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Original article

Self-Medication Behavior and Contributing Factors Among Libyan Students

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Abstract
Self-medication is a global issue, especially in areas with limited healthcare access. While offering temporary relief, it poses risks like misdiagnosis, adverse reactions, and antibiotic resistance. This practice is common among students and can impair health. This study evaluates the prevalence, knowledge, and factors influencing self-medication among medical and non-medical students. The study included 180 university students, surveyed by using an electronic questionnaire comprising 14 questions. Among the 180 participants, 75.6% practiced self-medication, with 82.2% being female, who were more likely to self-medicate compared to males (17.8%), with a p-value of 0.03. Key reasons for self-medication included previous experience (55.1%, p-value = 0.01), easy access to medications (40.4%, p-value = 0.02), and advice from family/friends (40.4%, p-value = 0.03). Additionally, 31.5% cited avoiding doctor visits as a reason (p-value = 0.04), and 64.4% were aware of the risks of self-medication (p-value = 0.04). These findings underscore the impact of gender, accessibility, and awareness on self-medication behavior. While awareness of risks is moderate, there is a need for increased education and stricter regulations to promote safer healthcare practices. The findings emphasize the importance of addressing these factors to reduce self-medication.
Keywords. Self-medication, Students, Prescription, Drug.

Introduction

Self-medication, the use of prescription or Over-The-Counter (OTC) drugs without professional guidance, is a global concern [1]. It is often used to treat minor ailments like headaches, colds, or pain [2]. While drugs such as analgesics are widely used, their misuse can lead to serious health issues, including liver damage, allergic reactions, and antibiotic resistance [3]. Antibiotic misuse, in particular, has fueled the rise of resistant bacteria, posing a major public health threat [4].

Among students, self-medication is driven by factors like convenience, cost, fear of hospitals, and reliance on family advice or online information [5]. Even medical students, who are expected to understand the risks, frequently self-medicate. For example, 78.6% of medical students in Ethiopia reported self-medication, highlighting a gap between knowledge and behavior [6]. This trend is exacerbated by the influence of social media and easy access to OTC drugs.

In regions like Libya, where medications are easily accessible without prescriptions, analgesic self-medication is particularly common. A study at Omar Al-Mukhtar University, Libya, found that 70.62% of 340 medical students used analgesics without prescriptions, primarily for headaches (24.90%) and dysmenorrhea (18.26%). Acetaminophen was the most used analgesic (41.08%), and while 53.41% were aware of potential health risks, 47.22% relied on prior experience for self-medication [7]. Similarly, antibiotic self-medication is prevalent, with 42.9% of 168 paramedical students reporting unprescribed use, often for conditions like tonsillitis and respiratory infections. Augmentin was the most commonly used antibiotic, and 17.4% discontinued treatment prematurely [8].

The limited local data on self-medication prevalence, knowledge, and contributing factors underscores the importance of this study. By exploring these issues, the research aims to provide insights into self-medication practices, informing strategies to reduce risks and improve public health outcomes.

Methods

Study design

A cross-sectional study was conducted using an online survey. The survey consisted of four sections: demographic information, self-medication practices, awareness of risks, and sources of information.

Sample size

The study included 180 students from the University of Tripoli Alahlia.

Data collection

Data were collected through a structured online questionnaire distributed via social media platforms and university forums. The data collection period spanned from February 16 to March 15, 2025.

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Data analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 22.0 (IBM Corp., Armonk, New York, USA) for descriptive statistics, including percentages and means. Inferential statistics, such as p-values, were also calculated to assess the significance of the findings. Graphs and tables were generated to visualize the results effectively.

Results

Table 1 exhibits the demographic information of the included subjects. The majority of participants were aged 18-21 years (70%), with females constituting 82.2% of the sample. A significant proportion (75.6%) had a medical background or were studying in a medical field, which may influence their self-medication practices. The p-values indicate a statistically significant association between age and self-medication (p=0.03) and between medical background and self-medication (p=0.01).

Table 1. Demographic information of study participants (n=180)

Category	Number (%)	P-value
Age distribution		
18 – 21 years	126(70%)	0.03
22 – 25 years	46(25.6%)	
26 – 29 years	6(3.3%)	
≥ 30 years	2(1.1%)	
Gender		
Male	32(17.8%)	0.15
Female	148(82.2%)	
Medical background		
Yes	136(75.6%)	0.01
No	44(24.4%)	

Self-medication was highly prevalent (75.6%), with painkillers being the most commonly used medications (80%). The primary reasons for self-medication included previous experience (55.1%) and easy access to medications (40.4%). The p-values indicate significant associations between reasons for self-medication and the practice itself (p<0.05). The high reliance on pharmacies without prescriptions (90%) highlights the need for stricter regulations (Table 2).

Table 2. Self-medication practices among the included subjects

Category	Number (%)	P-value
Prevalence of Self-Medication		
Yes	136(75.6%)	0.01
No	44(24.4%)	
Reasons for Self-Medication		
Easy access to medications	72(40.4%)	0.04
Avoiding doctor visits	56(31.5%)	
Low cost	18(10.1%)	
Previous experience	98(55.1%)	
Advice from family/friends	72(40.4%)	
Types of Medications Used		
Painkillers	144(80%)	0.10
Antibiotics	20(11.1%)	
Antihistamine	8(4.4%)	
Vitamins	42(23.3%)	
Sources of Medications		
Pharmacy without a prescription	162(90%)	0.10
Online	4(2.2%)	
Family/friends	14(7.8%)	

The awareness and risks of self-medication are reported in Table 3. While 64.4% of participants were aware of the risks of self-medication, a significant portion (26.7%) were unsure, and 8.9% had no awareness. Only 9.1% reported experiencing side effects, which may underestimate the risks due to the widespread use of painkillers. The p-values indicate significant associations between awareness levels and self-medication practices (p<0.05).

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Table 3. Awareness and risks reported by the subjects

Category	Number (%)	P-value
Awareness of side effects		
Yes	116(64.4%)	0.04
No	16(8.9%)	
Unsure	48(26.7%)	
Experienced side effects		
Yes	16(9.1%)	0.05
No	164(90/9%)	
Knowledge of antibiotic risks		
High knowledge	80(44.4%)	
Moderate knowledge	60(33.3%)	0.01
Low knowledge	16(8.9%)	
No knowledge	24(13.4%)	
Advised others		
Yes	88(49.4%)	0.03
No	108(59.6%)	

Pharmacists were the most common source of information (43.8%), followed by the internet (23.6%), with significant associations between sources of information and self-medication practices ($p<0.05$).

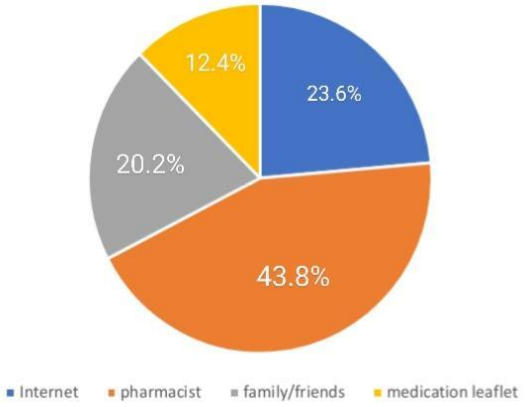

Figure 1. Sources of information for self-medication

A majority of participants (59.1%) supported stricter regulations on medication sales, reflecting an understanding of the risks associated with self-medication. However, 17% opposed such measures, and 23.9% were undecided, indicating a need for education and awareness campaigns to build consensus.

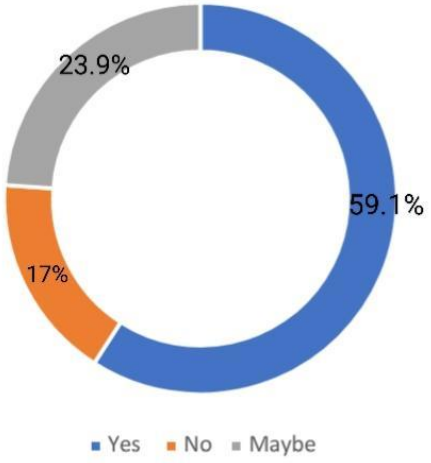

Figure 2. Attitudes toward stricter regulations.

Participants proposed stricter regulations (38.6%) and increased awareness campaigns (35.2%) as the primary solutions to reduce self-medication. However, 15.9% believed self-medication was not a significant problem, highlighting the need for targeted education to address misconceptions.

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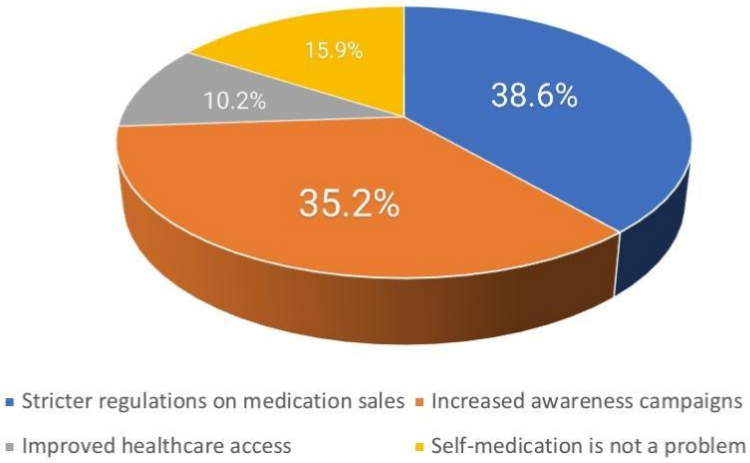

Figure 3. Suggested solutions to reduce self-medication

Discussion

The findings of this study provide valuable insights into self-medication practices among students at the University of Tripoli Alahlia. The results highlight several key trends, challenges, and areas for intervention. The study revealed that 75.6% of participants practiced self-medication, indicating a widespread reliance on this practice among students. This high prevalence suggests that self-medication is seen as a convenient and accessible solution for addressing health issues. However, it also raises concerns about the potential risks associated with unsupervised medication use, such as misdiagnosis, adverse drug reactions, and the development of antibiotic resistance. The high level reported in this study was similar to the Saudi study reported that 86.2% of university students were self-medicated [9]. Also, a previous local study conducted in Tripoli among 214 participants revealed that 82% of them practiced self-medication [10]. Self-medication with antibiotics is more prevalent (42.9%) among Libyan medical students, as reported previously [8].

The primary reasons for self-medication included reliance on previous experience (55.1%), easy access to medications (40.4%), and avoiding doctor visits (31.5%). These findings suggest that students often trust their judgment or past experiences over seeking professional medical advice. The ease of accessing medications without prescriptions (40.4%) further highlights the need for stricter regulations to control the sale of medications and ensure their safe use. Similarly, previous studies have identified multiple factors contributing to the widespread practice of self-medication in countries like Libya. These include limited access to healthcare services, the ease of obtaining medications without a prescription, and the growing trend of using drugs to manage anxiety or mental health issues [11-13].

Painkillers, such as paracetamol and ibuprofen, were the most commonly used medications (80%), followed by antibiotics (11.1%) and supplements or vitamins (23.3%). The widespread use of painkillers reflects their perceived safety and effectiveness for treating minor ailments. However, the use of antibiotics without prescriptions (11.1%) is concerning, as it can contribute to antibiotic resistance, a significant public health challenge. The use of supplements and vitamins (23.3%) also indicates a growing trend of self-care, though it may not always be based on professional guidance. This was in agreement with an earlier study reported that the most common category of medicines were 18.9% antibiotics, 18.3% antihypertensives, and 15.7% multivitamins and minerals [14].

While 64.4% of participants were aware of the potential risks of self-medication, 26.7% were unsure, and 8.9% had no awareness. This indicates a significant gap in knowledge, particularly regarding the risks of antibiotic resistance and adverse drug reactions [15]. The fact that 44.4% of participants had very high knowledge of the risks of using antibiotics without prescriptions is encouraging, but the remaining 55.6% (with moderate, low, or no knowledge) highlights the need for targeted educational campaigns to improve awareness.

Participants primarily relied on pharmacists (43.8%) and the internet (23.6%) for information about self-medication, which agreed with the most of literature [16]. This underscores the importance of promoting credible sources of health information and encouraging students to consult healthcare professionals for medical advice. A majority of participants (59.1%) supported stricter regulations on the sale of medications without prescriptions, reflecting an understanding of the risks associated with self-medication. However, 17% opposed such measures, and 23.9% were undecided, indicating a divide in attitudes that may stem from differing levels of trust in healthcare systems and regulatory frameworks. This suggests that any regulatory changes should be accompanied by efforts to build trust and educate the public about their benefits. Moreover, only 9.1% of participants reported experiencing side effects from self-medication, which is relatively low. This may be due to the widespread use of painkillers, which are generally considered safe when used appropriately. Nigerian study also reported a 34% rate of adverse effects reported from self-medication, predominantly headache [17]. Furthermore, our participants proposed stricter regulations on

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medication sales (38.6%) and increased awareness campaigns (35.2%) as solutions to reduce self-medication. These suggestions highlight the need for a multi-faceted approach to address the issue. However, 15.9% of participants believed self-medication was not a significant problem, indicating a need for targeted education to address misconceptions about its risks.

Conclusion

The findings of this study highlight the widespread practice of self-medication among students, driven by factors like convenience, cost, and accessibility. While some participants demonstrated awareness of the risks, a significant portion lacked sufficient knowledge, particularly regarding antibiotic resistance and adverse drug reactions. Addressing these issues through education, stricter regulations, and improved healthcare access is essential to mitigate the risks associated with self-medication and promote safer healthcare practices.

Conflict of interest

The authors declared no conflict of interest with this article

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