self-medication practices, prevalence of self- medication within the last one year and the groups of drugs taken are shown in Table 2.

Table: 2 Practice of self-medication among the respondents.

Prevalence	**Frequency**	**Percentage (%)**
Yes	293	73.25
No	107	26.75
Total	400	100
Frequency of self-medication		
Regular	72	18
Once a while	96	24
Often	60	15
Seldom	70	17.5
Rarely	34	8.5
Not at all	68	17.1
Total	400	100
Self treatment one year ago		
Last one month	187	46.8
Last three month	64	16.0
Last six month	52	13.0
Last one year	44	11.0
Total	347	86.75
Groups of drug for self-medication		
Pharmaceutical	248	62
Herbal	30	7.5
Stimulant	10	2.5
Pharmaceutical and herbal	20	5.0
Pharmaceutical and stimulant	23	5.8

Herbal and stimulant	10	2.5
Pharmaceutical+ Herbal+stmulant	6	1.5
Total	347	86.8

Presumed Diseases and Symptoms for Self-Medication among the respondents.

The most common presumed diseases and symptoms treated with self-medication among the population studied included Malaria (28.75%), stomach/back/menstrual pain (18.25%) and cold/catarrh (17.5%). Others are as listed in Table 4.

Table: 3 Presumed diseases and symptoms for self-medication.

Ailment	Frequency	Percentages
Ulcer	17	4.25
Headache	59	14.75
Malaria	115	28.75
Typhoid	43	10.75
Pains (Stomachache/back ache/menstrual pain)	73	18.25
Hypertension	4	1.0
Diabetes	2	0.5
Asthma	6	1.5
Pile	6	1.5
Sexually Transmitted disease	4	1
Cold/catarrh	70	17.5
Others	57	14.25
Total	456	132.75

Others include dysentery, fever, wound, diarrhea, pimples, itching and so on.

Classes of Drugs taken by the respondents

The respondents took many classes of drug either separately or together. The class with the highest frequency was analgesic 108 (27%) while antiulcer drugs had the least frequency 10 (2.5%) as shown in Table 4.

Table: 4 Classes of Drug Taken by the respondents

Classes of Drug	Frequency	Percentages
Analgesic	108	27
Antimalarial	25	6.3
Cold/catarrh remedies	22	5.5
Antiulcer	10	2.5
Antibiotics	15	3.8
Analgesic +Antimalarial +antibiotics+ cold remedies	10	2.5
Antibiotics +Analgesic	32	8.0
Analgesic +Antimalarial	22	5.5
Antimalarial + analgesic +antibiotics	21	5.3
Antibiotics + cold/catarrh remedies	17	4.3
Herbal	11	2.8
Vitamins / Hematinic	13	3.3
Others	15	3.8
Total	342	85.5

Reasons for self-medication

Table 5 shows the reasons for self- medication among the respondents with the most reasons being the consideration of ailments to be minor and drugs being used for preventive reasons (18.3%), lesser cost of self-medication (17.3%) and long hospital waiting period and believe of shortage of doctors in the hospitals (15.5%). Other reasons are as outlined in the table.

Table 5: Reasons for self-medication among the respondents

Reasons for self-medication	Frequency	Percentage
Ailment considered to be minor	73	18.3
Less cost	69	17.3

Long waiting period and shortage of doctors in hospital	62	15.5
Dissatisfaction with care received in the hospital	46	11.5
Previous knowledge of the drug from old prescription	44	11
Previous knowledge about the suspected ailment	25	6.25
Ailment did not require western medicine	20	5.0
Suspected ailment require rapid attention	15	3.75
The problem is a long standing one	13	3.25
Addiction	10	2.5
Total	377	94.35

Sources of Information for Self-Medication

Relatives, friends and family members were the highest sources of information (21.5%) for self-medication while the least source was pharmacy/chemist (7.25%) (Table 6).

Table 6: Sources of Information for Self-Medication.

Source of information	Frequency	Percentage (%)
Relatives/Friends/Family members	86	21.5
Health workers	71	17.8
Drug Advertisement/Internet	46	11.5
Others	45	11.3
Chemist/Pharmacy	29	7.25
Drug leaflets	25	6.3
Total	302	75.5

Sources of Drug for self-medication

Sources of drug for self-medication in this study include patent dealer/drug retail outlet (37.5%) while hospital/pharmaceutical shop was (18.8%). Details are shown below (Table 7).

Table: 7 Sources of Drug for self-medication

Sources of Drug	Frequency	Percentages (%)
Patent Dealer/Drug Retail Outlet	150	37.5
Hospital/Pharmaceutical Shop	75	18.8
Herbalist	33	8.3
Drug Hawker/Open Market Place	27	6.8
Others	20	5.0
Total	305	76.25

DISCUSSION

In this study most of the respondents were male; 60.3% and single; 81.5 %.(Table1). Majority of the participants fall within the age group 20-25 years (49.5%) and the least number in the 41-45 years category (0.3%) (Table 1). The high prevalence of self-medication among this age group is similar to what has been documented in a previous Nigerian study in which young people were found to be practicing self-medication actively.[8] This may be due to the fact that this is the active age in which individuals are engaged in different physical activities and the female gender are also prone to experiencing dysmenorrhea in their menstrual cycle, all of which may require the use of drugs especially the analgesics found to be mostly used in the population studied. A study among Indian population had found the practice of self-medication to be commoner in older population between 50-59 years compared with the younger age group.[12] Our study however did not include this older age group which is beyond the average age for students in higher institutions in Nigeria. However, the practice of self-medication has been found to be prevalent in both the young and older age groups of a Slovenian population,[13] a finding that is consistent with our finding in this study.

Individuals are increasingly taking responsibility for their own health as exemplified in this study. In their response to whether they self-medicate or not, 72.2% claimed they were engaged in self-medication while 27.7% denied such practice. However, responses to other questions asked in the study suggested even a higher prevalence of self-medication than 72.2% with over 80%

respectively admitting the practice of self- treatment within the previous one year and stating one form of drug or the other used as shown in Table 2. The prevalence of self-medication obtained in this study was similar to the findings of other researchers.[4,5,8,14] The reason for the high prevalence of self-medication among this studied population 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 Indian.[15]

Our study found relatively high prevalence of self-medication in both males (75.5%) and females (70.5%). Angeles et al in a Mexican study and Arute et al in a study among a Nigerian population have identified women to be highly involved in the use of drugs and the practice of self-medication. [8,16] The high prevalence of self-medication among women especially the house wives has been explained by their restricted movement outside home and a secondary status conferred on women in some cultures which might reduce their chances and opportunities of seeking professional help thereby making them to resort to self-medication.[15]

The frequency of self-medication obtained among the studied population revealed that18% practiced self-medication regularly and 24% once in a while. These frequencies suggest that self-medication is a public health problem and requires prompt attention and appropriate interventional measures. Furthermore, it was discovered that majority of the respondents (46.8%) self –medicated in the last one month prior to this study with the majority in this category practicing it within one week of the interview suggesting a regular practice. Measures need be put in place therefore to promote responsible self-medication.

The majority of the respondents were studying courses that were not health related like Secretariat studies, Information technology, Agriculture, Business Management and Administration, Accounting etc. Sakpota et al had shown that individuals that were non-science majors were more likely to practice self-medication.[17] This assertion is strengthened by the findings of responsible self-medication practices among a group of pharmacy students who perhaps have been influenced positively by their knowledge.[14] On the contrary, Correa da Silva et al found no difference in self-medication practices between healthcare and non-healthcare based students.[18]

The respondents took many groups of drug together. Hence, the problem of drug interaction is inevitable especially herbal and pharmaceutical products.[19] Also, adverse drug reaction may be associated with the practice. A lot of adverse drug reactions might have been associated with the practice unknowingly as the studied population may not be knowledgeable enough to identify such. For instance, most of the herbal products are not standardized and has not been purified from toxic constituents, hence this can lead to renal complications. Herbal medicines have not been fully integrated into the primary healthcare and traditional medicine practice are yet to be standardized and appropriately regulated in Nigeria. These lack of standardization and adequate regulation of the practice of traditional medicines have serious health consequences.[9] The majority of the respondents (62%) took both ethical and non-ethical pharmaceutical products, which potentially contributes to the problems of drug resistances that has assumed global dimension.[20] A concerted effort is therefore required urgently by all stake holders to ensure the practice of responsible self-medication in the society.

The practiced self-medication for different reasons, the most being consideration of ailment to be minor (18.7%), lesser cost of self-medication, avoidance of long waiting period in hospitals as well as perception of shortage of doctors to attend to their health needs. These reasons are perhaps consistent with the peculiarity of the study population of students who are not on the average financially buoyant to visit hospitals and who may also consider the time required for hospital visit as a constraint. The reasons for self-medication given by our study population are consistent with findings of other researchers in previous studies.[1,14] Other reasons given by the respondents for self-medication including having previous knowledge of the sickness, claim of previous knowledge from past prescriptions, considering ailment as long standing and ailment not requiring western medicine are all consistent with findings documented by Arikpo et al, Auta et al and Afolabi et al respectively.[5,9,21]

A notable reason for self-medication in this study is addiction. Many of the respondents (4%) that practiced self-medication because of addiction were discovered to abuse substances like codeine, tramadol, benzhexol, cannabis, marijuana and so on, classified as others in this study. A study had reported substance abuse as well. [18] This is a serious social problem that needs prompt attention from our government. The WHO supports self-medication as a means to reduce cost of healthcare but emphasizes the need to provide adequate framework and education that promotes a responsible practice.[22]

In this study the major source of information for self-medication are families, relatives and friends (21.5%) followed by health workers and drug advertisement/internet (17.8% and 15%) respectively. The major source of information in this study is similar to the findings in previous studies.[20,23] Health workers been a source of information for self -medication was similar to the findings of physicians and pharmacists and social medial/internet resources as the leading sources of information on non-prescription medicines in previous studies.[24,25]

The main sources of drugs used in this study are patent medicine store/drug retail outlet (37.5%) followed by

hospital/pharmacy (18.8%). This is similar to patterns observed in previous studies by Yusuf et al and Afolabi et al.[21,26] These findings may be due to the fact that the patent drug dealers are closer to the community and perhaps sell cheaper drugs. There is limited number of registered pharmacist in the state of Nigeria federation where the study was conducted and a number of the registered pharmacy outlets are being manages by sales persons who are not knowledgeable about drugs. This study is pointing to the need for firm regulation of practice of patent medicine store by different regulating agencies.

Research has shown that patent medicine store are major source of prescription medicines in Nigeria despite not been registered to handle such. This suggests that the sales of pharmaceuticals in Nigeria are under regulated. The under-regulation of pharmaceutical products has led to high prevalence of fake medicines; high incidence of self-medication; adverse drug reactions; lack of confidence in public drug market; protracted ill health; treatment failure; resistance and death of some victims in the country.[27]

The main presumed diseases and symptoms for self-medication in this study include malaria; 28.75%, headache;14.75%, pains (stomachache, backache and menstral cramp);18.25%, cold/catarrh; 17.5% and typhoid; 10.75%. Previous studies have also reported some of these diseases as reason for self-medication.[15,18] Other presumed conditions for self-medication include ulcer, diabetes, hypertension, asthma, pile, sexually transmitted disease and gastro-intestinal disorders. Management of common cold and cough, pains, headache and ulcer by self-medication has been reported in a study Banerjee and Bhadury.[11] Similarly, chronic conditions like diabetes mellitus and hypertension have been reported to be managed by self-medication previously.[12]

Many classes of drug were implicated in the practice of self-medication by the respondents including antibiotics in 23.9%. The prevalence of antibiotics use in this study is not as high as the prevalence reported in other studies carried out in Nigeria where 38.8% and 53.5% self-medicate with antibiotics.[7,17] Similarly, self-medication with antibiotics in this population was also lesser than the rate recorded among a population of Ghanaian students with 70% prevalence.[28] Self-medication particularly with antibiotics has been widely reported and recognized as a leading cause of antimicrobial resistance.[29]

The use of analgesics has the highest prevalence of 48.3%. Koushede et al found that individuals in low socioeconomic status and high perceived stress have high odd demands for using over the counter analgesic for headache than those in high socioeconomic status or low perceived stress.[30] This assertion perhaps may be applicable to our studied population who are not economically empowered yet and were prone to perceived stress of academic rigors. A high percentage of our studied population used NSAIDs to manage conditions like menstrual pain and body ache. Availability of prescription drugs, greater choice of treatment, ease of access, feeling the ailment is minor has made the practice so rampart. The same trend has been documented in a previous study.[4] Furthermore, the use of anti-malaria drugs by 19.6% of the population is consistent with the endemic nature of malaria in the community studied.[9,31]

CONCLUSION

This study revealed that self-medication is highly prevalent among the students of a Nigerian Polytechnic studied for a wide range of symptoms and presumed illnesses using both prescription only and over the counter medications. It is therefore paramount to institute measures to ensure responsible self-medication practices among the population studied and the Nigerian public in general including educational programs and strengthening of relevant regulatory agencies to promote rational use of medicines.

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