Original Article

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Knowledge and practice of undergraduate medical students regarding self-medication: A cross-sectional survey in Baghdad, Iraq

Samer Shukur Mohammed [1], Wael Waleed Mustafa [2]

[1] Department of Pharmacology and Toxicology, Faculty of Pharmacy, Al-Rafidain University College, Baghdad, Iraq. [2] Department of Pharmacology and Toxicology, Faculty of Pharmacy, Al-Turath University College, Baghdad, Iraq.

ABSTRACT

Background: The global trend of self-medication is rising, making it a priority to investigate associated risks that could lead to life-threatening complications. **Aim**: To assess self-medication practices among undergraduate medical students and evaluate their knowledge and the factors influencing their use of self-medication. **Methods**: A cross-sectional questionnaire-based study was conducted among 234 medical students from various medical colleges in Baghdad between November 2023 and March 2024. Participants were selected randomly. Data were collected and analyzed using SPSS version 23. The chi-square significance test was performed, and P-values ≤ 0.05 were considered statistically significant. **Results**: The study found that 72% of participants reported using self-medication at least twice a week in the past six months. Painkillers and cold medications were the most commonly used drugs without prior consultation. More than half of the participants (53%) relied on their previous knowledge as a source of information for obtaining medications, and they trusted social media more than physicians for medical advice. **Conclusion**: Self-medication practices were highly prevalent among undergraduate medical students in Baghdad, with many relying on their own experience for medical knowledge. Academics and pharmacists should educate students about the risks of improper self-medication and enforce stricter regulations on prescription-only medications.

Keywords: self-medication, undergraduate students, pharmacy students

Corresponding author: Samer Shukur Mohammed. E-mail: Samer.shukur@ruc.edu.iq
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INTRODUCTION

Self-medication refers to the use of medications without first consulting a physician regarding their indication, dosage, or duration of treatment. While self-medication can be beneficial to an individual's health, the WHO recognizes it as a form of self-care.[1] It can help treat minor ailments that do not require medical consultation. Previous surveys conducted in various countries have shown an increase in self-medication.[2]

The global rise in self-medication may be attributed to multiple factors, including economic, political, and cultural influences, as well as the widespread availability of pharmaceutical products and convenient access to medications. Additionally, the quality of healthcare and the increasing ability to effectively manage certain conditions through self-care have also contributed to this trend. [3]

The demand for direct participation in healthcare decision-making is increasing due to greater individual autonomy, driven by higher education levels, increased access to information, and growing personal interest in health.[2]

Self-medication is a significant issue as it can hinder proper diagnosis and contribute to the spread of drug-resistant bacteria and iatrogenic diseases.[3] Retail pharmacists play a crucial role in dispensing medications and significantly influence self-medication practices. They should distinguish between patients for whom pharmacist-administered medications are appropriate and those who should be referred to their primary care doctors.[4]

The WHO has stated that pharmacists are among the most important professionals in the process of providing and distributing medications to the general population.[5] Due to their clinical training, pharmacists are well-qualified to offer advice and recommendations on pharmaceutical products compared to other professionals.

Several studies have shown a high prevalence of self-medication among university students in various countries. For example, the prevalence rates in Bangladesh (88%), Jordan (86.7%), Saudi Arabia (88%), Egypt (52.7%), and Palestine (98%) are notably high. Similarly, research conducted among students in Indonesia and China found that 49% and 47.9% of respondents, respectively, self-medicated with antibiotics. In Ethiopia, the prevalence of self-medication among university students ranges from 32.7% to 70%.[6–13]

Several previous studies have explored the reasons why college students engage in self-medication. These studies have revealed that the most common reasons include prior experience, the desire to save money and time, mild ailments, and the need for immediate relief.[14–16] Other contributing factors include recommendations from family and friends, personal convenience, the ease of acquiring medications, dissatisfaction with healthcare services, and perceived rudeness from healthcare practitioners.[17, 18]

A growing number of individuals are managing an increasing percentage of their ailments without assistance from medical professionals such as physicians or pharmacists. Pharmacists can play a significant role in guiding patients to make informed self-care decisions that align with their level of knowledge.[18]

MATERIALS AND METHODS

A descriptive, community-based cross-sectional survey was conducted for the current research. The study was carried out at different universities in Baghdad from November 2023 to March 2024, involving all students enrolled during that period. Approval for the study was obtained from the Institutional Review Board and the Human Subjects Research Committee at Al-Rafidain University College. The questionnaire used was pre-validated by a previous study.[19]

The questionnaire was distributed randomly to students using simple random sampling across different classes and was completed during their class breaks. The inclusion criteria for the survey included medical students from different universities aged 18–23 years. Students outside this age range, those who declined to participate, and non-medical students were excluded from the study.

The questionnaire consisted of three parts. The first part included demographic questions about age, gender, education level, university, college, area of residence, last year's grades, and the presence of chronic diseases. The second part contained 14 closed-ended questions assessing knowledge of self-medication and the proper use of medicinal products, allowing participants to select more than one treatment used in the past six months. The third part focused on previous medication use, how

students managed their medications, and their reasons for self-medication.

The acquired data were double-checked to ensure completeness before being loaded into SPSS version 23 for further analysis. Descriptive statistical analyses, including frequency distributions and percentages, are presented as tables. A chi-square significance test was performed to determine the statistical significance of the data, P-values ≤ 0.05 were considered significant.

RESULTS

A total of 234 students participated in this questionnaire. All selected students were between 19 and 23 years old, with a mean age of 22.1 and a median age of 22. The majority of participants were female (70%), and most had no history of chronic diseases (86%). The demographic data are presented in Table 1.

Table 2 presents the knowledge of undergraduate students regarding self-medication use. A total of 78% of participants were aware of the concept of self-medication, while 62% believed that self-medication is not entirely safe. Additionally, 83% acknowledged the presence of adverse effects associated with these medications, and 94% believed that self-medication in individuals with kidney or liver dysfunction could be dangerous.

Furthermore, 79% of participants believed that self-medication may require special training, and 82% identified easy access to various medicines as a key reason for self-medication use. A comparable percentage of participants demonstrated the ability to diagnose and treat certain diseases. Moreover, 72% of students reported taking certain medications without prior consultation with healthcare providers, and most of them (72%) felt confident in using these medicines.

During this survey, the most common frequency of self-medication use was twice weekly (24%), followed by three times weekly (13%). Less frequent usage was observed for four times, five times, and more per week, as shown in Figure 1.

Table 3 presents the most common reasons for self-medication use among participants. Seventy-five percent (75%) of students used painkillers, 48% used antipyretics, 47% used cold preparations, 44.7% used cough syrup, 41% used antacids, 38% used antibiotics, 35% used medications for diarrhea, 31% used topical preparations, 27% used antihistamines, and 26% used nutritional supplements.

A statistically significant difference was observed in the use of antibiotics and cold preparations, with female students showing a higher prevalence of use compared to males.

Figure 2 illustrates the sources of information on self-medication use among undergraduate students. The majority of medical information was obtained from pharmacists and personal knowledge, accounting for 53.6% of all participants. In contrast, social media (34.5%) and physicians (29.8%) were less common sources of information.

The reasons for self-medication use among undergraduate students are presented in Figure 3. The absence of serious complaints was the most common reason, reported by 65% of participants. Additionally, 59% of students relied on their previous experience with self-medication, which encouraged them to use these medicines again. Furthermore, 55.4% of participants believed that the need for rapid relief was a key factor driving self-medication use.

Table 1: Demographic characteristics of university students participating in the study.

Characteristics	Number (%)
Total Number	234
Male	70 (30%)
Female	164 (70%)
Age	
20 years	4 (1.65%)
21 years	121 (51%)
22 years	109 (46%)
Academic level/Grade point average	
Acceptable	44 (19%)
Average	69 (29%)
Good	78 (33%)
Very good	41 (17%)
Excellent	2 (2%)
Chronic illness	
Present	33 (14%)

Absent	201 (86%)

Table 2: Students' knowledge about self-medication use.

Questions	Number (%)	
	Agree	Disagree
Self-medication is the self-consumption of drugs without a prescription.	183 (78%)	51 (22%)
Self-medications is safe.	88 (37%)	146 (62%)
Self-medication may have adverse effects.	195 (83%)	39 (17%)
Changing the dose without prior consultation with a physician is dangerous.	218 (93%)	16 (7%)
Using unknown medications in patients with liver or kidney problems is risky.	220 (94%)	14 (6%)
Self-medication can mask the symptoms of certain diseases.	211 (90%)	23 (10%)
Self-medication is a part of self-care.	134 (57%)	100 (43%)
There is no need for special training to use self-medication.	49 (21%)	185 (79%)
Are you able to diagnose a health complaint?	129 (55%)	105 (45%)
Are you able to treat certain health complaints?	119 (51%)	115 (49%)
Do you recommend self-medication to others?	103 (44%)	131 (56%)
Is easy access to medicine the main cause of self-medication?	192 (82%)	42 (18%)
Does the availability of OTC medicines make students believe they are safe?	138 (59%)	96 (41%)
Have you practiced self-medication in the last six months?	169 (72%)	65 (28%)
Have you ever experienced a negative side effect from self-medication?	73 (31%)	161 (69%)
Do you feel confident when using self-medication?	168 (72%)	66 (28%)

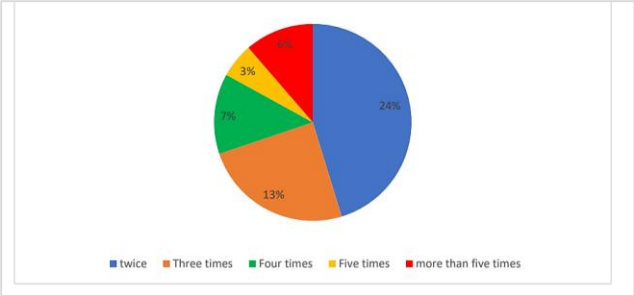

Figure 1: Frequency of self-medication use in the last six months (per week).

Table 3: Prevalence of self-medication use among undergraduate medical students (N=234).

Cause of self-medication use	Prevalence (%)	Male N=70 (%)	Female N=164 (%)	P-value
Pain killers	175 (75%)	62	113	0.65
Antipyretics	113 (48.2%)	38	75	0.926
Cough syrups	105 (44.7%)	36	69	0.058
Antacid	96 (41.2%)	24	72	0.17
Diarrhea	83 (35.3%)	16	67	0.42
Ear/nasal/eye drops	39 (16.5%)	9	30	0.36
Nutritional supplements	61 (25.9%)	13	48	0.41
Antibiotics	91 (38.8%)	27	64	0.050*
Antihistamine	63 (27%)	12	51	0.47
Cold preparations	110 (47.1%)	41	69	0.0006*
Constipation	44 (18.8%)	9	35	0.5
Anti emetics	58 (24.8%)	12	46	0.4
Topical preparations	72 (30.6%)	19	53	0.157
Herbal products	25 (10.7%)	5	20	

* Chi-square test, P-value ≤ 0.05.

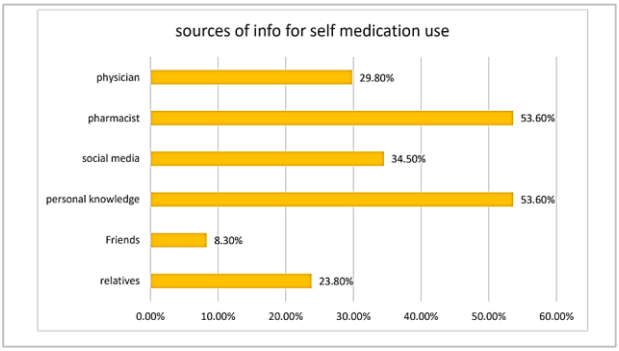

Figure 2: Sources of information on self-medication use among undergraduate students

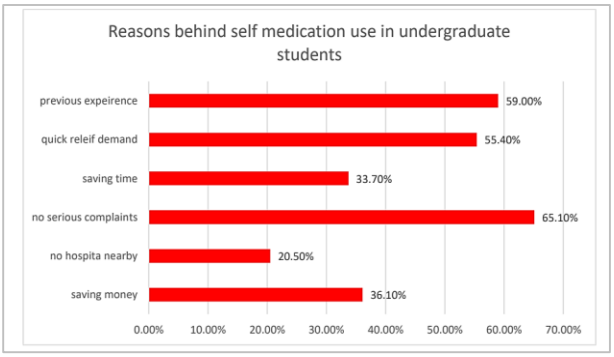

Figure 3: Reasons for self-medication use among undergraduate students.

DISCUSSION

For mild illnesses like headache, colds and mild allergies, the appropriate use of medications, accompanied by a comprehensive understanding of both the medications and the condition being treated, may be beneficial. Nevertheless, the risks associated with inappropriate medication duration and dosage errors cannot be ignored. Furthermore, drug-drug interactions may adversely affect an individual's health.

The current study was conducted in Baghdad to evaluate the knowledge and practices of medical students from different universities regarding self-medication.

The incidence of self-medication in this study reached 72% among undergraduate medical students, with most using self-medication at least twice a week. Similar results were reported in previous studies conducted in Baghdad, where the prevalence was found to be 63% and 84.88% in studies by Salih et al.[19] and Ahmed et al.,[20] respectively. Additionally, Al-Shawi et al. reported that 73% of medical students in Anbar Governorate, Iraq, practiced self-medication.[21] However, a study by Al-Ameri et al. found that the prevalence of self-medication among university students reached 92.4%.[22]

Several other studies have reported a high prevalence of self-medication among college students in various countries, reaching 88% in Bangladesh, 86.7% in Jordan, 88% in Saudi Arabia, 52.7% in Egypt, and 98% in Palestine. Similarly, research conducted among students in Indonesia and China found that 49% and 47.9% of respondents, respectively, self-medicated with antibiotics. Meanwhile, the prevalence of self-medication among university students in Ethiopia ranges from 32.7% to 70%.[4–11]

The prevalence of self-medication among this age group is increasingly high, especially in Asia. These high percentages can be attributed to various factors, including social and economic conditions, lifestyle changes, easy access to medications, inefficient healthcare systems, high medical costs, limited accessibility, and the uncontrolled distribution of medicines.[23]

The current study also revealed that a high percentage of undergraduate students were already aware of the concept of self-medication, the potential adverse effects of its use, and their own perceived ability to diagnose and treat various ailments. Additionally, they exhibited self-confidence in managing their own treatment.

These findings highlight the independence of undergraduate students in making decisions regarding medication use, with 52% relying on their personal knowledge rather than seeking information from drug experts. Furthermore, 34% of participants preferred obtaining drug-related consultations from social media, a percentage higher than those who sought advice from physicians.

These findings may lead to negative consequences and side effects due to the use of various medications without prior consultation with medical experts. Additionally, this practice may adversely affect their relatives or future patients under their care.

Furthermore, the questionnaire revealed that painkillers and cold preparations were among the most common reasons for self-medication among undergraduate

students. This finding is consistent with studies conducted in Iraq,[11] Serbia,[19] and Ethiopia.[24] However, it differs from the results of Ahmad et al., who analyzed 69 studies on the prevalence of self-medication worldwide and found that respiratory and digestive system complaints were the most common reasons for self-medication.[23]

This questionnaire is part of a series of studies conducted in Iraq that have examined the prevalence of self-medication among medical students.[19–22] These findings can help decision-makers address the factors that contribute to self-medication and assist academics in encouraging their students to use medications responsibly. Additionally, they highlight the importance of educating students on consulting medical practitioners before using certain medications.

CONCLUSIONS

This study revealed that self-medication practices are highly prevalent among undergraduate medical students in Baghdad. The most commonly used medications for self-medication were painkillers and cold preparations. Previous experience and the absence of serious health concerns were among the primary reasons for self-medication. The unauthorized use of Prescription Only Medicines (POM) should be prevented or restricted. Therefore, healthcare professionals, particularly community pharmacists, should provide health education to raise awareness about the risks of improper self-medication practices.

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