East and Central African Journal of Pharmaceutical Sciences
3 (2000) 53 - 56

Drug Use Pattern Among Medical Students Of The National University Of Rwanda

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Knowledge on use of drugs among students should help assess the perception of students on drugs. The present work studies the pattern of drug use among medical students of the National University of Rwanda. The study was carried out on English speaking medical students and was a cross-sectional one. Data was collected through a structured questionnaire. There was not significant difference between 3rd and 4th year students in responding to any of the questions asked in this study. Most students of both years had taken medicine two weeks prior to the distribution of the questionnaire. Only some students practised self-medication. About 50% of the drugs used for self-medication were analgesics. Antimicrobials were the next group of drugs commonly taken for self-medication. Oral route of administration was observed to be popular among most students. Over 50% of the drugs were purchased from government health institutions and on prescriptions. About 50% of the students opted for tablets, while 30% did not have any preference if they were given options. This study shows that drug utilization pattern among students is not worrying, though there is still a lot to be desired towards promotion of rational use of drugs among medical students, the future prescribers.

Key Words: Self-medication, medical students.

INTRODUCTION

Irrational use of drugs has become a chronic problem all over the world and in particular, the developing countries. Lack of government commitment, low capacity to design and implement appropriate drug policies, lack of regulatory mechanisms and quality assurance systems, and irrational consumption of drugs are still common [1]. Irrational prescribing, dispensing and consumption negatively affect the over all rational use of drugs. The problem of irrational drug use is worse with chemotherapeutic agents because of the inevitable emergence of drug resistance. If such practice continues, the effectiveness of the currently available antimicrobial drugs would largely be compromised. Drug sharing among community members is quite common in some developing countries and this has exacerbated the situation [2]. Non-affordability of most essential drugs in these countries is also a contributory factor.

Many studies have documented the problems related to drug use in the developing countries. The government in these countries have insufficient financial means to purchase the essential drugs. Hence, the communities in these countries are forced to rely on the private health care system if one can afford, or on herbal medicine where still available (3).

Self-medication often lead to irrational drug use. For instance, self-medicating in the treatment of headaches is a widespread practice with costly and unpredictable consequences (4). Several studies on self-medication indicated that the majority of illnesses were treated without proper justification [5, 6]. Not much is known about use and hoarding of drugs among medical students in developing countries. Drug utilization pattern studies among medical students could indicate how best rational use of drugs is promoted among medically oriented people. This could help medical training institutions to examine their

current curriculum at various levels, and take appropriate remedial action in time.

The main objective of the present work was, therefore, to study the pattern of drug use among the English speaking medical students of the National University of Rwanda, as a basis for studying the attitude of medically oriented individuals on drug use.

METHODOLOGY

Study Subjects and Setting

The study was conducted in the Faculty of Medicine, National University of Rwanda in January 1999. The study subjects were third and fourth year English speaking medical students, currently based at the Central Hospital, Kigali. The medical course in the National University of Rwanda takes about six years, including the internship. Pharmacology is taught in the third year and comprises of 60 hours of lectures.

Structuring Questionnaire

The questionnaire developed by WHO for household drug use survey with some additional close-ended variables was employed in this study. The questionnaire had items, which helped collect data on the socio-demographic characteristics and history of illness in the last two weeks proceeding the date of distribution of the questionnaire. The types of drug(s) employed, extent and frequency of use, routes of administration, sources and cost, hoarding and reasons for drug use were all contained in the questionnaire. In order to get the general opinion of students on the subject, a question about preference of dosage forms was also included in the questionnaire.

Measurement of response variables

The response variables measured in this study were:

- Intake of medicines in the last two weeks proceeding the date of distribution of the questionnaire.
- Types of medicines taken.
- Sources of medicines taken, types of dispensing (prescription or self-medication).
- Frequency and routes of administration of drugs taken as well as perceived reasons for taking drugs if it was self –medication.
- Drug hoarding (unjustified storing of drug) and types of drugs hoarded.
- Preferred dosage forms if options exist.

RESULTS

There were 95 and 97% response form 3rd and 4th year English speaking medical students in this study.

Informed consent was obtained from each individual respondent prior to distributing the questionnaire.

Most of the respondents were males, Catholic Christians and single, and all were Rwandese by nationality (table 1). Their average ages were 25.9± 0.5 and 27± 0.6 years for the 4th and 3rd year students, respectively.

There was not much difference between 3rd and 4th year student in any of the parameters measured in this study. Table 2 shows that most students (67.9% and 58.6% for 3rd and 4th year students, respectively) had taken medicine two weeks before they were subjected to the questionnaire.

Table 1. Exposure variables in the study

Study Level	Age	Sex		Religion		Marital Status	
		Male	Female	Christian	Atheist	Single	Married
3rd	27.0 ±0.6	27	1	27	1	23	5
4th	25.9 ±0.5	25	4	28	-	27	2

Age data are mean ± SEM.

Table 2: Students taken medicines in the two weeks preceding the study

Education	Students taken drugs N (%)	Students not taken drug (%)
3rd year	19(67.9%)	9(32.1%)
4th year	17(58.6%)	12(41.4%)

Self-medication among the students was observed. About half of the drugs used for self-medication were analgesics as shown in Table 3.

Table 3: Types of medicine taken and percentage

Drug taken	3rd year students	4th year students
Analgesics	9(47.4%)	9(52.9%)
Anti-microbial drugs	6(31.6%)	4(23.5%)
Cough and cold remedies	1(5.3%)	0(0.0%)
Anti-peptic ulcer drugs	2(10.5%)	1(5.9%)
Miscellaneous	1(5.2%)	3(17.7)

Anti-microbial drugs were the next commonly used agents for self-medication. About half of the respondents took the drugs rarely, while a third took them frequently (Table 4). Oral route of administration was observed to be popular among most students, and drugs were taken because of illnesses in most cases.

Over 50% of the drugs were purchased from government health institutions on prescriptions. It was noted that drug hoarding was not common (Table 5).

The most commonly hoarded drugs were analgesics (53.4%), followed by anti-microbial drugs (33.3%) (Table 6).

When students were asked about their preferences in terms of treatment, about 50% of the students opted for tablets and 30% took the drugs in the recommended dosage form (Table 7). Only few opted for injections and syrups.

Table 4: Frequency, routes and reasons for drug use N (%)

Study Level	Frequency				Route		Reason for taking drugs		
	Rare	As Required	Often	Oral	Injection	Topical	Stress	Prophylaxis	Illness
3rd yr	10(52.6%)	2(10.5%)	7(36.9%)	7(89.5%)	1(5.2%)	1(5.3%)	4(21.1%)	3(15.8%)	12(63.1%)
4th yr	9(52.9%)	2(11.8%)	6(35.3%)	16(94.1%)	1(5.9%)	0(0%)	0(0%)	1(5.9%)	16(94.1%)

Table 5: Sources and means of getting drugs and drug hoarding N (%)

Study Level	Sources of Medicine				Types of dispensing			Drug hoarding
	Government Health Institution	Pharmacy	Friend	Private Clinic	Market	Prescription	Non-prescription	
3rd yr.	15(53.6%)	9(32.1%)	3(10.7%)	-	1(3.6%)	19(67.9%)	9(32.1%)	7(25.0%)
4th yr.	15(51.5%)	10(34.5%)	3(10.5%)	1(3.5%)	-	21(72.4%)	8(27.6%)	8(27.6%)

Table 6: Types of medicine hoarded N(%)

Types of medicines hoarded	N(%)
Analgesics	8(53.4%)
Anti-microbial drugs	5(33.3%)
Miscellaneous	2(13.3%)

N - number

Table 7: Preferred dosage forms N (%)

Preferred dosage form	3rd year	4th year
Injections	3(10.7%)	3(10.3%)
Tablets	15(53.6%)	15(51.7%)
Syrups	1(3.6%)	2(6.9%)
As ordered	9(32.1%)	9(31.0%)

N - number

DISCUSSION

The observed responses to all questions by both groups of students indicate close similarity in their attitude to drug use. This might be explained in terms of their exposure to same course of pharmacology though at different times. Analgesics and antimicrobial drugs were commonly used for self-medication, perhaps because of easy availability of these drugs in the market. The students might have used analgesics because of self-perceived poor health and pain as previously observed by Antonov and Isacson in other studies [7]. The trend towards increased self-medication, and with it the increasing empowerment of patients has many potential benefits [8]. Appropriateness of self-medication, however, should be assessed [9]. The current trend of getting drugs from government institutions or pharmacies with prescription has to be encouraged as this could contribute to rational use of drugs at large.

In this study, the most commonly hoarded drugs were analgesics (53.4%) and anti-microbial drugs (33.3%). This may have some correlation with one of the previous studies on self-medication in Zimbabwe, which showed that drug hoarding is common among people with analgesics, herbal medicines and cough/cold remedies to the extent of 29%, 24% and 22%, respectively [10]. A previous study has shown that anti-microbial drugs, especially antibiotics, are frequently misused [11] and this is consistent with the present finding. The types of medicines hoarded corresponded with those taken frequently indicating the left over drugs were stored, i.e. over-prescribing or under-consumption of drugs.

In many cultures people prefer injections irrespective of the type of illness if given options [12, 13, 14]. The present study, however, show that tablets were preferred to injections.

In conclusion, drug utilization pattern among students in this study is not worrying. These students were exposed to a topic on rational use of drugs during pharmacology lectures. This might have helped them change their attitude on drug utilization pattern. Introduction of problem based learning on pharmaco-therapeutics might further help students strengthen the practice of rational use of drugs. This was shown to be useful with a traditional curriculum in one of the previous studies [15].

REFERENCES

[1] WHO. Operational research in the action program on essential drugs. Geneva, 23-24 June 1992.

[2] G. Mare, T. Gedif, T. Alemayehu and B. Tesfahum, East Afr. Med. J. 74 (1997) 362-367.

[3] S. Vander Geesr. Med. Anthr. 6 (1982).

[4] J. Eng-El, Lachenmeyer, Headache, 36 (1996) 452-455.

[5] S. Diana, J. Rachel and T. Judith, Soc. Sci. Med. 33 (1991).

[6] K. Dean, Soc. Sci. Med. 15A (1981) 673-687.

[7] K. Antonov and D. Isacson. Soc. Sci. Med. 42 (1996) 1473-14381.

[8] A. Blenkinsopp and C. Bradley. Bri. Med. J. 312 (1996) 629-632.

[9] J. Sclafer, L.S Slamet and G. de-Visscher. J. Clin. Pharm Ther. 22 (1997) 261-272.

[10] N. Nyazema, O.J. Kasilo and D. Chavunduka. People's perception and use of drugs in Zimbabwe, WHO Publication. 1992.

[11] J. Calva, Soc. Sci. Med. 42 (1996) 1121-1128.

[12] H.V. Wyatt, Soc. Sci. Med. 19 (1984) 911-915.

[13] A.V. Reeler, Soc. Sci. Med. 31 (1990) 1119-1125.

[14] J.E. Hadiyano, S. Suryawati, S.S. Danu, Sunartono, B. Santoso. Soc. Sci. Med. 42 (1996) 1177-1183.

[15] D. Chandra, S. Sharma, G. Sethi and S. Dkhar, Eur. J. Clin. Pharmacol. 51 (1996) 1-5.