

Original Research Article

A study of substance abuse among male engineering students staying at hostels in a township near Kolkata

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ABSTRACT

Background: Substance is being more common during college days, due to academic pressure, peer group effects, popularity and easy access to common substances. Men are more likely to engage in substance abuse. This was supposed to be more common in hostels. A study was carried out among male engineering students staying at hostels - with aims to find out the magnitude of substance abuse, to assess the potential risk of different substances abused and to find out a comparison between these two groups.

Methods: Study was carried out with the help of two part questionnaire, one part containing alcohol, smoking and substance involvement screening test 8 item screening tool proposed by WHO (WHO-ASSIST). Other part contained socio demographic information. First 50 students, in each two colleges were enrolled in the study after getting their consent.

Results: Ever use of tobacco product was found to be 66.0% and 22.0%, of alcoholic beverages: 72.0% and 26.0%, of cannabis: 46.0% and 14.0% - for students of government and private engineering college respectively. In the past 3 months, tobacco (36.0%) followed by cannabis (12.0%) were found to be the most commonly abused substances in government engineering college students while both (6.0%) cannabis and tobacco were the commonest substances of daily abuse among private engineering college students.

Conclusions: High level of substance abuse was found to be present among male engineering students staying at hostels with higher level found among students of government engineering college.

Keywords: Substance abuse, ASSIST-WHO

INTRODUCTION

World today is witnessing a virtual epidemic of drug abuse.¹ In India, youths are bearing the brunt of it. Industrialization, urbanization, migration, changing cultural values, increasing economic stress and loosening of traditional bonds are leading to initiation into substance abuse.² According to World Health Organization, substance abuse is persistence or sporadic excessive drug use inconsistent with or unrelated to acceptable medical practice.³ Worldwide, nearly two billion people use alcohol, with more than one billion use tobacco⁴ and around 200 million people admitted of having used some type of illicit drugs.⁵ University or

college duration is also a sensitive and critical period, because substance use could be seen, especially among students under academic pressure, peer group effects, popularity and easy access to common substances.⁶ Harvard School of Public Health College Alcohol Study reported 44% American college students practice binge drinking.⁷ College students were twice as likely found to develop alcohol related and drug related disorders than the rest of the general population.^{8,9} In a probabilistic study of college students carried throughout Brazil, men were found to have tried illicit drugs more than women in lifetime.¹⁰ Another study carried out among intercollege students in Dehradun district, substance abuse was found to be significantly higher among male students (45.8%)

compared to female students (7.3%) and prevalence of substance use was found to be significantly more in the students who were living away from their homes.¹¹ According to a study carried out in neighbouring Pakistan, majority of the male hostel students are affected negatively due to drug use.¹² Another thing of concern was that while experiencing serious levels of substance abuse, college students seldom realize the need for treatment or seek help at all.¹³

Based on these, a cross sectional study was carried out in 2 engineering colleges (one government and another private) located in Kalyani Municipality among male engineering students pursuing B.Tech degree and staying at hostels, with aims to find out the magnitude of substance abuse among them, to assess the potential risk of different substance of abuse present in them and to draw a comparison between these two groups of engineering students. There has been a dearth of studies regarding substance abuse in college students as well as about students pursuing professional courses in Eastern India, particularly in West Bengal. Kalyani being a planned township under Kolkata Metropolitan Development Authority Kolkata, is coming out as an education hub.¹⁴ It already hosts three engineering colleges, one government medical college, one law college, one university, Institute of Public Health and Policy, Indian Institute of Information Technology Kalyani, National Institute of Biomedical Genomics, Eastern Regional Station of National Dairy Research Institute, apart from one general degree college. Indian Institute of Science Education and Research- Kolkata (main campus) of agriculture university and that of West Bengal University of Animal and Fishery Sciences are also located nearby Kalyani.¹⁵

METHODS

The present study, cross-sectional, descriptive in nature had been conducted in two engineering colleges located in Kalyani Municipality. One was the Government Engineering College, Kalyani and the other, a private one. It was carried out with the active participation of 3rd semester undergraduate MBBS students of the College of Medicine and JNM Hospital, Kalyani during the 3rd week of August, 2015 following arrangements of prerequisite permission from the Medical College authority as well as engineering college officials.

The questionnaire consisted of two parts, first part had few demographic questions like age, year of study, type of family etc. Second part consisted of 8-item WHO-ASSIST screening tool that collected information concerning substance abuse spanning lifetime as well as past three months indicating the likelihood of risk and harm that might have been caused by the said abuse of substances. Three types of risks were classified- low, moderate and high. Moderate means there are potential risk present while high risk signified high risk of experiencing severe problems (health, social, financial,

legal, relationship) and are likely to be dependent.¹⁶ Prior to the study proper, questionnaire was introduced to a group of few undergraduate engineering students and their response was noted to find out needed modifications and alterations, in a private engineering college located in Kalyani, that was not included in the study later on.¹⁷

During the study period, on each engineering college, a small health talk regarding awareness about substance abuse was organized which were actively manned by undergraduate medical students preceding data collection. Data was collected from male students fulfilling the criteria, after securing written consent. On each college, out of the male engineering students who were presently staying at hostels and showed interest and fulfilled the inclusion criteria, first 50 students who expressed interest, were invited to fill up the schedule ensuring privacy and anonymity.

Only those male students who were then pursuing B. Tech in their 2nd year to 4th year of study, and those who stay together at college provided hostels' and gave consent were only included in the study. Students staying at rented apartments, in private mess, as well residing as paying guests outside were excluded as well. As it was just the beginning of the session, 1st year students were excluded.

Data was tabulated and analysed with MS Office and SPSS software using mostly descriptive statistical methods.

RESULTS

The study population consisted of male engineering students. In case of government engineering college, mean age was 20.48 and for private engineering college it was 20.02 years. The minimum family income of the students of the government college was found to be Rs.3500/- and that of the private engineering college was Rs.10000/-pm.

Alcohol and related drinks were the most common substance of abuse among both the groups, 72.0% and 26.0% among government and private engineering college students respectively. Among, the students of Government's College no abuse of cocaine or related product could be found whereas there was no reported abuse of sedatives or hallucinogens among private engineering college students. Among the other substance not included in the ASSIST schedule was steroid supplements taken for perceived health and fitness benefits.

Tobacco products (36.0%) were found to be the most common substance abused daily in past 3 months by government engineering college students while cannabis (6.0%) was found to be the commonest daily abused substance by private college students.

Table 1: Socio demographic profile of the hostel dwelling male engineering students.

Sl. No	Socio demographic variables	Government engineering college		Private engineering college	
		N=50	%	N=50	%
1.	Age	18	-	2	4.0
		19	8	20	40.0
		20	21	14	28.0
		21	12	6	12.0
		22	7	5	10.0
		23	2	3	6.0
2.	Type of family	Nuclear	28	33	66.0
		Joint	22	17	34.0
3.	Monthly family income (1000 ₹)	<25	26	10	20.0
		25-50	14	21	42.0
		50-75	5	6	12.0
		75-100	-	2	4.0
		>100	5	11	22.0
4.	Academic years of study	2 nd	8	22	44.0
		3 rd	21	14	28.0
		4 th	21	14	28.0
5.	Parents staying together currently	yes	45	47	94.0
		No	5	3	6.0

Table 2: Ever use of substances of addiction by the hostel dwelling engineering students.

Sl. no.	Ever-used substances- group wise	Government engineering college		Private engineering college	
		N=50	%	N=50	%
1.	Tobacco products (cigarette, beedi, chewing tobacco)	No	17	39	78.0
		Yes	33	11	22.0
2.	Alcoholic beverages (wine, spirits)	No	14	37	74.0
		Yes	36	13	26.0
3.	Cannabis (ganja, marijuana, hashish)	No	27	43	86.0
		yes	23	7	14.0
4.	Cocaine (coke, crack)	No	50	44	88.0
		Yes	-	6	12.0
5.	Amphetamines (speed, ecstasy)	No	47	49	98.0
		Yes	3	1	2.0
6.	Inhalants (glue, petrol, paint thinner)	No	46	47	94.0
		Yes	4	3	6.0
7.	Sedatives (sleeping pills)	No	46	50	100.0
		yes	4	-	-
8.	Hallucinogens (LSD, PCP, mushrooms)	No	48	50	100.0
		Yes	2	-	-
9.	Opioids (heroin, morphine, codeine)	No	48	49	98.0
		Yes	2	1	2.0
10.	Other oral	No	48	48	96.0
		Yes	2	2	4.0
11.	Injectables	No	49	47	94.0
		Yes	1	3	6.0

Among the government engineering college students, 3 were found to be of high risk for addiction with alcoholic beverages and cannabis related products, according to scoring by WHO-ASSIST score. They are likely to be dependent on future.¹⁶

Between the socio-demographic variables studied here, significant relationship could be established between ever use of cannabis and age of the students ($p=0.027$), ever use of alcohol and type of family ($p=0.015$), types of family and ever use of cocaine ($p=0.007$), type of family

and use of injectable drugs ($p=0.045$), ever use of inhalants and monthly family income ($p=0.023$); years in age of the students and frequency of alcohol abuse in past 3 months ($p=0.005$), age in years and frequency of cannabis abuse in past 3 months ($p=0.00$), academic years

of study and frequency of alcohol abuse in past 3 months ($p=0.26$), academic years of study and frequency of cannabis abuse in past 3 months ($p=0.02$) – among the students studying in the private engineering college.

Table 3: Frequency of substance abuse in past 3 months- category wise.

Sl.no	Substances abused	Usage frequency in past 3 months	Government engineering college		Private engineering college	
			N=50	%	N=50	%
1.	Tobacco products	Never	19	38.0	39	78.0
		1/2times	10	20.0	6	12.0
		Monthly	1	2.0	-	-
		Weekly	2	4.0	2	4.0
		Daily	18	36.0	3	6.0
2.	Alcoholic beverages	Never	16	32.0	37	74.0
		1/2times	16	32.0	6	12.0
		Monthly	12	24.0	2	4.0
		Weekly	3	6.0	3	6.0
		Daily	3	6.0	2	4.0
3.	Cannabis	Never	27	54.0	44	88.0
		1/2 times	10	20.0	3	6.0
		Monthly	4	8.0	-	-
		Weekly	3	6.0	-	-
		Daily	6	12.0	3	6.0
4.	Cocaine	Never	50	100.0	44	88.0
		1/2 times	-	-	3	6.0
		Monthly	-	-	3	6.0
5.	Amphetamine	Never	47	94.0	50	100.0
		1/2 times	2	4.0	-	-
		Monthly	1	2.0	-	-
6.	Inhalants	Never	46	92.0	47	94.0
		1/ 2times	2	4.0	1	2.0
		Monthly	2	4.0	2	4.0
7.	Sedatives	Never	46	92.0	50	100.0
		1/2 times	3	6.0	-	-
		weekly	1	2.0	-	-
8.	Hallucinogen	Never	48	96.0	50	100.0
		1/2 times	2	4.0	-	-
9.	Opioids	Never	48	96.0	49	98.0
		1/2 times	1	2.0	1	2.0
		Monthly	1	2.0	-	-
10.	Others	Never	48	96.0	48	96.0
		Monthly	1	2.0	2	4.0
		weekly	1	2.0	-	-
11.	Injectables	No, Never	49	98.0	47	94.0
		Yes, in past 3months	-	-	1	2.0
		Yes, NOT in past 3 months	1	2.0	2	4.0

Table 4: Category wise risk profile of engineering students staying at hostel according to WHO-ASSIST score.

Sl. no.	Category of substance abused	ASSIST-WHO score risk category	Government engineering college		Private engineering college	
			N=50	% of total student population	N=50	% of total student population
1.	Tobacco products	Low	5	10	1.0	2.0
		Moderate	27	54.0	9	18.0
2.	Alcoholic beverages	Low	23	46.0	6	12.0
		Moderate	7	14.0	7	14.0
		High	3	6.0	-	-
3.	Cannabis	Low	7	14.0	-	-
		Moderate	12	24.0	7	14.0
		High	3	6.0	-	-
4.	Cocaine	Low	-	-	2	4.0
		Moderate	-	-	4	8.0
5.	Amphetamine	Low	1	2.0	1	2.0
		Moderate	2	4.0	-	-
6.	Inhalants	Low	3	6.0	-	-
		Moderate	1	2.0	3	6.0
7.	Sedatives	Low	2	4.0	-	-
		Moderate	3	6.0	1	-
8.	Hallucinogens	Low	1	2.0	-	-
		Moderate	1	2.0	-	-
9.	Opioids	Low	1	2.0	-	-
		Moderate	1	2.0	1	2.0
10.	Others	Low	1	2.0	2	4.0
		Moderate	1	2.0	-	-

But within, the government engineering college students significant relationship could only be established between monthly family income and ever use of tobacco products ($p=0.015$), age of the students and ever use of tobacco products ($p=0.018$); type of the family and frequency of alcohol abuse in past 3 months ($p=0.20$).

DISCUSSION

A professional course is meant for creating professionals, whose knowledge and conduct could be trusted at face value. Ethics and moral values are as important as intellectual brilliance.¹⁸

A Jaipur based study carried on engineering students found nearly, 23% of the students reported smoking of tobacco with 8.68% of the subjects were current smokers. About 34% and 20.48% reported sensible and binge level of alcohol drinking, respectively. Cannabis use by students was nearly 11.80% whereas 6.90% used inhalants. The percentage of students who used ecstasy, lysergic acid diethylamide, and cocaine were nearly 1% each. It also showed alcohol addiction progresses with passing academic years.¹⁹ Findings of this study was somewhat similar to that of the findings of the private engineering college in our study.

A study carried out by Community Medicine Department of Government Medical College Chandigarh found prevalence of substance abuse among engineering passed graduates to be as high as 52.0%. Age was found to be significantly associated with substance abuse.²⁰ Another study carried out among high school students in rural areas of West Bengal found high level (55.6%) of substance abuse among boys.²¹ One more study carried out among medical students in Kolkata based medical college found prevalence of substance abuse to be quite substantial- tobacco (57.38%), alcohol (27.25%), cannabis (10.38%), amphetamine (1.12%), Inhalable substance (0.75%), hallucinogen (0.38%), sedatives (3.75%) and opium (1.50%).²² These findings got some familiarity with the findings of the government engineering college.

The use of alcoholic drinks in moderate level by adults is considered as normal behavior in most of the countries.¹⁹ Males in Indian state of West Bengal particularly exhibit higher fondness for tobacco products. Tobacco use in any form was 52.3% among males according to the Global Adult Tobacco Survey (GATS) carried out in West Bengal on 2009-2010, which again seems to be quite high.²³ All these findings are that of male engineering students not specifically staying together and influencing each other's behaviour. Prevalence of substance use was found to be significantly more in the students who were

living away from their homes.¹¹ Early adulthood was a period of adjustments to new patterns of life and new social expectations especially when they enter into organization stage.²⁴ The concept of hostel is not only limited to place of residence, hostel is a human practical laboratory.¹² Kalyani is located around a distance of 52 Km away from the centre of Kolkata and is also near to the Bangladesh border. According to news reports, Kolkata, doubles up as a destination and transit point for cannabis consignments headed for the northern part of the country.²⁵ Qualitative research suggests that a shared route of administration (i.e. via inhalation) for the common forms of both tobacco and cannabis may contribute to their co-occurring use. That may partly explain higher rate of cannabis abuse.²⁶

In general, government run institutions and its hostels have less strict regulations. Many government institutions have become battlegrounds for political rivalry resulting in poor governance leading to poor quality of education as well.²⁷ Private ones need to maintain their discipline for the sake of a better image. This may be the reason for difference in addiction profile of these two groups of students, leaving aside their socio demographic characteristics, which in many cases didn't show much significant influence.

CONCLUSION

There has been considerable difference in the socio demographic, substance abuse and risk profile between the hostel dwelling students of government run engineering college and privately owned engineering college. Overall, substance abuse was found bit common among government engineering college students. This needs further probing. Timely intervention with involvement of the faculty members, peer educators and establishing support group as well as regular vigilant supervision could improve the prevailing situation.

Limitations

A mix method study could have been more engrossing.

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