Analysis of Substance Abuse in Male Adolescents

Anees Ahmad*, MD; Najam Khalique, MD; Zulfia Khan; MD

Department of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh. U.P, India

Abstract

Objective: Substance abuse in adolescents may also be a marker to other harmful life styles. This study aims to find out the prevalence, pattern and sociodemographic risk factors of substance abuse in male adolescents.

Methods: This study examined 390 male school children aged 10-19 yrs in the rural and urban areas of district Aligarh, Uttar Pradesh, India. Data was analyzed by SPSS -10.

Findings: Substance abuse was prevalent in 13.3% of adolescents of whom 96.1% were using various forms of tobacco and 3.8% were taking alcohol. While there was statistically significant association between the substance abuse and the age group of adolescents and size of their families, variables such as religion, socioeconomic status, place of residence were not associated with substance use. Most of the students reported initiation of substance use at 14 yrs of age due to peer pressure.

Conclusion: Peer educators would be a useful strategy for communication with adolescents to counter peer pressure. The prevention and control measures should be started at primary education level.

Iranian Journal of Pediatrics, Volume 19 (Number 4), December 2009, Pages: 399-403

Key Words: Substance Abuse; School students; Adolescents

Introduction

The substance abuse by adolescents and their negative consequences are becoming progressively a major public health concern. Many adult smokers had initiated the habit as adolescents. Smoking in adolescents may also be a marker of other harmful life styles such as engagement in illicit drug use, alcohol use, psychiatric illnesses and sexual intercourse [1].

The type of substances used has varied depending on the society and age of the adolescent. In India currently the use of alcohol and locally manufactured tobacco products like

Biri (coarse tobacco rolled in tobacco leaves), smokeless tobacco like Kemam (flavoured tobacco paste), Gutkha (mixture of tobacco and betel nut), Gul (tobacco tooth powder), Pan Zarda (mixture of betelnut, tobacco leaves and lime) and Khaini (mixture of tobacco leaves and lime) have been noted[2].

One bothersome factor is the progressive decline in the age of initiation[3]. Early initiation is often associated with poor prognosis and a lifelong pattern of irresponsible behavior[4].

In India, the law prohibits the sale of alcohol and cigarettes to children aged less than 18 years. Both alcohol and cigarettes are heavily taxed and expensive. The primary finding of a systematic global assessment is that virtually every country needs to do much more to stop the tobacco epidemic. Although there has been progress in recent years, no government is fully implementing all key effective interventions[5].

This study aimed to estimate the prevalence, various substances used, socio-demographic risk factors, source of introduction of first use and reasons for substance abuse and to elicit the minimal and peak age of initiation at which intervention might prevent adolescents from starting the substance use.

Subjects and Methods

The cross-sectional study was undertaken during 2002-2003, in the schools located within rural and urban field practice areas of the Department of Community Medicine, JNMC, Aligarh, Uttar Pradesh, India. The total population of male adolescents (10–19 yrs) was 2347, out of which 410 students were selected using Probability Proportionate to Size sampling (PPS). Only 390 students (200 urban and 190 rural students) cooperated in the study. The non-cooperation might be due to the reluctance in disclosing information due to the stigma attached to substance abuse in Indian society.

The sample size was calculated using the formula– Sample size = $\{(1.96)^2 PQ\}/ L^2$, where Prevalence (P)=20%, Q=(1-P), Absolute Precision (L)=4%. Verbal consent of the

Principals of the schools selected for the study was received. The parents of the students were informed about this study for their affirmation.

The study tools consisted of a self-developed, pre-tested questionnaire to record the child's socio-demographic background (interviewer administered) and the history of substance abuse (self-reported). Due care was taken to maintain anonymity. Socioeconomic class was calculated using a modified form of Prasad's Classification of per capita income[6].

The substance users were classified as– Occasional Users (those who had used any substance occasionally), Regular Users (used any substance daily even for a short period) and Never Users (never used any form of substances).

Data collected was analyzed by SPSS for Windows version 10. Bivariate and multivariate analysis was done using Chi square test and binomial logistic regression respectively. For all statistical tests, a *P*-value of ≤0.05 was considered statistically significant.

Findings

Socio-demographic Characteristics: Most of the study population was in their early and mid teens 42.3% and 35.6% respectively.

Hindu (56.4%) and Muslim (43.6%) by religion, lower to middle socioeconomic status (92.6%), was living in unitary families (71.0%) with more than 5 total family members (68.5%).

Prevalence and Trend of Substance Abuse: Out of 390 male adolescents 52 (13.3%) adolescents (8.2% occasional and 5.1% regular users) were found having substance abuse. The percentage of regular users increased with the age group of the adolescent (Table 1).

Distribution of Occasional and Regular users by Type of Substance Use: Tobacco (96.1%) and Alcohol (3.8%) were the abused substances. The majority of adolescents used smokeless tobacco (71.1%) of which 70.2% consumed Gutkha, Pan zarda (18.9%), Gul and Khaini 5.4% each.

Socio-Demographic Risk Factors: Substance

Table 1: Prevalence and trend of substance abuse in male adolescents

Age group	Never Users N (%)	Occasional Users N (%)	Regular Users N (%)	Total N (%)
10 – 13 yrs (Early teens)	157 (95.2)	7 (4.2)	1 (0.6)	165 (100)
14– 15 yrs (mid teens)	112 (80.6)	19 (13.7)	8 (5.7)	139 (100)
16– 19 yrs (Late teens)	69 (80.2)	6 (6.9)	11 (12.8)	86 (100)
Total	338 (86.6)	32 (8.2)	28 (5.1)	390 (100)

abuse was significantly associated with age more than 13 yrs and moderate to large family size ie total family members more than five. Other variables like religion, place of residence etc were not significantly associated with substance use (Table 2).

Age of Initiation of Substance Use: 1.4% of the adolescents experimented with tobacco at the age of 10 yrs. Majority (75%) of the adolescents initiated substance use at the age of 13–15 yrs with a peak at 14 yrs of age (48.6%).

Reasons and Source of Inspiration for Using Substance: The majority of adolescents (47.2%) stated that they use the substances for fun whereas 40.3% used it when they were in company of their peers. Less frequent reasons were showing status (8.3%), relief of stress (2.8%) and as a habit (1.4%).

The majority (68.1%) of adolescents were inspired by their peers, followed by parents (22.2%) and teachers (6.9%). Adolescents who started on their own were least frequent (2.8%).

Discussion

An extensive tobacco survey in 19 states of India conducted during 2000–2004 showed wide variation (6%-69%) in the prevalence and type of substance use among boys[7]. This signifies the vast sociocultural diversity in India. The problem of substance abuse should thus be tackled at the regional level depending upon the prevalence and type of substance abuse.

In the present study, the ratio of regular users to occasional users is nearly 2/3. The frequency of drug use was previously reported to increase with age [8], affirming the trend in our study.

In India, smokeless tobacco use is much higher than that of smoking, which is consistent with the results of this study and of several other studies [9]. The reason for higher consumption of Gutkha was its low price (Re. 1) and effortless availability at roadside stands, tea stalls, etc.

Type of family, as a risk factor for substance abuse was not significant in this study. Researchers[10] supported this observation in contrast to others[11], which showed nuclear families to be a greater risk factor. Obviously, more research is needed to arrive at a consistent conclusion.

The majority of users had started the habit around 14 years of age, though 30.6% users reported initiation at the age of ≤ 13 yrs. The early age of initiation underscores the urgent need to intervene and protect this vulnerable group from falling prey to this addiction.

Other studies [12] underline the influence exerted by peer groups as a reason for initiating and sustaining the drug habit. The present study also revealed the importance of peer groups as a source of inspiration and reason for substance abuse in adolescents. Overall, it is difficult to state that the role of friendship in the emergence of a drug habit has been studied to the extent that it deserves. Firstly, the sample included in the study was limited to male adolescents, ignoring the female substance use. Secondly, the

Table 2: Sociodemographic risk factors of substance abuse in male adolescents

Variable		Present No. (%)	Absent No. (%)	Total No. (%)
Age Group	≤ 13 yrs (Early teens)	8 (5.0)	157(95)	165(100)
	> 13 yrs (mid + Late teens)	44(19.5)	181(80.5)	225(100)
	X^2 = 17.84, df – 1, p <.0005 **OR 4.77, 95% CI 2.21-10.25**			
Social class	Class I (Upper)	2(6.9)	27(93.1)	29(100)
	Class II + III (Middle)	42(13.0)	280(86.9)	322(100)
	Class IV + V (Lower)	8(20.5)	31(79.5)	39(100)
	X^2 =2.80, df –1, p < 0.25, **OR 1.80, 95% CI 0.79-4.10**			
Religion	Hindu	24(10.9)	196(89.1)	220(100)
	Muslim	28(19.5)	142(83.5)	170(100)
	X^2 = 2.10, df– 1, p < 0. 14, **OR 1.61, 95% CI 0.90-2.87**			
Place of residence	Rural	26 (13.7)	164(86.3)	190(100)
	Urban	26 (13.0)	174(87.0)	200(100)
	X^2 = .002, df– 1, p <.0.96, **OR 1.06, 95% CI 0.59–1.89**			
Type of family	Unitary	39(14.0)	238(86.0)	277(100)
	Joint	13(11.5)	100(88.5)	113(100)
	X^2 = 0.26, df – 1, p <.0.61, **OR 1.26, 95% CI 0.65-2.44**			
Total family members	≤ 5	6(4.9)	117(95.1)	123(100)
	> 5	46(17.2)	221(82.8)	267(100)
	X^2 = 10.07, df – 1, p <.001, **OR 4.05, CI 1.72–9.54**			

sample was limited to schools students. Thus, the findings are not representative of all adolescents. Furthermore, the data were based on self-reports of students, who might have underreported or over-reported their behavior. Other studies [12] underline the influence exerted by peer groups as a reason for initiating and sustaining the drug habit. The present study also revealed the importance of peer groups as a source of inspiration and reason for substance abuse in adolescents.

Overall, it is difficult to state that the role of friendship in the emergence of a drug habit has been studied to the extent that it deserves. Firstly, the sample included in the study was limited to male adolescents, ignoring the female substance use. Secondly, the sample was limited to schools students. Thus, the findings are not representative of all adolescents. Furthermore, the data were based on self-reports of students, who might have underreported or over-reported their behavior.

Conclusion

In the present study, male adolescents of above 13 yrs of age and belonging to moderate to large sized joint families were at most risk of substance abuse. Knowledge of the extent of problem and socio-demographic risk factors is essential to devise effective preventive strategies against substance use. The study recommends a peer approach to counter peer pressure. Our

findings suggest that preventive measures against tobacco use should be started early, preferably at primary education level. To be maximally effective the strategy on substance control should engage schools and parents and encourage them commit to implementing and sustaining such a program.

Acknowledgment

References

1. Rudatsikria E, Siziya S, Kazembe LN, et al. Prevalence and associated factors of physical fighting among school going adolescents in Namibia. Ann General Psychiatry 2007;6:18.

2. Tripathi BM, Lal R, Kumar N. Substance abuse in children and adolescents: An overview. J Personality Clin Stud. 2001; 17(2):67-74.

3. UNDCP. World Drug Report. New York: Oxford University Press Inc. 1997.

4. Tripathi BM, Lal R. Substance abuse in children and adolescents. Indian J Pediatr. 1999;66(4):569-75.

5. WHO Report on the Global Tobacco Epidemic 2008: the MPOWER package. Geneva: World Health Organization. 2008; 42.

6. Kumar P. Social classification - Need for constant updating. Ind J of Comm Med 1993;18(2):60-1.

7. Centre for Disease Control. Fact sheet on the results of Global Youth Tobacco Survey in India 2000-2004. Available online at: www.cdc.gov/tobacco/global/ GYTS.htm. Access date: Feb 21, 2005.

8. Parameswaran EG, Mashiuddin T. Drug scene in Hyderabad. In: Mohan (ed). Current Research in Drug Abuse in India. New Delhi: Gemini. 1981; Pp:58-64.

9. Sinha DN, Gupta PC, Pednekar MS. Tobacco use among students in Bihar. Indian J Public Health 2004;48(3):147-52.

10. Mohan D, Rustagi PK, Sundaram KR, Prabhu GG. Relative risk of adolescent drug abuse: Part I Socio-demographic and interpersonal variables. Available at: http://www.unodc.org/unodc/en/data-and-analysis/bulletin/bulletin_1981-01-01_1_page002.html. Access date: Jun 20, 2009.

11. Veeraraghavan V. Drug abuse among university students. In: Mohan (ed). Current Research in Drug Abuse in India. New Delhi: Gemini, 1981; Pp:89-98.

12. Dube KC, Kumar A, Gupta SP. Prevalence and pattern of drug use amongst college students. Acta Psychiatr Neurolog Scand. 1978;57(4):336-56.