From Novice to Self-Healer: Exploring Self-Medication among First-Year Medical Students

Minahil Iman Janjua[1], Dr. Sidra Hamid [2], Dr. Rahat Afzal [3]

Abstract

Objective: To study discusses what first-year medical students know about self-medication, their attitudes toward it, and their actual practices in managing their health.

Methods: The study surveyed 200 first-year medical students from October to December 2023 in Rawalpindi to assess their understanding, approach, and practice of self-medication using a non-random convenience sampling method. Data was analyzed with SPSS Version 27, employing descriptive statistics and correlation analysis.

Results: The prevalence of self-medication among the students was found to be 96%. Females (62.5%) showed a significantly higher association with self-medication compared to males (33.5%). Around 90% of students had basic knowledge of self-medication safety and precautions, and over half had a positive attitude towards it, with only 43.5% feeling confident in its success.

Conclusion: The study highlights a significant prevalence of self-medication among first-year medical students in Rawalpindi, with a majority demonstrating a basic understanding and positive attitudes toward its practice. Despite a lack of confidence in its efficacy, a high percentage of students still engage in self-medication practices. Further research could explore the factors influencing students' confidence in self-medication success to better inform future interventions and healthcare policies.

Keywords: Self-Healer, Self-Medication, Medical Students

[1]First-Year Medical Student, Rawalpindi Medical University,[2]Assistant Professor Physiology, Rawalpindi Medical University, [3]APWMO Biochemistry Department, Rawalpindi Medical University

1. Introduction

A noteworthy shift in the healthcare landscape prompts a reevaluation of the attitude and practices regarding personal health management, specifically in the realms of self-care and self-medication. Self-medication, identified as self-prescription, involves treating self-reported illnesses without consulting a healthcare professional.[1] It includes the administration of remedies for self-diagnosed conditions initiated by the individual. [2] Self-medication is a blanket term that encompasses a spectrum of activities from self-care to disease prevention and control, extending beyond the consumption of medicine to lifestyle modifications.[3] The mushroom growth of self-medication practices today is evident, with masses of people treating minor ailments like colds, flu, coughs, headaches, and muscle and joint pain without professional consultation.[4][5][6] These practices manifest in various forms, including using new drugs without a prescription, relying on medicines from prior treatments, and taking medicines from others with similar symptoms.

The rapid proliferation of self-medication poses a serious apprehension for health policymakers. Home remedies offer convenience and cost-effectiveness, providing swift solutions to minor ailments.[2][7][8] However, despite the advantages it offers to some, this trend raises significant concerns regarding potential misuse and adverse effects, underscoring the importance of professional medical advice. Irresponsible self-care practices can lead to many prospective health-related issues like delayed disease diagnosis, misdiagnosis, inappropriate therapy, incorrect administration, adverse reactions, dangerous drug interactions or resistance, and the risk of dependence and abuse. It also interrupts seeking medical advice when needed. [9,10]

Commonly, pieces of advice for self-medication come from family, friends, drug sellers, previous prescriptions, or suggestions from media advertisements.[11-14] People engage in this practice due to trust in self-diagnosis, perceived mildness of the disease, past experiences, having a stock of medicine at home, limited awareness of potential adversities, and lack of time.[2,12] Moreover, the unavailability or high cost of healthcare services, coupled with sloppy medical regulations, marks the predominance of self-medication in the general population.[7,12,15] This study focuses on first-year medical students, recognizing their unique position at the threshold of their medical education. This period is characterized by the assimilation of foundational medical knowledge, the internalization of professional values, and the initiation of clinical skills training. Understanding how these novices navigate

their personal health choices and engage in self-medication is crucial for several reasons.

Global trends among students indicate that the prevalence of self-medication among students worldwide stands at 70.1%, with a wide range from as low as 7.9 to as high as 99.0%.[11] This prevalence ranges from 53% to 61.3% in Pakistan.[23,24] Research suggests that self-medication has a higher prevalence in young adults and university students than any other age group, with a higher incidence among healthcare students compared to their non-medical peers.[11] Pharmacy students are more aware of self-medication, while medical students tend to seek professional assistance.[16] This trend seems to be influenced by medical training, as attitudes favoring self-medication increase through advancing years of study.[7,15,17,18] Additionally, studies reveal that first-year students are the most susceptible to self-care practices, having the least knowledge about safety and danger factors.[7,19]

Despite the global dilemma of improper self-medication, this issue is more pronounced in developing areas like Pakistan, where antibiotics are often accessible without a prescription. Attitudes towards self-medication among future healthcare professionals can influence their future pharmacotherapy practices. Studies indicate a high prevalence of this tendency among medical students in different regions of the country. Many students were distinguished to rehearse self-medication, and a significant portion of the respondents had helpless information; albeit with a positive attitude toward self-prescription. [20,21,22]

With the motivation to inform policymakers and facilitate the design and implementation of focused educational programs aimed at preventing unguided self-prescription, we conducted a comprehensive self-medication analysis of first-year medical students in Rawalpindi, Pakistan. Our primary objective was to target this specific cohort, providing valued insights that can shape future healthcare practices and educational interventions.

2. Materials & Methods

The study was a questionnaire-based cross-sectional study conducted to assess the level of understanding, approach, and practice of self-medication among first-year medical students in seven medical colleges of Rawalpindi. A total of 200 first-year medical students participated in the research. Responses were collected by non-random convenience sampling method. The analytical cross-sectional study was conducted from October to December 2023. The participants included in this study were consenting first-year undergraduates studying in the selected medical universities of Rawalpindi. Students who were repeating their first year, the students who were unwilling to provide informed consent due to factors like legal restrictions, and participants whose responses were incomplete, inconsistent, or deemed unreliable during data collection or analysis were excluded.

After initially calculating the sample size of 163 using the WHO sample size calculator, factoring in a 95% confidence interval, 5% margin of error, and a population proportion of 88.18% from a prior investigation[25], we increased it by 25% to account for potential factors such as withdrawals, and incomplete questionnaires. Consequently, the final sample size was set at 204.

A structured digital questionnaire was administered among first-year medical students of the selected medical institutes to gather data after obtaining informed consent from the participants. Students were explained the study's purpose. An informed consent was obtained from all participants for data collection. Confidentiality and anonymity were maintained strictly for all collected data, and compliance with the World Medical Association Declaration of Helsinki's guidelines was ensured, and personal data remained undisclosed. 200 responses fitting best in the inclusion criteria were recorded for analysis.

The questionnaire comprised statements covering the socio-demographic variables. Additionally, knowledge and attitude toward self-medication were assessed using questions adopted from a study by Siraj EA. [26] Various questions about self-medication practices were asked by a questionnaire based on prior investigations.[27][28]

Data was summarized and analyzed through SPSS Version 27. Descriptive statistics were applied to provide an overview of students' understanding, beliefs, and behaviors regarding self-medication as percentages. Correlation analysis was used to predict the relationship of these variables.

Our study defined first-year medical students as students in the final stages of their first year of MBBS in the medical universities of Rawalpindi. Self-medication knowledge was categorized as Good knowledge by students who scored greater than 3, average knowledge by students who scored greater than 0, and poor knowledge by students who scored less than 0. The outlook of medical students toward self-medication was positive for a score of 0 and above, while a negative score showed a negative attitude. Self-medication practice was the reported use of medications for the treatment of self-perceived ailments without professional consultation in the previous six months.

3. Results

Of the total 200 first-year medical students who were surveyed, 70 (35%) were males and 130 (65%) were females. Table 1 The prevalence of self-medication among the students was found to be 97%. Females (62.5%) showed a significantly higher association with self-medication compared to males (33%).

Table 1: Frequency Distribution according to Gender

Gender	Frequency	Percentage
Male	70	35%
Female	130	65%
Total	200	100%

Table 2. The major illness for seeking self-medication was headache, reported by 126(63%) students according to Figure 1.

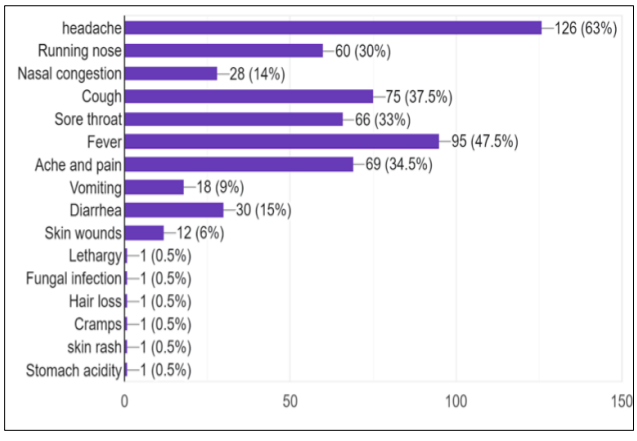


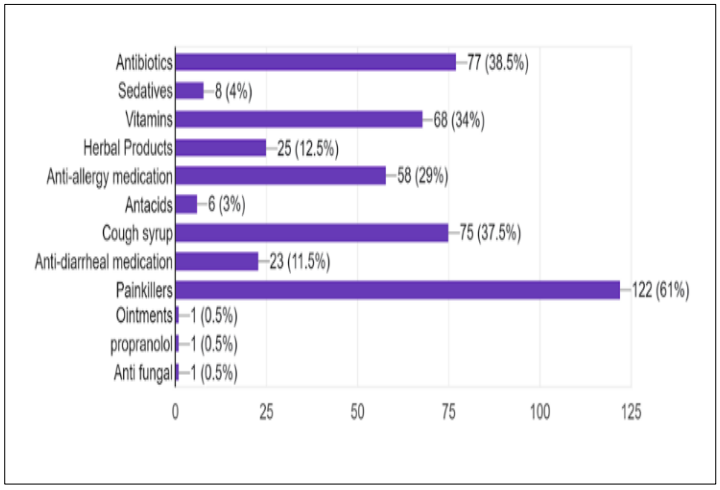
Figure 1: Indications for Self-Medication

The classes of drugs used for self-medication are shown in Figure 2, which illustrates that painkillers were the most commonly self-medicated drugs, as stated by 122 (61%) students.

Table 2: Practice of self-medication in medical students

Gender	Practice self-medication (%)	Do not practice self-medication (%)
Male	67(33.5%)	3(1.5%)
Female	125(62.5%)	5(2.5%)
Total	192(96%)	8(4%)

Figure 2: Drugs Used for Self-Medication



Sources of information about self-medicated drugs are depicted in Figure 3, while the sources of drugs are illustrated in Figure 4. Possible reasons associated with self-medication are shown in Figure 5. The majority of students self-medicating experienced no adverse effects Figure 6.

Approximately 90% of students demonstrated a basic knowledge about safety, hazards, and precautions of self-medication, while more than half exhibited a positive attitude toward its practice. However, only 43.5% of students reported feeling assertive in successful

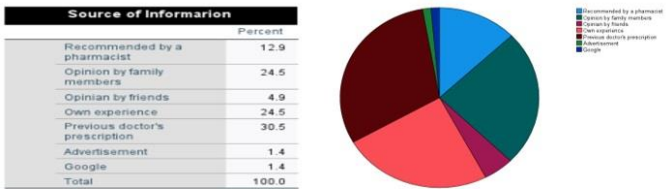


Figure 3: Source Of Information About Drug

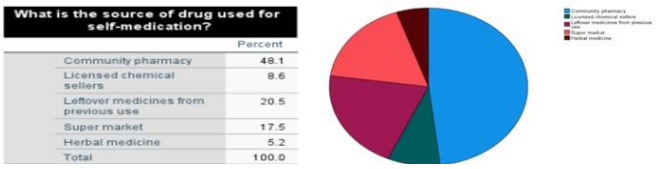


Figure 4: Source Of Drug

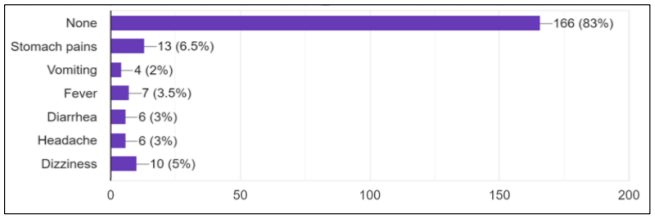


Figure 5: Adverse Effects From Self Medication

Correlation analysis suggests that certain gender-related factors may be associated with variations in knowledge levels regarding self-medication. Similarly, a potential influence of gender on individuals' attitudes toward and engagement in self-medication practices is seen. Furthermore, individuals with higher knowledge levels tend to harbor more positive attitudes
treatment by self-medication. Interestingly, despite this lower confidence level, self-medication was prevalent among 97% of the peers. Table 3.
toward self-medication, though it may not necessarily translate into increased confidence in practicing it. The most striking finding is that individuals with more positive attitudes toward self-medication may paradoxically exhibit lower confidence levels in its practice. Additionally, there is a proposition that individuals who engage in self-medication practices may exhibit higher confidence levels. Table 4

Table 3: Knowledge, Attitude, Practice, And Confidence

		Gender		Total	p-value
		Male	Female		
Knowledge	Good	29.5%	61%	90.5%	
	Average	4.5%	3.5%	8%	.095
	Poor	1%	0.5%	1.5%	
Attitude	Positive	20%	34%	54%	.307
	Negative	15%	31%	46%	
Practice	Yes	33.5%	62.5%	96%	.682
	No	1.5%	2.5%	4%	
Confidence	Yes, I can	14%	29.5%	43.5%	
	No, I cannot	3%	4%	7%	.114
	Not Sure	12%	31.5%	49.5%	

Table 4: Correlation Analysis of Study Variables

		Gender	Practice	Knowledge	Attitude	Confidence
Pearson Correlation	**Gender**	1.000	.117	.147	.046	.061
	Knowledge	.147	-.049	1.000	.101	-.090
	Attitude	.046	-.073	.101	1.000	-.289
	Practice	.117	1.000	-.049	-.073	.153
	Confidence	.061	.153	-.090	-.289	1.000
Sig. (1-tailed)	**Gender**	.	**.050***	**.019***	.258	.195
	Knowledge	**.019***	.244	.	.077	.104
	Attitude	.258	.152	.077	.	**<.0001***
	Practice	**.050***	.	.244	.152	**.015***
	Confidence	.195	**.015***	.104	**<.0001***	.

4. Discussion

The purpose of the present study was to assess the knowledge, approach, and practice of self-medication among first-year medical students in Rawalpindi, Pakistan, and to discuss the potential factors contributing to self-medication. Our study suggests that 96% of the students self-medicated in the last six months, in contrast to 80.9% prevalence according to a study conducted in Islamabad.[29] In our study, it was found that more female students practice self-medication than male students, consistent with the results of a few other studies.[30,31,32] It contradicts studies showing no difference between the self-medication practices of males and females[33,34], and those which report more males practicing self-medication.[35,36]

This study augments the previous findings that medical students tend to self-medicate more in illnesses like colds, headaches, and muscle and joint pain with antibiotics, and painkillers because of the mildness of the disease, faster relief, and previous experiences.[2,12,15] The amalgamation of findings from these studies emphasizes the universality of self-medication practices among health science students. The prevalence, motivations, and associated factors underscore the importance of targeted educational interventions, regulatory measures,

and collaborative efforts between educational institutions and regulatory bodies to promote responsible self-care practices. The collective insights provide a foundation for comprehensive strategies aimed at fostering a more informed and conscientious healthcare workforce among students pursuing health-related disciplines.

5. Conclusion

Self-medication (SM) has become a significant health issue in developing countries and is widely practiced among first-year medical students, with painkillers being the drug used most. Headaches were the most common cause. The major contributing factors towards self-medication were mildness of illness, quick relief, and previous use of medicine.

Self-medication among first-year medical students is concerning because they have inadequate knowledge and are not immune to the risks associated with over-the-counter medications. It can contribute to the development of drug dependence and even addiction. This highlights the urgent need for tighter legislation, government policies, and regulations concerning the sale of painkillers by community pharmacies. Consciousness about the possible adverse effects of self-medication must be endorsed via specific educational assistance and awareness programs. The provision of accessible mental health resources, counseling services, and workshops to help students manage stress and anxiety is important.

Limitations

The study has several limitations, including the absence of a comparative group, such as students from another field, and a small sample size. Other limitations involve the non-random sampling method and recall bias among participants, which may have led to inaccurate responses. There is a concern that participants might provide socially acceptable answers rather than their genuine preferences, causing fluctuations in results. Furthermore, the generalizability of the study results may be inadequate. The field of study could also benefit from an expansion in terms of compliance rate.

6. References

1. World Health Organization. Guidelines for the regulatory assessment of medicinal products for use in self-medication. World Health Organization; 2000.
2. Khadka A, Kafle KK. Prevalence of Self-medication among MBBS students of a Medical College in Kathmandu. JNMA: Journal of the Nepal Medical Association. 2020 Feb;58(222):69.
3. Galato D, Galafassi LD, Alano GM, Trauthman SC. Responsible self-medication: a review of the process of pharmaceutical attendance. Brazilian Journal of Pharmaceutical Sciences. 2009;45:625-33.
4. Pandya RN, Jhaveri KS, Vyas FI, Patel VJ. Prevalence, pattern and perceptions of self-medication in medical students. Int J Basic Clin Pharmacol. 2013 Jun;2(3):275-80.
5. Shehnaz SI, Agarwal AK, Khan N. A systematic review of self-medication practices among adolescents. Journal of adolescent health. 2014 Oct 1;55(4):467-83.
6. Ekor M. The growing use of herbal medicines: issues relating to adverse reactions and challenges in monitoring safety. Frontiers in pharmacology. 2014 Jan 10;4:177.
7. James H, Handu SS, Al Khaja KA, Otoom S, Sequeira RP. Evaluation of the knowledge, attitude, and practice of self-medication among first-year medical students. Medical principles and practice. 2006 Jun 12;15(4):270-5.
8. James H, Handu SS, Khaja KA, Sequeira RP. Influence of medical training on self-medication by students. International Journal of clinical pharmacology and Therapeutics. 2008 Jan 1;46(1):23-9..
9. Ruiz ME. Risks of self-medication practices. Current drug safety. 2010 Oct 1;5(4):315-23.
10. Hughes CM, McElnay JC, Fleming GF. Benefits and risks of self-medication. Drug safety. 2001 Dec;24:1027-37.
11. Behzadifar M, Behzadifar M, Aryankhesal A, Ravaghi H, Baradaran HR, Sajadi HS, Khaksarian M, Bragazzi NL. Prevalence of self-medication in university students: systematic review and meta-analysis. East Mediterr Health J. 2020 Jul 23;26(7):846-57.
12. Niroomand N, Bayati M, Seif M, Delavari S, Delavari S. Self-medication pattern and prevalence among Iranian medical sciences students. Current drug safety. 2020 Mar 1;15(1):45-52.
13. Klemenc-Ketiš Z, Hladnik Ž, Kersnik J. A cross sectional study of sex differences in self-medication practices among university students in Slovenia. Collegium antropologicum. 2011 Jun 24;35(2):3abad-34.
14. Kanwal ZG, Fatima N, Azhar S, Chohan O, Jabeen M, Yameen MA. Implications of self-medication among medical students-A dilemma. JPMA. The Journal of the Pakistan Medical Association. 2018 Sep 1;68(9):1363-7.
15. Ramadan B. Knowledge and attitude of medical students toward self-medication. Journal of Population Therapeutics and Clinical Pharmacology= Journal de La

Therapeutique Des Populations et de La Pharmacologie Clinique. 2022 Jan 21;28(2):e83-91.
16. Alam N, Saffoon N, Uddin R. Self-medication among medical and pharmacy students in Bangladesh. BMC research notes. 2015 Dec;8(1):1-6.
17. Pandya RN, Jhaveri KS, Vyas FI, Patel VJ. Prevalence, pattern and perceptions of self-medication in medical students. Int J Basic Clin Pharmacol. 2013 Jun;2(3):275-80.
18. Tomas Petrović A, Pavlović N, Stilinović N, Lalović N, Paut Kusturica M, Dugandžija T, Zaklan D, Horvat O. Self-medication perceptions and practice of medical and pharmacy students in Serbia. International journal of environmental research and public health. 2022 Jan 21;19(3):1193.
19. Van der Veer T, Frings-Dresen MH, Sluiter JK. Health behaviors, care needs and attitudes towards self-prescription: a cross-sectional survey among Dutch medical students. PloS one. 2011 Nov 21;6(11):e28038.
20. Mumtaz Y, Jahangeer SA, Mujtaba T, Zafar S, Adnan S. Self medication among university students of Karachi. Jlumhs. 2011 Sep;10(03):102-5.
21. Ullah HA, Khan SA, Ali S, Karim S, Baseer A, Chohan O, Hassan SM, Khan KM, Murtaza G. Evaluation of self-medication amongst university students in Abbottabad, Pakistan; prevalence, attitude and causes. Acta Pol Pharm. 2013 Sep 1;70(5):919-22.
22. Ali AS, Ahmed J, Sonekhi GB, Fayyaz N, Zainulabdin Z, Jindani R. of Nursing, Dow University of Health Sciences, Karachi, Pakistan. Cough.;15:19.
23. Azhar H, Tauseef A, Usman T, Azhar Y, Ahmed M, Umer K, Shoaib M. Prevalence, attitude and knowledge of self medication during Covid-19 disease pandemic. Pak. J. Med. Health Sci. 2021;15:902-5.
24. Dhedhi NA, Ashraf H, Ansari NB, Iftikhar S. Self-medication among people visiting outpatient clinics of a Tertiary care hospital, Karachi. Journal of Family Medicine and Primary Care. 2021 Feb;10(2):773.
25. Patil SB, Vardhamane SH, Patil BV, Santoshkumar J, Binjawadgi AS, Kanaki AR. Self-medication practice and perceptions among undergraduate medical students: a cross-sectional study. Journal of clinical and diagnostic research: JCDR. 2014 Dec;8(12):HC20.
26. Siraj EA, Yayehrad AT, Kassaw AT, Kassahun D, Solomon E, Abdela H, Gizachew G, Awoke E. Self-Medication Prevalence and Factors Associated with Knowledge and Attitude Towards Self-Medication Among Undergraduate Health Science Students at GAMBY Medical and Business College, Bahir Dar, Ethiopia. Patient preference and adherence. 2022 Jan 1:3157-72.
27. Haque M, Rahman NA, McKimm J, Kibria GM, Azim Majumder MA, Haque SZ, Islam MZ, Binti Abdullah SL, Daher AM, Zulkifli Z, Rahman S. Self-medication of antibiotics: investigating practice among university students at the Malaysian National Defence University. Infection and drug resistance. 2019 May 17:1333-51.
28. Amponsah SK, Odamtten G, Adams I, Kretchy IA. A comparative analysis of pattern and attitude towards self-medication among pharmacy and non-pharmacy students in University of Ghana. Pan African Medical Journal. 2022 Mar 28;41(1).
29. Bukhari GM, Saleem HB, Maken ZH, Saleem S, Saleem T, Batool H. Frequency and causes of self-medication among the medical students of Federal Medical College, Islamabad, Pakistan. Rawal Medical Journal. 2022 May 19;47(2):412-.
30. Helal RM, Abou-ElWafa HS. Self-medication in university students from the city of Mansoura, Egypt. Journal of environmental and public health. 2017;2017.
31. Kumar N, Kanchan T, Unnikrishnan B, Rekha T, Mithra P, Kulkarni V, Papanna MK, Holla R, Uppal S. Perceptions and practices of self-medication among medical students in coastal South India. PloS one. 2013 Aug 28;8(8):e72247.
32. Johnson M, Badyal DK. Prevalence, knowledge, attitude and practice regarding self-medication among medical, dental and paramedical students in a tertiary care hospital.
33. Klemenc-Ketiš Z, Hladnik Ž, Kersnik J. A cross sectional study of sex differences in self-medication practices among university students in Slovenia. Collegium antropologicum. 2011 Jun 24;35(2):329-34.
34. Gyawali S, Shankar PR, Poudel PP, Saha A. Knowledge, attitude and practice of self-medication among basic science undergraduate medical students in a medical school in western Nepal. Journal of clinical and diagnostic research: JCDR. 2015 Dec;9(12):FC17.
35. Singh S, Singh R, Singh V, Gupta B. Practice of self-medication among medical students in a region of northern state of India.
36. Girish HO, Divya HM, Prabhakaran S, Venugopalan PP, Koppad R, Acharya A. A cross-sectional study on self medication pattern among medical students at Kannur, North Kerala. Journal of Evolution of Medical and Dental sciences. 2013 Nov 11;2(45):8693-701.