



SELECTED ADOLESCENT HEALTH RISK BEHAVIOUR AMONG HIGH SCHOOL STUDENTS IN NORTH GOA

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ABSTRACT **Introduction:** Worldwide, over 150 million youth smoke, 11.7% of teenagers drink heavily on occasion, and the number of young people abusing drugs is rising, hence there is a perceived need to produce evidence by compiling information on these risky teenage behaviors so that our government's policy makers and initiatives can influence young people's behavior in a positive way. **Material And Methods:** A community based cross sectional study conducted among 206 students of classes IX and X from a selected high school in North Goa after informed consent and assent from the school authorities, parents and the study participants. **Results:** Our study revealed that over the past 1 month, 6 (2.9%) of the students had used tobacco, 29 (14.1%) had drunk alcohol and 3 (1.5%) had used drugs. 12 (5.8%) students reported to have been exposed to tobacco at home and 47 (22.8%) have been exposed to tobacco at a closed public space. 27 (13.1%) students had their first drink at the age of 13-14 years. 13 (6.3%) students had abused prescription drugs atleast once in their lifetime and 6 (2.9%) students claimed that someone had offered, sold or given any illegal drugs to them. **Conclusion:** A small but significant proportion of adolescents were found to have been exposed to tobacco, alcohol and drugs at a young age. This emphasises the importance of health education sessions among students, parents as well as the school authorities. There should be stricter enforcement of legislations regarding substance abuse.

KEYWORDS : adolescence, substance abuse, alcohol, tobacco, India

INTRODUCTION

Adolescence is defined by WHO as “the individuals belonging to the age group of 10 to 19 years.”¹ It is a critical time of transition from childhood to adulthood. India has the largest adolescent population in the world, at 243 million.² According to Census data from 2011, nearly 20% of the Indian population belongs to the age group of 10-19, meaning every fifth person in India is an adolescent.²

Additionally, adolescence is a crucial time for the establishment of behavioural patterns and the formation of enduring habits. However, self-harm and dangerous behaviour are common among teenagers.⁴ The common drugs of abuse among children and adolescents are tobacco and alcohol.⁵ The median age of initiation of smoking has been found to be 19 years.⁶ There has been an increase in the trade of tobacco products in recent years, including both smoking and smokeless varieties, and the prevalence of use has been found to vary across studies from 7 to 22% among adolescents.⁷ The Global Youth Tobacco Survey (GYTS) of persons aged between 13 and 15 years in India revealed that 14.6% of the sample identified as current tobacco users. Alarming, there was also a perception among both boys and girls that tobacco use was a desirable characteristic with high social capital. In addition, one-fourth to one-third of youngsters have parents or relatives who smoke.⁸ In spite of this, adolescent attendance at treatment centres is a rare sight.⁵ The use of drugs by adolescents has been shown to cause behavioural, neurochemical as well as physiological alterations and early onset brain changes can lead to irreversible long term damage.⁹

Goa is a southern coastal state of India that has culturally been associated with high levels of exposure to substance abuse and opportunities for drug use. Population based surveys have shown a high prevalence of mental disorders, and substance abuse has been found to be an independent risk factor for the same.¹⁰ Substance use has also been shown to be a cause of violence among adolescents in Goa.¹¹ Over the years, there has been a steady increase in the proportion of drinking population in Goa, with 74.3% of drinkers in the 1981-85 birth cohort compared to 19.5% in the 1956-60 one.¹² In this scenario,

quantification of the problem becomes essential. Although many studies have looked at prevalence among adults in Goa, studies on the school going population looking at various substances are sparse. Hence this study was done with the objective of assessing the prevalence and characteristics of substance use among school going adolescents and finding out the factors affecting the same.

METHODOLOGY

Study Setting

The study was conducted Goa which has an adolescent population of 2,24,864 as per Census 2011, constituting around 15% of the total population.³ The state has a total of 85 government high schools of which seven are run by the central government and 78 by the state government.¹³ School retention rates are relatively good, with 85% of all adolescents attending any educational institution.³ This cross-sectional study was conducted in a selected high school in North Goa in July 2019 among 206 adolescent girls and boys studying in the 9th and 10th grades. No other inclusion or exclusion criteria were applied. After obtaining IEC Approval from Goa Medical College Institutional Ethics Committee Ref. No. IEC/GMC-July 19-17, permission was initially obtained from school authorities for the conduct of the study. Written informed consent was obtained from the parents of the students and assent from the students themselves. None of the eligible participants refused to be a part of the study.

Sample Size And Sampling

Sample size was calculated based on a previous study.¹⁴ Assuming the prevalence of any substance use to be 20%, with 6% precision and 95% confidence interval, the minimum sample size needed for the study was 171. To account for a 20% non-response rate, a total of 206 students were approached for the enrolment. Cluster sampling was done by class divisions at the chosen school. The school was purposively chosen based on distance from the centre and administrative will and cooperation towards the conduct of the study.

Study Procedure

The tool for quantitative data collection was a semi-structured

questionnaire, which collected details related to socio-demographic characteristics and details related to substance usage like type of substance and frequency. After obtaining informed consent and assent, the self-administered questionnaires were given to the students in the classroom setting, but with the students being seated with adequate space in between. Students were assured of the results being confidential and that teachers, parents or school authorities would not get access to the filled questionnaires. The researchers made sure each student had adequate privacy while filling out the form. The operational definition of “ever use” was anyone who had tried the substance at least once in their lifetime.

Data Entry And Analysis

Data was entered on Microsoft Excel and analysed using Statistical Package for Social Sciences (SPSS) 22. Continuous variables like age were expressed in mean along with standard deviation. Categorical variables were expressed as proportions along with 95% Confidence Intervals (CI). The association between characteristics of substance use and various socio-demographic variables was studied using binomial regression. A p value of less than 0.05 was considered to be statistically significant.

RESULTS

The study was done in a total of 206 adolescents. The socio-demographic details of the participants is given in table 1. The mean (SD) age of the participants was 14.1 (0.6). The sample had a slightly higher number of males compared to females. Majority of the participants (82.1%) hailed from urban areas of Goa.

Around 47 (22%) of students had exposure to smoking and alcohol in public places, while 15 (7%) reported that their own parents used the substances and 12 (5.8%) had exposure at home. The prevalence and characteristics of various risky behaviours is summarised in table 2 and 3. The main substance used by students was alcohol 61 (29.6%) followed by prescription drugs 19 (9.2%) and tobacco 14 (6.8%).

Of those who ever used alcohol, 27 (44.3%) had a drink in the previous 30 days of which two reported drinking for more than 20 days. Around 6 (9.8%) participants had their first drink before the age of 8 years. The total number of drinking days was less than 10 days for 48 (78.7%) participants, of which 46 only had drinks for one or two occasions. At the time of drinking, 53 (86.8%) never exceeded five drinks, whereas four participants had more than five drinks on more than one occasion. Of the 14 participants who ever tried tobacco, eight (57.1%) participants stopped using the same. Of the six participants that continued to use, two used smokeless type, two used smoking type and two used both. Ten participants tried tobacco for the first time in adolescence (10 years and above), while 4 used it less than 10 years. Of the five participants who reported using non-medicinal drugs, one used it for the first time at 12 years of age, two at 13-14 years and two at ≥15 years. Three of them had used drugs in the previous month. Of the six participants who sold drugs, only two had ever used the same. Four students reported drinking on school premises while one each reported smoking and consuming drugs at school.

The association between environmental exposure and high risk health behaviours is given in tables 4,5 and 6. Univariate analysis showed that exposure to substance use in the home setting was significantly associated with ever use of alcohol, tobacco and selling drugs, while parental use was associated with only drinking and tobacco use. Exposure at public places was associated with a higher use of alcohol and selling of drugs.

Table 4: Factors Affecting Alcohol Use Among School Going Adolescents In Goa (206)

Variable	Ever Used Alcohol		P Value	Prevalence Ratio
	Yes (61) Number of participants n (%)	No (145) Number of participants n (%)		
Age category (years)				
13 – 14	43 (29.7)	102 (70.3)	0.983	-
15 – 16	18 (29.5)	43 (70.5)		
Gender				
Female	35 (36.8)	60 (63.2)	0.05	-
Male	26 (23.4)	85 (76.6)		
Area of Residence				

Rural	17 (45.9)	20 (54.1)	0.016	1.76
Urban	44 (26.0)	125 (74.0)		Ref
Exposure at home				
Yes	8 (66.7)	4 (33.3)	0.007	2.4
No	53 (27.3)	141 (72.7)		ref
Parental Use				
Yes	9 (60.0)	6 (40.0)	0.007	2.2
No	52 (27.2)	139 (72.8)		ref
Exposure in public places				
Yes	26 (55.3)	21 (44.7)	<0.001	2.5
No	35 (22.0)	124 (78.0)		ref
Ever used drugs				
Yes	5 (100)	0 (0)	0.002	-
No	56 (27.9)	145 (72.1)		

Table 5: Factors Affecting Tobacco Use Among School-going Adolescents In Goa (206)

Variable	Ever Used Tobacco		P value	Prevalence Ratio
	Yes (14) Number of participants n (%)	No (192) Number of participants n (%)		
Age category (years)				
13 – 14	10 (6.9)	135 (93.1)	1.00	-
15 – 16	4 (6.6)	57 (93.4)		
Gender				
Female	9 (9.5)	86 (90.5)	0.158	-
Male	5 (4.5)	106 (95.5)		
Area of Residence				
Rural	7 (18.9)	30 (81.1)	0.001	4.5
Urban	7 (4.1)	162 (95.9)		ref
Exposure at home				
Yes	3 (25.0)	9 (75.0)	0.04	4.4
No	11 (5.7)	183 (94.3)		1
Parental Use				
Yes	5 (33.3)	10 (66.7)	0.001	7.1
No	9 (4.7)	182 (95.3)		1
Exposure in public places				
Yes	4 (8.5)	43 (91.5)	0.528	1.3
No	10 (6.3)	149 (93.7)		1
Ever used alcohol				
Yes	14 (100)	0 (0)	<0.001	
No	47 (24.5)	145 (72.5)		

Table 6: Factors Affecting Sale Of Drugs By School Going Adolescents In Goa (206)

Variable	Ever Sold Drugs		P value	Prevalence Ratio
	Yes (6) Number of participants n (%)	No (200) Number of participants n (%)		
Age category (years)				
13 – 14	2 (1.4)	143 (98.6)	0.065	-
15 – 16	4 (6.6)	57 (93.4)		
Gender				
Female	2 (2.1)	93 (97.9)	0.689	-
Male	4 (3.6)	107 (96.4)		
Area of Residence				
Rural	1 (2.7)	36 (97.3)	1.00	-
Urban	5 (3.0)	164 (97.0)		
Exposure at home				
Yes	3 (25.0)	9 (75.0)	0.003	16.7
No	3 (1.6)	191 (98.4)		1
Parental Use				
Yes	2 (13.3)	13 (86.7)	0.06	6.4
No	4 (2.1)	187 (97.9)		1
Exposure in public places				
Yes	6 (12.8)	41 (87.2)	<0.001	-
No	0 (0)	159 (100.0)		-
Ever used alcohol				
Yes	5 (83.3)	1 (16.7)	0.009	11.9
No	56 (28.0)	144 (72.0)		1

DISCUSSION

The study found that the main substance used by students was alcohol (29.6%) followed by prescription drugs (9.2%) and tobacco (6.8%). Various studies have recorded different prevalence rates in the substance use patterns of adolescents. Similarly high prevalence of alcoholism was found in urban school students of Assam by Bhagabati et al and Mahanta et al.^{15,16} Reddy et al. reported alcohol use to be 28%, nearly identical to the current study.¹⁷ Previous literature also reports initiation in early adolescence.^{15,16,18} Other school based surveys have also found the value to be around 18%.¹⁹ In contrast, lifetime prevalence of any substance use was low in two studies out of Kerala, both of which reported around 7% prevalence.^{20,21} A few other studies including a study in Goa have also reported barely 2-6% prevalence rates for various substance usage among adolescents.^{12,22,23} These may be a reflection of socio-cultural differences in various geographical regions, as well as due to the distinct characteristics of the samples chosen for the study. Also, prevalence of substance use is an extremely sensitive parameter which may not be openly expressed by all, leading to difference in^{7,17} reported levels.

Of ever drinkers, nearly half had a history of drinking in the past one month. Binge drinking was found to be rare among the study sample. Age of initiation was found to be quite low similar to previous studies.²⁴ There was a higher quit rate among tobacco users than alcohol users. Islam et al. has found similar results in the survey-based study done in Bangladesh where nearly 85% of adolescent tobacco users were recorded to have attempted quitting.²⁴ This might be due to the increased awareness regarding side effects that are publicised in recent times. Global Adult Tobacco Survey – 2 (GATS 2) reported a decrease in the overall use of tobacco and increased awareness compared to GATS -1, and the same might be reflected in the adolescent age groups.²⁵

Selling of products is a topic that has not been captured in previous literature. It has already been established previously that peer pressure forms a major reason for initiation.^{7,17} When the users become sellers as well, there is an increased risk of peer pressure as they gain monetary benefits as well from promotion. The effect of exposure to the same has also been shown to be important risk factors in the current study. Both at-home and public exposure to substance use, including parental use, were found to be independent predictors of tobacco use and alcohol use. Stricter implementation of public use, awareness among parents is also instrumental in reducing usage.

The study has several strengths. The study looked at many components that were previously overlooked, like sale of drugs by adolescents and the effect of environmental exposure on usage patterns. There are few studies that describe usage patterns in detail. Since it was a self-administered questionnaire, students were comfortable filling out sensitive information. But in spite of this, there is the possibility of social desirability bias leading to under estimation of certain parameters. The study was also done only in a few schools, and the results may be influenced by the cluster setting.

CONCLUSION

Substance use is found to be high among Goan adolescents, irrespective of gender. Alcohol is the most common substance used followed by drugs and tobacco. Sale of drugs is also present in the school campus. Public and home exposure to substance use, residence in rural areas and parental drinking/ smoking were found to be significantly associated with substance use among school going adolescents.

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