

An Exploration in Women's Perception of the Use of Over-the-Counter Drugs: A Content Analysis

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Abstract

Background: Arbitrary drug use is considered as one of the major problems in all countries. Several studies indicate that self-medication is more prevalent in women. In addition to the side-effects of drugs on women's health, their health behavior can affect their families, as well. Qualitative research provides insight into participants' internal world as well as the chance to specify and interpret the data and their experience at a deeper level.

Objectives: The present qualitative study aimed to explore women's perception of OTC drugs.

Methods: The present study is a conventional qualitative content analysis conducted on women's community in the Guilan province, the North of Iran. The study population was selected through purposive sampling, and the data were gathered through semi-structured interviews, which continued up to data saturation point. Data analysis was performed as per the stages recommended by Graneheim and Lundman. Research strength and its scientific accuracy were evaluated as per the criteria proposed by Guba and Lincoln.

Results: Data analysis identified three main themes and 9 subthemes as follows: "fragmented interaction in health system (poor relationship between patients and therapists, government's poor economic support, inadequate supervision); "false self-confidence" (belief in the non-riskiness/efficiency of self-medication, self-esteem in understanding one's health status, good memories of healing); "perceived personal stonewalling" (limitations in time, huge costs of treatment, and poor understanding of nuisances).

Conclusions: Participants' experience highlighted the necessity of awareness about adverse side effects of OTC drug use; such awareness can be achieved through various methods such as information dissemination and proper culture of drug use promoted by healthcare professionals to resolve the mentioned issues and improve, consolidate, and promote society's level of knowledge and health.

Keywords: Over-the-Counter Drugs, Women, Qualitative Research, Content Analysis

1. Background

Medical sciences aim at maintaining and promoting society's health as well as offering health services to the patients. These objectives are attained through a chain of factors among which drugs are a key component (1). Proper use of drugs plays a vital role in human health (2) while currently self-medication is becoming an increasingly important part of global healthcare systems (3). Nowadays, the manner of drug use is the greatest health concern (4). The experts in medical sciences believe that proper, disciplined use of drugs brings about recovery (5). On the other hand, arbitrary drug use, which is rooted in the advice of family members, friends, neighbors, the pharmacist, or due to previous prescribed drug or suggestions from advertisements in newspapers or popular magazines, has been recognized since around the 1960's in the West-self-care, and self-medication is now regarded as an unnecessary and potentially even unhealthy practice (2).

Nowadays, having access to multifarious types of drugs is possibly due to scientific and industrial advances in pharmaceutical and medical fields. However, if such access is not disciplined by specific programs, many problems such as arbitrary drug use will emerge (5). Self-medication using drugs is defined as using OTC (over-the-counter) drugs for achieving recovery and health, but without professional advice or prescription (6), or the intermittent or continuous use of a medication prescribed by a physician for chronic or recurring diseases or symptoms (7).

Arbitrary drug use is one of the most common problems in every country which has led to various economic and medical problems (8). Various studies suggest self-medication and OTC drug use in Australia and other countries (9, 10). Self-medication has traditionally been defined as "the taking of drugs, herbs, or home remedies on one's own initiative, or on the advice of another person, without consulting a doctor (2), leading to the situation where al-

most half of the used drugs have been proven to be irrelevant (1).

With regard to drug use, the results of Azami-Aghdash et al. study show a relatively higher prevalence of self-medication among the Iranian population in community setting as compared to other countries in the world. The overall prevalence of self-medication in Iran has been reported as 53% (4).

Medications administered inappropriately not only lead to wastage of resources, but also carry potentially serious and life-threatening adverse effects for the users (11).

Studies suggest that 30% of liver and kidney disorders are caused by arbitrary use of drugs, and 3% of all hospitalized patients in the USA are admitted for drug abuse as the main cause of their condition (12). Drug use is affected by various factors such as personal and social characteristics of the user, gender, presence of disorders, age, attitude toward life and health, stress, and the user's role (13). In the study conducted by Tabiee et al. (2012), factors such as prior use and recovery, financial difficulties for paying the visit fee, and ease of OTC drug purchase have been introduced as the reasons for arbitrary drug use (14).

Some studies suggest that self-medication is more prevalent in women (5, 14, 15), those who live by their own or are of poor economic-social conditions, those who suffer from chronic illnesses, or those who are of particular mental conditions (16, 17). It also has a higher probability in developing countries where the health system is not efficient (15). In the research conducted by Nauert (2005), the results indicated that self-medication is of greater prevalence in women (16.93%) than men (14.46%), which was attributed to women's greater level of suffering, vulnerability and occasionally, emotional disorders (18).

In addition to the afore-mentioned side-effects, drug use can lead to abortions, congenital disorders, as well as maternal and child mortalities. Therefore, study of arbitrary drug use and its contributing factors can be of great benefit to devise an efficient plan for monitoring (15).

Women deserve special attention of health system researches in this regard because women's unhealthy behaviours such as drug abuse not only adversely affect their health, but also it can affect their family (19). Increasing current knowledge about women's experiences with regard to OTC drugs can help identify the factors contributing to this issue as well as compiling educational programs for monitoring and preventing its side-effects. Taking into account the high prevalence of over-the-counter drugs in Iranian women and its adverse effects, it is needed to consider seriously reducing and preventing this phenomenon. Increased knowledge will also be useful in planning an effective program for controlling OTC drugs. Many studies on the use of over-the-counter drugs have been

based on a quantitative approach in Iran. However, to the best of our knowledge, no qualitative research has been carried out in this field in Iran.

Research to explore individuals' experience in OTC drugs can help gain thorough knowledge about their values and beliefs (20). Qualitative research with content analysis orientation allows researchers to enter participants' world for determining and interpreting data and concepts at a deeper level (21).

Improving our knowledge about women's perception of the use of over-the-counter drugs will be the first step to conduct further studies in different cultures and contexts. Also, substantiating and following up of the findings of the present study through improving our knowledge regarding women's perception about the use of over-the-counter drugs could help us devise strategies for prevention and control of the use of over-the-counter drugs with the aim to improve public health.

2. Objectives

The present study aimed to explore women's life experiences and their perception about the use of OTC drugs, and if required, compile a proper educational program and thus take a serious step toward improving women's health as well as that of the society.

3. Methods

The research was conducted in governmental schools and offices in the Guilan province in the North of Iran in 2015-2016. Considering the main research question ("How much is Guilani women's perception of the use of OTC drugs?") and the general objective of the research ("exploring Guilan women's perception of the use of OTC drugs"), the conventional qualitative content analysis was determined as the appropriate methodology of the present research. Since in qualitative research methodologies the individual is considered as a whole with particular traits and the research focuses on individuals' experience specifically, and due to the fact that understanding specific types of behavior and the reason behind such behaviors, and as a result, providing appropriate educational health programs for changing health behaviors is possible only through this method of research, thus, this method is an appropriate method for understanding how individuals act (22).

In content analysis qualitative research, the relationship between ideas and opinions, main content, tendencies and meanings are first studied. Then, the researcher extracts the key points and specific themes from these general relationships.

3.1. Sample Collections

The study population was selected through purposive sampling and included those women who were willing and able to have interviews. The next participants were selected based on the criteria whether she could contribute to further clarification of research question.

3.2. Data Gathering

Data were gathered through face-to-face semi-structured interviews. Data were collected up to data saturation point, after which the collected data were repetition of the previous data and no new information was acquired. Each interview lasted between 35 and 50 minutes. To have maximum variation in sampling, participants were selected from a wide range of women with various characteristics with regard to their age, occupation, and education level.

The interviews started with some open-ended questions such as “if possible, please talk about your motivation behind taking drugs”, “please talk about your own experience of the effective factors in drug use”. The next questions were asked as per the provided answers to the initial questions with a greater focus to have better understanding of the issue. All interviews were conducted by a researcher specialized in qualitative research (the first author).

3.3. Data Analysis

Data analysis was conducted as per the steps recommended by Graneheim and Lundman (2004): 1. The interviews were transcribed and then, read for several times to achieve a general, accurate understanding; 2. The whole interviews and observations were regarded as an analysis unit; 3. The words, sentences, and paragraphs were regarded as meaning units. In fact, meaning units were comprised of words and sentences that were related to one another for their content and thus were consolidated and put together considering their content and provisions; 4. The meaning units were then conceptualized and made subjective as per their hidden meaning, and then were named with codes; 5. The codes were compared and contrasted, and then were grouped under specific labels in more subjective categories; 6. At the final step, the categories were compared with one another and after a close, deep study, the contents hidden in the data, which are called “themes,” were introduced (23).

3.4. Trustworthiness

The criteria proposed by Guba and Lincoln were utilized to determine the accuracy and strength of data (24);

the data credibility was increased through long-term participation and adequate interaction with the study subjects, collection of accurate information, and obtaining participants' confirmation on the data. Data dependability was achieved and increased through step-by-step data collection and analysis as well as reviewing the data by subject matter experts. Approval and opinion from university faculty members were sought to increase data confirmability. A detailed and rich description of the research was provided to assess whether the research can be applied in other areas for the purpose of research transferability.

3.5. Ethical Considerations

The present study is a partial result of the program ratified by Guilan University of Medical Sciences in Iran under the code IR.GUMS.REC.1394.370. Volunteer elderly women were invited to take part in the research after determining research objectives. The reason for recording the interviews, confidentiality of the data, deletion of their data after extraction of results, the voluntary nature of participation in the research, the possibility to opt out of the research, and possibility of having access to research results were explained to them and informed consent was also obtained.

4. Results

The study population comprised of 27 women within the age range of 24 to 63 years, with mean age of 43.5 years, having education degrees of diploma to master's, and working at offices and schools in Guilan province in the North of Iran (Table 1). 876 preliminary codes were extracted from the interviews with participants. After several rounds of code review and summarization as per their similarity and congruence, they were categorized into three main themes and nine subthemes, and then were given conceptual and subjective names as per their nature. The main themes and their subthemes were as follows: main theme 1: “fragmented interaction in health system,” including subthemes: poor relationship between patient and therapist, government's poor economic support, inadequate supervision; main theme 2: “false self-confidence,” including subthemes: belief in the non-riskiness/efficiency of self-medication, self-esteem in understanding health status, good memory of healing; main theme 3: “perceived personal stonewalling,” including subthemes: limitations in time, huge costs of treatment, and poor understanding of nuisances (Table 2)

Table 1. Personal Characteristics of Participants

Number of Participants	Occupation	Education	Age, year
P1	Teacher	Master's	29
P2	Teacher	Bachelor's	49
P3	Employee	Bachelor's	36
P4	Teacher	Master's	31
P5	Employee	Bachelor's	34
P6	Employee	Associate Degree	51
P7	Employee	Bachelor's	24
P8	Teacher	Master's	29
P9	Employee	Bachelor's	53
P10	Employee	Diploma	48
P11	Teacher	Bachelor's	57
P12	Employee	Associate Degree	27
P13	Teacher	Master's	46
P14	Employee	Diploma	61
P15	Teacher	Bachelor's	54
P16	Teacher	Master's	32
P17	Teacher	Bachelor's	37
P18	Teacher	Associate Degree	47
P19	Employee	Bachelor's	47
P20	Teacher	Diploma	63
P21	Employee	Master's	27
P22	Employee	Bachelor's	43
P23	Employee	Diploma	55
P24	Teacher	Bachelor's	49
P25	Employee	Bachelor's	53
P26	Teacher	Diploma	57
P27	Teacher	Bachelor's	60

4.1. Fragmented Interaction in Health System

The perception of participating women about the use of OTC drugs included issues such as poor relationship between patient and therapist, government's poor economic support, and inadequate supervision, which somehow indicates the Fragmented Interaction in Health System.

4.1.1. Poor Relationship Between Patients and Therapists

As a part of their experience, the participants pointed out the inappropriate relationship between therapists, pharmacists, and occasionally the healthcare team personnel. They talked about the lack of appropriate relationship and inadequate learning.

Table 2. Overview of the Themes, Subthemes, and codes Constructed Based on Women's Perception of the Use of OTC Drugs

Main themes	Subthemes	Codes	Number	
Fragmented Interaction in Health System	Poor relationship between patients and therapists	Limited relationship between therapists and patients	13	
		Inadequate guidance offered by pharmacists	17	
	Government's poor economic support	Inadequate support by insurance companies	14	
		Non-coverage of all drugs by insurance plans	18	
	Inadequate supervision	Easy access to OTC drugs	11	
		Access to some drugs only in the free market	9	
	Belief in the non-riskiness/efficiency of self-medication	Belief in high effectiveness of self-medication	12	
		Belief in non-riskiness of drugs	10	
	false self-confidence	Self-esteem in understanding one's health status	Knowledge over one's internal disorders	9
			Understanding one's own condition better than therapists	11
perceived personal stonewalling	Good memories of healing	Full recovery through self-medication	11	
		Fast recovery through self-medication	13	
	Limitations in time	Shortage of time	12	
		Overloaded by daily affairs	13	
	Huge costs of treatment	Expensive visiting fees	11	
		Expensive diagnostic methods	8	
	Poor understanding of nuisances	Fear of dangerous condition diagnosis	9	
		Fear of a worse condition diagnosis	10	

(Bachelor's, 34 years old): "When I visit a doctor, I find no chance for getting some information on the prescribed

medicine. This is because I have to get out of the room very soon for the next patient to come in.” (Bachelor’s, 53 years old): “Considering our age, there are a large number of drugs we are taking. But unfortunately, neither my doctor nor the pharmacist provides any information on the time the drugs should be taken or any possible drug interactions.” (Diploma, 61 years old): “I was hospitalized once for my high blood sugar. When I got discharged, some other drugs were prescribed and I had no idea when they should be taken. The personnel also used to say ‘whatever your doctor has instructed.’”

4.1.2. Government’s Poor Economic Support

Government’s insufficient support for purchasing drugs formed another part of participants’ experience.

(Associate Degree, 51 years old): “Specialists’ visit fee has increased tremendously and the insurance companies do not help us at all with it. If I am supposed to visit a doctor for any drug I need, then I will have to pay both for doctor’s visit and the drugs whose prescription in the insurance booklet is of no use as insurance companies do not cover the expenses for those drugs” (Diploma, 55 years old): “most of our drugs are not covered by insurance. For us who need to use some certain types of drugs, none of our salary remains if we pay both for doctors’ visit and drugs.”

4.1.3. Inadequate Supervision

Inadequate supervision of health system over the distribution of drugs formed another part of participants’ experience. They talked about the lack of adequate supervision over drugs. (Master’s, 29 years old): “if you once pay a visit to the places other than pharmacies, where non-insured drugs are provided, then you will see the depth of crisis. One can find any drug, and there is no supervision over it.” (Bachelor’s, 47 years old): “whenever I cannot fill my mother’s prescription, we get it through illegal channels and black market”.

4.2. False Self-Confidence

Women’s perception of the reasons for OTC drug use was also formed by a sense of false self-confidence.

4.2.1. Belief in the Non-Riskiness/Efficiency of Self-Medication

They talked about their trust in the non-riskiness and efficiency of their self-medication through OTC drugs.

(Bachelor’s, 57 years old): “up to this age, I have done the diagnosis by my own and purchased the related drugs and I am quite sure about the fact they have no side-effects.” (Bachelor’s, 37 years old): “there are several reasons for not visiting a doctor and seeking self-medication. One of the reasons lies in the trust in one’s own diagnosis.

But, I think it is effective, and in my opinion, this would be as effective as when one visits a doctor.”

4.2.2. Self-Esteem in Understanding One’s Health Status

Some of women talked about individuals’ own greater knowledge of one’s own health status. (Bachelor’s, 49 years old): “when a problem occurs, I know better than anyone else what it is. I start using the appropriate drug sooner and get a better result.”

4.2.3. Good Memories of Healing

Also, having a good experience about self-medication and the resulting alleviation of pain formed another part of participants’ experience.

(Bachelor’s, 43 years old): “When we got sick, my mother used to buy us drugs, and for the majority of times, she did not take us to a doctor. I also remember that I used to recover soon. I have good memories of our self-medication at home, as it is always coupled with good results.”

4.3. Perceived Personal Stonewalling

The women participating in the present study considered personal stonewalling as a reason for their perceived OTC drug use.

4.3.1. Limitations in Time

Some mentioned factors such as shortage of free time, not having enough time for visiting a doctor, and waiting in doctor’s office.

(Bachelor’s, 49 years old): “anytime I want to visit a doctor, I have to spend a whole afternoon for that as I need to wait for a long time in doctor’s office for my turn. This is difficult for me as I am employed and have only a couple of hours in the evenings to spend at home.”

Another participant talked about her workload at office and home.

(Master’s, 29 years old): “I sometimes have to do some schoolwork at home. I also have a 2-year-old son. Now, when I get a simple cold, how much time I have to spend for visiting a doctor. By taking an adult cold tablet and taking some cold syrup, I get well and save lots of time.”

4.3.2. Huge Costs of Treatment

The huge costs of diagnosis and treatment formed another part of participants’ argument. (Bachelor’s, 60 years old): “my husband passed away 7 years ago. Two of my children go to non-governmental universities. I can’t really visit a doctor for any simple thing that happens to me. To be honest, it might be the reason behind my self-medication.” (Bachelor’s, 54 years old): “when you visit a

doctor, the doctor immediately prescribes some tests and ultrasound. Then you find out you have had no problem. The prescribed drugs are not also covered by insurance”.

4.3.3. Poor Understanding of Nuisances

Some of participants were afraid of hearing from their doctor about a diagnosis of a severe illness and mentioned this fear as a reason for not visiting a doctor.

(Master's, 31 years old): “I remember I could feel a lump in my chest, and I suffered physically and mentally a lot, to finally found out it was nothing. I am just afraid of visiting doctors since then. In fact, fear to hear about a severe condition makes me not go to the doctor. Another participant (diploma, 57 years old) said: “once my spouse got sick during exercise, the doctor said his heart veins might have been blocked. They ran several tests just to find he is healthy. In my idea, such worry and fear kills one. Most of the times, I prefer to treat myself rather than suffer from the fear of hearing about such diagnoses of severe conditions.”

5. Discussion

The findings obtained as per participating women's perception revealed several reasons for OTC drug use. The main themes included Fragmented Interaction in Health System, false self-confidence, and perceived personal stonewalling.

Self-medication is a global phenomenon which is prevalent in all social and demographic groups and the prevalence rate is high all over the world (15) and is considered as a significant and globally prevalent problem of public health (25).

Studies indicate broad OTC drug use in women (6, 15). In the study conducted by Banerjee and Bhadury, women were found to be more inclined than men toward self-medication (26).

Prevalence of OTC drugs is much higher in some countries. In the study of Emmanuel et al. in Nigeria (2011), the prevalence ratio was calculated as 76.2% (15). In the study conducted by Azami-Aghdash et al. (2015), 53% of Iranian population (4) and in Sharifirad et al. study in Iran (2011), 86% of women had experienced at least one instance of self-medication in the last six months (19). The reasons for Drug use in women vary depending on their age, occupation, education level, and pregnancy. In the study of Abasuibong et al. (2012), preventing stillbirth, treating insomnia, nausea, infection, and preventing Anemia were considered as the reasons for arbitrary drug use in pregnant women (27). The results obtained by Azami-Aghdash et al. in Iran (2015) showed that the most significant group

of diseases that were self-medicated was respiratory diseases, and the most important groups of drugs used for self-medicated were analgesics and antibiotics (4).

In the present study, issues such as the poor relationship between patients and therapists, government's poor economic support and inadequate supervision somehow indicate the fragmented interaction in health system.

5.1. Fragmented Interaction in Health System

Participants talked about the inadequate relationship between therapists and themselves. The majority mentioned that they receive no precise and sufficient information on the drugs. In the study by Ershadpour et al. (2014), lack of correct information on the effect of drugs was one of the common reasons behind arbitrary use of drugs (28).

Similar results were obtained by Mortazavi et al. indicating that 99% of the participants were not aware of the possible side-effects of OTC drugs and mentioned that no information had been provided to them in this regard by pharmacists (29). In the study conducted by Naves et al. (2011), most of participants perceived the pharmacists as ordinary employees seeking only to increase profits and self-medication was identified as the dominant method of medication among the participants which was encouraged by their dissatisfaction with the quality of public health services; their participants also talked about the inadequate guidance on drug use provided by pharmacists which necessitates the provision of enough and correct training to patients for correct and effective manner of drug use (30). Patients' partial knowledge of drugs can affect its efficiency or even cause side-effects jeopardizing patients' health as well as that of the society (29). This may be rooted on one hand in therapists' and healthcare professionals' negligence in informing patients about the risks and side-effects resulting from incorrect use of drugs and on the other hand in patients' disregard of therapists' and experts' directions (3). Raising patients' awareness of drugs in such cases through consultation is of prime importance and demands therapists' and pharmacists' contribution (29). Healthcare professionals can resolve most of patients' ambiguities with regard to drugs by spending enough time on providing detailed and adequate information. For instance, therapists can discourage the arbitrary drug use through providing adequate information on the effects and side effects of drugs, and thus encourage patients to visit therapists for various problems occurring to them (31).

Some participants complained about poor governmental economic support and non-coverage of the majority of drugs by insurance. They voiced their expectations of support and cooperation from government for alleviating their therapeutic problems.

In the study conducted by Tabiee et al. (2012) (14) and Ershadpour et al. (2014) (28), lack of medical insurance coverage formed a part of participants' experience. According to Tabiee et al. (2012), the participants mentioned that as rural insurance covers only the hospitalization costs, then individuals, to avoid other costs, try to purchase OTC drugs or use the previously purchased drugs (14). As huge medical costs, which are mainly paid by patients, are usually coupled with their improper follow-up of their own medical affairs, the respective authorities' contribution in this regard and coverage of most of the therapeutic expenses by insurance can be effective solutions for this social problem.

Some participants talked about government's poor supervision over the distribution and availability of the majority of drugs. In fact, having easy access to OTC and rare drugs as one of the main causes accounts for individuals' tendency toward OTC drug use. The results obtained by Tabiee et al. (2012), conforming to those obtained by the present study, indicate that having access to free drug market, non-availability of drugs in drugstores, and accessibility of OTC drugs in pharmacies affect the prevalence of self-medication significantly (14).

As the purchase of such drugs can impose great economic pressure on families in addition to the adverse side-effects induced by such drugs, the assessment and introduction of a drug distribution supervision, management and monitoring process as one of the main responsibilities of health system authorities seem to be necessary (32).

5.2. False Self-Confidence

False self-confidence was the other main theme which included belief in non-riskiness/efficiency of self-medication, self-esteem in understanding health status, and good memories of healing as its subthemes. Some participants clarified their experience of OTC drug use by talking about their belief in the great efficiency and non-riskiness of these drugs. 28.9% of the participants in Tabiee et al.'s study (2012) counted the non-riskiness of these drugs as the reason behind their arbitrary drug use. In the study conducted by Wen et al. (2011), fast recovery and ease of access to these drugs were counted as the main reason for OTC drug use (33). It appears that the belief in non-riskiness of OTC drug use and having experience in treating illnesses are among the main factors of arbitrary drug use, and it is of great significance to identify and analyze the factors contributing to arbitrary drug use among various groups of society so as to decrease self-medication and its impacts (28).

Some participants talked about their keen perception of their health condition and full recovery through arbitrary drug use. Similar results were obtained by Ershadi

et al. (2014) who reported patients' casual attitude toward the issue as one of the main reasons for the dominance of self-medication (28). Similar results were obtained by other studies as well. In the study conducted by Tabiee et al. (2012), 77.2% of the participants considered self-diagnosis, knowing better about one's own health status, belief in their own diagnosis as being better than therapists' diagnosis, and not needing to visit their doctor as the reasons for OTC drug use (14).

Also, in the study conducted by Wen et al. (2011), the main reasons for self-medication were revealed to be lack of the need for visiting doctors for non-serious and minor illnesses such as cold, headache, fever, pain in the body, Indigestion, as well as fast recovery through self-medication (33).

Other studies also revealed that experiencing recovery and attaining positive results through self-medication were another reason for the tendency toward OTC drug use (14, 28). It can be claimed in this regard that initial, and perhaps a partial, recovery which may bring about severe and adverse side-effects was rooted in participants' false self-confidence. Raising participants' awareness can prevent many problems in future.

5.3. Perceived Personal Stonewalling

Some participants in the present study mentioned factors such as not having enough time for visiting their doctor, the high cost of visiting a doctor, and insurance not covering the cost of prescribed drugs, as well as being afraid of being diagnosed with an adverse condition as reasons behind permanent OTC drug use.

As the women participating in the present study were both employed and responsible for their family, they mentioned the necessity of waiting for long hours at doctors' offices as the reason behind not visiting doctors and using OTC drugs. Other studies have also yielded similar results. In a study, lack of enough time was mentioned as the reason for not visiting a doctor and using OTC drugs (28), and self-medication was identified more affordable in terms of money and time and also a cost-effective method by the participants in Wen et al.'s study (2011) (33). Arbitrary drug use was a common method among participants in the study conducted by Naves et al. (2010) which was accounted for by participants' dissatisfaction with the necessity to wait for long hours in doctors' offices (30).

Some participants complained about doctor's visit fees. They deemed as vain visiting doctors and filling prescriptions which are not covered by insurance as well; they also added that they could purchase the same drugs without visiting a doctor. The high cost of visiting a doctor as a significant factor shows up regularly in other studies as

well (14, 28) in which the researcher conclude that financial poverty depriving access to doctors as well as expensive visit fees encourage individuals' tendency toward self-medication. In the study conducted by Pagan et al. in 2006, it was revealed that there is a significant relationship between self-medication and economic condition of society and inaccessibility to healthcare professionals (34). Some people mentioned that they prefer OTC drugs as they are afraid of being diagnosed with adverse conditions. Ershadpour et al. (2014) also accounted individuals' fear of being diagnosed with serious illnesses and the necessity of various treatments as the reason for their self-medication and not visiting their doctor (28).

Another finding revealed by the present study was the relationship between OTC drug use and some demographic variables of participants. The interviews revealed that as women age, they tend to use more OTC drugs. However, Mortazavi et al. (2002) showed that there is no significant relationship between age and the level and period of OTC drug use (29). The other incompatible result was shown by Emmanuel et al. (2014) indicating that the younger the individual, the greater the tendency toward self-medication (15). Researchers account the cultural differences in the two communities as the reason for the contradictory results. The findings reveal that arbitrary drug use rises by an increase in individual's academic literacy and knowledge. Emmanuel et al. (2014) found no relationship between arbitrary drug use and level of individual's literacy (15). However, in agreement with the results of the present study, Davati et al. (2006) showed a significant relationship between arbitrary drug use and individuals' education level so that individuals with associate and higher education degrees had experienced arbitrary drug use within the last 3 months (3). Similar results were obtained by Porteous et al. (2005) (35) and Lukovic et al. (2000) (36). Educated individuals seem to believe they have a proper knowledge on drugs, and thus have a greater tendency toward arbitrary drug use which is a false sense of confidence (3). Also, the majority of women who decide not to visit their doctor stated a reason related to illnesses such as cold, headache, minor pain in the back or legs, and stomachache which were regarded as simple diseases not needing a doctor's examination and medication; self-medication in such cases starts with pain killers as well as drugs alleviating the symptoms of cold and fever. Various studies show a high consumption level of pain killers, vitamins, antibiotics, and Medicinal plants (15, 27). In the study conducted by Davati et al. (2006), the majority of used drugs included painkillers, digestive drugs, cold drugs, and sleeping pills (3).

According to the results of the present study, self-medication is identified by various factors as a signifi-

cantly health-threatening behavior. Thus, expansive and organized introduction of proper educational programs among different groups of society advising them against the serious side effects of arbitrary drug use can function as one of the effective factors for decreasing the levels of arbitrary drug use. The majority of people presuppose that OTC drugs are devoid of side-effects, while the same drug interactions and poisoning, which are commonly attributed to prescribed drugs, can be applied to OTC drugs as well.

It is worth to note that the prevalence of arbitrary drug use among educated groups of society may encourage the arbitrary drug use in other people and the public as the former group is more likely to be an example for other groups of society (28). Thus, further raising public's awareness of these drugs through various ways of information dissemination seems to be inevitable and necessary. To this end, promotion of a culture toward responsible drug use through frequently published newspapers, educational programs by the Broadcasting organization, as well as training courses offered at various private and governmental centers can effectively improve public's knowledge on various drugs. To prevent self-medication, various methods can be adopted, among which raising public awareness of self-medication consequences, training therapists and pharmacists to prescribe drugs correctly and offering advice to patients on prescribed drugs, as well as compiling catalogs and brochures can be mentioned. In this regard, pharmacists' advice on drug use can significantly decrease medical tariffs and self-medication.

Hopefully, huge steps could be taken toward resolving the problem addressed in the present study by the joint effort of the medical community of Iran and authorities of ministry of health and medical education.

5.4. Weak and Strong Points of Our Study

The present study reported women's perception about the use of over-the-counter drugs in Iran. The study will be useful to healthcare professionals to resolve the mentioned issues and improve, consolidate, and promote society's level of knowledge and health in the Iranian culture and context. This study focused on the women's perception about the use of over-the-counter drugs in the Iranian culture and context. Therefore, conducting further studies in different cultures and contexts is suggested in order to substantiate and follow up the present study findings, as well as to improve our knowledge regarding the different aspects of over-the-counter drugs use.

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Footnotes

Authors' Contribution: Parand Pourghane was responsible for the study conception and design; Parand Pourghane performed the data collection; Parand Pourghane, Fazlollah Ahmadi and Sanaz Salimi performed the data analysis; Parand Pourghane was responsible for the drafting of the manuscript; Fazlollah Ahmadi made critical revisions to the paper for important intellectual content.

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