

# Pattern of Self-medication in Undergraduate Students at BP Koirala Institute of Health Sciences

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## ABSTRACT

### Background

Self-medication is a growing health problem. It may lead to wastage of resources, emergence of antimicrobial resistance, adverse drug reactions and prolonged suffering. Little has been reported on the extent of self-medication practiced in medical students in Nepal.

### Objective

To study the pattern, reason and perception of self-medication among undergraduate students.

### Method

A cross-sectional study was conducted among all undergraduate students at BP Koirala Institute of Health Sciences, Dharan, Nepal between April and May, 2015. After obtaining ethical clearance, pre-validated questionnaire was used to collect data. The data were analyzed and presented as frequency and percentage using SPSS version 11.5.

### Result

Total of 520 students participated in the study with a mean age of  $21.2 \pm 1.7$  years. Prevalence of self-medication was found to be 48.3%. Most common cause for self-medication was common cold (53.3%). Nonsteroidal anti-inflammatory drugs (78.9%) were the most commonly used medicine for self-medication. The students commonly approached their seniors (50.2%) for the drug information. The most common adverse drug reaction experienced by the students was drowsiness (50.9%). Approximately one third of the students (33.2%) used to prescribe medicines to others. More than half of the students (53.8%) opined that self-medication is a part of self-care. Around one-fifth of the students (21.5%) students opined that self-medication is recommended by WHO.

### Conclusion

Self-medication is commonly practiced by undergraduate students. Nearly one third of the students also prescribe medicines to others. Nonsteroidal anti-inflammatory drugs are the most commonly used medicine as self-medication. The students need to be educated regarding appropriate safe-medication.

## KEY WORDS

*Antibiotics, medical students, non-steroidal anti-inflammatory drugs, self-medication*

## INTRODUCTION

Self-medication is the use of drugs to treat self-diagnosed disorders or symptoms. It also includes the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms.<sup>1</sup> It has both benefits and health hazards. It provides a low cost alternative therapy for the people in developing countries like Nepal.<sup>2-3</sup> Appropriate self-medication can relieve medical problems, save time and also save lives in acute conditions.<sup>4</sup> Inappropriate self-medication can cause masking of clinical disease, wastage of resources, increase antimicrobial resistance, adverse drug reactions, prolonged morbidity and drug dependence.<sup>5-7</sup>

Prevalence of self-medication ranges from 25% in Brazilian doctors to 92% in medical students of South India.<sup>8-11</sup> Medical students start prescribing medicines to each other and to other people much before they graduate as they are exposed to knowledge about diseases and drugs. They also have easy access to information from drug indices and literature.<sup>12</sup> In Nepal, almost every pharmacy sells a drug to a customer without even asking for a valid prescription.<sup>13</sup> These factors enhance practice of self-medication. There is not enough reports on prevalence of self-medication among undergraduate medical students in Nepal. The medical students represent the future generation of drug prescribers and health educationists. The understanding of the practice of self-medication and the reasons for it will enable us for formulating and implementing different interventional strategies. Hence this study was conducted to (1) describe pattern of self-medication practices among undergraduate students, (2) identify reasons for practice of self-medication and (3) assess the awareness and perception of self-medication.

## METHODS

A cross sectional study was conducted between March and April, 2015 among all undergraduate medical, dental and nursing students of BP Koirala Institute of Health Sciences, Dharan, Nepal. The students who practiced self-medication during the last six months were included in the study. Any event of use of medicines without consulting a doctor was considered as self-medication. Ethical clearance was taken from the Institutional Review Committee. Convenience sampling method was used. The written consent was taken from each participant. The students sitting in the lecture theater were approached after morning classes. A questionnaire consisting of both open-ended and close-ended items was used for data collection. The questionnaire was first validated and tested in 60 students involved in the study. The socio-demographic characteristics, the pattern of drug used during the last six-month period, reasons for practicing self-medication, source of drug information and perception towards self-medication were collected. The data were coded, entered and analysed using the SPSS

version 11.5 and expressed as frequency, percentage and mean. The results were tabulated where necessary.

## RESULTS

Total of 520 students were participated in the study with the mean age of 21.2±1.7 year. Almost half (50.4%) of the students were male. More than half of the students (53.8%) were from MBBS stream and 28.7% students from Bachelor of Dental Surgery stream. Nearly half of the students (48.3%) took some medicines as self-medication in the last six month period (Table 1). Similarly common cold (53.3%) was the most common symptom for self-medication (Table 2). We found that the most common reasons for self-medication was mild nature of the disease (64.5%). The most common source of drug information for self-medication was seniors (50.2%) (Table 3). Our study also found that nonsteroidal anti-inflammatory drugs (78.9%) were most commonly used for self-medication followed by antibiotics (19.9%). Among the students who used antibiotics as self-medication, only half of them (56%) completed the recommended course of the antibiotic.

**Table 1. General Characteristics of the participants**

Variables	Number (%)
Total number of participants	520 (100)
Suffered from sickness in the last six month	362 (69.6)
Practiced self-medication in the last six month	251 (48.3)
Experienced adverse effects due to self-medication	216 (41.5)

**Table 2. List of illness in the last six month among participants (n=362)**

Illness	Number (%)
Common cold	193 (53.3)
Headache	175 (48.3)
Fever	142 (39.2)
Pain	86 (23.8)
Heartburn	68 (18.8)
Diarrhoea	48 (13.3)
Anxiety	40 (11.0)
Insomnia	33 (9.1)

We found that 41.5% participants had experienced some adverse effects during self-medication. Drowsiness (50.9%) was the most common adverse effect experienced by the students during self-medication (Table 4). We also found that nearly one third of the students (33.5%) prescribed medicines to others (family members, friends, neighbors). More than half of the students (53.8%) thought that self-medication is a part of self-care (Table 5). Nearly one-fifth of the students (21.5%) thought that self-medication practice is recommended by WHO.

**Table 3. Characteristics of Self-medication among the participants (n=251)**

Variables	Number (%)
<b>Reasons for self-medication</b>	
Mild disease	162 (64.5)
Lack of time	43 (17.1)
Good knowledge of pharmacology	24 (9.6)
Suggested by others	19 (7.6)
Privacy	3 (1.2)
<b>Source of drug information for self-medication</b>	
Seniors	126 (50.2)
Textbooks	93 (37.1)
Pharmacist	51 (20.3)
Internet	29 (11.6)
Family members	18 (7.2)
Earlier prescription	6 (2.4)
Past experiences	5 (2.0)
<b>Medicines used for self-medication</b>	
NSAIDs	198 (78.9)
Antimicrobial agents	50 (19.9)
Anti-allergic	39 (15.5)
Anti-peptic ulcer	33 (13.1)
Cough syrup	5 (2.0)
Sedatives/hypnotics	4 (1.6)
Multivitamins	3 (1.2)

## DISCUSSION

Self-medication is a part of self-care practiced all over the world to minimize health care costs. However, it is associated with significant risk of drug related problems.<sup>14</sup> It can expose medical students to the various risks associated with inappropriate use of medicines.<sup>15</sup> In this study, the prevalence, pattern and perceptions of self-medication practices among the undergraduate students at a medical university was evaluated. In our study, the prevalence of self-medication among undergraduate students was found to be 48.3% which supported other studies in which the prevalence ranged from 26.2 to 92%.<sup>8-11</sup> Highly variable rate of prevalence of self-medication in different studies may be due to the differences in study population. Easy availability of almost all types of medicines in pharmacy, acquired knowledge of medicines, convenience and saving of time due to no need of consulting a doctor may be the important factors for high prevalence of self-medication in other studies.<sup>16</sup>

In our study, common cold was the most common symptoms for practicing self-medication and similar observations were also made by others.<sup>11</sup> In contrast to our findings, fever was the most common indication for self-medication in other studies.<sup>17,18</sup> Nonsteroidal anti-inflammatory drugs were the most common groups of

**Table 4. List of adverse drug effects experienced by the participants (n=216)**

Adverse drug effects	Number (%)
Drowsiness	110 (50.9)
Nausea and vomiting	64 (29.6)
Diarrhoea	60 (27.8)
Allergy	34 (15.7)
Gastritis	10 (4.6)
Weakness	3 (1.4)

**Table 5. Perception of self-medication among participants (n=520)**

Variables	Number (%)
Self-medication is a part of self-care.	280 (53.8)
I will continue the self-medication.	155 (29.8)
I will stop practice of self-medication.	71 (13.7)
I will advise self-medication to others.	14 (2.7)

drugs used for self-medication and similar finding were also reported in other studies.<sup>17,18</sup> In contrast to our study, antibiotics were the most common class of drugs used for self-medication in a study conducted by Banerjee et al.<sup>19</sup> Anti-allergic and antibiotics were also used in high proportion among the participants. Widespread and irrational use of analgesics and antipyretic, anti-allergic and antibiotics can mask serious illnesses and may lead to nephropathy and hepatotoxicity.<sup>20,21</sup> Therefore, safe and appropriate practices of self-medication is necessary. Our study also revealed that significant number of students used sedatives and hypnotics as self-medication. Similar results were also reported by Pandya RN et al. in their study.<sup>22</sup> This may be due to high degree of stress in life of medical students. However, regular use of such drugs may cause dependence and tolerance. The students should be trained to use other behavioral methods for management of stress.

Our study revealed that among the participants who took antibiotics, only half of them completed the recommended course of antibiotics which signified inappropriate use of antibiotics among the participants. Similar findings was reported by Ghaieth et al. in which 42% participants did not complete the course of the antibiotic.<sup>23</sup> The issue of antimicrobial resistance (AMR) is one of the greatest challenges in the 21<sup>st</sup> century. AMR is known to develop when they are taken in inappropriate doses or for inappropriate lengths of time or if the choice of antibiotics is inappropriate for the given disease.<sup>24</sup> Therefore, the students should be educated about appropriate use of self-medication with antibiotics.

Most of the students contacted their seniors for the drug information for self-medication. In contrast to our study, textbook was the most common source of drug information in other studies.<sup>11,18</sup> Our study found that pharmacist were the third most common source of drug information for

self-medication. Therefore pharmacists in particular can play a key role in giving advice to students and consumers on the proper and safe use of medicines intended for self-medication. It is important, therefore, to take this role into account both in their training and in practice.<sup>1</sup> Internet search was also significant source of drug information for self-medication in our study. Worldwide promotion and cross-border sale of medical products via the Internet is an important factor affecting self-medication. The Internet offers a considerable amount of websites promoting mail order pharmacies. Many of these sites are not secure in terms of guaranteeing the safety and quality of the products.<sup>21</sup>

In our study, majority of students practiced self-medication because of mild nature of illness. Similar observations were also made others in other studies.<sup>10,19</sup> In contrast to our study, time saving was the most common reason for self-medication in a study done by Pandya et al.<sup>22</sup> Our study revealed that nearly one third of the students prescribed medicines to others. They prescribed most commonly to their family members followed by friends, neighbors and patients. Similar findings were also documented by Zafar et al. in their report.<sup>25</sup> The students generally should not treat family members or friends as he or she may fail to probe sensitive areas when taking the medical history or may fail to perform intimate parts of the physical examination which is mandatory for making a provisional diagnosis. In emergency settings or isolated settings where there is no other qualified doctor available, the students should not hesitate to treat themselves or family members until another doctor becomes available. Majority of the students thought that self-medication is a part of self-care and similar finding was also reported in other study.<sup>26</sup> Self-

care is defined as what a person does by themselves to maintain health and it includes lifestyle, socioeconomic and environmental factors as well as self-medication. It can be practiced for the treatment of minor illness. One-fifth participants thought that self-medication practices is recommended by WHO. Self-medication is a key component of self-care.<sup>27</sup> The medical students should be educated that appropriate self-medication is recommended by WHO.<sup>28</sup>

The study was based on self-reported data about self-medication in the preceding six month thus prone to recall bias. The results obtained may not be applicable to all the medical students of other colleges. Moreover, although the students were encouraged to complete the questionnaire independently, mutual influence between them could not be entirely ruled out.

## CONCLUSION

Almost half of the medical students were practicing self-medication and one-third of the students also prescribed medicines to others. Nonsteroidal anti-inflammatory drugs and Antibiotics were the most commonly used drug for self-medication. Mild nature of the disease and lack of time were the commonest causes of practicing self-medication. The students should be educated and made aware about the dangers and implications of inappropriate self-medication and prescription to others. The results of the study would have been more generalized if it could involve students of other medical colleges. There is a need for a review of educational programs regarding the teaching of clinical pharmacology to include modules on self-medication.

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