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Original Research Article

Prevalence and pattern of self-medication among undergraduate medical students in various medical colleges in Kashmir: a student initiated research

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ABSTRACT

Background: Self-medication is a widespread practice among medical students, often driven by their growing medical knowledge and easy access to drugs. This study aims to determine the prevalence and pattern of self-medication practices among undergraduate medical students in various medical colleges of Kashmir.
Methods: A cross-sectional study was conducted among 218 undergraduate medical students from three medical colleges in Kashmir. Data were collected using a structured questionnaire to assess demographic characteristics, self-medication prevalence, reasons for self-medication, and types of drugs used. Statistical significance was set at $p<0.05$.
Results: Of the 218 participants, 152 (69.7%) were female, and 66 (30.3%) were male. The mean age of participants was 21±1.56 years. The prevalence of self-medication was 49%, with final-year students showing the highest prevalence (52%), followed by first-year students (28.4%). Headaches (55%) and rhinitis (44%) were the most common reasons for self-medication. Analgesics (33%) and antibiotics (29%) were the most frequently used drugs. While 68% of students were aware of the risks associated with self-medication, only 3.8% reported experiencing adverse events.
Conclusions: Self-medication is highly prevalent among medical students in Kashmir, especially among senior students. The frequent use of antibiotics raises concerns about antimicrobial resistance. Educational interventions are needed to promote rational drug use and reduce unsafe self-medication practices.

Keywords: Kashmir, Self-medication, Undergraduate medical student

INTRODUCTION

According to WHO definition, "self-medication involves the use of medicinal products by consumers to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of medication prescribed by physicians for chronic or recurrent diseases or symptoms.[1,2] Perceived as a cost-effective and time-saving approach in the general population to managing minor ailments, self- medication is common among both developed and developing countries with prevalence rates ranging from 25.6 to 73.6%.[3] Self-medication is not always a harm, but when practiced effectively, it can serve many benefits, from saving lives in emergency situations to minimizing long waiting times for proper medical assistance and lowering healthcare costs. When self-medication is not practiced effectively, it increases the risk of using illegal drugs, developing drug dependence, and masking underlying medical conditions, all of which can compromise human safety, leading to drug resistance and making diagnosis more challenging.[4] The worldwide prevalence of self-medication among the elderly was found to range from 11.2% to 93.7% in 2021.[5] In India, the prevalence of self-medication is observed to be 53.57%; familiarity with medication appears to be a major reason to practice self-medication. The practice was noticed more among

individuals from middle- to lower-class families, with a prevalence rate of 26.31%. Several studies have highlighted a worrying trend among medical students who, despite being aware of the risks associated with self-medication, continue to engage in this practice, often rationalizing their behavior by citing their medical knowledge.[6] Factors contributing to this trend include the perceived minor nature of the ailments, the convenience of self-medicating, and the stressful academic environment that medical students often navigate. A study conducted at AIIMS New Delhi observed that self-medication was considerably high among undergraduate medical and paramedical students in India, and it increased with medical knowledge. A study conducted among medical students in South India suggested the prevalence of self-medication among participants was 78.6%, with prevalence in females greater than males.[4] The most common reasons cited for self-medication were minor illnesses, the availability of medicines, and prior experience with similar symptoms. Analgesics, antipyretics, and antibiotics were among the most commonly self-medicated drugs, raising concerns about the potential for drug resistance and adverse drug reactions. In Kashmir, according to a community-based study, the prevalence of self-medication was found to be as high as 89.58%.[7] Medical students are in a unique position as both the future health care providers and current consumers of health care services. Given their professional aspirations, medical students serve as role models of responsible medication use. Therefore, uncovering any prevalent self-medication among them is pivotal in mitigating potential risks. To the best of our knowledge, there are limited studies that have been conducted on undergraduate medical students in Jammu and Kashmir. Hence the study was conducted with the aim to determine the prevalence and pattern of self-medication among undergraduate medical students enrolled in different medical colleges in Kashmir.

METHODS

Study design

This was a descriptive, cross-sectional study conducted among undergraduate medical students of various Medical Colleges of Kashmir division from 15th-30th March 2024, during our elective posting in the department of Community medicine.

Study participants

Undergraduate medical students of selected medical colleges (Government Medical College Baramulla, Government Medical College Anantnag, Government Medical College Baramulla Srinagar).

Study instrument

A questionnaire was framed after going through the relevant document related to the subject and reviewing the literature. Final questionnaire was framed after piloting the questionnaire. A Google Form was made, and the link to this Google Form was sent and circulated to various student social media groups of selected medical colleges. Due to scarcity of time, the response limit was kept for 2 days.

Sample size calculation

Assuming the minimum prevalence of self-medication taken as 78.6% from a previous study conducted on similar population.[4] The sample size (N) was calculated by:

$$N=Z^2pq/d^2$$

Where; N is the sample size, p is the prevalence of self-medication, q = (1-p), Z is the standard normal deviation (usually set at 1.96, which corresponds to the 95% confidence interval), and d is the desired degree of accuracy set at 0.05 to tolerate a 5% error. Accordingly, the calculated minimum sample size was 259.

Sampling

The convenience sampling technique was used and included all responses irrespective of proportionate to college during the stipulated time to achieve the desired sample size. We selected one medical college from the North, one from Central Kashmir, and one from South Kashmir.

Data collection and analysis

A spreadsheet was downloaded from Google Forms in Excel form and was entered and analysed using statistical software Jamovi 2.3.28 (free software). The qualitative data were represented using frequency and proportions. Quantitative data were represented using mean and standard deviation. For finding out the association between the use of self-medication and socio-demographic variables, the chi square test was used. A p value <0.05 was taken as significant.

RESULTS

During the study period, we received only 218 responses from undergraduate medical students, as the link was open for a limited period during our posting in the department. Out of total 218 responses, 152 (69.7%) were females and 66 (30%) were males. (Table 1). The mean age of participants was 21±1.56 years, ranging from 18 to 26 years. About 186 (85.3%) participants were from Government Medical College Baramulla, followed by Government Medical College Anantnag 26 (11.9%) and lowest among students of Government Medical College Srinagar 6 (2.8%). 92 (42.2%) participants were from final year students, followed by first year students (28.4%), second year students (22.4%), and the lowest among pre-final students (7.3%). The majority (90%)

were hostellers. We observed that out of 218 participants, 106 (49%) have self-medicated in the last three months, and 112 (51%) did not self-medicate. 56 (52%) of those self-medicated students were final-year students followed by first-year MBBS students; the results were statistically significant with p<0.05 (Table 2).

Headache (55%) and running nose (rhinitis) (44%) were the most frequent reported symptoms for which self-medication was practiced, followed by fever (21%), gastric acidity (17%) (Figure 1).

The results showed that the most common drugs used for self-medication were analgesics (33%), various antibiotics (29%), antacids (17%), antiallergic including antihistamines (13%), cough syrups (11%), sedatives, antidiarrheal, and antiemetic (5% each) (Figure 2).

Out of total self-medicated students, 36 (68%) were aware of the potential risks of the medications they took, and only 3.8% experienced some sought-after perceived adverse events. About 45 (85%) of the self-medicated students stopped taking medicine after symptoms disappeared.

Table 1: Distribution of participants in accordance with their response as per gender.

	Female (%)	Male (%)	Total (%)
No	74 (66.1)	38 (33.9)	112 (100.0)
Yes	78 (73.6)	28 (26.4)	106 (100.0)
Total	152 (69.7)	66 (30.3)	218 (100.0)
$\chi^{2=}$ 1.46, df=1 P=0.228			

Table 2: Distribution of participants in accordance with their response as the academic year.

Academic year	No (%)	Yes (%)	Total (%)
Final year	36 (32.1)	56 (52.8)	92 (42.2)
MBBS 1	40 (35.7)	22 (20.8)	62 (28.4)
MBBS 2	28 (25.0)	20 (18.9)	48 (22.0)
Pre-final year	8 (7.1)	8 (7.5)	16 (7.3)
Total	112 (100.0)	106 (100.0)	218 (100.0)
$\chi^{2=}$ 10.7, df=3, P=0.013			

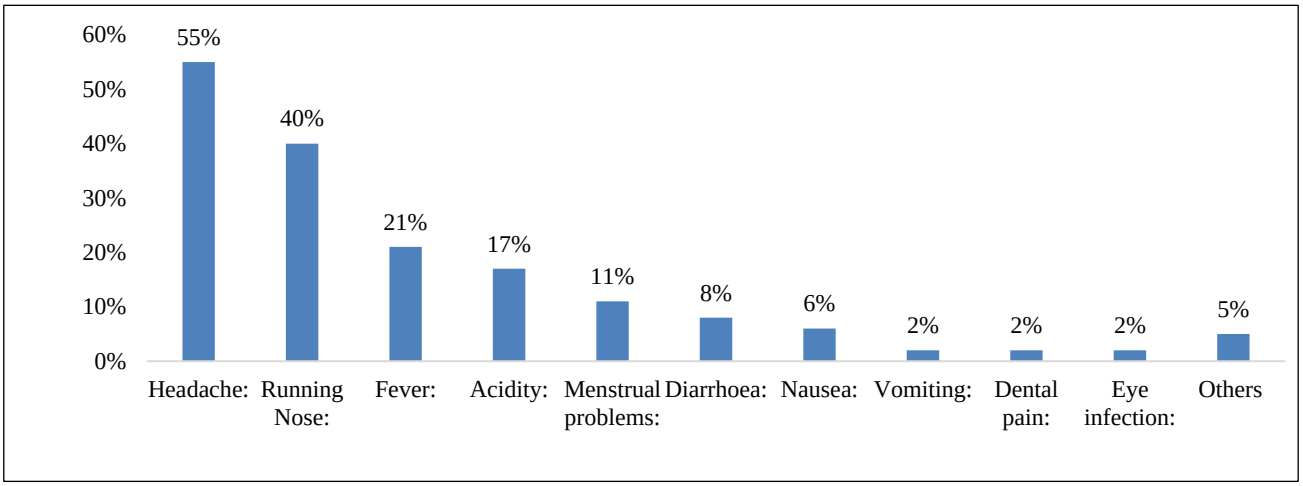

Figure 1: Indication for self medication.

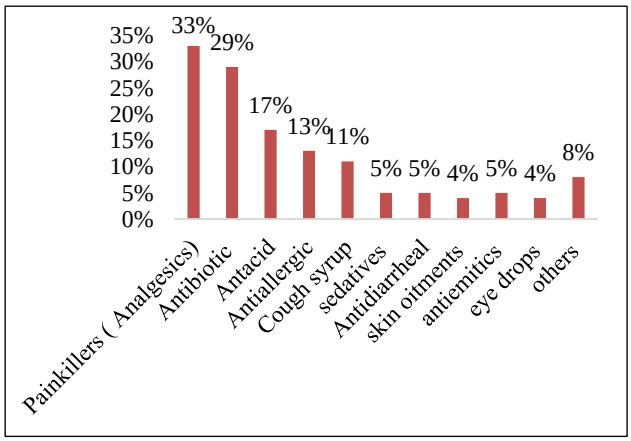

Figure 2: Drugs used for medication.

DISCUSSION

The present study aimed to determine the prevalence and patterns of self-medication practices among undergraduate medical students in various medical colleges in Kashmir. Our findings reveal that 49% of students engaged in self-medication over the past three months, reflecting a common behavior among medical students that has been observed globally, with prevalence rates typically ranging from 38% to 88% in various settings.[8] This suggests that self-medication continues to be a significant issue within this population, necessitating further attention in medical education. The majority of our participants were females (69.7%), though no significant gender differences were found in the practice of self-medication. Similar results were found by other

studies.[4,9] This finding contrasts with studies from other regions, which often report higher self-medication rates among male students due to differences in health-seeking behaviour.[5,10] The predominance of females might be due to the large sample size of the females. A statistically significant association ($p<0.05$) was found between the academic year and the likelihood of self-medication, with final-year students showing the highest prevalence (52%). This is consistent with existing research, where senior medical students are often more likely to self-medicate due to their increased knowledge and clinical experience, leading to greater confidence in diagnosing and treating minor ailments.[11,12] The trend is also evident in the present study, where students nearing the completion of their medical training exhibited higher self-medication rates. On the contrary, first-year students also showed a considerable prevalence of self-medication (28.4%), which could reflect a combination of curiosity and a lack of understanding of the risks involved at this early stage of their education. Headaches (55%) and rhinitis (44%) were the most frequently reported symptoms for which students practiced self-medication, consistent with findings from similar studies conducted among medical students in India and abroad.[13,14] The most common drugs used were analgesics (33%) and antibiotics (29%), which pose significant public health concerns, particularly in terms of antibiotic misuse. Similar studies have shown that medical students frequently self-medicate with antibiotics, often without proper medical indications, contributing to the growing global problem of antimicrobial resistance (AMR).[15,16] This highlights the need for stricter regulation of over-the-counter drugs and enhanced education on rational drug use, especially concerning antibiotics. Encouragingly, 68% of self-medicating students in our study were aware of the potential risks associated with their medications, likely due to their medical training. However, only 3.8% of these students reported experiencing adverse events, which may reflect either a reluctance to acknowledge negative outcomes or an underestimation of the risks. These findings align with previous research, where medical students often underreport side effects due to overconfidence in their ability to manage minor ailments.[5,17] This underreporting could contribute to ongoing unsafe self-medication practices, emphasizing the need for greater awareness of pharmacovigilance among medical students.

The present study was done in a limited time period, and we could not achieve the desired sample size. Secondly, we could not adopt the appropriate sampling technique to ensure equal participation from each college, gender, and batch.

CONCLUSION

The present study highlights the significant prevalence of self-medication among medical students in Kashmir, with nearly half of the participants engaging in this practice. Final-year students were the most frequent self-medicators, likely due to their increased medical knowledge, while headaches and rhinitis were the most common symptoms prompting self-medication. Analgesics and antibiotics were the drugs most frequently used, raising concerns about the potential for misuse, particularly regarding antibiotics and the associated risk of antimicrobial resistance. Although most students were aware of the risks, the underreporting of adverse events underscores the need for greater awareness. These findings emphasize the importance of incorporating targeted educational interventions on rational drug use and the dangers of self-medication into the medical curriculum to ensure responsible prescribing behaviors in the future.

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