

Original Research Article

Irresponsible Self-medication: A Common problem in northern area of Saudi Arabia

Mohamed Mousa Abd El-Mawgod^{1*}, Nagah M. Aboel-Fetoh², Najood Rahim Alenazi³ and Jawaher M. Alenazi⁴

Abstract

¹Department of Public Health and Community Medicine, Faculty of Medicine, Al-Azhar University, Assiut, Egypt

²Department of Public Health and Community Medicine, Faculty of Medicine, Sohag University, Sohag, Egypt

^{3,4}Faculty of Medicine, Northern Border University, KSA

*Corresponding Author's E-mail: mossa20072006@yahoo.com

BACKGROUND: Self-medication with over-the-counter (OTC) remedies is a common practice in both developed and developing countries. Self-medication can be defined as the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms.

OBJECTIVES: To determine the prevalence and factors associated with self-medication practice among people in Arar city, Saudi Arabia.

METHODS: This community-based, cross-sectional survey carried out in Arar city, the capital of Northern province of the Kingdom of Saudi Arabia (KSA), to explore self-medication behavior among the general population. Five community pharmacies were selected using cluster random sampling in order to represent the 5 geographical areas of Arar city (north, east, south, west and centre). In each community pharmacy, a sample of adult population (18–65 years) was selected using systematic random sampling. A total of 243 respondents attending 5 randomly selected pharmacies in Arar-KSA were interviewed in private over 2 months (November and December, 2015).

RESULTS: The results indicated that 53.9% of the respondents had practiced self-medication practice most of them 72(55.0%) purchased non-prescribed drugs more than 6 times within the previous 6 months. The source of information for self-medications was the pharmacist 53 (40.5%), the physician 21(16.0%) and friends 17(13.0%).

CONCLUSION: Irresponsible self-medication is common in Saudi Arabia. Future studies should focus on improving the consumers' awareness of self-medication and the proper use of medications.

Keywords: Community Pharmacy, Self-medication, Over-the-counter medication

INTRODUCTION

Self-medication can be defined as the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms (Guidelines for the regulatory assessment of medicinal products for use in self-medication, 2000). The US Food and Drug Authority has defined Over the Counter medication as “drugs that are safe and effective for use by the general public without seeking treatment by a health professional” (U.S. Food and Drug Administration, 2015). The practice of self-

medication is common worldwide in both developed and developing countries and may even be more common than the use of prescribed medication (Lam et al., 1989). It was also illustrated that the increase of OTC medication was influenced by many factors like age, sex, medication knowledge, previous experience of disease, non-seriousness of illness (Sawalha, 2008). The benefits of using OTC medications include a reduction in the frequency of visits to a physician and reduced cost. However, misuse of OTC medications can be accom-

panied by adverse reactions, interactions with other medications, overdosing, and other medication related problems (Pawaskar and Balkrishnan, 2007). Self-medication increases the chance of illegal drug use, dependence and masking the underlying disease which lead to public health complication, generate drug resistance and impede diagnosis (Mumtaz et al., 2011). Therefore, it is recommended that the public should be educated on the use of OTC medications to increase their knowledge and awareness and facilitate responsible self-care (Pawaskar and Balkrishnan, 2007). A study from Bahrain reported that 44.8% of medical students have self-medicated. The most commonly reported reasons for self-medication were time saving and minor illnesses (James et al., 2006). In Saudi Arabia, a recent survey of 500 patients attending primary health care centers in Riyadh, Saudi Arabia was carried out to determine the prevalence and factors associated with self-medication practice. It was reported that 35% of patients attending primary care centers have some experience with self-medication. Factors contributing to self-medication were male gender, young age, poor health status, and dissatisfaction with health care (Alghanim, 2011). In another prospective cross-sectional survey conducted in Riyadh city, Kingdom of Saudi Arabia. It was found that, most responders were male (73%), 23-33 years old (35%), and college graduates (42%). A total of 285 medications were bought without a prescription. Of these, 149 (49%) medications should be dispensed by prescription only, and 155 (51%) were over the counter medications. The most common prescription medications dispensed without prescriptions were antibiotics (22%) and analgesics/antipyretics (19%). The most common reasons for buying medications without a prescription were that the symptoms were too minor to visit a doctor (54%), time saving (40%), and minor illnesses for which the participants knew the required treatment (40%). Overall, most participants had poor knowledge, and negative perceptions regarding self-medication. More than 68% of participants did not know whether the medicine they bought is a prescription-only or over the counter medication (Aljadhey et al., 2015). In a study conducted in Kuwait to estimate the prevalence of self-medication with proprietary medicines and/or herbs among diabetic patients and evaluate factors associated with self-medication among diabetic patients. It was found that; the response rate was 96.2%. Seventy-four percent of the study participants reported that they seek medical consultation when they get an illness, 92% indicated that they know that the use of medicines and/or herbs to treat an illness without a medical consultation can be harmful. Only 13% of the respondents reported that they had used medicine or herbs without medical consultation to treat an illness within the previous 2 months of the study period. Nine percent of the study population reported that they used herbs to treat diabetes, and 2% used them for other illness. Only two (2%) indicated that they used medicines, which were analgesics, diet pills and vitamins. There was

no significant association between self-medication with medicines or herbs and the socio-demographic characteristics of the respondents ($p > 0.05$) (Awad et al., 2008).

Study objectives

The objectives of the current study were to determine the prevalence and factors associated with self-medication practice among people in Arar city, Saudi Arabia.

METHODS

This was a community-based, cross-sectional survey carried out in Arar city, the capital of Northern province of the Kingdom of Saudi Arabia (KSA), to explore the prevalence and factors associated with self-medication practice among the general population. Five community pharmacies were selected using cluster random sampling in order to represent the 5 geographical areas of Arar city (North, East, South, West and Centre). In each community pharmacy, a sample of adult population (18–65 years) was selected using systematic random sampling. A total of 243 respondents attending 5 randomly selected pharmacies in Arar-KSA were interviewed in private over 2 (November and December, 2015). The respondents were assured of confidentiality and provided with an explanation about the purpose of the study and the importance of their contribution.

Data collectors distributed the questionnaires to consumers buying medications with or without prescriptions from the selected pharmacies at different times of the day. Training on the data collection method was provided to all data collectors. Consumers buying cosmetics and medical equipment were not approached. In cases where consumers were illiterate, their caregivers were asked to interview them and complete the questionnaire on their behalf. A self-administered questionnaire was prepared after reviewing literature for similar studies. Initially, the content validity was conducted by a group of 5 pharmacists to review the questionnaire for clarity and understanding by the public. Face validity was tested on a pilot of 2 community pharmacy customers. During the pilot study the questions were found to be clear for the respondents. In the demographic characteristics section, participants were asked to provide their age, gender, educational level, and employment status. In addition, the survey also included questions on the type of medication purchased, the indication for OTC medication use, sources of medications information, and the frequency for buying medications without a prescription, history of occurrence of problems due to using of non-prescribed drugs, history of improvement with non-

Table 1. Socio-demographic characteristics of the studied population, KSA, 2015

Characteristics	No.	%
Age group		
Less than 20 years	42	17.3
20 -	83	34.2
30 -	62	25.5
40 years and more	26	10.7
Refused to answer	30	12.3
Minimum 18 years	Maximum 65 years	Mean \pm SD 29.8\pm10.1 years
Sex		
Female	162	66.7
Male	81	33.3
Marital status		
Divorced	7	2.9
Married	158	65.0
Single	77	31.7
Widow	1	.4
Relation to patient		
Him/her self	144	59.3
Son or daughter	29	11.9
Father or mother	31	12.8
Husband or wife	15	6.1
Sister or brother	11	4.6
Friend	13	5.3

prescribed drugs and history of Advising others to use non-prescribed drugs.

Ethical considerations

Permission to conduct the study was obtained from each pharmacy manager of the participating community pharmacies and the Research and Ethics Committee at the College of medicine, Northern Border University, Arar, Saudi Arabia. Data collectors gave a brief introduction to the consumers by explaining the aims and significance of the study. Verbal consent was obtained from all participants. Confidentiality of data was maintained throughout the study.

Statistical Analysis

We utilized the Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) version 16 to analyze the study data. Results are displayed as counts and percentages. Descriptive statistics were used to illustrate respondents' demographic characteristics, and list of medication classes. Categorical variables were presented as count and percentages and continuous variables as mean and standard deviation. Chi-square Test was used where appropriate.

RESULTS

Demographic characteristics: A total of 243 consumers visiting community pharmacies in the target city participated in the survey. Most responders were female (66.7% females Vs 33.3% males), the participants were predominantly in the age group 20-30 years (34.2%) followed by age group 30-40 (25.5%), 158(65%) of them were married and 77(31.7%) were single. 144(59.3%) of the respondents were buying the drug for himself, 31(12.8%) for his/her mother or father and 29(11.9%) were buying for his son and/or daughter (Table 1)

Self-medication practice, a total of 131(53.9%) of the participants purchased the drugs without prescriptions most of them 72(55.0%) purchased non-prescribed drugs more than 6 times within the previous 6 months. The source of information for self-medications was the pharmacist 53(40.5%), the physician 21(16.0%) and friends 17(13.0%) (Table 2).

The most common reasons for self-medications was common cold 22(16.8%) and the most common medications purchased without prescriptions were analgesics/antipyretics 41(31.3%), antispasmodics 25(19.1%) and antibiotics 14(10.7%) Table (3).

Most of the self-medication 87(53.7%) and authorized medication 75(46.3%) were females. University educated

Table 2. Type of medication, frequency and source of information in self-medication cases, KSA, 2015.

Type of medication	No	%
Self-medication	131	53.9
Authorized medication	112	46.1
Frequency of self-medication (in 6 months) (n=131)		
1-3 times	34	26.0
4-6 times	25	19.1
More than 6 times	72	55.0
Total	131	100.0
Source of drug information in self-medication cases(n=131)		
Pharmacist	53	40.5
Physician	21	16
Nurses	15	11.5
Friends	17	13
Others (Reading, Internet)	25	19
Total	131	100.0

Table 3. The most common reasons for self-medications and the most common medications purchased without prescriptions in studied population, KSA, 2015

Reasons for self-medications	No.	%
Skin allergy	5	3.8
Arthritis and back pain	7	5.3
Bronchial asthma	8	6.1
Burns	4	3.1
Abdominal or renal colic	10	7.6
Contraceptive methods	14	10.7
Dental problems	12	9.2
DM + hypertension	15	11.5
Dysmenorrhea	5	3.8
Hemorrhoids	12	9.2
Common cold	22	16.8
Needs tonics	17	13.0
Total	131	100.0
The most common medications purchased without prescriptions		
Anti-allergic drug	5	3.8
Anti- hypertensive drugs and Diabetes treatment	15	11.5
Bronchodilators	8	6.1
Contraceptives	12	9.2
Antibiotics	14	10.7
Antispasmodics	25	19.1
analgesics/antipyretics	41	31.3
Tonics	11	8.4
Total	131	100.0

constitute 57.1% of self-medication cases and 42.9% of authorized medication cases followed by secondary education 39 (52.7%) of self-medication and 35 (47.3%) of authorized medication. Regarding working status of the participants, governmental sector and students were more in self-medication (55.4%, 63.1%), compared to authorized medication cases (44.6%, 36.9) with no

statistically significant differences ($p>0.05$). Monthly family income is higher among self-medication than authorized medication cases and the difference statistically insignificant ($p>0.05$). 77(52.7%) of absence of problems due to drug usage were from self-medication cases and 69(47.3%)

Table 4. Socio-demographic characteristics, occurrence of problems, improvement and satisfaction in self and authorized medication cases, KSA, 2015

	Type of medication		Total	P value
	Self-medication	Authorized medication		
Sex				
Female	87(53.7%)	75(46.3%)	162(100.0%)	0.519
Male	44(54.3%)	37(45.7%)	81(100.0)	
Educational Level				
Illiterate	5 (100.0%)	0 (0.0%)	5 (100.0%)	0.087
Read and write	8 (42.1%)	11 (57.9%)	19 (100.0)	
Primary	5 (50.0%)	5 (50%)	10 (100.0%)	
Preparatory	2 (22.2%)	7 (77.8%)	9 (100.0%)	
Secondary	39 (52.7%)	35 (47.3%)	74 (100.0%)	
University	72 (57.1%)	54 (42.9%)	126 (100.0%)	
Working status				
Employed in governmental sector	62(55.4%)	50(44.6%)	112(100.0%)	0.159
Employed in private sectors	9(50.0%)	9(50.0%)	18(100.0%)	
Retired	2(50.0%)	2(50.0%)	4(100.0%)	
Student	41(63.1%)	24(36.9%)	65(100.0%)	
No work	17(38.6%)	27(61.4%)	44(100.0%)	
Family income per month				
Less than 4000 SR/month	23(62.2%)	14(37.8%)	37(100.0%)	0.178
4000-10000 SR/month	41(59.4%)	28(40.6%)	69(100.0%)	
More than 10000 SR/month	8(66.7%)	4(33.3%)	12(100.0%)	
Refused to answer	59(47.2%)	66(52.8%)	125(100%)	
Occurrence of problems				
No	77 (52.7%)	69 (47.3%)	146 (100.0%)	0.376
Yes	54 (55.7%)	43 (44.3%)	97 (100.0%)	
Improvement				
Yes	107 (53.8%)	92 (46.2%)	199 (100.0%)	0.530
No	24 (54.5%)	20 (45.5%)	44 (100.0%)	
Satisfaction and advising others				
Yes	87 (54.4%)	73 (45.6%)	160 (100.0%)	0.473
No	44 (53.0%)	39 (47.0%)	83 (100.0%)	

were from authorized medication cases. 107(53.8%) of improvement of disease occurs in self-medication cases and in 92(46.2%) of authorized. 87(54.4%) of satisfied cases were from self-medication cases and 73(45.6%) of authorized medication Table (4).

DISCUSSION

Our study showed that, a total of 243 consumers with a mean age 29.8 (SD 10.1), range (18-65 years), female (66.7%) and married (65%). Similar study conducted in Riyadh KSA found that participants were predominantly young with a mean age of 38.6 years (SD 12.9) years, range (18–65 years), of them, 279 (55.8 %) were males and 221 (44.2%) were females (Alghanim, 2011).

Over a period of 2 months before this survey, A total of 131 (53.9%) had used self-medication. This finding is surprising since most of the population in Saudi Arabia is eligible for free public health services. However, this prevalence supports the findings reported earlier by other studies conducted in Saudi Arabia (Saeed, 1988; Azab, 2000; Aba hussain and Taha, 2007) and confirms the notion that self-medication is wide-spread among the general population. Many studies conducted in different parts of the world such as the United States (Bent, 2008), the United Kingdom (Oborne and Luzac, 2005), Spain (Carrasco-Garrido et al., 2014), Germany (Uehleke and Steinhoff, 2001), France (Orriols et al., 2009), Mexico (Balbuena et al., 2009), Singapore (Chui and Li, 2005), Turkey (Gül et al., 2007), Pakistan (Zafar et al., 2008),

Jordan (Sawair et al., 2009), Kuwait (Awad et al., 2008), Egypt (Sallam et al., 2009) and Sudan (Awad et al., 2005) vary in their estimation of the percentage of patients who practice self-medication, with prevalence rates that range from about 13% to 92%.

The results of the present study indicated that women were more inclined to self-medication than men, which is consistent with results reported by other studies in the literature (Carrasco-Garrido et al., 2009) and inconsistent with Alghanim study in Riyadh, KSA (Alghanim, 2011).

The data from the present study indicated that about 40.5% of respondents who reported using self-medication identified that the pharmacist was a major source of information. This is not surprising since it is possible for any individual in Saudi Arabia to buy any drug products OTC without any prescription, except for a very limited number of drugs which may require a special prescription for dispensing. This finding is consistent with previous work reported from other neighboring countries such as Egypt (Sallam et al., 2009), Sudan (Awad et al., 2006) and Jordan (Yousef et al., 2008), which indicate that community pharmacies in these countries play a major role in the wide prevalence of self-medication among the population.

The results of this study indicated that physician was less influential source of information about self-medication compared to pharmacist. This is to be expected, since many people have the impression that doctors do not approve of self-medication. It is well-known that many doctors are reluctant to advise patients on self-medication or issue medicine without a clinical examination. The role of community pharmacists is important in guiding the consumer to ensure appropriate medication use. The WHO emphasizes that pharmacists should help patients to undertake appropriate and responsible self-medication, and if necessary refer the patient for medical advice (World Health Organization, 1998). Healthcare authorities have responsibilities in enforcing the rules and regulations governing the sale of prescription only medications without a prescription. Pharmacists should be instructed not to sell prescription medications without prescription. In addition, educational workshops for pharmacists and undergraduate pharmacy curriculum updates are necessary to ensure appropriate community pharmacy practice regarding the sale of prescription/non-prescription medications.

In this study, respondents identified several reasons for self-medication, the most common reasons for self-medication was common cold 22(16.8%) and the most common medications purchased without prescriptions were analgesics/antipyretics 41(31.3%), antispasmodics 25(19.1%) and antibiotics 14 (10.7%). such results similar to those reported in previous research conducted in Riyadh, KSA by Aljadhey et al; who revealed that the most

common medication for self-medication was analgesics/antipyretics 61(41.8%) (Aljadhey et al., 2015). Furthermore, Alghanim in his study in Riyadh, KSA indicated that the most common reason for self-medication was the minor illness (Alghanim, 2011).

CONCLUSION

Irresponsible self-medication is common in Saudi Arabia. Future studies should focus on improving the consumers' awareness of self-medication and the proper use of medications.

REFERENCES

- Aba hussain NA, Taha AZ (2007). Knowledge and attitudes of female school students on medications in eastern Saudi Arabia. *Saudi Medical J*; 28:1723–1727.
- Alghanim SA (2011). Self-medication practice among patients in a public healthcare system. *East Mediterr Health J*; 17: 409–416.
- Aljadhey H, Assiri G A, Mahmoud MA, Al-Aqeel S, Murray M (2015). Self-medication in Central Saudi Arabia. *Saudi Med J*; Vol. 36 (3)
- Awad A, Al-Rabiy S, Abahussain, E (2008). Self-Medication Practices among Diabetic Patients in Kuwait. *Med Princ Pract*; 17:315–320 DOI: 10.1159/000129612.
- Awad A, Eltayeb I, Matowe L, Thalib L (2005). Self-medication with antibiotics and antimalarial in the community of Khartoum State, Sudan. *Journal of Pharmacy and Pharmaceutical Sciences*; 8:326–331.
- Awad AI, Eltayeb IB, Capps PA (2006). Self-medication practices in Khartoum State, Sudan. *European Journal of Clinical Pharmacology*; 62:317–324.
- Azab AS (2000). Public knowledge, attitude and practice towards antibiotics use in Riyadh city. *Saudi Medical Journal* ; 21:784–785.
- Balbuena FR, Aranda AB, Figueras A (2009). Self-medication in older urban Mexicans: An observational, descriptive, cross-sectional study. *Drugs and Aging*; 26:51–60.
- Bent S (2008). Herbal medicine in the United States: review of efficacy, safety, and regulation: grand rounds at University of California, San Francisco Medical Center. *J. Gen. Internal Med.*; 23:854–859.
- Carrasco-Garrido P, de Andrés AL, Barrera VH, Jiménez-Trujillo J, de las Peñas CF, Palacios-Ceña D, García-Gómez-Heras S, Jiménez-García R (2014). Predictive factors of self-medicated drug use among the Spanish adult population: across sectional national study. *Pharmacoepidemiology and Drug Safety*; 17:193–199.
- Carrasco-Garrido P, Jiménez-García R, Hernández Barrera V, López de Andrés A, Gil de Miguel A (2009). Patterns of medication use in the immigrant population resident in Spain: associated factors. *Pharmacoeconomics and Drug Safety*; 18:743–750.
- Chui WK, Li SC (2005). Advice-giving on self-medication: perspectives of community pharmacists and consumers in Singapore. *J. Clin. Pharm. Therapeutics*; 30:225–231.
- Guidelines for the regulatory assessment of medicinal products for use in self-medication (2000). Geneva, World Health Organization, (WHO/EDM/QSM/00.1).
- Gül H, Omurtag G, Clark PM, Tozan A, Ozel S (2007). Nonprescription medication purchases and the role of pharmacists as healthcare workers in self-medication in Istanbul. *Medical Science Monitor*; 13:PH9–PH14.
- James H, Handu SS, Al Khaja KA, Otoom S, Sequeira RP (2006). Evaluation of the knowledge, attitude and practice of self-medication among first-year medical students. *Med Princ Pract*; 15: 270–275.
- Lam CL, Tse MH, Munro C (1989). A survey on the use of self medication over a period of two Weeks. *Hong Kong Practitioner*, 11:371–375.

- Mumtaz Y, Jahangeer SM, Mujtaba T, Zafar S, Adnan S (2011). Self medication among university students of Karachi. *JLUMHS*;10(3):102-105.
- Oborne CA, Luzac ML (2005). Over-the-counter medicine use prior to and during hospitalization. *Annals of Pharmacotherapy*; 39:268–273.
- Orriols L, Gaillard J, Lapeyre-Mestre M, Roussin, A (2009). Evaluation of abuse and dependence on drugs used for self-medication: A pharmaco epidemiological pilot study based on community pharmacies in France. *Drug Safety*; 32:859–873.
- Pawaskar MD, Balkrishnan R (2007). Switching from prescription to over-the counter medications: a consumer and managed care perspective. *Manag Care Interface*; 20: 42-47.
- Saeed AA (1988). Self-medication among primary care patients in Farazdak Clinic in Riyadh. *Social Science and Medicine*; 27:287–289.
- Sallam SA, Khallafallah NM, Ibrahim NK, Okasha AO (2009). Pharmaco epidemiological study of self-medication in adults attending pharmacies in Alexandria, Egypt. *Eastern Mediterranean Health Journal*; 15:683–691.
- Sawair FA, Zaid H, Abu Karaky B A, Abu Eid R (2009). Assessment of self-medication of antibiotics in a Jordanian population. *Medical Principles and Practice*; 18:21–25.
- Sawalha AF (2008). A descriptive study of self-medication practices among Palestinian medical and nonmedical university students. *Res Social Adm Pharm*;4(2):164-172.
- U.S. Food and Drug Administration (2015). Drug applications for over-the-counter (OTC) drugs. [Accessed October, 01,]. Available at: [http://www.fda.gov/drugs/development approval process /how drugs are developed and approved /approval applications/overthe-counterdrugs/default.htm](http://www.fda.gov/drugs/development%20approval%20process/how%20drugs%20are%20developed%20and%20approved/approval%20applications/over-the-counterdrugs/default.htm)
- Uehleke B, Steinhoff B (2001). Self-medication in Germany. *Int. J. Clin. Pharmacol. Therapeutics*; 39:484–487.
- World Health Organization (1998). The role of pharmacist in self-care and self-medication. Report of the 4th WHO Consultative Group on the role of pharmacist: Geneva (CH): WHO
- Yousef AM, Al-Bakri AG, Bustanji Y, Wazaify M (2008). Self-medication patterns in Amman, Jordan. *Pharmacy World and Science*; 30:24–30.
- Zafar SN, Syed R, Waqar S, Zubairi AJ, Vaqar T, Shaikh M, Yousaf W, Shahid S, Saleem S. Self-medication amongst university students of Karachi: Prevalence, knowledge and attitudes. *Journal of the Pakistan Medical Association* 2008; 58:214–217.