

**MEDICATION KNOWLEDGE, ATTITUDE AND PRACTICE (KAP)
AMONG UNIVERSITY OF GONDAR FRESHMAN STUDENTS,
NORTH WESTERN ETHIOPIA**

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Summary

Inadequate knowledge of medication use may directly lead to misuse by community and/or patients' non compliance with a drug regimen and results in serious outcomes like adverse drug reaction and reduction of the quality of treatment. Thus this study intended to assess knowledge, attitude and practices toward medication use of freshman students of University of Gondar. A cross sectional study was undertaken on 400 freshman students of University of Gondar in May 2007. The sample was taken from each faculty using systematic random sampling method. Three section of questionnaire were developed including 13 true false questions to measure knowledge, 5 questions for attitude in a 5 point scale, and 10 questions for medication practice in 5 point scale. A total of 400 students completed the survey instruments. Knowledge of students on duration of therapy of antihypertensive, drug interaction with antacids, frequency of medication taking and storage condition of ointment or gel and syrup was poor, answered correctly less than 34.1% of the respondents. On the other hand 86.5% of respondents were knowledgeable about taking medicine with food, drinks- tea or alcohol will interfere with the effect of medicine. Respondents have good attitude on trustworthiness of a pharmacist as a consultant of drug information (94%), necessity of dispensing and consultation of medicine by pharmacist (94.5%) and necessity of consultation on unusual effects of the medication by pharmacist (89.7%). On medication practice, 74% of the respondents intended to self-medication on minor ailments like colds; and few respondents usually practice sharing their medicine to others (14%) and use of traditional medicine with western medicine in combination (6%). The majority of the students have better attitude in getting consultation related to medication by pharmacist rather than deciding by themselves or peers but lack appropriate knowledge and practices related to safe use of medication. Hence, intervention is required towards improving drug knowledge and safe medication practice.

Keywords: Self medication; Knowledge, attitude and practice (KAP); Gondar; Freshman students.

Introduction

The global increase in the consumption of medications needs for studying medication knowledge and behaviors [1]. Medication knowledge assessment is used to assess a person's knowledge and ability to read and understand information necessary for appropriate medication use. Information from the medication knowledge assessment can serve as the basis to focused knowledge improvement plan [2].

Various studies have shown that because of lack of knowledge and information many people take and use their medication incorrectly or inappropriately. This in turn leads to loss of efficacy and an inefficient use of the considerable resources which are spent annually on drugs [3].

To make sure that drugs are being used rationally the patient or someone on behalf needs certain information about medicine. Inappropriate delivery of information about drugs by health professionals is believed to be one of the factors contributing to the knowledge deficit seen by the users as shown by studies done in Ethiopia and Papua New Guinea [4].

The medication practices occurring in the young population reveals complex relationship with health, knowledge, attitude and behavior which must be considered in order to deliver effective health education. Medication consultation is a direct method of promoting safe use of medication. The Center for Disease Control and Prevention (CDC) has identified that colleges and universities are important settings for delivering health promotion education and services to young adults [1].

In the implementation of a successfully rational safe medication program, studies on college or university students' knowledge, attitude and safe medication practices are essential for pharmacists, policy makers and health institutions in identifying areas of intervention and appropriately direct the merge resources available to promote rational drugs use [1, 4]. Hence, this study was conducted to assess knowledge, attitude and practices toward medication use of freshman students of university of Gondar, Ethiopia.

Methodology

Description of Study Area:

Study site was University of Gondar, which is found in Gondar town, North Gondar Zone, Northwestern Ethiopia. Gondar town is 742 Km far away from capital city Addis Ababa. The climatic condition is Woyna Dega (Mid highland).

University of Gondar established in 1947 as Gondar College of Public Health. In 1997, it becomes University of Gondar by having six faculties i.e. Faculty of Business Management and Economics, Faculty of Social Science and Humanities, School of Law, College of Medicine and Health sciences, Faculty of Applied and Computer Science and Faculty of Veterinary Medicine. At present it has 13,270 total students in regular and extension program. Among these 3,245 are freshman regular students in the academic year 2006-2007.

Study Design and population:

A cross sectional study was employed with structured questionnaires on four hundred (N=400) freshman students. The sample size was determined with 50% proportion, 0.05% desired accuracy at 95% confidence interval. To increase accuracy and representative of the result we used 400 students. Students are taken from each faculty using stratifying and then systematic random sampling method from each selected departments of the faculty. The total number of students in faculty of business, management and economics were 1009, in faculty of social science and humanities 468, school of law 158, College of Medicine and Health Sciences 811, faculty of applied and natural science 682 and faculty of veterinary medicine 117.

Data collection and management:

Data was collected using pre-tested self-administered structured questionnaires containing close-ended questions from four hundred freshman students. The number of students taken from each faculty was 175 from faculty of Business and Economics, 57 from faculty of Social Science and Humanities, 19 from School of Law, 100 from College of Medicine and Health Science, 84 from faculty of Applied and Natural Science and 14 from faculty of Veterinary Medicine.

The questionnaire was divided into 3 parts to assess student's knowledge of drug safety, attitude toward medication consultation and medication use practices and consultation with pharmacists. The survey instrument also requested demographic information, including gender, age and whether participant had family members currently enrolled in health institution or practice as health care professional. The study was conducted in all faculties in May 2007.

Data analysis and interpretation:

After data collection was completed data entry, clearance and analysis was done using EPI-info version 3.2 statistical package. During analysis frequencies of the different variables were determined.

Ethical issues:

The data collection process followed standardized protocol, which included obtaining permission from each faculty, as well as informing the study's purpose and encryption of students' responses for confidentiality. Students who participated in the study were requested to give verbal consent.

Results

Sociodemographic Characteristics:

Table 1 shows the sociodemographic characteristics of freshman students. In the present study, 400 respondents were covered and 64.5% (n=258) were males and 35.5% (n=142) females. The majority of respondents were Age between seventeen and twenty years. The number of participants majoring in health science including medicine and pharmacy was 100(25%) and the number in non-health science majors was 300 (75%). There were 147(36.8%) participants with family member currently practicing as health care professionals and 136 (34%) participants whose family members currently enrolled as health science students.

Table 1: Sociodemographic characteristics of freshman students (N=400) of University of Gondar, May 2007.

Characteristics	Frequency (n)	Percent (%)
1. Sex		
Male	258	64.5
Female	142	35.5
2. Age		
17-20	339	84.5
21-23	61	15.5
3. Family Background		
Presence of health professional in their family	136	34
Person who join colleges/universities to study health sciences in their family	147	36.8
No health related family	117	29.2

Medication Knowledge:

Table 2 shows students' medication knowledge response on rational drug use. Out of respondents (n=396), 261 (65.9%) answered it is right to discontinue antihypertensive when blood pressure returns to normal range. Also 178(44.9%) of respondents believed that antibiotics have to be discontinued when the symptoms of fever or soar throat are relieved.

345 (86.7%) of respondents answered correctly about the effect of over dosage of paracetamol, but only 168 (42.1%) knows overusing vitamins have negative effect to human bodies. 261 (66.6%) knows correctly about the ways antacids should be taken. But only 128(32.6%) knows an antacids should not be taken with all prescription drugs.

The response towards frequency of medication taking was found unsatisfactory. Only 129(32.6%) knows correctly about what it means by taking medicine three times a day. 279 (71.4%) of respondents believed that dosage of cough syrup is one bottle per use. The response of student toward adherence to medication use shown less, 225 (57%) respondents said not taking full does of medication does not have any effect.

Knowledge of storage condition of ointment (gel) and syrup was found to be unsatisfactory i.e. 71.4% and 69.8% of respondents said storing ointment or gel and syrup in the refrigerator could extend the expiration date respectively.

The students' knowledge of food drug interaction was found satisfactory, 86.5% of them know that taking medicine with food, drink; tea or alcohol will interfere with the effect of medicine. The majority of students (90%) get their prescription medication from community pharmacy.

Table 2: Freshman Students Response on Medication Knowledge Questions May 2007.

SN	Knowledge Questions	Number of students answered		Total (N)
		Correct n (%)	Incorrect n (%)	
1.	Antihypertensive drugs could be discontinued when blood pressure returns to a normal range.	135(34.1)	261(65.9)	396
2.	You can discontinue the use of antibiotics by yourself when the symptoms of fever or sore throat are relieved.	218 (55.1)	178(44.9)	396
3.	Overuse of Panadol (Paracetamol) will cause liver toxicity.	345(86.7)	53(13.3)	398
4.	Antacids should be chewed before swallowing to achieve a better effect.	261(66.6)	131(33.4)	392
5.	Antacids should be added into all prescriptions to avoid GI upset.	128(32.6)	265 (67.4)	393
6.	Taking all medicines with empty stomach helps to achieve optimum effect	197(49.6)	200 (50.4)	397
7.	Taking medicines three time a day means: taking at breakfast, lunch and dinner time.	129(32.6)	267(67.4)	396
8.	Not taking full dose of medication does not have any effect.	168(42.7)	225 (57.3)	393
9.	Vitamins are a health food, so overusing it will not cause negative effects to human body.	168 (42.1)	231(57.9)	399
10.	Storing ointment or gel in the refrigerator could extend the expiration date.	112(28.6)	279 (71.4)	391
11.	Storing syrup in the refrigerator could extend the expiration date.	120(30.2)	278 (69.8)	398
12.	Dosage of cough syrup is one bottle per use.	122(31.0)	271(69.0)	393
13.	Taking medicine with food, drink, tea or alcohol will interfere with the effect of medicine.	345(86.5)	54 (13.5)	399

Attitude toward pharmacist:

Table 3 shows students' attitude toward pharmacists' service on medications. Over all students showed positive attitude toward and trusted pharmacist's consultation. 357(94%) of students trust pharmacist consultation of drug information, 345(94.5%) agreed on the necessity of dispensing and consultation by pharmacist, 197(66%) said it is necessary to dispense and consult traditional medicine by pharmacist, 309(89.7%) agreed on the necessity of consultation on unusual effects of the medication by pharmacist and 309 (96.6%) said it is right to dispense and consult health food by pharmacist.

Table 3: Freshman Students Response on Attitude questions, May 2007.

SN	Attitude Questions	Number of students Answered		Total (N)
		Positive attitude	Negative attitude	
1.	Trustworthiness of a pharmacist as a consultant of drug information	357(94%)	23(6%)	380
2.	Necessity of dispensing and consultation medicine by pharmacist?	345(94.5%)	20(5.5%)	365
3.	Necessity of dispensing and consultation Traditional medicine by pharmacist?	197(65.9%)	102(34.1%)	299
4.	Necessity of consultation on unusual effects of the medication by pharmacist?	332(89.7%)	38(10.3%)	370
5.	Necessity of dispensing and consultation healthy food by pharmacist?	309(96%)	13(4%)	322

Medication Practices:

Table 4 shows that percent response of respondents regarding their medication practices. More than seventy five percent of the students seek for non-prescription medicines in the community pharmacy when they a cold and only 10% do not seek for non-prescription medicine from community pharmacy. Students state that about 46.4% of them share their prescription medications and 36.7% combine traditional medicine when they take western medicine. Sixty seven percent of the respondents were practicing medicine according to their friends' suggestion and 77 % were responding to discontinue their prescription medicine by themselves when their symptoms are relived. The students were reported that about 90% of them their source of the prescription medicine is from community pharmacy.

Discussion

The results of the study demonstrated that the students have positive attitude but still lack appropriate knowledge and safe practices in medication use. Knowledge and attitude influence patients' behavior and out comes. Improvements in knowledge are often correlated with better health practices.

The data strongly demonstrates poor medication knowledge of students. 65.9% of them thought it is correct to discontinue antihypertensive drugs when blood pressure returns to a normal range, also 44.9% said it is correct to discontinue antibiotics when the symptoms of fever or soar throat were relieved. This misunderstanding about antibiotic was also seen in study done in Taiwan college students on which the correctness rate is 45.8%, also in a telephone survey done in Taiwan, which showed that 27% of respondents with common cold believed that antibiotics prevented more illness that is serious and 48% expected their doctor to write a prescription for antibiotics [1].

Table 4: Freshman Students Response on Medication Practice Questions, May 2007.

SN	Medication Practice Questions	Answers			Total (N)
		Always/Usually n (%)	Sometimes n (%)	Seldom/Never n(%)	
1.	When you have a cold, will you seek for nonprescription medicines in the community pharmacy?	297 (74.6)	61 (15.3)	40 (10.1)	398
2.	When you have a cold, will you ask community pharmacists for medication without prescription?	297 (74.6)	60 (15.1)	41 (10.3)	398
3.	Did you ever give your prescription medicines to others?	56 (14)	129 (32.3)	214 (53.6)	399
4.	Will you combine Traditional medicine when you take western medicine?	24(6)	122 (30.7)	252 (63.3)	398
5.	Will you try medicines according to your friend's suggestion?	108 (27.2)	158 (39.8)	131 (33)	397
6.	When your symptoms are relieved, will you discontinue your prescription medicines by yourself?	198 (49.6)	109 (27.3)	92 (23.1)	399
7.	Did you ever receive your prescription from a hospital and have it dispensed in the community pharmacy?	251(90.2)	106 (26.8)	39 (9.9)	396
8.	Will you consult your pharmacist when you receive a special or uncommon dosage form of medicine (ex. Nasal spray or suppository)?	73 (18.4)	122 (30.7)	202 (50.9)	397
9.	When you visit your physicians, will you bring all medications you are currently taking?	67 (16.8)	137 (34.3)	195 (48.9)	399
10.	Will you check with your pharmacists before taking medicines that you have never used before?	343 (85.8)	176 (44.0)	57 (14.3)	400

Of all students 67.4% thought that, antacids should be added to all prescriptions to avoid gastrointestinal upset. This misconception also reflected in the study done in Taiwan college students. There by increasing the rise of drug interactions and creating unnecessary economic burden [1].

This study has demonstrated that there exists lack of medication knowledge regarding frequency of medication taking, dosage and duration of therapy. The results of several studies suggest up to 10% of hospital admissions and 23% of nursing home admissions are related to non-adherence.

It is well documented that safe and effective drug therapy is possible when patients are well informed about medications and their use [5]. Many factors determine patients or consumer knowledge including the quality of consultation and the information about the prescribed medicine given by the consulting health workers. The person dispensing medicine has to be in a position to enforce this information [6]. Thus competent and qualified pharmacists should be trained for dispensing and giving clear instructions to the patient on effective use of drugs.

In this study majority of students said that storing ointment or gel and storing syrup in the refrigerator could extend the expiration date, despite the fact that affect the stability of the aforementioned dosages. It is important to recognize and aware of the potential for stability in both manufactured and extemporaneous products due to improper storage condition [3].

All respondents in this study showed positive attitude towards the necessity of medication consultation by pharmacist. The level of trust given to the pharmacist to provide drug information was also very high. Low level of knowledge is observed concerning safe medication practice. More than 74% of students practiced self-medication. Similar study in Vietnam shows 40-60% of people depend on self-medication [7]. A study done in Jimma town also shown the prevalence of self-medication was found 27.6% [8]. Since self-medication is the treatment of common health problems with medicines especially designed and labeled for use with out medication supervision and approved as safe and effective for such use. In addition, many reports of drug interaction have involved the concurrent use of prescription drugs with over the counter or interactions may also result from concurrent use of two or more products available with out prescription [3].

A more serious unsafe practice found in this study was in discontinuing their prescription medicine usually when their symptoms are relieved. A study in Jimma town showed 39.9% of the respondents said they would terminate administrations when the symptoms of the disease disappear [4]. This shows the lack of adequate knowledge regarding the duration of treatment.

It's also alarming that 46.4% of students share their prescription medicines, 36.7% combine traditional medicine when they take western medicine and 67% of them try medicines according to their friends suggestion. In addition, the survey in America showed that Americans relay heavily on friends, family and internet for basic health information. Younger peoples are much more likely to rely on friends and family for advice on how to deal with every day health problems [9]. The data indicate inappropriate drug use practices further strengthen the need for medication education.

The study revealed that respondents have positive attitudes toward consulting pharmacist about their medication. One study reported that 64-89% of respondents wanted to be advised about how to take and store their medicine, as well as potential side effects and interactions [10].

Although the respondents have positive attitude in consulting pharmacist, their medication practices was poor. Drug interactions are inevitable since participants said they almost never informed their doctor and/or pharmacist about the medications they were taking. Consultation with the pharmacist before beginning a new medicine or dosage was uncommon. This pattern indicates urgent need to improve medication practices.

In conclusion, the present study has shown that Gondar university fresh man students lack knowledge and attitude toward safe medication practices. Their knowledge toward safe use of antihypertensive, antibiotics, and antacids, frequency of administrations and duration of treatment is unsatisfactory. Especially knowledge relating to storage condition of ointments or gel and syrup had the lowest number of correct responses among 13 items.

Over all students shows positive attitudes toward pharmacists and trusted pharmacists consultation. However, knowledge leading to safe medication practices was found to be lower. Interventions to improve drug knowledge and safe medication practices, such as arranging education program in the universities on how to use drugs safely, assigning budget for national education program of safe medication use and pharmacists have to provide clear and proper drug information.

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