



Medicine Knowledge and Self-Medication Practice Among Students

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ABSTRACT

This research was carried out to assess medicine knowledge and self-medication practice among undergraduate students of University of Jos, Jos, Nigeria; and to determine if a relationship exists between both. A descriptive, cross-sectional study was conducted, using a pretested questionnaire on 639 undergraduate students of University of Jos, sampled through a stratified two-stage cluster design. Data collected were entered and analysed using SPSS 16 and the chi-square test was used to determine associations between variables. The knowledge assessment test revealed that 36.9 % of respondents had inadequate knowledge, 30.8 % had marginal knowledge and 32.3 % had adequate knowledge. There was no significant relationship between self-medication and medicine knowledge. However, a significant ($P < 0.05$) relationship exists between medicine knowledge and respondents' faculty. Major sources of medicine information were health professionals (46.2 %), friends/relatives (17.1 %) and medicine information leaflets (16.9 %). The prevalence of self-medication was 51.5 % (95 % confidence interval of 47.6 – 55.4). The common reasons given by respondents for engaging in self-medication were that they were knowledgeable about the disease/treatment, their illness was mild, and that they had taken the same type of medicine in the past. The common classes of medicines used for self-medication were analgesics (26.0 %), antimalarial (19.8 %) and vitamins/hematinic preparations (15.7 %). The major sources of medicines for self-medication were the Patent Medicine Stores (53.4 %) and the Community Pharmacies (40.5 %). The study revealed that no significant relationship exist between self-medication practice and medicine knowledge among respondent. However, self-medication practice was high and inadequate knowledge of medicines exists among respondents.

KEYWORDS: Medicine knowledge, self-medication, students

INTRODUCTION

Self-medication is a common practice in developing countries. About 60-80 % of health problems are self-medicated [1]. Self-medication involves the use of medicines to treat self-recognized diseases or symptoms; or the intermittent or continued use of prescribed medication for chronic or recurring disease or symptoms; or the use of medications of family members [2,3]. Self-medication gives individuals the opportunity to take responsibility of their own health; enhances access to medications; improves medicine knowledge; and promotes the efficient use of scarce resources of the health care system especially in the developing world [2, 3]. However, successful self-medication practices have been associated with the general education,

educational level and socio-economic status of the individuals who practice self-medication [3].

For an individual to self-medicate appropriately, he must be able to accurately recognize symptoms, set therapeutic objectives, select appropriate medicine to be used for his medical condition, and determine appropriate dosage and dosage schedule taking into account his medical history, contraindication and possible side effects of the medicine [3]. This would therefore require adequate knowledge about medicines.

A number of disadvantages have been associated with self-medication practices. These among others include, wrong diagnosis; inappropriate choice of treatment; delayed health seeking behavior; increased risks of adverse drug reactions; risk of



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double medication and harmful interactions; risks of dependence and abuse; inappropriate storage and administration of expired medicines; and medication wastage [3].

Self-medication among students has been widely studied. Awad and Eltayeb studied self-medication practice with antibiotics and antimalarial among Sudanese undergraduate students and concluded that the prevalence of self-medication among students is high [1]. McCabe *et al.*, demonstrated that the non-medical use of prescription drugs is a major problem among secondary school students [4]. Abey and Amelo assessed self-medication practice among medical and para-medical students and concluded that drug authorities and health professionals need to educate students about the pros and cons of self-medication [5]. Verma *et al.*, demonstrated that the prevalence of self-medication among professional students in North India is high [6]. Self-medication was found to be very prevalent (94 %) among university students in Hong Kong [7]. In Nigeria, antibiotics self-medication pattern among undergraduate students was studied and the study showed that 56.9 % of respondents reported self-medicating with antibiotics [8]. Sapkota *et al.*, demonstrated that 1 in 4 university female student in south west Nigeria self-medicate with antibiotics to treat menstrual symptoms [9].

No study has assessed medicine knowledge and self-medication practice concurrently among students in Nigeria. This study was aimed at assessing medicine knowledge and self-medication practice among undergraduate students of University of Jos, Jos, Nigeria; and to determine if a relationship exists between both.

METHOD

Study Setting

The study was conducted in University of Jos, Jos, Nigeria. The University is made up of nine faculties but this study utilizes the old structure of eight faculties. Each faculty is made up Departments and students in each Department are organized into academic levels (classes).

Study Design

A descriptive, cross-sectional survey was conducted on 639 students of the University of Jos, Jos, Nigeria in March, 2011. A Stratified two-stage sampling design was used to obtain participants for this study. In the first stage, 12 clusters (departments) consisting of at least one cluster from each faculty were selected. The second stage of the sampling technique involved the selection of an

average of two academic levels (which constitutes the primary sampling unit) from each Department. Participants were selected from the primary sampling unit by a simple random sampling method with at least 20 participants selected from each primary sampling unit.

A pretested questionnaire was administered to participating students. The questionnaire contained both open and close-ended questions. Participants' responded to questions on demography, pattern of medication use within the last one month, reasons for self-medication, sources of medicines, medicine information, and medication sharing behavior. A knowledge assessment test was also administered to test respondents' over-the-counter medicine knowledge on key areas of medicine indication, drug administration, brand and generic names of medicines, contraindication, interaction and side effects of medicine.

Ethical Consideration

Informed consent was sought from participants before administering the questionnaire. Participants were told that participation in the study is voluntary and information obtained would be anonymous and confidential.

Data Analysis

Data were entered into the Statistical Package for Social Sciences (SPSS) version 16.0 (SPSS Inc., Chicago IL) to generate descriptive statistics. Two sample t-test between proportions was carried out to establish statistical difference between two groups. Relationship between self-medication and other variables were tested using the Chi-square analysis to establish statistical significance. Knowledge assessment test were graded and the score converted into percentages. A score of less than 50 % was considered inadequate, while a score of between 50 to 69 % was considered marginal and a score of 70 % to 100 % was considered adequate.

RESULTS

A total of 639 out of the 655 (representing 97.6 %) questionnaire administered were completely filled and returned by respondents. The respondents consist of 52.1 % males and 47.9 % females with majority of respondents in the age brackets of 20 – 24 years and 25 – 29 years (see table 1).

The knowledge assessment test revealed that 36.9 % of respondents had inadequate knowledge, 30.8 % had marginal knowledge and 32.3 % had

adequate knowledge (table 2). Self-medication practices among those that had inadequate, marginal and adequate medicine knowledge were 48.4 %, 52.3 %, and 54.3 % respectively.

Table 1: Characteristics of respondents

Variable	Frequency (%)
Gender	
Male	333 (52.1)
Female	306 (47.9)
Age	
15-19 years	43 (6.7)
20-24 years	363 (56.8)
25-29 years	210 (32.9)
30-34 years	18 (2.8)
Over 34 years	5 (0.8)
Faculty	
Natural Sciences	96 (15.0)
Pharmaceutical Sciences	72 (11.3)
Medical Sciences	89 (13.9)
Law	70 (11.0)
Art	84 (13.1)
Social Sciences	77 (12.1)
Education	62 (9.7)
Environmental Sciences	

There was no significant ($P > 0.05$) relationship between self-medication practice among respondents and their medicine knowledge. However a significant ($P < 0.05$) relationship exists between medicine knowledge and respondents' faculty (table 2). Students of the Faculty of Pharmaceutical Science and Medical Sciences showed higher knowledge scores than respondents from other faculties.

Table 2: Knowledge assessment score of respondents

Variable	Frequency (%)			χ^2 (P-Value), df
	Inadequate	Marginal	Adequate	
Faculty				
Natural Sciences	31 (32.3)	39 (40.6)	26 (27.1)	1.353 (P < 0.05), 14
Pharmaceutical Sciences	2 (2.8)	14 (19.4)	56 (77.8)*	
Medical Sciences	25 (28.1)	23 (25.8)	41 (46.1)*	
Law	25 (28.1)	35 (39.3)	29 (32.6)	
Art	37 (53.6)	22 (31.9)	10 (14.5)	
Social Sciences	50 (59.5)	19 (22.6)	15 (17.9)	
Education	30 (39.0)	31 (40.3)	16 (20.7)	
Environmental Sciences	35 (57.4)	13 (21.3)	13 (21.3)	
Total	235 (36.9)	196 (30.8)	206 (32.3)	

*t-statistic significant at 0.05 critical alpha level when compared with overall mean for category.

The knowledge assessment score in terms of subject areas covered by the study revealed that respondents were more knowledgeable in brand names (65.9 %), side effects (63.8 %), and generic names of medicines (59.0 %); and less knowledgeable in contraindications (50.7 %), interactions (47.4 %), drug administration (31.1 %) and indication of medicines (26.6 %).

Major sources of medicine information for respondents were health professionals (46.2 %), friends/relatives (17.1 %) and medicine information leaflets (16.9 %) (table 3).

Table 3: Sources of medicine information

Source of Medicine Information	Percentage Response (%)
Health Professionals	46.2
Media	9.7
Internet	8.0
Medicine Leaflets	16.9
Friends/Relatives	17.1
Others	2.1

The results revealed that 51.5 % (95 % confidence interval of 47.6 – 55.4) of respondents engaged in self-medication during the one month period preceding the study. Self-medication was found to be associated ($P < 0.05$) with respondents' faculty when chi-square was applied to the data and was high among students of environmental sciences and pharmaceutical sciences (table 4).

The common reasons given by respondents for engaging in self-medication are that they were knowledgeable about the disease condition and its treatment, their illness was mild, and that they had taken the same type of medicine in the past (table 5).

The common classes of medicines used for self-medication among students were analgesics (26.0 %), antimalarial (19.8 %) and vitamins/haematinics preparations (15.7 %). The major sources of medicines for self-medication were the Patent Medicine Stores (53.4 %) and the Pharmacies (40.5 %).

Table 4: Prevalence of self-medication among respondents

Variable	Prevalence (%)	95 % Confidence Interval	χ^2 , df
Gender			
Male	51.2	51.2 ± 5.5	0.025, 1
Female	51.9	51.9 ± 5.7	
Age			
15-19 years	56.4	56.4 ± 16.3	2.659, 4
20-24 years	50.0	50.0 ± 5.2	
25-29 years	54.5	54.5 ± 6.9	
30-34 years	47.1	47.1 ± 26.5	
Over 34 years	25.0	25.0 ± 79.7	
Faculty			
Natural Sciences	52.6	52.6 ± 10.2	48.856**, 7
Pharmaceutical Sciences	64.8	64.8 ± 11.4*	
Medical Sciences	31.5	31.5 ± 9.8	
Law	43.8	43.8 ± 10.5	
Art	62.7	62.7 ± 11.9	
Social Sciences	41.7	41.7 ± 10.8	
Education	55.4	55.4 ± 11.6	
Environmental Sciences	77.6	77.6 ± 12.1*	
Overall	51.5	51.5 ± 3.9	

**Chi square value significant at $P < 0.05$; *t-statistic significant at 0.05 critical alpha level when compared to the overall prevalence

Table 5: Reasons for self-medication

Reason	Percentage response (%)
Knowledgeable about treatment	41.6
Saves time	14.4
Saves money	9.3
Took the same medicine in the past	16.0
Illness is mild	17.9
Others	0.8

Table 6: Types and sources of medicines used for self-medication among students

Variable	Percentage (%)
Types of medicines	
Analgesics	26.0
Vitamins/Blood preparations	15.7
Antibiotics	13.4
Flu/Cough preparations	10.2
Skin products	5.3
Antimalarials	19.8
GIT medicines	6.2
Psychotropic medicine	0.9
Herbal	1.1
Others	1.4
Sources of medicine	
Pharmacy	40.5
Patent Medicine vendors	53.4
Friends/Relatives	4.5
Herbal homes	1.3
Others	0.3

DISCUSSION

The study demonstrated poor medicine knowledge among respondents; only 32.3 % of the respondents had adequate knowledge from the medicine knowledge assessment test. Since respondents to this study constitute a part of the educated group of the general public, a worse result may be obtained if this test is carried out in the general public. General knowledge about medicines was found to correlate with students' faculty of study as only students from the faculty of pharmaceutical and medical sciences showed significant adequate medicine knowledge above the average for the study population. Although the test was on general medicine knowledge, the

performance of pharmaceutical and medical sciences students might have been influenced by their field of study. Respondents' knowledge of medicine indication (26.6 %) and administration (31.1 %) was poor. This put the respondents at risk of using over-the-counter medicines for the wrong indication and inappropriate administration of medicines when they self-medicate. Hence, the need for health professionals and the Federal Ministry of Health to educate the general public on appropriate use and administration of over-the-counter medicines. In addition, over-the-counter medicine education can be incorporated into the general subject curriculum taught in Nigeria universities in order for non-health based faculty students to benefit from general medicine knowledge.

Reliable sources of medicine information increases an individual knowledge on medicine. Major source of medicine information among respondents were health professionals, friends/relatives and the medicine leaflets. Although medicine information from health professionals and medicine leaflets are reliable sources of medicine information [10], people do not benefit much from these sources because the contact time in developing countries between a health professionals and his client is small and medicine information leaflets are usually written at a level above the reading grade level of the general population and this affects their comprehension. Medicine information from friends/relatives, media and the internet are unreliable sources of medicine information [10]. People can easily be misinformed by these sources of medicine and this is of public health consequences especially with self-medication practice.

The prevalence of self-medication among students in this study is comparable to other studies conducted among students. In Arabian Gulf University in Bahrain, 44.8 % of students reported practicing self-medication [11], while in Nepal, self-medication practice among undergraduate students was found to be 59 % [12]. Prevalence of self-medication was high among students of Environmental Sciences, Pharmaceutical Sciences and Faculty of Art. The high prevalence among Pharmaceutical Sciences students may be related to their knowledge of medicines since the commonest reason given by respondents was that they are knowledgeable about the disease and treatment.

Other major reasons given by respondents as to why they engaged in self-medication were that their

illness was mild, they had taken the same type of medicine before, and self-medication saves time.

One advantage of self-medication is that it reduces the strain on the healthcare system scarce resources. When people have mild illnesses or symptoms that do not warrant visiting a health centre, when they self-medicate appropriately, they promote efficient use of the health sector scarce human resources. People often repeat their medication when they have a similar illness. However, different illnesses can have similar symptoms and carrying out differential diagnosis requires a skilled health profession. The practice of repeating the same type of medication when an individual has similar illness or symptoms can result in delayed health seeking behavior and worsening of the individual disease condition; inappropriate use of medicines; antibiotics resistance; and waste of financial resources.

Common classes of medicines used for self-medication were analgesics, antimalarial, vitamins/haematinics preparations and antibiotics. The high use of analgesics for self-medication confirms the findings that analgesics are the commonly used over-the-counter medicines for self-medication [2, 12]. In Nigeria, analgesics are usually the first line of medicines used by people in the event of an illness. This is because most illnesses present with pain and fever and these medicines are mostly used for their symptomatic relief. However, their use can lead to adverse effect. For example, they can contribute to increased risk of liver and kidney damage when taken in high doses [2].

The high use of antimalarial correlates with the high incidence of malaria and home treatment of malaria in Nigeria [13,14]. Vitamins/blood preparations are common because people take them as supplements for promoting health, preventing illness; boost the immune system, prevention of stress and to supplement regular nutrition [2]. Hence, their use is usually seen as part of a healthy lifestyle. The use of antibiotics in this study correlates with respondents' self-medication practice. Self-medication with antibiotics is of public health concern. Inappropriate use of antibiotics results in antibiotic resistance which is a major problem worldwide especially in developing countries [6].

The major sources of medicines for self-medication were the Patent Medicine Stores and Community Pharmacies. Patent medicine stores are commonly used because of their ease of accessibility, shorter waiting time, longer opening hours, ease of seeking advice, lower cost, flexible pricing policy and no

service charge [13,15]. A major problem with this sector in Nigeria is the poor knowledge of patent medicine vendors about medicines, unauthorized sale of prescription medicines, and the under-regulation of the sector [16].

CONCLUSION

The study revealed that there was no significant relationship between self-medication practice and medicine knowledge among the studied population. However, self-medication practice was high and respondents had inadequate knowledge of medicines as only one-third of the respondents had adequate knowledge of medicine. Hence there is need to promote medicine knowledge among university students to ensure appropriate self-medication practice.

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