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THE SELF-MEDICATION TREND: A CROSS-SECTIONAL STUDY AMONG YOUNG ADULTS IN ACADEMIA

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Abstract: *Self-medication is a widespread global health concern, particularly prevalent among university students. This practice poses significant risks, as students often engage in self-medication without the guidance of healthcare professionals. Our study examines the prevalence and factors contributing to self-medication among university students. We conducted a cross-sectional study involving 800 university students to gain insight into this phenomenon. Our findings reveal that self-medication is a common practice, with approximately 62.9% of students engaging in it. Similar trends were observed in various countries, such as India and Iraq, where self-medication rates reached approximately 92%. Reasons for self-medication among students include the perception of mild health issues not necessitating a physician's consultation, time constraints, past experiences with medications, advice from peers, cost avoidance, easy access to medications, and the desire to minimize waiting times. These findings underscore the urgent need for educational and awareness campaigns targeted at university students to promote responsible self-care and the dangers of self-medication. Healthcare institutions and policymakers should collaborate to address this pressing issue and develop strategies to ensure the health and safety of students.*

Keywords: *Self-medication, University students, Health issues, Medication practices, Health awareness*

Introduction

The use of self-medication is a global health issue (Sarahroodi, Maleki-Jamshid, Sawalha, Mikaili, & Safaeian, 2012), and it represents a health problem among universities students (Klemenc-Ketis, Hladnik, & Kersnik, 2010). It's described in the literature (Helal & Abou-ElWafa, 2017; Al-Ameri, Al-Badri & Lafta, 2017; Badiger et al., 2012). A cross-sectional study of 800 university student found that approximately 62.9% of the students used self-medication (Helal & Abou-ElWafa, 2017). Approximately, 92% of the university students used self-medication in India (Badiger et al., 2012), and in Iraq (Al-Ameri et al., 2017).

The reasons for using of self -medications by university students include: the belief that health problems were mild and did not deserve a physician consultation (Gama & Secoli, 2017; Albusalih, Naqvi, Ahmad & Ahmad, 2017; Sawhney et al., 2017). Lack of time to consult a physician (Gama & Secoli, 2017; Shehnaz, Khan & Sreedharan, 2013) and prior experience with medications (Albusalih, et al., 2017; Shehnaz, Khan, & Sreedharan, 2013) were another reasons also. Furthermore, advice from friend and to avoid cost of consultation (Shehnaz, Khan, & Sreedharan, 2013). Lastly, ease of access to medications (Syed et al., 2014) and to avoid long waiting time (Gutema et al., 2011).

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The main sources for self-medication among university students include: the pharmacy (Bunduki, Mumbere, & Mbahweka, 2017; Rock Britto, Elango, Shilpa Charles, Shyamala Priya, & Sivaranjan, 2017;), friends and relatives (Rock Britto et al., 2017; Ahmadi et al., 2016; Gutema et al., 2011), private clinic and hospital (Bunduki et al., 2017). A number of health conditions were found to promote students' use of self-medication; these were headache, cold and fever (Ahmadi, Jamshidi, Sadeghi, Abdi, & Vahid, 2016; Syed, Naseer, Memon, & Rani, 2014; Saeed et al., 2014; Badiger et al., 2012). In Iran, other health conditions such as allergy, insufficient vitamins and minerals, respiratory disease, and gastrointestinal problems were reported (Zardosht et al., 2016). While, in Pakistan, storage of medications for multi-purposes, occasional pain, common infections, and cough/cold were the health conditions that promote use of self-medication (Ullah et al., 2013).

Previous studies revealed that the analgesics, antibiotics, and antipyretics were the most commonly used self-medications among university students (Al-Ameri et al., 2017; Sawhney, Bhat, & Singh, 2017). A cross-sectional study from Iran found that cold and cough medications were the most commonly used medications followed by analgesics, antihistamines, herbal drugs, vitamins, dietary supplements, minerals, energizers, and antibiotics (Zardosht et al., 2016).

In Jordan, previous studies focused on the assessment of self-medication among public schools' students (ALBashtawy, Batiha, Tawalbeh, Tubaishat, & AlAzzam, 2015), and among students of medical faculties in public universities (Alkhatatbeh, Alefan, & Alqudah, 2016). The current study explored self-medication phenomena among university students. That is, it assessed the prevalence self-medication among Jordanian universities students. Health conditions that promoted universities students to use self-medication was also explored and lastly main reasons and source for self-medication were investigated.

2. Methods

2.1 Design

A cross-sectional study was conducted to assess the prevalence of self-medication, the type of medication students uses, health conditions that promote self-medication use, and source of self-medications among the students from September to October 2019.

2.2 Participants

A convenient sample of 150 universities students participated in the current study. Inclusion criteria were: Student registered for the first semester 2019-2020.Student has Jordanian nationality.

The exclusion criteria were being an international student.

2.3 Instrument

The questionnaire, which was based on the literature review, consisted of three parts: Socio-demographic: This part was used to gather data on each student's age (years), gender (male or female), faculty (medical; nursing & pharmacy) and (non-medical; humanities, economic & accounting), level of academic year (first, second, third, fourth or more).

Use of self-medication: This part was assessed retrospectively by asking students the following: Have you used medications by yourself (without prescription and without seeking medical consultation) in the past 6 months? For positive responses, students were then asked, What medications have you used? And, what is the purpose (health conditions/disease) of taking these medications?

Reasons for self-medication and medication source: Reasons behind self-medication were assessed by asking students the following: What are the reasons that force you to use medications by yourself (without medical prescription)?

Medication source was assessed by asking students the following: What are the sources of self-medication?

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2.4 Ethical Considerations

The study was approved by ethics committee of the University. Preceding data collection, the aim of the study was clarified to students, and informed consent was obtained. Also, anonymity and confidentiality of the students were maintained.

2.5 Statistical Analysis

Descriptive statistics (frequencies, mean and percentages) were applied to analyze data using Statistical Package for Social Sciences (SPSS) version 17.

3. Results

3.1 Characteristics of students

Of the 150 students that participated in the present study, 81 (54.0%) were females. The mean age of participants was 24.93 years old (SD = 5.894). The faculties were classified into: medical faculties 68 (45.3%), and non-medical 82 (54.7%). The dominant group among the students was the fourth year & more students 66 (44.0%), whereas the least represented group was first year students 18 (12.0%) (see Table 1).

TABLE 1 Characteristics of students (N = 150)

Variables	**Frequency**	**Percentage (%)**	**Mean (S.D)**
Age			24.93 (5.894)
Gender:			
Male	69	46.0	
Female	81	54.0	
Faculty:			
Medical faculties	68	45.3	
Nonmedical faculties	82	54.7	
level of academic year			
First year	18	12.0	
Second year	27	18.0	
Third year	39	26.0	
Fourth year & more	66	44.0	

3.2 Use of self-medication

About 104 (69.3%) of the students had used the self-medication at least once in the past 6 months and about 46 (30.7%) had not used the self-medication. Among the students who used the self-medication in the past 6 months, the most frequent medications for use were analgesics 92(61.3%), cold & cough medications 87(58.0%) and antibiotics 85(56.7%), while the less frequent medications for use were antispasmodic 5(3.3%), stimulants 5(3.3%) and psychotropic medications 1 (0.7%) (see Table 2).

Table 2 Use of Self-Medication (N = 150)

	Frequency	**Percentage (%)**
Use of self-medication		

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Yes	104	69.3
No	46	30.7
Medication used:		
Analgesics	92	61.3
Cold & cough medicines	87	58.0
Antibiotics	85	56.7
Antipyretics	80	53.3
Herbals	73	48.7
Antacids	47	31.3
Vitamins & nutritional complements	43	28.7
Medications for treatment of hair & skin diseases	39	26.0
Applied Creams	31	20.7
Aspirin	24	16.0
Anti- emetics	20	13.3
Antihistamines	19	12.7
Anti-diarrheal	17	11.3
Laxatives	15	10.0
Antidepressants and Anti-anxiety	9	6.0
Cardiovascular medications	7	4.7
Antispasmodic	5	3.3
Stimulants	5	3.3
Psychotropic medications	1	0.7

3.3 Health conditions for self-medication

The most common health conditions behind self-medication were headache 97(64.7%), cold and flu 94 (62.7%), fever 78(52.0%), while the less frequent health conditions for self-medication use were psychological problems 14(9.3%), Skin diseases 14(9.3%), and Bacterial & viral infections 14(9.3%) (see Table 3).

TABLE 3 Health conditions that make students use self-medication (N = 150)

	Frequency	**Percentage (%)**
Health conditions for self-medication:		
Headache	97	64.7
Cold and flu	94	62.7
Fever	78	52.0
Toothache	66	44.0
Allergy	41	27.3
Nausea/vomiting	39	26.0
Constipation	34	22.7
Inability to sleep	34	22.7
Acid reflux	30	20.0
Muscle Spasm	29	19.3

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Diarrhea	28	18.7
Respiratory problems	26	17.3
Eye Problems	25	16.7
Weight loss or gain purpose	23	15.3
Dysmenorrhea	20	13.3
Genitourinary infections	17	11.3
Psychological problems	14	9.3
Skin diseases	14	9.3
Bacterial & viral infections	14	9.3

3.4 Students's Perception of Reasons Affecting Their Use of Self-Medication

Table 4 shows that the main reasons behind use of self-medication were related to ease of access to medication 54(36.0%), advice from friend 49 (32.7%), lack of time to consult physician 41(27.3%), long waiting times for treatment 40 (26.7%), hospital medications do not work 30(20.0%), the hospital or clinic is very far away 28 (18.7%). Cost of consultation 26(17.3%) was the reason least perceived by students to affect their use of self-medication.

TABLE 4 Reasons for self-medication (N = 150)

Reason	**Frequency**	**Percentage (%)**
Ease of access to medications	54	36.0
Advice from friend	49	32.7
Lack of time to consult physician	41	27.3
Long waiting time	40	26.7
Hospital medications do not work	30	20.0
The hospital or clinic is very far away	28	18.7
Cost of consultation	26	17.3

3.5 Source of self-medication

The most common source for self-medication was pharmacy 88(58.7%), while the less frequent source for self-medication was friends' 31(20.7%) (see Table 5).

TABLE 5 Source of self-medication (N = 150)

Source	**Frequency**	**Percentage (%)**
Pharmacy	88	58.7
Available in home	74	49.3
Hospital	47	31.3
Health staff	47	31.3
Previous prescription	43	28.7
Friends	31	20.7

4. Discussion

In the present study, the rate of self-medication among university students in the past 6 months was 69.3%, and this is close to the rate reported in previous literature (Helal & Abou-ElWafa, 2017) but, less than the prevalence that was found among university students in other countries (Al-Ameri et al., 2017; Badiger et al., 2012). One explanation for such difference could be attributed to the discrepancy in demographic characteristics, socioeconomic status, and because of differences in methodologies and recall periods used to assess the use of self-medication among university students. there is a need to increase students' awareness on appropriate use of self-medications because of many risks of self-

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medication (e.g.: medication adverse effects and dependency, medication and food interaction, and resistance of microorganisms) (WHO, 2000).

The current study found that analgesics, cold & cough medications and antibiotics were the most frequent self-medications used among the university's students, which is in line with previous international studies (Al-Ameri et al., 2017; Zardosht et al., 2016; Sawhney et al., 2017). The irresponsible or/and overuse of analgesics self-medication is associated with side effects (Sarahroodi et al., 2012). For example, misuse of Non-Steroidal Anti-inflammatory Drugs (NSAIDs) may cause renal failure and hepatic dysfunction (Bashrahil & Baruzaig, 2008). As well, the use of antibiotics self-medication contributes in the development of resistance of microorganisms to antibiotics (Morgan, Okeke, Laxminarayan, Perencevich, & Weisenberg, 2011). There is a need to increase university students' awareness regarding complications and contraindications of these medications in order to avoid the complication of using it. Future research needed to assess the use of analgesics and antibiotics self-medication in details among the university students in Jordan.

In the current study, the main health conditions behind using self-medication were headache, cold and flu, and fever. This is similar to many other prior studies (Ahmadi et al., 2016; Syed et al., 2014; Saeed et al., 2014; Badiger et al., 2012).

University students in the current study and previous studies used self-medication because the ease of access to medication (Ahmadi et al., 2016), and advice from friend. Cost of consultation (Shehnaz et al., 2013), lack of time to consult physician (Gama & Secoli, 2017; Shehnaz et al., 2013), and long waiting times for treatment (Gutema et al., 2011) were another motivating factor.

The current study found that pharmacy was the main source for self-medication. Other frequent sources were available in home, hospital, health staff, previous prescription and friends. These findings were close to other recent study (Bunduki et al., 2017; Rock Britto et al., 2017; Ahmadi et al., 2016; Zardosht et al., 2016). Consequently, the pharmacist's role is important by selling medications only with medications prescriptions.

4.1 Limitations of the Study

Use of self-medication was self-reported which may result in recall bias. Nevertheless, it was measured as a dichotomous variable, which is easier to recall.

4.2 Conclusion and Recommendations

The findings reflected high rates of use of self-medication among Jordanian universities students. This study added to the body of knowledge in nursing regarding health-seeking behavior of the university students, which will help in promoting university students' health. Future plans to improve universities students' health must address the reasons that force student to use self-medication. Solutions to address this problem might consist of (a) offer health education programs to raise awareness of the university students regarding the possible problems of self-medication use to reduce risks; and (b) enforce medication laws and manage the pharmacies medications sale.

Conflict of Interest

No conflict of interests concerning the publication of the present study.

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