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Self-Medication Use and Associated Factors among University Students

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Abstract: Self-medication use is a rising health issue in youth. The current study aimed to evaluate the use of self-medication among university students. Data were gathered from 200 university students with a cross-sectional study design and a self-reported questionnaire. In the past 6 months, about 67.5% of the university students used self-medication. The use of self-medication among university students was associated with age, gender, type of faculty, smoking, and income. The main predictor of university students' use of self-medication at 6 months was gender (OR = 0.465). While several factors were associated with the university students' use of self-medication, gender was the main predictor. Future longitudinal studies are needed to get further data about more predictive factors of self-medication use among university students.

Keywords: self-medication, university students, Jordan.

大学生自我用药情况及影响因素

摘要：自我用药是青年人日益严重的健康问题。目前的研究旨在评估大学生自我药疗的使用情况。数据来自 200 名大学生，采用横断面研究设计和自我报告问卷。在过去的 6 个月中，约有 67.5% 的大学生使用过自我药疗。大学生自我药疗的使用与年龄、性别、教师类型、吸烟和收入有关。大学生在 6 个月时使用自我药疗的主要预测因素是性别（优势比 = 0.465）。虽然有几个因素与大学生使用自我药疗有关，但性别是主要的预测因素。需要未来的纵向研究以获得关于大学生自我药物使用的更多预测因素的进一步数据。

关键词：自我药疗，大学生，约旦。

1. Introduction

Self-medication use is a rising health issue in youth [1], [2], [3], [4], [5], and this term refers to the use of medication without a physician's consultation [6]. Inappropriate use of self-medication may carry risks of

incorrect disease diagnosis, drug side effects and interaction, and antibiotic resistance [7], [8].

International studies evaluated self-medication among university students with differences among countries. In the study conducted among medical students in Belgrade, 79.9% of students reported that

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they used self-medication [9]. In the Middle East countries, earlier studies found that the prevalence ranged from 92.4% in Iraq [10] to 62.9% in Egypt [11].

The use of self-medication by university students are associated with many factors: gender [9], [10], [11], [12]; income [12]; age [9]; and type of faculty [10], [11], [13]. Although studies regarding youth health issues are available [14], [15], [16], [17], [18], [19]. There are scarce studies available regarding the factors that influence the use of self-medication among Jordanian university students. Thus, the present study aims to look at factors associated with self-medication by university students in Jordan.

2. Methods

A cross-sectional study was carried out to look at the factors associated with and predict the use of self-medication by university students in the past 6 months in northern Jordan. The study period was from 1st February to 1st April 2021.

This study was conducted at three different universities north of Jordan. A convenient sample of 200 students from medical and non-medical faculties participated in the current study. Nursing and pharmacy are designated as medical faculties, whereas other faculties are designated as non-medical. Students who were registered for the second semester 2020–2021 and have Jordanian nationality were included in the study. Researchers created an online survey, approached university students through social media, and requested that they complete the survey.

Dependent variable: Use of self-medication. Students were asked: Have you used medications yourself (without medical consultation and prescription) in the past 6 months?

Independent variables: Student's age (years); gender (male or female); marital status (single, married, divorced or separated, and widowed); employment (employed or unemployed), income (Jordanian Dinar per month); smoking (smoker or non-smoker); faculty (nursing, pharmacy, economic & accounting, and humanities); level of the academic year (first, second, third, fourth or more year); chronic illnesses (have/do not have a chronic illness); and perceived general health status (good or bad).

The Ethical Committee of the university approved the present study. Written informed consent was obtained from all participants after a full explanation of the study and its aim. In addition, participants were informed that the data collected would be treated with confidentiality and anonymity.

Descriptive analysis (percentages, means, and standard deviations) was performed to describe the participants. Pearson's test and chi-square test were conducted to look at the association between dependent and independent variables. One logistic regression

model was developed for use and non-use of self-medication by the university students over the past 6 months. The statistically significant level was accepted at $p < 0.05$.

3. Results

The study participants were 200 students. The mean age was 25 years. There were 103 female students (51.5%), and 154 were single (77%). Of the students, 119 (59.5%) were from non-medical faculty, and 87 (43.5%) were in the fourth and more academic year. Approximately 106 (53%) students were unemployed, and more than two-thirds were non-smokers. The mean monthly income for each student was 358 Jordan Dinar (JD). About 18 (9%) of the students had chronic illnesses. Most students perceived their general health status in the past 6 months as good (Table 1).

Table 1 Descriptive statistics of the participants (n = 200)

Variables	N(%)	Mean (S.D)
Age (in years)		25 (6.20)
Gender:		
Male	97 (48.5%)	
Female	103 (51.5%)	
Marital Status:		
Single	154 (77%)	
Married	43 (21.5%)	
Divorce or separated	3 (1.5%)	
Widowed	---	
Faculty		
Medical (Nursing & Pharmacy)	81(40.5%)	
Non-medical (Humanities, Economic & accounting)	119(59.5%)	
Academic Year Level		
First year	20(10.0%)	
Second year	41(20.5%)	
Third year	52(26%)	
Fourth year and more	87(43.5%)	
Employment Status		
Unemployed	106 (53%)	
Employed	94 (47%)	
Smoking		
Non-smoker	145(72.5%)	
Smoker	55(27.5%)	
Income (Jordanian Dinars (JD) /Month)		358 (108.8)
Chronic Illnesses		
No chronic illnesses	182(91%)	
Have chronic illnesses	18(9%)	
Perceived general health status in past 6 months		
Good health	182(91%)	
Bad health	18(9%)	

About two-thirds of the university students had used self-medication in the past 6 months 135(67.5%). Factors strongly associated with increased use of self-medication in the past 6 months were: (a) increasing age; (b) female students; (c) student of medical faculty; (d) smokers; and (e) having the higher income (Table 2) and were entered into the logistic regression. Marital status, academic year level, employment status, chronic

illnesses, and perceived general health status in the past 6 months were not associated with the use of self-medication and were not entered into the logistic regression.

Table 2 Factors associated with the use of self-medication by universities students

Variable	Use of self-medication
Age	0.151*
Gender	.245**
Marital Status	.018
Faculty	-.181*
Academic Year Level	-.074
Employment status	.010
Smoking	.146*
Income	.148*
Chronic Illnesses	.032
Perceived general health status in past 6 months	.043

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.001 level (2-tailed)

The only factor associated with the use of self-medication among university students in the logistic regression analysis was gender (OR= 0.465, 95% CI 0.224- 0.963) (Table 3).

Table 3 Logistic regression analysis of predictors of use of self-medication by universities students (Confidence interval = 95%)

Predictors	b	Wald	Odds ratio	Confidence Interval (CI)	
				Lower	Upper
Age	0.040	1.465	1.041	0.976	1.110
Gender	0.766	4.243*	0.465	0.224	0.963
Faculty	-0.392	1.123	0.676	0.327	1.395
Smoking	0.157	0.166	1.170	0.549	2.493
Income	0.002	1.121	1.002	0.999	1.005

* Odds ratio is significant at the 0.05 level

** Odds ratio is significant at the 0.001 level

4. Discussion

In this study, 67.5% of the students reported the use of self-medication. However, this rate is less than that of other countries [9,] [10] but comparable to Egypt [11]. Further studies are needed to be conducted involving public university students and larger population groups from different parts of Jordan to get a precise prevalence of self-medication among university students.

The present study found that gender and age were associated with self-medication among university students, similar to Belgrade [9]. Females were using self-medication, in particular analgesics (such as aspirin and ibuprofen), more than male counterparts to treat menstrual symptoms and the use of antibiotics [20]. Students need to be educated about the problems of using medications without prescriptions. That should be part of the undergraduate curriculum.

Regarding the income variable, this study found a relationship between income and the use of self-medication among university students. This

finding was consistent with another previous study [12]. University students referred to cost-effectiveness as the main reason for using self-medication [21].

The current study found that the faculty variable was associated with self-medication use, similar to other studies' findings [10], [11], [13]. That may be explained by the medical faculty students believing themselves to be educated about medications. Medical faculty students ought to take responsibility and be role models to other students concerning self-medication. They are the specialists on them to whom the others students will understand [22].

The present study found that smoking was associated with self-medication. This result is consistent with the finding of a related study on this topic [23]. Therefore, age, gender, type of faculty, smoking, and income are factors that should be emphasized in future health educational plans that target self-medication among university students. Future studies are needed to examine other factors associated with self-medication, including students with chronic illnesses [24], [25], [26], [27], [28], [29] and quality of life [30], [31], [32], [33], [34], [35].

Gender was the strongest significant predictor of self-medication among university students. Logistic regression indicated that university students who were female students were more likely to use self-medication than male students (0.465). The results of the current study were compatible with earlier studies [11], [12]. That might be because females may use self-medication to prevent or *treat* female-specific conditions like acne [36]. Also, self-medication in females is of more significance, as they have sensitive periods in their lifetime containing pregnancy and lactation. They are role models for the individuals of their families. Therefore, effective interventions are needed to prevent and reduce self-medication among women [37]. Future studies need to look at the influence of student awareness, attitude, and medical knowledge on self-medication among university students in Jordan.

5. Conclusion

In summary, inappropriate use of self-medication among university students was a concern, so control of self-medication use was introduced. This study suggests an understanding of the factors influencing the use of self-medication among university students.

In Jordan, more than two-thirds of the university students had used self-medication in the past 6 months. In the present study, the results confirmed a positive association between factors (age, gender, smoking, and income) and the use of self-medication. Gender was the primary predictor variable for greater use of self-medication. Therefore, any future health education plans should consider this variable.

There are implications and recommendations for the present study results. First, this study's findings can help develop strategies that could support the reasonable use of self-medication among university students. Through prevention measures and education, the university has to develop and apply for a health education program on self-medication using lectures, workshops, or an elective course. Second, the role of health care providers may include developing health campaigns and health education programs to improve university students' awareness regarding wise use of self-medication. Third, the legislation and procedures to control the selling of medication should be activated and applied.

While the present study offers new data on self-medication use and factors associated with university students, it has limitations. First, the use of self-medication in the present study was self-reported, resulting in recall bias. Second, it is not easy to assume causality due to the cross-sectional design of this study. Third, the study participants were from private universities and may not represent all universities students throughout Jordan. Future longitudinal studies are needed to get further data about more predictive factors of self-medication use among university students.

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