

## ■ Original article

## Self-medication and related factors among university students in Iran

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### Abstract

**Background and Purpose:** Self-medication is a global medical issue, the rate of which has been reported to be on the rise in recent years. This study aimed to evaluate the prevalence rate of self-medication and the associated factors among the university students of Ahvaz city, Iran.

**Materials and Methods:** This cross-sectional study was conducted at Jundishapur and Shahid Chamran universities of Ahvaz, Iran in 2015. In total, 680 university students were selected from 16 different medical and non-medical schools to participate in this study. Using the easy sampling method, 45 students were selected from each school. Data collection tools included the socio-demographic questionnaire and a researcher-made questionnaires consisting of 12 items to evaluate self-medication. Data analysis was performed in SPSS V.20 using descriptive statistics (mean and standard deviation), independent T-test, and Chi-square test.

**Results:** In this study, prevalence rate of self-medication among the selected university students was 81.6%. The most frequent medicines used by the students were adult cold (69.05%), analgesics (48.23%), and antibiotics (31.02%). Moreover, preventive factors of self-medication among the subjects included family and friends (96.32%), lack of belief in the effectiveness of self-medication (93.82%), and fear of the complications associated with self-medication (88.97%).

**Conclusion:** According to the results of this study, university students had a positive attitude toward self-medication. Therefore, it is recommended that the knowledge and attitude of these individuals be promoted through the implementation of related training programs in order to reduce public tendency toward self-medication.

**Keywords:** Adverse effects, Self-medication, Students, Therapeutic use, University

### Introduction

Self-medication is defined as the use of therapeutic drugs without the professional recommendation of a medical expert (1). Rate of self-medication has been reported to be on the rise in recent years, which has been associated with numerous problems in the social, economic, and health status of different societies (2).

Self-medication is a widespread issue in developed and developing countries (3), and

statistics suggest different prevalence rates for this medical concern. In the United States, the prevalence rate of self-medication has been reported to be 77%, while it has been estimated at 68% in European countries. Moreover, prevalence of self-medication in the Middle East has been reported to be significantly higher than Western countries; for instance, this rate has been estimated at 92% and 83.3% in Kuwait and

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Iran, respectively (1, 4).

The most frequent therapeutic drugs used for self-medication are analgesics, anti-malarial medications, antibiotics, and cough medicines (5). According to one study conducted in Iran, antimicrobial agents account for the highest income of Iranian pharmaceutical companies (91 million dollars), followed by central nervous system drugs (61 million dollars), and gastrointestinal medications (35 million dollars) (6).

Recently, antibiotic self-medication has been shown to cause several complications in individuals; such examples are bacterial resistance, non-optimal treatment, and undesirable side effects (7). In developing countries, some of the common causes of self-medication are high costs of medical care, substandard treatment and patient management, poor medication distribution, and inefficient control of the production and distribution of therapeutic medicines (8).

Self-medication is influenced by several factors, including the age, gender, education level, socioeconomic status, and availability of medications for individuals (9).

As the sophisticated class of the society, self-medication among university students could lead to substantial social and health issues (10). Previous studies in this regard have denoted the high prevalence of self-medication practice among academic students (3, 4, 9, 10).

Considering the fact that Iran has the largest youth population and the majority of these individuals are academic students, self-medication needs of this population requires special attention. However, information is scarce regarding the exact causes and mechanisms of self-medication among the university students in Iran. This study aimed to evaluate the prevalence of self-medication and the associated factors among the university students of Ahvaz city, Iran.

## Materials and Methods

### *Study design and setting*

This cross-sectional study was conducted at Jundishapur and Shahid Chamran universities of Ahvaz city, located in the southwest of Iran.

### *Participants and sample size*

In total, 680 academic students selected from 16 different medical and non-medical schools were enrolled in this study. Using the easy sampling method, 45 students were selected from each school.

### *Data collection tools*

In this study, data were collected via interviews with the selected students using a socio-demographic questionnaire. In addition, a researcher-made questionnaire consisting of 12 items was used to evaluate self-medication. Items in the self-medication questionnaire were scored based on a five-point Likert scale (completely agree=5, completely disagree=1). Validity of this questionnaire was confirmed via content validity. To do so, the questionnaire was reviewed by 10 faculty members to apply their comments. To confirm the reliability of this questionnaire, we used the test-retest method. In this process, 30 students who met the inclusion criteria completed the questionnaire at the beginning of the study, and the questionnaires were completed again after two weeks. Moreover, reliability of the questionnaire was calculated at 0.71 using the Pearson's correlation-coefficient, and Cronbach's alpha was estimated at 0.64.

### *Statistical analysis*

Data analysis was performed in SPSS V.20 using descriptive statistics (mean and standard deviation), independent T-test, and Chi-square test. Study protocol was approved by the Ethics Committee of Jundishapur University of Medical Sciences (no. 93s.13), and written informed consent was obtained from all the participants prior to data collection.

## Results

In this study, 404 of the students (59.41%) were selected from Jundishapur University of Medical Sciences (AJUMS) of Ahvaz, and 276 (40.59%) were selected from Shahid Chamran University of Ahvaz. Mean age of AJUMS students was  $22.25 \pm 2.1$  years, while it was  $22.79 \pm 3.2$  years in

**Table 1.** Prevalence of self-medication in students of Jundishapur University and Shahid Chamran University in 2015

Socio-demographic Characteristics	Jundishapur University	Chamran University
	Frequency (%)	Frequency (%)
Male	192 (47.77)	130 (47.84)
Female	212 (52.23)	146 (52.16)
Single	388 (96.04)	255 (92.39)
Married	16 (3.96)	21 (7.61)
Bachelor's Degree	305 (72.36)	174 (61.33)
Master's Degree	15 (6.9)	96 (34.78)
PhD Candidate	84 (20.79)	6 (4.34)

**Table 2.** Distribution of prevalence of different causes of self-medication in university students

Cause	Completely Agree	Agree	No Comment	Disagree	Completely Disagree
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
Having Similar Symptoms to Previous Disease	183 (26.9)	312 (45.9)	130 (19.1)	36 (5.3)	19 (2.8)
Lack of Access to Physician	41 (6)	212 (31.2)	192 (28.2)	166 (24.4)	69 (10.2)
Belief in Self-medication	71 (10.4)	245 (36)	205 (30.1)	118 (17.4)	41 (6.01)
High Cost of Physician Visit	92 (13.5)	157 (23.1)	186 (27.4)	142 (20.9)	103 (15.1)
Easy Access to Therapeutic Medicines	124 (18.2)	273 (40.1)	159 (23.4)	86 (12.6)	38 (5.7)
Lack of Time to Visit Physician	103 (15.1)	230 (33.8)	192 (28.2)	121 (17.9)	34 (5)

the students of Chamran University. Demographic characteristics of the participants are presented in Table 1.

According to the results of this study, prevalence rate of self-medication among the university students was 81.6%. The most common medicines used by the students were adult cold (69.05%), analgesics (48.23%), and antibiotics (31.02%). Moreover, preventive factors of self-medication for the subjects included family and friends (96.32%), lack of belief in the effectiveness of self-medication (93.82%), and fear of the complications associated with self-medication (88.97%).

In this study, a significant association was observed between the self-medication of students and type of university. In other words, 85.6% of AJUMS students believed in self-medication, while only 75.7% of the students of Shahid Chamran University believed in the efficacy of this therapeutic measure

( $P=0.001$ ). In addition, the results of this study were indicative of a significant correlation between self-medication and marital status ( $P=0.004$ ) and socio-economic status ( $P=0.03$ ) of AJUMS students. Variety distribution and the associated factors of self-medication among the selected university students are shown in tables 2 & 3.

## Discussion

According to the results of the present study, 81.6% of the selected university students believed in the effectiveness of self-medication, which denotes the positive attitude of these individuals toward self-medication. Findings of one study in this regard were indicative of the positive attitude of students toward self-medication (12). However, the positive attitude of the students was reported to be moderate (13), which was inconsistent with the

**Table 3.** Distribution of prevalence of different causes of self-medication in university students

Cause	Completely Agree	Agree	No Comment	Disagree	Completely Disagree
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
Lack of Belief in Treatment of Physicians	56 (8.2)	159 (23.4)	196 (28.8)	195 (28.7)	74 (10.9)
Recommendation of Other Patients or Friends	53 (7.8)	224 (32.9)	217 (31.9)	132 (19.5)	54 (7.9)
Previous Experience of Disease	148 (21.8)	344 (50.6)	144 (21)	30 (4.4)	14 (2.2)
Easy Access to Medicine without Physician Visit	83 (12.2)	320 (47.1)	166 (24.4)	93 (13.7)	18 (2.6)
Availability of Medicines	99 (14.6)	315 (46.3)	179 (26.3)	67 (9.9)	20 (2.9)
Desirable Outcome by Arbitrary Use of Previous Medicine	104 (15.3)	325 (47.8)	159 (23.4)	80 (11.8)	12 (1.7)

results of the present study. This difference could be due to cultural and environmental diversities in the study populations.

According to the results of the current study, factors such as the occurrence of symptoms similar to previous diseases, effectiveness of previous self-medication, easy access to therapeutic drugs, and ability to purchase medicines from pharmacies without prescription were the most frequent causes of self-medication. In another study in this regard, one of the most common causes of self-medication was the ability to purchase medicines from pharmacies without prescription (14).

Findings of the present study indicated that medical students have a higher tendency toward self-medication since they are familiar with different pharmaceutical drugs and their influence on the body. It seems that drug awareness among medical students has doubled the rate of self-medication in this population since they have more courage to use new therapeutic drugs for self-medication. However, the results of another study in this regard demonstrated that self-medication was more common among non-medical students (15).

In the current research, the most common medicines used by the university students for therapeutic purposes were painkillers, cold medications, and antibiotics. This could be due to the availability and inexpensiveness of these pharmaceutical drugs. Similarly, findings of another research in this regard reported analgesics as the most common therapeutic drugs used for self-medication (16). Furthermore, the most common medicines in self-medication were reported to be analgesics, antibiotics (14), and antihistamine (13) in another study, while the results of one survey in this regard denoted the high consumption rate of vitamins for self-medication (17).

With respect to demographic characteristics in the present study, a significant association was observed between the marital status and self-medication of the selected university students; as such, rate of self-medication was higher among single participants. This finding was in congruence with the results of another study, in which the prevalence rate of self-medication was reported to be higher among single

subjects compared to married ones.

## Conclusion

According to the results of this study, university students had a positive attitude toward the effectiveness of self-medication. In this regard, results of a survey conducted in Iran in 2014 reported the prevalence rate of self-medication at 11.4%, which was four times higher than the average per capita medicine consumption in developing countries. Control of inappropriate medication intake involves the reinforcement of cultural beliefs and providing adequate education and information for different patients. Therefore, it is recommended that the knowledge and attitude of individuals be promoted through developing specific training programs and educational strategies regarding self-medication.

## Conflicts of interest

None declared.

## Authors' contributions

All the authors participated in the writing of the scientific proposal, data collection, and drafting of the manuscript.

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