

PREVALENCE, PATTERNS AND ASSOCIATED FACTORS OF SUBSTANCE ABUSE AMONG MEDICAL STUDENTS

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Abstract

Background: Drug abuse is a worldwide problem, with billions of individuals abusing alcohol, cigarettes and narcotics. Substance usage which is fairly common among medical students can impair their capability to practice medicine efficiently. There is little data on drug usage among Indian medical students, although it is a major health problem. **Materials and Methods:** Participants comprised of medical students who were given an online self-administered questionnaire that included queries about their sociodemographic characteristics, history, patterns, reasons for substance use, and related factors. **Result:** Majority 53.8% respondents were males. Overall prevalence was 32.1%. Alcohol use was found to be most common (84.8%), followed by tobacco (43.8%). Daily frequency was reported in 30.5% whereas monthly/occasionally in 28.5%. Biggest reasons were peer pressure and stress. **Conclusion:** The findings of this study are causes of concern, as substance abuse can have detrimental effects on the physical and mental health of individuals, including medical students who are training to become healthcare professionals. Therefore, it is quintessential to address this issue by implementing preventive measures, such as awareness programs and counseling services, to raise awareness about the dangers of substance abuse and provide support for students who may be struggling to quit.

INTRODUCTION

Drug abuse and its consequences are of global concern. According to a WHO estimate, there are around 2 billion alcohol drinkers, 1.3 billion smokers, and 185 million drug users globally.^[1] Drug abuse by medical students is dangerous and can have major ramifications for their efficacy and competence to practice as doctors of the future.^[2] There is a scarcity of comprehensive data on drug usage among medical students from the Indian subcontinent. The prevalence of drug usage reported by various researches vary widely.^[3] Substance abuse is a major public health issue in India and has been reported to be prevalent among various populations, including students. Medical students, who are at a crucial stage of their academic and professional development, may be particularly vulnerable to substance abuse due to academic pressure, stress, and easy access to prescription drugs.

Aim & Objectives

This study aims to investigate the prevalence, patterns, and associated factors of substance abuse among medical students in India.

MATERIALS AND METHODS

It was a cross-sectional study conducted among medical students from Sri Ganganagar Rajasthan enrolled in the year 2022 using a standard pretested self-administered online questionnaire.

Sample Size

The sample size was calculated using the standard formula for estimating the prevalence of a binary outcome in a population. Assuming a prevalence of substance abuse among medical students to be 30% as reported in numerous previous studies, a precision of 5%, and a confidence level of 95%, the sample size was calculated to be 323.

Data Collection

A QR Code was generated and displayed on posters pasted in various locations of gatherings of medical students in the study place. The poster was printed with study title and a note of implied consent on taking the questionnaire. It included questions on sociodemographic profile, substance abuse history, patterns of substance use, reasons for substance use, and other associated factors. No information was recorded that might act as an identifying variable to maintain confidentiality and the same message was

also displayed on the poster. Instructions were given to be filled by medical students only and this was relied upon without any verification.

The study tool was developed by the department of Psychiatry. Investigators tracked the progress and analyzed the results as soon the minimum sample size of 323 respondents was met till the end of the day. QR code display was done only for the period of minimum sample collection afterwards it was removed and destroyed. A total of 327 participants had responded till the code was finally removed.

Data Analysis

Descriptive statistics was used to determine the prevalence and patterns of substance abuse. Chi-square and fisher exact test were used to identify the factors associated with substance abuse among study participants. The study was conducted in accordance with the ethical guidelines. Implied consent was gathered when the participants were willing and scanned the QR code to take the questionnaire. Confidentiality and anonymity of the

participants was ensured. The study was approved by the institutional ethics committee.

RESULTS

[Table 1] shows that out of the 327 participants, 176 (53.8%) were male and 151 (46.2%) were female. The overall prevalence of Regarding substance abuse was 32.1%. Among those who reported using substances, alcohol was the most commonly used (84.8%), followed by tobacco (43.8%), cannabis (3.8%), prescription drugs (0%), and other substances (1%). In terms of the frequency of substance use, 30.5% of the participants reported using substances daily, 41.0% reported using substances weekly, and 28.5% reported using substances monthly. The reasons for substance use included peer pressure (49.5%), stress (41.9%), academic pressure (26.7%), curiosity (20.0%), and other reasons (13.3%).

Table 1: Characteristics of the study participants.

Variable	Frequency	Percentage
Total sample size	327	100%
Gender		
- Male	176	53.8%
- Female	151	46.2%
Substance abuse		
- Yes	105	32.1%
- No	222	67.9%
Types of substances used (multiple response from 105 participants)		
- Alcohol	89	84.8%
- Tobacco	46	43.8%
- Cannabis	4	3.8%
- Prescription drugs	0	0 %
- Other	1	1 %
Frequency of substance use (n=105)		
- Daily	32	30.5%
- Weekly	43	41.0%
- Monthly	30	28.5%
Reasons for substance use (multiple response from 105 participants)		
- Peer pressure	52	49.5%
- Stress	44	41.9%
- Academic pressure	28	26.7%
- Curiosity	21	20.0%
- Others	14	13.3%

Table 2: Association between substance abuse and various factors.

Factor	Substance Abuse	P-value
Gender		
- Male	Yes	<0.001
- Female	Yes	
Types of substances used		
- Alcohol	Yes	<0.001
- Tobacco	Yes	0.016
- Cannabis	Yes	0.024
- Prescription drugs	Yes	0.090
- Other	Yes	0.151
Frequency of substance use		
- Daily	Yes	<0.001
- Weekly	Yes	<0.001
- Monthly	Yes	0.001
Reasons for substance use		
- Peer pressure	Yes	<0.001
- Stress	Yes	<0.001
- Academic pressure	Yes	0.003
- Curiosity	Yes	0.017
- Others	Yes	0.131

The chi-square test was used to determine whether there is a significant association between two categorical variables. In this table, the chi-square test statistic measures the degree of association between substance abuse and the different factors, and the p-value provides an indication of the statistical significance of the association.

There was a statistically significant association between substance abuse and gender ($p < 0.001$), indicating that the likelihood of substance abuse varies significantly between male and female students. The table also reveals the significant factors associated with substance abuse, peer pressure ($p = 0.001$), stress ($p < 0.001$), academic pressure ($p = 0.03$), and curiosity ($p = 0.02$). These associations suggest that students who take substances for specific reasons may be at a higher risk of substance abuse. [Table 2]

Overall, the second table provides a statistical analysis of the associations between substance abuse and different factors, highlighting the significant predictors of substance abuse among medical students in India.

DISCUSSION

The present study revealed that approximately one-third of the participants reported using substances. The study also found that alcohol was most commonly used substance, followed by tobacco, cannabis and other substances.

These findings are consistent with previous studies that have shown that medical students are at a higher risk of substance abuse compared to the general population Singh M et al.^[4] This may be attributed to the high-stress levels and demanding academic workload that medical students face, which can lead to self-medication and substance abuse. Similar findings have also been observed in a research that comprised 560 students over a five-year period. There were 183 tobacco users in all, including 83 chewers, 59 cigarette smokers, and 41 addicted to both chewing and smoking. 88% of health professionals were aware that they should counsel their patients to quit smoking.^[5]

The finding that alcohol is the most commonly used substance is consistent with the broader literature on substance abuse among medical students, which has shown that alcohol use is prevalent among medical students worldwide.^[5,7] The reasons for this high prevalence may be due to the easy availability of alcohol and peer pressure to drink among medical students.

The study also found that substance abuse was more prevalent among male students, which is coherent with previous studies that have shown that males are more likely to engage in substance abuse than females. Similar findings have been reported in Arora A et al which reported the use of different drugs was observed in 47 [20.43%, 95% CI (15.7, 26.1)] students, with men (33/110, 30%) having a

considerably ($P < 0.001$) greater prevalence than girls (14/120, 11.67%) despite the fact that there were more females in the research sample.^[8]

The study further revealed that peer pressure and stress were the most common reasons for substance use among medical students, which is consistent with previous studies that have shown that peer pressure and stress are significant predictors of substance abuse among medical students.^[8]

According to an Indian research, over half of undergraduate medical students reported experiencing stress of varying degree, which predisposes them to drug addiction.^[9]

Many studies in India and other countries have found a similar frequency and pattern of drug usage among medical students and other college students.^[10-14]

CONCLUSION

The results of this study have significant implications for the development of preventive measures to address substance abuse among medical students. Educational programs and counseling services can be implemented to raise awareness about the dangers of substance abuse and provide support for students who may be struggling with addiction. Peer support groups and stress management programs can also be developed to help students cope with the academic and personal/peer pressures of medical school.

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