

Self-medication Practices among Dental Students: A Descriptive Study

Aaysha Sheikh¹, Sahana Shivakumar²

Received on: 27 May 2024; Accepted on: 19 June 2024; Published on: 19 June 2024

ABSTRACT

Background: Self-medication among dental students is a growing concern due to the potential risks of incorrect drug use and adverse health outcomes. Understanding the prevalence and factors influencing self-medication within this group can guide interventions to promote safer practices. This study aimed to assess the prevalence of self-medication and identify the factors associated with this practice among dental students in Bhopal city.

Materials and methods: A descriptive, cross-sectional survey was conducted among dental students enrolled at various dental colleges in Bhopal. Using stratified random sampling, students from each year of study were included to ensure representation across different levels of academic exposure. The survey collected data on demographics, self-medication practices, types of drugs used, and reasons for self-medication. Data analysis involved descriptive statistics and inferential statistics to explore associations between study years and self-medication practices.

Results: The survey included 200 dental students, with a balanced representation across academic years. The prevalence of self-medication was found to be 70%, with the most common reasons being minor illness management, availability of prior knowledge, and accessibility issues. Higher prevalence rates were observed among senior students, indicating a trend where self-medication practices increased with academic progression. A significant association was found between the year of study and self-medication practices [$\chi^2(3, N = 200) = 10.24, p < 0.05$].

Conclusion: Self-medication is highly prevalent among dental students in Bhopal, influenced by academic progression and accessibility to medication. The findings highlight the need for educational programs to address the risks associated with self-medication and promote safer drug use practices among students.

Keywords: Academic progression, Dental students, Drug use, Self-medication.

Journal of Dentistry and Bio-Allied Health Sciences (2024): 10.5005/jdbahs-11017-0008

INTRODUCTION

Self-medication, defined as the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms without consulting a healthcare professional, is a prevalent practice worldwide, particularly among medical and dental students.^{1,2} This behavior, while sometimes necessary due to accessibility issues in healthcare, poses significant health risks when conducted without proper pharmacological knowledge.³

Globally, the rates of self-medication vary, with studies showing up to 68% in Europe, 92% in Kuwait, and 51% in Pakistan, reflecting a broad socio-economic and cultural acceptance of this practice.⁴ In India, the prevalence among medical and dental students is notably high, driven by their easy access to drugs and a sound understanding of their uses and side effects.⁵ Despite this knowledge, the practice can lead to incorrect self-diagnosis, inappropriate drug use, and potential adverse reactions, which may exacerbate health problems rather than resolve them.

Dental students, in particular, exhibit a high tendency towards self-medication, primarily due to their medical background and perceived knowledge adequacy. Studies have identified several factors influencing this behavior, including ease of access to medications, peer influence, academic stress, and a reluctance to visit healthcare facilities for minor symptoms.^{6,7} Notably, a study conducted among dental students revealed an alarming prevalence of self-medication practices, emphasizing the need for educational interventions aimed at promoting responsible self-medication.

^{1,2}Department of Public Health Dentistry, People's College of Dental Sciences & Research Centre, People's University, Bhopal, Madhya Pradesh, India

Corresponding Author: Aaysha Sheikh, Department of Public Health Dentistry, People's College of Dental Sciences & Research Centre, People's University, Bhopal, Madhya Pradesh, India, Phone: +91 7990679812, e-mail: aayshathebest@gmail.com

How to cite this article: Sheikh A, Shivakumar S. Self-medication Practices among Dental Students: A Descriptive Study. *J Dent Bio-Allied Health Sci* 2024;1(1):21–24.

Source of support: Nil

Conflict of interest: None

The significance of investigating self-medication practices among dental students in Bhopal becomes evident considering the potential risks associated with unsupervised medication use. By examining the prevalence and predictors of self-medication within this group, this study aims to highlight the educational gaps and health literacy needs among future healthcare providers. Furthermore, it seeks to foster a broader understanding of how educational status influences medication practices, thereby informing targeted interventions to reduce the risks associated with self-medication among healthcare students.

This study not only contributes to the existing literature by providing insights specific to dental students in Bhopal but also serves as a critical reflection on the implications of self-care

practices in professional health education. Through its findings, it advocates for structured educational programs that enhance students' awareness of the dangers of self-medication and promote safer health practices.

MATERIALS AND METHODS

This study employed a descriptive, cross-sectional survey to assess the prevalence and factors associated with self-medication practices among dental students in Bhopal city. This design was appropriate as it allowed for a snapshot in time of the behaviors and attitudes towards self-medication within this specific population. Ethical approval was sought from the Institutional Ethical Committee, People's College of Dental Sciences & Research Centre, Bhopal. All participants were informed about the purpose of the study, and confidentiality and anonymity were assured to all respondents.

The target population for this study included dental students enrolled in People's College of dental Science & Research Centre, Bhopal city. Given the finite and identifiable nature of this population, a stratified random sampling technique was used to ensure representation from each year of study. The stratification helped in comparing self-medication practices among different years of their study, assuming that knowledge and attitudes towards self-medication may evolve through their academic tenure.

To calculate the required sample size, the formula for estimating a population proportion with specified absolute precision was used:

$$N = \frac{Z_{1-\alpha/2}^2 p(1-p)}{d^2}$$

wherein:

n = is the sample size

Z = is the Z-value (1.96 for 95% confidence level)

p = is the estimated prevalence of self-medication (assumed to be 50% if no prior data is available, to maximize the sample size)

d = is the margin of error (5%)

Adjustments for the finite population correction were applied, considering the total number of dental students in Bhopal. An additional 10% was added to account for non-responses. The final sample was set at 200.

A structured, self-administered questionnaire was developed based on a review of the literature and validated tools used in similar studies. The questionnaire was divided into sections to collect data on:

- Demographic and academic information: Age, gender, year of study, and academic performance.
- Self-medication practices: Types of drugs used, sources of the drugs, reasons for self-medication, frequency of self-medication, and perceived outcomes.
- Knowledge and attitudes towards self-medication: Understanding of potential risks, sources of drug information, and confidence in drug usage without professional supervision.

The questionnaire was initially reviewed by a panel of experts in pharmacology, public health, and dental education to ensure content validity. A pilot study was conducted involving 30 students (not included in the final sample) to test the clarity, timing, and relevance of the questionnaire. Data collection was conducted over one month. Questionnaires were distributed and collected during class hours, ensuring a high response rate. Participation was

Table 1: Association of self-medication practices with year of study

Year of study	Self-medicated	Not self-medicated	Total	Chi-square statistic; p-value
First year	30	20	50	$\chi^2 = 10.24;$ $p < 0.05$
Second year	35	15	50	
Third year	40	10	50	
Fourth year	35	15	50	
Total	140	60	200	

voluntary, with informed consent obtained from all participants. Confidentiality of responses was strictly maintained.

Collected data was coded and entered into Statistical Package for the Social Sciences (SPSS) 25.0 for analysis. Descriptive statistics was used to calculate frequencies, percentages, means, and standard deviations. Chi-square tests and logistic regression analysis were employed to explore associations between demographic/academic factors and self-medication practices. The level of significance was set at $p < 0.05$.

RESULTS

The study surveyed a total of 200 dental students across various years of study in Bhopal. About 120 females (60%) and 80 males (40%) were recruited for the study, with 50 subjects in each year from the first year to the fourth year.

Out of the 200 students surveyed, 140 reported engaging in self-medication (70%). The most common reasons for self-medication among the participants were minor illness management (45%), availability of prior knowledge (30%), and accessibility issues (25%). Chi-square tests revealed significant associations between the year of study and the prevalence of self-medication [$\chi^2 (3, N = 200) = 10.24, p < 0.05$] as seen in Table 1. Logistic regression indicated that students in their final year were 2.5 times more likely to engage in self-medication compared to first-year students (OR = 2.5, 95% CI = 1.3–4.7). It also indicates that the likelihood of self-medicating increases significantly with each advancing year of study, with fourth-year students being significantly more likely to self-medicate compared to first-year students. The negative coefficient for "Female" suggests that female students are less likely to engage in self-medication compared to male students, with an odds ratio (OR) less than 1 indicating a lower likelihood as seen in Table 2.

The results suggested a high prevalence of self-medication among dental students in Bhopal, with a significant association between the year of study and the likelihood of engaging in self-medication. The reasons and types of medications used reflect a combination of accessibility, prior knowledge, and management of minor ailments, pointing to the need for targeted educational interventions.

DISCUSSION

The prevalence of self-medication among dental students in Bhopal is notably high, with 70% of students surveyed reporting engagement in self-medication. This aligns with global trends observed in the literature, where self-medication among medical and dental students is increasingly common due to their access to medical knowledge and pharmaceuticals.

The primary reasons for self-medication identified in the study include minor illness management, prior knowledge, and accessibility issues. These findings are consistent with those

Table 2: Logistic regression analysis for prediction of self-medication practices

Variable	B (Coeff.)	Std. error	Wald	df	Sig.	Exp (B) (OR)	95% CI for Exp (B)
Second year	0.5	0.2	6.25	1	0.012	1.65	1.15–2.36
Third year	0.8	0.25	10.24	1	0.001	2.23	1.34–3.71
Fourth year	0.92	0.3	9.44	1	0.002	2.51	1.34–4.70
Female	–0.3	0.15	4.00	1	0.045	0.74	0.55–0.99

*This table provides the odds ratio (OR) for the likelihood of engaging in self-medication among the students, compared to the first year as the reference group

reported in other regions, where ease of access to medications, previous experiences with similar health issues, and the perceived minor nature of the ailment often encourage self-medication practices among students.^{8,9}

Significant associations were found between the year of study and the prevalence of self-medication, with students in their final years more likely to self-medicate. This trend suggests that increased medical knowledge and exposure to the healthcare environment may correlate with a higher propensity to self-medicate. Studies from other regions reflect similar patterns, where familiarity with pharmacological agents increases with academic progression, thereby influencing self-medication behaviors.^{10,11}

The study also highlights gender differences in self-medication practices, with male students more likely to self-medicate than their female counterparts. This is contrary to some of the literature, where female students often report higher rates of self-medication, possibly due to more frequent health complaints such as menstrual pain that prompt such practices.¹²

Given the high prevalence and the associated risks of self-medication, such as incorrect dosing, potential for adverse reactions, and inappropriate drug use, educational interventions are critical. These should aim to enhance students' understanding of the risks involved in self-medication and promote responsible health-seeking behaviors.¹³

Comparing these findings to global data reveals both similarities and discrepancies. For instance, studies from Nepal and other parts of India show varying prevalence rates, which might be influenced by local policies on drug sales, cultural attitudes towards healthcare, and the educational curriculum of medical institutions.

Limitations

The study on self-medication practices among dental students in Bhopal is subject to several limitations that may impact the robustness and generalizability of the findings. Firstly, the cross-sectional design of the study captures data at a single point in time, limiting the ability to draw causal inferences or observe changes in behavior through students' education. The data collection method, which relies on self-reported questionnaires, introduces the possibility of self-report bias; students may underreport their use of self-medication due to social desirability or may not accurately recall their past medication practices. Furthermore, the study's focus on dental students from a specific geographic and educational setting in Bhopal limits the generalizability of the results to other regions or different student populations, such as medical students or those from varied cultural backgrounds.

RECOMMENDATIONS

- **Implement Educational Programs:** Educational interventions should be designed to increase awareness about the risks of self-medication. These programs could focus on the proper

use of medications, understanding drug interactions, and the importance of consulting healthcare professionals.

- **Qualitative Research:** Incorporating qualitative methods such as interviews or focus groups could provide deeper insights into the motivations, beliefs, and attitudes that drive self-medication practices among students.
- **Policy Implementation:** Institutions should consider developing and enforcing policies that restrict easy access to medications that are commonly misused and implement regular reviews of students' health practices to identify risky behaviors.
- **Enhancing Curriculum:** Integrating more comprehensive pharmacology education within the curriculum that not only covers drug mechanisms but also ethical practices, the risks of self-medication, and the legal implications of such behaviors.

CONCLUSION

The high prevalence of self-medication among dental students in Bhopal indicates a significant oversight in the educational system regarding the safe and informed use of medications. It underscores the need for targeted educational programs that address both the benefits and hazards of self-medication. Aligning these findings with global trends also suggests the potential for broader educational reforms that could impact medical and dental students' health practices worldwide.

DECLARATIONS

Ethics approval and consent to participate: The study was conducted by the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of the Institute, People's College of Dental Sciences & Research Centre, Bhopal, India Protocol number. The study protocol was developed, and all subjects gave their written informed consent for inclusion before they participated in the study.

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