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Original Research Article

Self-Medication Practices Among Second-Year MBBS and BDS Students in a Rural Tertiary Care Hospital in South India: A Cross-Sectional Study

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Abstract

Background: Medication use without consulting a qualified healthcare professional is known as self-medication. Although responsible self-care may be beneficial for minor illnesses, inappropriate medication use may lead to adverse drug reactions, incorrect treatment, and antimicrobial resistance.

Objectives: To assess the knowledge, attitudes, and practices regarding self-medication among second-year MBBS and BDS students in a rural tertiary care hospital in Tamil Nadu.

Methods: A cross-sectional study was conducted between December 2025 and January 2026 among second-year MBBS and BDS students. Data were collected using a structured and pre-validated questionnaire. Descriptive statistics were used to summarise the results, and the Chi-square test was applied to evaluate associations between variables.

Results: A total of 233 students participated in the study, with a mean age of 20.2 years; 65% were female. Approximately 54% reported practising self-medication within the previous six months. Headache and fever were the most frequently treated conditions, and analgesics such as paracetamol were the most commonly used drugs. Pharmacies dispensing medications without prescriptions were the primary source of medicines. Although most participants acknowledged that antibiotics should not be self-administered, 23.5% reported self-administering antibiotics.

Conclusion: Self-medication is common among undergraduate medical and dental students despite awareness of potential risks. Educational strategies focusing on rational drug use and antimicrobial stewardship should be incorporated into early medical training.

Keywords: Self-Medication, Rational Use, Medical Training, Over-The-Counter Medication.

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Introduction

Self-medication means the consumption of medications without a registered medical practitioner's advice. Although self-medication can be beneficial for minor ailments, improper and unsupervised use of medications may lead to misdiagnosis, unpleasant drug responses, and the development of antimicrobial resistance. [1]

Self-medication practices are well-documented among students, particularly those in the health sciences. As medical students progress through the medical curriculum, they feel more confident in their ability to identify and manage minor illnesses. [2]. Easy availability of medications and time constraints during academic training also contribute to this behaviour. In India, as the largest producer of pharmaceuticals by volume, self-medication is more common than in other countries. Easy access to medicine through community pharmacies further contributes to its widespread use. [3].

Although self-medication may offer temporary relief for minor ailments, inappropriate medication use—especially antibiotics—can contribute to antimicrobial resistance, which is a major global public health challenge [4]. Previous research has

shown a high prevalence of self-medication among healthcare students worldwide [5]. However, limited studies have compared self-medication behaviour between medical and dental students in rural tertiary care settings. Therefore, the present study aimed to evaluate the knowledge, attitudes, and practices regarding self-medication among second-year MBBS and BDS students in a rural tertiary care hospital in Tamil Nadu.

Objectives: To assess the knowledge, attitudes, and practices regarding self-medication among second-year MBBS and BDS students in a rural tertiary care hospital in Tamil Nadu.

Methodology

Study Design and Setting: A cross-sectional observational study was conducted at a rural tertiary care teaching hospital in Chengalpattu district, Tamil Nadu, India. Data were collected between December 2025 and January 2026.

Study Population: Second-year MBBS and BDS students enrolled at the institution were invited to participate in the study. Participation was voluntary, and informed consent was obtained prior to data collection.

Sample Size: The sample size was determined using the single-proportion formula for cross-sectional studies. Based on a previously reported self-medication prevalence of 84.5% with a 95% confidence level and a precision of 5%, the minimum required sample size was calculated to be 222 participants. Accounting for a possible 5% non-response rate, the target sample size was increased to 233. (6)

Data Collection Instrument

A structured questionnaire was used to collect data. The instrument consisted of three sections:

1. Demographic characteristics
2. Knowledge of medication use and potential risks
3. Attitudes and practices related to self-medication

Attitudes were assessed using a five-point Likert scale ranging from strongly disagree to strongly agree.

Pilot Study: A pilot study involving 15 students was conducted to evaluate the clarity and reliability of the questionnaire. Based on participant feedback, minor modifications were made. The final questionnaire was validated by senior pharmacology faculty members and medical educators.

Data Analysis: Data were analysed using descriptive statistical methods. Frequencies and percentages were calculated for categorical variables. Associations between variables were analysed using the Chi-square test, with a significance level set at $p < 0.05$.

Ethical Approval: The study was initiated after the Institutional Ethics Committee. Participants' anonymity was maintained, and no identifying information was collected.

Results

A total of 233 students completed the questionnaire. The mean age of participants was 20.2 years, and females constituted 65% of the study population. 54% have self-medicated in the last 6 months for minor ailments, primarily utilising previous prescriptions or peer recommendations as the basis for their clinical decision-making. Pharmacies dispensing medications without prescriptions were the primary source of drugs for self-medication. Figure 1 depicts that the most common conditions for which self-medication was used were headache and fever (126), followed by cough and cold (76). Figure 2 showed that the ranking of the drugs for self-medication was analgesics, i.e. paracetamol (79), followed by combinations with cough syrups. It is evident from Figure 3 that the primary source of drug procurement was a pharmacy without a prescription (122). Among all users, only 9.9% reported side effects.

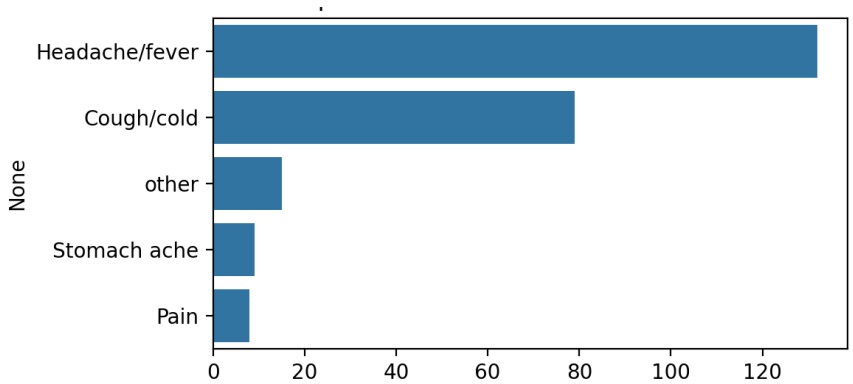

Figure 1: Self-medication practices for the most often treated conditions.

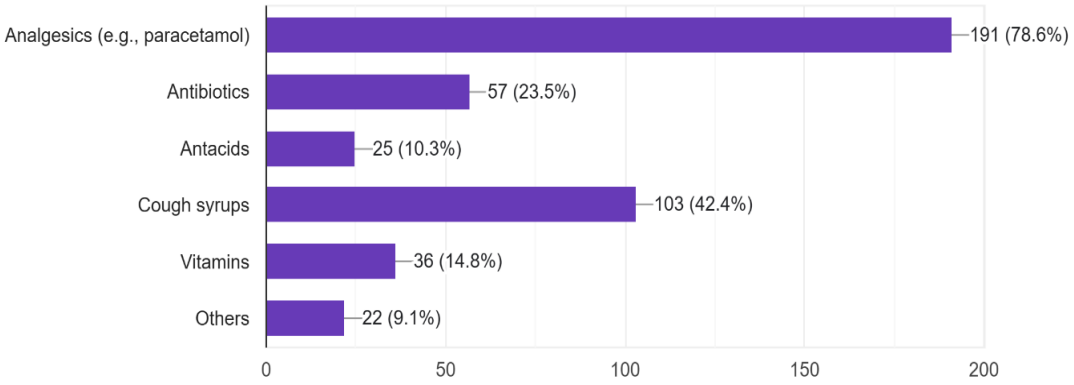

Figure 2: Most commonly used pharmacological class of drug for self-medication.

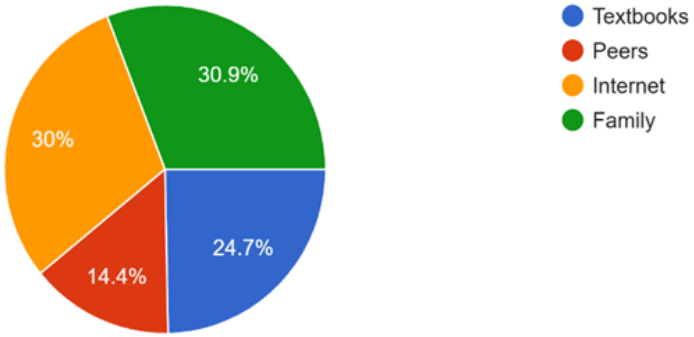

Figure 3: The primary source of information opted by participants for self-medication.

The Mean knowledge score for self-medication was 3.24/5. (Figure 4) 54% agree that self-medication is safe for minor ailments (Figure 5), while 75% agree that antibiotics should not be self-medicated. (Table 1) 57% say MBBS training influences their self-medication behaviour. More than 50 % of participants (183) stated that they took self-medication for minor ailments or complaints, while 29% used a previous prescription. Only 13% of participants listened to their seniors' advice for self-medication. (Figure 5) The most common sources for drug availability were Pharmacy without prescription (130), followed by Friends/family, old prescription, and Leftover medicines. (Table 2)

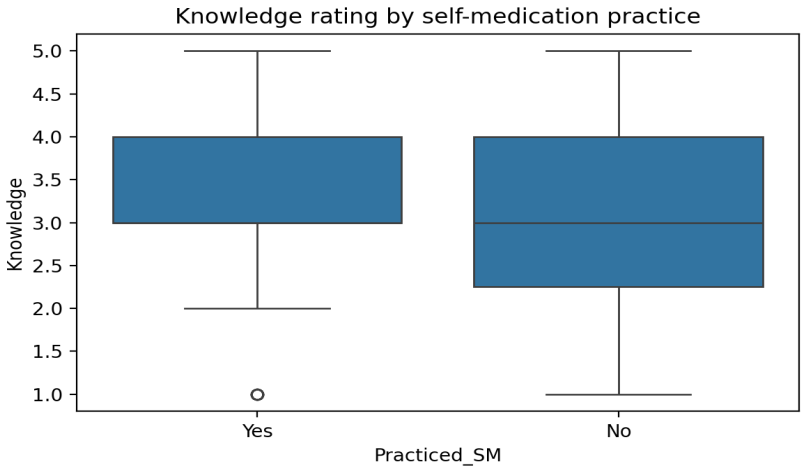

Figure 4: Comparison of participants' self-reported knowledge of self-medication risks (1–5) between those who did and did not practice.

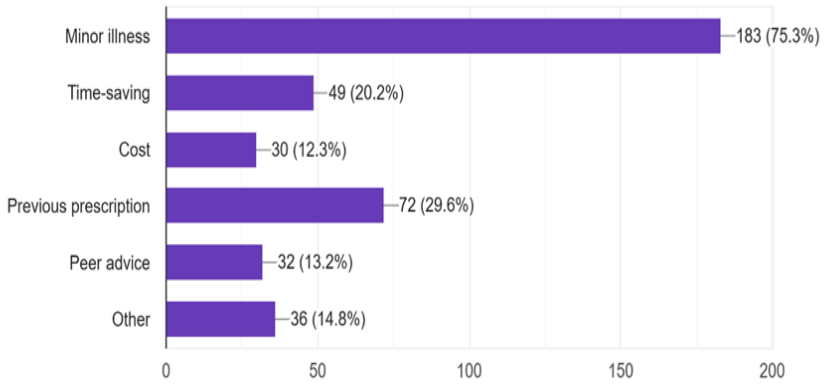

Figure 5: Common reasons stated for self-medication.

It is observed from Figure 6 that more than 35% of the participants (91) were frequently taking (2-5 times in six months) self-medication. Figure 7 shows a mapping to see whether higher self-rated knowledge is associated with more frequent self-medication.

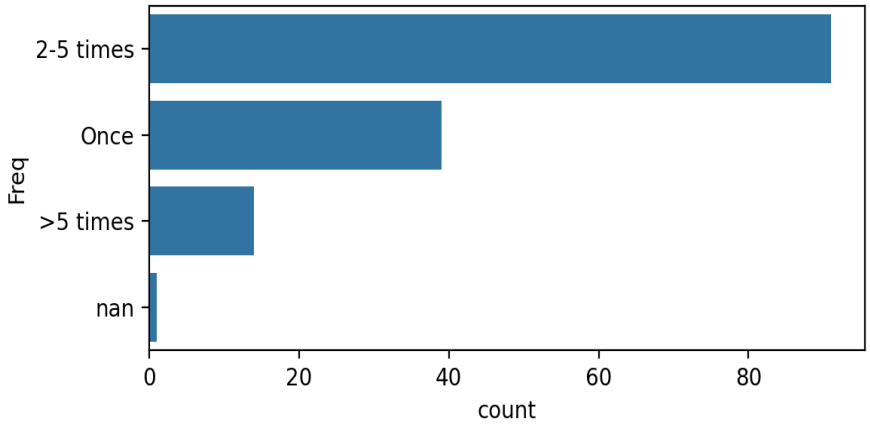

Figure 6: The distribution of responses to self-medication with respect to frequency in the last 6 months.

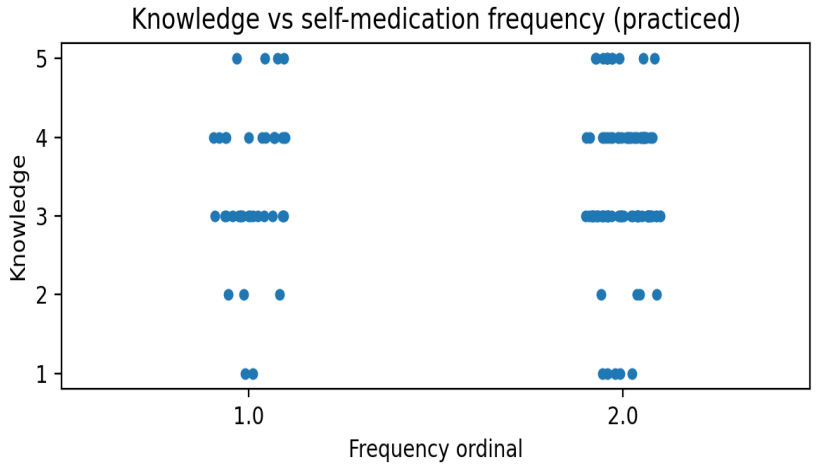

Figure 7: Mapping of frequency to an ordinal scale (Once =1 … More than 10 times=4) and over plotted knowledge ratings.

It is evident from Figure 8 and Table 3 that more than 50% agree that self-medication is safe for minor complaints. However, a minor percentage (7%) agreed that self-medication is unsafe for even minor illnesses.

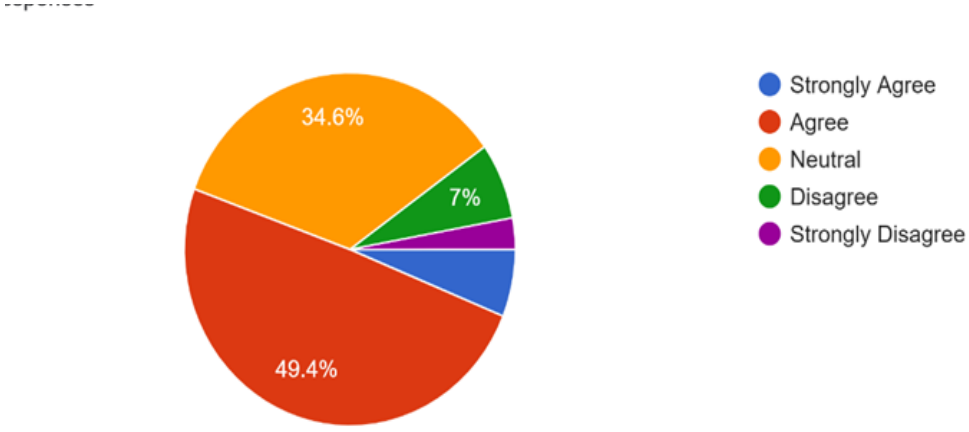

Figure 8: Attitude towards self-medication being safe for minor illnesses.

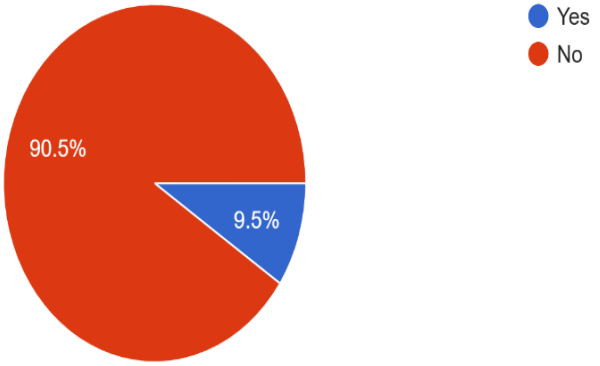

Figure 9: Incidence of adverse drug reactions among the self-medication users

Table 1: Attitude towards the antibiotic self-medication. (Antibiotics should not be self-medicated)

5-point Likert scale	Responses
Strongly agree	86
Agree	89
Neutral	46
Disagree	07
Strongly Disagree	05

Table 2: The sources for self-medication.

SL No.	Index	Count
1	**Pharmacy without a prescription**	**130**
2	**Friends, family**	**50**
3	**Old prescription**	**33**
4	**Leftover medicines**	**30**

Table 3: Attitude toward self-medication frequency.

5-point Likert scale	2-5 times	Once
Strongly agree	53	14
Agree	04	01
Neutral	21	20
Disagree	09	01
Strongly Disagree	00	02
Chi-square test 19.17, p = 0.01395.		

Statistical Association: A significant association was observed between the frequency of self-medication and participants' attitudes regarding its safety ($\chi^2 = 19.17$, $p = 0.013$).

Discussion

The findings of this study indicate that self-medication is a common practice among undergraduate medical and dental students. More than 50% of the participants reported using medications without professional consultation, which is consistent with earlier studies conducted among healthcare students by Ocan et al [5,7]. However, a study conducted by Singh S showed a very high incidence of self-medication (79.4%).

This could be due to fragmented knowledge, easy access to procure medication and academic pressure. [8] The heavy reliance on community pharmacies as sources of medication highlights the ease of access to pharmaceutical products without a prescription. In many developing countries, pharmacies often serve as the first point of contact for healthcare, especially in rural settings where access to physicians may be limited. The frequent procurement of medications from community pharmacies without a valid prescription suggests that regulatory lapses in rural settings may inadvertently facilitate these unsafe pharmaceutical practices.

Self-medication practices are frequently observed in the treatment of headaches and fevers, with the oral route being the most commonly employed method. Similar patterns have been documented in previous studies, where students often utilise analgesics to manage minor ailments such as headaches and fever. The reasons for self-medication include convenience, cost-effectiveness, and the perceived mildness of symptoms. Additionally, peer influence and social norms play a significant role, particularly within student populations. [5,9,10.11] The study conducted by Bhatiya MK mentioned quick relief, previous experience and overconfidence about the drugs as primary reasons for the self-medication. [12]

Although most participants (75%) acknowledged that antibiotics should not be used without medical supervision, nearly one-fourth (23.5%) used them for self-medication, suggesting inadequate knowledge and uncertainty about their use. Similar results were observed in a study conducted by Bagewadu HG. [13] A study by A. Shah found that 43% of participants used antibiotics for self-medication. [14] The higher percentage of use might be due to antibiotic use for viral illnesses or misconceptions about antibiotic use. [14] This clearly evidences a knowledge-practice gap in spite of therapeutic awareness. This gap between knowledge and behaviour has been reported in earlier research studies and suggests that awareness alone may not be sufficient to prevent inappropriate medication practices [4,15]. There is a definite need for sensitisation regarding antibiotic self-medication among medical students. A study by Akande S concluded that, given high rates of self-medication, responsible self-medication practices should be incorporated into formal undergraduate training. Previous studies reinforced the need for training in educational awareness, organising public awareness campaigns, appropriate handling of drugs and improving access to health services. [16,17,18,19, 20]

The significant association between self-medication frequency and attitudes toward its safety ($\chi^2 = 19.17, p = 0.013$) indicates that participants who perceive self-medication as safer are more likely to practice it frequently. This corroborates prior data indicating that positive attitudes, often influenced by overconfidence or insufficient awareness of risks, enhance self-medication rates, potentially increasing the risk of side effects, antibiotic resistance, and treatment delays. Interventions should focus on altering attitudes by educating individuals on the hazards and proper usage of pharmaceuticals, particularly in groups where self-medication is prevalent. [21,22]

The relatively low proportion (9.9%) of ADR was reported in the present study. However, a study conducted by Lahiri S found an ADR reporting rate of 28.2 %. [23] The lower rate in the present study may be due to limited awareness of medication-related complications or underreporting by participants. Nevertheless, repeated unsupervised use of medications may increase the risk of drug interactions, posing a serious health problem. These findings emphasise the importance of incorporating rational prescribing principles and antimicrobial stewardship training into early medical education. [22, 24]

Limitations: The study has several limitations. First, the use of self-reported questionnaires may introduce recall bias. Second, participants may have underreported inappropriate medication practices due to social desirability bias. Finally, the study was conducted in a single tertiary care institution, which may limit the generalisability of the findings.

Conclusion

Self-medication is widely practised among undergraduate medical and dental students despite awareness of potential risks. Easy access to medications and the perception that minor illnesses do not require professional consultation contribute to this behaviour. Strengthening pharmacology education and promoting the rational use of

medications and antimicrobial stewardship programs may encourage responsible medication practices among future healthcare professionals.

References

1. Hughes CM, McElnay JC, Fleming GF. Benefits and risks of self-medication. Drug Safety. 2001;24(14):1027–1037.
2. Montgomery AJ, Bradley C, Rochfort A, Panagopoulou E. A review of self-medication in physicians and medical students. Occupational Medicine. 2011;61(7):490–497.
3. Bennadi D. Self-medication: A current challenge. Journal of Basic and Clinical Pharmacy. 2013;5(1):19–23.
4. Rather IA, Kim BC, Bajpai VK, Park YH. Self-medication and antibiotic resistance: Crisis, current challenges and prevention. Saudi Journal of Biological Sciences. 2017;24(4):808–812.
5. Ocan M, Obuku EA, Bwanga F, et al. Household antimicrobial self-medication: A systematic review and meta-analysis. BMC Public Health. 2015; 15:742.
6. Kasulkar AA, Gupta M. Self-medication practices among medical students of a private institute. Indian Journal of Pharmaceutical Sciences. 2015;77(2):178-182.
7. Prabhakaran SS, Prabha MP, S A, Palappallil DS. Self-medication practices among first- and second-year medical undergraduates. Asian Journal of Pharmaceutical and Clinical Research. 2023;16(4):161-166.
8. Singh S, Balusamy D, Sinha A, Verma M, Jain D. Attitudes, patterns, and awareness on the use of self-medication and non-doctor prescription methods among undergraduate medical, nursing, and physiotherapy students of a tertiary care setting in South Gujarat. Indian Journal of Community Health. 2023;35(3):308-313.
9. Banerjee K, Banerjee MB, Ghosh A. A cross-sectional study on self-medication practices, perception, and attitudes of undergraduate medical students at a government tertiary care teaching hospital in Eastern India. Asian Journal of Pharmaceutical and Clinical Research. 2024;17(6):57–61.
10. Rani N, Sadiq S, Khajuria K. Comparative study of knowledge, attitude and practice of self-medication among undergraduate students of MBBS and BDS. International Journal of Basic & Clinical Pharmacology. 2018;7(12):2314-2318.
11. Suthar J, Shrina PP, Riddhi NS. Knowledge, attitude and practices of self-medication among the students of a private university. Asian Journal of Pharmaceutical and Clinical Research. 2020;13(5):104-107.
12. Bhatia MK, Ripudaman S, Akashdeep S, Bharadwaj BL. Knowledge, attitude and practice of self-medication among undergraduate medical students of Punjab. Journal of Medical Research. 2017;3(3):151-154.
13. Bagewadi HG, Deodurg PM, Patil BV, Zahid SH. Perceptions and practices of self-medication among undergraduate medical students at Gulbarga Institute of Medical Sciences, Kalaburagi, India. International Journal of Basic & Clinical Pharmacology. 2017;7(1):63-68.
14. Shah A, Dhanani JV, Bhadiyadara S, Navadiya V. Evaluation of self-medication practice in second-year undergraduate students at a medical college in South Gujarat. Asian Journal of Pharmaceutical and Clinical Research. 2021;14(8):104-107.
15. Rathish D, Wijerathne B, Bandara S, Piumanthi S, Senevirathna C, Jayasumana C, et al. Pharmacology education and antibiotic self-medication among medical students: a cross-sectional study. BMC Research Notes. 2017;10(1):337.
16. Akande-Sholabi W, Ajamu AT, Adisa R. Prevalence, knowledge and perception of self-medication practice among undergraduate healthcare students. Journal of Pharmaceutical Policy and Practice. 2021;14(1):49.
17. Abdi A, Faraji A, Dehghan F, Khatony A. Prevalence of self-medication practice among health sciences students in Kermanshah, Iran. BMC Pharmacology and Toxicology. 2018;19(1):36.
18. Alduraibi RK, Altowayan WM. Knowledge, attitudes, and practices of self-medication in medical and pharmacy students: a cross-sectional survey. BMC Health Services Research. 2022; 22:352.
19. Shitindi L, Issa O, Poyongo BP, Horumpende P, Kagashe GAB, Sangeda RZ. Knowledge, attitude, practice and predictors of self-medication with antibiotics among medical and non-medical students in Tanzania. Frontiers in Pharmacology. 2024; 14:1301561.
20. Auta A, Banwat SB, Sariem CN, et al. Medicine self-medication practice and associated factors among students. International Journal of Public Health. 2012;57(6):909–916.
21. Naser AY. Prevalence, knowledge, attitudes, and practices concerning self-medication with over-the-counter drugs among university students in Jordan: A cross-sectional study. PLoS One. 2026 Jan 28;21(1):e0339915.
22. Shah H, Arora B. Knowledge, attitude, and prevention of self-medication practices among the general population of Gujarat. Indian J Med Sci 2022; 74:22-6.

23. Lahiri S, Maji R, Ghosh S, Chakraborty S. Self-medication practices with antibiotics among phase I MBBS students in a peripheral medical college of West Bengal. Asian Journal of Medical Sciences. 2023;14(1):54-57.

24. World Health Organization. Guidelines for the regulatory assessment of medicinal products for use in self-medication. Geneva: WHO; 2000.