Original Article

Assessment of Nature, Reasons, and Consequences of Self-medication Practice among General Population of Ras Al-Khaimah, UAE

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Abstract

Aim: The aim of this study is to assess the nature, reasons, and consequences of self-medication practice among the general population of Ras Al-Khaimah, UAE. **Materials and Methods:** This was a prospective, cross-sectional, survey-based study. Data with respect to knowledge, awareness, and practices regarding self-medication were collected through an interviewer-assisted questionnaire answered by the study participants. Thus, collected data from 413 survey respondents were analyzed using SPSS version 24.0. **Results:** The prevalence of self-medication practices among our study respondents was 52.1%. A headache (155 [37.5%]) was the most common clinical condition treated through self-medication practice. Familiarity with the treatment/medication (198 [48%]) was the most common cited reasons, whereas the advertisement and friend's advice were the most (182 [44%]) cited sources of information for self-medication usage. The majority (265 [64.1%]) of the respondents were considered self-medication practice as safe. However, 19 respondents reported side-effects or complications during the due course of self-medication. It was observed that there is a statistically significant association ($P < 0.05$) between age and employment status of this study participants with self-medication practices. **Conclusion:** The data from this study show that the self-medication practice is very common among the study population. Variables such as younger age group and occupation status were significantly associated with self-medication practice. We emphasize the role of pharmacist in educating the community regarding safe medication practices such as harmful effects of self-medicating and inappropriate practices such as sharing the medications among family members and friends.

Keywords: *Perception and experiences regarding self-medication, reasons and consequences of self-medication, safety of self-medication, self-medication, self-medication practice, nature*

Introduction

Self-medication is the most common form of self-care which is becoming increasingly significant in many countries. Self-medication is the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms.[1,2] Responsible self-medication requires that an individual treat their ailments and conditions with medicines that are approved and available without prescription, and which are safe and effective when used as directed.[1-3]

There are various factors that contribute for self-medication such as urge of self-care, feeling of sympathy toward family members in sickness, poverty, ignorance, misbeliefs, extensive advertisement, availability of drugs other than in pharmacy, and lack of easy access to professional health-care services.[4] The prevalence of self-medication varies between the different age groups and depends on various factors such as type, severity, and frequency of illness.[1-3] The studies have found that fever, headache, common cold, and gastrointestinal symptoms such as acidity, diarrhea, and constipation as the most common ailments for which self-medication is being practiced.[1] Although the frequency is less, it was interesting to note that in few studies antimicrobials have been used for self-care through self-medication.[5]

In many cases, patients suffer from similar symptoms of illness, but the underlying pathology of the disease may not be the same. However, patients do not understand it and rely on self-medication that may lead to serious drug-related problems in the form of either therapeutic failure or toxicity.[6]

Although it is inevitable, care must be taken while practicing self-medication. In addition, to promoting the self-medication,

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due to specific reasons such as affordability and inaccessibility of health-care services, the World Health Organization has also outlined the role of pharmacist in self-medication.[7] As a health-care professional pharmacists can help general public on safe use of self-medication by understanding the patient illness and providing medication information.[8]

There are few of studies conducted in UAE to assess the self-medication use; however, the study population in those studies was limited to student community.[9-11] Through this study, we tried to explore the data from the general population with the aims of estimating the prevalence of self-medication, the common diseases/conditions, for which self-medications were practiced and the common drugs used as self-medications. In addition, this study aims to identify the association of some of the factors such as age, gender, ethnicity, education, and occupation with self-medication practices among our study respondents.

Materials and Methods

Study design and study site

This was a cross-sectional, survey-based study conducted over 3 months, which included general public of Ras Al-Khaimah, UAE. Approval for the conduct of the study was obtained from the institutional and local research and ethics committee of Ras Al-Khaimah, UAE.

Sample size

The target sample size was 400 respondents, based on the moderate cumulative R^2 = 0.15, alpha set at 0.05 (two tailed). The power of this study was 0.80.

Study population

General public of age >18 years with either gender or who were willing to answer the survey questionnaire on voluntary basis were included in the study. Respondents with hearing impairment; who could not speak and/or understand English and/or Arabic language as well as who are mentally challenged were excluded.

Study questionnaire

A self-administered or interviewer administered survey questionnaire consisting of 14 questions was prepared to assess the self-medication practices among the study population. The questionnaire was validated for its content through expert review and was translated to the Arabic language.[12] All the necessary and relevant data such as sociodemographic (age, sex, nationality, education, and occupation) information, questions-related self-medication practices were included in the questionnaire.

Study procedure

Target population were explained about the purpose of the study by the study investigators and the individuals satisfying inclusion and exclusion criteria were enrolled in the study after understanding their full willingness to participate in the survey on voluntary basis and obtaining the written informed consent for the same.

Data analysis

Thus, collected data were summated and was entered into the Microsoft Excel sheet. The results were analyzed using the statistical package for the social sciences (SPSS) version 24.0 (IBM, Armonk, NY, United States of America). The categorical data was expressed as percentage, whereas the continuous data were expressed as mean ± standard deviation. Chi-square test was used to test the association of different variables with sociodemographic data of the participants.

Relative risk (RR) was calculated to assess the association of variables with reported self-medication practice. RR more than one indicates higher prevalence of self-medication practices in the nonreference group, whereas RR less than one indicates lower prevalence of self-medication practices in the nonreference group.[13-15] A probability value of <0.05 was considered as statistically significant.

Results

Demographic characteristics of study population

A total of 413 respondents participated in the survey and majority (314/413 [76%]) of the respondents were females. Mainstream (182/413 [44.1%]) of the respondents were within the age group of 19–29 years. A good number (339/413 [82.1%]) of the study respondents were Arabs [Table 1].

Medical and medication history of study respondents

Only 132/413 (32%) survey respondents had chronic illness or any health-related issues, and 129 among them were taking prescribed medication/s for their current health condition/illness [Table 2].

Self-medication practices of study respondents

More than half (215/413) of the study population mentioned that apart from medication/s prescribed by their doctor; they sometimes take medications on their own to treat themselves. Thus, the prevalence of self-medication practices in our study was 52.1%. Headache (155 [72%]) followed by fever [119 (55.3%)] were the common clinical conditions for which respondents reported self-medication practice [Figure 1].

Familiarity with the treatment/medication (198 [92%]) followed by emergency need (93 [43.25%]) were the most common cited reasons for self-medication practice. Advertisement and friend's advice were the most (182 [84.7%]) cited sources of information for self-medication usage [Table 3].

A very good percentage (206/215 [95.8%]) of the survey respondents mentioned that their health condition improved

Table 1: Demographic parameters of the survey respondents (*n*=413)

Variables	*n* (%)
Gender	
Male	99 (23.9)
Female	314 (76.0)
Age (years)	
19-29	182 (44.1)
30-39	110 (26.6)
40-49	70 (16.9)
50-59	26 (6.3)
60-64	5 (1.2)
≥65	20 (4.8)
Ethnicity	
Arab	339 (82.1)
Non-Arab	74 (17.9)
Education status	
≤SSC	159 (38.5)
College	254 (61.5)
Employment status	
Student	88 (21.3)
Homemaker	145 (35.1)
Working	149 (36.1)
Not working	31 (7.5)
Marital status	
Married	249 (60.3)
Not married	164 (39.7)

Table 2: Details regarding the medical and medication history of the patient

Items	Yes, *n* (%)	No, *n* (%)
Do you have any illness or any health-related issues?	132 (32)	281 (68)
Are you currently taking any medication(s) for your health condition?	129 (31.2)	284 (68.8)
In general, apart from treatment(s) prescribed by your doctor, do you sometimes take medications on your own to treat yourself?	215 (52.1)	198 (47.9)

after self-medication. While eight (3.7%) respondents mentioned no improvement and one respondent reported worsening of their disease condition after self-medicating. Among the nine respondents who mentioned worsening and no improvement of the disease condition, majority (4/9 [44.4%]) consulted the pharmacist, two each consulted physician and nurse (2/9 [22.2%]) and one respondent (11.1%) waited to resolve the condition on its own.

Perception and experiences regarding safety of self-medication practice

It is interesting to note that good proportion (265/413 [64.1%]) of the respondents considered self-medication practice as safe. Only a small number (19/215 [8.8%]) of the respondents mentioned that they experienced side-effects or complications after self-medicating. Allergic skin rashes were the most (4/19 [21%]) common side effect reported by the study respondents [Table 4].

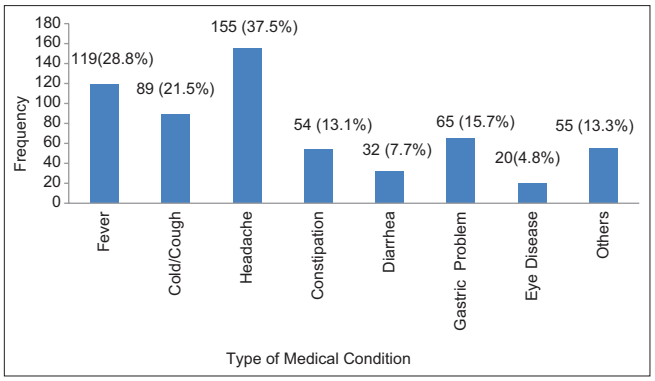

Figure 1: Medical conditions treated by self-medication practice

Association between sociodemographic variables and self-medication usage

Gender (χ^2 = 5.91; P = 0.015) and employment status (χ^2 = 9.62; P = 0.022) were significantly associated with self-medication usage. Female respondents were 1.3 times (confidence interval [CI] 95% 1.037–1.725 [P = 0.024]) more likely to self-medicate compared to male respondents. Also respondents from working (RR = 0.772, CI 95% 0.603–0.988 [P = 0.040]) and nonworking group (RR = 0.600, CI 95% 0.362–0.995 [P = 0.048]) were less likely to self-medicate compared to student respondents [Table 5].

Discussion

The prevalence of self-medication in our study was 52.1%, which is very close to the prevalence rate reported (53%) from a meta-analysis assessing the prevalence and cause of self-medication in Iran.[16] A study conducted by Keshari *et al*. in rural part of India and another community-based survey conducted at Karachi, Pakistan, reported the prevalence rates of self-medication as 69.6% and 84.4%, respectively.[17,18] Many other studies conducted across the globe provides a range of prevalence rate varying between 4% and 87%.[16] This huge difference in the prevalence rate could be due to varying study designs, definition of self-medication used by investigators, inclusion and exclusion criteria adopted, and most importantly the recall period of self-medication by the respondents.[17]

Headache was the most common clinical condition, for which our study respondents reported self-medication practice. Studies conducted by Corrêa Da Silva *et al.* in Brazil and Sawalha in Palestine also reports that majority of the respondents in their studies took self-medication to manage headache.[3,19] In many published literatures, the various medical conditions or symptoms such as abdominal pain, fever, headache, common cold, cough,

Table 3: Reasons and source of information for self-medication use (*n*=215)

Items	*n* (%)
For what reason (s) you take medications on your own? (multiple response)	
To save money	38 (17.6)
No health insurance	31 (14.4)
No time to visit physician	50 (23.2)
Emergency use	93 (43.2)
Familiar with treatment	198 (92)
Others	36 (16.7)
Sources of information for self-medication (multiple response)	
Previous experience	172 (80)
Family members	104 (48.3)
Advertisement	182 (84.6)
Internet	38 (17.6)
Advice from friend	182 (84.6)
Others	25 (11.6)

Table 4: Perception and experiences regarding safety of self-medication use

Items	*n* (%)
Do you think taking medication (s) on your own to treat yourself is safe? (*n*=413)	
Yes	265 (64.1)
No	35 (8.5)
Sometimes	42 (10.2)
Not sure	71 (7.2)
Have you ever experienced any side effects or complications after taking any medication on your own? (*n*=215)	
Yes	19 (8.9)
No	196 (91.1)
Type of side-effects/complication experienced by respondents (*n*=19)	
Allergic skin rashes	4 (21)
Stomach pain	3 (15.8)
Vomiting	3 (15.8)
Dizziness	2 (10.5)
Drowsiness	2 (10.5)
Diarrhea	2 (10.5)
Headache	2 (10.5)
Increased heart rate	1 (5.3)

muscle pain, diarrhea, menstrual cramps, and nausea. were reported to be managed by self-medication practices, and these observations are very much similar in our study as well.[20-24] There may be differences in the frequencies of the respondents in managing these medical conditions depending on the type of respondents (adults/females/elderly) included in different studies. But in all most all the studies, the medical conditions managed through self-medication practices were reported to be "minor" and "common."[21-24]

Familiarity, emergency need, low cost, lack of health insurance, and lack of time to visit physician were the reasons for self-medication practices among our respondents. Few other studies also reported the same reasons for the self-medication practices among their study population.[22,25,26] In one study, respondents felt that the medical conditions were too mild that it did not require doctors consultation, in addition, they also felt that even if they visit the doctor they will also prescribe the same medication hence they opted self-medication practices.[24] The common sources of information for self-medication reported by our study respondents are advertisement, previous experiences with medication, advice from family members and friends. These findings are very much similar to the opinions of participants of other published studies.[22,24-26]

It is the uniqueness of our study that we assessed both positive and negative outcomes of self-medication practices among our study participants. The majority (206/215) of the respondents who self-medicated reported that their health condition was improved. Nineteen among 215 respondents who self-medicated reported that they experienced side effects after self-medicating. A study conducted in Egypt, by El Ezz and Ez-Elarab reported 16.9% of their study respondents experienced side-effects following self-medication practices.[27] In a study conducted by Sharif *et al*., 62% of the study respondents avoided self-medication due to risks of side effects.[10] In another community-based survey, 19.2% of the study participants experienced the side effects due to self-medication.[18]

Although the number and percentage of participants who experienced side effects vary between the studies, it is evident that self-medication has always resulted in high incidence of side effects, compared to individuals who take medications under supervision of a health-care member.[16] This increase in the incidence of self-medication use is probably due to most of the people believe that self-medication practice is safe (as opined by 265 respondents in our study), which may not be always true or they may not be aware of risks associated with self-medications as reported in a study conducted by Parmar *et al*.[22]

In this study, the factors such as gender and occupation status were significantly associated with self-medication practices. In a study conducted in Portuguese, the observations were similar with respect to the association between self-medication practices and younger age group. However, the study also reports the strong association between male and self-medication practices which is contradicting to association found with homemakers (usually females) in our study.[28] This could be due to availability of medications at home, and this finding is very much similar to the observations of a study conducted by Corrêa Da Silva *et al*.[3] However, a

Table 5: Association between sociodemographic variables and self-medication usage

Variable	Self-medication usage		χ^2	*P*	Relative risk (95% CI)	*P*
	No (*n*=198)	Yes (*n*=215)				
Gender						
Male	58 (51.3)	41 (48.7)	5.91	0.015*	1.338 (1.037-1.725)	0.024*
Female	140 (63.0)	174 (37.0)				
Age (years)						
19-29	81 (65.6)	101 (34.4)	11.023	0.051	1 (reference)	-
30-39	46 (64.6)	64 (35.4)			1.048 (0.854-1.287)	0.651
40-49	39 (53.4)	31 (46.6)			0.798 (0.595-1.069)	0.131
50-59	18 (32.0)	08 (68.0)			0.554 (0.307-1.001)	0.05
60-64	04 (33.3)	01 (66.7)			0.360 (0.062-2.090)	0.255
>65	10 (66.7)	10 (33.3)			0.901 (0.570-1.432)	0.654
Education						
≤12th/SSC	70 (61.4)	89 (38.6)	1.589	0.207	1.128 (0.937-1.358)	0.201
College	128 (58.3)	126 (41.7)				
Ethnicity						
Arab	157 (60.5)	182 (39.5)	2.012	0.156	1.203 (0.916-1.581)	0.182
Non-Arab	41 (67.7)	33 (32.3)				
Employment status						
Student	36 (68.4)	52 (31.6)	9.621	0.022*	1 (reference)	-
Homemaker	61 (66.1)	84 (33.9)			0.980 (0.784-1.224)	0.861
Working	81 (51.1)	68 (48.9)			0.772 (0.603-0.988)	0.040*
Not working	20 (64.7)	11 (35.3)			0.600 (0.362-0.995)	0.048*

*χ^2 or Fisher's exact test; $P<0.05$ is statistically significant. CI: Confidence interval

review conducted by Jerez-Roig *et al*. describes that few studies reported positive and few other reported negative associations with self-medication practices and age, gender, and socioeconomic status of the study participants.[20]

Females respondents of our study were more likely to self-medicate than male and student respondents were more likely to self-medicate themselves compared to working and nonworking group, respectively. This could be due to majority of the respondents in the student group believed that self-medication practices are safe compared to any other group of respondents. This observation was similar to the findings of Lukovic *et al*. female gender as one of the variables associated with self-medication practice.[29] A study conducted by Sodhi *et al*. reports health science students as one of the variable associated with self-medication practice.[30] This finding is similar to observations in our study, where majority of the student respondents of our study population were with health sciences background. This could be one of the important factors influencing self-medication practice.

The major limitations of our study were we did not analyze the actual use of self-medication by the respondents. Since it was a questionnaire-based study, the information with regard to self-medication usage by the respondents was to the best knowledge and believes of the respondents. Furthermore, the respondents representing this study were not truly the representative sample of the emirate of Ras Al-Khaimah as the survey was conducted only in the limited areas of the emirate.

Conclusion

Self-medication practice was prevalent in slightly more than half of the survey respondents. Headache followed by fever were the most common medical conditions, treated by self-medication practice. Family and friends were the most common source of advice for self-medicating. Variables such as younger age group and occupation status (homemaker) were significantly associated with self-medication practice.

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Conflicts of interest

There are no conflicts of interest.

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