ORIGINAL ARTICLE

Self-medication and contributing factors: a questionnaire survey among Iranian households

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ABSTRACT

Background: Self-medication is a serious danger in every health sector which potentially brings harmful side effects for the society. The aim of this research was to investigate self-medication and its contributing factors among residents of Yazd province in Iran in 2014.

Methods: A descriptive, cross sectional study was conducted in 2014 using a self-constructed questionnaire. A total of 580 families living in Yazd in the time period of study were contributed to fill out the questions organized in two sections of demographic and self-medication factors. Data were analyzed by SPSS software version 16 through appropriate descriptive and analytical statistical tests.

Results: Self-medication was reported in 53.4% of the cases. The most frequent self-prescribed medications were related to pain killer drugs (26.6%). There was a significant statistical relation between self-medication and households' age, occupation and income, level of parents' education, number of children and place of residence. Among different reasons for self-medication the most important one was reported to be accessibility (3.44+1.3).

Conclusion: Due to the considerable prevalence of self-medication and its harmful effects on every society, such an issue should be appropriately controlled through legal regulations particularly in the area of selling dangerous drugs. Furthermore, provision of proper information and warning the population about harmful side effects can be helpful in this regard.

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INTRODUCTION

Worldwide, the main mission of medicine is to maintain; improve or retrieve population health in a proper manner. This objective can be achieved through a set of factors among which provision; distribution and appropriate consumption of drugs have the great importance.[1]

Medical specialists have emphasized on the significant role of medication as an inevitable component of a treatment process. They also believed that appropriate and rational use of medicines could facilitate patients' recovery.[2]

Today, self-medication is one of the social, health and economic challenges in all societies including Iran. Evidence revealed poor compliance between amount of prescribed drugs and country's population or epidemiological condition of diseases which might be due to the considerable prevalence of self-medication in the society.[3] In addition, such a common and undesirable issue would cause bacterial resistance, impairment of optimal treatment, unwanted poisoning, allergy, harmful side effects, delay in optimal management of acute medical conditions and drug interactions.[4-8]

Therefore, self-medication not only brings unpleasant physical effects for patients but also disrupts the performance of pharmaceutical market and insurance companies.[4] Studies have shown that drug consumption in our country does not follow a correct pattern and this deficiency will put the pharmaceutical system in a trouble of overuse and inappropriate self-medication.[9] That's why the most essential reforms required in consumption patterns in Iran society focuses on the way of drug use among population to effectively prevent consequent harmful results.[10]

Self-medication in Iran is approximately three times more than global average.[11] Efforts to correct the pattern did not lead to much success and pharmaceutical system still faces with overuse, improper or self-medication problems. On the other hand, supply of drugs increases annually so that the annual increase rate precedes the average natural growth. Greater access due to high amount of supply would increase indiscriminate medication among population.[12-13] Studies confirmed that about 65% of diseases were associated with noncompliance of prescribed drugs with the correct pattern of medication or irrational use of medicine by individuals.[14] Findings also showed that the main cause of hospitalization in 3% of American patients was related

to adverse effects of drug abuse.[15-16] According to Ministry of Health's report, total number of drugs' sale in 2005 was approximately 74.26 billion which depicted that considering Iran population, each Iranian individual consumed an average of 386 drugs in the year. Self-medication and improper culture of drug use are among important causes of high consumption compared to global average.[17] Self-medication issue is so important that today, correct and rational use of medicines is considered as one of the main goals and plans of World Health Organization (WHO) and Ministry of Health.[5]

Furthermore, WHO estimated that about 40% of treatment costs was related to incorrect or overuse of medications drugs.[18] Therefore monitoring how the drugs are used during the process of self-medication in order to remedy any potential abuse also to promote appropriate pattern of drug use are highly recommended.[5]

The objective of our study was therefore to assess self-medication and its contributing factors among residents of Yazd, Iran in 2014.

METHOD

This was a descriptive, cross-sectional study conducted in one of the east southern provinces of Iran, Yazd in 2014. According to previous studies in which the prevalence of self-medication was estimated to be 36% with 95% confidence interval and 4% desired precision, sample size was calculated to be 580 households using sample size formula. A stratified random sampling was used in a way that population living in Yazd was divided in to 16 clusters according to the blocking system of city health centers. Then a family was randomly selected from each cluster and thirty-seven families on its right side were included in the research. To gather data, a self-constructed questionnaire consisted of two main parts (demographic characteristics with 13 questions and self-medication factors with 22 questions) was used.

The second section was comprised of drugs' type and related contributing factors, economic variables, disease related factors and sources of drug information. The 5-point Likert scale was used for the scoring system with 1 representing "so little" and 5 "so many". Content validity of the questionnaire was checked and its 0.98 calculated Cronbach's Alpha confirmed its reliability. By referring to family homes, data collection was done through a direct approach and study objectives were explained to the households and verbal consent was obtained from them. Individuals were also ensured of the confidentiality of information. Data was analyzed using SPSS 16 software package. Statistical analysis was used through descriptive statistics, Chi-Square test of significance at 95% confidence interval to identify the associations among variables.

RESULTS

Majority of study participants belonged to the age group upper than 60 years old (24.5%) with an average family size including 1-3 members (48.7%) running by mother-headed families (60.2%) with diploma or lower educational levels. Among study sample, 39.4% were self-employed with an income of 150-300 $ a month (45.3%), 90.9% were under insurance coverage which mostly was belonged to social security insurance (61.4%).

Most of the participants (53.4%) had an experience of self-medication in a last recent year; of these 14% declared high, 17.9% moderate and 21.5% low amount of non-prescribed drug consumption (Table 1).

Table 1 **Descriptive statistics about self-medication among Residents of Yazd in 2014**

Experience of self-medication	Frequency (N)	Percent (%)
Never	275	46.6
Low	127	21.5
Moderate	106	17.9
High	83	14
Total	591	100

Table 2 **Self-medication among Residents of Yazd in different drug groups**

Drug groups	Frequency (N)	Percent (%)
Pain killers	84	26.6
Sedatives	5	1.6
Antacids	38	12
Antibiotics	11	3.5
Herbal medicines	72	22.8

Table 3 **Drug Related Factors in Self-medication among Residents of Yazd in 2014**

Drug Related Factors	Mean	SD
Drug Accessibility	3.44	1.3
Awareness of the Drug Use	2.89	1.2
Belief in the Efficacy of the Drug	2.86	1.14
Previous Drug Use	3.12	1.11

Table 4 The relationship between Self-medication and Under Study Variables

Variables	Age	Occupation	Income	Educational level	Family size	Living place
Self-medication	p<0.05	p<0.05	p<0.05	p<0.05	p<0.05	p<0.05

Households with high degree of self-medication, 16.2% had governmental jobs, 24.4% belonged to an income category of 300-450 $ a month, 32.6% were living in a family size with more than 5 members which 17.9% were run by mother-headed families with diploma or under diploma educational level and 17.1% by upper diploma. Additionally, 14.2% of those under insurance coverage experienced high amount of self-medication; of which 22.6% was related to the Armed Forces Insurance.

In a separate review of each group of medications, analgesics and pain killers constituted the highest level of frequency in self-medication (Table 2).

Overall, among five under study factors associated with self-medication, drug related ones had the greatest impact; among which drug accessibility (3.44+1.3) was the most important reason for such an arbitrary use (Table 3).

In this study among factors related to the cost and time, households mentioned "high costs of medication and physicians visits", among disease factors they referenced to previous experience of self-treatment and among factors associated with sources of information, they acknowledged physicians' recommendation to take a particular drug also personal information as the most important reasons for self-medication. On the other hand, Chi-Square test results revealed a statistical significant relation between self-medication and living place, head of household's occupation and income, family size, parents' age and level of education (table 4).

DISCUSSION

In the present study, the percentage of self-medication was estimated to be 53.4% which 14% of it belonged to high levels of non-prescribed drug consumption. Self-medication was analyzed both among Tehran University of Medical Sciences and Bojnoord University students which assessed values were obtained 35.7% and 41.9% respectively (19-20). Furthermore, in a review article published by Montgomery in 2011, findings stated that in 76% of studies conducted on self-medication, the prevalence of such cases was reported over 50% of the population (21). A similar research among Indian population in 2014 also indicated that the prevalence of seld-medication in deprived areas was about 56%.[22]

In our study, level of education was evaluated as a cultural factor affecting on self-medication. Results indicated highest amount of self-medication in father-headed families with diploma or lower levels of education also in mother-headed families with associate diploma. These results were confirmed by other findings.[23-25]

A study conducted by Moayyeri et al in 2014 revealed that the highest prevalence of self-medication was among those with diploma degree.[26] Regarding to family size, the highest frequency of self-medication was seen in families with more than five members. More frequent self-medication in large families could be due to inability to pay for treatment procedures and their more experience in the field of self-medication. Study conducted by Tajik et al in 2009 confirmed our findings and reported that families with more than 7 members experienced more frequent number of self-medication in their life period.[27]

Our findings also showed a significant positive correlation between head of the household's age and self-medication. Asefzadeh et al confirmed the results and declared that in upper age groups, there was a significant increase in self-medication prevalence.[1] Figueiras revealed that such prevalence in individuals over 40 years old was higher compared with those in lower age groups.[28]

Study also found a statistical significant relation between self-medication and variables of living place, head of the household's occupation, income, and level of education, age and family size. In a research done by Jose in 2006, it was found that self-medication in Mexico significantly was associated with socio-economic status and lack of access to health care professionals (29). Similar study done by Ayin parast confirmed our findings and indicated a significant relation between antibiotics and antimalarial self-medication and variables of age, income, sex and educational level.[30]

Results also showed that high prevalence of self-medication was mainly related to pain killer drugs. A study in Brazil in 2009 got similar findings and mentioned pain killers and antibiotics as most non-prescribed drug consumptions (31). Tajik reported antibiotics and sedatives as most frequent ones.[27]

Among different associated factors with self-medication, drug related ones had the most impact. Accessibility to drugs, awareness of drugs and their use, belief in their efficacy and finally previous experience of drug use were among important drug related factors which relatively affected self-medication. Moayyeri et al mentioned

the main influencing factors as to be easy access to drugs from pharmacies without physicians' prescription, lack of proper information about drugs' side effects and ignoring the importance of a disease by individuals.[26] Karimi et al reported in 2011 factors such as previous experience of a particular disease, accessibility to drugs and desired outcome obtained from previous self-medication as the main important self-treatment factors.[32] Previous experience of a particular disease, accessibility to drugs and neglecting the importance of an illness were among influential factors on self-medication which were similarly reported in a study conducted among Tehran University of Medical Sciences' students.[6] Siam (2003) added factors including lack of access to healthcare professionals due to poverty also high costs of physicians' visits to have a significant impact on self-medication.[33] Furthermore, Zafar et al in 2007 emphasized that the most common reason for self-medication was due to patients' previous experience of a particular disease.[34]

CONCLUSION

According to the results of this research, culture and education are the most important measures for rational drug use, so that people are required to consider medicine as a means of specialized treatment and avoid from its arbitrary use. On the other hand, limiting drug access without physicians' prescription and continuous informing of people on the harms of self-medication are regarded as other effective strategies.

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CONFLICTS OF INTERESTS

There was no conflict of interests to be declared.

AUTHORS' CONTRIBUTION

All authors contributed equally in this work.

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