

## Practice of Self-Medication among Under Graduate Medical Students in a Tertiary Care Hospital of Jharkhand

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Conflict of interest: Nil

### Abstract:

**Introduction:** WHO defines Self-medication as self-prescription which includes diagnosing and treating one's own illness and prescribing for one's self. Self-medication is widely prevalent globally among both urban and rural populations, including developing nations such as India, where numerous medications are available over the counter without the need for a prescription. This accessibility offers a cost-effective option for individuals, particularly for minor or common ailments such as headaches, fevers, and the common cold self-medication may appear to be a convenient and economical option, However it carries considerable risks and potential negative outcomes. The misuse of nonprescription medications is particularly notable among young individuals, especially students, largely influenced by media and advertising. This practice is prevalent not only within the general population but also among healthcare professionals, who possess greater awareness of drug patterns, incidence, and knowledge.

**Methods:** This descriptive cross-sectional study was conducted using online methods among 93 MBBS students. The study involved the administration of the research questionnaire including demographic information, practice of self-medication, type of illness, factors influencing self-medication, commonly self-prescribed drugs, sources of self-medication.

**Results:** The prevalence of self-medication was 81 (87%), more common among female students. The common illness found was fever and headache and common drug self-prescribed was analgesic-antipyretic. The most common source of obtaining self-medication was pharmacy. Most prevalent motivations for self-medication were the aim to conserve time followed by the assessment of the illnesses as being minor.

**Conclusions:** Self-medication is a common practice among medical students. Although it can alleviate certain health concerns, it also poses risks such as adverse drug reactions, the emergence of drug resistance, and the possibility of masking more serious health issues. To mitigate the prevalence of self-medication, it is crucial that medical students are adequately educated on the principles of rational prescribing. Moreover, additional studies are necessary to investigate self-medication behaviors among different health professionals and the general population.

**Keywords:** Self-Medication, Medical Students, Jharkhand.

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### Introduction

WHO defines Self-medication as self-prescription which includes diagnosing and treating one's own illness and prescribing for one's self [1].

Self-medication is widely prevalent globally among both urban and rural populations, including developing nations such as India, where numerous medications are available over the counter without the need for a prescription [2,3]. This accessibility offers a cost-effective option for individuals. Particularly for minor or common ailments such as headaches, fevers, and the common cold self-medication may appear to be a convenient and economical option, however it carries considerable risks and potential negative outcomes. The adverse effects associated with self-medication can include

addiction, the development of drug resistance, serious health complications, and in extreme cases, death [4,5].

The implementation of Self Medication should rely on credible medical information to prevent the irrational use of medications. However misuse of drugs can result in resource wastage, heightened resistance among pathogens, and may lead to significant health risks, including extended suffering, adverse drug reactions, and drug dependence. The misuse of non-prescription medications is particularly notable among young individuals, especially students, largely influenced by media and advertising. This practice is prevalent not only within the general population but also

among healthcare professionals, who possess greater awareness of drug patterns, incidence, and knowledge.

The inclination towards self-medication among students from healthcare field are on the rise. These students possess convenient access to drug-related information through well-documented literature and drug indices, which encourages them to self-diagnose and increases their likelihood of self-medicating [6]. This study has been initiated to assess and analyse the self-medication behaviours of these students, who will actively participate in demonstrating their self-medication patterns.

One significant consequence of self-medication is the development of drug resistance. The inappropriate use of medications, whether through excessive or insufficient consumption, plays a role in fostering drug resistance, thereby diminishing the body's responsiveness to future treatments. Ongoing self-medication with unprescribed drugs or incorrect dosages exacerbates this resistance, ultimately lowering the effectiveness of medications and complicating treatment efforts, which can also lead to increased costs. This issue is particularly evident with antibiotics, which are frequently misused, resulting in bacterial resistance and complicating the management of infectious diseases in the future. Risk of addiction, adverse drug reaction are also matter of concern in self medication

It is essential to recognize that self-medication may appear to be a cost-effective and convenient option, it can significantly elevate the risk of negative consequences, ultimately impacting overall health and quality of life.

### Methods

This descriptive cross-sectional study was done among medical students of Phulo Jhano medical college, Dumka, Jharkhand. The study was conducted from 01 February 2024 to 14 March 2024. In the study, students in all years of Bachelor of Medicine, Bachelor of Surgery (MBBS) were included. A structured questionnaire was prepared by taking reference from similar research conducted among undergraduate medical students.

Data collection was conducted through an online method. The study's objectives were communicated

to participants via clear and accessible messages distributed through emails and social media groups.

Respondents completed a questionnaire using Google Forms and submitted their responses electronically after giving their digital consent. Measures were taken to ensure confidentiality and anonymity throughout the process. Those who did not give consent were excluded from the study.

Convenience sampling was done and minimum sample size was calculated as,

$$n = z^2 \times (pq) / e^2$$

$$= 1.64^2 \times (0.5 \times 0.5) / 0.1^2$$

$$= 67$$

Where, n= minimum sample size

z= confidence interval at 90% z= 1.64

p= prevalence of self-medication taken as 50%

q= 1-p

e= margin of error, 10%

The study was conducted among 93 students.

The data were analyzed using SPSS software version 16 (SPSS for Windows). The quantitative data were expressed using descriptive statistics of frequencies and percentages. The data were analyzed using SPSS software version 16 (SPSS for Windows). The quantitative data were expressed using descriptive statistics of frequencies and percentages.

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### Results

Out of 93 medical students, It was seen that 81 (87.1%) MBBS students were involved in self-medication in the preceding one year. There were 43 (46%) males, and 50 (54%) females in this study out of which 45 females (55%) and 36 males (45%) took medicines without registered doctors' advice.

## HAVE YOU TAKEN ANY MEDICATION WITHOUT REGISTERED DOCTOR'S ADVICE IN LAST 1 YEAR?

93 responses

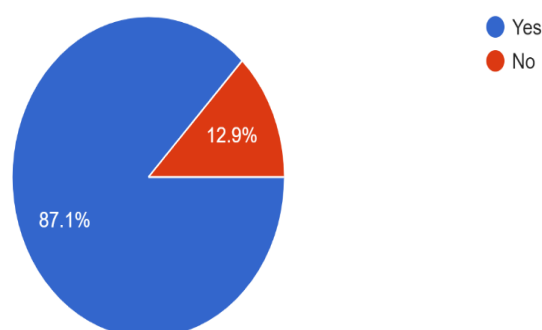


Figure 1:

Table 1: Prevalence of self-medication according to Genders and Semesters (n = 81)

Gender	Number	Percentage
Male	36	45
Female	45	55

Table 2:

	Number	Percentage
First	11	13.5
Second	24	30
Third	19	23.5
Fourth	27	33

Table 3: Conditions for self-medication (n = 81)

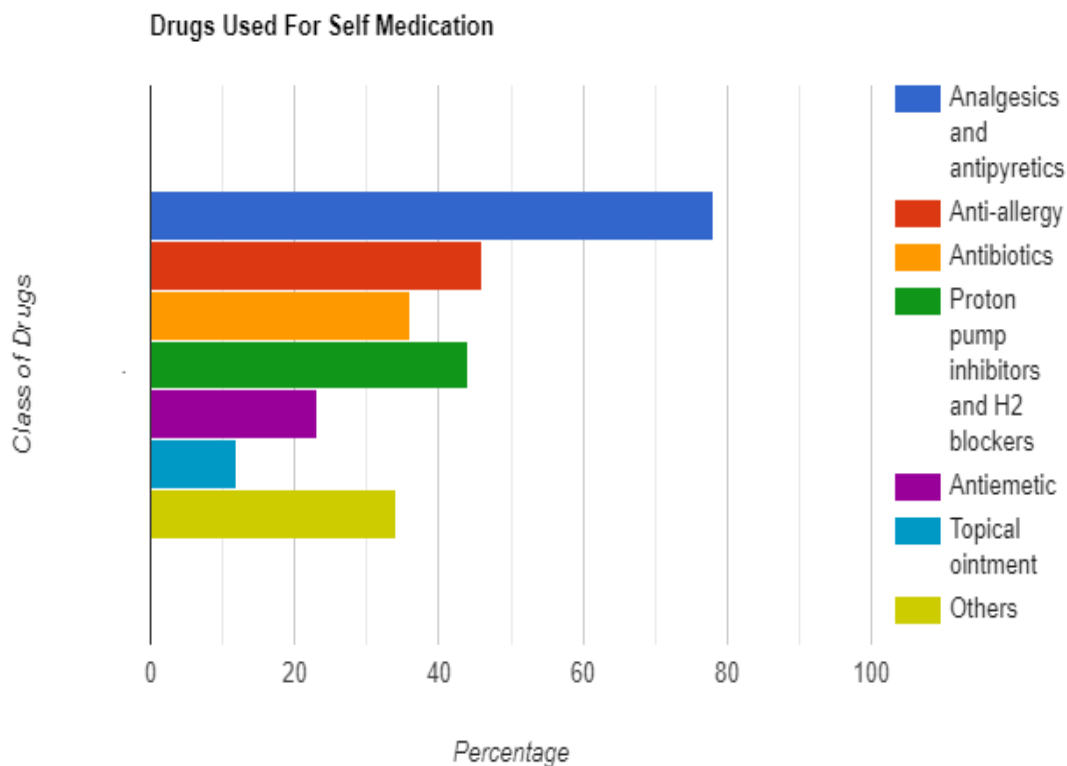
	Number	Percentage
Fever	66	81.5
Headache	51	62.9
Cough	56	69.1
Running Nose	44	54.3
Acidity	38	46.9
Diarrhea	37	45.6
Muscle Pain	17	20.9
Menstrual problems	24	29.6
Nausea and Vomiting	22	27.1
Wounds	07	8.6
Others	06	7.4

Analgesic and antipyretics were used by 63 (78%), anti-allergic- 36 (45%) and proton pump inhibitors and H2 blockers- 35(43%).

Amongst analgesic and antipyretics, paracetamol was used most commonly by 53 (66%) and among anti-allergic, levocetirizine was most commonly used by 26 (32%).Self Medication of Antimicrobials was done 28 (35%) students among

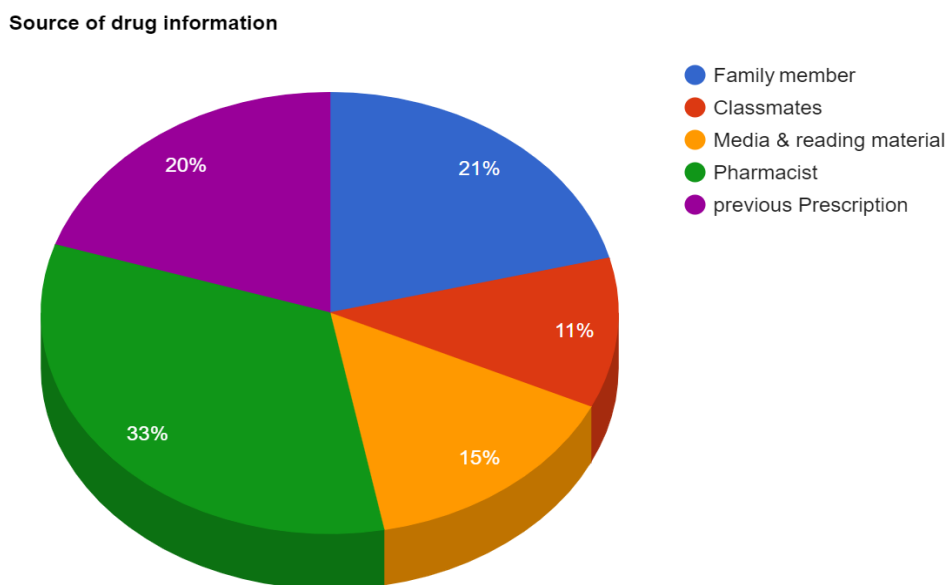
which Amoxicillin clavulanic acid 17(60 %) and 11(40%) Azithromycin was most common. Route for administration of medicine preferred by students was oral route 75 (92%), topical route by 10 (12%), and inhalational route by 4 (5%) for Self-medication.

None of them used injections for Self-medication.



**Figure 2: Drugs used for self Medication**

It was observed that 27 (33%) respondents got information about drugs through the pharmacist followed by 17 (21%) as per advice from family members. 16 respondents (20%) got self-medicated based upon knowledge from previous prescription, 12(15%) from media and reading materials and 9 (11%) as per advice from their classmates.



**Figure 3: Source of drug information**

**Reasons for self-medication:** The prime motivation behind self-medication was the intention to save time with 33 (41%) respondents.

The other reasons for self-medication was considering nature of illness as minor ailments

among 15 (19%) participants. 13 (16%) participants considered self-medication to be economical as doctor fees was high. Confidence in self-Diagnosis 11(13%) And expertise from previous prescription 9(11%) were other factors for taking self-medication into account.

Reasons for self-medication

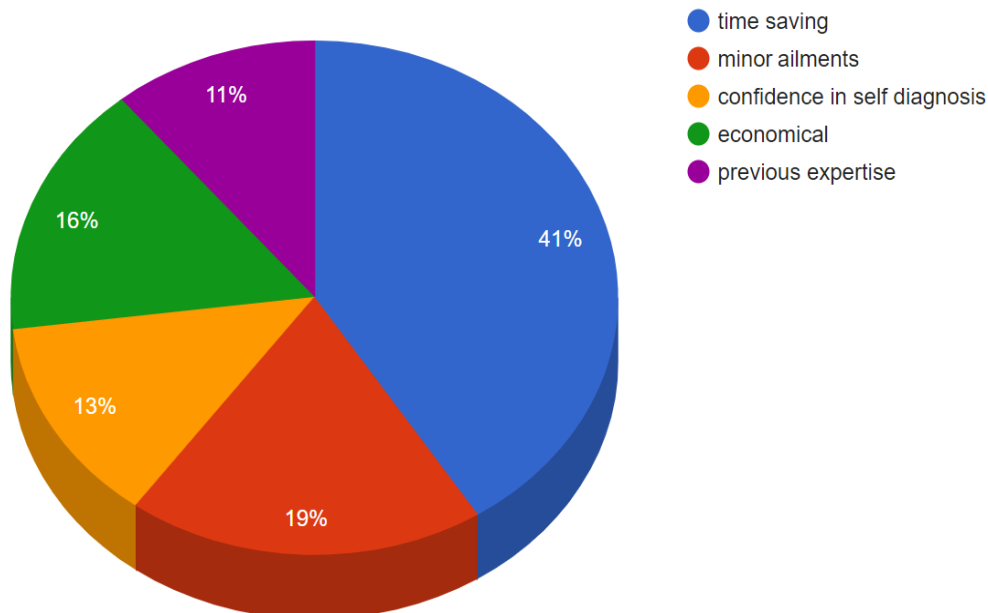


Figure 4: Reasons for Self Medication

**Experience of Side Effects:** It was found that 13 (16%) students experienced some sort of adverse effects after self medication however 81 out of 93 students(87 %) who participated in this study were aware of reporting of adverse drug reactions.

Experience of side Effects

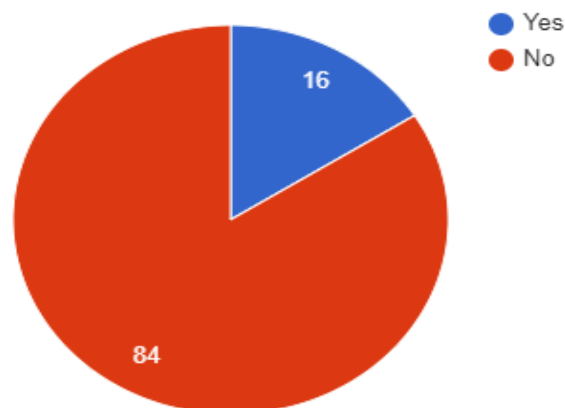


Figure 5: Experience of Side effects

## Discussion

Self-medication (SM) is defined as the practice of individuals administering medications to themselves without professional medical oversight. In countries like India, a substantial portion of health conditions is managed through self-medication, primarily due to the easy access to non-prescription pharmaceuticals. This phenomenon presents a significant obstacle to the safe and effective use of medications. The potential for inappropriate use is greater when individuals do not possess complete knowledge, yet this practice is becoming routine, particularly among undergraduate medical students [7-11].

The findings of this study demonstrated that 87 % of students practiced self-medication in the previous year. In contrast, various other studies have reported prevalence rates that vary significantly, from 52% to 80% [12-15]. The ability to compare these prevalence figures with those of the current study is hindered by disparities in demographic characteristics, methodological approaches, and socioeconomic backgrounds.

The occurrence of self-medication varied across different student years, with a notable increase in the final year students. This trend may be linked to the greater understanding of medications possessed by final-year students, which aligns with previous research findings [15,16]. On the other hand, a study conducted in Kathmandu revealed a greater prevalence of self-medication among first-year students [17]. Moreover, the practice was found to be more prevalent among female students compared to male students, which is in agreement with earlier studies [12,18]. However, some research indicated similar proportions of self-medication between genders, while others noted a slightly higher prevalence among males [17,19]. The illnesses most commonly associated with self-medication in this study—fever and Headache followed by cough and cold—were similarly reported in other research [13,16,19]. This observation, however, contrasts with a study conducted across six medical colleges in Mumbai identified cough and cold as the predominant reasons for self-medication [12]. Numerous researchers [15,16,18,19] have noted that antipyretics and analgesics are frequently used for self-medication, which aligns with the findings of the current study. In contrast, a study conducted at a tertiary care medical college in West Bengal found that antibiotics were the most commonly prescribed medications [20].

The majority of students favoured the oral route for self-medication, followed by the topical and inhalational routes. Notably, no participants opted for the parenteral route. It was observed in this

study that most common source of information about drugs for self-medication was acquired through the pharmacist followed by knowledge from previous prescriptions. On the other hand, various studies pointed out that the sources of information stemmed from internet, seniors, family and friends, and earlier prescriptions [13,17,18,19]. Our study highlighted that the most prevalent motivations for self-medication were the aim to conserve time followed by the assessment of the illnesses as being minor. On the other hand, few studies noted that previous knowledge [16], and the need for rapid alleviation [21] were key reasons for engaging in self-medication. A significant proportion of students in this study, regardless of their academic year, expressed awareness regarding the harmful effects associated with medications and the necessity of documenting adverse drug reactions. These results are consistent with the observations made by other researchers [6,22,23,24].

## Conclusions

The findings of our research indicate that self-medication is significantly common among medical students in India. While the incidence of self-medication is notably higher among senior students, it is important to note that junior students, despite their limited exposure to pharmacological knowledge, also engage in this practice. This may be explained by their heightened awareness of drugs, which is facilitated by easy accessibility of information regarding medications.

The alarming trend of self-medication among the youth underscores the urgent need for educational programs that advocate for safe practices. While it may be challenging to completely eliminate self-medication, a range of strategies can be implemented to deter these practices. If proactive steps are not taken, the risk of adverse effects, drug interactions as well as antimicrobial resistance is likely to increase significantly.

To address the issue effectively, it is essential to implement awareness programs at the onset of the MBBS curriculum. These programs should aim to educate students about the multifaceted nature of self-medication. Key topics should include fundamental pharmacology, the adverse effects associated with various medications, the concepts of drug dependence, and the phenomenon of drug resistance. This approach will cultivate a heightened awareness among students regarding the inappropriate use of medications.

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