

Pattern of Self-Medication and Use of Prescription Only Medication among Undergraduate Students of Peoples University Nawabshah

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ABSTRACT

OBJECTIVE: To determine the prevalence of SM and prescription-only drugs without medical advice among undergraduate students and their effects on academic performance.

METHODOLOGY: This Cross-sectional study was conducted on 660 undergraduate students from MBBS and allied health sciences programs at Peoples University of Medical and Health Sciences for Women, Nawabshah, Sindh, Pakistan. Participants were included using simple random sampling after informed consent was obtained, and data were collected using a designed questionnaire and analyzed using SPSS (Version 26.0).

RESULTS: The prevalence of self-medication was 67%, and was more common among 2nd year MBBS students. Analgesic-antipyretic medications were often self-prescribed, and headaches were the most prevalent ailment observed. Use of only-prescription/ prohibited Medication was reported 6.97% students for depression or anxiety and 9.69 % for sedation. Over-the-counter medicine was readily accessible without a prescription. Stress, depression and insomnia were the main reasons cited for the usage due to academic burden. The majority of these students were using these drugs without a diagnosis by Physicians. Significant association was observed between the use of prohibited drugs and compromised academic performance (p-value 0.021).

CONCLUSION: The use of SM is more frequent among university students and affects academic performance. The results have significance for measures of prevention and intervention for college students who are susceptible to abusing prescription drugs.

KEYWORDS: Self-medication, Over-the-counter Medication, Illegal Prohibited Medication.

INTRODUCTION

Worldwide, self-medication is a common practice. Nonetheless, it has been widely reported by citizens of nations with limited resources. Even one of its subcategories, self-medication (SM) among medical students, has been the focus of multiple research studies¹. SM is such a large topic in the health sector. Despite being a very clear phrase, there is disagreement over what exactly constitutes SM. It has been defined as the use of Medication to treat oneself without medical supervision, or as the selection and application of medications to treat self-recognized diseases or symptoms. However, the definitions found across studies make it challenging to address this problem from a theoretical perspective and, consequently, to find an adequate solution to this public health issue^{2,3}.

Self-care is any activity or practice people do for themselves to stay healthy, prevent illness, and guard

against it. One aspect of self-care is self-medication. According to WHO's definition, "Self-medication involves the use of medicinal products by the consumer to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of medication prescribed by a physician for chronic or recurrent diseases or symptoms"⁴.

SM has a negative impact on consumers and is a serious global public health concern. It could result in a false diagnosis; conceal underlying medical conditions, antimicrobial resistance, drug dependence, drug addiction, and serious side effects and drug reactions from taking too much medication⁵.

SM is a human behavioural response in which a person uses Medication to treat minor symptoms or conditions they have self-diagnosed. This behaviour can be beneficial or harmful, depending on the use of pharmaceuticals. Because many pharmaceuticals are available over-the-counter without a prescription and offer consumers a low-cost option, they are widely used by people in both urban and rural areas of the world, including developing nations like India. Numerous factors, such as lifestyle, socioeconomic level, easy access to medications, and the larger supply of pharmaceuticals in emerging nations, could be to blame⁶.

Self-medication empowers individuals by enabling them to manage minor illnesses independently, thereby reducing the burden on healthcare services⁴.

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However, when practiced without adequate knowledge or regulation, it can lead to irrational and potentially dangerous drug use⁷. This is especially concerning in contexts where unregulated drug vendors or inadequately trained practitioners facilitate access to medications. Prior studies emphasize the ongoing need for public education and regulatory enforcement to ensure the safe use of self-medication, particularly among young people⁸.

Both developed and developing countries frequently practice self-medication, though the reasons and methods vary from one country to another. For a variety of reasons, more people than ever before are self-medicating worldwide. Since self-healing has both advantages and disadvantages, it is a serious issue for authorities and healthcare professionals worldwide. It may help patients and medical professionals, but it may also put people at risk⁹.

According to contextual factors including education, knowledge, income, and gender, the incidence of self-medication varies widely, making it one of the primary societal challenges affecting economic and health systems. Self-medication has become much more commonplace globally. Approximately 80% of all pharmaceuticals in poor nations can be purchased without a prescription, according to evidence. In a study, the individual factors related to self-medication were expressed in six subcategories, including "having medication information, having previous experience, easy access to medicine, not having enough time, access to medical staff, and not taking the disease seriously." Economic factors are categorized into the prices of travel, para-clinical services, and a doctor's appointment. It was discovered that self-medication was partially linked to physicians. It covered subcategories such as overcrowded doctors' offices, inadequate patient privacy protections, and poor doctor-patient communication. Culture was another element that influenced the participants' self-medication. Participants raised this category, which included a subcategory called "acceptance of self-medication in society"^{10,11}.

Previous surveys published from different nations revealed that SM was increasing¹². Self-medication was more common among first-year students, with a prevalence of 58 (76.6%). Analgesic-antipyretic drugs were often self-prescribed, and headaches were the most prevalent disease observed. The pharmacy was the most popular source of Medication for all three-year medical students. Additionally, students were writing prescriptions for medications to friends, family, and juniors. Self-medication methods should be promoted, according to 52 students, or 68.4% of the total¹³. According to several studies, the incidence of self-medication before the COVID-19 pandemic ranged from 11.2 to 93.7%¹⁴. The objectives of our study were to determine the frequency of self-medication and prescription-only medication among

Medical and Allied Health Sciences students, and to compare the effects of prescription-only medications on participants' academic performance of the participants.

METHODOLOGY

Study setting: This Comparative Cross-sectional study was conducted at Peoples University of Medical and Health Sciences for Women, Nawabshah, Sindh, Pakistan. 660 undergraduate students of MBBS and Allied Health Sciences (Doctor of Pharmacy, Doctors of Physical Therapy, BS Nursing, BS Public Health) were selected and studied for the duration of 06 months from January to June 2025. Sample size was calculated according to the prevalence of Self-Medication practices (20.0%) among Medical Students using simple Random Sampling technique. Total 330 students were selected from 2nd to final batch of MBBS and 330 students were selected from Allied Health Sciences departments for comparison.

Data Collection Procedure: Data was collected on already designed questionnaire for the required information through direct interview by researchers / Students from the participant who was enrolled in this university. Confounding will controlled through inclusion and exclusion criteria.

Statistical Analysis: Following information collection, the data was analyzed using a calculator, statistical software for social sciences (SPSS Version 26.0), and manual sorting techniques. Forms for gathering data were created in order to examine each variable independently. After data analysis, the results were documented and displayed as tables and charts. Level of significance will be set at $P \leq 0.05$. All rights of the patients were followed as per rules and confidentiality was maintained.

RESULTS

Most commonly used drugs were antipyretics 35 (53%) and analgesics (57.5%) among these participants. We had focused on prescription only medications including antidepressants and sedatives without consultation. Combining both groups 48 (14.55%) participants were frequently using these drugs even without prescription or consultation from medical group, and 17 (5.14%) allied health sciences participants were using these drugs. **Table I**

From our study data most common sign symptoms were headache and fever in both groups, Target group were using prescription only medication for anxiety, depression, stress and Insomnia and were using even knowing adverse outcome. **Table II**

Most common source of information was relatives and friends and second common source were pharmacy and pharmacist. **Table III**

Over the counter Medication were easily available without prescription. Students have easy access to these drugs from pharmacies nearby without prescription. **Table IV**

Table I: Groups / Types of drugs used by the by Participants

Drug Name	Response	
	Medical (n1 = 330)	Allied Health Sciences (n2 = 330)
Antipyretics	258 (78.18)	210 (63.63)
Analgesics	277 (83.93)	283 (85.76)
Antacids	162 (49.09)	143 (43.33)
Antibiotics	72 (21.81)	48 (14.54)
GI ailments	88 (26.67)	72 (21.81)
Creams and lotions	305 (92.42)	316 (95.76)
Anti-depressants	26 (7.88)	11 ((3.33)
Sedatives	22 (6.67)	6 (1.81)
Supplements / Multivitamins	122 (36.97)	138 (41.81)

Table II: Indications for use of Medication by Participants

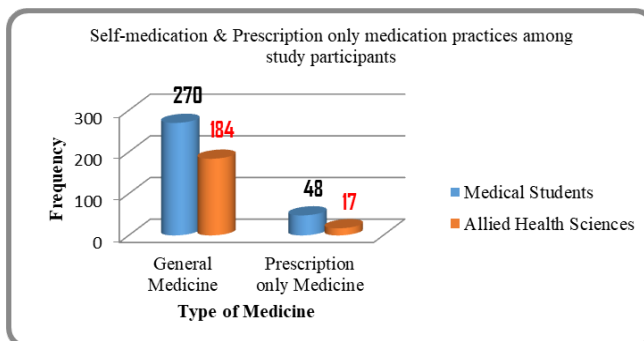
Drug Name	Response	
	Medical stu- dents (n1 = 330)	Allied Health Sciences students (n2 = 330)
	Frequency (%)	Frequency (%)
Fever, Headache	270 (81.81)	184 (55.76)
Cough, Cold and Flu	177 (53.64)	133 (40.30)
Acidity, GIT problems	132 (40.0)	82 (24.85)
Nausea, Vomiting, Diarrhea	204 (61.81)	124 (37.57)
Skin Problems	198 (60.0)	175 (53.03)
Anxiety, depression, Stress, Insomnia	48 (14.54)	17 (5.15)
Weakness / Nutrients Deficiencies	46 (20.60)	11 (3.33)

Table III: Source of Information for self-medication by Participants

Drug Name	Response	
	Medical students (n1 = 330)	Allied Health Sciences students (n2 = 330)
Family members relatives and friends	172 (52.12)	208 (63.03)
Pharmacist	231 (70.0)	229 (69.39)
Seniors/ classmates	64 (19.39)	96 (29.09)
Reading materials, Books	255 (77.27)	205 (62.12)
Previous prescriptions	111 (33.36)	82 (24.84)
Internet / Social Media	206 62.42)	254 (79.99)

Table IV: Awareness related to self-medication by Participants

Drug Name	Response	
	Medical students (n1 = 330)	Allied Health Sciences students (n2 = 330)
Over the counter medicine	251 (76.06)	259 (78.48)
Adverse effects of drug	110 (33.33)	88 (26.67)
Expiry date of drug	213 (64.54)	259 (78.48)
Importance of completing course of medicines	95 (28.79)	65 (19.7)

**Figure 1: Frequency of self-medication and prescription only medication among study participants**

Prevalence of self-medication practices was 270 (81.81%) among medical students and 184 (55.75%) among allied health Sciences students. Prevalence of prescription only Medication was more 48 (14.54%) among medical students as compared to allied health sciences students 17 (5.15%). **Table V**

Table V: Association between use of prescription only Medication and academic performance among study participants (n=65)

		Academic performance Frequency (%)				P-value
		Good	Average	Poor	Total	
Disci- pline	Medical Students	7 (10.76)	15 (23.08)	26 (45.45)	48 (73.85)	0.021*
	Allied Health Sciences	2 (3.07)	5 (7.69)	10 (15.38)	17 (26.15)	0.053
Total		9	20	36	65	

*association was significant at ≤ 0.05 level.

According to our study data there was statistically significant association between academic performance (p-value 0.021) among medical students compared to allied health sciences students (p-value 0.053).

DISCUSSION

This study identified a high frequency of self-medication 270 (81.81%) among female medical undergraduates compared to allied health sciences

under graduates 184 (55.75%) at Peoples University of Medical and Health Sciences for Women, Nawabshah. These findings align with those reported by Alshahrani et al.¹⁵, who also observed widespread self-medication among medical students in Saudi Arabia, citing early exposure to medical knowledge as a contributing factor.

The pattern of drug use in our population, with analgesic-antipyretics being the most frequently used class, mirrors findings from a recent cross-sectional study at Fakeeh College, where paracetamol was also the most commonly used OTC medication among students. The self-reported reasons for engaging in SM in our study including stress, academic burden, and insomnia as found in other literature. A study emphasized similar psychosocial triggers for self-medication and noted that a majority of students resorted to it as a coping strategy during demanding academic periods. 90% of students used OTC drugs, less than 30% demonstrated adequate knowledge of safe usage, showing that accessibility and knowledge do not necessarily go hand in hand. These findings further affirm that SM is not solely a matter of drug access but also a reflection of students' mental health needs and institutional pressure¹⁶. Similarly, a Rawalpindi-based study reported that 68% of medical students used self-medication for symptoms like headache and fever, with analgesics as the most common drug category¹⁷. These repeated trends across multiple institutions and countries confirm that analgesic use in SM is both common and culturally normalized.

However, the use of prescription-only medications without physician oversight such as antidepressants (6.96%) and sedatives (9.69%) observed in our study, is a particularly concerning finding. Comparable results were seen in the Sudanese study by Elamin et al.¹⁸, where nearly 12% of medical students used benzodiazepines or antidepressants without any prescription, primarily due to academic stress and sleep disturbances. These statistics highlight a growing mental health burden among students that is being masked through self-medication rather than addressed through institutional support.

Another key issue is the significant knowledge gap among students regarding drug safety. In our study, only 18.96% of participants were aware of adverse drug effects, and a similarly low percentage knew the correct dosing and frequency. This aligns with Yismaw et al. and Araia et al., both of whom found that medical students often lacked essential pharmacological understanding, despite being in clinical training^{19,20}.

Prescription only medications alter behavior and adversely affect the mental health and compromised academic activities among graduates we concluded in our study. Intentions to abuse stimulants in daily life were specifically linked to student, calendar-based, and temporary academic aspects. Beyond the percentage of academic events encountered, real-

time academic events were found to be a strong predictor of misuse behavior²¹.

In our study prevalence of prescription only medication was more frequent 14.54% among medical students as compared to allied health sciences students 17 (5.15%). A study concluded that the percentage of students who used psychoactive substances was 24.7%. Psychoactive medicines were recommended by doctors to a significant percentage of these students (95.8%) and for relaxation or stress alleviation (73.2%). Psychoactive drug use was more prevalent among women, medical students (as opposed to dental students), and individuals with poorer academic standing²². This is in accordance with our study as well.

Furthermore, our results showed a statistically significant association between the uses of prohibited medications and compromised academic performance (p-value 0.021). This outcome supports the findings of Daanish et al.²³, who reported that students engaging in unsupervised medication use, particularly for psychological symptoms, often experienced cognitive impairment and reduced academic efficiency.

Overall, the findings from this study reinforce existing literature that self-medication, though normalized among health sciences students, and poses multiple risks when not practiced rationally. While some level of SM may be inevitable due to students' exposure to medical knowledge, it is crucial that this knowledge is supplemented with structured training, regulatory enforcement, and accessible mental health services. In a study conducted by Sekerci S et al.²⁴ concluded that he perceived academic performance levels and grade point averages of psychostimulant drug users and non-users did not differ significantly. Poor academic performance and a high level of pharmacology knowledge were risk factors for the non-medical use of prescription psychostimulants. These findings also support our study data.

CONCLUSION

The use of self-medication especially prescription-only medicines are more frequent among students in universities. This apparently reflects the effect of medical education and training of the students especially in medical universities. The results have significance for measures of prevention and intervention for college students who are susceptible to abusing prescription drugs.

Recommendations: There should be proper legislation and implementation of law to control prescription only medications without prescription of registered consultants / doctors. Pharmacies nearby these institutions and hospitals should be strictly instructed sell these medications under act and rules.

Ethical Permission: Peoples University of Medical & Health Sciences, ERC/IRB approval.

Conflict of interest: There is no conflict of interest between the authors.

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Data Sharing Statement: The corresponding author can provide the data proving the findings of this study on request. Privacy or ethical restrictions bound us from sharing the data publicly.

AUTHOR CONTRIBUTION

Rajput MS: Final approval
 Batool M: Acquisition of data
 Brohi K: Data analysis
 Malik R: Drafting
 Asad Z: Concept of study
 Ahmer A: Data collection

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