

Research Article

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Self-medication with Antibiotics among Iranian Population in Qom State

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Abstract

Objectives: Self-medication with antibiotics is a worldwide problem and led to several social problems such as antimicrobial resistance. **Methods:** A descriptive cross-sectional questionnaire-based study was conducted in Qom, 2011 September. Data was entered and analyzed using SPSS 18 and results were presented as the percentage of 94.8% of respondents filled and returned the questionnaire. **Results:** Among 542 participants, 312(57.6%) reported antibiotics self-medication within past two years. Respiratory problems such as common cold were the main indication for self-medication with antibiotics (48%) and amoxicillin was the antibiotic most commonly used (68.6%). **Conclusion:** The results of this study confirm that self-medication with antibiotics is a frequent problem in Qom state and interventions such as educational programs in radio, TV and multimedia are required in order to reduce this problem in community.

Keywords: Antibiotics, Self-medication, Knowledge, Attitude, Iran, Qom

Introduction

Self-medication is treatment of self-diagnosed diseases or symptoms and intermittent or continued use of medications which are prescribed for recurrent or chronic disease.¹ Inappropriate self-medication could be cause of resources wastage, drug dependency and serious health hazards such as pathogens resistance. Irrational use of antibiotics is a global problem³ and the rate of this problem and antibiotics resistance is increasing in Middle-east.⁴ Several reports from different countries^{1, 5-15} reveals high antibiotics self-medication world-wide. Antibiotics self-medication can produce some adverse reactions on patients, as well as, harmful effects on society¹ such as antibiotics resistance.⁴

The aim of present study is to evaluate knowledge and attitude regard antibiotics self-medication in Qom.

Materials and Methods

A descriptive cross-sectional questionnaire-based study was conducted in Qom food exhibition for Ramadan month in September 2011. Data was collected through a structured validated questionnaire which was composed by a pharmacist and pharmacologist and the proposal of study was approved by Ethical Committee of the Qom University of Medical sciences.

A total of 18 questions were stated concerning the following: socio-demographic characteristics, patterns of self-medication with antibiotics (e.g., type of antibiotics used, source of information regarding the antibiotics and the health condition that pushed the student to use antibiotic without prescription.

The survey was conducted by two trained undergraduate, third-years, paramedicine students of Qom University of Medical sciences. The interviewers carried out face-to-face interviews in Persian language with 542 respondents. Interviewees were taken asked if had taken antibiotics in the past two years without consulting a physician. If the answer of respondents were yes, then they were asked about the diseases or symptoms which they took the antibiotics and the other questions.¹⁶

After completion of data collection, it was reviewed, organized, tabulated and entered into Statistical Package for Social Sciences (SPSS Inc., Chicago, IL) for windows version 18. A p-value of <0.05 was considered statistically significant.

Results

Of 572 invited visitors, 542 agreed to participate in the study, a respondent rate of 94.8%. Females represented 42.1% (n=228) of the participants, while males represented 57.9% (n=314). The age of participants, their educational levels and other demographic data are shown in Table 1. 57.6% (n=312) of respondents reported antibiotics self-medication during two past years; with 56.7% of male and 43.3% of female.

Table 1: Demographic and characteristic of the respondents

<i>Variable</i>	N	Percent
<i>Gender</i>		
Male	314	57.9%
Female	228	42.1%
<i>Education</i>		
Read & write	179	33%
High school diploma	200	36.9%
Technician diploma	22	4.1%
Bachelor	107	19.7%
Masters and more	26	4.8%
Religion education	8	1.5%
<i>Persons in the family</i>		
1 or 2	80	14.8%
2	127	23.4%
3	170	31.4%
4 and more	165	30.4%
<i>Employment status</i>		
Unemployed	187	34.5%
Government employed	107	19.7%
Non-governmental or self-employed	171	31.6%
Student	56	10.3%
Retired	21	3.9%

Self-medication with antibiotics was not significantly affected by economy of family (P>0.05), age (P>0.05) and education (P>0.05) of respondents.

The commonest indication for antibiotics self-medication among respondents was respiratory infections by 48% (n=260) of all respondents, followed by Urogenital, skin and gastrointestinal infections respectively (table 2).

Table 2: Medical conditions that pushed the respondents to self-medication with antibiotics

Condition	N	Percent
Respiratory problems	260	48%
Urine and vaginal infection	33	6.1
Skin Problems	12	2.2
GI problems	17	3.1

The frequencies of self abused antibiotics are showed in table 3. Penicillin's group was the most frequently self-medicated group by about half of self-medicated

respondents and among penicillin group, Amoxicillin ranked highest by 68.6% (n=214).

Table3: The type of antibiotic used by respondents in self-medication

Antibiotics Name	N	Percent
Amoxicillin	214	68.6%
Ampicillin	14	4.5%
Cephalexin	11	3.5%
Doxycycline	1	0.3%
Erythromycin	3	1%
Penicillin	6	1.9%
Ceftriaxone	3	1%
Co-amoxiclave	4	1.3%
Amoxicillin+ Ampicillin	6	1.9%
Amoxicillin+ Penicillin	10	3.2%
Amoxicillin+ Co-amoxiclave	9	2.9%
Amoxicillin+ Cephalexin	9	2.9%
Amoxicillin+ Ceftriaxone	2	0.6%
More than 3 antibiotics	20	6.4%

37.1% (n=116) of respondents completed the period of antibiotic therapy (7 days), while 55.8% (n=174) did not complete and 7.1% (n=22) did not know what is the meaning of complete course of antibiotic use.

The main source of antibiotic supply was purchasing from pharmacies by 61.3%, previously prescribed antibiotics stored in the household or friends and relatives, as shown in Figure 1.

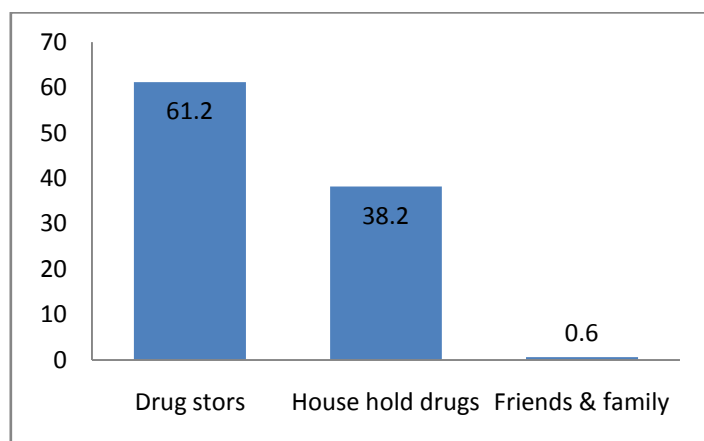


Figure 1: Source of acquisition of antibiotics

In the last part of the study we asked about the satisfaction of antibiotics self-medication, 87% (n=274) of respondents who reported antibiotics self-medication, were satisfied with self-medication and 44.2% (n= 138) told that they will do it in their same next infectious disease again.

Discussion

According to the World Health Organization (WHO), self-medication is utilization of drugs to treat self-diagnosed symptoms or diseases, irregular or continues using of prescribed drugs for repeated or chronic diseases, disorders or symptoms.¹⁷ Self-medication with antibiotics and irrational use of these drugs is a general problem³ and finding associated factors with it would be important to prevent its occurrence.¹⁶

The observed frequency of antibiotic self-medication in this study is 57.6%, which is similar to 56.3% and 56.9% documented in community of Abu Dhabi¹⁸ and Nigeria.¹⁹

Higher rates of self-medication with antibiotics are reported from China by 59.5%²⁰, Yemen by 60%²¹ and Greece by 74.6%.⁹ However there are some lower rates, reported from other studies in Iran and other countries. Our other study in Ahwaz (southern state of Iran) showed 40%²² and the other one is in Tehran revealed 53%²³ of antibiotics self medication among university students, also some other lower rates are reported from Sudan by 48.1%¹, Jordan by 40.7%¹⁶, Lithuania by 22%²⁴ and Turkey by 19.1%.²⁵

Respiratory infection was the principal reason for antibiotics self-medication in the current study. This is similar to findings of our previous studies in Ahwaz city²² and Capital Tehran.²³ Also the same condition is the principal reason for antibiotics self-medication in other countries such as Palestine²⁶, Turkey³, Yemen²¹, European countries⁸, Malaysia²⁷ and Jordan.¹⁶ While diarrhea was

the main reason for this kind of self-medication is diarrhea in Nigeria.^{28, 19} This difference could be cause of this fact that diarrhea is endemic of some African developing countries.²⁸

In general Penicillines were the most self medicated antibiotics among respondents while Amoxicillin was the most abused one among them. Our findings are in agreement with other studies in Yemen²¹, central and southern parts of Iran²²⁻²³, united Arab Emirate¹⁸ sudan¹, Jordan²⁹ and Greece.³⁰ This pattern could be cause of low price of penicillines in many parts of our planet and wide prescription of these antibiotics by physicians that led people to recognize these agents.^{22, 23}

In this study 37.1% of respondents mentioned that complete course of antibiotic therapy. This is higher than our other studies in Tehran by 26.8%, Ahwaz by 32.5%, and in agreement with a study in Jordan by 37.6%.¹⁶

The major source for preparing non-prescribed antibiotics was Pharmacies and followed by over medications at home. Our other studies in Tehran²³ and Ahwaz²² were in agreement with this study. Also this finding was in consistent with the results of some other studies in pakistan¹⁵, United Arab Emirate¹⁸, Turkey²⁵, Jordan¹⁶ and Greece.³⁰

As the main source of non-prescribed antibiotics purchasing was drugstores make us realize that it is disastrous to let drugstores continue as the way they do in Qom, and some restrict systems should check them not to do like this way.¹⁵

Conclusion

The results of this study confirm that self-medication with antibiotics is in high level in Qom state. So we suggest interventions to knowledge of people in this state by producing educational programs, films or even animations, TV, radio and multimedia to reduce this problem in community. On the other hand physicians should be awarded of self-medication pattern in community, so they can inform patients and people to complete the course of antibiotic therapy and not to use their medication for others and also for their next disease.

At last, it is needed to enforce the law on pharmacies, to control sales of antibiotics without a prescription.^{22, 23}

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