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Review Article

A Survey on Self-Medication Practices Among College Students: A Review

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ABSTRACT

The practice of self-medication, especially among college students, is increasingly recognized as a significant public health issue globally. It involves individuals independently selecting and consuming medications without professional medical advice to treat perceived ailments. This behaviour is notably prevalent among students in health-related disciplines such as pharmacy and medicine due to their access to pharmacological information and medicinal products. Although self-medication offers certain conveniences -like saving time and reducing treatment costs -it is not without risks. Unsupervised drug use can lead to incorrect diagnoses, adverse drug interactions, misuse of antibiotics, and delayed medical consultation. This review aims to examine the scope, drivers, patterns, and health implications of self-medication practices among students. Influencing factors include academic stress, prior medication experience, peer influence, and accessibility to OTC drugs. The review also considers gender- and course-based trends, regulatory challenges, and the role of digital health information. Finally, it offers strategic recommendations to mitigate risks and foster safer self-care behaviours among the student population.

INTRODUCTION

Self-medication, as defined by the World Health Organization (WHO), refers to the act of individuals selecting and using medications on their own initiative to treat symptoms or illnesses they have self-identified, without consulting a healthcare professional[1]. While this practice can serve as a practical component of self-care and potentially reduce the burden on overstretched healthcare systems, it poses notable public health risks when used inappropriately.

Among college students—particularly those enrolled in pharmacy, medical, and other health science programs—the prevalence of self-

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medication is notably high[2]. These students typically have greater exposure to pharmaceutical knowledge and easier access to medications, which can lead to overconfidence in diagnosing and managing health conditions independently.

Multiple factors have been identified as contributors to the increasing trend of self-medication in this population. These include the perception that an illness is minor, prior successful experiences with the same symptoms, time limitations, reluctance to visit healthcare facilities, and peer or familial encouragement. The widespread availability of over-the-counter (OTC) drugs, access to unused prescription medications, and persuasive online advertising further facilitate this behavior[2].

Despite its perceived convenience, self-medication can result in numerous health hazards. These include misdiagnosis, harmful drug interactions, adverse reactions, and delayed diagnosis of serious conditions[3]. A particularly alarming consequence is the inappropriate use of antibiotics, which significantly contributes to the global issue of antimicrobial resistance (AMR)[4].

In countries such as India, this issue is exacerbated by challenges such as lax regulatory enforcement, limited public awareness, economic barriers to healthcare access, and reliance on informal advice from pharmacies or family traditions[5]. In many urban and semi-urban settings, prescription-only drugs are often dispensed without proper validation[6], increasing the likelihood of adverse drug events and resistant infections.

This review seeks to comprehensively assess the extent and determinants of self-medication among college students - a population uniquely positioned at the intersection of pharmaceutical knowledge and behavioural vulnerability. By evaluating the motivations, consequences, and awareness surrounding self-medication, the review aims to provide insights for public health intervention and policy development.

OBJECTIVES OF THE REVIEW

1. **To determine the prevalence of self-medication among college students**
   This objective seeks to quantify the extent to which self-medication is practiced by students at undergraduate and postgraduate levels, particularly those enrolled in pharmacy, medical, and allied health disciplines. Establishing the prevalence helps provide baseline data for future research and targeted public health strategies.

2. **To investigate the underlying motivations for self-medication**
   This goal focuses on identifying the psychological, academic, social, and economic factors that influence students' decisions to self-medicate rather than seek professional healthcare. Factors such as convenience, cost-saving, past experiences, perceived mildness of illness, and peer or family influence are considered.

3. **To identify commonly used drug categories in self-medication**
   The review aims to catalog the types of drugs most frequently used without prescriptions. These may include analgesics, antibiotics, antipyretics, antihistamines, gastrointestinal agents, skin ointments, cold and flu remedies, and dietary supplements. Recognizing usage trends is vital for evaluating potential risks.

4. **To assess awareness regarding the potential consequences of self-medication**
   This objective evaluates the students' knowledge of possible adverse effects, drug interactions, contraindications, and the long-

term impact of improper medication use—especially regarding antimicrobial resistance. The analysis considers whether pharmaceutical education influences risk perception and safe usage.

5. **To propose strategies that promote safer self-medication practices**
   Based on literature findings, the study outlines potential interventions to mitigate unsafe or irrational drug use. Suggestions may include integrating rational drug use modules into academic curricula, regulating OTC drug availability, raising awareness through campus campaigns, and involving pharmacists in community education.

METHODOLOGY OVERVIEW

This review article adopts a structured narrative approach, synthesizing findings from diverse academic and scientific sources to examine self-medication behaviour's among college students. The methodology includes the selection, evaluation, and integration of data from studies published over the last 15 years.

1. Study Design and Scope

The review is based on a qualitative narrative synthesis of relevant literature, including cross-sectional surveys, questionnaire-based investigations, observational reports, and retrospective analyses. The primary geographic focus is India, although relevant comparisons are drawn from international studies conducted in both developing and developed nations to provide broader context.

2. Data Sources

The analysis incorporates peer-reviewed articles and institutional reports retrieved from reputable academic databases, including:

- PubMed
- Scopus
- Google Scholar
- ScienceDirect
- SpringerLink
- Academic repositories of pharmacy and medical institutions

In addition, reports and guidelines from global organizations such as the World Health Organization (WHO) and data from national health surveys were also considered for policy-related insights.

3. Search Strategy

A systematic literature search was performed using relevant keywords and Boolean operators such as:

- "Self-medication" AND "college students"
- "OTC drug use" OR "over-the-counter medication"
- "Pharmacy students" AND "India"
- "Antibiotic misuse" OR "self-prescribing behaviour"

Studies were screened based on their titles, abstracts, and full-text availability to ensure relevance.

4. Inclusion and Exclusion Criteria

Inclusion criteria:

- Articles published in English
- Studies involving undergraduate and postgraduate students
- Research on pharmacy, medical, dental, nursing, and general student populations
- Papers addressing prevalence, motivations, awareness, and drug usage patterns

Exclusion criteria:

- Studies unrelated to student populations
- Clinical trials not focused on self-medication
- Non-peer-reviewed or anecdotal content

5. Data Extraction and Synthesis

Key variables such as sample size, prevalence rates, commonly used drug categories, influencing factors, and awareness levels were systematically extracted. Comparative analysis and visual aids (charts and tables) were used to summarize trends across demographics and geographical regions.

6. Quality Assessment

Each study included in the review was evaluated for methodological rigor, clarity, and data reliability. Where applicable, standard tools such as the STROBE checklist (Strengthening the Reporting of Observational Studies in Epidemiology) were used to assess the quality of observational research.

FINDINGS AND DISCUSSION

1. Prevalence of Self-Medication

Multiple studies have reported that the prevalence of self-medication among college students ranges between 55% and 92%[7–8]. In India specifically, research conducted among pharmacy students has shown alarmingly high self-medication rates, often between 78% and 89%. In contrast, students from non-health-related disciplines tend to exhibit lower, though still significant, levels of self-treatment[9]. These statistics underscore the need for targeted interventions within academic environments, especially in health science institutions.

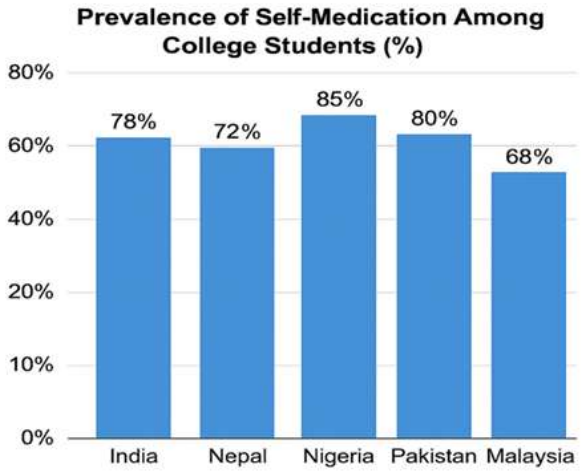

Figure 1: Prevalence of self-medication

2. Motivational Drivers of Self-Medication

Several overlapping factors contribute to the widespread nature of self-medication among students:

- The perception that certain illnesses are too minor to warrant a doctor's visit[10]
- Prior successful use of medications for similar symptoms[11]
- The convenience and time saved by bypassing formal healthcare systems[12]
- Financial considerations, such as avoiding consultation or diagnostic costs[13]
- Easy access to over-the-counter medications and unused prescription drugs[14]

Additionally, peer influence and digital health information, especially from social media and forums, further encourage students to self-medicate without proper guidance.

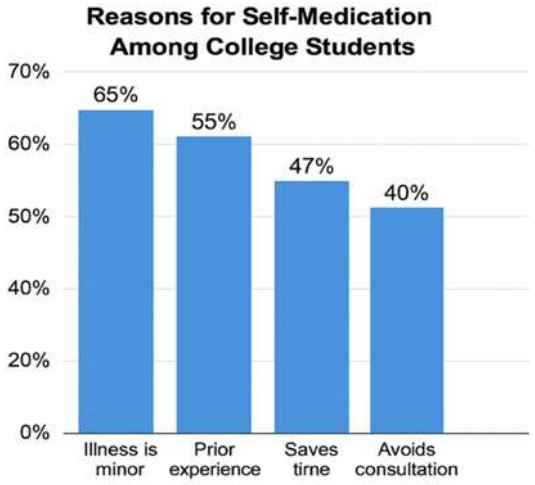

Figure 2: Motivations behind self-medication

3. Frequently Used Medications

Drug Category	Purpose/Use	Examples	Remarks
Analgesics	Pain relief	Paracetamol, Ibuprofen[13]	Commonly used for headaches, muscle pain
Antipyretics	Fever reduction	Paracetamol, Ibuprofen	Often overlaps with analgesics
Antibiotics	Treatment of bacterial infections	Amoxicillin, Azithromycin[14]	Frequently misused without proper indication
Antacids	Relief from acidity, indigestion	Gelusil, Digene, Eno	Used often for gastric discomfort
Antihistamines	Management of allergy symptoms	Cetirizine, Chlorpheniramine	Typically for cold, sneezing, or rash
Cold Medications	Relief from cold and flu symptoms	Dolo Cold, Sinarest	Combination drugs for symptomatic treatment
Nutritional Supplements	General immunity and wellness	Multivitamins, Protein powders	Often consumed without medical advice

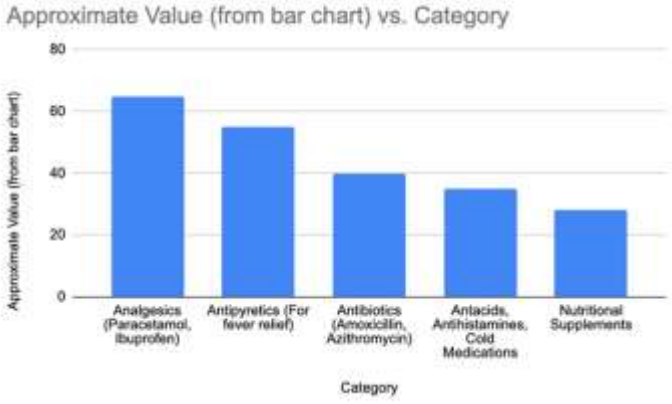

Figure 3: Commonly Used Drugs

4. Sources of Drug Information

Students often rely on informal and easily accessible sources for drug-related decisions, including:

- Internet search engines and health-related social media posts[17]
- Previously prescribed medications
- Advice from family members or peers
- Pharmacists and retail drug store workers

The over-reliance on non-professional sources can contribute to misinformed or unsafe choices, even among students with basic pharmacological knowledge.

5. Health Risks Associated with Self-Medication

Improper self-medication carries several clinical and behavioural risks:

- Misdiagnosis and delays in appropriate medical treatment
- Allergic or adverse drug reactions (e.g., rashes, gastrointestinal issues)[18]
- Development of antimicrobial resistance due to irrational antibiotic use[19]
- Dependence on medications for routine discomforts
- Harmful drug interactions, especially in those with chronic illnesses

These risks are amplified when students self-treat recurrent symptoms without identifying underlying conditions.

6. Knowledge-Practice Gap

Although pharmacy and medical students generally possess foundational knowledge of drug mechanisms and indications, this does not always translate into safe usage. A recurring observation in the literature is the disconnect between theoretical knowledge and practical behaviour. Academic stress, peer pressure, and overconfidence in one's ability to self-diagnose often override rational decision-making, leading to unsafe self-medication practices.

RECOMMENDATIONS

To address the widespread and often unsafe self-medication practices among college students, especially those in healthcare-related fields, a multifaceted approach is necessary. The following recommendations are proposed based on the review findings:

1. Integrate Drug Safety into Academic Curricula

Educational institutions, particularly those offering pharmacy and medical programs, should incorporate structured modules on rational drug use and medication safety. Topics should include the dangers of self-prescription, antibiotic resistance, drug interactions, and the ethical responsibilities of future healthcare professionals. Continuous reinforcement through workshops, simulations, and assessments can help bridge the knowledge-practice gap.

2. Strengthen Regulation of Over-the-Counter Drug Sales

Governments and drug regulatory authorities must enforce stricter controls on the sale of prescription medications - especially antibiotics - without valid prescriptions. Pharmacies should be monitored to ensure adherence to dispensing protocols. Encouraging proper documentation and pharmacist accountability can help reduce inappropriate access to high-risk medications.

3. Implement Awareness Campaigns

Colleges and universities should actively engage in student outreach through posters, seminars, health talks, and digital media campaigns highlighting the risks of self-medication. These campaigns should use real-world case studies and testimonials to make the dangers relatable and impactful.

4. Enhance Access to Campus-Based Medical Services

One way to reduce student reliance on self-treatment is to provide accessible, affordable, and student-friendly medical care on campus. Establishing dedicated college health centers or teleconsultation platforms can ensure timely medical advice, reduce delays in treatment, and promote professional diagnosis over self-diagnosis.

5. Provide Psychological Support Services

Academic pressure and mental health issues can often push students toward self-medicating for stress-related symptoms. Institutions should offer counselling services, peer support groups, and stress management programs to address underlying causes. Promoting mental well-being indirectly reduces the inclination to self-medicate.

These recommendations, if effectively implemented, could significantly mitigate the risks associated with unsupervised drug use and promote safer health behaviours among students.

CONCLUSION

Self-medication is a prevalent practice among college students, particularly those enrolled in health science programs. While these individuals often possess a foundational understanding of pharmacology and therapeutic drugs, this knowledge does not always translate into safe or responsible behaviour. In many instances, partial knowledge, academic pressure, and overconfidence contribute to irrational medication practices—including the misuse of antibiotics, reliance on leftover prescriptions, and disregard for potential adverse effects.

The unsupervised use of medications poses serious risks such as misdiagnosis, harmful drug interactions, masking of underlying conditions, and the escalating threat of antimicrobial resistance. These challenges are compounded in low- and middle-income countries like India, where regulatory enforcement remains weak, public health education is limited, and access to affordable healthcare is often restricted.

The normalization of self-medication among students may foster long-term behaviour's that undermine efforts to ensure rational drug use—both during their academic careers and in their future professional roles. Moreover, students outside the health disciplines, who often rely on informal or digital sources of information, may be particularly vulnerable to misinformation and inappropriate drug use.

Addressing this issue requires a collaborative and sustained response from educators, policymakers, healthcare providers, and regulatory authorities. Educational institutions must proactively equip students with the knowledge, critical thinking skills, and ethical grounding to practice responsible medication use. Regulatory reforms should ensure that high-risk medications remain accessible only through valid prescriptions. Mental health support and campus medical services can also help reduce the behavioural triggers associated with self-treatment.

Ultimately, fostering a culture of informed, cautious, and responsible medication use among students is not only vital for individual health and academic performance—it is essential for shaping

a future healthcare workforce committed to safe and evidence-based practices.

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