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Prevalence and Patterns of Self-Medication among Undergraduate Students of National Medical College: A Cross-sectional Study

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Abstract

Introduction: Self-medication refers to the use of medicines by individuals to manage symptoms or illnesses that they identify themselves without consulting a healthcare professional. In Nepal, easy access to medicines contributes to the widespread practice of self-medication. Self-medication behavior among young people may also be influenced by peer pressure.

Objective: To assess the prevalence and patterns of self-medication among undergraduate medical students.

Method: A descriptive cross-sectional study was conducted among undergraduate bachelor of medicine and bachelor of surgery students at National Medical College, Birgunj, from March to June 2022. The calculated sample size was 235 students. Semi-structured questionnaire was used and analyzed using Microsoft Excel 2016 and statistical package for the social sciences version 26.

Results: The prevalence of self-medication among students was found to be 32.8% (n = 77). The majority of respondents were male (63.4%), the most common age groups were 20-21 years (79, 33.6%) and 22-23 years (73, 31.1%). Second-year students constituted the largest group 81 (34.5%). Fever, headache and cough were common symptoms showing 39(50.6%), 36(46.8%) and 26(33.8%) respectively. Forty-nine (63.6%) participants confirmed the medication's prescription and its expiration date. Only 19 (24.7%) had government sponsored insurance.

Conclusion: Self-medication was common among undergraduate medical students. Fever, headache, and cough were the most frequently reported symptoms, while saving time and old prescriptions were the main reasons. Most students used allopathic medicines. Despite medical knowledge, some experienced adverse effects and many lacked health insurance, highlighting the need to promote rational drug use and appropriate healthcare-seeking behavior.

Keywords: Fever; headache; self-medication.

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Introduction

World Health Organization defines self-care as 'the ability of individuals, families and communities to promote their own health, prevent disease, maintain health, and to cope with illness with or without the support of a health or care worker'.[1] Increasing practice of self-medication poses a challenge to healthcare systems as more people gain access to medical information and pharmaceutical products. Compared to other regions of the world, the mean prevalence of self-medication was higher in Eastern European and Asian nations[2] with 57% in the USA and 68% in Europe, and significantly higher rates in underdeveloped countries with Kuwait having the highest rate at 92% of adolescents. Likewise 31% of Indians, 51% of Pakistanis, and 59% of Nepalese self-medicate.[3]

Several studies have been conducted in Nepal, with 26.2% of medical students in Pokhara, 35.1% of dental students in Kathmandu, and 50.7% of nursing students in Chitwan. Ninety-one percent of health sciences students have self-prescribed paracetamol, according to a study conducted at the B. P. Koirala Institute of Health Sciences.[4] However, limited studies have explored patterns of self-medication in relation to safety practices, academic year, and health-insurance status. It is imperative to assess the prevalence and patterns of self-medication among medical students.

Methods

A cross-sectional study was conducted among undergraduate MBBS students at National Medical College. The study period was from March-June 2022, after receiving Institutional Review Committee ethical approval with Ref. F-NMC/586/078-079. A total of 480 students from first to fifth year were enrolled in the MBBS program. Assuming that proportion of student having self-medication was 50% and taking 95% Confidence interval and 5% error sample size was calculated using formula $N_1= z^2pq/ d^2$, where z = z score for desired confidence interval (1.96 for 95%), p = 50%, q = 1-p= 50%, d =5%, N_1= Estimated sample size

n=Final sample size

= 1.96 X1.96X0.50X0.50/0.05X0.05

= 0.9604/ 0.0025

= 384.16

For the finite population N=480,

$n=N_1/1+ (N_1-1)/N$

=384.16/ 1+ (384.16-1)/480

=213.6447

Final sample size of 235 was taken after adding 10% attrition rate.

A pre-tested semi-structured questionnaire was adopted from previously published studies.[5,6,8] Participants were selected using simple random sampling. The questionnaire was pre-tested among 10% of students i.e. 25 participants to assess clarity and reliability. Written informed consent was obtained from all participants. The study evaluated a number of factors, such as demographic characteristics, the causes of self-medication, related signs and symptoms and their presence of health insurance. Data were entered using Microsoft Excel 2016 and analyzed using Statistical Package for the Social Sciences (SPSS) version 26. The data was summarized using descriptive statistics. Frequencies and percentages were presented in tables and figures were used to interpret the results.

Results

A total of 235 MBBS students had participated in the survey. Among them, the majority of respondents were male 149 (63.4%) whereas females were 88(36.6%). About 25 (10.6%) were aged between 18-19 years, 79 (33.6%) were aged 20-21 years, 73 (31.1%) were aged 22-23 years, and 43 (18.3%) belonged to the 24-25 years age group. A smaller proportion, 15 (6.4%), were older than 25 years. The highest proportion were second year students 81 (34.5%), followed by first-year students 56 (23.8%), fourth-year students 49 (20.9%), third-year students 25 (10.6%), and fifth-year students 24 (10.2%). (Table 1)

Table 1: Demographic characteristics of students.

Variable	Frequency (n)	Percentage (%)
Age		
18-19 Years	25	10.6
20-21 Years	79	33.6
22-23 Years	73	31.1
24-25 Years	43	18.3
>25 Years	15	6.4
Sex		
Male	149	63.4
Female	86	36.6
Religion		
Hindu	212	90.2
Muslim	16	6.8
Others	7	3
MBBS Academic Year		
I	56	23.8
II	81	34.5
III	25	10.6
IV	49	20.9
V	24	10.2

In the span of three months, 77 (32.8 %) students self-medicated, 9 (3.8%) were unsure and 149 (63.4%) reported not practicing self-medication. From the 77 participants who went for medication it was found that 29 (37.7 %) answered the cause being saving times. Around 19(24.7%) participants had followed their old prescription as shown in Figure 1. Among the 77 participants, 9 (11.7%) had medicines of family member. Nine (11.7%) reported

that the doctor or clinic was far from home, 8(10.3%) followed the pharmacist advice without doctor consultation, 7(9.1%) stated high fees for doctor and doctor being too busy 2(2.5%). Students who reported using medical knowledge gained through text books or peers were 22(28.5%).

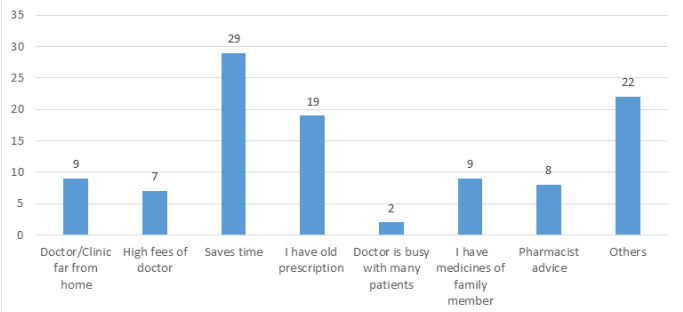

Figure 1: Reason of participants for self-medication practices.

Table 2: Signs and Symptoms for which self-medication was practiced among participants.

Sign and symptoms	Frequency (n)	Percentage (%)
Fever	39	50.6
Headache	36	46.8
Cough	26	33.8
Runny nose	23	29.9
Acidity	17	22.1
Diarrhea	11	14.3
Body pain	9	11.7
Vomit	8	10.4
Menstruation problem	7	9.1
Dandruff	5	6.5
Migraine	4	5.2
Hair fall	3	3.9
Asthma	3	3.9
Dental pain	3	3.9
Muscle pain	3	3.9
Rash	2	2.6
Wounds	2	2.6
Nausea	2	2.6
Eye infection	2	2.6
Ear pain	1	1.3
Diabetes	1	1.3
Skin disease on open area	1	1.3
Urination problem	1	1.3

The use of medication for various signs and symptoms, showing that fever 39 (50.6%) and headache 36 (46.8%) were the most frequently reported conditions. This was followed by cough 26 (33.8%) and runny nose 23 (29.9%). Gastrointestinal symptoms such as acidity 17 (22.1%) and diarrhea 11 (14.3%) were moderately reported. Other complaints including body pain, vomiting, menstrual problems, dandruff, migraine, hair fall, and muscle pain were less common. Very few participants reported for conditions such as asthma, dental pain, rash, wounds, nausea, eye or ear infections, diabetes, skin diseases on open areas, and urination problems, indicating that it was predominantly for common and minor health conditions. (Table 2)

Among the participants, 49 (63.6%) reported verifying their prescription and checking the expiration date of the medication. Additionally, 24 (31.2%) stated that they checked sometimes, while 4 (5.2%) did not confirm their prescription details, as illustrated in Figure 2.

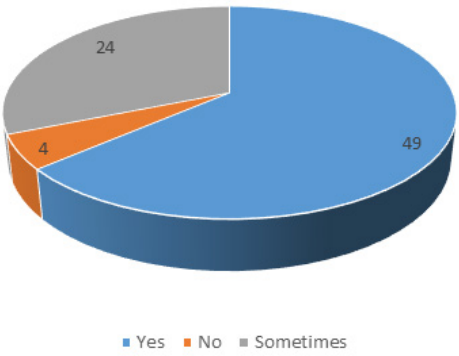

Figure 2: Practice of checking prescribing information prior to self-medication.

A total of 13 (16.9%) participants reported experiencing adverse events after taking the medication. Self-medication towards chronic diseases lasting more than 3 months was done by 7 participants 9.1%. Participants used allopathic medications being 60(77.9%), followed by ayurvedic medicines 11(14.3%) and homeopathic medicines 6 (7.8%). Of the total self-medicated participants, 45 (58.4%) had no health insurance coverage. Government-sponsored insurance was reported by 19 (24.7%), while 3 (3.9%) had rural insurance. Private medical insurance and other forms of insurance were each reported by 5 (6.5%) of students. (Figure 3)

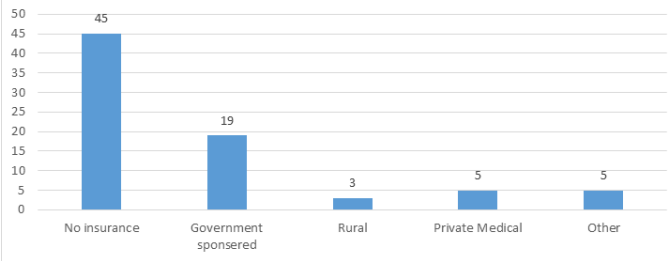

Figure 3: Health insurance coverage of self-medicated participants.

Discussion

Out of the total participants, 77 students (32.8%) reported

practicing self-medication, indicating that nearly one-third of the respondents engaged in self-medication. Students at Imam Abdulrahman Bin Faisal University (previously the University of Dammam), which is situated in the city of Dammam in the Eastern Province of Saudi Arabia, participated in a descriptive research. According to reports, 19.61% of pharmacy college students self-medicate. The medical college reported a 49.3% prevalence of self-medication.[7] similarly, a study conducted at Kathmandu Medical College Teaching Hospital (KMCTH), Duwakot, among basic science medical students, revealed a 67.7% prevalence.[8] According to the Janaki Medical College and Teaching Hospital (JMCTH) research, 90.3% of students have self-medicated within the previous six months.[12] The variation in prevalence between studies may be due to differences in sample size, study population, and study duration. Nineteen percent of medical university students self-medicated, prevalence of self-medication varies by nation because of cultural, political, and economic factors.[9]

Male respondents made up 63.4% of the second year respondents in our study who were between the ages of 20 and 23. According to a study by Banerjee et al. in West Bengal, female students were more likely than male students to use self-medication[9], medical college in Maharashtra, India where self- medication practice was higher 72.1% and significantly higher in females.[10] In general second year students belongs to the age group and male population were higher due to greater participation of the study. In the present study, fever was the most common reason for self-medication (50.6%), followed by headache (46.8%) and cough (33.8%). Regarding the reasons for practicing self-medication, the majority of participants reported convenience and prior experience with similar symptoms as it saves time, with 29 (37.7%) indicating this as the primary reason. Additionally, 19 (24.7%) participants relied on old prescriptions, 8 (10.3%) sought advice from pharmacists, 9 (11.7%) reported that the doctor was far from home, doctor are too busy 2(2.5%) and 7 (9.1%) mentioned high consultation fees as contributing factors.

A similar pattern was observed in a study conducted at Kathmandu Medical College Teaching Hospital, where fever (48.62%), headache (46.33%), and cough (25.69%) were the most common conditions for which participants practiced self-medication. The primary motivation reported in that study was saving time (44.5%), which was identified as the main reason for self-prescription. This was followed by the use of old prescriptions (32.11%) and seeking advice from pharmacists (18.8%). Other reasons included the doctor being far away (12.39%), high consultation fees (7.34%), using medicines prescribed for family or friends (7.34%), and doctors being busy with many patients (1.83%). Most prevalent source of drug information was by pharmacist with 52.99% at JMCTH.[12] These findings are comparable to the results of the present study, indicating similar patterns and motivations for self-medication going through hectic schedules.

Self-medication is an important component of self-care, involving the selection and use of medicines, including herbal and traditional products, to treat self-identified illnesses or the continued use of previously prescribed medications for chronic or recurrent conditions.[13] Allopathy, Ayurveda and homeopathic medication as 60 (77.9%), 11(14.3%) and 6(7.8%) respectively in our study. Consistent with previous research, the majority of people practiced allopathic treatment, followed by Ayurveda and homeopathic medicine.8 The study shows that the population under examination, which was probably made up of medical students, has a clear and strong preference for contemporary medicine (allopathy), with a smaller and secondary preference for traditional systems.

About 19 (24.7%) had government-sponsored insurance, 3 (3.9%) had rural insurance, 5 (6.5%) had private medical insurance, and 5 (6.5%) had other insurance. Only 45 participants nearly 58.4% did not have any kind of insurance. This displays the clues to draw attention to the significant coverage gaps. All medical students ought to be required by their schools to hold a current health insurance policy.[14] This could be because students and their parents are unaware of their health insurance knowledge. Health insurance directly involves the government and communities.[15]

This study has some limitations. It was conducted among undergraduate MBBS students from a single medical college, which may limit generalizability. The reliance on self-reported data could introduce recall bias, and detailed information on medications used, duration of use, and symptom timelines was not extensively collected, limiting a full understanding of participants' health and medication practices.

Conclusion

The present study found that self-medication was a common practice among undergraduate medical students. Fever, headache, and cough were the most frequently reported symptoms leading to self-medication. The main reasons for practicing self-medication included saving time, prior experience with similar symptoms, and the use of old prescriptions. Most students relied on allopathic medicines, although a proportion also used Ayurvedic and homeopathic treatments. Despite having some medical knowledge, a notable number of students experienced adverse effects and many lacked health insurance coverage. Therefore, increasing awareness about the rational use of medicines and encouraging appropriate healthcare seeking behavior among medical students is essential to minimize the potential risks associated with self-medication and future studies involving a larger and more diverse population with more detailed data collection are recommended.

Conflict of Interest: None

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