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Original Article

SELF-MEDICATION PRACTICE AMONG CONSUMERS IN SANA'A CITY

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ABSTRACT

Objective: To determine the prevalence of self-medication practice and its associated risk factors in Sana'a City.

Methods: A cross-sectional descriptive study was carried out on consumers attending community pharmacies in Sana'a City. A self-administered questionnaire containing open-ended and closed-ended questions was developed and used for this study. Chi-square test and multiple logistic regressions were used in this study.

Results: A total of 400 consumers were involved in this study. The prevalence of self-medication in the past six months was found to be 90.7 % (94.1% of females and 88.3% of males). In Multivariate analysis, chewing khat, smoking, availability of medical services near the residence and the perception about death due to self-medication were significant predictors of self-medication practice. Those who chewed khat were less likely to use self-medication compared to those who did not chew khat (OR= 0.296, CI 95% 0.100-0.882, p= 0.029). Similar results showed that smokers were less likely to use self-medication compared to non-smokers (OR= 0.429, CI 95% 0.206-0.895, p= 0.024). It was also found that those who have medical services near their residence were more likely to use self-medication compared to those who do not have medical services near their residence (OR= 3.022, CI 95% 1.384-6.596, p= 0.006). Moreover, those who did not believe that self-medication leads to death were more likely to use self-medication compared to those who believed that self-medication may leads to death (OR=2.645, CI 95% 1.232-5.681, p= 0.013).

Conclusion: Self-medication practice was high among consumers in Sana'a City. Chewing khat, smoking, availability of medical services near the residence and the respondent perception about the possibility of death due to self-medication was significantly associated with self-medication.

Keywords: Self-medication, Risk factors, Khat, Community pharmacies, Sana'a City

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INTRODUCTION

Self-medication is a common practice worldwide. It 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 a recurrent disease or symptoms. Self-medication, as one element of self-care, is the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms [1]. It plays an important role in some developing and economically poor countries. However, it was found to be related to socio-economic factors, availability of medications, law, advertisement and lifestyle [2].

Self-medication is an important response to an illness that can be controlled in its early stage. Although negative implications have been suggested to it, the existence of its vital role was acknowledged by the World Health Organization [3]. However, drug abuse can lead to serious side effects, toxicity, and drug interaction or could delay accurate diagnosis and treatment [4]. Moreover, there is a worldwide concern about the resistance of microorganisms toward antibiotics in people abusing oral antibiotics. Therefore, there is an urgent need to recognize and determine the risk factors associated with self-medication practice.

Many researchers have been studying self-medication practice all over the world and different studies showed different outcomes. In some studies, younger age groups were found to be more engaged in self-medication than older ones [5-7]. However, the association between self-medication and age was not found in other studies [8, 9]. Association between gender and self-medication was found [10, 11], but some studies revealed no association between them [8-12].

In Yemen, very few studies about self-medication were found in the literature. A study conducted in a private hospital in Yemen stated that antibiotics use in children without a medical prescription is alarmingly high, and intervention from health authorities was suggested [13]. In another study, irrational treatment of malaria was observed among households. Belief, experience, lack of confidence in health services and cost of treatment were the reasons for self-medication as suggested by the researcher [14]. A study on the prevalence of self-medication in a city in Yemen was conducted, and misuse, and irrational overuse of drugs by patients were found [15]. The objective of this study was to determine the prevalence of self-medication practice and its associated risk factors in Sana'a City.

MATERIALS AND METHODS

A cross-sectional descriptive study was carried out on consumers attending community pharmacies in Sana'a City. A self-administered questionnaire containing open-ended and closed-ended questions was developed and used for this study. The questionnaire was evaluated by five expert reviewers and pre-tested in a pilot study on a sample of 40 participants attending a community pharmacy in Sana'a City. The questionnaire was developed in English and then a bilingual expert was asked to translate the instrument from English to the Arabic language. Permission to carry out this study was obtained from UiTM Research Ethics Committee, the administration of health office and targeted community pharmacies in Sana'a City.

After describing the purpose of this study, written consent was obtained from each participant. Using a convenience sampling method, a total of 400 self-administered questionnaires were distributed to consumers attending 10 community pharmacies selected to represent all districts at Sana'a City. The questionnaire included questions about the socio-demographic characteristics of participants, type of medication used, symptoms or illness treated, reasons for self-medication practice, source of information or advice during self-medication practice and their perception about the safety of the medication.

All data obtained from the questionnaire were coded, entered and analyzed using SPSS statistical software version 21 [16]. Chi-square test was used to assess the association between the categorical variables and the use of self-medication. Multiple logistic regressions were used to identify predictors of self-medication practices among the population of the study.

RESULTS

A total of 400 questionnaires were completed and collected, out of which 231 (57.8%) were males, and 169 (42.2%) were females. The mean age±SD of the respondents was 28.6±7.7 (range 18-65). Table 1 shows the descriptive analysis of the variables. The majority were married (62.8%), with a degree (64.3%), non-smokers (77.2%), khat chewers (72.5%), without medical insurance (85.7%), with low income (74.3%) and have access to medical centers (83.3%).

The prevalence of self-medication in the past six months was found to be 90.7 % (94.1% of females and 88.3% of males).

Table 1: Descriptive analysis

Variables	N	%
Age		
18-39	367	91.8
40-59	30	7.5
≥ 60	3	0.8
Gender		
Male	231	57.8
Female	169	42.2
Marital status		
Married	251	62.8
Single	149	37.2
Education Status		
Primary	44	11
Secondary	75	18.7
Diploma	24	6
Degree	257	64.3
Employment		
Employed	130	32.4
Unemployed	143	35.8
Student	127	31.8
Income		
≤ 50,000 Yemeni Riyals	297	74.3
51,000-100,000 Yemeni Riyals	58	14.5
>100,000 Yemeni Riyals	45	11.2
Self-medication		
Yes	363	90.7
No	37	9.3
Medical Insurance		
Yes	57	14.3
No	343	85.7
Medical center		
Yes	333	83.3
No	67	16.7
Chewing khat		
Yes	290	72.5
No	110	27.5
Smoking		
Yes	91	22.8
No	309	77.2

Fig. 1 Show the most common drug used during self-medication. Drug commonly used were analgesics (90.1%), antimicrobials (87.1%), antipyretics (64.2%), antacids (51.2%), vitamins and minerals (50.7%) and common cold (72.2%) medications.

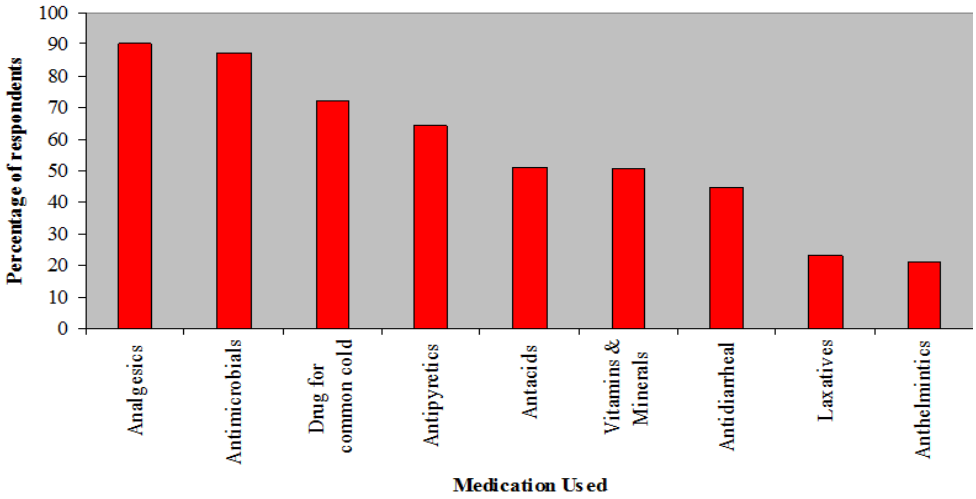

Fig. 1: Most common medication used during self-medication

The majority of illness/symptoms which were treated during self-medication were headache (78%), common cold (66.8%), fever (60.5%), cough (57.5%), acidity/ulcer (46%), constipation (20.5%) and back pain (19.3%) (fig. 2).

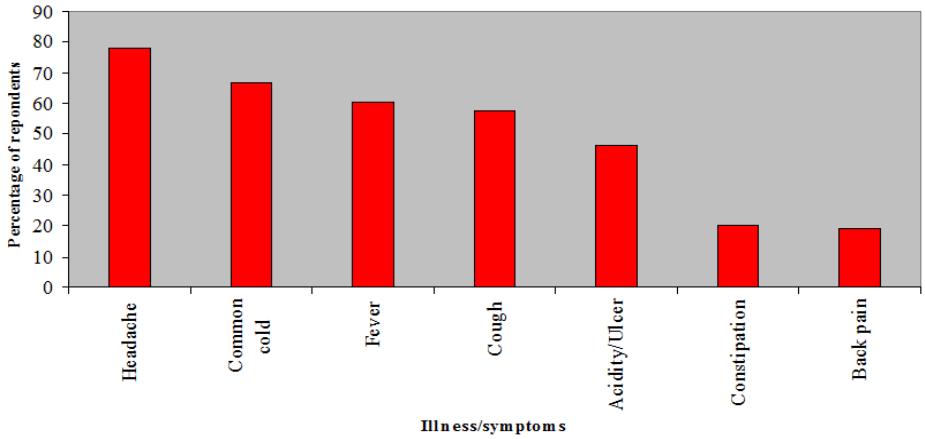

Fig. 2: Illness/symptoms treated during self-medication

Common reasons for self-medication can be seen in fig. 3. The high cost of physician consultation (92.3%) was found to be the main reason for the respondents to practice self-medication. Other reasons like the case was not serious (65.6%), and time consuming (30.6%) were reported as well.

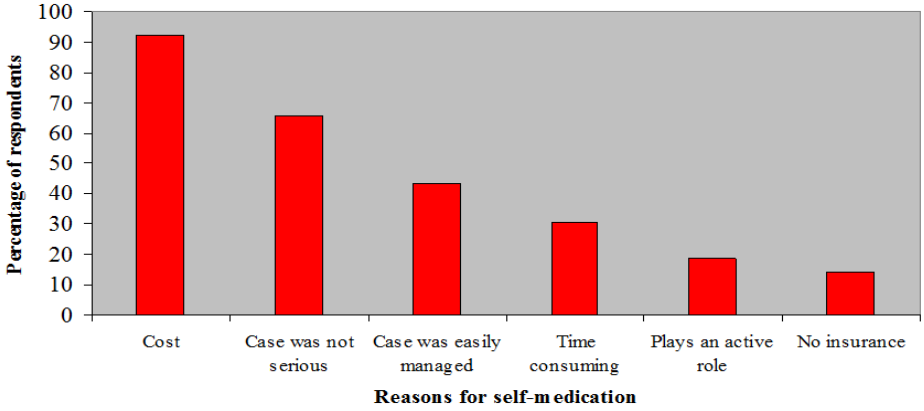

Fig. 3: Reasons for self-medication

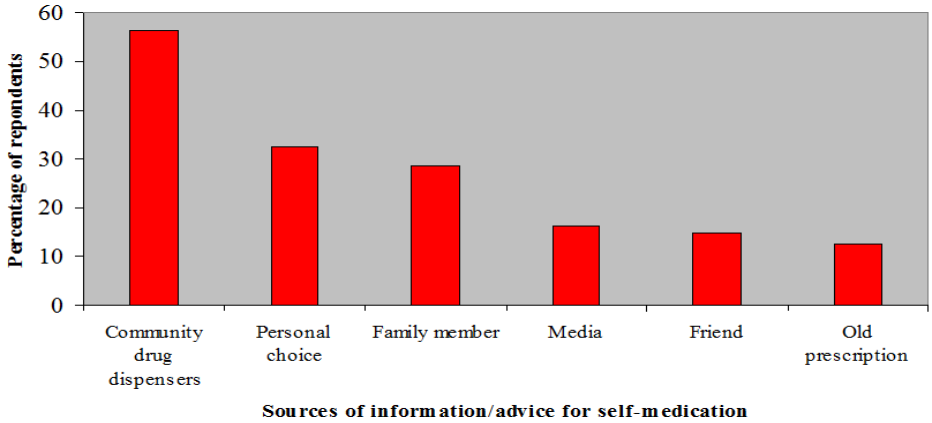

Fig. 4: Sources of information/advice for self-medication

Fig. 4 showed that the common source of information were the community drug dispensers (56.2%) followed by family members (28.7%) and then media (16.3%).

The bivariate analysis was used to identify the risk factors associated with self-medication as shown in table 2. It was found that factors like gender, chewing khat, smoking, availability of medical services near the residence, respondent perception about the complications due to self-medication and death due to self-medication have an association with self-medication practice. However, only chewing khat, smoking, respondent perception about the complications due to self-medication and the availability of medical services near their residence were found to be significant predictors of self-medication practice (table 3).

Table 2: Bivariate analysis (Chi square test)

Variables					C. I 95%		
	Yes (%)	No (%)	Chi-Square	Odds Ratio	Lower	Upper	Sig.
Age							
18-39	331 (90.2)	36 (9.8)	1.69				0.429
40-59	29 (96.7)	1 (3.3)					
≥ 60	3 (100.0)	0 (0.0)					
Gender							
Male	204 (88.3)	27 (11.7)	3.87	0.475	0.223	1.011	0.049
Female	159 (94.1)	10 (5.9)					
Material Status							
Married	225 (89.6)	26 (10.4)	0.99	0.690	0.330	1.440	0.321
Single	138 (92.6)	11 (7.4)					
Educational Status							
Primary	40 (90.9)	4 (9.1)	2.94				0.401
Secondary	71 (94.7)	4 (5.3)					
Diploma	23 (95.8)	1 (4.2)					
Degree	229 (89.1)	28 (10.9)					
Employment							
Employed	115 (31.7)	15 (40.5)	1.69				0.431
Unemployed	133 (36.6)	10 (27.0)					
Student	115 (31.7)	12 (32.4)					
Income							
≤ 50,000 Yemeni Riyals	268 (90.2)	29 (9.8)	3.29				0.193
51,000–100,000 Yemeni Riyals	51 (87.9)	7 (12.1)					
>100,000 Yemeni Riyals	44 (97.8)	1 (2.2)					
Medical insurance							
Yes	55 (96.5)	2 (3.5)	2.61	3.125	0.730	13.370	0.106
No	308 (89.8)	35 (10.2)					
Smoking	76 (83.5)	15 (16.5)	7.343	0.388	0.192	0.785	0.007
	287 (92.9)	22 (7.1)					
Chewing khat			5.696	0.294	0.102	0.850	0.017
Chewer	257 (88.6)	33 (11.4)					
Non-chewer	106 (96.4)	4 (3.6)					
Medical center			7.191	2.688	1.275	5.666	0.007
Yes	308 (92.5)	25 (7.5)					
No	55 (82.1)	12 (17.9)					
Complications due to self-medication							
Yes	210 (88.2)	28 (11.8)	4.43	0.441	0.202	0.962	0.035
No	153 (94.4)	9 (5.6)					
Death due to self-medication							0.004
Yes	164 (86.3)	26 (13.7)	8.48	0.349	0.167	0.727	
No	199 (94.8)	11 (5.2)					

In table 3, multiple logistic regression was used to identify the most important risk factor related to self-medication. The results indicated that those who chewed khat were less likely to use self-medication compared to those who did not chew khat (OR= 0.296, CI 95% 0.100-0.882, *p*= 0.029). Similar results showed that smokers were less likely to use self-medication compared to non-smokers (OR= 0.429, CI 95% 0.206-0.895, *p*= 0.024). It was also found that those who have medical services near their residence were more likely to use self-medication compared to those who do not have medical services near their residence (OR= 3.022, CI 95% 1.384-6.596, *p*= 0.006). Moreover, those who did not believe that self-medication leads to death were more likely to use self-medication compared to those who believed that self-medication may leads to death (OR=2.645, CI 95% 1.232-5.681, *p*= 0.013).

Table 3: Multivariate analysis (multiple logistic regression model)

Variables						95% C. I for EXP(B)	
	B	S. E.	Wald	Sig.	Exp(B)	Lower	Upper
Chewing khat	1147	0.565	4.119	0.042	3.150	1.040	9.542
Smoking	0.815	0.383	4.523	0.033	2.259	1.066	4.788
Medical Center	-1.115	0.406	7.531	0.006	0.328	0.148	0.727
Death due to self-medication	0.973	0.390	6.224	0.013	2.645	1.232	5.681
Medical Insurance	-1.309	0.786	2.777	0.096	0.270	0.058	1.259
Monthly income			3.510	0.173			
Constant	-4.535	1.212	14.014	0.001	0.011		

DISCUSSION

The prevalence of self-medication practice in different countries was ranged from 39% to 94% [17-25]. The prevalence in this study was 90.7% which suggests that self-medication practice in Sana'a city is among the highest. The reason for such variation may be due to the differences in socio-economic status, education, culture and healthcare system [20, 22]. The most commonly medication used during self-medication were the analgesics which were found to be the main medication used according to many studies [20-23, 26].

Following analgesics, antibiotics were the second common medication used during self-medication. Although antibiotics use was reported to range from 32.7% to 46% [21, 23, 25] by other

researchers, it is worth mentioning that 87% of respondents in this study used antibiotics. Such value indicates an inadequate drug regulation by health authorities. Other findings were consistent for medications used like antacids [20], vitamins [25, 26] and medications for common cold [20, 21, 25].

The respondents used self-medication mainly for the treatment of a headache, common cold, fever and acidity/ulcer. The findings were consistent with the results found for the type of medication used in fig. 1. Similar sort of illness was reported by other studies as well [17, 19, 22]. The most common reason for practicing self-medication was the high cost of physician consultation which was found to be the main reason for such practice in other studies [22, 27]. Other reason like illness was not serious and lack of time was found to be reported by other studies [17, 23, 26].

The most common source of information during self-medication was the community drug dispenser which is similar to other studies [19, 22, 23, 25, 26]. This was expected as the pharmacy is the main supply for medication. Other sources like family member [18, 20, 23] and media [21] were found to be common in other studies as well.

The bivariate analysis was used to identify the risk factors associated with self-medication as shown in table 2. Although some factors like gender and respondent perception about the complications due to self-medication and were significant, only chewing khat, smoking, the availability of medical services near residence and respondent perception about the possibility of death due to self-medication were found to be the most important factors in our study (table 3).

The result showed that female respondents were more involved in self-medication than males. It is commonly known that women in Yemen face various obstacles to health care and self-sufficiency which may be due to the cultural and religious history that influence their current state of health [28]. It is unlikely for a woman to leave her house without her parents, husband or guardian's permission. It is less common for a woman to visit a doctor unless the doctor is a women or condition is really serious. It was reported that only 36% of births are attended by doctors or skilled attendants [29]. Therefore, it may be favorable for a woman to visit the nearest pharmacy than visiting a doctor. The respondent perception about the complications due to self-medication was significant as well. Those who did not believe that self-medication leads to serious health complications were expected to be more involved in self-medication practice due to their inability to recognize the risk and consequences.

Khat is a plant that is grown all over Yemen for centuries and more than 70% of the population are believed to use it [30]. It contains an alkaloid, cathinone, an amphetamine-like-stimulant believed to cause excitement, loss of appetite, and euphoria [31]. In the present study, those who did not chew khat were more likely to practice self-medication compared to those who did chew khat. This can be due to the analgesic and antispasmodic effects of khat [32, 33]. Other effects like feeling of well-being, increased level of energy and euphoria [34-37] may contribute to the reluctance of respondent toward self-medication practice.

Smokers were less likely to use self-medication compared to non-smokers. Nicotine in cigarettes was found to produce pleasure, mood modulation [38, 39], induces stimulation and may improve concentration [40]. Moreover, cigarette additives were found to have some pharmacological effects. Such effects like anti-inflammatory and the possibility of influencing sexual behavior were believed to be used by the tobacco industry to mask symptoms and illnesses associated with smoking behavior [41]. Such effects and the feeling of well-being may be the reason behind the lack of enthusiasm of smokers towards self-medication practice.

It was also found that those who have medical services near their residence were more likely to use self-medication compared to those who do not have medical services near their residence. Such results were unexpected as those who live far from medical centers were more expected to use medication for self-treatment without referring to a physician. However, other reasons like the high cost of doctor consultation and the case were not serious maybe the reason for such results (fig. 2). Finally, those who did not believe that self-medication leads to death had a similar attitude as those who did not believe that self-medication may lead to serious health complications. The respondents were expected to be more involved in such practice due to their inability to recognize the risk and consequences.

In developing countries like Yemen, poor quality of health care services, undeveloped health care infrastructures and the lack of comprehensive laws and regulations controlling medicine are among the reasons which encourage such practice and leads to an irresponsible use of medication. The high prevalence of self-medication practice among consumers may be related to the fact that majority have a very low income with no access to medical insurance. In addition to the effect of chewing khat on self-medication practice, it is of great importance to mention that Yemeni families have been reported to spend more than 60% of their income on khat [30].

Since community pharmacists were the main source of information/advice in this study, their role must be highlighted and closely regulated and controlled by health authorities. Moreover, the level of patient's understanding about their medications is highly variable and the need for professional guidance to select a suitable medicine for each condition was found to be increased [42, 43]. Furthermore, the perception of the respondents about self-medication in this study was found to affect their attitude toward such practice. This even suggests that consumers should have a basic knowledge about medication and health care to avoid any misuse of medication.

Limitation of the study

Although Sana'a is the capital and largest city in Yemen, a generalization of findings can be questioned. Translation equivalence was proposed by several researchers to be impossible. However, workable translation may be possible and demonstrable. Moreover, the original language will be open to revision if back-translation is poor.

CONCLUSION

Self-medication practice was high among consumers in Sana'a City. Chewing khat, smoking, the availability of medical services near the residence and the respondent perception about the possibility of death due to self-medication was significantly associated with self-medication. There is an urgent need to increase awareness and education among consumers for a safe and responsible practice. The role of community drug dispenser in self-medication should be investigated. A list of over the counter medications should be enforced by the health care authorities.

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CONFLICTS OF INTERESTS

Declared none

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