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KNOWLEDGE, ATTITUDE AND PRACTICE OF SELF-MEDICATION AMONG MEDICAL STUDENTS: A QUESTIONNAIRE-BASED STUDY

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ABSTRACT: Background: Self-medication is a common practice among medical students due to their exposure to pharmacological knowledge and easy access to drugs. This reflects a gap between knowledge and behavior driven by perceived convenience and confidence in their medical knowledge. **Objectives:** To assess the knowledge, attitude, and practice (KAP) of self-medication among undergraduate medical students using a structured questionnaire. **Methods:** A cross-sectional study was conducted using a pre-validated questionnaire on 150 medical students. The data collected were analyzed using descriptive statistics and Chi-square tests to identify trends and associations between demographic variables and self-medication practices. **Results:** 78% of the students reported practicing self-medication. Most had adequate knowledge but showed casual attitudes. Common drugs used included antipyretics, analgesics, antacids, and antibiotics. 46% were unaware of the potential dangers of self-medication, such as adverse drug reactions and antibiotic resistance. **Conclusion:** Educational strategies must be implemented to promote rational and responsible drug use among medical students.

INTRODUCTION: Self-medication is defined as the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms without professional supervision [1]. It is especially prevalent among medical students due to their increasing knowledge of diseases and drugs, access to textbooks and online resources, and proximity to medical stores [2]. While responsible self-medication may help reduce the burden on healthcare systems and provide quick relief from minor ailments, irrational use poses risks such as incorrect diagnosis, drug resistance (especially due to misuse of antibiotics), adverse drug reactions, and masking of serious illnesses [3]. Studies have shown that self-medication is generally prevalent in the developing world [4, 5].

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It has been associated with several factors, particularly, lack of access to health care, availability of almost all the drugs as over-the-counter drugs, poor regulatory practices and the relatively higher prevalence of infectious diseases [6, 7]. Given that medical students are future prescribers, understanding their current knowledge, attitude, and practice (KAP) of self-medication is essential for planning educational interventions to ensure safe practices.

MATERIALS AND METHODS:

Study Design: This was a survey based cross-sectional study carried out after obtaining approval from the Institutional Ethical Committee (FHMC/IEC/R. Cell/2024/42). This questionnaire-based study was conducted at F H Medical College Agra, from January to March 2025.

Study Population: A total of 150 medical students from all academic years (1st year to intern) were selected using a stratified random sampling technique. Students from each academic year were

proportionally included to ensure a representative sample.

Data Collection Tool: A structured and prevalidated questionnaire was used to obtain the data from all participants in this survey. The questions were developed based on the previous literature and take the agreements of six experts. The questionnaire was pre-tested on a small sample (30 students) for validity and reliability. Cronbach's alpha was found to be 0.78, indicating good internal consistency. The questionnaire was distributed electronically to informed and consenting participants. Prior to administrating the questionnaire, the students were addressed regarding the purpose and process of data collection. They were informed that the data collected would be anonymous, and their participation would be voluntary. Questionnaires were distributed among the participants after receiving informed consent. It included both open ended and close-ended questions to gather comprehensive information on demographic, educational, and social variables, as well as self-reported therapeutic drug-seeking behavior and self-medication practices over the past five years.

The questionnaire was divided into four sections:

Demographics: Age, gender, year of study, *etc*.

Knowledge of Self-Medication: Questions about drug types, risks, and side effects. The response choices for knowledge items included "yes", "no" and "do not know". Correct answers were scored as 1, while incorrect answers and "do not know" were scored as 0. The total knowledge score ranged from 0 to 7 (7 items). Knowledge was defined as poor for a score of 0–4 and good for a score of 5–7.

Attitudes Toward Self-Medication: Four-point Likert scale items were used; strongly agreed responses were scored as 4, agree as 3, disagree as 2, and strongly disagree as 1.

Practice of Self-Medication: Questions on the frequency of self-medication, types of drugs used, and reasons for self-medicating.

Pilot Study: The clearness of questions, the time needed to complete the questionnaire and the response rate were assessed by the pilot study to overcome any difficulties or related issues that may arise during data collection. The pilot study was done on 30 students in college in two days' duration, the students were selected from different stages. Some modifications were made to several practice questions to make them clearer to students. The average time needed to complete the questionnaire was approximately 10-15 minutes.

Statistical Analysis: Data was entered in MS Excel using computer software. The results are expressed as percentage (%) of proportions and statistical analysis was performed using the Chi-square test with SPSS version 16 (Statistical Package for the Social Sciences). $p<0.005$ was considered to be significant.

RESULTS: A total of 150 participants provided responses, detailing demographic characteristics, self-medication practices, and associated behaviors.

Among the participants, the majority of the students took analgesic/ antipyretics (84%), followed by antacids (72%), antibiotics (38%), and anti-allergic medications (32%). Key findings are summarized as follows:

Demographic Data: A total of 150 students participated in the study, with a response rate of 98%. The mean age was 22.5 ± 2.1 years.

TABLE 1: THE DEMOGRAPHIC BREAKDOWN OF PARTICIPANTS IS AS FOLLOWS

	Group	%
Gender	Male	56
	Female	44
Age	18-22	20
	23-27	65
	28-32	15
Education level	First year	18
	Second year	22
	Third year	25
	Fourth year	20
	intern	15

Knowledge of Self-Medication: The majority of students had moderate to high knowledge of the concept of self-medication, with the majority able to identify common medications used for self-treatment but with limited awareness about the risks. 46% were unaware of the potential dangers of self-medication, such as adverse drug reactions and antibiotic resistance.

TABLE 2: KNOWLEDGE TOWARDS RESPONSIBLE SELF-MEDICATION

S. no.	Variable	Frequency (%)
1	Have you heard the term "self-medication"? (Yes/No)	Yes -56, No-44
2	Do you know the definition of self-medication? (Yes/No)	Yes -39, No-61
3	Can self-medication lead to harmful effects? (Yes/No)	Yes – 46, No-44
4	Are you aware that irrational use of antibiotics causes resistance? (Yes/No)	Yes-31, No- 69
5	Knowledge of appropriate dosages and administration (Yes/No)	Yes-28, No-72

Association between Demographic Factors and Self-Medication: A significant association was found between the year of study and self-medication practices ($p < 0.05$). Students in higher years (3rd, 4th, and 5th years) had a higher prevalence of self-medication (85%) compared to those in their 1st and 2nd years (68%).

Attitude towards Self-Medication: Most students perceived self-medication positively for minor ailments, believing it was a time-saving and cost-effective option.

However, many were also aware of the risks involved.

TABLE 3: ATTITUDE TOWARDS SELF-MEDICATION

S. no.	Attitude Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
1	Self-medication is acceptable for treating minor illnesses.	38%	30%	22%	10%
2	Self-medication saves time and money.	45%	32%	13%	10%
3	Self-medication is risky and should be avoided.	25%	30%	35%	10%
4	I feel confident in self-medication for minor illnesses.	30%	45%	20%	5%
5	Self-medication is acceptable for treating minor illnesses.	27%	32%	23%	18%
6	Self–medication part of self-care	36%	24%	18%	22%
7	No need for training to use self-medication?	29%	31%	22%	18%
8	Medical students are able to diagnose different diseases.	36%	34%	16%	14%
9	Medical students are able to treat different diseases.	30%	28%	22%	20%

Practice of Self-Medication: The practice of self-medication was highly prevalent among the students. Approximately 78% of the students agreed that they used self-medication in the last 6 months. The practice frequency and types of drugs used are summarized in **Table 4.**

TABLE 4: STUDENTS' PRACTICES TOWARDS SELF-MEDICATION

S. no.	Question	Response	Percentage
1	Have you practice self-medication in the last 6 months?	• Yes	78
		• No	22
2	How frequently did you visit the pharmacy to purchase drugs without a prescription for yourself in the last 6 months?	• Once	58
		• Twice	32
		• ≥Three times	16
3	Do you know if the medicines you consumed needed prescription or not?	• Yes	74
		• No	16
		• I don't know	10
4	Which of the following drugs have you taken without a prescription in the last 6 months?	• Analgesic/ Antipyretics	84
		• Antibiotics	38
		• Antacid drugs	72
		• Antihistamines	3228
		• Cough syrups	27
		• Cold and flu preparations	45
		• Drugs for constipation	12
		• Drugs for diarrhoea	8
		• Anti-emetics	
5	For which of the following indications did you take medications without prescription during the last 6 months?	• Headache	74
		• Cough & common cold	62
		• Fever	58
		• Heart burn	3418
		• Allergy	28

		• Disorder of digestive system	
		• Body pain	32
		• Tooth pain	23
		• Acne/skin diseases	15
		• Insomnia	12
6	What is your source of information about self-medication?	• Old prescriptions	35
		• Internet Relatives	43
		• Friends	23
		• Personal Knowledge	21
		• Multimedia	22
		• Lecture class	16
7	Do you know the potential adverse reactions of the drug with which you have self-medicated?	• Yes	34
		• No	68
		• Don't know	8
8	What do you know about the drug you requested?	• Name of the drug	54
		• Indication	64
		• Dose	37
		• How to use	27
		• Frequency	22
		• Duration	18
		• Storage of the drug at home	9
9	What is the most important reason for you to self-medicate?	• To save money	65
		• To save time	62
		• Privacy	32
		• Needed quick relief	40
		• No hospital nearby	21
		• Previous experience	18
		• Health problem not serious	9
		• Embarrassed of discussing own symptoms	8
		• Avoidance of crowd	15
10	Do you feel confident with the use of SM?	• Yes	37
		• No	28

DISCUSSION: This study shows that while most students have adequate knowledge about self-medication and its risks, the practice remains highly prevalent. The casual attitude among students stems from perceived competence and convenience. This study highlights that self-medication is a prevalent practice among medical students, with a significant number of students engaging in it despite possessing moderate knowledge of the risks involved. The high confidence in self-medication practices might be due to students' perceived expertise in health-related matters, but this could lead to improper medication use [8].

The results are consistent with studies from other parts of the world (Al-Hasan *et al.,* 2018) [9], and Siraj *et al* [10]. Which also found high self-medication rates among medical students. However, our study reveals a critical gap in students' awareness of certain risks, especially drug interactions and antibiotic resistance, which are particularly relevant to their training. The attitudes of the students in our study were mostly negative. This shows that students may be careful about self-medication because their knowledge level is good. This negative attitude may result from their ignorance of the concepts of responsible self-medication and irresponsible self-medication.

Although many students correctly identified the risks of self-medication, the high prevalence of painkillers and antibiotic use raises concerns about inappropriate practices. This indicates a need for interventions aimed at educating medical students on the dangers of improper drug use and promoting safe practices. The frequent use of antibiotics without prescriptions is particularly concerning due to the risk of antimicrobial resistance. Although students are generally aware of such risks, this knowledge doesn't always translate into responsible behavior. Common reasons cited were mild illness,

time-saving, and prior exposure to similar conditions. These findings are consistent with studies conducted in other medical institutions across India.

CONCLUSION: Self-medication among medical students is common despite adequate knowledge of its risks. This reflects a gap between knowledge and behavior driven by perceived convenience and confidence in their medical knowledge. Integrating rational drug use and ethics into the undergraduate curriculum and sensitizing students to the consequences of irrational practices is crucial. While students are aware of the risks associated with self-medication, their attitudes towards its practice remain largely positive. Educational programs focusing on the dangers of self-medication and the promotion of responsible drug use are recommended to reduce potential health risks.

Limitations: The study was conducted at a single institution, limiting generalizability. Self-reported data may be subject to recall bias or social desirability bias.

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