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Study of self-medication status among referring patients to Kashan pharmacies

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ABSTRACT

Background: Self-medication is one of the largest social, economic and health problems in developing communities such as Iran. It is considered as an unsafe treatment behavior. This study aimed to assess self-medication status among referring patients to Kashan pharmacies. **Methods:** This descriptive cross-sectional study was conducted in 2012; 12 pharmacies were selected randomly from 56 pharmacies in Kashan. The data was collected through observation, interviews and semi-structured questionnaire. The data were analyzed through SPSS v.18. **Results:** About 26% of patients requested drug without a prescription. Of 208 persons, 143 persons (%68.8) were men, and 65 (31.3%) women; 119 (57.2%) had high school or academic education. The most requested drugs were analgesics (36.5%), antibiotics (30.8%), cold remedies (16.8%), gastrointestinal (513.5%), tranquilizers and antidepressants (11.5%). Main excuses for self-medication were having previous experience of using the drug (46.7%) and low importance of the disease (25%). **Conclusion:** In Iran, the rate of self-medication is very high and analgesics and antibiotics are among the most without-prescription requested drugs. Clearly, providing help to raise public awareness on the over-the-counter (OTC) drugs and prescription-only medicines' (POM) risks and side effects is needed. According to the reasons mentioned for self-medication immediate action for reducing nonprescription medicine request are essential.

Keywords: Self-medication, Over the counter drugs, Kashan, Pharmacy.

1. Introduction

Self-medication, as it is generally called, is defined as all the activities done by people and communities for health rate improvement, disease prevention or reduction, and health recovery [1]. In other words, self-medication is consumption of one or more drugs without a doctor's advisement or prescription and therapeutic monitoring [2]. Drug consumption without a prescription and based on the patient's self-diagnosis is called self-medication [3].

There are two aspects to self-medication: the first is related to the use of legal and known drugs with little side-effects. If used under the advisement of individuals familiar with medicine and therapy, these drugs will have no adverse consequences; they are called over the counter (OTC) drugs. The second aspect is related to the use of drugs with strong side-effects and specific drugs. They are prescribed at the doctors' discretion and patients are not allowed to arbitrarily use them; these drugs are called prescription only medicine (POM) [4]. Despite the fact that most people's information about how to use various drugs is insufficient having required knowledge of drug usage even for accessible OTCs is essential. However, due to availability of a wide range of POMs in some pharmacies, many people may presume a POM drug as an OTC one [5].

Some studies performed in several African and Asian countries indicate that 82% of Indian patients had sufficient information about OTC drugs and this number was 56, 81, 75, and 63% in Bangladesh, Tanzania, Nigeria, and Nepal, respectively [6].

The goal of medicine is to preserve and promote the health of society which is fulfilled through a combination of various factors of which, the adequate supply and distribution of drugs plays a central role [7]. Unfortunately, the society only looks at curing aspects of drugs while in medical texts, drug is described as a double-edged sword which fights with pathogens on one edge and may take the lives of people on the other due to improper administration or side effects [7-8]. Nowadays with the significant scientific advances, people appear to have more access to various drugs [9]. Self-medication is one of the greatest social, economic and health problems in many societies including Iran [10]. Investigations reveal that the rate of drug prescription is not consistent with the country's population and epidemiology of diseases, a fact which may be the result of self-medication and arbitrary drug use [10]. As estimated by World Health Organization (WHO), 40% of medical expenses are spent on drugs [11]. Education, age, gender, job, economic index, etc. are some of the factors which can affect self-medication [12]. Various methods are implemented in the United States to prevent self-medication such as enhancing peoples' knowledge of self-medication, forcing doctors and pharmacists to interpret and explain drugs and drug-food interactions, and providing brochures and catalogs [12]. Recently, excessive arbitrary drug use has extremely increased in Iran [13]. The arbitrary drug use has already led to an increase in bacterial resistance, degrading treatment, unintentional or even intentional poisoning, side-effects, etc. [14]. Another risk of self-medication is that drugs are the first choice for suicide now [15]. Moreover arbitrary drug use results in market instability, and increase of per capita drug consumption and thus leading to waste of financial resources [16].

Despite many actions taken nationwide, excessive drug use, especially arbitrarily is still a serious problem in Iran which has negatively affected socioeconomic development and health promotion [17].

In a study in 2009 focused on investigation of knowledge, attitude, and performance of pregnant women in Arak in respect to self-medication, it was revealed that their knowledge about how to properly use drugs was weak in 61.2% of the cases, average in 28.6% of the cases and good in 10.2% of the cases. Their attitude toward no self-medication was weak in 15.2%, average in 48.5% and good in 36.6% of the cases. The performance turned to be 56.5% in average. There was also a significant relationship between knowledge and performance of pregnant women and their job and education with arbitrary drug use. The study showed that self-medication is highly prevalent, and these women are to be encouraged to refer to doctors in case of sickness [18].

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Table 1. Demographic information of studied clients.

Variables		Absolute frequency	Relative frequency
Gender	Male	143	68.8
	Female	65	31.2
Age	15-34	109	52.4
	34-54	73	35.1
	Above 54	26	12.5
Marital status	Single	55	26.4
	Married	153	73.6
Education	Illiterate	15	7.2
	Elementary school	43	20.7
	Guidance school	31	14.9
	Diploma	72	34.6
	University degree	47	22.6
Job	Housekeeper	48	23.2
	Worker	18	8.9
	State employee	27	13.1
	Self-employed	48	23.1
	Other	66	31.7

Another study entitled "self-medication and health insurance coverage in Mexico" mentions that more than 30 million people in Mexico try self-medication at least once a year. Therefore the medical committee concerns about the potential risks of self-medication. American immigrants try self-medication more because they have no access to health insurance. In this research there was no relationship between age and self-medication but education had a reverse relationship with self-medication and probably those who were more educated and more knowledgeable about self-medication risks were less interested in self-medication. Most of rich people were interested in using all health services, even self-medication. However, self-medication was reported to be related with low education, low income, rural residence, and lack of access to health insurance services [19].

In another research on self-medication with antibiotics in Lithuania, researchers stated that high improper use of antibiotics has become a universal concern. Results of this study revealed that 53% of respondents arbitrarily used antibiotics in last 12 months. Women were more interested in arbitrary antibiotics use in a way that 30% of women and 17% of men had used antibiotics. No relationship was observed in this study between age and education and the rate of arbitrary use of antibiotics while area of residence and history of chronic diseases were related with antibiotics arbitrary use [20].

The present research attempts to find the rate of arbitrary drug consumption, without prescription request for drug, and also identifying the factors involved in high rate of self-medication and the type of drugs used often.

2. Methods

This is a descriptive and cross-sectional study performed in 2012. Out of 56 pharmacies 12 were selected through cluster sampling in respect to population focus and different cultures. Regarding the 49.4% rate of OTC drugs' use and the sample size formula, 384 people were considered to be the least sufficient number for the sample. Taking into account the effect size for cluster sampling this number was doubled and for a more reliable sample, raised to 800. Interview was the preferred tool to identify individuals with self-medication experience. A total of 208 individuals had arbitrarily drug use and all of these people completed the questionnaire. Data were collected through observation and a semi-structured questionnaire. The questionnaire validity was confirmed by experts and specialists of food and drug administration in several stages. Its reliability was calculated 89% by Cronbach's alpha test measured with 30 participants who were demographically similar to the population under study. The questionnaire consisted of two parts; the first part included demographic information such as age, gender, job, education, and marital status. The second part had two sections: the type of drugs used for self-medication and factors and causes of arbitrary drug use. Interviewers attended in selected pharmacies and recorded 800 clients. Among these, individuals who referred with no prescription (n=208) were interviewed and then completed the questionnaire. Data were analyzed using descriptive and inferential statistics through SPSS software.

3. Findings

A total of 208 clients referred to pharmacies across Kashan City demanded drugs with no prescription. Their frequency based on the gender, age, marital status, education, and job is presented in Table 1.

Among these 208 subjects, 164 individuals (78.8%) knew the name of their drug, two (1%) had used previous prescriptions, and 42 (20.2%) had the used drugs' cartridges with themselves.

Tables 2 and 3 show the frequency of requested drugs and absolute frequency of the causes of excessive drug use.

4. Discussion

In the present study, the rate of self-medication was 26% which is higher than that of a study performed in Ilam with a 15.9%, reports from the United States and also global standards [21]. However, it is

Table 3. Frequency of requested drugs in terms of self-medication status

Self-medication status	With self-medication		No self-medication		Total	
Type of drug	Absolute frequency	Relative frequency	Absolute frequency	Relative frequency	Absolute frequency	Relative frequency
Painkillers	76	36.5	132	63.5	208	100
Antibiotics	64	30.8	144	69.2	208	100
Cold medicine	35	16.8	173	83.2	208	100
Vitamins and minerals	19	9.1	189	90.9	208	100
Sedatives and antidepressants	24	11.5	184	88.5	208	100
Hormonal	15	7.2	193	92.8	208	100
Digestive	28	13.5	180	86.5	208	100
Blood sugar	6	2.9	202	97.1	208	100
Cutaneous drug	13	6.2	195	93.8	208	100
Cardiac pulmonary drugs	3	1.4	205	98.6	208	100

Table 3. The most important causes of arbitrary drug use

Cause	Frequency	Absolute frequency	Relative frequency
No insurance coverage		9	4.3
Crowded offices		4	1.9
No access to doctors		8	3.8
Previous successful self-medication		46	22.1
Belief in harmlessness of drugs		9	4.3
Distrust of doctors		15	7.2
Insignificant disease		52	2.5
Expensive doctors' fee		42	20.2
Previous experience of disease		99	47.6
Not having enough time to see a doctor		22	10.6
Easy access to drugs from pharmacies		6	2.9
Other's recommendation		29	13.9
Refusing to pay the fee		5	2.4

lower than the results of a study in Hong Kong where the rate of self-medication was reported 32.9 [22]. Men tried self-medication more than women that is in line with Tavakoli's [13] results but in contrast to the findings of the study in Ilam where no relationship was found between gender and self-medication [12], and to a study in Rasht where women used self-medication more than men [11].

Among the subjects, 73.6% were married and 26.4% were single which is similar to a research carried out in Tabriz [7]. Self-medication was more prevalent (87.5%) in people of the age 15-54, which is almost similar to that of the Ilam study where self-medication more occurred in under the age 40 [12]. In terms of participants' jobs, 23.2% were housekeepers, 23.1% were self-employed and 31.7% had other jobs including students, and unemployed people. These findings are in association with that of other studies performed in Ilam and Zarandieh where self-medication was not related to job [10, 12].

Considering educational status, one can state that the literacy is an important factor in prediction of self-medication in the society. Only 7.2% of people who requested a drug without prescription were illiterate. The high percentage of literate individuals with guidance school, high school (diploma) and non-medical university degrees, and the low percentage of medical students indicated that people who are not informed and knowledgeable enough are more exposed to self-medication. It is noteworthy that the mere literacy will not lead to proper behavior; other factors are included such as practical experience and infield knowledge. A general education for youth and the educated persons about the side-effects and unmonitored risks of drugs' use seems inevitable. In agreement with other studies, our findings showed that high education level is related with high rate of self-medication [3]. Most people (78.8%) know the name of their requested drugs and 21.2% had already used drug cartridges or old prescriptions. The most consumed drugs were painkillers (36.5%), antibiotics (30.8%), cold medicines (16.8%), digestive (13.5%), sedatives (11.5%), vitamins and minerals (9.1%). Antibiotics were excessively used in a research carried out in Babol [23]. Investigations show that one of the most important causes of self-medication is the common cold. People often use drugs arbitrarily to treat headache, cold, muscle and bone pain, abdominal pains, diarrhea, fever, and sore throat. In the research done in Hong Kong the most occurred cases for self-medication were due to cough, fever, and general pain and the most drug types were painkillers, vitamins, antibiotics, vomiting and diarrhea medicines, and antacids [11]. In the present research, OTC painkillers and POM antibiotics were used more than other drugs that is in line with most of previous studies [7, 10-11]. Without prescription use of antibiotics is not limited to Iran and generally happens in other countries; for 14.9% in Hong Kong [24], 28.4% in Mexico [25], and 7.4% in the United States [26].Arbitrary uses of antibiotics dispose patients to serious side-effects including increase resistance to the drug. As a result, the useful life of antibiotics is decreased in society and the increasing need for new antibiotics imposes high costs on individuals and the community [7]. In another study on self-medication status in Spain, results indicated that more than half of participants reported at least one side-effect and 24% reported at least two side-effects in terms of self-medication. Participants usually obtained drugs from pharmacies (88%) and supermarkets (6%). The main reasons to refer for drugs were high blood pressure (65%), diabetes (65%), digestive problems (64%), depression (58%), sleeping difficulties (55%), arthritis (52%), and osteoporosis (30%) [27].

In the present research the most important reasons for self-medication were previous experience of disease, seemingly insignificant disease, and expensive doctor's visit fees. Rakhshani et al identified insignificant disease as the most prevalent reason for self-medication in Zahedan. In their study, 80% of individuals used drugs with no prescription in the cases such as catching a cold. Headache and cough were next with 56% and 43% respectively. Drugs which were kept most at home were painkiller pills (82%) and antibiotic capsules (43%). The commonest self-used drug was painkillers (83%) [28]. Pagan et al study in Mexico identified the main reasons for self-medication as follows: high costs of medical treatments for most people of Mexico where more than half of the participants with adverse diseases had not referred to doctors; people's distrust of medical cares in a way that 70% of respondents with little health problems had not tried medical cares; and belief in self-medication and traditional drugs. This research showed that although people continue self-medication because of poverty and inaccessibility to doctors, providing health insurance coverage will reduce the costs of medical cares and will reduce self-medication rate [19].

In the present study a great portion of participants mentioned previous experience of disease as the reason for not referring to doctors and requesting drugs with no prescription. A possible solution here is that doctors should ask more detailed questions when visiting a patient and refuse to prescribe repeated medicines in different sessions. The second important factor is seemingly insignificant disease and previous successful self-medication. Therefore some strategies such as medicine consultation in pharmacies is a useful way to increase people's, especially the illiterate ones', awareness of drugs proper usage. Mass media also can improve public awareness on issues occurred due to arbitrary use of drugs. Short films, brochures and catalogs about adverse consequences of arbitrary drug use can play important roles. No need to mention that these actions require high costs including sparing enough time and money on production and distribution of the educational items.

The third factor identified here was expensive doctor's visit and consultation fees and the patients' financial inability. The patients may incur hidden costs related to side-effects. Therefore, self-medication issues would be diminished by expanding health insurance coverage for all people and reducing medical costs including doctor's consultation fees. The fourth factor was others' recommendation and the belief that drugs are harmless. Not enough time spared on each patient and crowded offices and hospitals were other factors which may cause self-medication.

Clearly, the number of doctors may be more than enough in some districts that this improper distribution across the city makes some

offices crowded while some others have fewer patients. Other factors were also involved in requesting drugs with no prescription but are not discussed here because they are less important. It is highly probable that the factors discussed here are also the cases across the country and therefore it is necessary to take them seriously and offer solutions.

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