



Article Type: Original Article

Self-Medication and its Determinants in Women of Reproductive Age in Gorgan city in 2018-2019

Mohammad Shokrzadeh ¹, Danial Jafari ², Reza Hoseinpoor ², Jafar Jalilian ³, Yaghoob Shayeste ^{*2}

1. Department of Pharmacology and Toxicology, Faculty of Pharmacy, Mazandaran University of Medical Sciences, Sari, Iran

2. Health Management and Social Development Research Center, Golestan University of Medical Sciences, Gorgan, Iran

3. Faculty of Pharmacy, Mazandaran University of Medical Sciences, Sari, Iran

Correspondence: Golestan University of Medical Sciences, Gorgan, Iran. Tel: +981732160330 Email: shayeste.yaghoob@gmail.com

Abstract

Background: Self-medication is an important concern for health authorities throughout the world. The women of reproductive ages were the most vulnerable groups at risk for self-medication in the society. The purpose of this study was to determine the frequency and some associated factors of self-medication in women of reproductive ages in Gorgan, north of Iran.

Methods: This cross-sectional study was carried out on 800 women of reproductive age (15-49 years) who were residents in Gorgan, in 2018-2019. Data were collected through home visits and interviews using a checklist with 19 questions. Data were analyzed in SPSS-16 using Pearson's chi-squared test.

Results: Self-medication was reported in 68.9% of reproductive ages. The majority of the self-medication was in the age range of 40-49 years (78.5%). The main cause for self-medication was found to be headache (68.6%) and common cold (57.7%). Most frequently, self-medication was related to pain killer drugs (90.6%) and NSAIDs (64.4%). Also, the major causes of self-medication were found to be the previous use experience (n=307) and availability of drugs at home (n=266). Finally, we found a significant association between self-medication with age, marital status, occupation, education, income, number of children and family size (p<0.05).

Conclusion: Self-medication, mainly in pain-killer drugs and NSAIDs were high among women of reproductive age in Gorgan. Therefore, it seems necessary to provide public trainings for all women of reproductive age and train them about the dangers and side effects of self-medication.

ARTICLE HISTORY

Received Feb 02, 2020

Accepted Mar 11, 2020

DOI: [10.29252/jgbfm.17.2.20](https://doi.org/10.29252/jgbfm.17.2.20)

Keywords:

Self-medication

Women

Reproductive history

Introduction

Given the significant progress of mankind in various scientific fields, we have now more access to various drugs, so that this easy access has become as a social harmful phenomenon due to the misuse and overuse of drugs (1).

Therefore, the uncontrolled use of drugs and generally self-medication has become a big social, health and economic problem of societies and can cause problems such as an increase in per capita drug consumption, drug resistance, lack of optimal treatment, poisoning, and unwanted drug side effects (1, 2).

According to studies, 65% of diseases are due to non-compliance with proper prescription patterns by physicians and irrational use of drugs (2).

The general self-medication can be done industrial or handmade, and through access to drugs without physician's prescription, using or distributing drugs prescribed for someone among family members and acquaintances, using the additional drugs in the house or self-medication by intake of main drug, either by additional use of drug or without any physician's prescription or non-full consumption of drug (3).

According to studies, the prevalence of self-medication has been reported 68% in European countries, 77% in the US, 92% in Kuwait, 31% in India, and 59% in Nepal. (4)

Similar studies indicated that the prevalence of self-medication varied from 12% to 90% in Iran (5); and estimate indicated that the rate of self-medication in Iran is three times more than the global average (6).

Iran is also among the top 20 countries in terms of drug use and is ranked second in Asia after China (7).

Studies on this issue indicate that every Iranian takes 339 drugs annually that is 2 to 4 times higher than the world standard. The per capita use of injectable drugs is also 4.11 in Iran that is 4 times more than the per capita use of other countries (1).

On the other hand, the self-medication frequency and pattern vary in different countries and regions, depending on socioeconomic status, demographic factors, level of access to medications, advertising of medicinal products, medical history of people, medicines available at home (8) as well as gender (9), especially female sex (10).

In this regard, it is important to pay attention to the population of women because of being in critical times such as pregnancy, lactation, as well as greater contact with family members and being a role model for them (2).

Studies have indicated that women have special tendency to self-medication and usually use medications to treat problems like dysmenorrhea, symptoms of menopause, menstrual disorders, mood disorders, prevention of osteoporosis as well as problems during pregnancy and lactation. All of these factors may underlie self-medication in women (3).

Previous studies indicated the greater self-medication in women, especially young women and those with certain conditions such as pregnancy, single person, illness or chronic health problems, and psychological and emotional problems (11).

Studies also indicate that the self-medication in women accounts for more than 13% of congenital malformations, and increases the probability of preterm labor by 2 to 3 times in pregnant women or leads to abortion and fetal malformations (3).

Given the high prevalence of self-medication in women, and because of their vulnerability, especially at the reproductive age, investigating the self-medication burden in women and identifying its relevant factors can help these individuals and healthcare providers to modify risky behaviors and promote women's health. The present study aimed to determine the frequency and some associated factors of self-medication in women of reproductive age in Gorgan.

Methods

This cross-sectional study was conducted in 2018-2019. Inclusion criteria were as follows: women's age of 15 to 49 years, living in Gorgan during the last 6 months, and consent to participate in the study. The incomplete questionnaires were excluded from the study. In the study, the self-medication referred to consumption of drugs without a prescription by a physician or therapist during the last three months, but the use of herbal remedies or traditional products, as well as chemical medications, which were consumed for more than three months after data collection, were not considered as the self-medication.

Sample size was estimated using the following formula. In this formula, the sample size was calculated to be 755 assuming that P (prevalence of self-medication in women) was 0.77 according to previous studies (11), z (confidence level) was 95% and d (error) was equal to 0.03. Due to the power of study, sample size was eventually 800.

$$n = \frac{z^2 \times P(1-p)}{d^2}$$

Sampling was performed using a randomized multi-stage clustering method. Therefore, Gorgan city was first divided into 50 geographical regions based on the population and 16 individuals were selected through health records from each region. Households were randomly selected in each region, and then all eligible women in the household were included in the study. If one or more eligible households were not present during the data collection at home, data of present individuals were collected and we referred for absent ones at another time (up to 2 times). Due to the uneven number of people living in households, the survey of households in that area was stopped whenever the required 16 individuals were completed in each neighborhood.

Data were collected through home visits and interviews. A checklist with 19 questions was considered as the data collection tool. The first part consisted of 10 questions about demographic characteristics (age, sex, marital status, occupation, household size, number of children, household income, health insurance, and type of insurance) and the second part consisted of 9 questions containing information about using the medication over the past three months, self-medication over the past three months, frequency of self-medication, illnesses or problems leading to self-medication, medication category, causes of self-medication, forms of medication, self-medication information source, and medication supply source.

The checklist was designed according to similar papers (1-6); and its validity was approved by experts in the field of pharmacology, toxicology and social medicine.

Data collection was performed by two graduates of toxicology and pharmacology. It took between 15 to 20 minutes to complete each checklist; and due to easier access and reduced household absences, checklists were completed in the evenings.

Before conducting the study, the protocol was approved in ethics committee of Golestan University of Medical Sciences (IR.GOUMS.REC.1396.271). The participants was ensured about their confidentiality, and then they sign the written consent form before participating in the study.

Data were analyzed in SPSS statistics for windows, version 16.0 (SPSS Inc., Chicago, Ill., USA) using descriptive statistics such as frequency, percentage, standard deviation and range of variation. Pearson Chi-square test was used to examine relationships of variables. The significance level of statistical tests was less than 0.05.

Results

In the present study, the majority of women were at the age range of 30-39 (47.9%), married (69.6%), high school degree (35.9%), housewives (39.5%), and with one or two children (85.6%). Findings indicated that 68.9% of women were self-medicated during the past three months. The highest rate of self-medication by women at the reproductive age was seen in the age group of 40-49 years (78.5%), divorced women (85.7%), married (73.8%), those with high school degrees (74.6%), and the employee (86.1%). Furthermore, self-medication was more prevalent in women with a household size of 5 and higher (72.3%); and it was more prevalent (86.7%) among women with 4 children and more. On the other hand, women with a monthly household income of more than 3 million RLS (about \$214) had higher self-medication (84.6%) than women with lower incomes. Moreover, women who had health insurance had higher self-medication than women without insurance, but the increase was not significant ($P=0.179$). In the field of self-medication in women of childbearing age according to type of insurance, social security insurance, which had the highest coverage in the statistical population, had the least frequency of self-medication than other insurances (66.4%). There were statistically significant relationships between self-medication and variables such as age, marital status, education, occupation, household size, number of children, monthly household income, and type of health insurance ($P<0.05$) (Table 1).

Table 1. Frequency distribution of history of self-medication in women according to demographic characteristics

Demographic characteristics	Yes		No		P-value	
	N	%	N	%		
Age (Years)	15-19	31	54.4	26	45.6	0.003
	20-29	154	71.3	62	28.7	
	30-39	253	66.1	130	33.9	
	40-49	113	78.5	31	21.5	
Marital status	Single	108	56.3	84	43.7	0.004
	Married	411	73.8	146	26.2	
	Divorced	24	85.7	4	3.6	
	Widow	8	34.8	15	65.2	
Education level	Primary school	5	23.8	16	76.2	0.003
	Secondary school	44	57.9	32	42.1	
	High school	214	74.6	73	25.4	
	Academic	288	69.2	128	30.8	
Occupation	Unemployed	23	65.7	12	34.3	0.003
	Housewife	210	66.5	106	33.5	
	School student	14	40	21	60	
	University student	50	56.8	38	43.2	
Household size	1-2	80	60.6	52	39.4	0.004
	3	184	71.8	72	28.1	
	4	200	68	94	32	
	≤5	86	72.3	32	27.1	
Number of children	1	150	76.1	47	23.9	0.003
	2	136	69.7	59	30.3	
	3	40	78.4	11	21.6	
	≤4	13	86.7	2	13.3	
Average income (Million RLS)	<2	195	63.3	113	36.7	0.004
	2-3	279	69.6	122	30.4	
	≤3	77	84.6	14	15.4	
Health insurance	Yes	517	69	232	31	0.179
	No	34	66.7	17	33.3	

Table 2. Frequency of illnesses leading to self-medication in women

Disease/ morbidity	N	%
Fever	99	18
Headache	378	68.6
Cold	318	57.7
Digestive problems	73	13.2
Cardiovascular diseases	38	6.9
Diabetes	16	2.9
Anemia	69	12.5
Insomnia and mental disorders	66	12
Eye problems	13	2.4
Skin problems	21	3.8
Genitourinary disorders	34	6.2
Bone, joint and muscle problems	26	4.7
Others	20	3.6

Table 3. Drugs used in the self-medication

Drug category	N	%
Analgesics	499	90.6
Non-steroidal anti-inflammatory drugs	355	64.4
Anti-cold	323	58.6
Antibiotics	198	35.9
Gastrointestinal drugs	77	14
Cardiovascular drugs	41	7.4
Anti-diabetes drugs	20	3.6
Sedative and hypnotic drugs	81	14.7
Ophthalmic drugs	13	2.4
Iron and Supplements	78	14.2
Others	54	9.8

Regarding the frequency of self-medication in the past three months, the mean frequency was 3.45 ± 5.17 times; and 11.4% had once self-medication, 27.8% twice, 18% three times, 47 individuals (8.8%) four times, and 189 individuals (34.3%) had five or more. Among drugs commonly used in the self-time of self-medication, the headache was the most common cause of illness leading to self-medication (68.6%) in the women, and then the cold was the second leading cause (57.7%) (Table 2).

Medication, the most common drug category was analgesics which were experienced by 90.6% of women with self-medication in the past three months. Non-steroidal anti-inflammatory drugs (64.4%) were ranked second (Table 3).

In terms of causes, according to women's views in the statistical population, 307 cases had self-medication due to previous experience of drug use; and 266 cases had self-medication due to the existence of drugs at home (Figure 1).

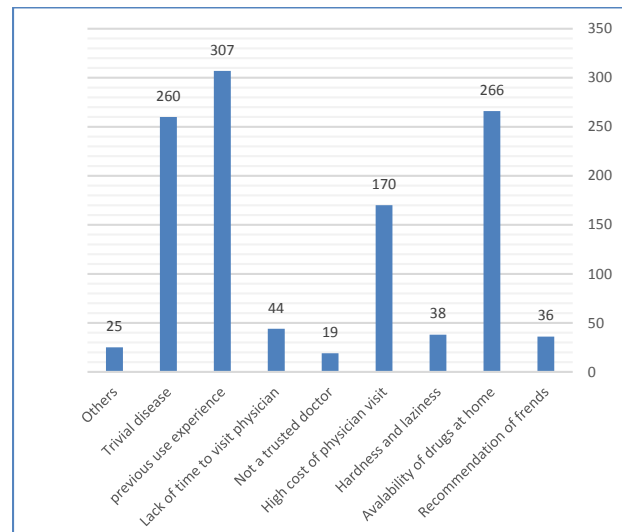


Figure 1: frequency of cause's self-medication in women

In terms of the drug form used in self-medication, most women experienced using pills (95.6%). In this regard, capsule (26.5%), syrup (19.6%), suppository (13.2%), ointment (12.3%), ampoule (11.8%), drops (4.2%) were put in the next ranks; and 7 individuals experienced drug in other forms (1.3%).

Concerning the information sources of women who participated in the study for self-medication, previous drug use experience (55.7%) was the first cause of self-medication. In this regard, the experience obtained from the previous prescription of physician (26.3%), information obtained from pharmacies (25.4%), friends and acquaintances (16.7%), health personnel (14.2%), family (12.9%), internet (5.6%), and other cases (1.5%) were other causes.

In the present study, women who had self-medication during the past three months, were more likely to supply their medications from pharmacies in the city (454 women, 82.4%), and medicines available at home (181 women, 32.8%), pharmacies in hospitals and medical centers (30 women, 5.4%), and other sources (27 women, 4.9%).

Discussion

The present study which aimed to determine the frequency and factors affecting self-medication of women at the reproductive age in Gorgan revealed that 68.9% of women had self-medication during the past three months. The percentage was higher than the results of some similar studies such as research in Yasuj in 2016, Hamadan in 2013 (13), Shahrud in 2016 (14), and Poland in 2013 (15). According to these results and despite the high prevalence of self-medication in some studies such as similar studies in Tehran in 2017 (11), Ahvaz in 2013 (16), and Bandar Abbas in 2016 (1) compared to the present study, the frequency of self-medication in the population of reproductive age in Gorgan can be assumed to be high. A reason for high prevalence of self-medication maybe is that the target population of study was only women and they showed a greater tendency to self-medication (12).

Regarding the age of women with self-medication, the highest prevalence was in those aged 40-49 years. In a study in Tehran, the highest prevalence occurred among women at the age of 31 to 40 years. Another similar study in the north of Iran (17) reported more self-medication over the age of 40 years. In a study in the south of Iran (16), the highest frequency was seen at the age of 15 to 25. Regarding the increasing burden of self-medication at an older age, it is worth noting that the increasing burden of disease and its resulting problems increases the need for medication in people that is fulfilled by self-medication in some cases.

Consistent with the results of a similar study in Tehran, the prevalence of self-medication in women was higher in those with high school and academic degrees. A research in Yasuj in 2016 also found that the individuals were more likely to have high school or academic degrees. Studies in Mazandaran province in 2014 (17) and Nigeria in 2012 (18) also indicated that women with self-medication were more likely to have academic degrees. In general, women with higher education are likely to be able to obtain sufficient information from drug sources or diagnose a disease for the next time after a few prescriptions and take medication using the previously prescribed drugs (12).

Among women with children, the highest self-medication occurred in those with 4 or more children. In a study in Semnan (14) and Markazi (1) provinces, the results were consistent with the present study. Since the higher number of children can make problems for some families to pay for their care, the self-medication has increased among these families. On the other hand, as the number of children increases and subsequently the mother's experience and awareness of diseases and medications increase, families may apply the self-medication (19).

In the present study, it was found that the self-medication was higher among households with higher incomes. A similar study in Ahvaz (16) also confirmed this issue, and it can be argued that either the tendency to use medication is so high that individuals may self-medicate regardless of their income level or the cost of medicines is low in Iran and people can easily afford and use them (1).

An important result of the present study was to identify problems or diseases leading to the self-medication, among which headache and cold were the most important ones. The results were consistent with studies in Rasht (16) and Isfahan (3). Similar study in Sabzevar also indicated that cold was the most important cause of self-medication and then the headache was the second most common cause (20). According to authors in this paper, attention to time and season of research could be also important. For instance, given the higher prevalence of cold and respiratory infections in winter, conducting research in this time range can affect increasing the burden of self-medication due to cold.

Analgesics and then non-steroidal anti-inflammatory drugs have been the most widely used drug class used for self-medication in women of reproductive age. A study in Tabriz (16) also indicated that analgesics were the most important drug category, and then antibiotics were in the second category. In a study in Pakistan (8), 61% of participants were using analgesics for self-medication.

As the leading causes of self-medication from participants' viewpoints, the previous drug use experience and consequently drug availability at home were the most important issues. In Yasuj, the first two causes of self-medication were consistent with the present study (12). In Isfahan, the high cost of visits and previous drug use experience were the most important causes of self-medication (3). In Tabriz, high costs and no feeling of need to visit a physician were the main reasons for participants' self-medication (16). In a study in Mexico, mistrust in physicians and the effectiveness of Traditional medicines were noted by individuals (21).

Limitations of the present study included the self-reported data collection, which might be due to participants' inadequate awareness or lack of confidence in the confidentiality of information that might lead to bias of data collection.

Conclusion

The present study indicated that the frequency of self-medication was higher in women of reproductive age in Gorgan than many studies. Furthermore, the prevalence of self-medication was significantly correlated with variables such as age, job, education, marital status, household size, household income level, and type of insurance. Headache and cold were the most important medical causes of self-medication. Analgesics and non-steroidal anti-inflammatory drugs were the most important class of drugs used in the self-medication. In the present study, having previous drug use experience and existence of drugs at home were the most important causes of self-medication from the participants' perspective.

Acknowledgements

The present paper was resulted from a research project approved by Golestan University of Medical Sciences with a code 961103263. The authors are grateful to the Health Management and Social Development Research Center and all participants. The authors also declared no conflict of interest among them.

References

1. Rezaie J, Hasani L, Mohseni S. The prevalence of self-medication and identify the reason of it in women referring to Health Centers in Bandar Abbas. *J Med Council Iran*. 2016; 34(1): 53-61. [Persian] [View at publisher] [Google Scholar]
2. Bagheri A, Eskandari N, Abbaszadeh F. Comparing the self-medication and supplement therapy in pregnant women in Kashan rural and urban areas. *J Mazandaran Univ Med Sci*. 2014; 24 (114):151-157.[Persian] [View at publisher] [Google Scholar]
3. Pirzadeh A, Sharifirad Gh. Knowledge and practice among women about self-medication based on health belief model. *J GorganUniv Med Sci*. 2011; 13 (4):76-83.[Persian] [View at publisher] [Google Scholar]
4. Tabiei S, Farajzadeh Z, Eizadpanah A. Self-medication with drug among university students of Birjand. *Modern Care J*. 2012; 9(4):371-8. [View at publisher] [Google Scholar]
5. Azami-Aghdash S, Mohseni M, Etemadi M, Royani S, Moosavi S, Nakhaee M. Prevalence and cause of self-medication in Iran: A Systematic Review and Meta-Analysis Article. *IJPH*. 2015; 44(12):1580-93. [View at publisher] [Google Scholar]
6. Ranjbar Ezzatabadi M, Rafiei S, Shafiei M, Dehghani Tafti A, Saghafi F, Bahrami MA and et al. Self-medication and contributing factors: A questionnaire survey among Iranian households. *Bali Med J*. 2016; 5(3): 376-380. [View at publisher] [DOI] [Google Scholar]
7. Amani F, Shaker A, Mohammadzadeh S, Sadegh M, Alaaf Akbari N, Sarraf Sesmaeili S. Drug use pattern between urban families in Ardabil city, Iran. *J Payavard Salamat*. 2012; 5(5):36-45. [Persian] [View at publisher] [Google Scholar]
8. Aqeel T, Shabbir A, Basharat H, Bukhari M, Mobin S, Shahid S and et al. Prevalence of self-medication among urban and rural population of Islamabad, Pakistan. *Trop J Pharm Res*. 2014; 13(4): 627. [View at publisher] [DOI] [Google Scholar]
9. Garofalo L, Di Giuseppe G, Angelillo IF. Self-medication practices among parents in Italy. *Biomed Research International*. 2015; 580650: 1-8. [View at publisher] [DOI] [Google Scholar]
10. Parvan J, Ashna S, Pandya P, Mitul R. Knowledge, attitude and practice of self-medication among under graduate MBBS students at tertiary care teaching hospital. *IJHSR*. 2015; 5(7):192-197. [View at publisher] [Google Scholar]
11. Botyar M, Kashanian M, Abadi ZRH, Noor MH, Khoramroudi R, Monfaredi M and et al. A comparison of the frequency, risk factors, and type of self-medication in pregnant and nonpregnant women presenting to Shahid Akbar Abadi Teaching Hospital in Tehran. *J Family Med Prim Care*. 2018; 7(1):124-129. [View at publisher] [DOI] [Google Scholar]
12. Waltz, C. F., & Bausell, B. R. Nursing research: design statistics and computer analysis. *New York: Davis FA*. 1981. [View at publisher]
13. Behroozpour A, Shams M, Mousavi M, Ostovar R, Maleki M. Self-Medication among Women in Yasouj City and Factors Associated with it: A Preliminary Study for Designing an Intervention Based on Health Belief Model. *SJSPH*. 2016; 14(3): 97-108. [Persian] [View at publisher] [Google Scholar]
14. Jalilian F, Hazavehei SM, Vahidinia AA, Jalilian M, Moghimbeigi A. Prevalence and related factors for choosing self-medication among pharmacies visitors based on health belief model in Hamadan Province, west of Iran. *J Res Health Sci*. 2013; 13(1):81-5. [View at publisher] [Google Scholar]
15. Ebrahimi H, Atashsokhan G, Amanpour F, Hamidzadeh A. Self-medication and its risk factors among women before and during pregnancy. *Pan Afr Med J*. 2017; 27(1):183. [View at publisher] [DOI] [Google Scholar]
16. Muras M., Krajewski J., Nocun M., Godycki-Cwirko M. A survey of patient behaviours and beliefs regarding antibiotic self-medication for respiratory tract infections in Poland. *Arch Med Sci*. 2013; 9(5):854-857. [View at publisher] [DOI] [Google Scholar]
17. Afshary P, Mohammadi S, Koshteh S, Pajohideh S Z, Tabesh H. Survey on prevalence and causes of self-medication in women referring to health centers in Ahwaz, in 2013. *Iran South Med J*. 2015; 18 (5):1034-1044. [Persian] [View at publisher] [Google Scholar]
18. Moayeri A, Aminshokravi F, Tavafian S, Moayeri A. Assessing Related Factors on the Illicit Use of Medications in Abbas Abad City(mazandaran): A Cross Sectional Study. *Sci J IlamUniv Med Sci*. 2014; 22(5):2014. [Persian] [View at publisher] [Google Scholar]
19. Osemene KP, Lamikanra A. A study of the prevalence of self-medication practice among university students in southwestern Nigeria. *TJPCR*. 2012; 11(4): 683-689. [View at publisher] [DOI] [Google Scholar]
20. Shamsi M, Bayati A. A survey of the prevalence of self-medication and the factors affecting it in pregnant mothers referring to health centers in arak city. *Pars journal of medical sciences: Jahrom Med J*. 2009; 7(4): 34-42. [Persian] [View at publisher] [DOI] [Google Scholar]

21. Kharghani Moghadam SM, Shojaiezadeh D, Mahmoudi M, Shojaiezadeh E, Farhandi H, Khalili H. Effect of education based on health belief model to prevent the arbitrary use of the drug in women referring to Health Centers sabzevar city. *J Health Syst Res.* 2014; 9(14):1876-1888. [Persian] [[View at publisher](#)] [[Google Scholar](#)]

How to Cite:

Mohammad Shokrzadeh, Danial Jafari, Reza Hoseinpoor, Jafar Jalilian, Yaghoub Shayeste. Self-Medication and its Determinants in Women of Reproductive Age in Gorgan city in 2018-2019. *Journal of Research Development in Nursing & Midwifery*, 2020; 17(2): 20-23

© Mohammad Shokrzadeh, Danial Jafari, Reza Hoseinpoor, Jafar Jalilian, Yaghoub Shayeste