Original Research Article

Correlates of substance misuse among college-going male students in Chandigarh

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ABSTRACT

Background: The World Health Organization (WHO) defines substance misuse as "consistent or occasional use of a drug inconsistent with or unrelated to acceptable medical practice". The implementation of evidence-based policies, rules, and interventions targeted at preventing substance abuse and promoting healthier campus settings can result from an understanding of the specific issues associated with substance mis-use among children, particularly college students.
Methods: A cross-sectional study was conducted among 256 college students in Chandigarh, selected through stratified multi-stage random sampling. A self-administered, semi-structured, and validated questionnaire was used for collecting data. The data was analyzed using SPSS-26.0.
Results: Out of 256 respondents, 157 (61.3%) reported not using any substance. The prevalence of substance use among them was found 38.7%. Among substance users, smoking was the most commonly used (82.8%) followed by drinking (75.7%) and chewing (26.2%). Inhaling was also emerging as substance misuse (4.0%). Prevalence rates among different disciplines varied significantly, law students (100.0%) followed by arts (40.0%), commerce (36.4%), medical (34.9%), and engineering (32.3%). Students irrespective of socio-demographic factors were at equal risk of substance misuse based on the logistic regression.
Conclusions: Based on the study's findings in demographics, it was determined that age, discipline, mother's educational level, and current living situation have a significant association with substance misuse.

Keywords: Adverse effects, College students, Substance misuse

INTRODUCTION

Substance misuse can be defined as the use of any psychoactive substance or drug that is not medically suggested including both licit and illicit drugs. The use of psychoactive substances endangers the health of families, communities, and nations, as well as the social and economic fabric of those communities and nations. Drug addiction is on the rise all across the world, especially in India, potentially as a result of newer and more stress connected with rapid lifestyle changes. Drug addiction is an issue that is getting worse, and its effects are expensive for the community and constitute a serious health concern. Policymakers and healthcare experts in the majority of countries are very concerned about behavioral and medical issues associated to alcohol and drugs. Both the general public and experts in mental health have become more aware of this problem in recent years.[1,2] The World Health Organization (WHO) defines substance misuse as "consistent or occasional use of a drug inconsistent with or unrelated to acceptable medical practice". Substance misuse is a broad term that refers to the use of harmful or hazardous psychoactive substances such as alcohol, tobacco, and other illicit drugs such as opiates, heroin, amphetamines, cannabis, and others.[3] The crucial time when the initial steps toward substance usage

are taken is adolescence. Due to increasing academic pressure, students are particularly interested among young people. Teenagers are easy target because of peer pressure, the allure of fame, and the accessibility of numerous substances like alcohol, tobacco (cigarettes and gutkha), and other drugs. About 5500 children and teenagers in India begin smoking tobacco products every day, some as young as 10 years old. Most smokers started using tobacco before they became 18 years old. Drug misuse is more common in children and adolescents than in the general population. This is significant because youth is a period of experimentation and identity formation. Drug misuse among youth in developed countries is generally associated with specific youth subcultures and lifestyles.[4,5] The most obvious effects of drugs misuse-which are manifested in the individuals who misuse drugs-include ill health, sickness and ultimately, death. Particularly devastating to a misuser's health is the contraction of needle-borne illnesses including hepatitis and HIV/AIDS through injection drug use, People with addiction often have one or more associated health issues, which could include lung or heart disease, stroke, cancer, or mental health conditions. Increased strain on the liver, which puts the person at risk of significant liver damage or liver failure, seizures, stroke, mental confusion, and brain damage, lung disease, problems with memory.[6] Some factors of substance misuse are family history of addiction. Drug addiction is more common in some families and likely involves an increased risk based on genes, mental health disorder, peer pressure, lack of parental supervision, and traumatic experiences.[7] Data about Chandigarh college students' drug use can have an impact on governmental and institutional policy development. Evidence-based policies, rules, and interventions aimed at reducing substance abuse and creating healthier campus environments can be put into place by taking into account the particular difficulties and requirements of this demographic.

Therefore, the present study was conducted with the objectives to determine the prevalence and pattern of substance misuse among college students of Chandigarh, to investigate perceived reasons and factors associated with substance use, and to explore the adverse effects of substance misuse reported by the students.

METHODS

Study type

A cross-sectional study was conducted from February 2023 to June 2023 among university and college students of Chandigarh India.

Study population

All undergraduate and postgraduate students who studied in different colleges located in Chandigarh during the study period of February 2023 to June 2023. Chandigarh is a city and a union territory in India. It serves as the capital for two states, Punjab and Haryana, but it is administered directly by the central government of India. It is one of the planned cities in the country and is known for its well-organized layout and modern architecture. Chandigarh is known for its educational institutions. It houses Punjab University, the Post Graduate Institute of Medical Education and Research (PGIMER), and several other prestigious colleges and schools.

Sampling technique

A stratified multi-stage random sample design was adopted in the proposed study. Strata were formed on the basis of the type of college professional (medical, engineering) and non-professional courses. Within each stratum, a sample of respondents was interviewed with proportional allocation.

Sample size

On the basis of a 25.9% anticipated prevalence among college students as in Punjab reported in a study conducted in Amritsar, with a 90% confidence coefficient and 5% permissible error-the sample size came out to be 196, using the following formula:

$$n_{opt} = \frac{Z_{1-\alpha/2}^2 (1-p)}{\epsilon^2 \, P}$$

Where, P = anticipated population proportion, 1 - α = confidence coefficient, ϵ = relative precision, and Z (.) is the value of standard normal variate. Accordingly, 256 male college-going students from different colleges were interviewed using an interview schedule.

Inclusion criteria

Unmarried individuals attending various colleges/universities who were willing to participate in the study and capable of giving answers themselves or through any close respondent were included.

Exclusion criteria

All the married individuals, not attending college/ university, suffering from any major physical/mental disorder and without a reliable respondent, ones who were not willing to participate in the study were excluded.

A self-administered, structured, and validated questionnaire was used for collecting data on substance misuse among the students.

Ethical consideration

Before the study began, each participant was asked for their informed consent. All the information regarding the goals and objectives of the study was provided in the form as well.

Information to be collected

Information regarding socio-demographic characteristics like age, educational status, religion, caste, occupation, and education of parents, family background, social background, peer behavior, substance misuse, duration of use, family history of substance misuse, perceived reason, harmful effects of substance misuse, data was collected by the interview method using a semi-structured interview schedule.

Statistical analysis

Descriptive and analytical statistics were applied. Categorical variables were expressed as proportion and percentage. The chi-square test was used to find an association between sleep disturbance and various factors. Data analysis was carried out by using SPSS version 27.0.

RESULTS

This research was carried out on a sample of 256 college-going male students in Chandigarh. The primary aim of this study was to investigate the prevalence, pattern, perceived reason, adverse effects of substance misuse among the students, and factors associated with substance use. Out of 256 respondents, 61.3% (n=157) reported not using any students. While 38.7% (n=99) reported using the substance.

Table 1: Substance misuse by socio-demographic characteristics.

Age in years	Substance misuse		Total
	Yes, N (%)	No, N (%)	N (%)
18-20	16 (40.0)	24 (60.0)	40 (15.6)
21-23	47 (38.8)	74 (61.2)	121 (47.2)
24-26	21 (28.8)	52 (71.2)	73 (28.5)
Above 27	15 (68.2)	7 (31.8)	22 (8.5)
Total	99 (38.7)	157 (61.3)	256 (100.0)
χ^2=11.129, p=0.011			
Discipline			
Medical	29 (34.9)	54 (65.1)	83 (32.4)
Arts	2 (40.0)	3 (60.0)	5 (1.9)
Commerce	8 (36.4)	14 (63.6)	22 (8.5)
Engineering	41 (32.3)	86 (67.7)	127 (49.6)
Law	19 (100.0)	0 (0.0)	19 (7.4)
Total	99 (38.7)	157 (61.3)	256 (100.0)
χ^2=32.857, p<0.001			
Father education level			
Middle school	8 (25.0)	24 (75.0)	32 (12.5)
High school	21 (44.7)	26 (55.3)	47 (18.3)
Associate diploma	25 (47.2)	28 (52.8)	53 (20.7)
Bachelor's degree	27 (33.3)	54 (66.7)	81 (31.6)
Master's degree and higher	17 (41.5)	24 (58.5)	43 (16.7)
Illiterate	1 (50.0)	1 (50.0)	2 (0.78)
Total	99 (38.7)	157 (61.3)	256 (100.0)
χ^2=6.068, p=0.30			
Mother educational level			
Middle school	19 (41.3)	27 (58.7)	32 (12.5)
High school	25 (39.7)	38 (60.3)	47 (18.3)
Associate diploma	18 (62.1)	11 (37.9)	53 (20.7)
Bachelor's degree	28 (43.8)	36 (56.3)	81 (31.6)
Master's degree and higher	2 (6.1)	31 (93.9)	43 (16.7)
Illiterate	7 (33.3)	14 (66.7)	21 (8.2)
Total	99 (38.7)	157 (61.3)	256 (100.0)
χ^2=22.601, p<0.01			
Currently living			
Home	6 (17.1)	29 (82.9)	35 (13.6)
Rented flat	18 (34.0)	35 (66.0)	53 (20.7)
PG	9 (15.3)	50 (84.7)	59 (23.0)
Hostel	66 (60.6)	43 (39.4)	109 (42.5)
Total	99 (38.7)	157 (61.3)	256 (100.0)
χ^2=42.977, p<0.001			

Among the 256 participants, a high prevalence of substance misuse was observed in 47.2% of students who were in the age group of 21-23 years. Age was determined to have a significant association with substance misuse (p=0.011), as indicated in (Table 1). The prevalence of substance misuse was higher among law students (100.0%) compared to students from other streams, including arts (40.0%), commerce (36.4%), medical (34.9%), and engineering (32.3%). Discipline was determined to have a significant as-sociation with substance misuse (p-0.01) (Table 1). Additionally, it was noted that substance misuse was more common among students whose fathers had lower levels of literacy. Prevalence of substance misuse was found among students whose mothers were educated up to an Associate diploma and mother education was found to be significantly associated with substance misuse (p<0.01). The prevalence of substance misuse was higher among hostlers 60.6% com-pared to, rented flats 34.0%, homes 17.1%, and PG 15.3%. Currently living was determined to have a significant association with substance misuse (p<0.001).

Table 2: Prevalence rate of different substances misused.

Type of substance misuse	N (%) (n=99)
Smoking	82 (82.8)
Bidi	22 (22.2)
Cigarette	75 (75.7)
Tobacco/hukkah	26 (26.2)
Drinking	75 (75.7)
Beer	72 (72.7)
Rum	10 (10.1)
Whiskey	48 (48.4)
Brandi	33 (33.3)
Desi	15 (15.1)
Scotch	6 (6.0)
Wine	1 (1.0)
Vodka	6 (6.0)
Tequila	2 (2.0)
Chewing	26 (26.2)
Pan/Betel	5 (5.0)
Gutkha/pan-masala	18 (18.1)
Khaini	17 (17.1)
Bhang	9 (9.0)
Other substances	
Cocaine	4 (4.0)
Heroin	4 (4.0)
Hashish	5 (5.0)
Sulfa	4 (4.0)
Opium	5 (5.0)
Cannabis	26 (26.2)
Familial addiction	**No. (%) (N=256)**
Father only	45 (17.6)
Mother only	5 (2)
Both	4 (1.6)
None	228 (89.1)

Table 3: Pattern of use of different substances.

Parameters	N (n=99)
Pattern	
Alone	67 (67.6)
With friend	96 (96.9)
Relatives	43 (43.4)
Family member's	5 (5.0)
Drug dealer	1 (1.0)
Source to manage	
Pocket money	95 (95.9)
Friend (peer group)	95 (95.9)
Self earns	5 (5.0)
Source of substance	
Local grocery shop	76 (76.7)
Unknown dealer/known local	26 (26.2)
Friends	81 (81.8)
Driver	1 (1.0)
Barber	1 (1.0)
Canteen, Mess Worker	7 (7.0)
Liquor shop	53 (53.5)
Hookah bar	1 (1.0)
Peddler	1 (1.0)
Ever tried to stop	
Yes	60 (60.7)
No	39 (39.3)
Stopped	
Yes	8 (8.1)
No	91 (91.9)
Stopped for	
1 week	14 (14.1)
Days	27 (27.2)
Month	8 (8.1)
Permanent	8 (8.1)
Could not stop	42 (42.5)
Perceived Reason	
Teenager's curiosity	42 (42.4)
Joy seeking	59 (59.5)
During Anxiety	3 (3.0)
Lack of knowledge about complications of drugs	7 (7.0)
Positive attitude towards drugs	11 (11.1)
Increase self-confidence	99 (100.0)
To eliminate shyness	6 (6.0)
Presence of an addicted person in the family, friend offers, family disputes access to drugs	16 (16.1)
The presence of an addicted person in a residential/educational place	61 (61.6)
Feel relief	70 (70.7)
Peer influence	80 (80.8)
Experimental use	18 (81.8)
Enjoyment	6 (6.0)

In Table 2, among the users, smoking was the most common (82.8%), followed by drinking (75.7%),

chewing (26.2%), and the highest prevalence of usage among users was for cigarettes (45.7%), beer (72.7%), and gutkha/Pan-masala (18.1%). Other substances, such as cocaine (4.0%), heroin (4.0%), hashish (5.0%), sulfa (4.0%), opium (5.0%), and cannabis (26.2%), were also reported (Table 2). Among the users, (17.6%) had fathers who used some substance, (2%) had mothers who used some substance, while (1.6%) had both fathers and mothers who used substances, while 89.1% reported no usage of any substance by any member in the family.

The Table 3 provides insights into substance use patterns among respondents. The majority of respondents reported sourcing substances from their pocket money or peer groups, with 95.9% each. In terms of the source of the substance, the local grocery shop was the most common, chosen by 76.7% of participants, followed by friends at 81.8%. When asked if they ever tried to stop, the majority (60.7%) indicated they had. However, only a small fraction (8.1%) success-fully stopped, primarily for one week or longer. The most prevalent perceived reasons for sub-stance use included seeking increased self-confidence (100%), influence from peers (80.8%), and curiosity (59.5%). Overall, the majority of respondents showed a trend towards social and psychological factors influencing substance use.

Out of the 256 participants, it was observed that 94.9% of the participants had an awareness of the ill effects of substances. Among the 256 students, the majority of participants reported 71.1% for cancer, 62.9% for cirrhosis, while a few participants reported 12.5% for HIV/AIDS caused by substance consumption. Among the 99 users, the majority of participants reported 88.9% for

cancer, 78.8% for cirrhosis, while a few participants reported 17.1% caused by sub-stance consumption (Table 4).

Table 4: Awareness of side effects of using different substances.

Awareness of ill effects	Among all, N (%) (n=256)	Among users, N % (n=99)
Cirrhosis	161 (62.9)	78 (78.8)
Hypertension	116 (45.3)	65 (65.7)
Recurrent chest infection	66 (25.8)	31 (31.3)
Asthma	16 (6.3)	10 (10.1)
Cancer	182 (71.1)	88 (88.9)
HIV/AIDS	32 (12.5)	17 (17.1)
Aware of any side effect	243 (94.9)	82 (82.8)

Table 5 represents, age group: the odds ratio for the age group was 0.542, with a 95% confidence interval ranging from 0.646 to 2.299, The confidence interval included one and hence the risk of substance misuse with age was not significantly changed. In other words, substance misuse was not significantly related to different age groups, and youths of different age groups were at equal risk. Similarly for other potential risk factors like education family discipline of aca-demic studies, and background size were not found significant risk factors contributing the risk of substance misuse. Students irrespective of socio-demographic factors were at equal risk of substance misuse based on the logistic regression in the present study.

Table 5: Socio-demographic risk factors of substance misuse.

Logistic analysis of risk factors of substance misuse						95% CI for exp(B)	
	B	S. E	Wald	Sig.	Exp(B)	Lower	Upper
Age group	0.197	0.324	0.371	0.542	1.218	0.646	2.299
Education	-0.178	0.327	0.296	0.587	0.837	0.440	1.590
Family Size	-0.550	0.265	4.299	0.038	0.577	0.343	0.970
Discipline	-0.246	0.287	0.734	0.391	0.782	0.446	1.372
Background	-0.054	0.274	0.039	0.843	0.947	0.553	1.622
Constant	-0.068	0.306	0.049	0.825	0.935		

DISCUSSION

The overall prevalence of all types of substance misuse in the present study was 38.7% which is higher as compared to the study carried out by Kokiwar et al and the study carried out by Juyal et al reported the overall prevalence of substance misusers was 58.7%, the study carried out by Jagnany et al reported the overall prevalence of substance misuse was 14.5% with sample size 2566 and 20.43%

overall prevalence of substance misuse in study carried out by Arora.[12-15]

The current study showed that the prevalence rate of smoking among substance misusers was 82.8% which is higher than the study carried out on a 256-sample size by Gupta et al which the prevalence rate of smoking was 27.3%.[4]

The current study shows that the prevalence rate of pan-masala/gutkha/betel was 23.1% and for Khaini was 17.1% which is higher than the study carried out by Gupta et al in which the prevalence rate of pan-masala/gutkha/betel was 3.5% and for khaini was 1.9%.[4]

The current study shows that the prevalence rate of substance misuse by hostellers was 60.6% out of 109 participants who currently live in a hostel which is low as compared to a study carried out by Kumari et al with a prevalence rate of substance abuser by hostellers was 21.8% out of 214 participants who currently live in a hostel.[7] But prevalence rate may be different in the current study if the hosteller was more in the data collection.

Our current study shows that out of 256 participants, 99 participants use or misuse substances, the prevalence rate of alcohol consumption was 75.7%, the prevalence rate of cigarette/bidi was 97.9%, but as compared to a study carried out by Raphael et al the prevalence rate of alcohol was 27.4%, the prevalence rate of cigarette/bidi was 16.2%, and study carried out by Gupta et al reported the prevalence rate of cigarettes was 24.2% and Bidi 2.7%.[4,8]

The current study showed that the prevalence rate of teenage curiosity for substance misuse was 42.4% and the prevalence rate of peer influence was 80.8%, which is higher as compare to study carried out by Haldar et al with a sample size of 452, which reported a prevalence rate of teenage curiosity for substance misuse was 15.65%, and prevalence rate of peer influence for substance misuse is 3.5%.[9] The difference in prevalence rates may be attributed to the larger sample size, and study carried out by Chatterjee et al had reported prevalence rate of teenage curiosity for substance misuse was 44.92%.[11]

According to a current study, the prevalence rate of alcohol was 75.7% which was higher as compared to the study was carried out by Jagnany et al with a prevalence rate was 41.5% with a sample size of 2566 and a study carried out by Sharma et al which a prevalence rate was 72.7% with a sample size of 1000.[10,14]

According to the current study, the prevalence rate of Tobacco was 26.2% which was low as compared to the study was carried out by Jagnany et al with a prevalence rate was 39% in a sample size of 266 and a study carried out by Sharma et al with a prevalence rate was 52.1%.[10,14]

A study of 266 undergraduate students was carried out by Jagnany et al show prevalence rate of cannabis was 28.5%, and Heroin 1.8%, which was higher than the current study which the prevalence rate was heroin 4.0%, and cannabis 7.3% but the prevalence rate of cocaine was higher 4.0% than study carried out by Jagnany et al.[14]

The study has a few limitations also. The study was unable to include a sizable sample of college-bound students due to timing restrictions. Some individuals declined to participate fully and provided only partial responses to the questionnaire, as the data collection was conducted during the exam period and they were preoccupied with the studies. Several participants hesitated to reveal their overall monthly family income.

CONCLUSION

Based on the study's findings in demographics, it was determined that age, discipline, mother's educational level, and current living situation have a significant association with substance mis-use. At the individual level, recommendations to address substance misuse among students include providing accurate information about the risks, promoting peer education for responsible decision-making, offering accessible counselling and support services, and implementing evidence-based prevention programs that enhance life skills and resilience. At the community level, promoting awareness about substance use involves engaging parents and guardians, reinforcing campus policies, collaborating with external resources, and conducting regular check-ins. Parents should be involved in open discussions with their children, while campus policies should be communicated clearly. Local organizations and treatment centers can provide additional support, and regular assessments help improve awareness efforts. In Chandigarh, the ad-ministration has enforced smoking bans in various public places to protect public health and discourage smoking.

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