

Original Research Article

Prevalence and pattern of substance abuse among male adolescents in urban and rural areas of Dehradun

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ABSTRACT

Background: Substance abuse is a serious problem because it is engulfing the younger generation with serious health, social and economic concern. This study was conducted to determine the prevalence of substance abuse among male adolescents and study the habit pattern of substance abusers.

Methods: A cross sectional study was conducted among 776 male adolescents residing in urban and rural field practice areas under the department of Community Medicine, through randomly selected house to house visit. Data regarding the current use of alcohol and tobacco was collected in a predesigned and pretested proforma by oral questionnaire method.

Results: The prevalence of substance abuse among male adolescents was found to be 22.8% and majority of them used some form of smokeless tobacco, followed by smoking tobacco. Consumption of alcohol or tobacco by adolescents is significantly associated with alcohol or tobacco consumption by their family members.

Conclusions: Prevalence of substance abuse was high among the male adolescents and they should be motivated through IEC to give up the habit.

Keywords: Adolescents, Alcohol, Substance abuse, Smoking tobacco, Smokeless tobacco

INTRODUCTION

The epidemic of substance abuse in young generation has assumed alarming dimensions in India. Changing cultural values, increasing economic status and dwindling supportive bonds are leading to initiation into substance abuse. Though there is much variation in different parts of India, data indicates that there are about 3 million people indulging in substance abuse in India and 190 million people worldwide.¹

Joint family, parental abuse status, working status, illiteracy and school dropout are some of the risk factors which are related to substance abuse.² The effect of substance abuse is manifold, typically harming physically, mentally, socially as well as economically. Such addicted individuals are ostracized by the society leading them to have low self-esteem.³

This study was conducted with the aims and objectives such as to determine the prevalence of substance abuse

among male adolescents and to study the habit pattern of substance abusers.

METHODS

A community based cross sectional study was conducted among males aged 10-19 years residing in urban and rural field practice areas under the department of Community Medicine, SGRRIM and HS, Dehradun from December 2012 to November 2013.

Sample size calculation

With reference to review of literature related to this study the prevalence of substance abuse among male adolescents varied. (13.3% to 63.54%). So, a pilot study was conducted among 100 male adolescents (50 each in urban and rural) to find the prevalence of substance abuse, which was found to be 34 % on the basis of which sample size was calculated according to the formula $N=4pq/l^2$, where p=prevalence, q=1-p, l=allowable error. With sampling error of 10% and 95% confidence limit, $N=4 \times 34 \times (100-34)/10\%$ of 34=776 (approx).

Ethical approval

It was obtained from Institutional ethical committee, SGRRIMHS, Dehradun.

Sampling technique

The entire population of approximately 12,000 of UHTC, Bombay Bagh is divided into 13 areas and the entire population of approximately 13,000 of RHTC, Mothrowala is divided into 16 villages. In order to divide the sample size (n=776) into the study group in UHTC and RHTC,

776 were equally divided into two, that is, 388 subjects were studied in UHTC and 388 subjects in RHTC respectively. In order to cover the desired sample size, the study was conducted through randomly selected house to house visit after obtaining verbal consent from their parents. Data was collected in a predesigned and pretested proforma by oral questionnaire method which

consisted of socio demographic profile and details of substance abuse. Data regarding the current use of alcohol and tobacco (smoking and smokeless tobacco) was collected.

Inclusion criteria

All male adolescents who gave consent to participate in the study were enrolled.

Exclusion criteria

Male adolescents who were seriously ill and who did not give consent to participate in the study.

Working definitions

Respondents who were currently using tobacco (smoking and smokeless tobacco) or alcohol, and used them regularly for at least last one month, were defined as substance users. The substance users were further classified as- occasional users (those who had used any substance occasionally) and regular users (used any substance daily even for a short period)

Data processing

The data obtained was compiled, tabulated, analyzed and statistically evaluated using percentage and chi square test.

RESULTS

In both urban and rural, majority of the adolescents belonged to Hindu religion (60.8% and 80.4%) and nuclear family (87.6% and 86.9%). In both urban and rural most of the adolescents (59.5% and 36.1%) belonged to upper lower socioeconomic class and majority of them (70.6% and 92.8%) were students (Table 1).

Table 1: Socio-demographic characteristics of the adolescents.

Characteristics	Area		Total
	Urban (n=388)	Rural (n=388)	(n=776)
	N (%)	N (%)	N (%)
Religion			
Hindu	236 (60.8)	312 (80.4)	548 (70.6)
Muslim	147 (37.9)	72 (18.6)	219 (28.2)
Sikh	5 (1.3)	2 (0.5)	7 (0.9)
Christian	0 (0.0)	2 (0.5)	2 (0.3)
Type of family			
Nuclear	340 (87.6)	337 (86.9)	677 (87.2)
Joint	48 (12.4)	51 (13.1)	99 (12.8)

Continued.

Characteristics	Area		Total
	Urban (n=388)	Rural (n=388)	
	N (%)	N (%)	
Social class			
Upper middle	8 (2.1)	60 (15.5)	68 (8.8)
Lower middle	93 (24)	74 (19.1)	167 (21.5)
Upper lower	231 (59.5)	140 (36.1)	371 (47.8)
Lower	56 (14.4)	114 (29.3)	170 (21.9)
Occupation			
Student	274 (70.6)	360 (92.8)	634 (81.7)
Labour	31 (8)	5 (1.3)	36 (4.6)
Business	1 (0.3)	3 (0.8)	4 (0.5)
Agriculture	1 (0.3)	0 (0)	1 (0.1)
Service	51 (13.1)	12 (3.1)	63 (8.1)
Unemployed	18 (4.6)	6 (1.5)	24 (3.1)
Others	12 (3.1)	2 (0.5)	14 (1.8)

Table 2: Prevalence of substance abuse among the adolescents according to area.

Area	Addicted to substance		Total
	Yes	No	
	N (%)	No (%)	
Urban	141 (36.3)	247 (63.7)	388 (100.0)
Rural	36 (9.3)	352 (90.7)	388 (100.0)
Total	177 (22.8)	599 (77.2)	776 (100.0)

Table 3: Area-wise distribution of adolescents according to different substances they use.

Type of substance abuse	Area		Total (n=177)
	Urban (n=141)	Rural (n=36)	
	N (%)	N (%)	
Alcohol	18 (12.8)	6(16.7)	24* (13.6)
Smoking tobacco	75 (53.2)	13(36.1)	88* (49.7)
Smokeless tobacco	109 (77.3)	29(80.6)	138* (78)

*multiple responses.

Table 4: Distribution of adolescents area wise according to frequency of consumption of different substances

Substance	Frequency of use					
	Daily		Weekly		Occasionally	
	Urban	Rural	Urban	Rural	Urban	Rural
	N (%)	N (%)	N (%)	No (%)	No (%)	No (%)
Alcohol (n=24*)	0 (0.0)	0 (0.0)	15 (62.5)	6 (25.0)	3 (12.5)	0 (0.0)
Smoking tobacco (n=88*)	73 (82.9)	13 (14.8)	2 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)
Smokeless tobacco (n=138*)	109 (78.9)	29 (21.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

*Multiple responses.

Table 5: Impact on adolescent if any family member is consuming substance.

Adolescent addicted to substance	Family member consuming substance		Total
	Yes	No	
	N (%)	N (%)	
Yes	78 (44.0)	99 (56.0)	177 (100.0)
No	224 (37.4)	375 (62.6)	599 (100.0)
Total	302 (38.9)	474 (61.1)	776 (100.0)

 $\chi^2=71.577$; $df=1$; p value <0.0001 .

The overall prevalence of substance abuse among adolescents was found to be 22.8% (36.3% and 9.3%) in urban and rural respectively (Table 2).

In both urban and rural majority of the adolescents (77.3% and 80.6%) used some form of smokeless tobacco, followed by smoking tobacco (53.2% and 36.1%) (Table 3).

In urban it was found that most (62.5%) of the adolescents consume alcohol weekly and only (12.5%) consume alcohol occasionally, whereas in rural 25.0% of the adolescents consume weekly. In both urban and rural (82.9% and 14.8%) of the adolescents smoke tobacco daily whereas only 2.3% of the adolescents in urban who smoke weekly. In both urban and rural (78.9% and 21.0%) of the adolescents who use some form of smokeless tobacco are daily users (Table 4).

44.0% of the family members of the adolescents, who consume substance, also consume substance against 37.4% of the family members of those who do not consume any kind of substance.

Substance abuse among adolescents was significantly associated with consumption of substance among the family members ($p < 0.05$) (Table 5).

DISCUSSION

In our study the prevalence of substance abuse was 22.8% and adolescents from urban (36.3%) were more addicted compared to rural (9.3%). Findings of our study differed from those as observed by Tsering et al in 2003-2004 in eastern India in which prevalence of current users in urban area was 33.33% and 50% in rural area.⁴ Comparable if not similar (13.3%) was reported by Ahmad et al in 2002-2003 in Aligarh, Uttar Pradesh and (63.54%) as reported by Naik et al in 2003-2004 in Mumbai.^{5,6} Further another study by Sarangi et al in 2004-2005 in urban slums of Sambalpur revealed that the prevalence of substance abuse was 49.5% as also observed by Kokiwar et al in 2010 in an urban slum of Karimnagar district, Andhra Pradesh where the overall prevalence was 32.7%.^{2,7}

In our study, the prevalence of current users of alcohol was found to be 13.6%. The reason for the high prevalence could be due to the fact that alcohol consumption was more among the late adolescents who were independent. This is contrary to the findings reported by Deswal et al in 2002-2003 in remote hills of Arunachal Pradesh who reported that the prevalence of regular users of alcohol among male adolescents was 4.82% as also reported by Saxena et al in 2009 in Doiwala block, Dehradun who found that 8.7% of adolescents were taking alcohol.^{8,9}

In our study, the prevalence of current use of smoking tobacco was found to be 49.7% and smokeless tobacco

was found to be 78.0%. Ahmad et al in 2002-2003 in Aligarh, Uttar Pradesh also corroborated similar findings (71.1%) of current users of smokeless tobacco.⁵

In another study done in Goa in 2004 Padnekar et al among school children reported that the prevalence of current tobacco use (smoking) was 3.5% which is contrary to the findings of our study as also observed by Mohan et al in 2005 in Kerala who found that the prevalence of current tobacco users was 11.3%.^{10,11} Analogous study by Siziya et al in 2006 in East Timor Leste, reported that the prevalence of current cigarette smoking was 59.0%.¹²

In urban it was found that most (62.5%) of the adolescents consume alcohol weekly and only (12.5%) consume alcohol only on occasions whereas in rural 25.0% of the adolescents reported consuming alcohol weekly.

In both urban and rural 82.9% and 14.8% of the adolescents who smoke daily whereas only 2.3% of the adolescents in urban who smoke do so weekly.

In both urban and rural 78.9% and 21.0% of the adolescents who use some form of smokeless tobacco were daily users. Analogous study by Muttappallymyalil et al in 2010 among school children in Kannur district, Kerala reported that 84.6% smokeless tobacco users were using it 2-3 times a week.¹³ Further another study by Shenoy et al in 2009 among rural school children of 13-15 years found that 32.8% boys used tobacco once daily and 4.7% boys used tobacco five or more times daily.¹⁴

In our study it was found that consumption of alcohol or tobacco by adolescents is significantly associated with alcohol or tobacco consumption by their family members. Ahmad et al in 2002-2003 in Aligarh, Uttar Pradesh also found that 22.2% of the adolescents who were addicted were influenced by their parents.⁵

CONCLUSION

The present study has brought out a high prevalence of substance abuse among the male adolescents and the influence of socio-cultural environment on it.

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REFERENCES

1. Drug abuse in India, 2010. Available at: <http://www.azadindia.org>. Accessed on 25 July 2019.
2. Sarangi L, Acharya HP, Panigrahi OP. Substance Abuse among Adolescents in urban slums of Sambalpur. *IJCM*. 2008;33(4):265-7.

3. Miller WR, Sanchez VC, Alcohol use and misuse by young adult. In: Dame N, ed. University of Notre Dame Press; 1994: 55-81.
4. Tsering D, Pal R, Dasgupta A. Licit and illicit substance use by adolescent students in eastern India: Prevalence and associated risk factors. *J Neurosciences Rural Practice*. 2010;1(2):76-81.
5. Ahmad A, Khaliq N, Khan Z. Analysis of substance abuse among male adolescents. *Iranian J Pediatr*. 2009;19(4):399-403.
6. Naik PR, Seema S, Gokhe B, Shinde R, Nirgude AS. Street children of Mumbai: Demographic Profile and Substance Abuse. *Biomed Res*. 2011;22(4):495-8.
7. Kokiwar PR, Rao G, Jogdand S. Prevalence of substance among male adolescents in an urban slum area of Karimnagar district, Andhra Pradesh. *Indian J Public Health*. 2011;55(1):42-5.
8. Deswal BS, Jindal AK, Gupta KK. Epidemiology of Alcohol Use among Residents of Remote hills of Arunachal Pradesh. *Indian J Community Med*. 2006;31(2):88-9.
9. Saxena V, Saxena Y, Kishore G, Kumar P. A study on substance abuse among school going male adolescents of Doiwala block, Dehradun. *Indian J Public Health*. 2010;54(4):197-200.
10. Padnekar MS, Gupta PC. Tobacco use among school children in Goa. *Indian J Public Health*. 2004;48(3):147-52.
11. Mohan S, Sarma SP, Thankappan KR. Access to pocket money and low educational performance predict tobacco use among adolescent boys in Kerala. *Prev Med*. 2005;41(2):685-92 .
12. Siziya S, Muula AS, Rudatsikira E. Prevalence and Correlates of current cigarette smoking among adolescents in East Timor Leste. *Indian J Pediatr*. 2008;45:963-68.
13. Muttappallymyalil J, Sreedharan J, Divakaran B. Smokeless tobacco consumption among school children. *Indian J Cancer*. 2010;47(1):19-23.
14. Shenoy RP, Shenai P, Ganesh K, Panchmal S, Kotian SM. Tobacco use among rural school children of 13-15 years age group: a cross sectional study. *Indian J Community Med*. 2010;35(3):433-5.

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