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...
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±2.1 years, while it was 22.79±3.2 years in
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 socioeconomic 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.

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

<table>
<thead>
<tr>
<th>Socio-demographic Characteristics</th>
<th>Jundishapur University</th>
<th>Chamran University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>192 (47.77)</td>
<td>130 (47.84)</td>
</tr>
<tr>
<td>Female</td>
<td>212 (52.23)</td>
<td>146 (52.16)</td>
</tr>
<tr>
<td>Single</td>
<td>388 (96.04)</td>
<td>255 (92.39)</td>
</tr>
<tr>
<td>Married</td>
<td>16 (3.96)</td>
<td>21 (7.61)</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>305 (72.36)</td>
<td>174 (61.33)</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>15 (6.9)</td>
<td>96 (34.78)</td>
</tr>
<tr>
<td>PhD Candidate</td>
<td>84 (20.79)</td>
<td>6 (4.34)</td>
</tr>
</tbody>
</table>

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

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

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

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

1. Jayasuriya DC. Let pharmacists do more for health
   in developing countries. World Health Forum 1994;
2. Masoudi Alavi N, Izadi F, Ebadi A, Hajbagheri A. Self-
   treatment experience in diabetes mellitus type 2. Iran J
3. Osemene KP, Lamikanra A. A Study of the prevalence
Self-medication in university students