

Prevalence, Patterns and Perceptions of Self-Medication Among Undergraduate Medical Students at a Government Medical College in North India

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ABSTRACT

Background: Self-medication is widely practiced among medical students due to their pharmacological knowledge and easy access to medicines. However, inappropriate self-medication can lead to adverse drug reactions and antimicrobial resistance.

Objectives: To assess the prevalence, patterns, and perceptions of self-medication among undergraduate medical students.

Methods: A cross-sectional study was conducted among 197 undergraduate medical students using a pre-tested, structured, self-administered questionnaire. Data were analyzed using descriptive statistics and Chi-square test.

Results: The prevalence of self-medication was 70.1%. Analgesics (33.0%), antipyretics (40.6%), and antibiotics (44.7%) were the most commonly used drugs. Fever (45.7%) and common cold (44.2%) were the most frequent indications. Pharmacy purchase without prescription (45.2%) was the most common source of medicines. Among antibiotic users, 38.5% did not complete the full course. Significant associations were observed between year of study and self-medication ($p = 0.002$), and between year of study and antibiotic completion ($p < 0.001$).

Conclusion: Self-medication is highly prevalent among medical students. Despite adequate awareness, inappropriate practices persist, highlighting the need for targeted educational interventions.

Keywords: Self-medication, medical students, antibiotics, prevalence, attitudes

INTRODUCTION

Self-medication refers to the use of medicinal products by individuals to treat self-recognized illnesses without professional supervision. While it is

considered an important component of self-care for minor ailments, inappropriate self-medication can lead to serious consequences such as adverse drug reactions, masking of underlying diseases, delayed diagnosis, and

the growing problem of antimicrobial resistance.¹

Medical students represent a unique population with regard to self-medication practices. Their ongoing medical education provides them with increasing pharmacological knowledge, early clinical exposure, and easier access to prescription-only medicines. This combination often leads to a higher tendency toward self-medication compared to the general population.^{2,6} Studies have consistently reported a high prevalence of self-medication among medical students across different regions, with rates ranging from 50% to 90%.^{2-5, 9}

Commonly used drugs for self-medication include analgesics, antipyretics, and antibiotics, often used for conditions such as fever, headache, and common cold.^{3, 10} The use of antibiotics without proper supervision is particularly concerning, as it contributes to the development of antimicrobial resistance, which is a major global public health issue.^{1,11}

Various factors influence the practice of self-medication among medical students. These include perceived mildness of illness, prior experience with similar symptoms, time constraints, academic stress, and easy availability of medicines without prescription.^{4, 7} Additionally, confidence in self-diagnosis and familiarity with drug information further reinforce this behavior.^{8, 12}

Despite having adequate knowledge regarding the risks associated with self-medication, studies have shown that inappropriate practices such as incomplete antibiotic courses and irrational drug use are still prevalent among medical students, indicating a gap between knowledge and practice.^{5, 13}

Understanding the prevalence, patterns, and perceptions of self-medication among medical students is essential, as they are future healthcare providers who will influence prescribing practices. In the context of North India, limited data are available exploring both behavioral patterns

and underlying perceptions of self-medication. Therefore, the present study was conducted to assess the prevalence, patterns, sources, and perceptions of self-medication among undergraduate medical students.

MATERIALS & METHODS

This cross-sectional descriptive study was conducted at Government Medical College, Jalaun over a six-month period from October 2025 to March 2026. The study population comprised undergraduate MBBS students, including first-year MBBS students, second-year MBBS students, and interns. A total of 197 students were included in the study.

Inclusion Criteria:

1. Undergraduate medical students who were present during the study period.
2. Students who provided written informed consent.

Exclusion Criteria:

1. Students who declined to participate.
2. Incomplete or improperly filled questionnaires.

Data Collection Tool:

Data were collected using a pre-tested, structured, self-administered questionnaire developed based on study objectives and literature. The questionnaire included sections on socio-demographic details, prevalence and patterns of self-medication, drug classes used, sources of medicines and information, and attitudes and perceptions.

Attitude and perception were assessed using a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The questionnaire was reviewed by subject experts and pilot-tested prior to administration.

Statistical Analysis:

Data were analyzed using SPSS software. Descriptive statistics were expressed as mean \pm standard deviation and percentages. Chi-square test was used to assess

associations between categorical variables. A p-value <0.05 was considered statistically significant.

RESULTS

A total of 197 undergraduate medical students participated in the study. The mean

age of the participants was 23.3 ± 2.84 years. The majority of participants were males (63.5%) and nearly half of the study population were interns (49.7%), followed by second-year (25.4%) and first-year students (24.9%).

Table 1: Socio-demographic characteristics of the study participants (n = 197)

Variable	Category	n (%) / Mean \pm SD
Age (years)	—	23.3 \pm 2.84
Gender	Male	125 (63.5%)
	Female	72 (36.5%)
Year of Study	1st MBBS	49 (24.9%)
	2nd MBBS	50 (25.4%)
	Intern	98 (49.7%)

Values are presented as mean \pm standard deviation (SD) or frequency (percentage).

Table 2: Prevalence of self-medication among study participants (n = 197)

Self-medication practice	n (%)
Yes	138 (70.1%)
No	59 (29.9%)

Values are presented as frequency (percentage).

The prevalence of self-medication among the participants was 70.1%, with 138 out of 197 students reporting self-medication in the last six months.

Table 3: Frequency of Self-Medication Among Participants Practicing Self-Medication (n = 138)

Frequency	n (%)
Occasionally	100 (72.5%)
Monthly	23 (16.7%)
Weekly	8 (5.8%)
More than once a week	7 (5%)

Only participants who provided a valid response to this question were included.

Among participants who reported practicing self-medication and provided a valid response to this question, the majority reported occasional use (72.5%), followed by monthly use (16.7%). A smaller proportion reported weekly use (5.8%) and more than once a week (5%).

Table 4: Drug Classes Used for Self-Medication (n = 197)

Drug Class	n (%)
Antibiotics	88 (44.7%)
Antipyretics	80 (40.6%)
Analgesics	65 (33.0%)
Antihistamines	46 (23.4%)
Antacids	45 (22.8%)
Vitamins/Supplements	45 (22.8%)
Sedatives/Sleeping pills	9 (4.6%)
Others	2 (1.0%)

Multiple responses were allowed; percentages may not sum to 100%.

Antibiotics (44.7%) and antipyretics (40.6%) were the most commonly used drug classes for self-medication, followed by

analgesics (33.0%). Use of antihistamines, antacids and vitamin supplements was also reported, while sedatives and other drugs were used less frequently.

Table 5: Ailments for Which Self-Medication Was Practiced (n = 197)

Ailment	n (%)
Fever	90 (45.7%)
Common cold / cough	87 (44.2%)
Headache	63 (32.0%)
Gastric pain / acidity	44 (22.3%)
Diarrhea	35 (17.8%)
Body aches	33 (16.8%)
Allergies	24 (12.2%)
Stress / anxiety / sleep issues	21 (10.7%)
Others	8 (4.1%)

Multiple responses were allowed; percentages may not sum to 100%.

Fever (45.7%) and common cold/cough (44.2%) were the most common ailments

for which self-medication was practiced, followed by headache (32.0%). Other reported conditions included gastric acidity, diarrhea and body aches.

Table 6: Source of Medicines Used for Self-Medication (n = 197)

Source of Medicines	n (%)
Pharmacy without prescription	89 (45.2%)
Friends / seniors	60 (30.5%)
Leftover medicines from previous prescription	46 (23.4%)
Online pharmacies	8 (4.1%)
Others	9 (4.6%)

Multiple responses were allowed; percentages may not sum to 100%.

The most common source of medicines was pharmacy purchase without prescription (45.2%), followed by obtaining medicines from friends or seniors (30.5%) and leftover medicines from previous prescriptions (23.4%).

Table 7: Source of Information for Selecting Drugs (n = 197)

Source of Information	n (%)
Previous doctor's prescription	94 (47.7%)
Pharmacology textbooks	47 (23.9%)
Advice from friends/seniors	46 (23.4%)
Self-judgment	35 (17.8%)
Internet / mobile apps	24 (12.2%)
Others	5 (2.5%)

Multiple responses were allowed; percentages may not sum to 100%.

Previous doctor's prescription (47.7%) was the most common source of information for selecting medications, followed by pharmacology textbooks (23.9%) and advice from friends or seniors (23.4%).

Table 8: Completion of Antibiotic Course Among Participants Using Antibiotics (n = 130*)

Completion of Antibiotic Course	n (%)
Yes	80 (61.5%)
No	50 (38.5%)

*Excluding "Not applicable" responses
Among participants who used antibiotics, 61.5% completed the full course, whereas 38.5% did not complete the prescribed course.

Table 9: Reasons for Self-Medication (n = 197)

Reason	n (%)
Mild nature of illness	130 (66.0%)
Prior experience with illness	104 (52.8%)
Easy availability of medicines	56 (28.4%)
Lack of time	34 (17.3%)
Academic stress	22 (11.2%)
Cost of consultation	21 (10.7%)
Others	6 (3.0%)

Multiple responses were allowed; percentages may not sum to 100%.

The most common reason for self-medication was the mild nature of illness (66.0%), followed by prior experience with the illness (52.8%). Other contributing

factors included easy availability of medicines and lack of time.

Table 10: Attitudes and Perceptions Regarding Self-Medication (n = 197)

Statement	Agree + Strongly Agree n (%)
Confident in diagnosing minor illness	129 (65.5%)
Self-medication saves time	104 (52.8%)
Visiting doctor for minor illness is unnecessary	64 (32.5%)
Medical knowledge encourages self-medication	103 (55.7%)
Self-medication is cost-effective	84 (45.1%)
Aware of adverse drug reactions	111 (59.4%)
Aware of antibiotic resistance	114 (61.3%)
Self-medication can be harmful if done improperly	156 (83.4%)

Responses were measured on a 5-point Likert scale. Values shown represent participants who agreed or strongly agreed with each statement.

A majority of participants reported confidence in diagnosing minor illnesses (65.5%) and agreed that self-medication

saves time (52.8%). Most participants were aware of adverse drug reactions (59.4%) and antibiotic resistance (61.3%). Notably, a large proportion (83.4%) agreed that self-medication can be harmful if practiced improperly.

Table 11: Association Between Variables Using Chi-Square Test

Variables Compared	χ^2 value	df	p-value
Year of study vs Self-medication	12.0	2	0.002
Gender vs Antibiotic completion	5.47	1	0.019
Year of study vs Antibiotic completion	26.1	2	<0.001

χ^2 : Chi-square statistic; df: degrees of freedom; $p < 0.05$ considered statistically significant.

A statistically significant association was observed between year of study and self-medication practice ($\chi^2 = 12.0$, $df = 2$, $p = 0.002$). Gender was also significantly associated with completion of antibiotic course ($\chi^2 = 5.47$, $df = 1$, $p = 0.019$). Additionally, a highly significant association was found between year of study and completion of antibiotic course ($\chi^2 = 26.1$, $df = 2$, $p < 0.001$).

DISCUSSION

The present study assessed the prevalence, patterns, and perceptions of self-medication among undergraduate medical students. A high prevalence of self-medication (70.1%) was observed in the present study (Table 2), indicating that self-medication is a common practice in this population. The majority of participants reported occasional use (72.5%) (Table 3), suggesting that self-medication is not habitual but practiced in specific

situations. Analgesics (33.0%), antipyretics (40.6%), and antibiotics (44.7%) were the most commonly used drug classes (Table 4), and self-medication was primarily practiced for minor ailments such as fever (45.7%) and common cold (44.2%) (Table 5). Pharmacy purchase without prescription (45.2%) was identified as the most common source of medicines (Table 6).

The prevalence observed in the present study is consistent with findings from previous studies conducted among medical students in India and other regions, where self-medication rates have been reported to range between 50% and 90%.^{2-5,9} Similar drug usage patterns have been reported in earlier studies, where analgesics, antipyretics, and antibiotics were the most commonly used drugs.^{3,10} The high prevalence may be attributed to increasing medical knowledge, easy accessibility of medicines, and familiarity with common illnesses among medical students.^{6,7} Self-medication in this study was predominantly practiced for minor and self-

limiting conditions such as fever, common cold, and headache (Table 5). The most common reasons identified were the mild nature of illness (66.0%) and prior experience with similar symptoms (52.8%) (Table 9), indicating that students tend to rely on their existing knowledge and clinical exposure. Additional contributing factors included easy availability of medicines (28.4%) and lack of time (17.3%). These findings are consistent with previous studies where convenience and prior knowledge were identified as key drivers of self-medication behavior.^{4,8}

A notable finding of this study is the use of antibiotics for self-medication and the pattern of incomplete antibiotic courses among a considerable proportion of participants. Among those who used antibiotics, 38.5% did not complete the full course (Table 8), which may contribute to the growing problem of antimicrobial resistance.¹¹ Despite a relatively high level of awareness regarding adverse drug reactions (59.4%) and antibiotic resistance (61.3%) (Table 10), inappropriate practices were still observed. This reflects a gap between knowledge and practice among medical students, which has also been highlighted in previous studies.^{5,13}

Furthermore, a statistically significant association was found between year of study and self-medication practice ($p = 0.002$) (Table 11), with interns demonstrating higher prevalence. This may be attributed to increased clinical exposure and confidence in diagnosing and managing minor illnesses. At the same time, interns showed better adherence to antibiotic completion ($p < 0.001$) (Table 11), suggesting that greater clinical experience may promote more rational drug use. These findings indicate a transition from knowledge acquisition to more responsible practice as students' progress in their medical training.

The study has certain limitations. Being a cross-sectional study, causal relationships cannot be established. The data were self-reported and may be subject to recall bias or social desirability bias. Additionally, the

study was conducted in a single institution, which may limit the generalizability of the findings.

Despite these limitations, the study provides valuable insights into self-medication practices among medical students. The findings emphasize the need for targeted educational interventions to promote rational drug use and to address inappropriate practices such as antibiotic misuse. Incorporating structured training on rational pharmacotherapy during undergraduate education may help bridge the gap between knowledge and practice.

CONCLUSION

Self-medication is highly prevalent among undergraduate medical students, particularly for minor ailments. Although awareness regarding risks is adequate, inappropriate practices such as incomplete antibiotic courses persist. Educational interventions focusing on rational drug use are necessary to promote safe practices among future healthcare professionals.

Declaration by Authors

Ethical Approval: Approved by the Institutional Ethics Committee, Government Medical College, Jalaun, Orai, Uttar Pradesh (Approval No. 79/Ethics/RMC Jalaun/2025 dated 20/09/2025).

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