



EXPLORING SELF-MEDICATION PRACTICES AND PATTERNS AMONG MEDICAL AND NURSING STUDENTS: A CROSS-SECTIONAL STUDY.

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Abstract

Background: Self-medication is a common practice among individuals of all ages, including medical and nursing students. While it can be beneficial in certain situations, it can also lead to adverse effects and complications. This study aimed to explore the self-medication practices and patterns among medical and nursing students in India.

Methodology: This cross-sectional study was conducted among the undergraduate medical and nursing students of NIMS University, Jaipur, Rajasthan between May and July 2023. All undergraduate students of the National Institute of Medical Sciences & Research and NIMS Nursing College were included in the study. Those who did not take self-medication in the last six months and did not give consent or incomplete forms were excluded from the analysis. A semi-structured questionnaire was employed for data collection regarding sociodemographic profile and their self-medication practices. Qualitative data were presented as percentages, while quantitative data were presented as a mean and standard deviation. The chi-square test was applied for inferential statistics. P-value less than 0.05 was considered statistically significant.

Results: A total of 686 students participated in the study, with 71.5% of the students engaging in self-medication. The study found that the prevalence of self-medication among medical undergraduates was 74.1%, while nursing students had a prevalence rate of 65.4%. Analgesics were the most used medication, and the primary reasons for self-medication were minor illnesses, convenience, and previous experience with the medication.

Conclusion: In conclusion, this study provides valuable insights into the self-medication practices and patterns among medical and nursing students and highlights the need for increased awareness and education on responsible medication use.

Keywords: *Medical Students, Nursing Students, Perception, Practice, Self-Medication*

Introduction

Self-medication is often defined as the independent selection and use of medications to address self-identified health issues or symptoms [1]. In today's fast-paced world, the practice of self-medication has become increasingly common, transcending geographical boundaries and demographic barriers. When employed judiciously, self-medication can offer several advantages, including potentially saving lives in acute situations, reducing the time spent waiting for medical consultations, and curbing healthcare costs. However, it also comes with inherent risks, including unwarranted medication use, prolonged treatment durations, inaccurate self-diagnoses, medication interactions, and the emergence of antibiotic resistance [2,3].

Notably, studies have highlighted a significant trend among college students, who exhibit a limited inclination to seek healthcare professionals for health-related information, treatment, or other medical services. The youth demographic is particularly susceptible to the influence of media and the internet, both of which tend to endorse self-medication behaviours. The extensive advertising of pharmaceuticals presents a growing concern, especially for the younger population, as it raises apprehensions regarding misdiagnosis, drug interactions, and the misuse of medications for conditions other than their intended purpose [4,5]. With the proliferation of social media and online information sources in recent years, students have increasingly turned to the internet for health-related insights, often bypassing healthcare professionals, thereby elevating the likelihood of self-medicating for self-diagnosed ailments.

Past research has illuminated the role of medical knowledge as a contributing factor to self-medication practices among college students [6–9]. In this context, understanding the prevalence of self-medication among medical and paramedical students towards it is of paramount importance. It not only furthers our comprehension of self-medication within the academic community but also carries broader implications for public health. The insights garnered from this study may inform policy development and educational initiatives aimed at promoting responsible self-care among future healthcare professionals, thus mitigating the associated risks, and improving overall healthcare outcomes. However, there remains a dearth of literature addressing the patterns of self-medication among medical and nursing students in Western India. To address this knowledge gap, the current study was undertaken to assess the extent of self-medication practices among undergraduate medical and nursing students at NIMS University, Jaipur, Rajasthan.

MATERIALS AND METHODS

Study design, setting and duration

This cross-sectional study was conducted among the undergraduate medical and nursing students of NIMS University, Jaipur, Rajasthan between May and July 2023.

Sample size and sampling

The sample size was calculated using the formula, $N = (Z^2 \cdot p \cdot q) / d^2$, where $p = 70.1\%$ [10] and $d = 5\%$. At 95% confidence level, after adding 10% non-response/missing data, the sample size which comes to 354.2, rounded off to 360 as the final sample size. However, we distributed the online questionnaire to all the students of the National Institute of Medical Sciences & Research and NIMS Nursing College who were enrolled as medical and paramedical students, respectively.

Inclusion & Exclusion criteria

All undergraduate students of the National Institute of Medical Sciences & Research and NIMS Nursing College were included in the study. Those who did not take self-medication in the last six months and did not give consent or incomplete forms were excluded from the analysis.

Recruitment of participants

Respondents were recruited through emails from the study team and school administrators. The study's aims and a statement about voluntary participation were shared verbally and in all emails. The Non-probability sampling method was used to select study participants. Ethics Committee

approval was obtained from the Institutional Ethics Committee of NIMS University, Jaipur, Rajasthan, India prior to the commencement of the study.

Data collection and analysis

A semi-structured questionnaire was employed for data collection, which was developed based on previous studies addressing the same topic. The questionnaire was structured into two distinct sections. In Section I, participants were asked about their sociodemographic profile and whether they engaged in self-medication. Those who acknowledged practising self-medication were directed to complete Section II, which contained questions pertaining to their self-medication practices. The distribution of these questionnaires was conducted with the appropriate permissions from the institution's Dean, and the participating medical and nursing undergraduates were given a comprehensive briefing on the study's objectives. Informed consent was obtained from those students who willingly agreed to take part in the research. Subsequently, a thorough assessment of the questionnaires was performed to ensure completeness, and only those questionnaires that were fully completed were included in the final data analysis. Students were given opportunities to complete the survey within one month.

Data was entered in MS Excel and analysed using IBM Statistical Package for Social Sciences (SPSS) software (Version 26.0). Qualitative data were presented as percentages, while quantitative data were presented as a mean and standard deviation. The Chi-square test was applied for inferential statistics. P-value less than 0.05 was considered statistically significant.

RESULTS

A total of 686 students took part in the survey, but we had to exclude six responses due to incomplete information. Table 1 describes the characteristics of the sample. The survey achieved an overall response rate of 52.3%. Specifically, 475 students from the National Institute of Medical Sciences & Research participated, accounting for a 47.5% response rate, and 205 students from the NIMS Nursing College participated, showing a higher response rate of 68.3%. The mean age of the respondents was 25.8 ± 7.2 years. Among the students, 71.5% reported engaging in self-medication.

Table 1: Basic characteristics of participants (N=680)

Variables	Sub-group	Frequency	Percentage
Age-group (in years)	≤20	125	18.4%
	21-30	325	47.8%
	> 30	230	33.8%
Gender	Male	341	50.1%
	Female	339	49.9%
Branch	Medical	475	69.9%
	Nursing	205	30.1%
Residence	Urban	592	87.1%
	Rural	88	12.9%
Living status	With family	55	8.1%
	In Hostel	625	91.9%
Chronic illness	Present	18	2.6%
	Absent	662	97.4%
Medical (n=475)	1st	104	21.9%
	2nd	146	30.7%
	3rd	127	26.7%
	4th	98	20.6%
Nursing (n=205)	1st	65	31.7%
	2nd	72	35.1%
	3rd	68	33.2%
Self- medication	Yes	486	71.5%
	No	194	28.5%

When we break it down further (see Figure 1), we find that 74.1% of medical students and 65.4% of nursing students engage in self-medication. The difference was found to be statistically significant (p -value=0.20). A proportionately larger number of males were self-medicating (73%, 249/341) than females (69.9%, 237/339). The primary reasons for self-medication included considering their ailment too minor for professional consultation (80.1%), confidence in their pharmacological knowledge (55.7%), and the desire to save time (51.2%) (as summarised in Table 2).

Figure 1: Distribution of students according to self-medication

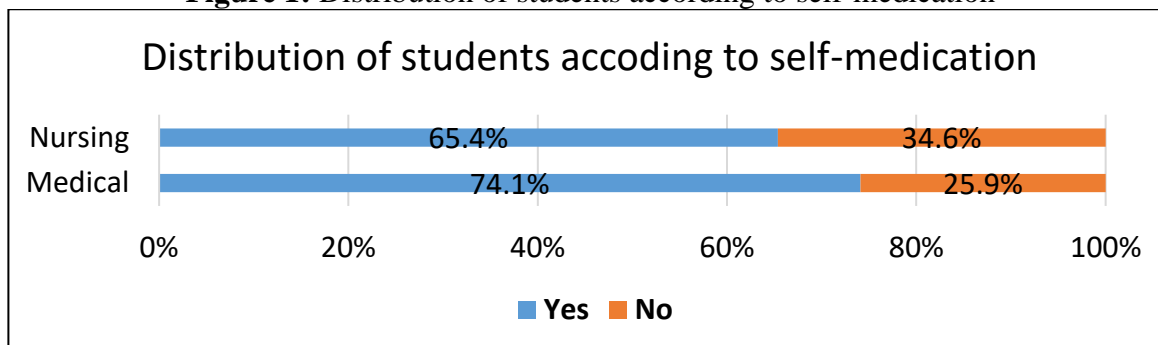


Table 2: Distribution of reasons for self-medication (n=486)

Reasons for self-medication [#]	Frequency	Percentage
Illness too trivial for consultation	389	80.1
Sufficient pharmacological knowledge	271	55.7
To save time	249	51.2
Previous experience	198	40.8
To avoid crowds at OPD	161	33.1
Privacy	44	9.1

[#] Contains multiple responses, % is based on “n”

Interestingly, 59.0% of the participants relied on old prescriptions for the same condition when seeking information about the medication (as detailed in Table 3). Looking at specific reasons for self-medication (Table 4), fever was the most common (75.5%), followed by headache (67.7%) and general pain (61.9%). Sore throat (56.0%) was the leading reason for self-medicating with antibiotics. Interestingly, 31.2% of the participants admitted to not completing the full course of antibiotics, stopping their medication once their symptoms improved.

Table 3: Distribution of Source of information about drugs for self-medication (n=486)

Sources [#]	Frequency	Percentage
Old prescription for same illness	287	59.0
Pharmacist	162	33.4
Friends/ family	139	28.6
Self-acquired knowledge	109	22.4
Drug advertisement/Internet	85	17.5

[#] Contains multiple responses, % is based on “n”

Table 4. Indications for self-medication (N = 486)

Indications	Frequency	Percentage
Fever	367	75.5
Headache	329	67.7
Pain	301	61.9
Sore throat	272	56.0
Gastritis	217	44.7
Rash/allergies	184	37.9
Diarrhoea	170	35.0
Vomiting	154	31.7
Insomnia	51	10.5

[#] Contains multiple responses, % is based on “n”

As for the types of drugs used for self-medication, antipyretics were the most common (75.0%), followed by analgesics (68.2%) and antibiotics (57.3%), as depicted in Table 5.

Table 5. Medications used for self-medication (N = 486)

Categories	Frequency	Percentage
Antipyretics	365	75.0
Analgesics	331	68.2
Antibiotics	278	57.3
Antispasmodic	248	51.1
Antiulcer	218	44.9
Antihistamines/Anti-allergic	191	39.2
Antidiarrhoeal	176	36.2
Antiemetics	154	31.6
Tonics/Vitamins	130	26.7
Antitussives	103	21.1
Multivitamins	90	18.6
Sedatives	47	9.6
Anxiolytics	36	7.5

Contains multiple responses, % is based on “n”

Discussion

Self-care, including self-medication, has been a feature of healthcare for many years and people have always been keen to accept more personal responsibility for their health status. Self-medication by itself has both pros and cons that depend on who and what one chooses to self-medicate. The present study was conducted to evaluate the practices of self-medication among medical and nursing students of a private university of Jaipur, Rajasthan.

In our research, overall, 71.5% of students practised in self-medication. The prevalence of self-medication was 74.1% for medical undergraduates and 65.4% for nursing students. Taking a closer look at studies conducted in India, the statistics are nothing short of eye-opening, with self-medication rates among students ranging from 67.0% to a staggering 92% [8,11–15]. Notably, Dutta et al. reported an overall lower prevalence of 67%, but an intriguing finding emerged that a greater inclination among medical students (71%) compared to non-medical students (63%) ($p < 0.05$) [11]. Karmakar et al. painted a picture where medical students took the lead with a prevalence rate of 91.5%, surpassing their nursing counterparts at 85% [8]. Singhla et al. reported an overall prevalence of 88.6% for self-medication among university students. A captivating observation within their study was the marked disparity between medical students (93.5%) and nursing students (83%), demonstrating an enthralling dimension to this prevalent practice [14]. On the other hand, Johnson et al. reported an astonishing 92.39% prevalence of self-medication, and the practice was particularly prominent among pharmacy (92.35%) and nursing (99.4%) students, surpassing medical students at 86.3% [15].

In our study, a predominant motivation for self-medication among a significant portion of participants was the perception that their ailment was too trivial to warrant a doctor's visit. This finding aligns with the observations made by Singla et al., where a substantial majority of students expressed the view that minor illnesses did not necessitate a doctor's consultation [14]. Conversely, Karmakar et al. provided an interesting contrast, highlighting several driving factors for self-medication. This included self-confidence and a well-informed awareness about medicines (62.3% among medical students and 15.3% among nursing students), time constraints preventing doctor visits, reluctance to incur expenses related to medical consultations and laboratory tests, as well as the desire for prompt relief. Notably, a significant portion of students (49.7% among medical students and 30% among nursing students) resorted to self-medication when they had previously experienced successful recovery from a similar ailment through the use of the same medication [8]. In a separate study conducted by Damodar et al., a substantial 35.23% of participants reported prior experience in treating similar diseases independently [13].

In our study, fever was the most common indication for self-medication, a finding consistent with similar observations in South India [16]. Singla et al. and Karmakar et al. also reported fever and headache as the most frequently self-medicated ailments, followed by cough and cold [8,14]. Further insights from the study by Mehta et al. indicated that a substantial proportion of individuals resorted to self-medication for cold and cough, followed by pain relief, fever management [17]. Notably, in studies from Western and Southern parts of India, cough and cold represented the most common symptoms prompting self-medication [18,19].

Antipyretics was the most frequently self-medicated class of drugs in our study, closely followed by analgesics and antibiotics. A review of the literature corroborated this trend, with common self-medication choices typically revolving around analgesics, antipyretics, antacids, and antispasmodics [11,14,17,20]. Damodar et al. reported a prevalence of 88.08% for antibiotics and cough syrup, with 74.09% for analgesics in the preceding 12 months [13]. However, studies conducted in other countries highlighted analgesics as the most prevalent group of self-medicated drugs [21,22]. In a divergence from these patterns, Karmakar et al. noted that the most frequently used drugs were vitamins and antioxidants (67.8%), followed by antibiotics (61.2%) and cough syrup (55.9%) [8]. These findings underscore the diverse regional patterns in self-medication practices and emphasize the importance of considering local factors and preferences in healthcare research and interventions.

Limitations

This study, limited to a single institution and encompassing solely medical and nursing students, necessitates caution when generalizing the findings. A multicentric study encompassing a wider array of students would be imperative to provide a more comprehensive perspective on this matter. Moreover, it is worth noting that this study relied on retrospective data recall, inevitably introducing the potential for recall bias.

CONCLUSION

Self-medication among students is prevalent, driven by the perception of minor illnesses, limited access to healthcare services, and the ready availability of medications. While acknowledging the inevitability of self-medication, it is imperative for drug regulatory authorities and healthcare professionals to educate students about the potential side effects and adverse drug reactions associated with such practices, as well as the broader consequences. Furthermore, government intervention aimed at restricting the easy accessibility of medicines through pharmacies can significantly mitigate self-medication tendencies.

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