Research Article

Perception of self-medication among university students in Saudi Arabia

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ABSTRACT

The aim of this study is to assess self-medication practice among university students in the Al-Qassim Province of Saudi Arabia. A cross-sectional community-based survey was conducted by distributing a self-administered 18-item questionnaire among university students in the Al-Qassim Province of Saudi Arabia in the period between October and December 2012. The participants were selected using a convenience sampling technique. Data were collected from the questionnaire and analyzed using SPSS version 19. A total of 354 male students with an average age of 21.95 (SD ± 3.43) participated in this study. Our study showed that self-medication among male students was high (86.6%) compared to results shown in other studies in the same region. Headache (59.9%), cough/cold (41%) and fever (24.6%) were the most common symptoms associated with self-medication. Congruent with the medical conditions reported, the most widely used medications without prescriptions were paracetamol (34.7%), followed by antibiotics (31.4%) and nonsteroidal anti-inflammatory drugs (28.7%). Our study shows that antibiotics were sometimes irrationally used for self-treatment of cough and fever. Self-medication was highly frequent among the students. Influence of TV advertisements, high accessibility of pharmacies and convenience stores, as well as good buying power were found to be leading factors for self-medication among male university students.

Key words: Nonprescription drugs, over-the-counter drugs, Saudi Arabia, self-care, self-management

INTRODUCTION

People desire to take responsibility for their own health care management. Many do so via self-medication.[1] Self-medication is defined as the use of over-the-counter (OTC) drugs without consulting a professional health care practitioner.[2] Self-medication involves acquiring medication without a prescription, resubmitting an old prescription to procure medication, sharing medications with others, or utilizing a medication that is already available in the residence.[3] Several governmental organizations developed policies to encourage self-care for minor illnesses, reclassifying many drugs as nonprescription medications instead of prescription-only medications, allowing the drugs to be administered by patients without a prescription.[1] Many factors underlie self-medication, such as geographical difficulties in accessing health care centers and unavailability of qualified medical doctors. Self-medicating is easier than accessing health care services located far from where the patient resides and is common among poor communities.[4] Thus, social, financial and health-related factors drive the use of medications.[5] The growing number of OTC drugs and the abuse of medications have been cited as major obstacles to the effective and safe use of medications. Several studies have shown both beneficial and harmful effects of self-care practices.[6] Past studies revealed that the prevalence of self-medication among university

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students was 45% in Turkey, 76% in Karachi, 88% in Croatia and 94% in Hong Kong.[7] Numerous studies have found that improper self-medication leads to attrition of money, increased possibility of drug resistance among pathogens, unwanted drug side effects and drug addiction.[2] A worrying trend also was reported that misuse of a variety of painkillers, vitamin and sedatives has been reported among university students.[3] However, to our best knowledge, no such study examining the self-care and medicine use among university students has been performed in Saudi Arabia. The objective of our study was to estimate the prevalence of self-medication, the main symptoms driving self-medication and the most commonly used nonprescription medications among the university students in the central region of Saudi Arabia.

MATERIALS AND METHODS

Setting and participants

This study was based on a descriptive, cross-sectional community-based survey. The study was conducted from October 1, 2012 to December 31, 2012. Year one to year six male students from Qassim University from the main campus in Buraidah city situated at the central part of Saudi Arabia were invited to participate in this survey. The minimum effective sample size calculated for this study was 321, with a confidence interval of 95% and margin of error of 5%. However, to reduce the chance of bias the questionnaires were randomly distributed to the students at the main entrance of different canteens and student halls at stipulated intervals.

Validity and reliability of the questionnaire

A self-administered questionnaire adopted from a previous study was used.[3] The questionnaire was validated for local student use. The content validation of the study tool was performed by local lecturers from the Department of Pharmacy Practice, College of Pharmacy, Qassim University. The face validity was tested on a pilot sample of 30 local male university students. During the pilot phase, respondents were found to understand all the questions without any confusion. In order to estimate the internal consistency of the items, a reliability scale evaluation was performed. A good Cronbach's alpha ($a = 0.75$) score was achieved.

Data were collected by recording students' responses to the questionnaire. The main contents of the questionnaire were demographic questions and questions regarding self-medication practice, medical conditions treated by self-medication and specific medications that the students used when self-medicating. Data from the survey were analyzed using SPSS software version 19. An a value less than 0.05 was considered statistically significant. The study protocol was approved by the ethics committee of the College of Pharmacy, Qassim University. The researchers did not record any information that may disclose the identity of the respondents.

RESULTS

A total of 354 male students completed the questionnaire, giving a response rate of 70% ($n = 500$). The participants' ages ranged from 16 years to more than 26 years. The majority (n = 208; 59.6%) of the students were between 21 and 25 years of age. The mean age of the respondents was 21.95 ± 3.43 years.

We found that the majority (n = 305; 86.2%) of the students had self-administered a medication at least once during the 12 months prior to the study. We found that the most important medical conditions that led to the use of nonprescription medications by the students were headache (59.9%), cough/cold (41%), fever (24.6%), pain (18.1%), diarrhea/constipation (17.2%), allergy (14.1%), heartburn/indigestion (7.6%) and skin problems (7.6%). Table 1 shows the medical condition (s) that led to self-medication among the participants.

We also investigated the different types of nonprescription medications used by the students in the 12 months prior to the study. Overall, 623 different medications were self-administered by the students. The most commonly used ($n = 123$; 34.7%) medication was paracetamol, followed in decreasing order of prevalence by antibiotics, nonsteroidal anti-inflammatory drugs (NSAIDs), cough syrup,

Table 1: Major symptoms experienced by students who took OTC medications

Medical condition (s)[a]	*N*	% [a,b]
Headache	212	59.9
Cough/cold	145	41.0
Fever	87	24.6
Pain	64	18.1
Diarrhea/constipation	61	17.2
Allergy	50	14.1
Heartburn/indigestion	27	7.6
Skin problems	27	7.6
Total	673	

[a]Not mutually exclusive [b]Percentage of the 354 students reporting self-medication for each symptom, OTC=Over-the-counter

topical agents, antidiarrheal/constipation medications, antihistamines and antacid/indigestion medications. In 22.9% of the reported cases of self-medication, the students did not remember the names or categories of the medications. Table 2 shows the most commonly used nonprescription medications by the students.

DISCUSSION

The practice of self-medication, with full information and good knowledge of the nature of the disease and the drug profile, has several advantages, including disease prevention, cost-effective treatment of minor ailments, reduced pressure on medical services when there is a shortage in health care staff, access to health care for those living in remote areas and the potential for patients to manage their own chronic illness.[8] In contrast, there are many potential hazards associated with the misuse of medications. For instance, studies have reported that exceeding the maximum recommended doses of paracetamol, antipyretics and analgesics can cause hepatic failure.[9] We used a self-administered questionnaire in our study, relying on information provided by the study participants. Despite encouraging the students to complete the questionnaire independently, we could not rule out mutual influence among the study participants.

Self-care practice with nonprescription medications among the University students was high. This finding is consistent with a similar finding in a study conducted by Mumtaz *et al*. who reported 80% of university students in Karachi practiced self-medication.[10] Likewise, other studies found that the prevalence of self-medication was high among the middle age group of university students in southwestern Nigeria,[11] 77.03% among university students in Islamabad[12] and 98% among An-Najah University students in Palestine.[13] In contrast, a study by Souza *et al*.[14] reported the prevalence of self-medication among undergraduate students was 38.8%. Also, a survey of 500 patients visiting primary health care centers in Riyadh, Saudi Arabia, showed that the prevalence of self-medication was 35.4%; and the same result was reported among pharmacy visitors in Hamadan Province in western Iran.[15] The high prevalence of self-medication found in our study could be explained by easy access to the community pharmacy. In Saudi Arabia, free consultation on the use of OTC products is provided by the community pharmacist. Fuelled by buying power and easy access to OTC products in the convenience store, students purchase OTC medication without a prescription after consultation with the pharmacist. Another important factor that enhanced self-medication among university students is the wide coverage of direct to consumer electronic and print media advertisements on various types of OTC medicines.[16]

Table 2: Types of medications used without a prescription by the students

Medication	*n*	%[a]
Paracetamol	123	34.7
Antibiotics	111	31.4
NSAIDs	105	28.7
Cough syrup	69	19.5
Topical agents	45	12.7
Antidiarrheal/constipation	34	9.6
Antihistamine	29	8.2
Antacids/indigestion treatment	26	7.3
I do not remember	81	22.9
Total	623	

[a]Some students reported taking more than one drug, not mutually exclusive, NSAIDs=Nonsteroidal anti-inflammatory drugs

Paracetamol, antibiotics and NSAIDs were the medications most frequently used without a prescription among the University students, which is comparable to the findings of several studies carried out in different countries.[4,10,12] There are many problems associated with the inappropriate use of these medications. For instance, administering paracetamol doses that exceed the maximum recommended dose can result in paracetamol toxicity. Moreover, the chronic use of paracetamol may lead to hepatotoxicity. Furthermore, the misuse of antibiotics results in increased antibiotic resistance among pathogens, treatment failure and other adverse effects.[17,18] The misuse of NSAIDs is associated with many adverse effects, including acute and chronic kidney disease and gastrointestinal ulceration.[19] Additionally, NSAIDs are associated with many interactions with other medications, including loop diuretics, angiotensin-converting enzyme inhibitors and angiotensin receptor blockers, resulting in reduced effectiveness and increased risk of renal dysfunction.[20]

Limitations

A convenience sampling technique was used in this study. A sample drawn by this technique has fewer representatives than a sample drawn using a probability sampling technique. Additionally, the sample size in this study was not large enough to generalize the study results. Moreover, females were not included in this study; therefore, the findings cannot be generalized across genders.

CONCLUSION

Self-medication was high among the University students during the two semesters prior to the study. Similar findings have been reported in several studies conducted among university students in other countries. In our study, paracetamol, antibiotics and NSAIDs were the medications used most frequently without a prescription.

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