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Pattern of Self-medication among Undergraduate Medical Students: A Cross-sectional Study

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ABSTRACT

INTRODUCTION: Self-medication is one of the major emerging health problems. It may lead to many health hazards as well as resistance to antimicrobial agents. Lack of enough report on self-medication in medical students has encouraged to conduct this study. The study aims to find out the pattern, perception and reasons for self-medication in undergraduate medical students. **MATERIALS AND METHODS: T**his descriptive cross-sectional study was conducted among undergraduate medical students at Janaki Medical College and Teaching Hospital (JMCTH) from February 2022 to April 2022. A pre-validated questionnaire was used for data collection and was analyzed using SPSS. **RESULTS:** Total of 134 students participated in this study, with mean age of21.70±1.66 years. 90.3% of students practiced self-medication in last 6 months. Mild nature of disease was the most common reason for self-medication. Fever (65.67%) was the most common cause of self-medication, whereas NSAIDS (45.9%) was most commonly used drugs for self-medication. Pharmacist (52.9%) were the most common source of drug information. Nausea/vomiting (32.09%) was the most common adverse effect experienced by participants. 80.6% thought that self-medication was a part of self-care. More than one-third had opinion that self-medication was recommended by WHO. **CONCLUSIONS:** Majority of students practiced self-medication. More than half of them prescribed medication to others. Medical students should be made aware of the harmful effects of self-medication.

Keywords: Drugs, Medical students, Self-medication.

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INTRODUCTION

World Health Organization defines self-medication as using medicines on one's own initiative to alleviate problems that they have independently diagnosed without seeking medical advice. This practice is acknowledged as a crucial part of the health care system[1].Additionally, it entails consuming leftover medications, taking prescription drugs and trading medications with and among family members [2].Within the constraints of limited resources, appropriate self-medication can reduce mild illnesses and is also cost and time effective [3]. False self-medication can cause prolonged morbidity, irrational drug use, increased pathogen resistance, health risks and unpleasant drug reactions [4].Self-medication is prevalent in between 25% of Brazilian doctors and 92% of South Indian medical students [5-8].According to a study, up to 80% of medications were bought without a prescription in underdeveloped nations [22,23]. Undergraduate medical students begin prescribing medications to one another and to other patients because they are exposed to information about diseases and medications, before they graduate. Moreover, they have simple access to data from drug indices and literature [9].Nearly every pharmacy in Nepal provides a customer with a medicine without even requesting a legal prescription [10]. Since, many studies were conducted related to self-medication by students in different medical colleges except Janaki Medical College and Teaching Hospital (JMCTH). This study was conducted at JMCTH to assess the self-

medication pattern in undergraduate medical students, as use of drugs without prescription may lead to harmful effects which may also affect their academic activities.

MATERIALS AND METHODS

Study design and setting

A descriptive cross-sectional study was conducted from February to April 2022 among all undergraduate medical students at Janaki Medical College and Teaching Hospital (JMCTH), Janakpurdham, Nepal. Janaki Medical College is situated in Janakpur, the capital city of madhesh province, of Nepal. The undergraduate medical students from first year to fourth year were included in the study residing from different parts of Nepal and India.

Participants, sample size and sampling technique

All undergraduate medical students (n=134) studying at Janaki Medical College were included as participants for this study. Convenience sampling method was used to select participants. All the students present in class at the time of data collection were included in the study. The students were approached immediately after their theory classes in the lecture hall.

Data collection procedure and study variables

A pre-validated semi-structured questionnaire was used as previously used by Sarraf et.al [14]. The questionnaire consisted both open-ended and close-ended items for data collection. Socio-demographic characteristics, 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, from those students who practiced self-medication during six months period. Any medicine taken without doctor's consultation was also taken as self-medication.

Statistical analysis and data management

The data were entered in Microsoft Excel and analyzed by Statistical Package for Social Sciences (SPSS version 20). Descriptive statistics was employed to summarize the data. The results were interpreted in terms of frequency and percentage.

Ethical considerations

Ethical clearance for this study was obtained from Institutional Review Committee (IRC) of Janaki Medical College and Teaching Hospital, prior to start of study (Ref. No. 12 IRC/2078-079).Written consent was taken from each participant before data collection.

RESULTS

A total of 134 students participated in the study; the mean age was 21.70± 1.66 years. 66.4% were males and 33.6% were females (Table 1).

Table1| General Characteristics of the participants

Variables	Number	Percentage
Total participants	134	100
Age in years	Mean ± SD	21.70±1.66
Gender		
Male	89	66.4
Female	45	33.6
Participants suffered from sickness in the last 6 months		
Yes	125	93.3
no	9	6.7
Practiced self-medication in the last six months		
Yes	121	90.3
no	13	9.7
Experienced adverse drug effects due to self-medication		
Yes	63	47.0
no	71	53.0

About 90.3% students practiced self-medication in the last 6 months. Fever (65.67%) was the most common cause of self-medication. 88.3% took allopathic medicine whereas 52.2% took medications without consulting doctors (Table 2).

Table 2| Illness in the last six month among participants (n=134)

Illness	Number	Percentage
Fever	88	65.67
Headache	78	58.21
Common cold	70	52.84
Diarrhoea	33	24.63
Pain	32	23.88
Heartburn	31	23.13
Anxiety	16	11.94
Covid-19	3	2.24
Tonsillitis	2	1.49
Insomnia	2	1.49
Acne vulgaris	1	0.75
Depression	1	0.75

The most common reason for self-medication was found to be mild nature of disease (65.67%) and the most common source of drug information for self-medication was from pharmacist (52.99%). We found NSAIDS were most commonly used for self-medication

Table 3| Characteristics of self-medication among participants (n=134)

Variables	Number	Percentage
Reasons for self-medication		
Mild nature of disease	88	65.67
Good knowledge of pharmacology	24	17.91
Suggested by others	19	14.18
Lack of time to consult	13	9.7
Privacy	1	0.75
Source of drug information for self-medication		
Pharmacist	71	52.99
Textbook	44	32.83
Internet	28	20.90
Senior/Classmate	27	20.15
Past experience	1	0.74
Medicines used for self-medication		
NSAIDS	90	45.9
Antimicrobial	47	31.3
Anti-allergic	27	13.7
Anti-peptic ulcer	23	11.7
Vitamin C	2	1.0
Tinidazole	1	0.5
Albendazole	1	0.5

Table 4| Adverse effects experienced by the participants (n=134)

Adverse drug effects	**Number**	**Percentage**
Nausea/vomiting	43	32.09
Drowsiness	26	19.40
Diarrhoea	19	14.18
Allergic reaction	15	11.19
Fever	11	8.21
Gastritis	2	1.49
Yellow urine	1	0.75

Table 5| Perception of self-medication among participants (n=134)

Perception	**Number**	**Percentage**
Self-medication is a part of self-care	108	80.6
Stop self-medication	20	14.9
Continue self-medication	5	3.7
Advise self-medication	2	1.49

(45.9%), followed by antimicrobial drugs (31.3%). Only 44% of them completed antimicrobial course for self-medication (Table 3). Our study found that 85.8% were aware of side effects, while 47% experienced adverse reaction of drugs. Nausea/vomiting was the most common (32.09%) adverse effect experienced by the students. 17.6% of the participants, consulted doctors for their adverse drug reactions whereas 20% of them neglected it (Table 4). More than half of the undergraduate medical students prescribed medications (53.7%) to others (friends, family members, neighbor's), wherein more than one third (48.5%) prescribed medication to friends. We found that 80.6% thought self -medication was a part of self-care, while, 39.6% thought that self-medication practice was recommended by WHO (Table 5).

DISCUSSION

Self-medication is common in developing countries, where it has both economic and social implication [11]. Self-medication is practiced all over the world. It is associated with inappropriate use of medicine [12].In this study, the pattern, prevalence and perception of self-medication was evaluated in undergraduate medical students. The prevalence of self-medication among undergraduate medical students was 90.3%which is supported by studies of Mekhuria et al. and Sarraf et al. were the prevalence rate was 68% and 48.3% respectively [13,14].High prevalence rate in our study may be due to time saving and easy availability of medicines at pharmacy without prescription. Fever was the most common cause of self-medication in our study and similar observations were made in other studies [15, 16]. In contrast to our findings, common cold was the most common symptom for practicing self-medication [14].We also found that NSAIDS were most commonly used for self-medication which was similar to study done by Sarraf et al. [14]. In contrast to our study, antibiotics were most common drugs for self- medication in a study conducted by Banerjee et al. [17]. Antibiotics and anti-allergic groups of drugs were also used by the participants in our study. This may be because our study was conducted during third wave of Covid-19. Our study revealed that more than one third of participants completed antimicrobial course, which is similar to the findings of Sarraf et al. [14], where 56% completed the recommended course of antibiotics. Although textbook and internet were used as source of drug information in our study, majority of the participants contacted pharmacist for drug information in our study. In contrast to our study seniors were the most common source of drug information in other studies [14,16]. Our study also revealed that majority of participants practiced self-medication because of mild nature of disease. Similar observations were also made in other studies [14,18]. In contrast to our study, Pandya et al. [19] revealed that, time saving was the most common reason for self-medication. In our study,more than half of the participants prescribed medicines to friends,family members and neighbor's which is similar to study done by Zafar et al. [20] and

Sarraf et al. [14]. Nausea/vomiting was the most common adverse effect experienced by the participants, while drowsiness was reported in the study of Sarraf et al. [14]. Majority of the students thought self-medication as a part of self-care. Similar finding was reported in other studies [14, 21]. Also, more than one-third of medical students thought that self-medication practice was recommended by WHO, which is similar to the findings of Sarraf et al [14].

CONCLUSIONS

More than two-third of medical students were practicing self-medication. Non-Steroidal Anti-inflammatory drugs were most commonly used drug followed by antibiotics. They practiced self-medication because of and prescription-based drug dispensing should mild nature of disease. The medical students should be made aware of the harmful effects of self-medication be encouraged. Also medical students should be continuously emphasized about the dangerous effects of unnecessary use of medications for self or to others for any disease. The study limitations include less sample size and data collection was done at a single centre.

ADDITIONAL INFORMATION AND DECLARATIONS

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Data Availability: Data will be available upon request to corresponding authors after valid reason.

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