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Contents lists available at ScienceDirect

Journal of Acute Disease

journal homepage: www.jadweb.org

Document heading doi: 10.1016/S2221-6189(14)60056-1

Evaluation of self-medication practices in acute diseases among university students in Oman

Marwa Al Flaiti¹, Khaloud Al Badi², Wefaq Othman Hakami³, Shah Alam Khan^{1*}

¹Department of Pharmacy, Oman Medical College, Muscat, Sultanate of Oman

²Department of Pharmacy, Diwan of Royal Court Hospital, Muscat, Oman

³College of Arts and Social Science, Sultan Qaboos University, Alkhoud, Oman

ARTICLE INFO

Article history:

Received 2 September 2014

Received in revised form 5 September 2014

Accepted 7 September 2014

Available online 20 November 2014

Keywords:

Self-medication

Students

OTC drugs

Prescription

Analgesics

ABSTRACT

Objective: To evaluate the practices of university students towards self-medication to treat minor ailments in Muscat and Sohar region of Sultanate of Oman. **Methods:** A cross sectional study was conducted in October 2013–January 2014. A total of 450 university students were randomly selected and their verbal consent was obtained. The data were collected through the self-administered, close ended, pretested questionnaire and was analyzed statistically by SPSS version 19.0. **Results:** Overall 204 males (45.3%) and 246 females (56.7%) participated in the study. The mean age of respondents was 22.3 years. Ninety-four percent of respondents reported practicing self-medication and 165 (36.7%) participants admitted of having purchased drugs without prescription more than four times over the last six months. Headache, fever, cough and cold were the most common ailments which prompted respondents to seek self-medication. Analgesics, cough preparations and antibiotics were the most common classes of drugs used in self-medication. The majority of respondents practiced self-medication either because their illness was not serious or they had prior experience with the drug. The majority of respondents had good medication knowledge which they reported to acquire from reading drug leaflet or from pharmacists' advice. **Conclusion:** The prevalence of self-medication among university students was very high. There is a need for intensive education and comprehensive awareness campaign to advocate for reduction in the prevalence of self-medication practices among students.

1. Introduction

Self-medication is a human behavior which refers to the use of over-the-counter and/or prescription only medicines to treat self-recognized minor ailments without medical supervision^[1]. According to WHO, self-medication is defined as “the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms”^[2]. It involves obtaining medications without a prescription, taking medicines on advice of pharmacists, relative or friends without consulting medical professional, sharing medicines with family members/friends or consuming leftover medicines stored at home^[3]. Self-medication is a common practice in both developed

and developing countries and is reported to be on rise^[4]. Prevalence rates of self-medication are reported to be higher in developing countries^[5]. The higher prevalence rates could be due to the fact that people generally considers self-medication in a first place to treat minor ailments or acute symptoms such as vomiting, headache, nausea, fever, cold etc instead of visiting a medical practitioner probably to save their time and money. However, few other reasons reported in the literature that could lead to self-medication includes previous experience of treating similar disease, knowledge of drugs and their use, incessant advertising and lack of availability of qualified healthcare professional^[6]. Practice to self-medicate is also reported to be influenced by education level, gender, age and socio-economic status^[7]. The most commonly used drugs for self-medication include analgesics, antibiotics, cough syrups etc^[8].

Self-medication is one of the important issues in healthcare sector and has been debated a lot because of its both favorable and unfavorable consequences. Those who are against self-medication believe that it does more

*Corresponding author: Dr. Shah Alam Khan, Associate Professor, Department of Pharmacy, Oman Medical College, Muscat, Sultanate of Oman.

Tel: 00968-24504608 Ext: 165

E-mail: shahalamkhan@yahoo.com; sakhan@omc.edu.om

harm than good and lead to wastage of resources, microbial resistance development, adverse drug reactions, prolonged illness and drug dependence[9]. On the other hand, World Health Organization (WHO) has pointed out that an appropriate self-medication can be beneficial in treating acute ailments that do not require medical consultation, can save the time spent in visiting a physician and provides a cheaper alternative for treating common diseases[10]. Many studies have revealed that young adult students are more vulnerable and prone to practice self-medication due to their low perception of risk associated with the use of drug(s), knowledge of drugs, easy access to internet, wider media coverage on health related issues, increase in unregulated pharmaceutical advertising, ready access to drugs, level of education and social status etc[11]. The prevalence rates of self-medication amongst university students are quite high. Previous studies have reported prevalence rates of about 76% in Karachi, Pakistan[1], 94% in Hong Kong[12], 87% in India[13], 43.2% in Ethiopia[3], 86.4% in Brazil[14], 98% in Palestine[15] and 55% in Egypt[16].

This pilot study aimed to evaluate the self-medication practices in acute diseases among university students in two major cities, Muscat and Sohar, of Sultanate of Oman.

2. Materials and methods

This cross sectional study was conducted during October 2013 to January, 2014 at different university colleges in Muscat and Sohar, Sultanate of Oman. The study protocol and designed questionnaire was approved by the college research committee of Oman Medical College. A total of 450 randomly selected university students studying arts, science, medicine, pharmacy, engineering, management etc. consented to participate in the study. The objectives were explained to the study participants and their verbal consent was obtained. All the participants were ensured confidentiality. The data were collected through self-administered close ended, pretested questionnaire prepared in English. It had two section; first section was about demographic information and characteristics like (age, gender, level of education, marital status etc.), second section had 6 questions related to attitude and practice of self-medication. The collected data were analyzed statistically by SPSS version 19.0.

3. Results

Overall 204 males (45.3%) and 246 females (56.7%) ($n=450$) studying in different undergraduate and postgraduate courses at various colleges in Muscat and Sohar participated in the study. The mean age of respondents was found to be 22.3 years. Majority of the participants (390; 86.7%) were single and only 2% were above 32 years of age. More than half of the participants (56.6%) were aged between 18 to 22 years and were enrolled in bachelor degree programs. Demographic characteristics of participants are presented in

Table 1.

Table 1.

Demographic characteristics of participants (Mean age 22.3).

Variable		n (450)	Percentage (%)
Gender	Male	204	45.34
	Female	246	54.66
Age (in years)	18–22	255	56.66
	23–27	123	27.33
	28–32	63	14.00
	Above 32	9	2.00
Marital status	Single	390	86.67
	Married	60	13.33

Ninety-four percent of respondents reported practicing self-medication and admitted of having purchased medicines without prescription more than once over the last six months. Approximately one third (33.33%), of the male participants while 40% female students visited community pharmacy four or more than four times (39.43%) indicating self-practice is to be more common among females. Results regarding information about how frequently the participants visited the community pharmacy without prescription in the last 6 months for self-medication are presented in Table 2.

Table 2.

Self-medication practices of participants in the past six months.

Frequency of visit to pharmacy	Males (%) $n=204$	Females (%) $n=246$	Total (%) $n=450$
None	6 (2.90)	20 (8.13)	26 (5.78)
Once	3 (1.40)	29 (11.70)	32 (7.11)
Twice	43 (21.07)	37 (15.04)	80 (17.78)
Thrice	84 (41.17)	63 (25.60)	147 (32.67)
Four times or more	68 (33.33)	97 (39.43)	165 (36.67)

When asked about the common illnesses/symptoms that prompted participants for self-medication, majority of them cited headache/fever as the main cause followed by upper respiratory tract diseases such as cough, cold, flu etc (Table 3).

The most common reasons that lead to practice self-medication among study participants are presented in Table 4. Prior experience about the drug was the main common reason that prompted both male and female students to practice self-medication. However, males do not prefer to self-medicate in the prevention of known/unknown diseases while female participants avoid self-medication in emergency situations.

It was observed that analgesic and antipyretic drugs were the most common class of medications used by both males and females with 96.6% and 95.1% respectively. The second class of widely used medications was for cough and cold (males; 86.8%, females; 94.7%). It was also noticed that female use more gastrointestinal drugs (64.2%) for the treatment of diarrhea, constipation, ulcer etc than their counterparts (44.6%). On the other hand, males asked for antimicrobial drugs more often than the gastrointestinal drugs (Table 5).

Table 3.

Common illnesses/symptoms that prompted self-medication.

Illness/symptoms	Males (%)	Females (%)
Headache/ fever	198 (97.10)	235 (95.50)
Respiratory tract infection (cough, cold, etc.)	171 (83.80)	220 (89.40)
Gastro-intestinal disease (diarrhea, heart burn, etc.)	126 (61.80)	169 (68.70)
Skin disease, injury, etc.	93 (45.60)	112 (45.50)
Eye/ ear disease	82 (40.20)	95 (38.60)
Others	39 (19.11)	105 (42.68)

Table 4.

Reasons for self-medication.

	Use	Not serious	Diseases	About the drug	Less expensive in terms of prior experience for prevention of known/unknown disease is emergency time/money
Males	58	169	41	200	130
Females	77	194	110	232	209

It may lead to higher risks and development of resistance in males' if they are exposed to antimicrobial drugs without completing the full course of medicines.

Table 5.

Type of drugs requested by participants for self-medication.

Category of drugs	Males (%)	Females (%)
Antimicrobial	92 (45.1)	116 (47.2)
Analgesic/antipyretic	197 (96.6)	234 (95.1)
Cough and common cold	177 (86.8)	233 (94.7)
Gastrointestinal drugs	91 (44.6)	158 (64.2)
Vitamins, supplements	62 (30.4)	45 (18.3)
Others	10 (4.9)	30 (12.2)

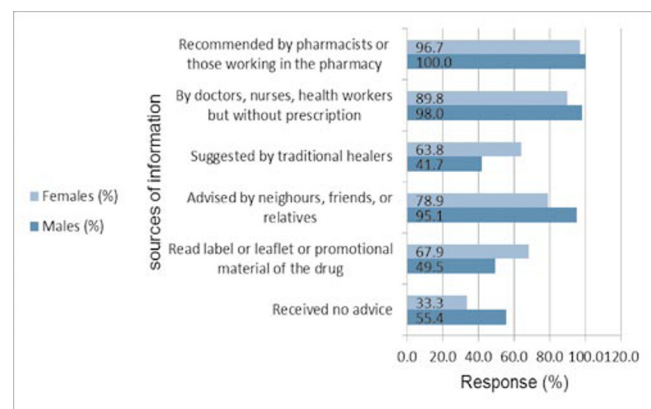
In order to know what prior information/knowledge participants had about the medicines they intend to use for self-medication, they were asked some basic questions regarding name, indication and storage of drugs at home. Approximately 3/4th of the respondents could recall the correct names of medication they purchased from pharmacy but only half of the participants were aware about storage conditions of the drug at home (Table 6).

Table 6.

Knowledge of the respondents regarding drug used for self-medication.

Participants	Name of the drug	Indication	Storage of the drug at home
Males (%)	152 (74.5)	130 (63.7)	120 (58.8)
Females (%)	187 (76.0)	146 (59.3)	123 (50.0)

As it can be observed from the Figure 1, pharmacists are the main source of information for self-medication in both the genders. However, it is surprising to note that 33.3% and 55.4% of the female and male respectively, admitted to have received no advice from any health worker. In all other cases the patients had obtained the knowledge from physicians, nurses, traditional healers or from other health workers.

**Figure 1.** Sources of information for self-medication as reported by participants.

4. Discussion

A cross sectional study analysis of 450 university students in two major cities of Oman showed that the concept of self-medication practice without physician consultation is quite common in this well-educated category of society. In the present study, 94% of the total students reported to practice self-medication and its prevalence was found to be more in females. Results of our study are quite consistent with the previous findings reported for, Hong Kon^[12], India^[13] and Palestine^[15], while much higher than the prevalence rates among students of China^[17].

Self-medication can certainly help in treatment of minor ailments and therefore play an important role in lessening the pressure on medical services especially in countries which have limited health care resources^[18]. Contrary to this, the availability of the more complex and potent drugs such as antibiotics without prescriptions is a source of great concern. Analgesics and antipyretics belonging to Non-steroidal anti-inflammatory drugs were found to be the most commonly used medications by the participants for the treatment of headache, fever and pain followed by medications for cough and cold. Many studies have also

reported the similar findings with regard to the use of analgesics^[19]. Unlike previous studies, self-medication with antimicrobials was not so common in our study population.

The two major reasons cited by the participants to self-medicate was prior experience with the drug (93.0%) and mildness of the illness (80.67%). The same reasons were also reported by Abay and Amelo in 2010^[20] but differs from results of one study in Sudan where the main reason for self-medication was financial constraint^[21]. Although, urgency of the problem could be a justifiable rationale for practicing self-medication but among our participants it was found to be the least common reason.

It was interesting to note that those who provided information regarding self-medication also included traditional healers, friends and relatives in addition to qualified health care professionals. Such a fact poses a threat to the health of population^[22]. The major information source for the participants who reported to practice self-medication was pharmacists in this study. This suggests that pharmacists can play an important role in helping people who practice self-medication by providing the necessary information about the drugs and dosage especially in the case of over the counter drugs. The students' knowledge about name, indication and storage of the drugs used for self-medication revealed that only half of the participants knew the correct storage conditions while 75% recalled the correct name of the drug.

The prevalence of self-medication among university students was found to be high which could be due to their educational level. Analgesics, cough and cold preparations were the most commonly reported types of medications consumed in self-medications. The results suggest a significant role for pharmacists to get more involved in patient education regarding practicing self-medication.

We recommend intensive education and comprehensive awareness campaign to educate the student community on the pros and cons of self-medication to reduce the prevalence of self-medication practices among students.

Conflict of interest statement

Authors declare no conflict of interest.

Limitations of the study

The number of male participants is less than females due to refusal to participate or to complete questionnaire papers. Therefore the results could not be generalized to all students of Oman.

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