

## Evaluation of Self-Medication Among Pharmacy Students

Suleiman Ibrahim Sharif,  
Osama Hussein Mohamed Ibrahim, Laila Mouslli and Riham Waisi

Department of Pharmacy Practice and Pharmacotherapeutics,  
College of Pharmacy, University of Sharjah, 27272, United Arab Emirates, Sharjah

Received 2012-12-01, Revised 2012-12-05; Accepted 2012-12-15

### ABSTRACT

To determine the incidence of self-medication among Sharjah university students and the impact of medical knowledge on such practice. A pre-validated questionnaire was distributed to 200 pharmacy students during May, 2012. Data were analyzed using SPSS and results expressed as counts and percentages. The overall response rate was 85% with 98% of respondents being Arabs. Females comprised about 91% of students and the mean age (SD) was 19.5(2.4). Practicing self-medication in the past year was high as 145 (86%) used drugs without medical consultation. Most respondents (128, 76%) obtained their medication from pharmacies and used the medication for one week (106, 63%). Antibiotics were used by 54(32%) of students despite the fact that slightly more than 50% of students were aware of the possibility of emergence of bacterial resistance and were also aware of the concept of rational drug use in general. Main reasons for self-medication were non-serious health problem, illness is minor, seeking quick relief and to avoid long waiting hours at clinics. Reasons against self-medication include risks of adverse effects, using the wrong medication, drug interaction, misdiagnosis and drug abuse and dependence. Medical consultation is mainly sought in case of presence of severe pain, worsening of symptoms, or persistence of the latter for more than a week. Headache or mild pain, eye and ear symptoms, gastric problems, cold, fever and allergy were the commonest symptoms for self-medication. Knowledge of responsible self medication is inadequate but the practice is high and common among pharmacy students. Interventions to promote responsible self-medication among university students are required.

**Keywords:** United Arab Emirates, Pharmacy Students, Self-Medication

### 1. INTRODUCTION

Self medication is the medically unsolicited use of prescription and/or Over-The Counter (OTC) drugs. The practice is becoming a form of self care (Hughes *et al.*, 2001) and is a global trend that is encouraged when it deals with minor illness (Porteous *et al.*, 2005). Self-medication is not restricted to OTC drugs, it also encompasses use of prescription drugs like antibiotics (Abasaheed *et al.*, 2009; Sarhroodi *et al.*, 2010). Particularly in countries where there are no strict regulations and prescription drugs are freely dispensed.

Therefore responsible self-medication can be defined as the appropriate use of OTC drugs to conditions for which they are necessary (Annonymus, 2007), a practice that requires a certain level of knowledge by those who use such drugs (Aljinovic-Vucic *et al.*, 2005). The WHO (1995) stressed that rational self medication helps in the prevention and treatment of minor pathological conditions at an affordable cost. However, the practice is not without undesirable and sometimes serious drawbacks. As in addition to the possibility of serious adverse effects, drug interactions, poly pharmacy and drug abuse and dependence, the emergence of resistant

**Corresponding Author:** Suleiman Ibrahim Sharif, Department of Pharmacy Practice and Pharmacotherapeutics,  
College of Pharmacy, University of Sharjah, 27272, United Arab Emirates, Sharjah

pathogens pose a problem when dealing with misuse of antibiotics (Hughes *et al.*, 2001; Sarhroodi *et al.*, 2010). James *et al.* (2006) reported numerous reasons for self-medication which include high cost of medical consultation, long hours of waiting at clinics, lack of time, social or family support, previous experience with the condition and its drug management and lack of nearby health facilities and unavailability of health professionals. It has been frequently reported that in different populations, university students use self-medication very often (Sawalha, 2008; Zafar *et al.*, 2008; Klemenc-Ketis *et al.*, 2010). Moreover, medical knowledge has been shown to influence self-medication (James *et al.*, 2006; Sawalha, 2008; Klemenc-Ketis *et al.*, 2010). Self-medication among university students in the United Arab Emirates has not, to our knowledge, been previously explored. The present study was undertaken to evaluate self-medication practice among students of the Sharjah-pharmacy students and assess the impact of knowledge about drugs and diseases on such practice.

## 2. MATERIALS AND METHODS

This anonymous questionnaire-based study was carried out during May, 2012, using a pre-validated questionnaire consisting of both open-ended and closed-ended item as modified from questionnaires used in other studies (James *et al.*, 2006; Klemenc-Ketis *et al.*, 2010). The study was approved by the research and Ethics Committee of the Colleges of Medicine and Health Sciences, University of Sharjah, United Arab Emirates. The questionnaire was first pre-validated on a sample of 12 students and it was in English. It was distributed to a total of 200 students of third pharmacy at the University of Sharjah. The use of prescription or OTC drugs without medical consultation was considered self-medication and the questionnaire was explained to all students participating in the study. Students were asked to report self-medication in the past year. The questionnaire contained questions covering demographic information namely age, sex, nationality, college and year of study and questions focusing on self-medication. The latter included self-medication practice, types of self-medications used, duration of use, source of drugs, use of antibiotics, reasons for and against self-medication and reasons for seeking medical consultation. The questions also addressed views of students on self-medication, health conditions requiring self-medication and the medications used.

Descriptive statistics were calculated using SPSS program version 18. The data were summarized as percentages and frequencies.

## 3. RESULTS

The questionnaire was completed by 169 students (response rate 85%). Ninety eight percent of the students were Arabs with 10% UAE nationals. The mean age  $\pm$  S.D. of the respondents was  $19.5 \pm 2.4$  (range 18-23). The number of females (153, 91%) was far in excess of male (16, 9%) students. Self-medication practice in the past year, duration of use, source of medication and self-use of antibiotics are shown in **Table 1**. Large number of students (145, 86%) practiced self-medication in the past year and the majority (128, 76%) obtained their medications from pharmacies. About one third of students used antibiotics for self-medication and slightly more than 50% of students were aware of rational drug use and the possibility of development of bacterial resistance associated with misuse of antibiotics. Responses on reasons for self-medication are shown in **Table 2**. These include health problem is not serious, illness is minor, seeking quick relief and avoidance of long waiting at clinics. On the other hand, reasons against self-medication focused on risks of adverse effects, use of wrong medication, drug interaction, misdiagnosis of condition and drug abuse and dependence.

**Table 1.** Self- medication practice by pharmacy students in the past year

	No. of respondents	Percentage
<b>Did you use self-medication in the past year?</b>		
Yes	145	86
<b>How long the treatment was used?</b>		
One week	106	63
Two weeks	21	12
One month	6	4
Longer than a month	10	8
<b>Where from you obtained self-medication?</b>		
Pharmacy	128	76
Street market	12	7
Herbal store	13	8
Relative/friend	21	12
<b>Antibiotic obtained as self-medication.</b>		
Yes	54	32
No	94	56
<b>Duration of use.</b>		
One week	42	25
Two weeks	15	9
<b>Awareness of bacterial resistance.</b>		
Aware	89	53
Not aware	80	47
<b>Awareness of rational drug use.</b>		
Aware	90	53
Not aware	124	73

Total number of respondents (n = 169)

**Table 2.** Reasons for self-medication

	No. of respondents	Percentage
Health problem is not serious	122	72
Seeking quick relief	88	52
Personal convenience	48	28
Avoidance of long waiting at clinics	52	31
High cost of medical consultation	27	16
Suggestion of a relative/friend	26	15
Learning opportunity	10	6
Self need to play active role	15	9
Physician's advice of self management	17	10
Physician prescription was not effective	7	4
I do not trust my physician	9	5
Illness is minor	88	52
Embarrassed of discussing own symptoms	11	7
Total number of respondents (n = 169)		

**Table 3.** Reasons against self-medication and reasons for seeking professional help

	No. of respondents	Percentage
<b>Reasons against self-medication</b>		
Risk of adverse effects	105	62
Risk of using wrong medication	104	62
Risk of misdiagnosis of illness	61	36
Risk of drug interaction	64	38
Risk of drug abuse and dependence	50	30
<b>Reasons for seeking professional help</b>		
-Presence of severe pain	101	60
-Symptoms last for more than one week.	79	47
-Symptoms are worsening	103	61
-Thinking the problem is serious.	64	38
-Usual treatment is not effective.	42	25
-Side effects of usual treatment.	22	13
-In case of mental problem	10	6
Total number of respondents (n = 169)		

**Table 4.** Student's views on some aspects of self-medication

	Approve No. of respondents	Disapprove (%)
-All medications (prescription, OTC and herbal) have adverse effects.	70 (41)	65 (39)
-Concomitant use of drugs can be dangerous.	80 (47)	80 (47)
-Increasing drug dose can be dangerous.	124 (73)	36 (21)
-Decreasing drug dose can be dangerous.	47 (28)	53 (31)
-In case of adverse effects, physician help must be sought.	102 (60)	75 (44)
-Using medications with unknown Substances in patients with liver and kidney disease is dangerous.	111 (66)	68 (40)
-No drug can be used during pregnancy.	57 (34)	105 (62)
-Mild medical problems do not require drug treatment.	71 (42)	83 (49)
-Self-medication can mask signs and symptoms of disease so the physician can over look them easily.	80 (47)	64 (38)
Total number of respondents (n = 169)		

Participants stated that they seek medical consultation if symptoms worsen or persist for more than and in case of severe pain or thinking the problem is serious (**Table 3**). Student's views on some aspects of self-medication are shown in **Table 4**. Symptoms for which self-medication was practiced include headache or mild pain, eye and ear symptoms, gastric problems, cold, fever and allergy. The most common types of self-medications used by participants include analgesics, (70%), antipyretic (67%), vitamins and minerals (67%), herbal teas (40%), eye drops (33%) and ear drops (30%), anti-histamines (20%), nasal decongestants (20%), antacids (20%), laxatives (10%), anti-diarrheal(1%) and anti-emetics (1%).

#### 4. DISCUSSION

The majority of Sharjah-pharmacy students participating in the present study were female Arabs who have been exposed to courses on drugs and diseases. Self-medication among students seems to be common practice for non serious health problems, to seek quick relief and for minor illness. In the present study, prevalence of self-medication is rather high such prevalence is reminiscent to the trend in Pakistani (Mumtaz *et al.*, 2009) but higher than that in Bahraini (James *et al.*, 2006) students. It is worth noting that Martins *et al.* (2002) reported prevalence rates as low as 26.2% in Portugal whereas higher rates (92%) were observed by Abahusain *et al.* (2005) in Kuwait. It has been claimed that the incidence of self-medication is dependent on how the question was constructed in the questionnaire (Almasdy and Sharrif, 2011) where questioning current practice yield high rates (Sawalha, 2008; Zafar *et al.*, 2008; Klemenc-Ketis *et al.*, 2010; James *et al.*, 2006; Verma *et al.*, 2010; Ali *et al.*, 2010) and questioning past practice yield low rates (James *et al.*, 2006; Hussain and Khanum, 2008). Our results do not support such claims as our students were asked to report on past year self-medication practice and the incidence rate was markedly high reaching 86%.

Abahusain *et al.* (2005) reported on differences in self-medication between male and female high school students. Since in the present study 91% of the participants were females, no attempts were made to study the gender-based differences, if any, on self-medication frequency. Most respondents used self-medication for one week; however, 8% of respondents practiced self-medication for longer than a month. Despite the fact that it is only reported by a small number of respondents such a lengthy self-medication

practice warrants in-depth further investigation as it could be traced back to misdiagnosis of condition or to the use of the wrong medication. The main source for obtaining medicines was the pharmacy and only a few respondents obtained their medications from other sources including street market, herbal stores and relatives or friends. This is in accordance with results of earlier studies (James *et al.*, 2006; Zafar *et al.*, 2008; Klemenc-Ketis *et al.*, 2010). Alarmingly, about one third of the respondents obtained antibiotics for self-medication without a prescription despite the fact that they were aware of the risk of development of bacterial resistance. This is similar to the results reported for Jordanian (Sawair *et al.*, 2009) and Iranian (Sarhroodi *et al.*, 2010) students. Such a trend is probably due to the fact that regardless of the strict regulations of health authorities in UAE, antibiotics, like other most prescription drugs, can still be obtained without a prescription.

Results of the present study indicate that in agreement with previous studies (Sawalha, 2008; Zafar *et al.*, 2008; Klemenc-Ketis *et al.*, 2010; James *et al.*, 2008; Ghosh *et al.*, 2010), the main reasons for self-medication include health problem being not serious, the illness is minor, to get quick relief of the condition and to avoid long waiting at clinics. Similarly, our results for reasons against self-medication were in agreement with those reported for university students in other countries (James *et al.*, 2006; Sontakke *et al.*, 2011; Olayemi *et al.*, 2010). Risks of adverse effects and using wrong medication were ranked as the main reasons deterring respondents from practicing self-medication while risks of misdiagnosing the condition, drug interaction and drug abuse and dependence were ranked second. Surprisingly a large number (range 21-62%) of students disapproved the concepts that prescription and OTC drugs and herbal preparation have adverse effects, decreasing or increasing the drug dose or concomitant use of drugs may be dangerous, physician's help should be sought in case of adverse effects, using medication with unknown substance in presence of renal or liver disease can be dangerous, minor problems may not require drug treatment and self-medication may mask symptoms of a disease. These responses by third year pharmacy students points at the need to stress on such important aspects on the use of prescription drugs, OTC and herbal preparation in various relevant courses of pharmacy practice and pharmacology. A very alarming observation is the use of antibiotics for self-medication by one third of the participants despite their knowledge of the possibility of development of bacterial resistance. This issue requires more attention of both the academic

and health authorities in attempts to increase awareness of not only students but also the general public to the rational use of antibiotics. Similar to earlier studies (Hughes *et al.*, 2001; James *et al.*, 2006; Sawalha, 2008; Zafar *et al.*, 2008) symptoms for which self-medication was practiced include headache or mild pain, eye and ear symptoms, gastric problems, cold, fever and allergy. The most common types of self-medications used by participants include analgesics, vitamins and minerals, herbal teas, eye and ear drops, anti-histamines, nasal decongestants, antacids, laxatives, anti-diarrheal and anti-emetics.

## 5. CONCLUSION

The prevalence of self-medication among pharmacy students at Sharjah University is high. Knowledge of students of reasons for and against self-medication seems appropriate. However, more efforts to promote responsible self-medication by inclusion in the curricula of topics/courses dealing with rational drug and antibiotic use and general aspects of self-medication are needed. In addition, health authorities should practice more strict control over pharmacies.

## 6. ACKNOWLEDGMENT

The researchers would like to thank the students of the college of pharmacy, at the University of Sharjah for their valuable help in this study.

## 7. REFERENCES

- Abahusain, E., L.K. Matowe and P.J. Nicholls, 2005. Self-reported medication use among adolescents in Kuwait. *Med. Princ. Pract.*, 14: 161-164. DOI: 10.1159/000084633
- Abasaheed, A., V. Jiri, A. Mohammed and K. Ales, 2009. Self-medication with antibiotics by the community of Abu Dhabi Emirate, United Arab Emirates. *J. Infect. Dev. Ctries*, 3: 491-497. PMID: 19762966
- Ali, S.E., M.I.M. Ibrahim and S. Palaian, 2010. Medication storage and self-medication behavior amongst female students in Malaysia. *Pharm. Pract.*, 8: 226-232.
- Aljinovic-Vucic, V., V. Trkulja and Z. Lackovic, 2005. Content of home pharmacies and self-medication practices households of pharmacy and medical students in Zagreb, Croatia; findings in 2001 with reference to 1977. *Croat. Med. J.*, 46: 74-80. PMID: 15726679
- Almasdy, D. and A. Sharrif, 2011. Self-medication practice with nonprescription medication among university students: A review of the literature. *Arch. Pharm. Pract.*, 2: 95-100.
- Annonymus, 2007. World Self-Medication Industry: responsible self-care and self-medication. A worldwide review of consumer surveys.
- Ghosh, S., V. Vikas, A. Gupta and R. Chaudhary, 2010. Evaluation of the practice of self-medication among college students in west Uttar Pradesh. *Int. J. Pharm. Profess. Res.*, 1: 14-18.
- Hughes, C.M., J.C. McElnay and G.F. Fleming, 2001. Benefits and risks of self-medication. *Drug Saf.*, 24: 1027-1037. PMID: 11735659
- Hussain, A. and A. Khanum, 2008. Self-medication among university students of Islamabad, Pakistan-a preliminary study. *Southern Med. Rev.*, 1: 14-16.
- James, H., S.S. Handu, K.A.J. Al-Khaja and R.P. Sequeira, 2008. Influence of medical training on self-medication by students. *Int. J. Clin. Pharmacol. Ther.*, 46: 23-29. DOI: 10.5414/PPP46023
- James, H., S.S. Handu, K.A.J. AlKhaja, S. Otoom and R.P. Sequeira, 2006. Evaluation of the knowledge, attitude and practice of self-medication among first-year medical students. *Med. Princ. Pract.*, 15: 270-275. DOI: 10.1159/000092989
- Klemenc-Ketis, Z., Z. Hladnik and J. Kersnik, 2010. Self-medication among healthcare and non-healthcare students at university of Ljubljana, Slovenia. *Med. Princ. Pract.*, 19: 395-401. DOI: 10.1159/000316380
- Martins, A.P., A.C. Miranda, Z. Mendes, M.A. Soares and P. Ferreira *et al.*, 2002. Self-medication in a Portuguese urban population: A prevalence study. *Pharmacoepidemiol. Drug Saf.*, 11: 409-414. DOI: 10.1002/pds.711
- Mumtaz, Y., S.M.A. Jahangeer, T. Mujtaba, S. Zafar and S. Adnan, 2009. Self medication among university students of Karachi. *JLUMHS*, 10: 102-105.
- Olayemi, O.J., B.O. Olayinka and A.I. Musa, 2010. Evaluation of antibiotic self-medication pattern amongst undergraduate students of Ahmadu Bello university (main campus), Zaria. *Res. J. Applied Sci. Eng. Technol.*, 2: 35-38.
- Porteous, T., C. Bond, P. Hannaford and H. Sinclair, 2005. How and why are non-prescription analgesics used in Scotland? *Fam. Pract.*, 22: 78-85. DOI: 10.1093/fampra/cmh719

- Sarhroodi, S., A. Arzi, A.F. Swalha and A. Ashtranezhad, 2010. Antibiotic self-medication among southern Iranian university students. *Int. J. Pharmacol.*, 6: 48-52.
- Sawair, F.A., A. Baqain, A.A. Karaky and R.A. Eid, 2009. Assessment of self-medication of antibiotics in a Jordanian population. *Med. Princ. Pract.*, 18: 21-25. DOI: 10.1159/000163041
- Sawalha, A.F., 2008. A descriptive study of self-medication practices among Palestinian medical and non-medical university students. *Res. Soc. Adm. Pharm.*, 4: 164-172. DOI: 10.1016/j.sapharm.2007.04.004
- Sontakke, S.D., C.S. Bajait, S.A. Pimpalkhute, K.M. Jaiswal and S.R. Jaiswal, 2011. Comparative study of evaluation of self-medication practices in first and third year medical students. *Int. J. Biol. Med. Res.*, 2: 561-564.
- Verma, R.K., L. Mohan and M. Pandey, 2010. Evaluation of self medication among professional students in North India: Proper statutory drug control must be implemented. *Asian J. Pharmaceut. Clin. Res.*, 3: 60-64.
- WHO, 1995. Report of the WHO Expert Committee on National Drug Policies. 1st Edn., World Health Organization, Geneva, pp: 78.
- Zafar, S.N., R. Syed, S. Wagar, A.J. Zubairi and T. Vagar *et al.*, 2008. Self-medication amongst university students of Karachi: prevalence, knowledge and attitudes. *J. Pak. Med. Assoc.*, 58: 214-217. PMID: 18655436