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Substance Use Pattern among Medical College Students in Kolkata: A Cross Sectional Study

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Original Research Article

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Abstract: Substance use is found worldwide including among students. We carried out this study to estimate the prevalence of substance use among medical students studying in a medical college in eastern India. It is observed that medical students undergo tremendous stress during training. Repeated use of drugs can impair essential decision making and lead to difficulties in academic and social activities. Using a validated questionnaire a cross-sectional survey was conducted among 200 undergraduate medical students in a government medical college in a metropolitan city. The prevalence of substance use was 32 percent (65/200) among medical students. An increase in substance use was observed in the latter years of medical education. The most common reasons for substance use were relief from psychological stress (47/65, 72%). Nearly one-third of medical students use substance despite knowing the ill effects with the main predisposing factor being the psychological stress.

Keywords: Psychological stress, medical students, substance use.

INTRODUCTION

Substances use and its associated problems are a global concern in recent time. A WHO estimate shows a burden of worldwide psychoactive substance use of around 2 billion alcohol users, 1.3 billion smokers and 185 million drug users [1]. Doctors are extremely vulnerable to substance use due to easy accessibility to the substance. Adolescence is the most critical period when the first initiation of substance use takes place. Epidemiological surveys which were carried out in the last three decades to assess the prevalence of alcohol and drug users in general population in India have revealed that 20-40% of subjects who were above 15 years were current users of alcohol and that 10% of them were regular or excessive users [2].

Varma *et al*., found that rates of current use of alcohol in Punjab were 45.9% in Jalandhar and 27.7% in Chandigarh [3]. Substance use disorders are among the world's leading public health problems in modern day world as they cause enormous human sufferings, in terms of morbidity, mortality, economic loss and threaten the very social fabric of almost all communities around the world. Medical training is identified as full of stress and it is also observed that students undergo excessive stress during various years of medical training. Stress among students results in impaired judgments, absenteeism, self-medication, and addiction to substances such as cigarette smoking, alcohol drinking and use of cannabis. Substance use pattern is of interest due to potential impact of drug related functional impairments on medical students i.e. accidents, decline in academic and professional performance etc. Substance use is shown in some studies to be a proxy of psychiatric morbidity which can further impair medical education. Along- side the negative effects of substance use on medical student's physical and mental health, it may also threaten their ability to provide adequate patient care and be a role model for healthy lifestyle [4].

To plan effective interventions, it is essential to have information on the extent and type of substance use among medical schools and their attitude towards its control. Despite serious medico legal, ethical and political ramifications, there is little research on the subject in recent time.

AIM OF THE STUDY

- To identify the substance use pattern in medical students in a medical college of a metropolitan city.
- To identify the reasons of substance use and also its association with socio-demographic factors.

MATERIALS AND METHODS

After obtaining approval from the Institutional ethics committee of R, G. Kar Medical College Kolkata written informed consent was taken from the participants. A structured questionnaire designed and validated in-house was administered to obtain the information. The content of the validity of the questionnaire was checked and two week test-retest reliability was checked in an initial group of 30 students and those students were not included in main study sample. Cronbach's alpha was used to check the reliability of the questionnaire during the initial validation and a value of 0.82 was obtained for each question. Briefly, the themes under which the questions were asked included demographic details, details of the substance use (name, duration, frequency, amount) and its source, attempt to quit in the past, ill-effects and legal consequences of substance use, factors associated and the impact on academic activities. With 5 per cent precision and alpha error and an estimated prevalence of 20 percent using Daniel's formula for sample size calculation, 200 students were recruited. The students were selected through systemic random sampling according to their serial number in class and every 5th student were selected for this research work. 40 students were selected in each batch to achieve similar representation. Chi-square test was done to analyse the association of various categories. Confidence interval (95%) for the overall prevalence of substance abuse was estimated.

RESULTS

The results of this study show that among 200 respondents 145 are male and 55 are female. Among 200 students it has been seen that 65 students are taking substances (Table-1, Fig-1). Among the students who are using substances 54 were Hindu, 9 were Muslim and 2 were Sikh (Table-2). Association between religion and substance use has shown statistical significance with a p value of 0.04. Result shows that around 30% female students were taking substances .It has also been found that among the substance users 55 students were from nuclear family and 10 students belong from joint family. A significant number that is 49 students who are using substance were staying at hostel and 16 students were attending college from their residence. Majority of the candidates (41.5%) are using substance in daily basis where as only (10.76%) students are taking substance on monthly basis (Fig-2). 58.4% students who are using substances have family history of substance intake.

Table-1: Distribution of GroupVs. Substance use

Group	Yes	No	TOTAL
1st Yr	4	36	40
2nd Yr	12	28	40
3rd Yr	13	27	40
4th Yr	17	23	40
Intern	19	21	40
TOTAL	65	135	200

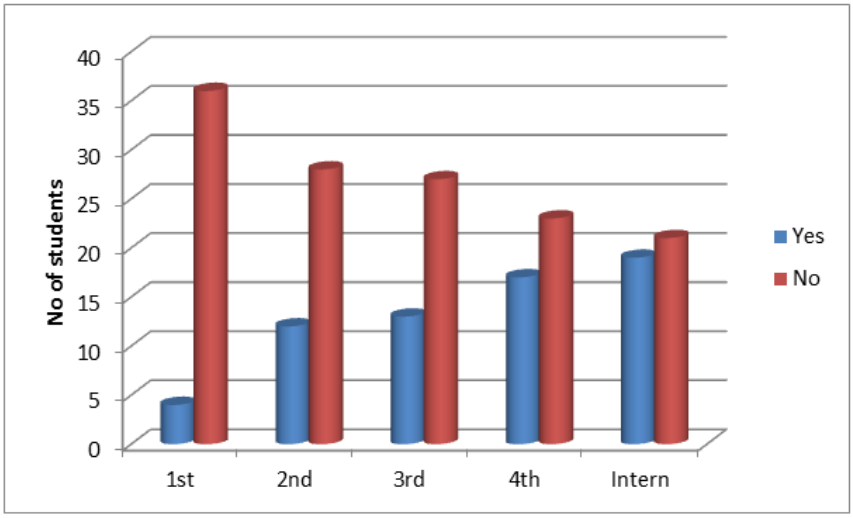

Fig-1: Bar diagram representing substance use pattern among students

Table-2: Distribution of ReligionVs. Substance use

Religion	Yes	No	TOTAL
Hindu	54	104	158
Muslim	9	31	40
Sikh	2	0	2
TOTAL	65	135	200

Table- 3: Types of Substance being used

	1st Yr	2nd Yr	3rd Yr	4th Yr	Intern	TOTAL
Cigarette	4	7	8	9	7	35
Bidi	1	6	8	9	8	32
Alcohol	2	9	10	11	14	46
Cannabis	1	3	3	3	3	13
Heroin	0	1	2	1	1	5
Cocaine	0	0	0	1	1	2
LSD	0	0	0	0	0	0
Opiates	0	0	0	0	0	0
Scheduled drugs	0	0	0	0	0	0
Steroids	0	2	0	2	0	4
Chewable tobacco	1	6	6	2	2	17

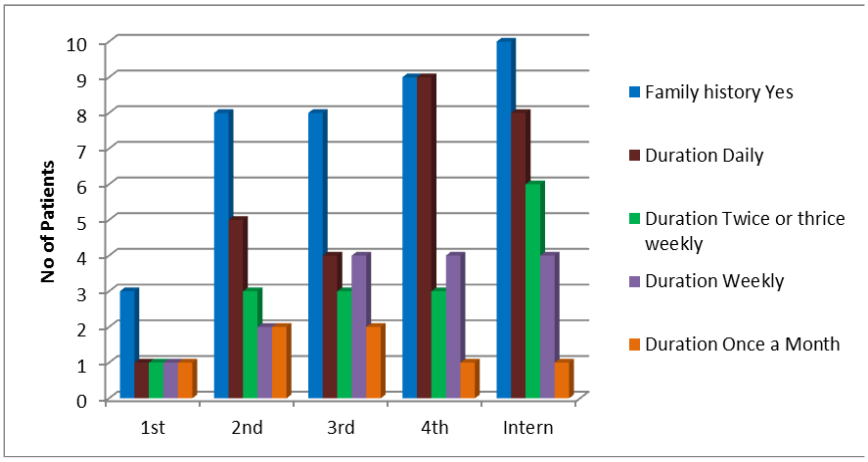

Fig-2: Bar diagram representing the frequency of substance intake and family history

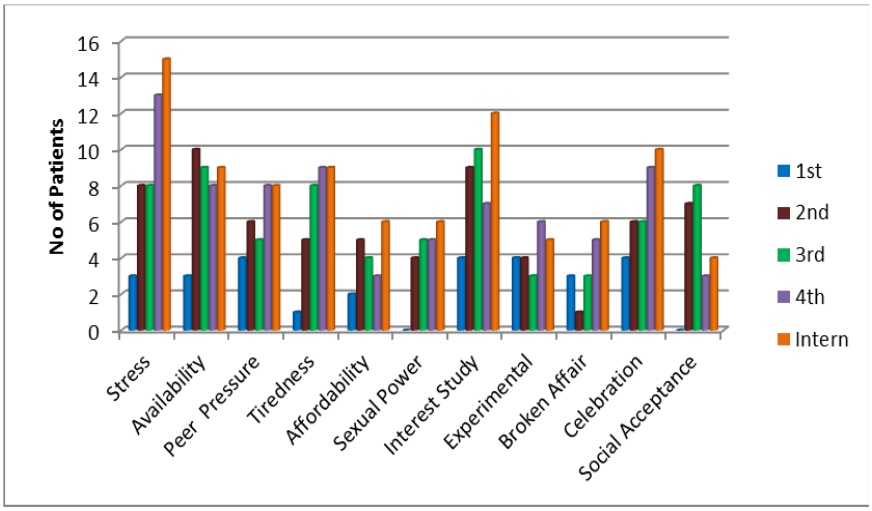

Fig-3: Bar diagram representing causes of substance use

DISCUSSION

Substance use (tobacco, alcohol and various other drugs) have been recognized as an area of concern among medical students. Our study contributes to the evidence by providing some data on the prevalence and pattern of substance use among medical students in a medical college of a metropolitan city. Substance use has severely affected society and not only destroyed the social structure but also has led to huge economical loses. It has assumed epidemic proportion in the society involving adolescents, adults and people in all other age groups. The prevalence of substance use has shown a significant upward trend in recent time due to globalization and socio-cultural changes. New and non-conventional substances are being used by younger generations replacing the older ones. These newer and non-conventional substances are extremely harmful and lead to greater morbidity and mortality in people using these drugs and especially younger generations. This study shows around 32% of under graduate medical students are using various substances. Result shows that around 30% female students were taking substances and the result is comparable with the study Mir AR et al (27%) [5]. Substances like Alcohol (23%), Cigarette (17.5%), Bidi (16%), Cannabis (6.5%), Chewable tobacco (8.5%) are being used which are not mutually exclusive. Some of the substance users have reported the practice of multiple substance intake. A study by Datta A *et al.*, in Kolkata showed 27% of medical students using alcohol [6]. Statistically significant p-value has been noted regarding association of substance use with place of stay, religion, family type. It has been noted that less number of students from Muslim community is taking substances. A study by Baba TA *et al*., where majority of substance users lived in hostels [7]. As the students are becoming senior there is increased tendency of substance use which is statistically significant (p value: 0.004). Studies done in India and in other countries have revealed similar prevalence and pattern of substance use. 72.3% of substance users had complained of stress as a cause of substance use. A study by Mannapur B *et al*., noted nearly 50 percent of the undergraduate medical students reporting stress, predisposing to substance use [8].

Majority of the candidates (41.5%) are using substance in daily basis where as only (10.76%) students are taking substance on monthly basis. This research work shows a significant number of students have reported peer pressure (47.69%), easy availability, celebration, relationship problem and to increase interest in study are the factors for substance use. Another study by Jagnany V K *et al.*, also showed friends as main suppliers of substances [9]. Experimentation (33.8%) is one of the important factor for substance use. A study by Datta A *et al*., showed 39.21% of substance users initiated due to curiosity [7].

This study is not free of limitations. Students in the medical stream were only included without any control group.Factors like parents-student, student-teacher and peer relationships were not assessed in this research work. Regression analysis could not be carried out due to small sample size.

CONCLUSION

There is a wrong belief that medical college students are immune to the harmful effects and consequences of substance use. The roots of this problem runs deep into our society and may contribute to other factors like depression, communicable diseases and social evils and disharmony. This study showed high prevalence of substance use which even though is lower than the general population, but still significantly alarming. The problem of substance use among the young medical students should be taken seriously as their own attitudes towards substances may play determining role on their professional judgment. Talks on substance use should be delivered to new students as that is the age they get exposed and students should be encouraged to take part in such type workshops. Persistent monitoring by the mentors concerned should be carried out regularly as peer pressure is one of the most important factors and proper monitoring can prevent initiation of substance use. Security system should be strengthened so that such substances are not sold in the hospital campus and specially in the hostels. Counselling and treatment facility should be provided with proper privacy regulations so that the students can participate in such activities without any hindrance. Lastly, the prevention programme of substance use among medical students should be a multimodal approach by involving teachers, doctors, administrators, parents and students for the betterment of the situation.

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