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SELF-MEDICATION PRACTICES AMONG DENTAL STUDENTS IN A PRIVATE DENTAL COLLEGE IN NORTH INDIA

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ABSTRACT: Background: Self-medication is of particular concern as the trend is increasing now-a-days, especially during the post COVID-19 pandemic. Without adequate knowledge, self-medication may lead to adverse drug reactions, or in extreme cases, may require hospitalization for further management. **Methods:** A questionnaire-based cross-sectional study was undertaken involving the dental undergraduate students in a private dental college in Haryana after it was validated. 150 dental students filled the questionnaire within the age group of 17-25 years. **Results:** In the present study, the data has been obtained from self-medication questionnaire. Out of 150 students, the females were 106 (71%) and the males were 44 (29%). Our study showed that 91% of the students practice self-medication. Females practiced more self-medication (96.23%) than male students (79.54%). The most common reason for self-medication were previous visit to the doctor, medicines present at home of the previous visit, to save time, to avoid visit to the OPD/doctor and to save expenses. The sources of drug information which the students preferred were from the pharmacy (37.3%). Paracetamol (90%) and cetirizine (57.33%) were the most common drugs used for self-medication. **Conclusion:** The study shows that self-medication is a common practice among dental students as they have an easy access to the knowledge regarding the diseases and drugs. This is of a growing concern and there is an urgent need to educate the students regarding the rational use of drugs, misuse of antibiotics, emergence of resistance and responsible self-medication to prevent health related adverse consequences.

INTRODUCTION: Self-medication is of growing concern during the postCOVID-19 pandemic as there has been an increase in trend in self-medication due to the vast available information and easy access to the medical resources. Self-medication is defined as any drug taken by the patient to treat common illness or symptoms without the advice of the physician.

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Self-medication contributes to primary healthcare if one has proper knowledge regarding the drugs being taken. Self-medication gives confidence to an individual, promotes a positive outlook, helps in timely medication and also decreases the expenses. Self-medication is considered as an essential part of health policy in various countries [1, 2, 3, 4].

But proper knowledge of the drugs is essential as self-medication may lead to adverse health consequences with insufficient knowledge [5]. Over-the-counter drugs are a part of self-medication and include drugs to treat symptoms like fever, aches and pain, cold and gastrointestinal problems like diarrhoea and abdominal pain.

However, there may be risks involved in self-medication such as improper dosage, adverse drug reactions, prolonged or frequent use of drugs and emergence of resistance associated with the use of antibiotics [3]. Responsible self-medication would go a long way by easing the burden on the family and society. This increase in the practise of self-medication among the university students have been attributed to the digital era, which enables an individual for fast and easy availability of information, access and spread of information, which was rare earlier. At the same time, self-medication has an important role as it may help to reduce the medical burden and timely medication may prevent the aggravation of the medical condition, if practiced responsibly and safely [6]. There is a need to create awareness in the society to prevent complications associated with self-medication.

MATERIALS AND METHODS: This cross-sectional questionnaire-based study was conducted among the dental undergraduate students of the first and second year in a private dental college in Haryana, North India, after obtaining Institutional Ethical approval (MRIIRS/MRDC/SDS/IEC/2023/39). The questionnaire was taken and modified from a previously validated study [7]. It was pretested in 20 dental students, and after minor changes, the validated questionnaire was finalized. The questionnaire included both open and closed-ended questions. The participants were asked to fill a questionnaire. The link of the Google Form was made available through digital platform mainly WhatsApp to the first year and second year dental students. The participation in this study was voluntary and it was conducted after obtaining their consent.

Sample size and Sampling: A convenience sampling technique was used and the first year and second year dental students were included in the study. The study was conducted in 150 students. The questionnaire consisted of five sections. The first section included demographic details such as initials, participants age, gender and year, section two included symptoms leading to self-medication. In the second section, the participants were asked to select the symptoms which led them to self-medicate which included fever, pain, cold, sore throat, cough, abdominal pain and diarrhoea. In this section, an open-ended question was also included. Section three consisted of various drugs and the participants were asked to select from the commonly used drugs such as paracetamol, diclofenac, ibuprofen, cetirizine, amoxycillin-clavulanic acid combination, and ciprofloxacin and tinidazole combination, among the antibiotics. Since the participants were first year and second year dental students, brand names were mentioned so that they could understand the names related to the drug combinations. In this section also, an open-ended question was included. Section four included options related to the sources of information of drugs such as pharmacy, friends and family, knowledge through education and internet. Section five included the reasons of self-medication like previous visit to the doctor, medicines present at home from previous visit, to save time, to avoid OPD (outpatient department)/ doctor visit, to save expenses and an open-ended option to mention the other reasons of self-medication. The responses of all the participants were recorded and analysed.

Statistical Analysis: Descriptive statistics was used in this study. The results have been explained in frequency and percentage. Chi square test has been used to determine the factors associated with self-medication.

RESULTS: A total of 160 participants were included in the study, out of which 150 completed the questionnaire, the response rate was 94%. **Table 1** shows the demographic details of the participants. The female students were 106 (71%) and males were 44 (29%) in the study. The age group of 17-19 years were 67 (45%) and 20-25 years were 83 (55%). The prevalence of self-medication in the present study was 91%.

TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS

Variables	N (%)
Gender	
Male	44 (29)
Female	106 (71)
Age	
17-19 years	67 (45)
20-25 years	83 (55)
BDS year	
First year	81 (54)
Second year	69 (46)

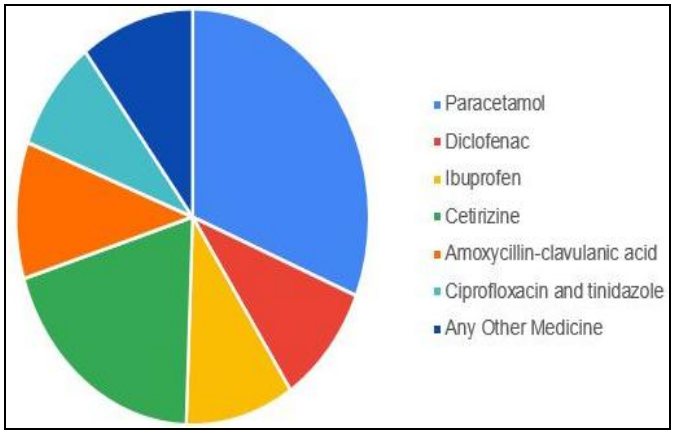

FIG. 1: DRUGS TAKEN FOR SELF-MEDICATION

The commonly used drugs for self-medication by the students are depicted in **Fig. 1**. The drugs included paracetamol (90%), ibuprofen (28.66%), diclofenac (27.33%), cetirizine (57.33%), and antibiotics like amoxycillin-clavulanic acid combination (30.66%), ciprofloxacin and tinidazole combinations (24.66%) and other medication included mainly antacids, vitamins and non-allopathic medication (30%). Fever, pain, cold, sore throat, cough, abdominal pain and diarrhoea were the common symptoms which led to self-medication.

TABLE 2: SOURCES OF DRUG INFORMATION

Source	N (%)
Pharmacy	56 (37.3)
Friends and family	47 (31.3)
Knowledge through education and learning	35 (24)
Internet	11 (7.3)

The sources of drug information used by the students are depicted in **Table 2**. Pharmacy (37.3%), friends and family (31.3%), knowledge through education and learning (24%), and internet (7.3%) were the common sources of drug information.

TABLE 3: REASONS FOR SELF-MEDIATION

Reasons for self-medication	N (%)
Having previous prescription of the visit to doctor	54 (36)
Medicine present at home of previous visit	48 (32)
To save time	28 (18.7)
To avoid visit to OPD/ doctor	9 (6)
To save expenses	4 (2.7)
Any other, specify:	
Knowledge of some commonly used drugs	2 (1.3)
Parents are doctors	3 (2)
All	2 (1.3)

OPD- out patient department.

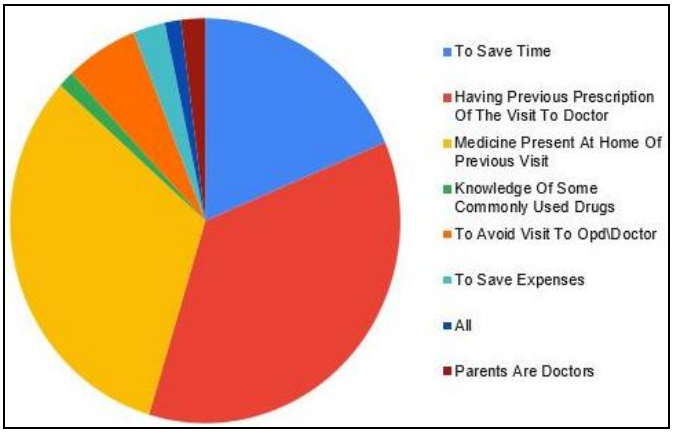

FIG. 2: REASONS FOR SELF-MEDICATION

The reasons for self-medication by the participants are depicted in **Table 3** and **Fig. 2**. The most common reasons of self-medication were previous visit to the doctor (36%), followed by the left-over medicines of previous visit (32%), to save time (18.7%), to avoid visit to the doctor (6%), to save expenses (2.7%), and among the other reasons in open ended question, the participants have also mentioned knowledge of some commonly used drugs (1.3%) and parents are doctors (2%) and all the factors (1.3%).

TABLE 4: ASSOCIATION BETWEEN DEMOGRAPHIC DETAILS AND SELF-MEDICATION

Variables	Category	Self-medication		Total	X^2	*P* Value*
		Yes	No			
Gender	Male	35	9	44	10.93	0.001
	Female	102	4	106		
Age	17-19	60	7	67	0.49	0.486
	20-25	77	6	83		
BDS year	First year	75	6	81	0.35	0.553
	Second year	62	7	69		

(Statistically significant p value <0.05, X^2 denotes Chi square value).

In the present study, the female dental students favoured self-medication as compared to males which was statistically significant as depicted in **Table 4**. Factors such as age and year of BDS were not significantly associated with self-medication in our study.

DISCUSSION: Our results show that 91% dental students practiced self-medication. A similar study conducted in 78.6% adolescents in Karnataka [8], and 83.3% of the medical students practised self-medication in a study conducted in Nepal [9]. The knowledge of illness and treatment remains the main contributor for the self-medication practices among the university students. The results in our study were slightly higher when compared to Brazil 76.0% [10], Oman 94.6% [11], and 75.2% in Saudi Arabia [12].

In our study, we found that self-medication is practised by the female students (96.23%) more than the male students (79.54%) have been reported in the earlier studies also [13, 14]. Analgesics and antihistamines were commonly used by the students to treat common illness like fever, body ache, headache, myalgia, cold, and antibiotics have also been used as self-medication. This increase may be due to post COVID-19 pandemic, the global scenario has changed now, and there is an increased trend for self-medication. Many patients opt for on-line medicines, and especially with antibiotics there can be increased prevalence of resistance. There is an urgent need to guide the students regarding the appropriate use, dosage and completion of the antibiotic course, and to be taken only after consultation with the physician. This would also help the pharmacists to minimize the concerns associated with the use of self-medication. Self-medication contributes to primary healthcare if practised responsibly [15]. The increase in self-medication by the dental students as seen in our study can be explained by the fact that after the post COVID-19 pandemic, people become anxious and stressed if they suffer from fever or cold, and resort to self-medication, and many still prefer to stay at home and take timely medication rather than to visit an OPD/ doctor [16].

It is the responsibility of the healthcare workers, including doctors, pharmacists and nurses to increase awareness regarding the appropriate use of medication in order to ensure patient safety and prevent adverse drug reactions. The usage of antibiotics as directed by the physician would prevent antibiotic resistance.

Strength and Limitations: All the questions were framed in such away that the first year and second year dental students were able to fill and submit the questionnaire with proper understanding. Therefore, the findings are justified in the present study. The sample size was relatively small, and there was no comparison between the dental students. The other non-allopathic drugs can be included which would give a better study outcome regarding self-medication.

CONCLUSION: Self-medication is widely practiced by the dental students as they have adequate knowledge of the drugs. However, self-medication may lead to certain undesirable effects which may be due to the adverse effects of the drugs or drug interactions. Paracetamol has been one of the commonest drugs followed by cetirizine for self-medication. Most of the students have obtained drugs from the pharmacy. Pharmacists have a crucial role in recognizing, understanding and avoiding the drug related problems and thereby improving the quality of life of the patient [16, 17, 18, 19]. The drugs used for self-medication is mainly based on the previous visit to the doctor, and had a knowledge regarding the drugs being used by them.

Post COVID-19 pandemic has led to an increase in self-medication practices which is varied across population and countries. Although an important component of healthcare, self-medication is a huge global challenge. Responsible self-medication can reduce the burden on the healthcare, and patient awareness campaigns would go a long way in preventing adverse health reactions and emergence of microbial resistance [20]. Therefore, healthcare workers and policy makers along with patient awareness programmes would greatly help the society for responsible and appropriate self-medication. The expertise of the pharmacists makes them the key position holders for the patients, OTC drugs and self-medication, and antibiotics has the potential to improve patient outcomes [21]. However, further research in future is required which would regulate the self-medication policy along with the pharmacists who play a pivotal role in providing their expertise and knowledge.

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CONFLICT OF INTEREST: Nil

REFERENCES:

1. Limaye D, Limaye V, Fortwengel G and Krause G: Self-medication practices in urban and rural areas of western India: a cross sectional study. Int J Community Med Public Health 2018; 5(7): 2672-85.
2. Tsvetkova A, Todorova A and Petkova V: The role of pharmacist as an advisor on responsible self-medication: a survey. World J of Pharmacy and Pharmaceutical Sciences 2014; 3(11): 325-35.
3. Torres NF, Chibi B, Middleton LE, Solomon VP and Mashamba-Thompson TP: Evidence of factors influencing self-medication with antibiotics in low and middle-income countries: a systematic scoping review. Public Health 2019; 168: 92-101. doi: 10.1016/j.puhe.2018.11.018. Epub 2019 Feb 1. PMID: 30716570.
4. Druică E, Băicuș C, Ianole-Călin R and Fischer R: Information or Habit: What Health PolicyMakers Should Know about the Drivers of Self-Medication among Romanians. International Journal of Environmental Research and Public Health 2021; 18(2): 689. https://doi.org/10.3390/ijerph18020689.
5. Ruiz ME: Risks of self-medication practices. Curr Drug Saf 2010; 5(4): 315-23. doi: 10.2174/157488610792245966. PMID: 20615179.
6. Behzadifar M, Behzadifar M, Aryankhesal A, Ravaghi H, Baradaran HR, Sajadi HS, Khaksarian M and Bragazzi NL: Prevalence of self-medication in university students: systematic review and meta-analysis. East Mediterr Health J 2020; 26(7): 846-857.
7. Quispe-Cañari JF, Fidel-Rosales E, Manrique D, Mascaró-Zan J, Huamán-Castillón KM, Chamorro-Espinoza SE, Garayar-Peceros H, Ponce-López VL, Sifuentes-Rosales J, Alvarez-Risco A, Yáñez JA and Mejia CR: Self-medication practices during the COVID-19 pandemic among the adult population in Peru: A cross-sectional survey. Saudi Pharm J 2021; 29(1): 1-11. doi: 10.1016/j.jsps.2020.12.001. Epub 2020 Dec 15. PMID: 33519270; PMCID: PMC7832015.
8. Mathias EG, D'souza A and Prabhu S: Self-Medication Practices among the Adolescent Population of South Karnataka, India. J Environ Public Health 2020; 2020: 9021819. doi: 10.1155/2020/9021819. PMID: 32963558; PMCID: PMC7492945.
9. Shrestha A and Madhikarmi NL: Prevalence of Self Medication Practice among Dental Undergraduates in a Dental college. JNMA J Nepal Med Assoc 2020; 58(221): 20-23. doi: 10.31729/jnma.4740. PMID: 32335634; PMCID: PMC7580486.
10. Gama ASM and Secoli SR: Self-medication among nursing students in the state of Amazonas - Brazil. Rev Gaucha Enferm 2017; 38(1): 65111. Portuguese, English. doi: 10.1590/1983-1447.2017.01.65111. PMID: 28538809.
11. Al Flaiti M, Al Badi K and Hakami WO, Khan SA: Evaluation of self-medication practices in acute diseases among university students in Oman. J Acute Dis 2014; 3(3): 249–252.
12. Ibrahim NK, Alamoudi BM, Baamer WO and Al-Raddadi RM: Self-medication with analgesics among medical students and interns in King Abdulaziz University, Jeddah, Saudi Arabia. Pak J Med Sci 2015; 31(1): 14-18. doi: 10.12669/pjms.311.6526. PMID: 25878607; PMCID: PMC4386150.
13. Athanasopoulos C, Pitychoutis PM, Messari I, Lionis C and Papadopoulos-Daifoti Z: Is drug utilization in Greece sex dependent? A population-based study. Basic Clin Pharmacol Toxicol 2013; 112(1): 55–62. doi: 10.1111/j.1742-7843.2012.00920.x.
14. Muhammad UN: Evaluation of practices of self-medication among undergraduate dental students in Riyadh. Saudi Journal of Oral Sciences 2021; 8(1): 22-27.| DOI: 10.4103/sjos.SJOralSci_80_20
15. Doomra R and Goyal A: NSAIDs and self-medication: A serious concern. J Family Med Prim Care 2020; 9(5): 2183-2185. doi: 10.4103/jfmpc.jfmpc_201_20. PMID: 32754470; PMCID: PMC7380783.
16. Zheng Y, Liu J, Tang PK, Hu H and Ung COL: A systematic review of self-medication practice during the COVID-19 pandemic: implications for pharmacy practice in supporting public health measures. Front Public Health 2023; 11: 1184882. doi: 10.3389/fpubh.2023.1184882. PMID: 37397709; PMCID: PMC10310324.
17. Rodziewicz TL, Houseman B and Hipskind JE: Medical Error Reduction and Prevention. Treasure Island, FL: Stat Pearls Publishing 2023.
18. Rashid M, Chhabra M, Kashyap A, Undela K and Gudi SK: Prevalence and Predictors of Self-Medication Practices in India: A Systematic Literature Review and Meta-Analysis. Curr Clin Pharmacol 2020; 15(2): 90-101. doi: 10.2174/1574884714666191122103953. PMID: 31763976; PMCID: PMC7579319.
19. Perrot S, Cittée J, Louis P, Quentin B, Robert C, Milon JY, Bismut H and Baumelou A: Self-medication in pain management: The state of the art of pharmacists' role for optimal Over-The-Counter analgesic use. Eur J Pain 2019; 23(10): 1747-1762. doi: 10.1002/ejp.1459. Epub 2019 Aug 7. PMID: 31349370.
20. Nabi N, Baluja Z, Mukherjee S and Kohli S: Trends in Practices of Self-Medication with Antibiotics among Medical Undergraduates in India. J Pharm Bioallied Sci 2022; 14(1): 19-24. doi: 10.4103/jpbs.jpbs_17_21. Epub 2022 May 19. PMID: 35784102; PMCID: PMC9245917.
21. Valliant SN, Burbage SC, Pathak S and Urick BY: Pharmacists as accessible health care providers: quantifying the opportunity. J Manag Care Spec Pharm 2022; 28(1): 85-90. doi: 10.18553/jmcp.2022.28.1.85. PMID: 34949110; PMCID: PMC8890748.

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