BJHS
Birat Journal of Health Sciences

ISSN:

2542-2758 (Print) 2542-2804 (Online)

ARTICLE INFO:

Received Date: 2024-07-02
Acceptance Date: 2024-12-24
Published Date: 2025-01-01

KEYWORDS:

Intern doctors, Preclinical medical students, Self-medication

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Access the article online

DOI: https://doi.org/10.62065/bjhs566

CITATION:

Yadav B, Yadav A, Parajuli S, Rai P. Comparative Study of Self-medication Practice in Preclinical Medical Students and Intern Doctors of Birat Medical College Teaching Hospital, Nepal. Birat J. Health Sci. 2024;9(2):48-52.

Comparative Study of Self-medication Practice in Preclinical Medical Students and Intern Doctors of Birat Medical College Teaching Hospital, Nepal

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ABSTRACT

Introduction: Self-medication is a very common practice in the community, especially among medical students. Self-medication includes the use of drugs to treat illnesses that have been diagnosed, as well as the intermittent use of prescribed medications for chronic conditions.

Objectives: The main objective of this study was to determine the differences in self-medication practices among intern doctors and preclinical medical students.

Methodology: A cross-sectional online questionnaire-based study was done from December 2022 to November 2023 among preclinical medical students and intern doctors at Birat Medical College Teaching Hospital (BMCTH), Morang, Nepal. A total enumeration sampling technique was used. All data were collected in MS Excel 2007 and analyzed using SPSS version 19.

Results: Overall 280 premedical students and intern doctors were enrolled in this study, however only 203 preclinical medical students and intern doctors consented for participation. These participants were divided into two groups: preclinical students (Group I) and intern doctors (Group II). In Group 1 self-medication was reported at 72.5% while it was at 38.4% in Group II. The most common illness for self-medication in Group I were fever (23.2%) and headache (17.6%). Group I had more thyroid problems (4.8%) as comorbidities than group II. The majority of self-medication cases in Group I involved allergies (40%) and fever (25.6%) in Group II. Antihistamines (56.8%) and paracetamol (60.2%) respectively were the most often used medications for self-medication in both the groups. Self-medication was common among Group I participants as many of them were currently experiencing minor health problems and were also familiar with the drugs used.

Conclusion: Self-medication was prevalent in both preclinical medical students and intern doctors at BMCTH. Although there is no significant difference in self-medication behavior among premedical and intern doctors, intern doctors are more likely to use medications rationally, which could be due to more knowledge gained throughout their internship training and clinical experience.

INTRODUCTION

Self-medication involves using pharmaceuticals to treat diagnoses or persistent symptoms, as well as intermittent prescriptions for young or elderly patients, and also includes family members' medications.[1] The idea that self-medication is a part of self-care is becoming more and more prevalent.[2] Self-care encourages patients to take responsibility for their health, while self-medication, which involves the use of medications, can be beneficial or harmful. However, excessive use can lead to side effects and health risks, such as drug dependence, unpleasant reactions, and prolonged suffering. Ensuring proper self-medication is crucial for patient well-being.[3] When done properly, self-medication can save waiting times for medical appointments, be cost-

effective, and save money on insurance plans and the public health system.[4]

The World Health Organization emphasizes that self-medication can prevent and treat conditions without medical advice, offering a cost-effective alternative to traditional treatments.[4] Self-medication products should be understood by all users, but studies have assessed their practice in various populations, emphasizing the importance of understanding their advantages and disadvantages.[5]

To study aims to evaluate the nature of self-medication among medical students and intern doctors. It also intends to understand patterns of drug use, adverse reactions, and the development of antibiotic resistance, highlighting the potential risks associated with self-medication, including resource wastage, pathogen resistance, and health hazards.

METHODOLOGY

This was a cross-sectional online questionnaire- based study conducted in the department of pharmacology at Birat medical college teaching hospital, Budhiganga, Morang, Nepal from December 2022 to November 2023. However, the data collection was done from February to May 2023. The data was collected after taking approval of the Institute Research Committee (IRC-PA-271/2023). Total enumeration sampling technique was applied and minimum sample size was calculated taking the reference of Khadka et.al[6]

As given below:

n = z2 2 p(1-p)/(d)2

= 1.962 x2(76.6x 23.4)/7.662

= 3.84x76.6x23.4/58.6756

= 234.7

d = 10 % relative error

Since we have finite population =280

Then the corrected sample size (n') = n/ 1+n-1/N

=234.7/1+233.7/280

= 234.7/ 1.8346

= 127.9

= 128

However, in this study we enrolled all 280 participants but only 203 (125 preclinical students and 78 intern doctors) responded.

Where;

n = minimum sample size

z =confidence level at 95% (standard value) z: 1.96

p = estimated prevalence or proportion of project area

d = permissible difference

Then these participants were divided into two groups: Group I: medical students and Group II: intern doctors. Data were collected through a structured, validated, online 14-question-based questionnaire [6] which students filled up after explaining the aim of the study and giving assurance about the confidentiality of all information. Data were analyzed for those students who had self-medicated within one year. A structured questionnaire was circulated to complete via clicking the link, connected to the Google form. The questionnaire included questions about demographic details, frequency of self-medication, indications for self-medication and reasons for favouring self-medication practice.[7] All preclinical medical students and intern doctors who used self-medication and provided written consent were included in the study. Those participants who did not submit the questionnaire and refused to give consent were excluded from the study in this study. All the data obtained were recorded in MS Excel version 2007 and analyzed using SPSS version 19. Chi-square test was applied for statistical comparison of data between the two groups considering p-value less than 0.05 as statistically significant.

RESULTS

Table 1: Demographic profile of preclinical medical students and intern doctors

Participants	Intern doctors (n=78)	Preclinical medical students (n=125)
Age		
18-24	69(88.46%)	120(96%)
25-39	9(11.53%)	5(4.00%)
Gender		
Male	38(48.70%)	62(49.60%)
Female	40(51.30%)	63(50.40%)
Study population		
Biratnagar	22(28.20%)	46(36.80%)
Outside Biratnagar	56 (72%)	79(63.20%)

The study included 203 preclinical medical students and intern doctors. These participants were divided into two groups: preclinical students (Group I) and intern doctors (Group II). In Group 1 self-medication was reported at 72.5% while it was at 38.4% in Group II. The majority of the participants in Group I 120 (96%) and Group II 69 (88.46%) were between age group 18-24 years. Group I had more males 62 (49.60%) and females 63 (50.40%) than Group II. The majority of participants in both groups lived outside of Biratnagar, with 79 (63.20%) and 56 (72%), respectively. There was a significant association of self-medication with socio-demographic characteristics between two groups (p= 0.0155). Table 1

The most common comorbidity in Group 1 participants was thyroid issues 6 (4.8%). Other comorbidity was similar in both the groups. Figure 1

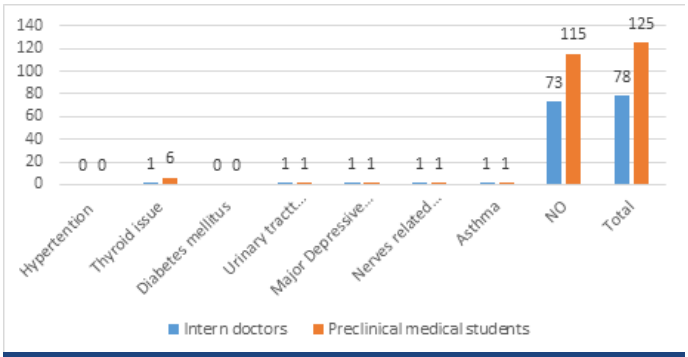

Fig 1: Comorbidities of preclinical medical students and intern doctors.

The common symptoms in Group 1 were fever 29(23.2%) followed by headache 22 (17.6%) and sore throat 18(14.4%) respectively while in Group II the common symptoms were headache 20 (29%) followed by fever 15 (19.2%) and sore throat 13(16.6%) respectively. Figure 2.

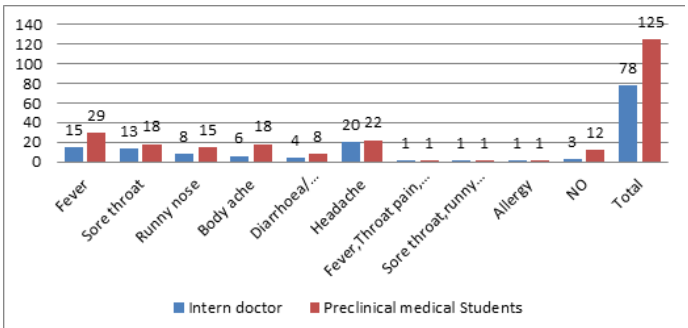

Fig 2: Conditions/symptoms for self-medication

Among Group I participants, the most common drug used for self-medication was antihistamines 71(56.8%) followed by paracetamol 12(9.6%) and ibuprofen 11(8.8%). Among Group II participants, paracetamol 47 (60.2%), was the most commonly used self-medication drug, followed by azithromycin 7(8.9%) and ibuprofen 6(7.6%), figure 3.

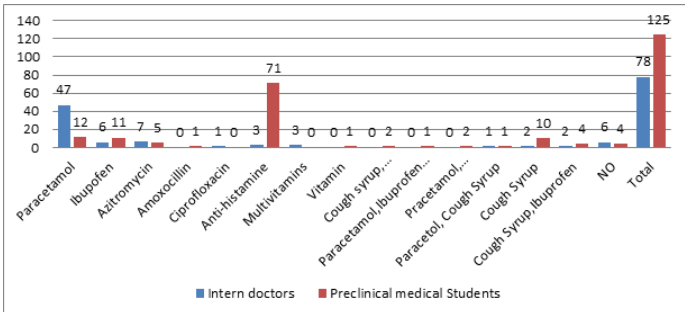

Fig 3: Drugs used as self-medication

The most common reason for self-medication in both the groups were non-severe illness 46(13.6%) and 35 (44.9%) respectively, quick relief 34 (27.2%) and 18 (23.7%) respectively and time saving 17 (15.2%) and 7 (8.9%) respectively. Figure 4

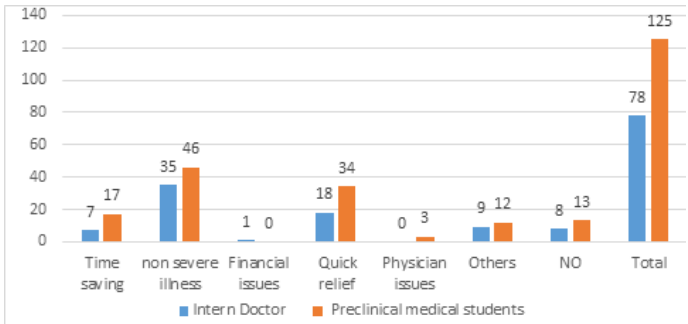

Fig 4: Reasons for favouring self-medication

Table 2 demonstrates the important sources for self-medication. The most common source of self-medication in Group I were seniors 40(32%), family and relatives 24(19.2%) and physician 20(16%) respectively where as in Group II it was textbooks 30(38.46%), seniors 20(25.6%) and physicians 15(19.23%) respectively.

Table 2: Source of medicine for self-medication in preclinical medical students and intern doctors

Source	Intern doctor (n %)	Preclinical medical students (n %)
Family and relatives	5(6.4%)	24(19.2%)
Friends	0(0. 0%)	15(12%)
Seniors	20(25.6%)	40(32%)
Textbooks	30(38.46%)	13(10.4%)
Physician	15(19.23%)	20(16%)
Not responded	8(10.25%)	13(10.4%)
Total	78	125

Table 3 The most common adverse effect in Group I participants was headache 10 (12.8%) followed by dizziness 5 (4%) and diarrhoea 4 (3.1%). Similarly, headache 7(12.8%), gastritis 4 (5.1%), diarrhoea 4(5.1%) and dizziness 4 (5.1%) were the most common adverse effect of self-medication among Group II participants.

DISCUSSION

Self-medication is a common practice worldwide, particularly among educated and urban populations. Due to their understanding of medications and ailments, doctors also tend to self-medicate to the greatest extent possible. According to various research, the percentage of people who self-medicate ranges from 25 to 56%.[8] During their undergraduate education, which includes internships in several nations, including India, medical students learn about medications and develop their abilities in drug selection and prescription. Additionally, it is well known that throughout their early undergraduate training years, members of this group begin to rely on self-medication. With varying degrees of success, several studies have examined the frequency and pattern of self-medication among medical

students.[9] This findings revealed that 72% of our students self-medicated, which is consistent with a study conducted by Shankar et al. in Pokhara Valley, Western Nepal.[10] However, the results of this investigation were higher than the results of a study carried out by Henry James and colleagues which found self-medication in 60% of young doctors.[5] It has been found that professional standing and a high degree of education were associated with a higher likelihood of self-medication.[11] In this study 93.10% of the respondents, were in the 18–24 years age range which is slightly in contrast to a prior study, where 53% of the participants were in the 20–39 years age range.[10] This might be due to the selection of study participants.

In this study female respondents had a higher prevalence of self-medication (51%) than male students (50%). This was compatible to a study done on medical students, which found that female students had a higher prevalence of self-medication (45%) than male students (44%).[11] Also another study supports this findings, where it is reported that a significant variation in self-medication among medical students, ranging from 56.90% to 98% and even among the general population ranging from 12.7% in Spain to 59% in Nepal to 95% in Harare.[12]

In present study, preclinical medical students (63.2%) and intern doctors (72%) were from outside Biratnagar. The most common comorbidity in preclinical medical students was thyroid issues (4.8%) as compared to intern doctors (1.3%) respectively.

The common symptoms in preclinical medical students were fever (23.2%) followed by headache (17.6%) and sore throat (14.4%) respectively while in intern doctors the common symptoms were headache (29%) followed by fever (19.2%) and sore throat (16.6%) respectively. This showed that complaining symptoms for self-medication were similar in both the groups. Fever (78.9%) and headaches (57.9%) were the most common ailments for which students self-medicated, according to a recent Karachi study.[4] According to another study, fever (72.7%), headaches (69.1%), and upper respiratory tract infections (64.1%) were the most common diseases/symptoms that students self-medicated for. Other prominent conditions were body aches, gastrointestinal pain, and diarrhoea.[8] Similarly, as per a study the most prevalent reasons for self-medication include severe ailments including headaches, body aches, toothaches, fever, gastrointestinal disorders, cough, and cold.[13] The current study's findings confirmed the influence of medical knowledge and education on the practice of self-medication.

In this study the most common drug used for self-medication by premedical students was antihistamines (56.8%) followed by paracetamol (9.6%) and ibuprofen (8.8%). Among intern doctors, paracetamol (60.2%), was the most commonly used self-medication drug, followed by azithromycin (8.9%) and ibuprofen (7.6%). In present study the most important difference in self-medication is use of antibiotics which was more in intern doctors and nil in preclinical medical difference. This difference might be because of adequate knowledge of rational use of antibiotics among intern doctors experienced during their clinical posting. Analgesics and antipyretics were the most often utilised drugs for self-medication according to a study.[12] Additionally, it was also found that medical students utilized a greater variety of antibiotics than non-medical students possibly as a result of their increased understanding of antibiotics.[14]

This study revealed that the most common reasons for self-medication were non-severe illness (46.6%) in preclinical medical students and (35.9%) among intern doctors respectively followed by quick relief and time saving in both the groups. The second most common reason for self-medication in preclinical medical students was quick relief, followed by time-saving (15.2%) in preclinical medical students and intern doctors 7(8.9%) respectively. This is consistent with previous study results, which found that the primary defenses for medication were fast symptom relief and non-severity of illnesses, as reported by both medical and non-medical students. Another survey found that time and money savings, as well as the ability to provide immediate, easy, and convenient relief from minor diseases without having to contact a doctor are the main drives for self-medication, even among the general public.[8] However, when compared to non-medical students, medical students are particularly more aware of self-medication.[15]

In this study the most common source of self-medication among preclinical students were seniors (32%) followed by family and relatives (19.2%) and physicians (16%) whereas intern doctors relied on textbooks (38.46%), seniors (25.6%), and physicians (19.23%), respectively. Source from family and relatives, friends, seniors and physicians were more in preclinical medical students than intern doctors. It is inconsistent with the increase knowledge in textbook and clinical exposure among intern than preclinical students. According to the previous study, the group primarily mentioned textbooks (39%) and seniors or classmates (38%), as their sources of information for self-medication.[16] Also prior studies found that 50% of the medical students use their academic medical knowledge for self-medication. Reading material was the primary source of information for the majority of preclinical medical students who self-medicated.[14]

The most common side effect among premedical students was headache (12.8%), followed by dizziness (4%) and diarrhoea (3.1%). Similarly, intern doctors reported headache (12.8%), gastritis (5.1%), diarrhoea (5.1%), and dizziness (5.1%) as the most common adverse effect of self-medication. According to previous research, out of 564 respondents, (70.8%) were aware of the likelihood of unfavorable reactions to self-medication drugs, with (7.6%) having actually encountered them.[8] In all populations, factors for development of Adverse Drug Reaction (ADR) include inadequate doses and frequency of administration, which increases the risk of illness escalation, and drug interactions, which increase the probability of following an incorrect prescription.[12]

CONCLUSION

Self-medication was commonly prevalent among both preclinical medical students and intern doctors and in this study; however use of antibiotics was almost negligible among preclinical participants. The practice of self-medication is quite common and has its own pros and cons. Correct and proper use of medicine may contribute to great extent in the healthcare

system and also time saving. Otherwise, it can result resources waste, pathogens resistance, and dangerous health risks from severe drug reaction. Intern doctors had more information about self-medication than preclinical medical students because they had more knowledge and more clinical exposure. Regular practice remained the primary source of information, whereas books and internet usage were a good indicator. However, the most of these are well known even to junior students who have not been exposed to drug or patient knowledge, possibly due to the ease with which information is available.

RECOMMENDATIONS

Controlling the non-prescribed medication which is bought over the counter from the chemist or pharmacist, and expanding access to healthcare, and implementing consumer awareness campaigns are some strategies than can be employed to stop self-medication.

LIMITATION OF THE STUDY

Since traditional self-medication practices do not account for contemporary medication practices, the current study set out to evaluate them. There is a higher chance of underreporting because the study is cross-sectional and relies on self-reported assessment. The attitudes of the participants on the practice of self-medication and the kinds of medications were not covered in this study. Furthermore, the study was conducted with health science students, and there is no comparison group from the para-health field.

ACKNOWLEDGEMENT

The authors would like to thank all the preclinical medical students and intern doctors for actively participating in this study.

CONFLICT OF INTEREST None

FINANCIAL DISCLOSURE None

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