

## Self medication among medical and dental students in tertiary care teaching hospital of Udaipur, India

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### ABSTRACT

**Background:** Self-medication involves acquiring and consuming medication without the advice of a physician and also resubmitting old prescriptions to purchase medicines. Inappropriate self-medication causes increase cost of therapy and incidence of adverse drug reactions. Self-medication was significantly higher among undergraduate medical and paramedical students in India. Objective of the study was to evaluate the prevalence of self-medication and perception towards self-medication among the undergraduate medical and dental students.

**Methods:** A pre-designed questionnaire collected the information pertaining to demographic details like age, gender, course, reason, pattern, indications, drugs used for self-medication. It also included questions concerning their attitude, perception and safety regarding self-medication.

**Results:** The prevalence of self-medication was 76.27%. Larger numbers of females were self-medicating (55.56%). The majority of the students' self-medicated because of other advice (92.59%), there was statistically significant difference between the male and female medical students to use a previous prescription for the same illness. A total of 136 (76.83%) of the participants opined that self-medication was a part of self-care. Statistically significant differences between male and female students had been observed in safety variables like, "know side effects about your drug", "increasing drug dose can be dangerous" and "in case of side effects physicians' help must be sought". Cold and Cough was the most common (60%) indication for self-medication.

**Conclusions:** The prevalence of self-medication was higher among females. The majority of the students' self-medicated because of other advice. The stringent policies should be required for medicines which can prevent the increasing trend of self-medicating.

**Keywords:** Dental students, India, Medical students, Self-medication

### INTRODUCTION

William Osler told that an immense characteristic which distinguishes human from animals is the craving to take medicine.<sup>1</sup> Self-medication involves acquiring and consuming medication without the advice of a physician and also resubmitting old prescriptions to purchase medicines, sharing medicines with relatives or using leftover medicines stored in house.<sup>2</sup> Thus, self-medication

is a part of self-care which includes first aid on a daily basis life, non-drug self-treatment and social support in illness.<sup>3</sup> The social media promote self-medication activities and the youth are highly influenced by them.<sup>4</sup> Due to increased advertising of pharmaceutical products, they are the larger threats to the youth who involve in self-medication which increases issues like incorrect self-diagnosis, drug interaction and misuse of drugs for false indications.<sup>5</sup> Inappropriate self-medication causes increase

cost of therapy, resistance of pathogens and incidence of adverse drug reactions, thus self-medication increases morbidity.<sup>6-9</sup> Misuses of medicines are increased due to easy availability of pharmaceutical products globally. Self-medication is a common practice among a group of health workers in Nigeria, according to Ehigiator O et al.<sup>10</sup> Undergraduate medical and paramedical students have easy access to information about pharmaceuticals from drug indices, literature and social media.<sup>11</sup> A previous study from All India Institute of Medical Sciences, New Delhi reported that self-medication was significantly higher among undergraduate medical and paramedical students in India and it increased due to their medical acquaintance.<sup>12</sup> Hence, the present study was conducted to evaluate the prevalence of self-medication and perception towards self-medication among the undergraduate medical and dental students of the Pacific Medical College, Udaipur, Rajasthan, India.

## METHODS

Ethical approval was obtained from the Institutional Ethics Committee of Pacific Medical College and Hospital, Udaipur, India prior to the start of the study. This cross-sectional study was carried out among the first year medical and dental undergraduate students of Pacific Medical College, Udaipur during 2017. The sample size was calculated assuming with a 5% margin of error, 50% response rate, 250 population size and 95% confidence interval, so 152 participants were calculated by using an online sample size calculator (Raosoft). Informed consent was taken of each student before participating in the study. A pre-designed questionnaire was used to collect the relevant information from undergraduates. The information pertaining to demographic details like age, gender, course, reason, pattern, indications, drugs used for self-medication were included in the questionnaire. It also included questions concerning their attitude, perception

and safety regarding self-medication. The investigator was present in case the respondents required assistance about the questionnaire. The students who did not self-medicate was instructed to fill questions about demographic details, attitude and safety regarding self-medication. The questionnaires were assessed for their completeness and only the completed questionnaires were considered in the final analysis in this study. The collected data was analyzed by using GraphPad Instat 3.0 (Trial Version). The results obtained were expressed in proportions. Fisher's exact test was used for testing the statistical significance.  $P < 0.05$  was considered as statistically significant.

## RESULTS

A total of 177 students was assessed regarding their practice, attitude and perception regarding self-medication behavior, out of which 47.46% ( $n = 84$ ) were males and 52.54% ( $n = 93$ ) were females. The prevalence of self-medication among the study participants was 76.27% ( $n = 135$ ). A proportionately larger number of females were self-medicating ( $n = 75$ , 55.56%) than males ( $n = 60$ , 44.44%) which was statistically not significant (Table 1).

**Table 1: Demographic data of the participants.**

Characteristics	Medical student (%)	Dental student (%)	Self-medicated student (%)	
			Medical student	Dental student
Male	69 (38.9)	15 (8.5)	48 (69.5)	12 (80)
Female	54 (30.5)	39 (22)	43 (79.6)	32 (82)
Total ( $n = 177$ )	123 (69.5)	54 (30.5)	91 (73.9)	44 (81.5)

Figures indicate numbers with percentages in parentheses

**Table 2: Reasons for self-medication.**

Reason	Medical student			Dental student		
	Male (48)	Female (43)	Total (91)	Male (12)	Female (32)	Total (44)
It is time saving	41	35	76	12	28	40
Want to avoid OPD crowd	21	22	43	06	16	22
Want to avoid Fees	10	06	16	04	07	11
Because someone advice	43	41	84	12	29	41
Acquired knowledge from social media	29	32	61**	05	12	17
Can manage such symptoms on my own	46	40	86#	10	26	36
Due to prescription failure	07	05	12	00	04	04
Feel uncomfortable with physician	02	05	07	02	06	08
Using previous prescription for same illness	23	30*	53	09	20	29
Confidence in self diagnosis	39	30	69	07	20	27

$P < 0.05$  as compared to male medical students (Chi-square test); \*\* $P < 0.05$  as compared to dental students (Fisher's exact test); # $P < 0.05$  as compared to dental students (Fisher's exact test).

The majority of the students self-medicated because of other's advice (92.59%), followed by their confidence about managing the symptom by themselves (90.37%), followed by its time saving process (85.92%). There was statistically significant difference between the male and female medical students to use a previous prescription for the same illness ( $P= 0.03$ ). "Acquired knowledge from social media" ( $P= 0.002$ ) and "Can manage such symptoms my own" ( $P= 0.02$ ) were statistically significant reasons between medical and dental students (Table 2).

However, for other reasons the differences were not statistically significant between male and female of medical and dental students, also it was not significant between medical and dental students (Table 2).

The attitude of medical and dental students towards the practice of self-medication was shown in Table 3. A total of 136 (76.83%) of the participants opined that self-medication was a part of self-care. 44.06% of the participants want to advise self-medications to others. However, Students' attitude towards self-medication; the differences were not statistically significant between male and female students.

**Table 3: Students attitude towards self-medication.**

Items	Male (84)		Female (93)	
	Yes (%)	No (%)	Yes (%)	No (%)
Self-medication is a part of self-care	64 (76.2)	20 (23.8)	72 (77.4)	21 (22.6)
Continue with/start self medication	60 (71.4)	24 (28.6)	75 (80.6)	18 (19.4)
Want to stop self-medication	24 (28.6)	60 (71.4)	18 (19.4)	75 (80.6)
Advice self-medication to Friends	42 (50)	42 (50)	36 (38.7)	57 (61.3)

According to Table 4, statistically significant differences between male and female students had been observed in safety variables like, "know side effects about your drug" ( $P= 0.004$ ), "increasing drug dose can be dangerous" ( $P= 0.02$ ) and "in case of side effects physicians' help must be sought". Details of the views regarding safety of self-medication were presented in Table 4.

However, for other variables regarding safety views of self-medication, the differences were not statistically significant between male and female students.

Cold and Cough was the most common (60%) indication for self-medication, followed by headache (59.2%) and fever (51.8%). Renal stones (0.7%) were the least common cause for self-medication which is shown in Table 5. Types of self-medications commonly practiced among undergraduate students were shown in Table 6.

**Table 4: Students' view about safety of self-medication.**

Items	Male (84)		Female (93)	
	Yes	No	Yes	No
Self-medication is safe	35 (41.7)	49 (58.3)	42 (45.2)	51 (54.8)
Know side effects about your drug	41 (48.8)	43 (51.2)	65* (69.9)	28 (30.1)
Ayurvedic drugs have not side effects	58 (69)	26 (31)	57 (61.3)	36 (38.7)
Simultaneous use of two drugs can be potentially dangerous	72 (85.7)	12 (14.3)	85 (91.4)	08 (8.6)
Increasing drug dose can be dangerous	79 (94)	05 (6)	93** (100)	00 (00)
Lowering drug dose can be dangerous	38 (45.2)	46 (54.8)	32 (34.4)	61 (65.6)
In case of side effects physicians' help must be sought	80 (95.2)	04 (4.8)	93# (100)	00 (00)
Branded drugs are more safe	65 (77.4)	19 (22.6)	67 (72.04)	26 (2.8)
Want to take medicine by brand name	47 (56)	37 (44)	59 (63.4)	34 (36.6)

\* $P < 0.05$  as compared to male students (Fisher's exact test); \*\* $P < 0.05$  as compared to male students (Fisher's exact test); # $P < 0.05$  as compared to male students (Fisher's exact test)

**Table 5: Indications for self-medication (N = 135).**

Indications	N (%)
Cold and Cough	81 (60)
Headache	80 (59.2)
Fever	70 (51.8)
Acidity	34 (25.2)
Vomiting	28 (20.7)
Abdominal Pain	24 (17.8)
Diarrhoea	22 (16.3)
Sore throat	21 (15.6)
Menstrual symptoms	21 (15.6)
Muscular or joint pain	19 (14.07)
Weakness	16 (11.85)
Ulcer in mouth	11 (8.1)
Renal stones	01(0.7)

## DISCUSSION

Self-medication defined as the utilization of drugs to manage self-diagnosed health complaints or the usual use of a prescribed drug for acute or chronic disease manifestations.<sup>13-15</sup> According to World Health

Organization, “self-medication is the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms.”<sup>16</sup> Self-medication is considered a constituent of self-care.<sup>16</sup> People have always been keen to accept more individual responsibility for their own health status and so, self-medication has been a characteristic of the healthcare system since many years.<sup>16,17</sup> Self-medication has many pros and cons and it’s depend on who and what one decided to take it.<sup>18</sup> The present study was conducted to evaluate the prevalence of self-medication and perception towards self-medication among the undergraduate medical and dental students of Pacific Medical College, Udaipur, Rajasthan, India.

**Table 6: Type of self-medication commonly practiced by the participants.**

Types of self-medication	N (%)
Over the counter drugs	90 (66.7)
Homeopathic drugs	28 (20.7)
Ayurvedic drugs	20 (14.8)
Slimming diet	04 (2.9)
Remedies for muscle mass gain	01 (0.7)

The prevalence of self-medication in this study was found to be 76.27% as compared to Kumar N et al.<sup>19</sup> The prevalence of self-medication among the medical students from India was shown to be ranging between 57.1% and 92% as compared to non-medical students were 80.1% in other studies.<sup>20-23</sup> The prevalence of self-medication was shown to be 25.4% and 43.2% in Ethiopia, 51% in Slovenia, 55.3% in Pakistan, 55% in Egypt, 56.9% in Nigeria and 80.9% in Malaysia.<sup>24-30</sup> Gender is considered as a significant factor in self-medication patterns among undergraduate students.<sup>19</sup> In the current study, the prevalence of self-medication was observed to be higher among females as same as other studies from India and overseas countries.<sup>20,22,26</sup> Allopathic system of medicine was mostly followed system as compared to other and it was similar finding observed in other studies.<sup>31,32</sup>

The majority of the students’ self-medicated because of other advice, followed by their confidence about manage the symptom themselves and it’s time saving process as compared to coastal south et al where a reason for self-medication was illness is too minor.<sup>19</sup> However, another study from Tamil Nadu the most common reason for self-medication was time saving, whereas in Punjab was for quick relief.<sup>23,32</sup> Previous prescription for the same illness was reported as the most common source of information about the drugs used for self-medication.<sup>19,23,32</sup> In current study, the use of the previous prescription for the same illness was more prevalent in female medical students than male medical students (Table 2). Most common indication for self-medication in this study was cold and cough, which was similar finding in other studies from western and southern part of India.<sup>20,22</sup> Other studies reported fever as the most common indication for self-medication.<sup>19,24</sup> In the current study, 76.8% of the participants felt that self-medication was part of self-care which was higher to that

reported in other studies from Southern India, Ethiopia and Karachi.<sup>19,25,27</sup> As compared to southern et al, 76% of the participants wished to continue with self-medication which was higher than it.<sup>19</sup> In this study, 44.06% of the participants want to advise self-medications to others as compared to other.<sup>19</sup> The irrational utilization of drugs is a cause of public as well as a professional concern.<sup>3</sup> Self-medication can be defensible when there is a legal use of medicines. Self-medication has concern with many threats like using expired drugs, sharing them with friends or taking medicine that have been originally prescribed for some other indications, accidental drug poisoning. Self-medication also invites hazards such as drug dependence, adverse reaction and antimicrobial resistance. Antimicrobial resistance is another universal problem, particularly in developing countries where antimicrobials are often available without a prescription.<sup>33</sup>

The current study findings are based on a single centre hence, the study observations cannot be generalized. If we want to know various factors influencing the people for self-medication, we will be needed more multi-centric studies in India.

## CONCLUSION

The current study concluded that the prevalence of self-medication was higher among females. The majority of the students’ self-medicated because of other advice. Higher numbers of students felt that self-medication was part of self-care and wished to continue with it. Our study distinguishes that stringent policies should be required for medicines which can prevent the increasing trend of self-medicating.

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