Original Article

A study on substance abuse among medical students of a Medical College in Kolkata, West Bengal, India

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Substance abuse refers to the use of any psychoactive substance or drug, which poses a threat to the health, social and economic fabric of families, communities and nations. Substance abuse among health professionals is a serious problem which not only bring down their levels of professional standards but, can lead to horrifying picture for health care consumers. Medical students are very much vulnerable to substance or drug abuse because of many factors. Under these circumstances present study wasdone to study the prevalence and pattern of substance use, socio-demographic status, economic background, the psycho-social behaviour of youth and perceived reasons. A Cross sectional observational study was undertaken among medical students of a Medical College of Kolkata. The study instrument was a questionnaire which was developed by WHO. The result shows that tobacco is most commonly used for easy availability (100%), followed by alcohol (98%). The most common perceived reason was reduction in psychological stress (66.0%), while affordability, peer influence and reduction in tiredness were also among the common reasons. This analysis showed that substance use was common among male students, irrespective of their social demographic characters.

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Substance abuse refers to the use of any psychoactive substance or drug, including licit and illicit drugs, other than when medically indicated. Psychoactive substance use can lead to dependence syndrome - a cluster of behavioural, cognitive, and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences.

The Global status report on alcohol and health, 2014 presents a comprehensive perspective on the global, regional and country consumption of alcohol, patterns of drinking, health consequences[1]. The harmful use of alcohol results in 3.3 million deaths each year. Less than half the population (38.3%) actually drinks alcohol. At least 15.3 million persons have drug use disorder[2]. Injecting drug use reported in 148 countries, of which 120 report HIV infection among this population.

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In such a scenario, it was very prudent to know the socio-demographical factors associated with the substance abuse among the future healthcare personnel.Kolkata has more than 0.2 million students from across the country pursuing their courses in higher education. Among them a large fraction engaged in medical education comprising 5 govt. and 1 private medical college situated here. There is a very little information about pattern of drug dependence among the medical college students of Kolkata. Under these circumstances present study was undertaken to study the prevalence and pattern of substance use among medical students and to study the psycho-social behaviour of youth, socio-demographic characteristics and perceived reasons for using substances.

Material and Methods

A Cross sectional study was undertaken by random selection. It was a descriptive type of observational study, done in Calcutta Medical College, Kolkata from October 2014 to March 2015. Based on Previous prevalence of substance abuse sample size was calculated using the formula $4pq/l^2$. On the basis of a 60% prevalence which was anticipated on the basis of a pilot study which was done, 90% confidence coefficient and 10% permissible error–sample size came out to be 256. However, in this study all the students on roll in the college are proposed to cover ie, census coverage. It has been observed that 1000 students are on the roll. After repeated attempt to

cover absentee, 800 students were possible to cover.

The study instrument was a standard WHO questionnaire which is pretested and modified in regional context as necessary. Questioners contain description about 9 drugs/substances namely tobacco, alcohol, cannabis, amphetamine, hallucinogen, inhaled, tranquiliser, opium, sedative. Questioners thus collected were tabulated and analysis was done using appropriate statistical procedure.

Inclusion Exclusion Criteria :

The entire willing candidates from 1st semester to 9th semester of the medical college were taken in this study. Unwilling students, non responders, not filled up forms, incompletely filled questionnaires were excluded. Written informed consents were obtained from all the participants. All ethical clearance from appropriate authority was taken.

Results and Analysis

Prevalence of substance use is seen in 52.7% students who belonged to age group 19 to 21 years (Table 1).

Age was found to be significantly associated with substance abuse (p=0.01)(Table 2).

More prevalence of substance use was found among 2nd year students (76.2%) followed by the students from 3rd year part-I (62.5)(Table 3).

It was observed that substance use was comparatively more among students whose fathers had low literacy rates (Table 4).

More prevalence of substance use was found among students whose mothers were educated up to primary level (Table 5).

Among the users Tobacco was most commonly used (58.1%), followed by alcohol use (27.3%), cannabis (10.4%), sedative (3.75%)(Table 6).

Among the substances it is found that the tobacco is most commonly used (465) and age of first abusing more commonly during 17-18 years of age. Next commonly used substances are alcohol & cannabis and maximum usage took place also around the age of 17-18 years. Though the number of users for hallucinogen is less but it has very high incidence among the students of age group 17-18 years (Table 7).

Behavioural Pattern of Substance Users-Relief from psychological stress (66.0%), followed by curiosity and enjoyment reasons (Table 8).

Tobacco is most commonly used due to very easy availability (100%) followed by Alcohol (98%) (Table 9).

Affordability, peer influence is the common reasons for substance abuse. In spite of rapidly changing lifestyles, family permission did not come out to be the common reason which was in favour of increasing use tobacco & alcohol (Table 10).

Table 1 — *Dstribution of substance abuse according to age (N=Total number of students=800)*

Age in years	Substance abuse		Total No (%)	X^2=9.1 (P=0.01)
	Yes (%)	No (%)		
16 – 18	20	80	5.9	
19—21	60	40	52.7	
22—25	59.4	40.6	41.4	
Total	57.4	42.6	100	

Table 2 — *Distribution of Subsatnce Use and Non Use n Different Years*

Years	Substance use		Total
	Yes (%)	No (%)	
1st Year	78(39)	122(61)	200
2nd Year	152(76)	48(24)	200
3rd Year-I	125(62.5)	75(37.5)	200
3rd Year-II	104(52)	96(48)	200
Total	459(57.4)	341(42.6)	800

Table 3 — *Distribution of Substance User and Nonuser according to Father's Education*

Education Levels of father	Substance use		Total number (%)
	Yes (%)	No (%)	
No Formal Education	6(40)	9(60)	15(1.9)
Primary	10(77)	3(23)	13(1.6)
Secondary (High School)	54(53)	48(47)	102(12.8)
University	388(58)	281(42)	669(83.6)
Total	459(57.4)	341(42.6)	800(100)

Table 4 — *Distribution of Substance Users and Non Users by Mother's Education*

Education of Mother	Substance use		Total number (%)
	Yes (%)	No (%)	
No Formal Education	15(50)	15(50)	30(3.8)
Primary	38(86.4)	6(13.6)	44(5.5)
Secondary (High School)	88(59.9)	59(40.1)	147(18.4)
University	318(55)	261(45)	579(72.4)
Total	459(57.4)	341(42.6)	800(100)

Table 5 — *Prevalence Rate of Different Substances Used*

Frequency of Use of Drugs	No of Users	% of Respondants of Total Students(n=800)
Tobacco	465	58.1
Alcohol	218	27.3
Cannabis	83	10.4
Cocaine	0	0
Amphetamines	9	1.1
Hallucinogen	3	0.3
Inhaled	6	0.75
Tranquiliser	8	1
Sedative	30	3.75
Opium	12	1.5
Heroine	0	0
Other	0	0

Smoking is generally not disapproved among the students followed by alcohol, while smoking Marijuana both occasionally as well as regularly is strongly disapproved by and among majority (71.4%) & (78.5%) of the students.

Table 6 — *Age at First Use of Different Substances....*

Substances	Total users	<10 years		11-12 years		13-14 years		15-16 years		17-18 years		19 years & more	
		No	%	No	%	No	%	No	%	No	%	No	%
Tobacco	465	2	0.4	7	1.5	51	11	68	14.7	171	36.8	166	35.7
Alcohol	218	0	0	1	0.4	7	3.2	11	5	107	49.1	92	42.2
Cannabis	83	0	0	1	1.2	2	2.4	9	10.8	58	70	13	
Amphetamine	9	0	0	0	0	0	0	3	33.8	2	22.2	4	44.4
Hallucinogen	3	0	0	0	0	0	0	1	33.3	2	66.7	0	0
Inhaled	6	0	0	0	0	1	16.7	2	33.3	2	33.3	1	16.7
Tranquiliser	8	0	0	0	0	0	0	2	25	5	62.5	1	12.5
Opium	12	0	0	0	0	2	16.7	4	33.3	3	25	3	25
Sedative	30	0	0	0	0	1	3.3	3	10	11	36.7	15	50

Table 7 — *Percieved Reasons of Substanceuse*

Reasons	No	% (N= 459)
Relief of psychological stress	303	66
To be Social	92	20
To Be accepted by others	80	17.4
Religious Customs	31	6.8
Enjoyment	181	39.4
Enhancement of sex	119	25.9
Curiosity	180	39.2
Treatment of health disorder	75	16.3
Relief of cold, hunger	194	42.2

Table 8 — *Percieved Availability of Substances with Abuse Potential*

Pattern of Availability	cannabis	Amphetamines	Alcohol	Tobacco	Sedative
Probably impossible	0	0	0	0	0
Very difficult	154(19.3%)	65(8.1%)	0	0	43(5.4%)
Fairly difficult	102(12.8%)	709(88.6%)	0	0	71(8.9%)
Fairly easy	538(67.3%)	26(3.2%)	24(3%)	0	665(83.1%)
Very easy	6(0.7%)	0	776(98%)	800(100%)	21(2.7%)
Total	800	800	800	800	800

Table 9 — *Sourece of Introduction to Substance Use*

Source	No	% of Total Users (N=459)
Family	92	20
Casual Acquisition	138	30
Friends	193	42
Drug Pushers	2	0.4
Doctor	28	6.1
Other Health Practitioners	0	0
Pharmacists/Druggists	0	0
Don't Know/Others	6	1.3

Table 10 — *Attitude towards Substance Abuse*

Pattern of Substance Abuse	Don't Disapprove		Disapprove		Strongly Disapprove		Total
	No	%	No	%	No	%	
Smoking (20/ more Cigarette per day)	393	49.1	134	16.8	273	34.1	800
Trying Marijuana/Cannabis	97	12.1	170	21.3	533	66.6	800
Smoking Marijuana occasionally	88	11	141	17.6	571	71.4	800
Smoking Marijuana regularly	59	7.4	113	14.1	628	78.5	800
Alcohol	312	39	271	33.9	217	27.1	800

Discussion

Substance use and dependence continue to be a major threat to public health in India. Present study was an attempt to assess the problem of substance use among college going students, along with its related factors. Alcohol and tobacco were the most common substances which were used, which is corroborative with the most of the studies all over the world[3]. Most of the users used substances in company of their friends and were aware about the ill effects of substance use[4].

The prevalence of smoking was found to be high. The rates of nicotine use have been increasing progressively among students, as has been shown by various studies which were done in the west, which indicate that powerful preventative nature of public health programmes needed to introduce[5].

Prevalence of cannabis usage in current study was (10.4%) which was relatively higher, than 3% which was reported among current male users in an Indian general population survey[6].

Maximum usage of substance (52.7%) was observed in the age group of 19-21 years.

A large number of studies have been done on medical students and they have shown high prevalence rates of substance use among them. We observed that 2nd Year students had maximum prevalence of substance abuse (76%) than other years which is an unusual occurring. It may be due to lesser study pressure relatively and long time schedule in this 2nd year.

It was also observed that substance usage was prevalent among all year students, irrespective of religion, literacy and occupation of parents and other social characteristics. Socio-economic status was also not found to be significantly associated with substance use. This fact may be understood in view of perceived reasons of substance use.

In an individual user, personalized reasons for preferring a particular substance for use is likely to be a more compelling source of information. A perceived relief from psychological stress (66%), easy availability (100%) and peer pressure (42%) came out to be the most common reasons for the use of these substances[7]. This showed that increasing tension in life and adopting changing life styles under peer pressure

compelled young students to search for solutions for reducing psychological stress. Also, easy availability and social acceptability of smoking & drinking to some extent gave them an option whether right or wrong. Use of substances like cannabis, alprazolam, anabolic steroids, and diazepam was also reported in the studied group. Chewing habits are not found to be so common among college students in kolkata. Use of desi liquor was not so common among male college students and whisky, rum, beer were some common brands which were used. Among smokers, bidi was not commonly used.

Connection between substance users and their parent's education status showed the changing life styles of civilized community in Kolkata[8]. A majority of students were motivated to use substances by their friends. A majority of abusers had used these substances were than 10 years from their childhood.

Reasons of drinking to be more popular among substances abused were investigated further in detail in the present study. Reducing psychological stress, easy availability, affordability and a perceived enhancement in sexual activity were among the common perceived reasons which were in favour of alcohol use[9].

Male college students, being young adults, are inherently at a risk of recreational substance use and the stress which is associated with present day education is likely to be a predisposing and a perpetuating factor for addictive behaviour[10]. This study investigated the extent of the problem, the type and nature of the substances which were used and the perceived reasons for the substance use. However, the medical complications, treatment, seeking behaviour and effect of treatment interventions could not be studied. This aspect needs to be taken care of in the future studies.

Conclusion

Tobacco is most commonly used due to very easy availability (100%), followed by alcohol (98%).

The most common perceived reason in favour of consuming tobacco and alcohol was reduction in psychological stress (66.0%), while Affordability, peer influence and reduction in tiredness were also among the common reasons.

In spite of rapidly changing lifestyles, family permission did not come out to be the common reason which was in favour of increasing use tobacco & alcohol.

This analysis showed that substance use was common among college going male students, irrespective of their social demographic characteristics like age, religion, parental education, occupation and socio-economic status.

Therefore,interventions in terms of health education/ counselling for reducing substance use among them should be adopted, irrespective of their socio-demographic characteristics. It can be done through inclusion of this topic in school education curriculum and strengthening adolescent health initiatives.

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