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FACTORS AFFECTING PATIENTS' APPROACH TO BUY AND CONSUME OVER-THE-COUNTER DRUGS

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ABSTRACT

Background: Self-medication is a behavior in which a person tries to solve a health problem without opinion of professionals. Currently, self-medication is one of the major problems in the treatment cycle in Iran and many other countries resulting in bacterial resistance, lack of optimal treatment, unwanted poisoning, wasted costs, etc. Therefore, in this study, the factors affecting patients' approach for buying and consuming over-the-counter medicines have been studied. **Methods**: The statistical population was the customers of pharmacies in Tehran. Sample size was 384 patients according to Morgan's table. A researcher-made questionnaire was developed to evaluate the factors affecting patients' approach to buy and consume OTC drugs. Cronbach's alpha coefficient was used to measure reliability. ANOVA, Pearson test, Friedman test were used to evaluate correlations between frequency of buying and consuming of OTC drugs with variables. The data were analysed using SPSS statistical software V.16. **Results:** There was a positive and significant correlation between the frequency of use of OTC drugs and variables (advertising, drug packaging, the extent of awareness of correct use of OTC drugs). The highest correlated variable was the level of knowledge and awareness of patients. Consultation with a pharmacist, consulting a doctor or pharmacist about advertising OTC medicines, use of OTC medicines based on previous experience and the information contained in the prescription drug brochure were the most important factors in buying OTC medicines. **Conclusion:** Consulting a pharmacist can play an important role in proper use of medicines and reducing their side effects.

KEYWORDS: Self-medication, over-the-counter medicines, pharmacies in Tehran, pharmacist consultation.

1. INTRODUCTION

Faced with feelings of boredom or illness, patients choose ways to get rid of the problem, which is referred to as treatment-seeking behavior. This behavior includes not paying attention to the disease, seeking treatment by referring to health care providers, and self-medication.[1] Self-medication, which is different from the concept of self-care, is a behavior in which a person tries to solve a health problem without the help and opinion of professionals. Neafsey defined self-medication as the use of medicine to treat disease or its symptoms without a specialist prescription.[2]

Currently, self-medication is one of the major problems in the treatment cycle in Iran and many other countries. This has led to bacterial resistance, lack of optimal treatment, unwanted poisoning, side effects, disruption of the drug market, wasted costs, and increased per capita drug funding in the community.[3] However, self-medication is one of the most important social health issues that can cause significant problems for the individual and society in many cases. Over the past decade, the consumption of medicine as a strategic commodity subject and as a basic public need has increased. Studies show that the application of medicine in the country does not have the right pattern. Efforts to correct this pattern have not been very successful and the country's pharmaceutical system still faces the problem of excessive, inappropriate, and arbitrary uses of medicines.[4] Each year, the amount of medicines supply is higher than the previous year and the annual increase is higher than the average normal growth.[5]

Today, people can access easily various medicines, which have been proposed as a harmful social phenomenon and causes medicines abuse and self-medication. Self-medication can be achieved through the use of industrial or home-made medicines, access to over-the-counter (OTC) medications, the use of prescription drugs in similar cases, the use of previously prescribed drugs in similar cases, the recommendation of prescription medicines to family members and

acquaintances, and the use of additional medicines left at home.[6,7] Arbitrary use of medicines can cause side effects such as nausea, indigestion, stomach upset, anorexia, headache, meningitis, shortening of the visual field, increased heart rate, diarrhea, skin inflammation, and latent bleeding.[8]

As mentioned, studies conducted in some communities as well as in Iran indicate high irrational medicines use and a high prevalence of self-medication. According to the National Institute on Drug Abuse in the United States (NIDA), between 2002 and 2003, arbitrary medicines use increased from 22.1% to 32.7%.[9] The prevalence of self-medication in Bangladesh, Tanzania, Nigeria, and Nepal was 81, 56, 63, and 75%, respectively.[10] In Iran, the situation of irrational medicine use is more critical. According to the pharmaceutical statistics of 2007, the total sales of medicines in the country were about 19000 billion Rials, of which 3000 billion Rials are related to antibiotics. It is very high as compared to other countries.[11] Today, it is known that 65% of the cases of diseases in Iran are due to not following the correct pattern of prescribing and irrational use of medicines. The rate of arbitrary medicine use in Iran is almost three times higher than the global average. Therefore, Iran is among the top 20 countries in the world in terms of medicines consumption and is ranked second in Asia after China. Therefore, in this study, the factors affecting the patients' approach to buy and consume OTC medicines have been studied to identify them and reduce the use of these medicines as much as possible.

2. METHODS

2-1. Statistical population, sampling method, and sample size

The statistical population of this study was the customers of pharmacies in Tehran. The pharmacies were selected from all 4 areas in the north, south, west, and east of Tehran and a questionnaire was distributed among them. The questionnaires were distributed among patients over 18 years of age. Because the number of these patients was unlimited, according to Morgan's table, the sample size was 384 patients.

2-2. Questionnaire

To measure the variables, a researcher-made questionnaire was developed. This questionnaire evaluated the factors affecting patients' approach to buy and consume OTC drugs in 4 sections. The first part of the questionnaire included information about the respondents (including age, gender, and level of education). The second part of the questions included 3 questions related to the amount and reasons for taking OTC drugs. The third part of the questions consisted of 19 questions related to the factors influencing the purchase of OTC drugs based on the five-point Likert scale. The fourth part of the questions consisted of 12 questions related to the level of knowledge and awareness of how to properly use OTC drugs on a five-point Likert scale. Cronbach's alpha coefficient was used to measure reliability.

2-3. Data analysis

After completing the questionnaires, the data were analyzed using SPSS statistical software V. 16. First, the normality of data distribution was determined by the Kolmogorov-Smirnov test. Frequency was used to describe qualitative data. The Chi-square test or Fisher's exact test was used to analyze the qualitative variables. Independent t-test and ANOVA were used to compare qualitative variables between groups and Pearson correlation test was used to examine the relationship between quantitative variables.

2-4. Ethical considerations

The present study was approved by the dissertation council of the Faculty of Islamic Azad Pharmacy, Tehran Branch of Pharmaceutical Sciences, and the researchers adhered to all the principles of protocols and guidelines recommended by the Helsinki Convention on research ethics. To protect the privacy of individuals, the results of this research were published without disclosing the names and addresses of individuals and pharmacies.

3. RESULTS

3-1. demographic information

The results showed that 39% (150 patients) of the patients were male and 61% (234 patients) were female. 15.36% (59 patients) of the subjects were between 18 to 25 years old. 28.12% (108 patients) of respondents were 26 to 34 years old and the same percentage of respondents were 35 to 44 years old. 14.58% (56 patients) of the respondents were aged between 45 to 55 years and 13.80% (53 patients) were over 55 years old. The results also showed that 5.72% (22 patients) of the respondents had undergraduate education, 36.19% (139 patients) had diploma education, 40.88% (157 patients) had bachelor's degrees and 17.18% (66 patients) had the senior degree and higher.

3-2. frequency of otc drug uses

The results showed that 7.55% (29 patients) of the respondents had never used OTC medicines and 46.87% (180 patients), 29.68% (114 patients), 9.11% (35 patients), and 6.77% (26 patients) had used OTC medicines infrequently (1 per month), sometimes (more than 1 per month), frequently (1-2 per week) and often (3 or more per week), respectively. The results showed that most respondents rarely and sometimes used OTC medications.

Twenty-five percent of respondents used OTC medications for pain and 25 percent for colds and fevers. The results also showed that 11% of respondents used OTC medications for cough, 12% for heartburn, 8% for bloating and indigestion, 6% for skin problems and wound healing, 5% for sleeping, 2% used as adjuvant drugs for giving up smoking and 6% have used OTC drugs for other reasons. The results showed that pain,

cold, and fever were the most important uses of OTC drugs.

3-3. reasons for buying otc drugs

The results showed that 31% of the respondents used OTC drugs due to minor symptoms, 16% due to time savings, and another 16% due to cost-saving. The results also showed that 4% have bought OTC drugs for fear of serious illness, 15% for having enough information about drugs, 12% for trusting the pharmacist's advice, and 6% for other reasons.

3-4. the correlation between the use of otc drugs and studied variables

The results of the Pearson parametric test showed that there is a positive and significant correlation between the frequency of OTC drugs uses and drug advertising, packaging, and drug knowledge and awareness. There is the highest correlation between the frequency of OTC drugs uses and the extent of drugs knowledge and awareness. The results also showed that previous experience and trust in the drug brand did not have a positive effect on the number of OTC medications.

Table 1: Relationship between frequency of over-the-counter drug use and research variables based on Pearson parametric test.

Variable	Correlation coefficient	Sig.
Consulting	0.005	P=0.917
Advertising	0.169	P=0.001
Price	0.004	P=0.944
Drug packaging	0.121	P=0.018
Previous experience and trust in the drug brand	-0.006	P=0.910
Knowledge and awareness of the correct way to take over-the-counter drugs	0.260	P<0.001

3-5. the effects of otc medicine use on the studied variables

The results of the ANOVA test showed that advertising, drug packaging, and the extent of knowledge and awareness of proper use of OTC drugs had a significant effect on the frequency of using OTC medications. These variables have led respondents to use more OTC medications.

Table 2: The effects of OTC medicine use on the studied variables using ANOVA test.

Variables	Degrees of freedom	Average of squares	F	Sig.
Consulting	1	0.020	0.011	0.917
Advertising	1	27.107	11.188	0.001
Price	1	0.013	0.005	0.944
Drug packaging	1	13.648	5.630	0.018
Previous experience and trust in the drug brand	1	0.016	0.013	0.910
Knowledge and awareness of the correct way to take over-the-counter drugs	1	61.283	27.597	0.000

3-6. the effects of counseling variable on the uses of otc drugs

The results of the Friedman test showed that consultation with a pharmacist was the most important factor and the advice of friends and relatives was the least important factor for the uses of OTC drugs.

Table 3: The effect of counselling factors on the uses of OTC drugs based on Friedman test.

Counselling factors	Average rating
Doctor's advice	3.58
Pharmacist’s consult	3.74
Friends and relatives recommendation	2.32
Personal experience	2.85

3-7. the effects of advertising factors on the uses of otc drugs

The results of table 4 showed that consulting with a physician or pharmacist regarding OTC drugs advertisements was the most important factor and advertisements in magazines and posters had played the least role.

Table 4: The effects of advertising factors on the uses of OTC drugs.

Advertising factors	Average rating
Advertisements in magazines and posters	2.56
Media advertising	2.73
Pharmacy advertising	2.66
Consult with doctor or pharmacist	3.97

3-8. influences of price-related factors on the uses of otc drugs

The results of table 5 showed that the highest average rank was related to the use of OTC drugs based on previous attention regardless of its price and the lowest score was related to the effect of price on the quality of over-the-counter drugs.

Table 5: The effect of price-related factors on the uses of OTC drugs.

Price-related factors	Average rating
The impact of price on quality	2.36
the use of OTC drugs based on previous attention regardless of its price	2.88
The impact of price on selection and purchase	2.56

3-9. the effects of drug packaging factors on the uses of otc drugs

The results showed that the amount of information on the medicine package was the most important factor in purchasing OTC drugs and the effect of packaging on the quality of the medicine was the least important factor.

Table 6: The effects of drug packaging factors on the uses of OTC drugs based on Friedman test.

Drug packaging factors	Average rating
Design and quality of packaging	2.69
The effect of packaging on the quality and effectiveness of the drug	2.59
Reminding of drug package	3.33
The amount of information on the medicine package	3.67

3-10. the effects of previous experience and trust in the brand factors on the uses of otc drugs

According to the Friedman test, it was observed that the brand reputation of a drug had an effective role in its purchase and the recommendation of the drug to relatives and acquaintances was the least important one in the frequency of purchasing OTC drugs.

Table 7: The effects of previous experience and trust in the brand factors on the uses of OTC drugs based on Friedman test.

Previous experience and trust in the brand factors	Average rating
Prefer to use a brand I have used before	3.36
Recommendation of a brand of OTC drugs with good experience to friends and relatives	2.90
Prefer to use a more reputable brand	3.51
Trust the brand that is effective in curing my illness	3.48

3-11. the effect of knowledge and awareness factors for proper use of otc medicines

The results of table 8 show that the information contained in the OTC drug brochure had the greatest impact on the purchase of OTC drugs and the safety of these drugs had the lowest mean score.

Table 8: The effect of knowledge and awareness factors for proper use of OTC medicines based on Friedman test.

Previous experience and trust in the brand factors	Average rating
Taking OTC medication at the first sign of illness	5.23
Safety of over-the-counter medications	4.15
Observing the recommended duration of use for over-the-counter medications	7.52
Taking OTC medications as recommended	8.32

Following the instructions on the packaging of OTC drugs	8.09
OTC medications can cause dangerous side effects	7.25
Continued use of OTC medications is addictive	7.40
OTC medications can sometimes mask the symptoms of a serious illness	7.58
Taking OTC medications can interfere with the natural healing process of the disease	6.79
OTC medications may interact with other prescribed medications	7.93
Prescription drugs are more effective than over-the-counter drugs	7.91
The information contained in the prescription drug brochure are applicable	8.36

4. DISCUSSION

The results of this study showed that 39% of the responders were male and 61% were female. The total study population was 384 people and most of the respondents were women. Also in this study, it was observed that 15.36% of the responders were 18 to 25 years old and 28.12% of the respondents were 26 to 34 years and the same percentage of respondents were 35 years old. 14.58% of the respondents were aged 45 to 55 years and 13.80% were over 55 years old. The results of this study showed that most of the respondents were in the age range of 26 to 44 years. In this study, it was observed that 5.72% of the respondents had undergraduate education, 36.19% had a diploma education, 40.88% had a bachelor's degree and 17.18% had a master's degree or higher. The results showed that most of the respondents had a diploma and a bachelor's degree.

In this study, it was observed that 7.55% of the respondents had never used OTC medicines, and 46.87%, 29.68%, 9.11%, and 6.77% had used OTC medicines infrequently (1 per month), sometimes (more than 1 per month), frequently (1-2 per week) and often (3 or more per week), respectively. The results showed that most respondents rarely and sometimes used OTC medications. Twenty-five percent of respondents used OTC medications for pain and 25 percent for colds and fevers. The results also showed that 11% of respondents used OTC medications for cough, 12% for heartburn, 8% for bloating and indigestion, 6% for skin problems and wound healing, 5% for sleeping, 2% used as adjuvant drugs for giving up smoking and 6% have used OTC drugs for other reasons. The results showed that pain, cold, and fever were the most important uses of OTC drugs. Ershadpour et al. (2015) examined the reasons for the prevalence of per capita medicine use among the general public in Iran. The results of the research showed that most Iranian families consume medicines daily and according to published reports, analgesics, eye drops, and antibiotics had the highest amount of arbitrary medicine use, respectively. Keeping medicine at home, believing that the use of drugs is safe, not having enough time to see a doctor, delivery of medicines without a doctor's prescription by pharmacies, and the preference of foreign to Iranian medicines are important factors in the arbitrary use of medicines in Iran.[12] Margdari Nejad et al. (2016) examined the frequency of OTC drug use and related factors in Golestan medical students. The results showed that the most commonly used medicine was analgesic drugs (84.8%) followed by antihistamines and anti-cold drugs (77.5%). The most important factor in the arbitrary use of medicines was not seeing a doctor due to mild symptoms (67.5%). Self-medication with OTC medications was popular among students. Mild symptoms were a motivating factor. Public education remains essential to increase student awareness. The data showed that students considered several factors to be influential in the arbitrary use of the drug, among which mild symptoms were priority.[13]

It was showed that every Iranian patient consumes 339 drugs a year, which is 2 to 4 times more than the world standard. The per capita consumption of injectable drugs in Iran in recent years is 11.4, which is 4 times higher than other societies. However, it is estimated that only one in 37 symptoms will be evaluated and treated by a physician, and the rest will likely undergo self-medication.[14] On the other hand, statistics on the rate of self-medication in different parts of the country have reported different results, so that this rate is reported in Tabriz as 36, in Qazvin as 83, and in Shahrekord as 5.4 percent.[15] Although this treatment is available in many countries and even in developed countries, according to research by the Ministry of Health and Medical Education, 50% of patients do not go to medical centers even when it is necessary. However, it is estimated that 83.3% of Iranian patients use the medicines arbitrarily.[16]

The results of the Pearson parametric test showed that there was a positive and significant correlation between the frequency of use of OTC drugs and some variables such as advertising, drug packaging, and the extent of knowledge and awareness of correctly use of OTC drugs. The highest correlation was observed between the frequency of use of OTC drugs and the level of knowledge and awareness of patients. The results of the ANOVA test also confirmed the results of the Pearson correlation test and showed that advertising, drug packaging, and the extent of knowledge and awareness of patients had a significant effect on the use of OTC medications. In 2011, Tajik et al. studied the knowledge, attitude, and practice of mothers in Arak city regarding the arbitrary use of medicines and observed that their knowledge about the correct use of drugs in 61.2% of cases was weak, in 28.6% was average and in 10.2% was good. The attitude towards lack of self-medication was poor, moderate, and good in 15.2%, 48.5%, and 36.3% of patients respectively. The performance of mothers in the field of arbitrary use of medicines was 56.5%. Also,

there was a significant relationship between the knowledge of mothers and their jobs and education with arbitrary use of medicines (P<0.01). The results of this study showed that the prevalence of self-medication was high among mothers and as a result, it is necessary to develop and implement a program to change their attitudes and habits.[17] Maqhbel et al. (1993) conducted research in Ramhormoz and showed that all the patients believed that it was necessary to prescribe medicine to them when they saw a doctor. They demonstrated that 94% of patients were not aware of the side effects of drugs, 88% were accustomed to storing drugs at home, and 94% had a history of self-medication,[18] In 2015, Ershadpour et al. examined the reasons for the prevalence of per capita medicine use among the general public in Iran. The results of the research showed that most Iranian families consumed drugs daily and according to published reports, analgesics, eye drops, and antibiotics had the highest amount of arbitrary use of medicines, respectively. Arbitrary use of medicines included a variety of causes, such as keeping drugs at home, believing that the use of drugs is safe, not having enough time to see a doctor, delivery of drugs without a doctor's prescription by pharmacies, and the preference of foreign to Iranian medicines.[12] The results of this research are consistent with the results of the present study. In this study, it was observed that there was a positive and significant correlation between the frequency of the use of OTC medicines and some variables including advertising, drug packaging, and the extent of knowledge and awareness of the proper use of OTC medicines.

The results of the Friedman test showed that consultation with a pharmacist was the most important factor and the advice of friends and relatives was the least important factor regarding the role of counselling in buying OTC medicines. Also, consulting a doctor or pharmacist about advertising OTC medicines was the most important factor in buying OTC drugs, and advertising in magazines and posters has played the least role. According to the Friedman test, the highest average score was related to the use of OTC medicines based on previous experience, regardless of its price, and the lowest score was related to the effect of price on the quality of OTC medicines. The results of this study showed that the information contained in the packaging of drugs was the most important factor in purchasing OTC medicines and the effect of packaging on medicine quality was the least important factor. Also, based on the Friedman test, it was observed that the brand reputation of a drug had an effective role in its purchase, and the recommendation of the drug to relatives and acquaintances was the least important factor. The results showed that according to the Friedman test, the information contained in the prescription drug brochure had the greatest impact on the purchase of OTC medicines and the safety of OTC medicines had the lowest mean score. In research conducted in different countries, the role of pharmacists in advising on the use of OTC medicines has been very colorful. For example, European patients in 50% of cases consulted a pharmacist when they decided to self-medicate.[19] Also, according to a study in the United States, an average of 60% of patients were willing to listen to pharmacists' advice on OTC medications, and 90% were even willing to pay for private OTC consultation with a pharmacist.[20] Another study demonstrated that in 40% of cases, patients seeked advice from a pharmacist at least once a year on minor health issues.[21]

5. CONCLUSION

In general, the results of this study showed that advertising, drug packaging, and the extent of knowledge and awareness of how to properly use OTC medicines had a significant effect on the use of OTC medicines. Also consulting with a pharmacist was found to be the most important factor regarding the role of consulting in purchasing OTC medications. Therefore, it can be concluded that attention to advertising, drug packaging, knowledge of the use of medicines, and the information contained in the drug brochure has an important role in the use of OTC drugs. Finally, consulting a pharmacist can play an important role in the proper use of medicines and reducing their side effects.

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REFERENCES

1. Brown CJ, Pagan JA, Rodriguez-Oreggia E. The decision-making process of health care utilization in Mexico. Health Policy, 2005; 72(1): 81-91.
2. Neafsey PJ, Jarrín O, Luciano S, Coffman MJ. Self-medication practices of Spanish-speaking older adults in Hartford, Connecticut. Hispanic Health Care International, 2007; 5(4): 169-79.
3. Ziayee T, Azgholi G, Yaghmaei F, Akbar Zadeh A. The survey of self medication in woman with pregnancy in Tehran. Scientific Jurnal of University Midwife Shahid beheshty, 2008; 8(2): 35-42.
4. Mosleh A, Darbooy S, SH KA, Mohammadi M. Drug prescription based on WHO indicators: Tehran university of medical sciences facilities with pharmacy. Tehran University Medical Journal TUMS Publications, 2008; 65(14): 12-5.
5. Sharifi M, Mahyar A, Kashanipoor N, Karimzadeh T, Mohammadi F. The use of non-prescribed antibiotic in diarrheal children by mothers in Qods children hospital (Qazvin). Journal of Inflammatory Disease, 2005; 9(3): 74-9.
6. Wilkinson IF, Darby DN, Mant A. Self-care and self-medication: an evaluation of individuals' health care decisions. Medical Care. 1987; 965-78.
7. Reiff-Eldridge R, Heffner CR, Ephross SA, Tennis PS, White AD, Andrews EB. Monitoring pregnancy outcomes after prenatal drug exposure through prospective pregnancy registries: a pharmaceutical

company commitment. American journal of obstetrics gynecology, 2000; 182(1): 159-63.
8. Sadighi J, Maftoon F, Ziai S. Herbal medicine: Knowledge, attitude and practice in Tehran. Journal of Medicinal Plants, 2005; 1(13): 60-7.
9. Awad A, Al-Rabiy S, Abahussain E. Self-medication practices among diabetic patients in Kuwait. Medical Principles Practice, 2008; 17(4): 315-20.
10. Mortazavi A, Hajebi G. The know-ledge of referres to Tehran pharmacies of OTC drugs requested. J Res Med Sci., 2003; 27: 299-304.
11. Solaimani F, Majdzadeh S, Cheragh Ali A, Dinarvand R, Golestan B. Process evaluation indicators in prescribing and drug. Razi Pharmaceutical Journal, 2009; 20(7): 613-24.
12. Ershadpour R, Marzouni HZ, Kalan N. Review survey of the reasons of the prevalence of self-medication among the people of Iran. Navid no, 2015; 18(60): 16-23.
13. Margdari Nejad M, Kazemi S, kord F, Khosravi M, Sanagoo A, Jouybari L. The Prevalence of Non-Prescription Drugs and Related Factors in Students of Medical Sciences in 1392. Iran Journal of Nursing, 2017; 29(104): 66-74.
14. Stevenson FA, Britten N, Barry CA, Bradley CP, Barber N. Self-treatment and its discussion in medical consultations: how is medical pluralism managed in practice? Social Science Medicine, 2003; 57(3): 513-27.
15. Tajik R, Shamsi M, Beygee AM. Survey prevalence of self medication and factors effected in woman's Arak City. Avicenna Journal of Nursing Midwifery Care, 2008; 16(1): 29-39.
16. Masoudi Alavi N, Izadi F, Ebadi A, Hajbagheri A. Self treatment experience in diabetes mellitus type 2. Iranian Journal of Endocrinology Metabolism, 2009; 10(6): 581-8.
17. Tajik R, Shamsi M, Mohammadbeygee A. Knowledge, attitude and practice about self-medication among mothers in Arak, Iran. Payesh, 2011; 10(2): 197.
18. Maghbal A. The survey of over consumer druges in Ramhormoz city. Monthly J Razi, 1998; 19(10): 13-22.
19. Shrewsbury R. Remington: The Science and Practice of Pharmacy. American Journal of Pharmaceutical Education, 2001; 65(3): 304.
20. Troy M. Pharmacists have become OTC allies. Drug Store News. London school of Medicine, 2000.
21. Schulke DG. American Pharmaceutical Association review of literature on prescription to over-the-counter drug switches. Clinical therapeutics, 1998; 20: C124-C33.