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Medical Students and Substance Abuse: Exploring the Scope and Repercussions - A Cross Sectional Study

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ABSTRACT:

Background: Substance abuse among medical students is an emerging public health concern, potentially impacting academic performance, mental well-being, and future clinical practice. Understanding the extent and consequences of substance use in this population is crucial for early intervention and developing a course of action for prevention and support

Objective: To assess the prevalence of substance abuse and examine its psychological, academic, and social repercussions among medical students in a medical college in South Delhi

Methods: A cross-sectional study was conducted among 200 undergraduate medical students using a structured, anonymous questionnaire. Out of 200, 182 responded. The survey collected data on demographic details, types and frequency of substances used, reasons for use, and perceived impacts. Statistical analysis was performed to identify significant associations between substance use and various academic and psychosocial factors.

Results: Out of the total participants (N = 182), 71 or **39 %** reported current or past use of at least one psychoactive substance, with alcohol and cannabis being the most commonly used. A significant proportion cited stress relief, peer pressure, and academic burden as key motivators. Substance use was found to correlate with decreased academic performance, poor sleep quality, and higher levels of anxiety and depression ($p < 0.05$).

Conclusion: The study highlights a concerning prevalence of substance abuse among medical students and underscores its negative implications on academic and mental health outcomes. There is a pressing need for awareness programs, counselling services, and institutional support systems to address this issue within medical education environments.

Keywords: Substance abuse, mental health, psychoactive substances, alcohol, cannabis

INTRODUCTION

Substance abuse remains a growing global public health issue, with young adults, particularly college students, being among the most vulnerable groups. Medical students, despite their awareness of the harmful consequences of substance use, are not immune to this phenomenon. In fact, studies suggest that the prevalence of substance abuse among medical students may be higher than in the general student population due to unique stressors related to medical education [1,2]. Medical training is widely recognized as rigorous, demanding, and psychologically taxing. Academic pressure, long study hours, exposure to human suffering, and the competitive environment often contribute to elevated stress, anxiety, and burnout among medical students [3]. These factors, in turn, can drive students toward maladaptive coping strategies, including the use of alcohol, tobacco, cannabis, and prescription medications [4]. Peer influence, curiosity, and perceived performance enhancement further contribute to the initiation and continuation of substance use [5]. The consequences of substance abuse in this population are far-reaching. In the short term, it may lead to impaired academic performance, absenteeism, and mental health issues such as depression and anxiety. In the long term, it can affect professional behaviour, ethical decision-making, and patient care outcomes . Early exposure to substance abuse in medical school can also increase the risk of long-term dependency, affecting future medical practice and professional integrity [6]. Despite the seriousness of the issue, substance use among medical students is often underreported due to stigma, fear of academic consequences, and lack of institutional support. There is a pressing need to understand the extent and impact of substance abuse in this population to develop effective prevention and intervention strategies. This study aims to assess the prevalence of substance use among medical students in a medical college and to explore its associated psychosocial and academic

repercussions. The findings may provide insights for educators, policymakers, and mental health professionals to better support students and foster a healthier learning environment.

MATERIALS AND METHODS

This was a cross-sectional, questionnaire-based study conducted among undergraduate students of a medical college in South Delhi during the academic year 2022-2023. The study aimed to assess the prevalence and impact of substance abuse among medical students.

Study Population

The target population included MBBS students of second and third year (part one) . A total of 200 student were approached. Out of these, 182 students consented and completed the questionnaire, resulting in a response rate of 91%.

Inclusion and Exclusion Criteria

- **Inclusion criteria**: All MBBS students of second and third year (part one) currently enrolled and willing to participate.
- **Exclusion criteria**: Students who were absent during data collection or who declined consent.

Data Collection Tool

Data were collected using a pre-tested, semi-structured, self-administered questionnaire designed based on previous literature and WHO guidelines on substance use surveys [8,9]. The questionnaire included the following sections:

- Demographic details (age, gender, year of study, place of residence)
- Substance use behaviour (type of substance, age of initiation, frequency, duration)
- Reasons for use (peer pressure, academic stress, curiosity, etc.)
- Consequences (academic performance, physical/mental health, social issues)

The questionnaire was anonymous to maintain confidentiality and encourage honest responses.
Written informed consent was obtained from all participants. Participation was voluntary, and confidentiality was strictly maintained.

Data Analysis

Data were compiled using Microsoft Excel and analysed using SPSS version 25.0. Descriptive statistics (percentages, means, standard deviations) were used to summarize the data. Inferential statistics such as the Chi-square test and Fisher's exact test were used to explore associations between substance use and variables such as academic performance, mental health, and year of study. A p-value < 0.05 was considered statistically significant.

RESULTS

1. Demographic Profile of Participants

Out of 200 students approached, 182 consented to participate in the study, yielding a response rate of 91%. The mean age of participants was 21.4 ± 1.9 years. Among them, 54.4% (n = 99) were male and 45.6% (n = 83) were female. The distribution of students by academic year was as follows:

- 2nd year – 97 (53%)
- 3rd year – 85 (47%)

2. Prevalence of Substance Use

Out of 182 students, 71 (39.0%) reported having used at least one psychoactive substance at some point during their medical education.

3. Types of Substances Used

Among the 71 substance users:

- **Alcohol** was the most commonly used substance (n = 54; 76.1%)
- **Tobacco** was reported by 32 students (45.1%)
- **Cannabis** was used by 14 students (19.7%)
- **Sedatives** (e.g., benzodiazepines) were reported by 5 students (7.0%)
- **Other substances** (including stimulants and inhalants) were reported by 3 students (4.2%)

(Some students reported using more than one substance.)

4. Frequency and Duration of Use

- **Occasional use** (once or twice a month): 42 students (59.2%)
- **Weekly use**: 19 students (26.8%)
- **Daily use**: 10 students (14.0%)

5. Age of Initiation

- The most common age group of initiation was **18–20 years** (n = 38; 53.5%)
- Followed by **<18 years** (n = 22; 31.0%)
- And **>20 years** (n = 11; 15.5%)

6. Reasons for Substance Use

Participants cited multiple reasons for substance use (multiple responses allowed):

- **Relief from academic stress** – 47 students (66.2%)
- **Peer pressure** – 35 students (49.3%)
- **Curiosity/experimentation** – 30 students (42.3%)
- **To enhance performance/concentration** – 9 students (12.7%)
- **Recreational/social use** – 25 students (35.2%)

7. Reported Consequences

Substance use was associated with self-reported issues:

- **Poor academic performance** – 24 students (33.8%)
- **Sleep disturbances** – 29 students (40.8%)
- **Mental health concerns** (e.g., anxiety, low mood) – 31 students (43.7%)
- **Conflict with peers/family** – 18 students (25.4%)

8. Gender and Year-wise Distribution of Substance Use

- **Males (n = 99)**: 50 reported substance use (50.5%)
- **Females (n = 83)**: 21 reported substance use (25.3%)

This difference was statistically significant (**$p < 0.01$**).

- Highest prevalence was seen among third year students (n = 24; 53.3% of final-year students), followed by second year students (n = 20; 44.4%).

DISCUSSION

This study revealed a concerning 39% prevalence of substance use among medical students, with alcohol and tobacco being the most commonly used substances. These findings are consistent with other studies in India and globally, which have shown prevalence rates ranging from 20% to 45% among medical students (10) The higher prevalence in males aligns with existing literature, suggesting gendered patterns in risk behaviour and coping mechanisms . Moreover, the rising rates in senior academic years suggest cumulative academic stress and possibly greater exposure to peer influence over time.(11) Stress emerged as the leading reason for substance use, cited by two-thirds of users. (12). This reinforces previous research, highlighting the psychological burden faced by medical students and their vulnerability to unhealthy coping mechanisms . Notably, a significant portion of users reported academic decline, mental health challenges, and social conflicts, underlining the negative repercussions of substance abuse on personal and professional development.

The relatively early age of initiation (often during or even before medical college) indicates a need for preventive measures at both school and college levels. Institutions should prioritize early identification, psychoeducation, and supportive interventions through counselsling and peer-support programs.

CONCLUSION

The study highlights a significant prevalence of substance abuse among medical students, primarily driven by academic stress and peer influence. Substance use is associated with negative academic, psychological, and interpersonal outcomes, and its incidence appears to increase with seniority in the medical course and among male students.

Recommendations

- **Awareness programs** on the dangers of substance use, tailored to the medical student population
- **Regular mental health screening** and stress management workshops
- **Confidential counselling services** with easy access
- **Peer mentorship and de-stigmatization campaigns** to encourage help-seeking behaviour

Addressing substance use among future healthcare providers is not just essential for their personal well-being but also for ensuring safe, ethical, and competent future medical practice.

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