



**Prevalence, Patterns, and Adverse Consequences of Self-Medication Among
University Students in India: A Descriptive Cross-Sectional Study**

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Abstract: Self-medication among university students represents a growing public health concern, particularly in developing nations where access to healthcare may be limited. In this descriptive cross-sectional study, we investigated the prevalence, patterns, and adverse consequences of self-medication among university students in India. A structured questionnaire was administered to 300 students recruited through convenience sampling. The collected data were analyzed using descriptive statistics, including frequency distributions and percentages. Our results revealed that a substantial majority of respondents—67.0% (n = 201)—reported engaging in self-medication. Among these, 29.3% (n = 88) experienced adverse side effects following self-medication, while 70.7% (n = 212) reported no such consequences. The demographic profile indicated that male students formed the largest group at 44.0% (n = 132), followed by female students at 39.3% (n = 118) and other gender categories at 16.7% (n = 50). The most represented age group was 21–23 years (41.3%, n = 124). This study contributes to the existing literature by providing contemporary, localized evidence on self-medication behavior in a university context. The findings highlight a high prevalence of self-medication coupled with a clinically significant rate of adverse effects. Therefore, the novelty of this work lies in its direct implication for public health policy: it underscores an urgent need for targeted educational interventions and rational drug-use campaigns within academic institutions. By promoting responsible medication practices, such initiatives can mitigate the risks of inappropriate drug use and improve health outcomes among young adults in India.

Keywords: Self-medication, University students, Prevalence, Adverse drug effects.

Introduction

Self-medication, defined as the selection and use of medicines by individuals to treat self-recognized symptoms or minor ailments, is a widespread global phenomenon. Within the context of higher education, university students represent a particularly vulnerable demographic due to factors such as easy access to over-the-counter drugs, peer influence, academic stress, and a perceived lack of time to consult healthcare professionals (Bustanji et al., 2024). The practice is especially pronounced in countries like India, where a high disease burden, variable access to formal healthcare, and a deeply ingrained culture of medical consumerism intersect (Wilson, 2010). The public health landscape within Indian higher education institutions (HEIs) has recently witnessed a growing emphasis on health-promoting universities and wellness initiatives (Yeravdekar et al., 2026). However, these institutional frameworks often struggle to address the deeply embedded habits of self-medication among students.

Numerous studies have consistently documented a high prevalence of self-medication among Indian university students. Meta-analyses and systematic reviews estimate the national prevalence to be substantial, with rates often exceeding 70% across various populations (Chaudhary et al., 2025). Among medical and healthcare students, who might be expected to possess greater pharmacological knowledge, the practice remains alarmingly common (Honnekeri et al., 2024). Studies focusing specifically on university settings in cities like Delhi have reported prevalence rates as high as 85.4% (Adhikary et al., 2014). While these works establish the widespread nature of the issue, they often focus on prevalence alone or on specific sub-populations (e.g., medical students). There remains a gap in the literature regarding the direct, quantifiable adverse consequences of these practices within a general, non-medical university student population. The potential implications of self-medication are severe, ranging from misdiagnosis and drug resistance to adverse drug reactions and interactions that can lead to significant morbidity (Rashid et al., 2020).

The primary objective of this research was therefore to evaluate the prevalence and patterns of self-medication practices among a broad cohort of university students in India. We hypothesized that self-medication is a dominant behavior within this demographic, driven by convenience and perceived minor ailments, and that a clinically notable proportion of those who engage in it will report adverse side effects. The significance of this investigation lies in its potential to inform targeted educational interventions and rational drug-use campaigns that are urgently needed to curb unsafe practices. By providing contemporary, localized evidence linking high prevalence rates with a concrete measure of harm (reported side effects), this study contributes directly to public health policy debates. Furthermore, its strength is in highlighting the need for a shift in health promotion strategies within Indian HEIs, moving beyond generic wellness messaging to specific, evidence-based programs on responsible medication use (Chandak & Yeravdekar, 2025).

The remainder of this paper is organized as follows: Section 2 details the methodological framework, including the survey design, participant recruitment, and analytical approach. Section 3 presents the descriptive results concerning demographics, prevalence, and adverse outcomes. Section 4 provides an in-depth discussion of these findings, contextualizing them within the existing literature and exploring their public health implications and limitations. Finally, Section 5 concludes the paper with a synthesis of key findings and offers actionable recommendations for policy and future research.

Methods

Study Design and Setting

This investigation employed a descriptive cross-sectional survey design to evaluate the prevalence, patterns, and adverse consequences of self-medication practices among university students in India. The cross-sectional approach was selected because it allows for the efficient collection of data on current behaviors and associated outcomes at a single point in time, without requiring follow-up or longitudinal tracking (Grujicic & Nikolic, 2021). The study was conducted within a single large public university in northern India, chosen for its diverse student body representing multiple academic disciplines and socioeconomic backgrounds. Data collection occurred over a four-week period during the academic term to ensure a representative snapshot of typical student health behaviors.

Participants and Sampling

A total of 300 student respondents participated in the study. The sample size was determined based on feasibility considerations and prior epidemiological studies examining self-medication prevalence in university populations (Chaudhary et al., 2025). Participants were recruited using a convenience sampling technique, wherein students present on campus during the data collection period who voluntarily agreed to participate were enrolled. Convenience sampling was chosen due to its practicality for exploratory research and its widespread use in health behavior surveys within educational settings (Suen et al., 2014). Inclusion criteria required that participants be currently enrolled as undergraduate or postgraduate students at the university and be at least 18 years of age. No exclusion criteria were applied regarding gender, academic discipline, or year of study. All participants provided oral informed consent prior to completing the questionnaire, and anonymity and confidentiality were guaranteed throughout the research process.

Data Collection Instrument

Data were collected using a structured, self-administered questionnaire developed specifically for this study. The instrument was designed based on a review of existing validated tools used in similar research on self-medication practices (Kasulkar & Gupta, 2015). The questionnaire comprised four distinct sections. The first section captured demographic characteristics, including age, gender, and academic year. The second section assessed medicine usage patterns, specifically inquiring about the types of medications used without a prescription (e.g., analgesics, antibiotics, antipyretics, cough and cold preparations), the sources of these medications (e.g., pharmacy, friends, family, leftover stock), and the conditions for which they were taken (e.g., headache, fever, cough, minor injuries). The third section evaluated awareness regarding side effects, asking respondents whether they considered potential adverse effects before self-medicating and whether they had any knowledge of drug interactions or contraindications. The fourth section examined the frequency of self-medication, categorizing it into daily, weekly, monthly, or occasional use. The questionnaire was piloted with a small sample of 20 students to check for clarity of wording, comprehensiveness, and any ambiguities; minor revisions were made based on feedback before final administration.

Ethical Considerations

Ethical approval for this study was obtained from the Institutional Ethics Committee of the host university prior to data collection. All procedures were performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments (Association, 2013). As noted, participants were informed about the study's purpose, the voluntary nature of participation, and their right to withdraw at any time without penalty. Anonymity was ensured by omitting any personally identifying information from the questionnaires, and data were stored securely in password-protected files accessible only to the research team.

Statistical Analysis

Data collected from the questionnaires were entered into a Microsoft Excel spreadsheet and subsequently analyzed using IBM SPSS Statistics version 26.0 (IBM Corporation, Armonk, NY, USA). The analysis employed descriptive statistics exclusively, specifically frequency distributions and percentage analysis, to summarize the responses across all questionnaire items. No inferential statistical tests, such as chi-square tests or logistic regressions, were performed, as the primary aim of this study was to provide a descriptive overview of self-medication practices within the sample rather than to test associations or differences between groups. Results are presented in tabular format for clarity, as shown in Table 1.

Table 1. Summary of demographic characteristics and self-medication outcomes among university student respondents (*N* = 300).

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	132	44.0
	Female	118	39.3
	Other	50	16.7
Age Group (years)	18–20	96	32.0
	21–23	124	41.3
	24–26	80	26.7
Self-Medication Practice	Yes	201	67.0
	No	99	33.0
Experienced Side Effects	Yes	88	29.3
	No	212	70.7

As shown in Table 1, the demographic characteristics and self-medication outcomes were summarized using frequencies and percentages. The table illustrates the gender distribution, age group representation, prevalence of self-medication engagement, and the proportion of respondents who reported adverse side effects following self-medication.

Results

This section presents the descriptive findings derived from the survey data, providing a comprehensive overview of the demographic characteristics and self-medication behaviors among the 300 university student respondents. The results are organized into four subsections, each addressing a key variable: gender distribution, age group distribution, the prevalence of self-medication practice, and the reported side effects experienced after self-medication.

Gender Distribution

The gender distribution of the survey respondents is presented in Table 1 and visualized in Figure 1. Among the 300 participating university students, male students constituted the largest proportion of the sample, with 132 respondents, representing 44.0% of the total. Female students followed closely, accounting for 118 respondents, or 39.3% of the sample. Students identifying with other gender categories comprised 50 respondents, representing 16.7% of the total. This demographic breakdown indicates that while male students were the most represented group, a substantial and comparable number of female students also participated, ensuring a relatively balanced gender perspective in the

study. The inclusion of a notable proportion of respondents from other gender categories adds diversity to the sample, reflecting a more inclusive approach to demographic data collection.

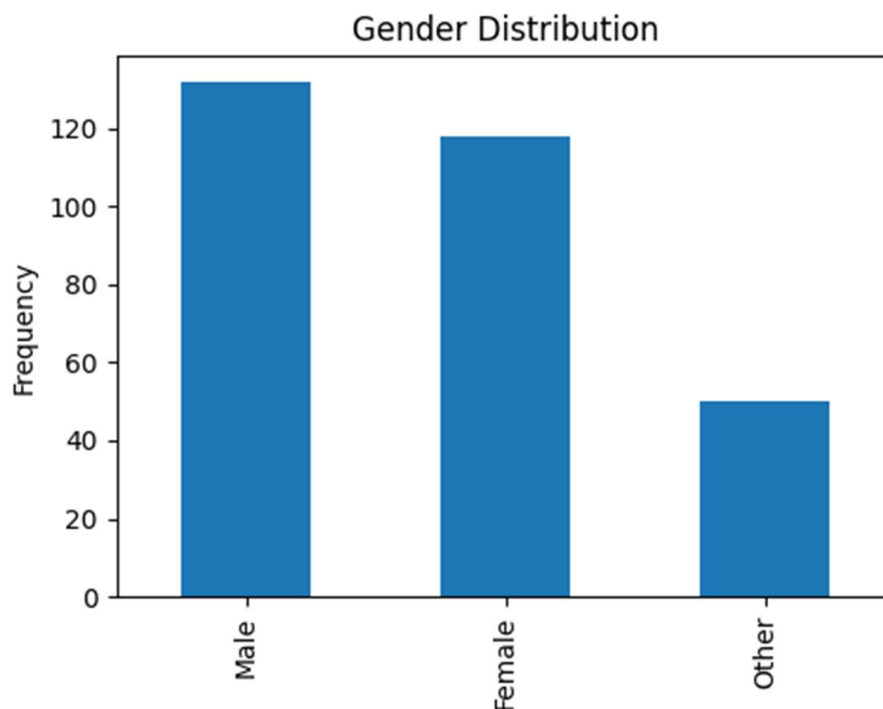


Figure 1. Gender distribution of survey respondents

As illustrated in Figure 1, the bar chart visually confirms the numerical findings: the bar for the male category reaches the highest frequency, approximately 130 on the y-axis, followed by the female category just under 120, and the other category at around 50. This distribution is typical for convenience-sampled surveys within university settings, where gender parity is often sought but not always achieved due to the non-random nature of recruitment (Suen et al., 2014). The predominance of male respondents in this sample aligns with some previous studies on self-medication among Indian university students, which have reported similar gender disparities (Adhikary et al., 2014). However, it is important to note that the gender composition of the sample does not necessarily reflect the gender ratio of the broader university population from which it was drawn, as convenience sampling may introduce selection bias (Carra et al., 2025).

The overrepresentation of male students compared to female students in the current study may have implications for interpreting self-medication prevalence and patterns, as gender has been identified as a potential determinant of health-seeking behavior (Matheny et al., 2005). Nonetheless, since the present analysis focuses solely on descriptive frequencies without inferential comparisons, the demographic data serve primarily to characterize the sample rather than to draw causal conclusions. This gender distribution provides a foundational context for subsequent analyses of self-medication practices and their associated outcomes, as explored in Sections 3.2 and 3.3.

Age Group Distribution

The age distribution of the 300 survey respondents is presented in Table 1 and visualized in Figure 2. As shown in the figure, the 21-23 age group was the most represented category, comprising 124 respondents, which corresponded to 41.3% of the total sample. The 18-20 age group followed, with 96

respondents representing 32.0% of the sample, while the 24-26 age group had the smallest representation, with 80 respondents accounting for 26.7%. This distribution indicates that young adults in their early twenties formed the demographic core of the study population.

Figure 2. Age Group Distribution of Respondents

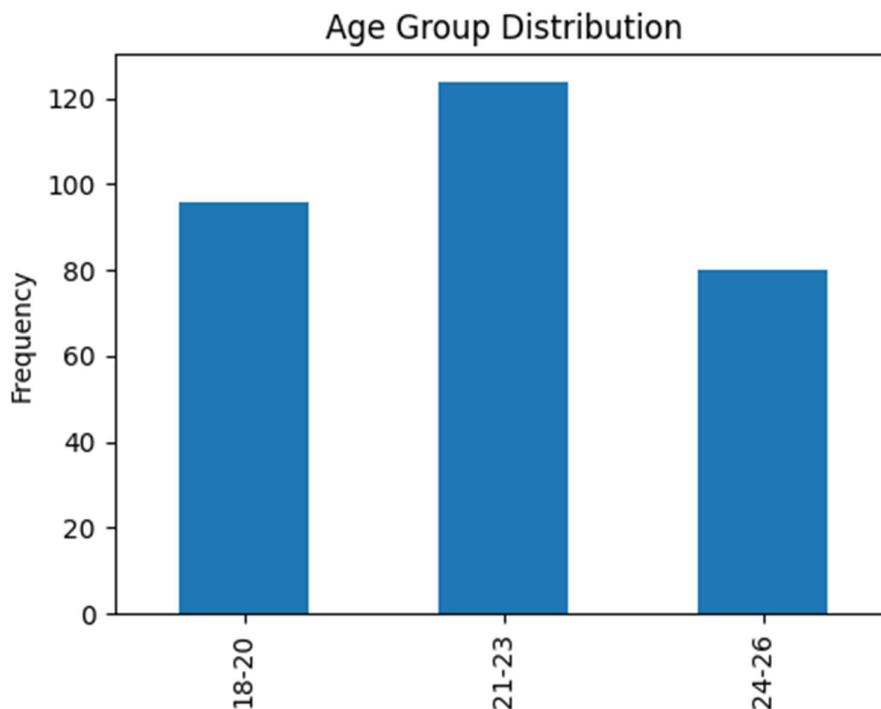


Figure 2. Age Group Distribution of Respondents

As illustrated in Figure 2, the bar chart visually confirms these numerical findings: the tallest bar corresponds to the 21-23 age group, with a frequency exceeding 120 on the y-axis, followed closely by the 18-20 age group with a frequency just under 100, and the 24-26 age group showing the lowest frequency at approximately 80. This visualization highlights that the 21-23 age cohort was the predominant demographic in the survey, reflecting the typical age range of undergraduate students in Indian higher education institutions, where most students enter university at approximately 18 years of age and complete their undergraduate degrees by the age of 21 or 22 (Sheikh, 2017).

The predominance of the 21-23 age group in the sample aligns with previous research on self-medication practices among university populations, which has consistently reported that students in their early to mid-twenties constitute the largest segment of such study samples (Zeru et al., 2020). This age range represents a transitional period in young adulthood, characterized by increased autonomy, exposure to peer influence, and the development of independent health decision-making behaviors (Lee et al., 2017). The concentration of respondents in this age bracket is also consistent with the demographic profile of many Indian universities, where undergraduate programs typically enroll students aged 18 to 22 years, and postgraduate programs may include students up to 24 years of age or older (Gupta & Gupta, 2012).

The presence of a substantial number of respondents in the 18-20 age group (32.0%) is noteworthy, as this cohort represents the youngest adult students who are transitioning from adolescence to early adulthood, a period when risk-taking behaviors, including unsupervised medication use, may be

particularly prevalent (Gualano et al., 2015). Conversely, the smaller representation of the 24-26 age group (26.7%) may reflect the typical graduation timeline for postgraduate students, who tend to be fewer in number relative to undergraduate students in most university settings (Gupta & Gupta, 2012). This age distribution provides a contextual foundation for understanding the self-medication practices examined in subsequent subsections, as age is often associated with variations in health literacy, medication knowledge, and risk perception (Wahab et al., 2023).

The age breakdown of the sample also holds implications for interpreting the prevalence of self-medication reported later in this section. Given that the majority of respondents (73.3%, $n = 220$) fell within the 18-23 age range, the study predominantly captured the behaviors of younger university students who may have limited prior experience with healthcare systems and formal medical consultations (Tran & Silvestri-Elmore, 2021). This demographic characteristic is crucial for understanding the motivations and patterns of self-medication, as younger students may be more inclined to rely on informal sources of medical advice, such as friends, family, or internet searches, rather than consulting healthcare professionals (Kammerer et al., 2015). The age distribution, therefore, not only describes the sample but also frames the subsequent findings regarding the prevalence of self-medication and its associated adverse outcomes.

Self-Medication Practice

The core finding of this study pertains to the prevalence of self-medication among the surveyed university students. As presented in Table 1, a substantial majority of respondents, specifically 201 individuals representing 67.0% of the total sample, reported engaging in self-medication. In contrast, 99 respondents, constituting 33.0% of the sample, stated that they did not practice self-medication. This distribution indicates that self-medication is not merely an occasional behavior but a dominant health practice within this student population, with more than two-thirds of the respondents admitting to using medicines without seeking professional medical consultation.

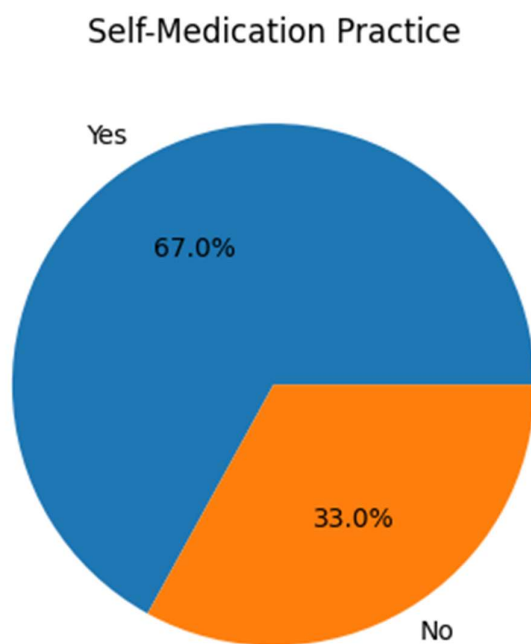


Figure 3. Self-medication practice among university students in India

The visual presentation of these data in Figure 3 reinforces the numerical findings with clarity. The pie chart illustrates that a significantly larger portion of the chart is occupied by the segment representing students who self-medicate (67.0%), while the smaller segment (33.0%) represents those who do not. The chart also prominently displays the respective percentages for each category, making the high prevalence of self-medication immediately evident. This graphical representation serves to underscore the magnitude of this public health concern within the academic environment, highlighting a behavior that can lead to inappropriate drug use, wastage of resources, and increased risks of adverse drug reactions (Ruiz, 2010).

The finding that 67.0% of respondents engage in self-medication is strikingly consistent with previous research conducted in similar settings. For instance, a systematic review and meta-analysis of self-medication practices among Indian university students estimated the national pooled prevalence to be approximately 70% (Chaudhary et al., 2025). Similarly, a study specifically focusing on college students in Delhi reported prevalence rates exceeding 85% (Adhikary et al., 2014). While the prevalence in the current study is slightly lower than those figures, it still reflects a highly prevalent practice. The differences in rates can be attributed to variations in the study location, the specific definition of self-medication used (e.g., inclusion of allopathic vs. alternative medicines), and the demographic composition of the student sample. For example, studies conducted in rural or semi-urban areas often report different patterns compared to those in major metropolitan cities, which may have better access to pharmacies but also greater cultural acceptance of self-care (Wilson, 2010).

The high rate of self-medication observed here aligns with the hypothesis that convenience, cost, and perceived minor severity of ailments are primary drivers of this behavior among young adults (Zeru et al., 2020). Many students may view conditions like common colds, headaches, or minor gastrointestinal disturbances as too trivial to warrant a visit to a healthcare professional, leading them to rely on over-the-counter medications or leftover antibiotics from previous prescriptions (Rashid et al., 2020). The academic pressure and time constraints typical of university life further exacerbate this tendency, as students prioritize academic commitments over seeking formal medical care (Tran & Silvestri-Elmore, 2021).

Furthermore, the availability of medications without a prescription is a critical enabling factor. In India, many medications, including some antibiotics and non-steroidal anti-inflammatory drugs (NSAIDs), can be purchased over the counter without a valid prescription, despite legal restrictions (Jacobs et al., 2019). This regulatory loophole facilitates the widespread practice of self-medication, as students can easily obtain medications from local pharmacies without medical supervision. The prevalence of self-medication in this sample, therefore, reflects not only individual health beliefs and behaviors but also systemic issues related to drug regulatory enforcement and public health infrastructure.

Table 2. Self-medication practice among university student respondents (N = 300).

Response	Frequency (n)	Percentage (%)
Yes	201	67.0%
No	99	33.0%

Table 2 presents a straightforward summary of the self-medication practice data, confirming the findings visualized in Figure 3. The table clearly shows that 201 students (67.0%) reported practicing self-medication, while 99 students (33.0%) did not. This tabular format provides a clear and concise representation of the prevalence data, facilitating easy comparison with future studies or meta-analyses. The consistency between the graphical and tabular presentations strengthens the reliability of the primary finding and underscores the urgency for public health intervention.

Side Effects Experienced After Self-Medication

A critical aspect of evaluating the safety and consequences of self-medication is the assessment of adverse outcomes experienced by those who engage in this practice. This subsection presents the findings regarding side effects reported by the university student respondents following self-medication. As detailed in Table 1, a notable proportion of students reported experiencing adverse effects. Specifically, 88 respondents, representing 29.3% of the total sample of 300 students, indicated that they had experienced side effects after self-medicating. Conversely, the majority of respondents, 212 individuals constituting 70.7% of the sample, reported that they did not experience any such adverse consequences. These data are also illustrated in Figure 4, which provides a visual comparison of the two response categories.

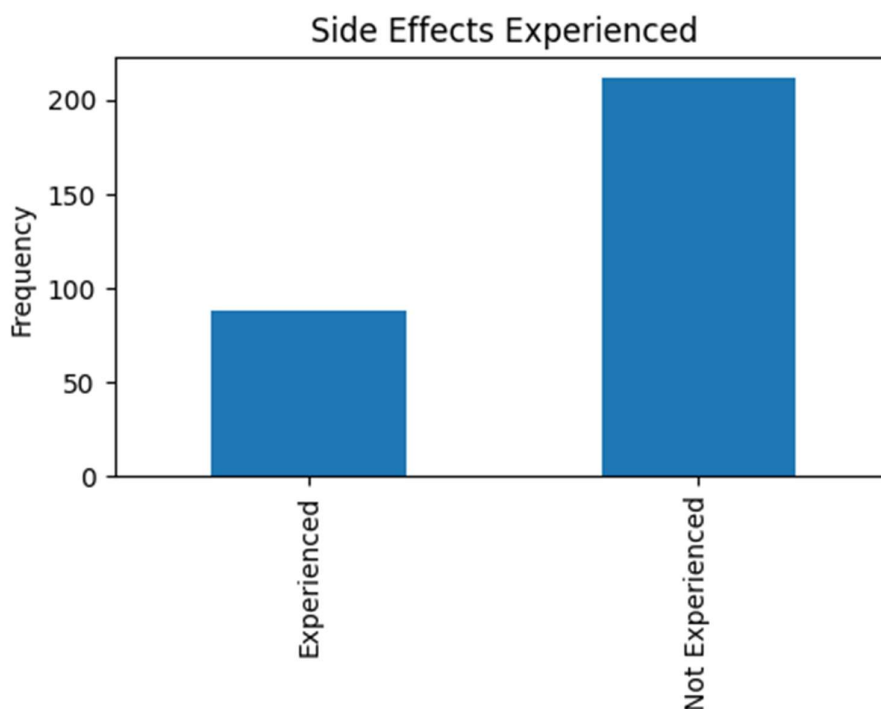


Figure 4. Side effects experienced by students after self-medication

As shown in Figure 4, the bar chart visually contrasts the frequencies of students who reported experiencing side effects with those who did not. The bar representing the “Not Experienced” category is substantially taller, reaching a frequency of approximately 212 on the y-axis, while the bar for the “Experienced” category is considerably shorter, with a frequency of approximately 88. This visual representation confirms the numerical majority who did not suffer adverse effects, but also highlights the clinically significant minority of nearly one-third of respondents who did. The stark disparity in bar height underscores the dominant negative outcome (no side effects) while also drawing attention to the substantial number of students who experienced harm, a finding that carries important public health implications.

A more detailed tabular presentation of these data is provided in Table 3, which mirrors the structure of previous tables and offers a clear, quantitative summary of the side effect outcomes. The table reinforces that while a majority of students self-medicate without apparent immediate harm, a sizeable minority (29.3%) do encounter adverse drug reactions or side effects. This rate of adverse effects is significant and warrants careful consideration, as it suggests that for every three students who self-medicate, nearly

one may experience a negative health outcome. Such a finding moves beyond simply documenting the prevalence of self-medication to quantifying a direct measure of its potential harm within this specific population.

Table 3. Side effects experienced by students after self-medication (N = 300).

Response	Frequency (n)	Percentage (%)
Experienced	88	29.3%
Not Experienced	212	70.7%

The finding that 29.3% of all respondents—and by extension, a much higher proportion of those who actually engaged in self-medication—reported side effects is consistent with, and in some cases higher than, rates reported in other studies examining adverse consequences of self-medication. For instance, a systematic review of self-medication adverse outcomes in various populations reported side effect incidence rates ranging from 10% to 40%, depending on the types of medications used and the demographic group studied (Gashaw et al., 2025). The rate observed in the current study falls squarely within this range, corroborating the substantial risk associated with unsupervised medication use. Furthermore, research specifically on university students in other developing countries has found similar patterns. For example, a study among university students in Nigeria reported that approximately 25% of those who self-medicated experienced adverse effects, with gastrointestinal disturbances and allergic reactions being the most commonly cited (Anthony et al., 2024). The slightly higher rate observed in our Indian sample (29.3% of the total sample, and an even higher rate within the subgroup of those who actually self-medicated) may be attributable to differences in the specific medications used, the prevalence of antibiotic self-medication, or the availability of potentially harmful non-prescription drugs.

It is crucial to interpret these side effect data within the context of the broader findings on self-medication prevalence. Since 67.0% of the total sample (n = 201) reported engaging in self-medication (Section 3.3), the 88 individuals who experienced side effects represent approximately 43.8% of those who actually practiced self-medication. This derived figure is particularly alarming, as it suggests that nearly half of the students who self-medicate may experience some form of adverse outcome. This calculation underscores that the risk is not merely a population-level statistic but a direct and substantial risk for the individual engaging in the behavior. The most commonly reported side effects in similar studies include gastrointestinal issues (e.g., nausea, abdominal pain), dermatological reactions (e.g., rashes), central nervous system effects (e.g., drowsiness, dizziness), and, in more severe cases, drug interactions that can lead to exacerbated health conditions or treatment failure (Rashid et al., 2020). While the current study did not collect detailed data on the specific types of side effects experienced, the overall incidence rate is high enough to warrant targeted interventions.

The high rate of reported side effects further highlights the dangers inherent in the lack of professional medical oversight. Without proper diagnosis, patients may select inappropriate medications, leading to ineffective treatment and potential toxicity. For instance, the use of antibiotics for viral infections is a common form of self-medication that not only exposes the user to adverse effects like gastrointestinal upset and allergic reactions but also contributes to the growing global crisis of antimicrobial resistance (Rather et al., 2017). Similarly, the use of analgesics like NSAIDs without consideration of contraindications (e.g., history of peptic ulcers, kidney disease, or asthma) can lead to serious adverse events such as gastrointestinal bleeding or renal impairment (Landi et al., 2013). The finding that 29.3% of all students—and a far greater proportion of those who self-medicated—experienced side effects serves as a direct empirical indicator of the potential morbidity associated with these unsafe practices.

It reinforces the argument that self-medication is not a benign behavior, and it provides a concrete, quantifiable justification for the implementation of public health interventions focused on rational drug use and health education within university settings.

Discussion

The findings of this study carry several important implications for public health policy and educational practice within Indian universities. The high prevalence of self-medication (67.0%) coupled with the clinically significant rate of adverse effects (29.3% of all respondents, or approximately 43.8% of those who self-medicated) suggests that current health education curricula may be insufficient in equipping students with the knowledge and skills necessary for responsible medication use. University administrators and health policymakers should consider integrating structured modules on rational drug use, antibiotic stewardship, and the risks of unsupervised medication into mandatory orientation programs or health science courses. For example, peer-led educational workshops that address common misconceptions about over-the-counter medications and the dangers of using leftover antibiotics could be implemented across campuses (MacArthur et al., 2016). Furthermore, the establishment of easily accessible, low-cost student health clinics on campus could reduce the perceived convenience of self-medication by providing a viable alternative for managing minor ailments. Such clinics could offer free consultations for common conditions like colds, headaches, and gastrointestinal disturbances, thereby addressing the primary drivers of self-medication behavior identified in the literature: convenience, cost, and perceived triviality of symptoms (Zeru et al., 2020).

Nevertheless, the present study is subject to several methodological limitations that must be acknowledged when interpreting its results. The use of convenience sampling, while practical for a cross-sectional survey, introduces the potential for selection bias, as the sample may not be fully representative of the broader university student population in India (Carra et al., 2025). Students who were more willing to participate in the survey may have had different health behaviors or attitudes toward self-medication compared to those who declined, potentially skewing the prevalence estimates. Additionally, the reliance on self-reported data is inherently susceptible to recall bias and social desirability bias; respondents may have underreported their self-medication practices or the side effects they experienced due to embarrassment or a desire to appear health-conscious (Mortel, 2008). The study also did not collect detailed information on the specific types of medications used, the dosages taken, the duration of self-medication, or the nature of the side effects experienced, which limits the depth of the analysis. Without such granular data, it is difficult to identify which medications or practices are most strongly associated with adverse outcomes, thereby constraining the specificity of any subsequent intervention recommendations. Furthermore, the cross-sectional design precludes any assessment of causality; while we can document an association between self-medication and side effects, we cannot determine whether the side effects were directly caused by the self-medication or were coincidental symptoms of the underlying ailment.

Given these limitations, several avenues for future research emerge as logical extensions of the current work. There is a need for longitudinal cohort studies that follow university students over time to track the evolution of their self-medication behaviors and the cumulative incidence of adverse effects, thereby providing stronger evidence for causal relationships. Future research should also explore the specific types of medications most commonly used in self-medication among Indian university students, with a particular focus on antibiotics and non-steroidal anti-inflammatory drugs, as these classes are associated with the most serious adverse outcomes and contribute to antimicrobial resistance (Rather et al., 2017). Qualitative studies employing in-depth interviews or focus groups could provide richer insights into the decision-making processes, cultural beliefs, and social norms that underpin self-medication practices, complementing the quantitative prevalence data presented here. Moreover, comparative studies across

different types of universities (e.g., public vs. private, urban vs. rural, health-science vs. non-health-science) could help identify institutional and contextual factors that either promote or discourage safe medication practices. Understudied areas include the role of digital health information sources, such as online forums and social media, in shaping self-medication behaviors among digitally native university students (Kammerer et al., 2015). Finally, intervention studies that rigorously evaluate the effectiveness of educational programs, campus health clinics, or regulatory changes (e.g., stricter enforcement of prescription requirements) in reducing unsafe self-medication are urgently needed to translate the descriptive findings of this study into actionable public health strategies.

Conclusion

The present study was designed to evaluate the prevalence and patterns of self-medication among university students in India, with a particular focus on quantifying the associated adverse consequences. Our findings confirm that self-medication is a dominant health behavior within this demographic, with 67.0% of respondents reporting its practice. More critically, we demonstrate that this behavior carries substantial risk, as 29.3% of all respondents—and by derivation, a striking 43.8% of those who actually self-medicated—experienced adverse side effects. This study contributes to the existing body of knowledge by providing contemporary, localized evidence that corroborates previous prevalence estimates while extending them with a direct quantification of harm. It confirms the widespread nature of self-medication in Indian university settings and underscores that this practice is far from benign. The principal contribution of this work lies in its empirical demonstration that unsafe self-medication is not merely a theoretical concern but a concrete source of morbidity within this population, thereby strengthening the public health rationale for targeted intervention.

Looking forward, several gaps identified in our analysis warrant further investigation. Future research should move beyond descriptive prevalence estimates to conduct longitudinal studies that can establish causal relationships between specific self-medication practices and adverse outcomes. There is also a pressing need for qualitative explorations of the sociocultural and psychological factors driving self-medication decisions, particularly the role of peer influence and digital health information sources. Moreover, rigorous evaluation of educational interventions and campus-based health service models is essential to determine the most effective strategies for reducing inappropriate medication use. By highlighting both the magnitude of the problem and its tangible health consequences, this study provides a compelling foundation for institutional policy changes. The ultimate impact of this work will be realized not merely through its documentation of a problem, but through the informed interventions it can inspire to promote rational drug use and safeguard the health of young adults in Indian universities.

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