Self-Medication "Boon or Bane!!": A Cross-Sectional Survey of Undergraduate Medical Students

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Abstract

Background: Self-medication can be a boon as well as curse to mankind whose proper application can reduce the unnecessary pressure on the health care system. The focus of this study was to assess the knowledge, attitude, and self-medication practices among undergraduate (UG) medical students, who are more likely to self-medicate themselves due to their limited knowledge and easy drug availability.

Methods: The study involved distributing questionnaires among undergraduate medical students at Government Medical College, using a cross-sectional approach. The data was collected in June 2022, with 360 responses analyzed. The questionnaire, consisting of 17 close-ended questions, included demographics, prevalence, indications for self-medication, commonly self-medicated drugs, patterns of self-medication, and knowledge about safety and consequences.

Results: 327 students willingly participated in the study of which 164 were females and 163 were males belonging to the age group of 18-25 years. The prevalence of self-medication was found to be 75.5%. Most common indication was cold, cough & sore throat (70.4%) followed by headache (66%). Antipyretics (71.2%) and analgesics (62.3%) were most commonly used class of drugs. 84.5% students are aware about adverse effects of drugs. 74% opine that self-medication is not a good practice..

Conclusion: Due to rising incidence of self-medication amongst the undergraduate medical students there is an increased risk of adverse drug effects. Thus, it is crucial to undertake measures that emphasize education and awareness, aiming to discourage self-medication among them.

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Keywords: Self-Medication; Medical Students; Over the Counter Drugs; Questionnaire

Introduction

AThe World Health Organization (WHO) precisely defines self-medication as the conscious use of non-prescription pharmaceuticals intentionally produced and distributed for self-administration by consumers without the need for a medical prescription commonly known as "over-the-counter (OTC) medications"(1).

According to the WHO, responsible self-medication has the potential to proactively manage and alleviate symptoms that do not necessitate medical consultation, offering a cost-effective approach for common medical conditions and helping alleviate the healthcare system's burden (2). This practice is prevalent globally, with a higher incidence observed in developing regions like India (3). Self-medication encompasses fundamental aspect of self-care, including health preservation, disease prevention, and therapeutic interventions, especially for acute medical conditions such as headaches, respiratory irritations, and gastrointestinal disturbances, which can rapidly deteriorate and require lifesaving interventions in urgent situations. Various factors influence self-medication behaviour, including age, socioeconomic class, level of education, information about medicine, being exposed to promotional materials, health education, and the availability of pharmaceuticals and healthcare facilities (4).

Self-medication presents a duality of both benefits and drawbacks. Responsible self-medication helps conserve limited medical resources by addressing minor conditions, easing the burden on healthcare facilities, and reducing the financial and time costs associated with seeking medical care for minor ailments (1). However, improper self-medication carries potential hazards, including delays in seeking appropriate medical guidance, the risk of failing to recognize contraindications or interactions

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with prescribed medications, the omission of reporting ongoing self-medications to the prescribing physician (with the associated risks of duplication or harmful interactions), incorrect durations of medicine use, and the potential for dependency and abuse, particularly among young people influenced by of media and internet-driven self-medication behaviours. The proliferation of pharmaceutical advertisements further heightens the risk by exposing young individuals to self-medication practices (5).

Self-medication holds particular significance for future medical practitioners, especially impacting medical students during their undergraduate studies. Despite their increasing understanding of disease pathophysiology and therapeutics, medical students lack legal authorization to prescribe medications. This unique situation places them in a distinct position regarding self-medication.

Primarily, medical students benefit from ready access to drug information through drug indices, medical textbooks, and interactions with peers, enabling them to diagnose and medicate themselves. In addition, they have easy access to medications through pharmacies or doctor samples delivered by pharmaceutical companies, which helps them understand their relationship to self-medication in the term of their medical education (6).

Self-medication becomes inevitable in specific situations, highlighting the need to promote responsible self-care throughout the general population. Medical students, representing the upcoming generation of physicians and medical educators and possessing a strong grasp of self-medication principles, have the potential to champion, inspire, and share essential knowledge about responsible self-medication with both their patients and the wider community. Moreover, healthcare practitioners must possess a comprehensive understanding of prevalent self-medication practices within their communities. This awareness empowers them to inquire about their patients' self-medication behaviours before prescribing medications, facilitating treatment optimization, and reducing the risk of drug interactions.

Therefore, the primary goal of this study was to evaluate undergraduate students' knowledge, attitude, and behaviour related to self-medication. These students, as the future of the medical profession, have perspectives on pharmacotherapy that can significantly influence their future prescribing practices.

Methods

This study employed a cross-sectional, questionnaire-based approach. The research was conducted among undergraduate students of Government Medical College. The data was collected in the month of June 2022. A total of 360 responses were analysed based on inclusion and exclusion criteria. All the undergraduate medical students who voluntarily agreed to participate in the study were included. The study protocol received approval from the Institutional Ethical Committee.

A self-developed questionnaire, consisting of 17 close-ended questions, was framed, evaluated, and approved by experts. The experts offered suggestions, which were adopted and forwarded for approval. The goal of the study had been explained to the participating students, confidentiality was ensured, and informed consent was obtained from the participants. The questionnaire was created in Google Form and was shared among students. This questionnaire included questions/ information regarding demographics (age, gender, academic year), prevalence, indications for self-medication, commonly self-medicated drugs and their sources, patterns of self-medication, knowledge about the safety and consequences of self-medication. Information regarding knowledge, practices, perceptions and awareness regarding self-medication was analysed. The study protocol received approval from the Institutional Ethical Committee.

Results

A total of 327 participants willing participated in the study out of approximately 750 undergraduate (UG) students. These participants had an average age of 21.18±1.31 years, with 164 (50.3%) being females and 163 (49.7%) males. Among these 327 students, 79 (24.2%) were in their first year, 119 (36.4%) in the second year, 69 (21.1%) in the third year (minor) & 60 (18.3%) in the third year (major).

Regarding the practice of self-medication, it was prevalent among 75.5% of the participants. The majority (59.9%) of the students believed that minor illnesses did not require doctor's visit. They cited reasons such as finding it easy and convenient (37.4%), achieving quick relief, saving time, having confidence in their knowledge about medicine, economic considerations and avoiding crowded healthcare facilities (Table 1).

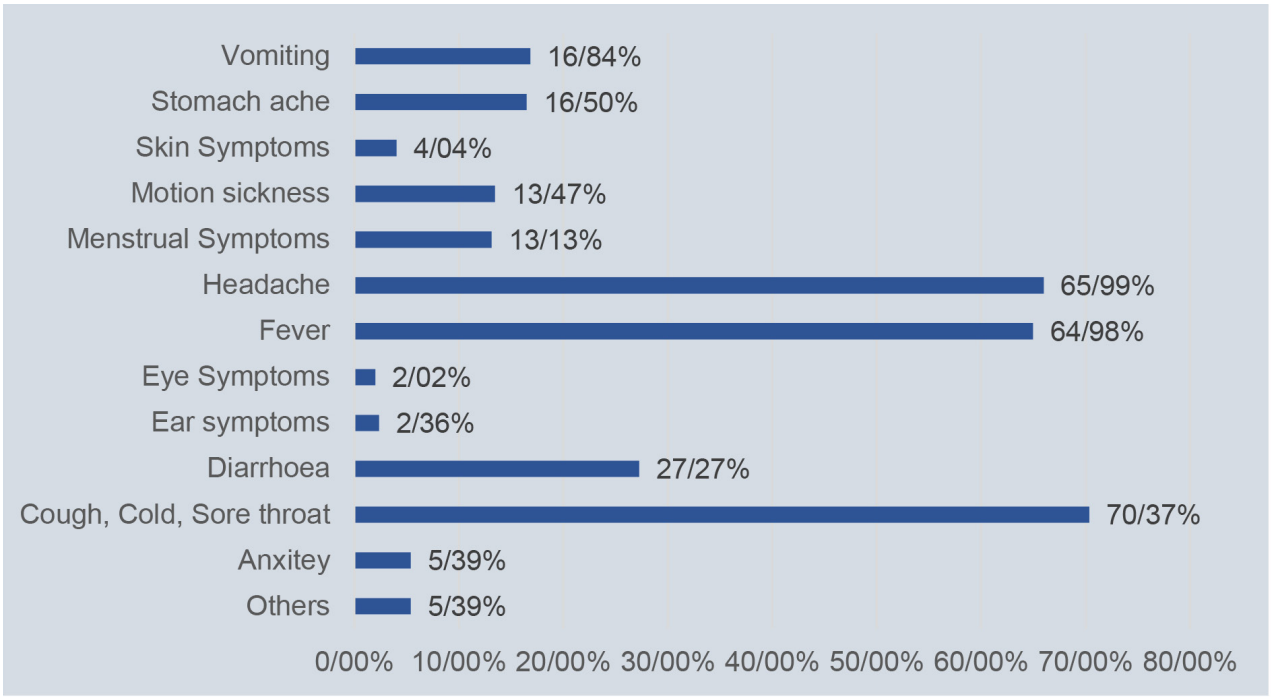
Table 1. Reason for using self-medication.

Reasons for Self-medication	Percentage
No need to visit doctor for minor illness	59.5
Ease and convenience	37.4
Quick relief	34.6
Time saving	30.7
Confidence on your knowledge about medicine	20.6
Economical	10.5
Avoidance of crowd	10.1

Cough, cold, and sore throat accounted (70.4%) major

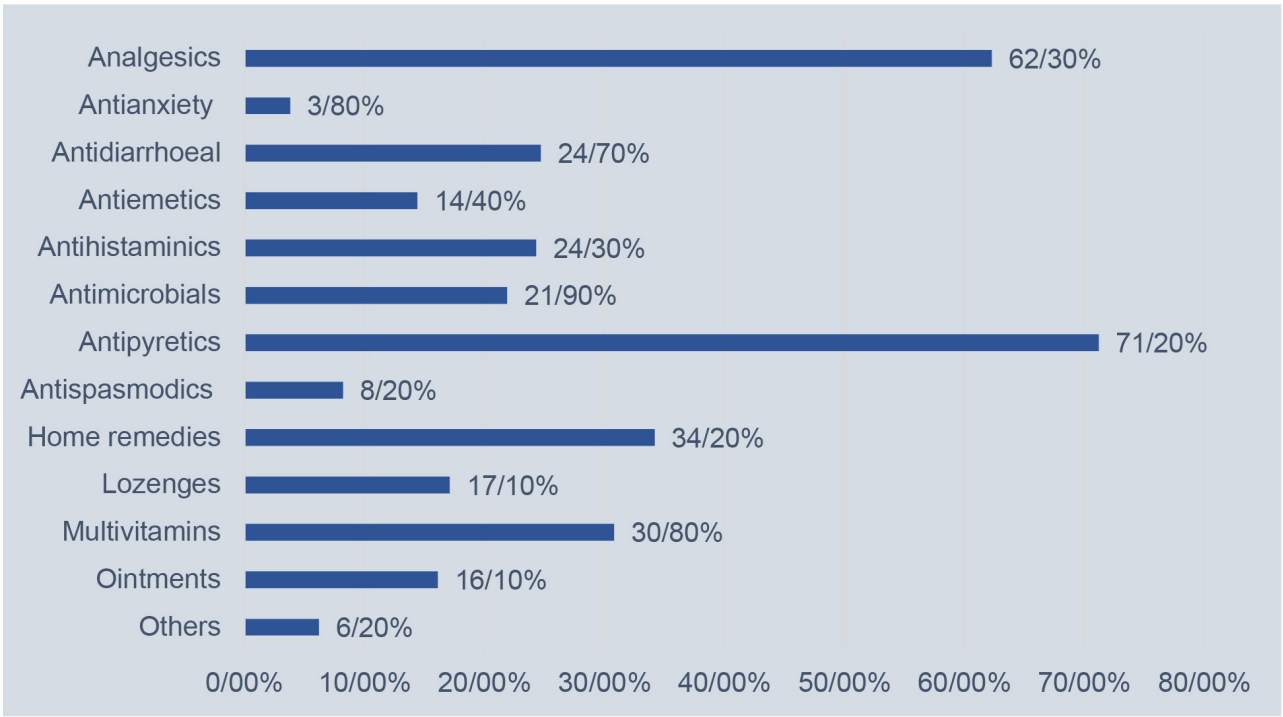
indication for self-medication, followed by conditions like headache, fever, diarrhoea, vomiting, stomach ache, motion sickness, menstrual cramps, anxiety and various symptoms related to skin, ear and eye (Graph No. 1).

Graph 1. Bar graph showing indication for self-medication.



Commonly used drugs included antipyretics (71.2%), followed by analgesics, home remedies, multivitamins, antidiarrheals, antihistaminic, antimicrobials, lozenges, ointments, antiemetics, antispasmodics and antianxiety medications (Graph No. 2).

Graph 2. Bar graph showing commonly used drugs



The primary source of information was old prescription (53.1%), followed by advice from doctor without prescriptions, recommendations from family and relatives, guidance from pharmacists, information obtained from the internet, television and print media (Table 2).

Table 2. Source of information self-medication

Source of information for self-medication	Percentage
Old prescription	53.1
Advice from doctor without prescriptions	40.1
Advice from friends and relatives	27.4
Advice from pharmacists	25.3
Internet and television	17.8
Print media	4.5

Table 3. Reason against self-medication

Reasons against Self-medication	Percentage
Lack of knowledge about medicines	43.9
Risk of side-effects	38.6
Risk of using wrong drugs	30.7
Risk of misdiagnosis	23.7
Risk of using drugs in the wrong way	20.2
Risk of drug dependence	14

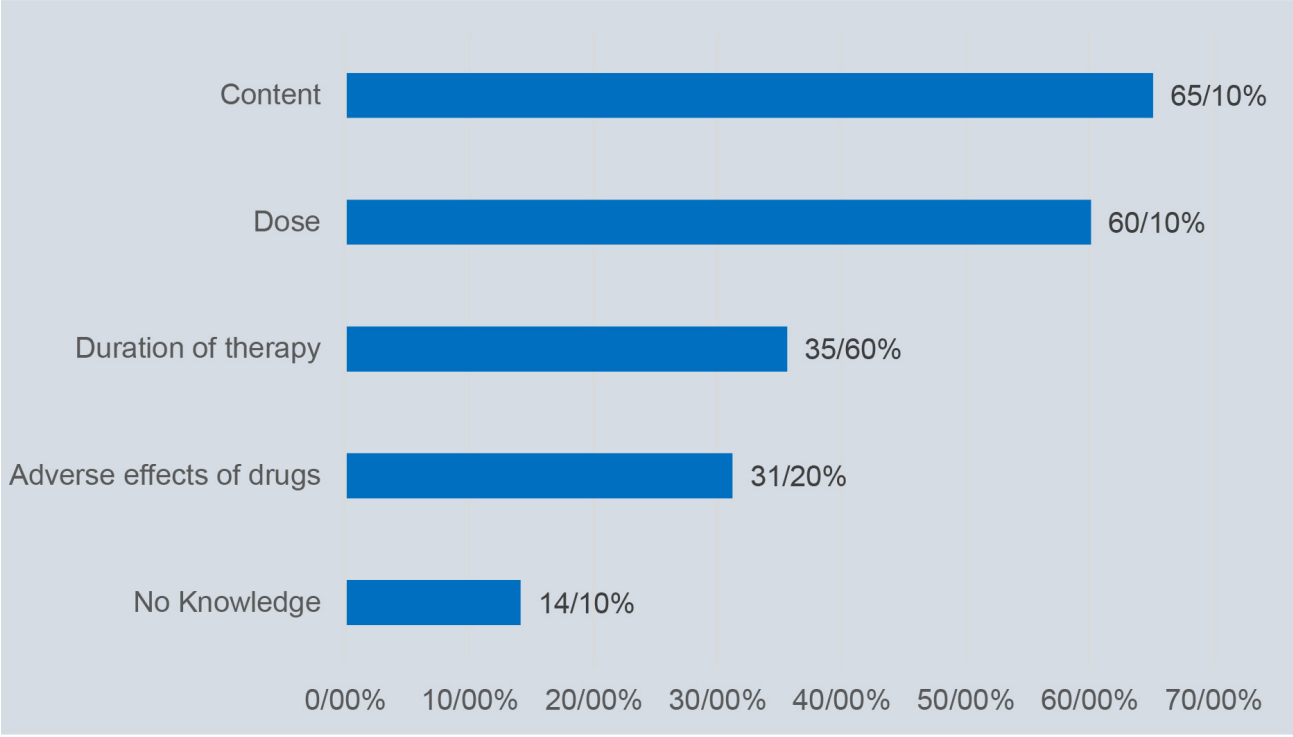
Regarding knowledge about medication among the students, 65.1% knew about the content of the drug, 60.1% knew about the proper dosage, 35.6% understood the duration of therapy, 31.2% were aware about potential adverse effects. A small portion (14.1%) had no knowledge about the medication (Graph 3).

In terms of knowledge, the primary reason against self-medication was that students’ belief that they lacked sufficient knowledge about medicines (Table 3).

The majority (84.5%) of students were aware of potential adverse effects associated with drugs. Concerning dosage and adverse drug reactions, 71.7% of students had some awareness, 17.8% had limited awareness, and 10.5% students were well-aware of both dosage and adverse drugs reactions of all medications.

Regarding attitudes, approximately 74% students expressed a negative opinion about self-medication, while the remaining 26% had a more positive attitude towards it.

Graph 3. Bar graph showing knowledge about medication among participants.



Discussion

Previous studies have consistently reported patterns similar to our current study. For instance, the present study involved 750 MBBS UG students, of whom 327 (43.6%) actively participated. Among these participants, 247 students were engaged in self-medication, resulting in a prevalence rate of 75.5%. These findings closely

resemble earlier research conducted on medical undergraduates, where self-medication prevalence rates were reported as 78% (7) and 86.5% (8).

Regarding the participants' demographics, the mean age was 21.18±1.31 years, with 164 (50.3%) females and 163 (49.7%) males. A study conducted by Burute et al., (9), found a similar mean age of 19.34±1.33 years, with 47.87% males and 52.12% females. Additionally, another study conducted by James H et al., reported that out of 134 respondents, 32.1% were males and 67.9% were females, with a mean age of 18.01±0.78 years (10).

In a study conducted by Sundararajan et al., it was reported that among 264 students, 53 (20.1%), 67 (25.4%), 83 (31.4%), and 61 (23.1%) were in 1st year, 2nd year, 3rd Minor and major MBBS, respectively. These figures closely resemble the distribution of students in our current study, where among 327 participants, 79 (24.2%), 119 (36.4%), 69 (21.1%), and 60 (18.3%) were in the I year, II year, III (minor), and III (major), respectively (11).

In comparison to previous studies, particularly those conducted in India (12-14), the current study indicates that the majority of students (59.9%) share the belief that there is no necessity to visit a doctor for minor illnesses. Additionally, 37.4% of participants in our current study found self-medication to be a convenient option, citing reasons such as the desire for quick relief, time-saving benefits, confidence in their medical knowledge, cost-effectiveness, and a preference to avoid crowded healthcare settings. It's noteworthy that the most common reason for choosing self-medication in our current study aligns with the findings of these prior investigations, highlighting its perceived usefulness in treating mild illnesses and its ready availability.

Previous studies have consistently shown patterns similar to our current study (14,15). In the study, Cough, cold, and sore throat accounted (70.4%) major indication for self-medication, followed by various other symptoms, including headache, fever, diarrhoea, vomiting, stomach ache, motion sickness, menstrual cramps, anxiety, as well as skin, ear, and eye symptoms. The primary reason for choosing self-medication, as found in our current study, aligns with previous investigations, emphasizing its perceived effectiveness in treating mild illnesses and its ready availability.

Previous studies, including one conducted in 2018 among undergraduate medical students, found that the most prevalent conditions for which self-medication was preferred were fever, cough, cold, and headache. These findings were congruent with those of an Ethiopian study (14). Additionally, South India's report that cough and cold are among the most common causes (7).

In previous studies, including one conducted in Tamil Nadu (15), it was observed that fever was the most common indication for self-medication, a finding consistent with our study. However, in studies from Western India (13) and the Southern part of India (6), cough and cold emerged as the most common symptoms for self-medication. Additionally, a study from Ethiopia (14) reported fever as the most common symptom for self-medication.

The commonly used drugs were Antipyretics (71.2%), followed by Analgesics, Home remedy, Multivitamins, Antidiarrheal, Antihistaminic, Antimicrobial, Lozenges, Ointments, Antiemetics, Antispasmodics, Antianxiety. The study reveals that antipyretics are the most commonly used medications for common ailments, followed by local ointments and antibiotics. Antibiotics are used 41.3% in the study, with similar findings in West Bengal and Karachi (13,5). This suggests an increasing use of antibiotics as self-medication, highlighting the need for regulatory control of over-the-counter drugs. Additionally, 39.3% of participants self-medicated with antibiotics.

Previous studies have consistently revealed certain trends in self-medication. Antipyretics (74.8%) were the most commonly self-medicated class of drugs in their study, closely followed by antitussives, analgesics were (65.8%) and (68.2%) respectively. These findings align with observations made in a study conducted in South India (6), and another in Ethiopia (14). However, in studies from Iran (16), Mozambique (17), Pakistan (5), and Egypt (18), analgesics emerged as the most commonly self-medicated group of drugs.

Previous studies have consistently identified patterns in self-medication. In present study, analgesics (81.3%) was frequently used group of drugs, primarily involving paracetamol, with occasional use of nonsteroidal anti-inflammatory drugs. It's noteworthy that antispasmodics were exclusively used by female subjects. In the majority of cases, these medications were procured from private pharmacies (85.8%), followed by friends (16.4%) and supermarkets (14.9%) (10).

This study reveals that the primary source of information about drugs was old prescriptions from registered medical practitioners, accounting for 53.1% of the data. This was followed by advice from doctors without a prescription, suggestions from family and relatives, guidance from pharmacists, and information from the internet, television, and print media. Interestingly, these findings contrast with those of other studies where reading materials were the leading source, followed by old prescriptions (19,20).

In previous studies, insights into student's knowledge

levels about medication have been examined (19-21). In our current study, we found that 65.1% of students were knowledgeable about the content of the drug, 60.1% were informed about the appropriate dose, 35.6% had an understanding of the duration of therapy, 31.2% were aware of the potential adverse effects of the drugs and 14.1% lacked any knowledge about the medication. Moreover, 84.5% of students demonstrated awareness of the potential adverse effects of the drugs. Among them, 71.7% were informed about both the dose and adverse drug reactions for some drugs, while 17.8% had limited awareness, and 10.5% possessed knowledge about the dose and adverse drug reactions for all drugs.

Regarding attitudes towards self-medication, 74% of students believed it was not a good practice, while the remaining 26% had a positive attitude towards self-medication.

Previous studies have provided insights into students’ awareness of the adverse drug reactions. In another study, only 11% of students were clearly aware about all drug reaction, while 63% were aware some adverse drugs reactions. A significant portion, 20.88% of the students, demonstrated poor awareness in this regard. Despite these findings, a substantial 72.88% of students expressed the opinion that self-medication should not be practiced. Interestingly, this aligns with the attitudes of students in a study conducted in Bahrain (21).

Despite the fact that the majority of the students had a negative view regarding self-medication, it was extensively carried out among them. As a result of a rising incidence of self-medication among medical undergraduates, they are at a higher risk of adverse reactions to drugs. Appropriate measures should be made to reduce self-medication among medical undergraduates by educating and raising awareness among them about the different side effects of the drug, the dangerous drug-drug interactions, and antibiotic resistance. This will promote better methods of self-medication among medical students, which will help spread the word, benefiting society.

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