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Self-Medication Practice Among Undergraduates of Rupandehi District, Nepal

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Abstract

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Background: Self-medication is a global concern that is widely practiced by university students, which may be due to easy access to medicines, perceived mild illnesses, and lack of time. Though this practice is convenient, it may lead to adverse drug reactions, resistance, and delayed diagnosis. The study aims to assess the prevalence, enabling factors, and associations between self-medication and sociodemographic and socioeconomic characteristics among undergraduates of Rupandehi district, Nepal.

Methodology: An analytical cross-sectional study was conducted among 364 undergraduate students (182 medical and 182 non-medical). A structured, self-administered questionnaire was used. Convenience sampling was applied for selecting medical colleges, and neighbourhood control sampling for non-medical colleges.

Result: The prevalence of self-medication in the past six months was 81%. Common symptoms were headaches (74.3%), common cold (70.6%), and fever (41.2%). Painkillers (84.5%) and antibiotics (39.4%) were the most frequently used medications. Pharmacies were the main source (87.5%). Parental education and mother's occupation were significantly associated with self-medication ($p < 0.05$).

Conclusion: Self-medication is highly prevalent among undergraduates due to easy access to medicines and perceived minor illnesses. Awareness programs and stricter regulation of over-the-counter medicine dispensing are essential.

Keywords: Enabling factors, Pharmacy access, Self-medication, Undergraduates

Declaration: There is no conflict of Interest

Introduction

Self-medication is a growing global concern, affecting both developed and developing nations, including Nepal. Self-medication refers to the practice of using medicinal products to treat self-diagnosed symptoms or conditions without professional guidance, which is also an important aspect of self-care[2]. This may involve using over-the-counter drugs, leftover prescriptions, or advice from non-medical sources. While self-medication can be convenient and cost-effective, especially for minor health issues, it carries serious risks when done irresponsibly[3]. In university settings, especially among students, self-medication is a common behaviour. Medical students are often believed to self-medicate more confidently due to their academic exposure to healthcare, whereas non-medical students might

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rely on advertisements or past experiences. Studies show that medical students may have better access to health information and resources, potentially making their self-medication practices more informed[4]. However, across both groups, common reasons for self-medicating include lack of time, financial constraints, difficulty in accessing medical professionals, and peer influence. Despite the occasional benefits of quick relief and cost-saving, self-medication can lead to delayed diagnoses, misuse of drugs, resistance to antibiotics, and even serious side effects[5]. Therefore, understanding how and why students, both medical and non-medical, engage in this practice is vital for designing effective awareness and intervention strategies.

METHODOLOGY

An analytical cross-sectional study was conducted among undergraduates (medical and non-medical) of Rupandehi district, Nepal. The students enrolled in Bachelor of Medicine and Bachelor of Surgery (MBBS) and Pharmacy among medical undergraduates, along with non-medical undergraduates enrolled in Bachelor of Business Administration (BBA) and Bachelor of Business Studies (BBS) were included in the study. Those students who were absent and didn't want to participate were excluded. Sample size was calculated using Cochran's formula with p = 59% (self-medication prevalence), 95% Confidence Interval, and 5% margin of error for the final sample size after adjustment and 10% non-response, which equals 364 (182 medical, 182 non-medical). The convenience sampling technique was used for choosing medical colleges, whereas the neighbourhood control method[6] was used for choosing non-medical colleges, and the Probability Proportional to Size sampling technique was used for student selection. A structured questionnaire was used as a tool, and a self-administered questionnaire technique was used for data collection. The data analysis was done using Statistical Package for the Social Sciences (SPSS) software, and the questionnaire was pretested by 10% of the study population to validate the consistency of the questions and data collection tools. Appropriate modifications were made after discussing with the supervisor before starting the data collection procedure. For the validity of the tool, adequate concerned literatures are reviewed. Study proposal presentation and questionnaire development were done under the close guidance of the supervisor. The set of 13 questionnaires was checked and verified by the study supervisor and the concerned teacher. Similarly, ethical consideration was approved by Kathmandu Multiple College (KMC), and informed consent was obtained from each college department.

Results

Sociodemographic status

Table 1: Sociodemographic Characteristics of Respondents (n = 364)

Variables	Frequency	Percent (%)
Age		
Less than 20	111	30.5
20 and above	253	69.5
Mean±Standard Deviation: 21±1.5	Minimum/Maximum: 17/29	
Gender Category		
Male	135	37.1
Female	229	62.9

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Ethnicity/ Caste Category		
Terai Brahmin	106	29.1
Terai Chhetri	20	5.5
Terai Janjati	41	11.3
Hill Brahmin/Chhetri	135	37.1
Hill Janjati	20	5.5
Terai Dalit	12	3.3
Hill Dalit	3	0.8
Muslim	13	3.6
Others (Telu, Vaishnav, Rajput, Bhumihar)	14	3.8
Religion category		
Hindu	334	91.8
Buddhist	12	3.3
Christian	6	1.6
Family members		
Less than 5	242	66.5
5 and above	122	33.5
Mean±Standard Deviation:5±1.7	Minimum/Maximum: 3/10	

Most respondents were aged 20 years and above (69.5%), with a mean age of 21 ± 1.5 years. Females represented a larger proportion (62.9%). The largest ethnic group was Hill Brahmin/Chhetri (37.1%), followed by Terai Brahmin (29.1%). The majority identified as Hindu (91.8%). Two-thirds (66.5%) lived in families with fewer than five members.

Socioeconomic status

Table 2: Socioeconomic Characteristics of the respondents (n = 364)

Variables	Frequency	Percent (%)
Education category		
Father's Education		
Cannot read and write	2	0.5
Can read and write	15	4.1
Basic Level (1-8)	56	15.4
Secondary Level (9-12)	197	54.1
Bachelor's and above	94	25.8
Mother's Education		
Cannot read and write	2	0.5
Can read and write	30	8.2
Basic Level (1-8)	83	22.8
Secondary Level (9-12)	200	54.9
Bachelor's and above	49	13.5
Father's Occupation		
Homemaker	1	0.3
Unemployed	4	1.1
Government worker	67	18.4
Business	138	37.9
Daily wages	4	1.1

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Variables	Frequency	Percent (%)
Foreign employment	90	24.7
Agriculture	55	15.1
Others (Doctor, Teacher)	5	1.4
Mother's Occupation		
Homemaker	89	24.5
Unemployed	22	6.0
Government worker	39	10.7
Business	103	28.3
Daily wages	5	1.4
Foreign employment	16	4.4
Agriculture	83	22.8
Others (Teacher)	7	1.9
Academic Field		
Medical	182	50
Non-Medical	182	50

The table presents the socioeconomic characteristics of the 364 respondents. In the education category, Secondary level (9-12) education is maximum in both father's (54.1) and mother's (54.9) educational status. Similarly, both the parents have business as major occupation followed by foreign employment (24.7) in father's occupation and Homemaker (24.5) among mothers. The medical and non-medical students are equal in number.

Self-medication practices within 6 months

Table 3: Prevalence of Self-Medication practice within 6 months

Variable	Frequency	Percent (%)
Prevalence of Self-Medication practice within 6 months (n=364)		
Yes	295	81
No	69	19
Practice of self-medication (n=295)		
Always	4	1.4
Often	42	14.2
Sometimes	167	56.6
Rarely	82	27.8

*Multiple Response

The table shows the prevalence of Self-Medication reporting that 81% engaged in self-medication in the past six months, while 19% did not, mainly due to lack of illness (66.7%) or fear of wrong diagnosis (21.7%). Among those who self-medicated, 56.6% did so sometimes, 27.8% rarely, 14.2% often, and 1.4% always.

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Enabling factors of self-medication

Table 4: Enabling factors of self-medication practice

Variable	Frequency	Percent
Common health issues*		
Common cold	209	70.6
Headache	220	74.3
Gastritis	99	33.4
Fever	122	41.2
Menstrual Pain	64	21.6
Skin problem	19	6.4
Others (Tonsillitis, Diarrhoea)	3	1.0
Reasons for using medicine*		
Mild illness not serious enough for a doctor's visit	228	77
Lack of access to health care	22	7.4
Lack of time/emergency	29	9.8
Previous experience with similar symptoms	92	31.1
Cost of medical consultation/checkups	16	5.4
Influence from friends/family	15	5.1
Sources of information*		
Internet search	145	48.8
Books	45	15.2
Experience (self-knowledge)	181	60.9
Advice from friends/family	109	36.7
TV, social media, newspaper	58	19.5
Types of Medication used*		
Painkillers (e.g., Ibuprofen, Diclofenac, Meftal, etc)	251	84.5
Antibiotics (e.g. Amoxillin, azithromycin, Penicillin, Metronidazole, etc)	117	39.4
Cough/cold medications	95	32
Antacids (e.g., Digene, Pantoprazole, Omeprazole, etc) for gastritis	67	22.6
Don’t know	16	5.4
Others (Supplements)	1	0.3
Sources of receiving medication*		
Directly from the pharmacy	260	87.5
Leftover medicine at home	81	27.3
With the help of the previous prescription	45	15.2
If from the pharmacy, how? *		
Mentioning symptoms	180	60.6
Mentioning the name of the medicine	171	57.6
Showing the paper with the name of the medicine written	40	13.5
Potential risks/drawbacks of self-medication*		
Wrong diagnosis	121	40.7
Increase risk of abuse	90	30.3
Misuse, Overdose or interaction with other drugs	152	51.2

*Multiple Response

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Headache (74.3%) and common cold (70.6%) were the leading conditions prompting self-medication. Mild illness was cited as the main reason (77%). Pharmacies were the most common source of medicines (87.5%), and painkillers (84.5%) were the most frequently used drugs. More than half (51.2%) believed self-medication risks included misuse or overdose.

Association of self-medication practice with sociodemographic characteristics

Table 5: Association with sociodemographic practice

Variables	Practicing Self-Medication (n=295) (%)	Not practicing Self-Medication (n=69) (%)	Chi-square	p-value
Age				
<20 years	90 (81.1)	21 (18.9)	0.001	0.990
>20 years	205 (81.0)	48 (19.0)		
Gender				
Male	108 (80.0)	27 (20.0)	0.152	0.696
Female	187 (81.7)	42 (18.3)		
Ethnicity/Caste				
Terai Brahmin/ Chhetri	95 (75.4)	31 (24.6)		
Hill Brahmin/ Chhetri	114 (84.4)	21 (15.6)	4.034	0.133
*Others	86 (83.5)	17 (16.5)		
Religion				
Hindu	269 (80.3)	66 (19.7)		
Others (Buddhist, Christian)	26 (89.7)	3 (10.3)	1.521	0.358
Family size (Number)				
<5	197 (81.4)	45 (18.6)	0.61	0.805
>5	98 (80.3)	24 (19.7)		

*Others (Terai/Hill Janjati, Terai/ Hill Dalit, Muslim, Telu, Vaishnav, Bhumihar)

None of the sociodemographic characteristics (age, gender, ethnicity, religion and family size) were significantly associated with self-medication ($p<0.05$).

Association of self-medication practice with socioeconomic characteristics

Table 6: Association with socioeconomic characteristics

Variables	Practicing Self-Medication (n=295) (%)	Not practicing Self-Medication (n=69) (%)	Chi-square	p-value
Father's Education				
Below secondary level	52 (71.2)	21 (28.8)	5.721	**0.017**
Secondary level and above	243 (83.5)	48 (16.5)		
Mother's Education				

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Below secondary level	86 (74.8)	29 (25.2)	4.290	**0.038**
Secondary level and above	209 (83.9)	40 (16.1)		
Father's Occupation				
Government worker	58 (86.6)	9 (13.4)		
Business	105 (76.1)	33 (23.9)	6.244	0.100
Foreign employment	71 (78.9)	19 (21.1)		
Others	61 (88.4)	8 (11.6)		
Mother's Occupation				
Business	77 (74.8)	26 (25.2)		
Agriculture	70 (84.3)	13 (15.7)	9.014	**0.029**
Homemaker	80 (89.9)	9 (10.1)		
Others	68 (76.4)	21 (23.6)		
Academic field				
Medical	151 (83.0)	31 (17.0)	0.876	0.349
Non-Medical	144 (79.1)	38 (20.9)		

*Others (Terai/Hill Janjati, Terai/ Hill Dalit, Muslim, Telu, Vaishnav, Bhumihar)

Self-medication was significantly associated with parental education and mother's occupation. No significant association was found for the father's occupation or academic field.

Table 7: Odds ratio of associated factors

Variable	**Practicing Self-Medication (n=295) (%)**	**Not practicing Self-Medication (n=69) (%)**	**p-value**	**Odds ratio**	**95% CI**	
					Lower	Upper
Father's Education						
Below secondary level	52 (17.6)	21 (30.4)	0.018	0.49	0.270	0.088
Secondary level and above (Ref)	243 (82.4)	48 (69.6)				
Mother's Education						
Below secondary level	86 (29.2)	29 (42)	0.040	0.57	0.331	0.974
Secondary level and above (Ref)	209 (68.4)	40 (58)				
Mother's Occupation						
Business	77 (26.1)	26 (37.7)	0.035	0.91	0.472	1.771
Agriculture	70 (23.7)	13 (18.8)				
Homemaker	80 (27.1)	9 (13)				
Others Unemployed) (Ref)	68 (23.1)	21 (30.4)				

*Others (Terai/Hill Janjati, Terai/ Hill Dalit, Muslim, Telu, Vaishnav, Bhumihar)

Respondents whose fathers have secondary or higher education have lower odds of practicing self-medication than those with less educated fathers. Likewise, children of mothers with secondary

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education and above are less likely to self-medicate, as shown by odds ratios below 1. Similarly, the likelihood of self-medication remains nearly unchanged across different maternal occupations.

Discussions

This study aims to identify the prevalence of self-medication and its association with sociodemographic and socioeconomic characteristics among undergraduates of Rupandehi district. An analytical cross-sectional study was conducted in Rupandehi district. A total of 282 students participated, including both medical and non-medical students. The findings highlight a deeply rooted culture of self-medication among undergraduates in Rupandehi. Easy access to medicines, financial constraints, and perceived simplicity of symptoms were some leading causes. These results show international trends, but the local context, such as high reliance on pharmacies and a lack of strong anti-prescription enforcement, magnifies the risks.

This study reveals how common self-medication is among undergraduate students in Rupandehi district, finding a high prevalence of 81% while most recent studies measure self-medication prevalence among specific populations, such as undergraduates in Kathmandu (78%), medical students in Pokhara (81.35%), and general communities in Western Nepal (59%)[7,8]. The topic of prevalence is central across Nepali research, usually with rates between 50% and 90%[9]. The commonly used medicines according to this study are painkillers, antibiotics, antacids, and flu/cold medicines as the drugs most frequently used. Other Studies in Nepal reveal antipyretics (paracetamol), NSAIDs, anticold medicines, and antibiotics leading the list. The pattern is consistent with research across different student populations within Nepal[7]. Health Risks and Consequences in this study discusses perceived risks such as wrong diagnosis, overdose, side effects, and development of drug resistance among peers who self-medicate. Other Studies in Nepal shows the health consequences of unsupervised self-medication, often pointing to the risk of adverse drug reactions, drug resistance, and mistaken self-diagnosis as recurring themes[7]. In the context of sources of information and access, the pharmacy is considered a primary source of medication, with students describing symptoms to pharmacists or requesting known medicines. Many studies show that easy access to pharmacies and the absence of strict prescription enforcement are major reasons for high self-medication rates. Both studies report that students often rely on pharmacists rather than physicians for advice[7].

In this study, the association with socio-demographic factors examines the relationship between education level, parental occupation, and self-medication. The other study of Nepal confirms that education level frequently affects self-medication behaviours. However, factors like age, gender, and marital status tend to show weaker or inconsistent associations in other Nepalese studies[7].Comparing medical and non-medical students, the data suggests both groups are equally susceptible, although medical students may have better knowledge of drug types. However, both groups overlook risks like drug resistance and side effects, which point to gaps in awareness and education.

Conclusion

This study found a high self-medication rate (81%) among undergraduate students in Rupandehi, showing it is a common behaviour across both medical and non-medical groups. Easy drug access perceived minor illness, reliance on pharmacists, and experience were key factors, with frequent use of painkillers, antibiotics, antacids, and cold/flu medicines like findings from other Nepali studies. Despite

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awareness of risks like misdiagnosis and antibiotic resistance, these concerns did not significantly reduce the practice. Parental education and mother's occupation showed some influence, highlighting the need for stronger awareness, regulation, and targeted educational programs.

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