

ORIGINAL RESEARCH ARTICLE

KNOWLEDGE, ATTITUDE AND PRACTICE OF SELF-MEDICATION AMONG MEDICAL STUDENTS DURING EXAM TIME

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**ABSTRACT**

**Background:** Medical education is one of the toughest education systems where the students are under intense physical and mental pressure especially during the exam time. They have information of different drugs that can cope with their medical conditions and also aware of different cognitive enhancers. Self-medication results in wastage of resource, adverse effects, drug dependence and increase chances of resistance of pathogens. Hence, this study was undertaken to determine the knowledge, attitude and practice of irrational drug use among the medical students during the exam time.

**Methods:** This was descriptive cross-sectional using semi-structured questionnaire in the one of the medical school located inside Kathmandu Valley. A total of 90 students participated in the study. The data was analyzed with SPSS version 20, by using descriptive statistics.

**Results:** Among the total respondents, 20 (17.7%) were practicing self-medication during the exam time. Of the participants who practiced the self-medication, most common drug used was NDAIDs. Most of the respondents 87 (96.7%) were aware of the possible adverse consequences. About 75 (83.3%) participants thought the self-medication practice during the exam time is acceptable while 15 (16.7%) regarded this as unacceptable.

**Conclusions:** Although low incidence of self-medication was found among students during exam time, the false prerogative of being medical students can lead to meager practice and awful consequences.

**INTRODUCTION**

Self-medication is defined as procurement and consuming drugs without the advice of a physician for diagnosis, prescription or surveillance of treatment.<sup>1,2</sup> This includes consuming medicines without prescription, reusing expired prescriptions, sharing medicines with friends and relatives or using left over drugs stored at home.<sup>3</sup> Inappropriate self-medication also causes wastage of resources, increase resistance of pathogens and generally cause serious health hazards such as adverse drug reactions, prolonged suffering and drug dependence.<sup>4</sup>

There are many explanations for the increased possibility of self-medication among medical students. They have easy access to information from drug indices, literature, and easy accessibility.<sup>3,4</sup> Medical education being one of the toughest examination modules all over the world can be stressful to many students.<sup>6</sup> Many experience medical conditions like anxiety, palpitation, restlessness and increased gastric secretions. There are even chances of taking psycho stimulants by some students to enhance cognitive functions.<sup>9</sup> Many have tendency to take drugs for gaining wakefulness to increase study span. Many studies have showed that inappropriate

self-medication causes wastage of resources, increases resistance of pathogens and generally causes serious health hazards such as adverse drug reactions, prolonged suffering and drug dependence.<sup>3-5</sup>

There is scarcity of studies on self-medication among medical students during the exam times. This subject can be startling issue but a concealed truth. This study objective was to identify the reasons, pattern, attitude and their knowledge of self-medication during the exam time.

**METHODS**

This study was a questionnaire-based study approved by the Research and Ethics Committee of the Kathmandu Medical College. This study was conducted among the first and second year MBBS and BDS Students of Kathmandu Medical College from May 2020 to June 2020. A semi-structured questionnaire consisting both open and closed ended items was used. The questionnaire was inculcated from published articles<sup>11, 13</sup> and the questionnaire was finalized by the faculty members of the department of Pharmacology. It was pretested among small group of ten students to look for the understanding and accep-

tance by the students. These ten students were not included in the study. Based upon the response of the pretesting, minor modification on the questionnaire was done and the final questionnaire to be used in study was prepared.

A twenty-two item Semi- structured questionnaire comprising four sections was used to achieve the study objectives. First section comprised the six item demographic details, second section included the five items to look for the knowledge. Third section comprised six items to look for the attitude and practice while last section included four items to look for the reason of self-medication and its adverse consequences. Owing to the COVID-19 pandemic as the academics were closed an online version of the questionnaire was prepared using google forms and then sent to the first and second year BDS and MBBS students in their Viber groups. The written online consent was also attached with the online version. Data was collected, compiled and analyzed by using Statistical Package of Social Science (SPSS) version 20. The data was analyzed using descriptive statistics. The results were tabulated where necessary.

## RESULTS

Total number of participating students was 90. Of them 32(35.6%) were MBBS Second year, 26(28.9%) MBBS first year, 16(17.8%) BDS first year and 16(17.8%) BDS second year. Of the participants 47(52.2 %) were female candidates and 43(47.8 %) male candidates.

**Table 1: Socio-demographic characteristics of study population**

Socio demographic factors		Number of students (%)
Gender	Male	43 (47.8)
	Female	47 (52.2)
Year	First	42 (46.67)
	Second	48 (53.33)
Program	MBBS	58 (64.44)
	BDS	32 (35.55)

**Table 2: Knowledge and pattern of self-medication among the participants**

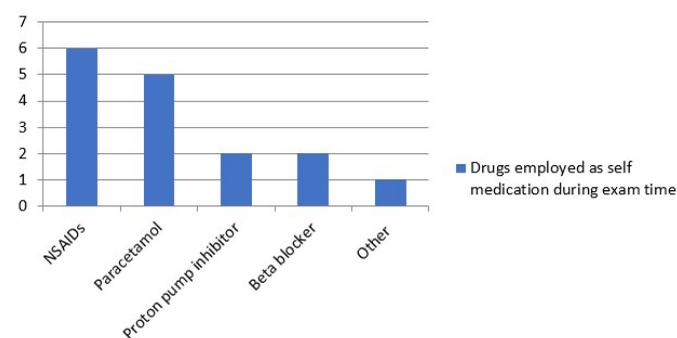
Knowledge and patterns of self-medication	Yes	No
	N (%)	N (%)
Take medication during exam time	16(17.7)	74(82.3)
Read medication leaflet before use	68(75.6)	22(24.4)
Follow the dosage directions properly	71(78.7)	19(21.3)
Awareness of side effects	73(81.25)	17(18.75)
Long term use OTC drug cause side effects	87(96.7)	3(3.3)

The respondents perceived several advantages and disadvantages of self-medication (Table 1). The most important advantage in favor of self-medication were minor condition to be consulted (39.4%), having the self-confidence about the knowledge of the drug (21%), saving time (20.6%), do not want

to consult doctor (10.4%) and other (8.6%).

The disadvantage of self-medication was perceived as the risk of side effects and risk of using inappropriate drugs as presented in table 2. Most of the participants 96.7% were aware of long term adverse consequence of OTC drugs. 84 (93.33%) patient are aware of the likelihood of the side effects while 6(6.67%) are not aware of the possibility of the side effects.

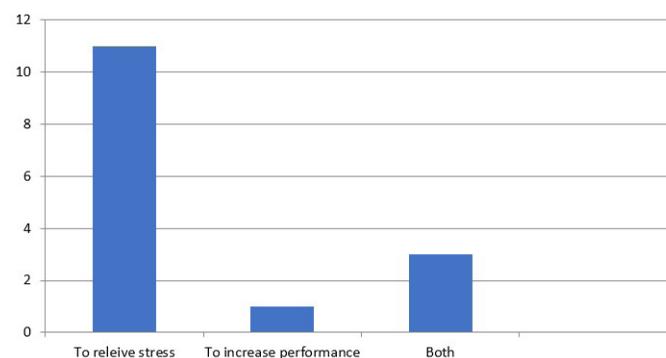
The majority of the respondents 73(83.3%) had negative attitude like chances of adverse effects, misuse and dependency towards the self-medication saying it is unacceptable while 15(16.7%) respondents thinks it is acceptable as it is convenient and feels better after self-medication during the exam time. Of the 90 respondents only 20(22.22%) were devoid of any conditions during exam time. Most of them had anxiety 40(44.44%), followed by headache 17(18.88%), GI problems 16(17.77%), Insomnia 7(7.77%), nausea and vomiting 3(3.33%), palpitation 3(3.33%), others 7(7.77%). Out of them 25(27.77%) had more than one symptoms.



**Figure 1: Drugs employed as self-medication during exam time**

**Table 3: Source of self-medication during the exam time**

Source of self-medication during the exam time	Number of students (%)
Text book	6 (37.5)
Internet	4 (25)
Pharmacy	2 (12.5)
Friends / senior suggestions	2 (12.5)
Others	2 (12.5)



**Figure 2: Reasons for self-medication during the exam time**

The source of their knowledge about the drugs they are taking for self-medication during exam times is as presented in table 3. Out of 16 participants who takes the medicine during exam time 6(37.5%) has experienced the side effects.

## DISCUSSION

Medical education is one of the toughest education systems. Here the students undergo many demanding conditions which can create stress and pressure on them which can make them liable for taking many types of medicines.<sup>7</sup> Medical students thus had higher depression rates than the general population.<sup>7</sup> They can have stress and anxiety related symptoms like palpitation, severe anxiety, insomnia, restlessness, stress related increase gastric acidity. Stress and anxiety can worsen many existing diseases as well such as depression, gastrointestinal disease, asthma, heart diseases. This can also lead to deprive sleep related symptoms like headache, dizziness, etc. and it can make the existing anxiety and depression even worse. Due to pressure of exams many might also have possibility to take the drugs that cause insomnia like caffeine, psycho-stimulants, amphetamine, beta blockers, decongestants etc, so that they can make more hours for their studies.<sup>8,9</sup> So the students who are facing these situations can make self-diagnosis or to cope up with the difficult situation can lead to self-medication without seeking proper medical channel. The data further reflect an increasing trend toward self-medication among college students. A substantial percentage reported using over the counter (OTC) medications (74.1%), herbal or dietary supplements (70.6%).<sup>8</sup> And because health care students are associated with higher medical knowledge, have higher possibility of seeking any kind of self-medication.<sup>14</sup> In some reports the drugs like methylphenidate was used by the students up to 16% to improve the cognition.<sup>9</sup> Sleep deprivation, poor sleep quality are common among clinical year's medical students. High levels of stress and the pressure of maintaining grade point averages may be influencing their quality of sleep.<sup>10</sup> Being medical students they are also aware of existence of cognitive enhancer drugs. The combination of increased exam pressure and stress with their accessibility and knowledge of drugs makes this group very vulnerable for the irrational drug use and sometimes also for drug abuse.<sup>9</sup>

The respondents had good knowledge of the advantage and disadvantage of self-medication. Many of them perceived self-medication as easier and convenient alternative for overcoming their symptoms. 96.7% were aware of the long term consequences of the self-medications. In a similar study, done in Kathmandu medical college, 80.8% thought that self-medication was a part of self care and 89.4% planned to continue self-medication and 99% of the participants had self medicated at some point of their lifetime.<sup>12</sup> From these data we can assume the scenario where although the participants has knowledge of the consequences of the self-medication but still they are practicing to much large extent.

Majority of the participants 75(83.3%) had negative attitude towards the use of any sort of self-medication. They are not willing to take the self mediations due to concern about the likeliness

of adverse events, misuse and dependency. 68(75.6%) students read the medicine leaflet before use and 71(78.7%) followed the dosage directions properly. In the similar study Almalak et al. in 2014 a study done in Saudi Arabia, 85.2% were aware that long term use of OTC drugs can cause serious side effects.<sup>11</sup>

In this study only 17.7% practiced self-medicine during exam time. And most of them were taking the NSAIDs followed by proton pump inhibitors and beta blockers. In the study by Almalak et al. nearly 80% students disclosed the usage of NSAIDs during the exam time for the relief of headache.<sup>11</sup> Most of them were taking the medicines to relief the problems due to stress of the exam. The most common source of the information about the medication was textbooks followed by internet and pharmacy sources. In the study by Badigarin 2012, maximum number(39%) were found to derive the information from textbook. The most common drugs that were used as self-medication were analgesic and antipyretics.<sup>13</sup> Ease of access to the OTC drug was regarded as the main contributory factor by Almalak et al.<sup>11</sup>

It was interesting that although good proportion of respondents had the symptoms like insomnia (7.77%), nausea and vomiting (3.33%) and other (7.77%) there was no reported drug use for those conditions. This study suggests that students are more liable take the medicines for the headaches, gastric conditions and anxiety than other conditions. There was no response of the use of the cognitive enhancers except some use energy drinks. In this study it was not found the evidence of use of any substance abuse drugs by the students for the enhancement of their cognitive functions and to relieve from the exam induced stress. Exclusivity and relevance is the major strength of this study. Increment of the sample size and broadening to multicentric study could make this study even more compelling and persuasive.

## CONCLUSION

This descriptive survey showed that the medical students had good knowledge about ill effects of the self-medication during the exam time. The attitude of them towards the self-medication was negative and they quite know the drawback and consequences of this. Still the small number practicing the self-medications during the exam time suggests the existing false prerogative present in medical students that can lead to meager practice and awful consequences. And it would be interesting to evaluate the changes in the self-medication pattern during the exam time while students' progress through the medical school.

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**CONFLICT OF INTEREST:** None

**FINANCIAL DISCLOSURE:** None

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