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## Original Research Article

## Addiction behavior practiced by the Adolescent: An observational cross-sectional study

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## ABSTRACT

**Background:** As with tobacco use, alcohol use shows a monotonic increase during adolescents and young adulthood, particularly during the transition out of high school and excessive alcohol consumption can lead to lifelong problems and chronic diseases.

**Objective:** To study the addiction behavior practiced by the Adolescent.

**Study Design:** An observational cross-sectional study.

**Setting:** The present study was carried out in Department of Community Medicine, Santosh Medical College, Ghaziabad & Urban area of district Ghaziabad. 750 Adolescents aged 10 to 19 years studying in the selected schools of urban Ghaziabad were included for the study. The period of study was from November 2011 to October 2012.

**Results:** Proportion was higher (64.8%) in male adolescents in comparison to female adolescents (33.9%). The prevalence of drugs, smoking, tobacco chewing and drinking among adolescents was found to be 2.5%, 21.7%, 9.6% and 15.5% respectively. Among the adolescents, who used tobacco chewing, 61.1% of them were ever users and 38.9% were current users. The students who used smoking, 50.3% of them were ever users and 49.7% were current users. Students who used addicting substance, their encouragement to start addiction was maximum from peers (33.0%). About three-fourth (75.4%) of adolescents who used addicting substance had knowledge of health hazards of addicting substances.

**Conclusion:** The study evokes an urgent need to stimulate an action to identify those at risk and those who need treatment and prevention of progression of the health risk behaviors, among the adolescents.

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## 1. Introduction

Tobacco use is one of the leading preventable causes of morbidity and mortality in the world.<sup>1</sup> Tobacco use usually starts in adolescence and continues into adult life, meaning that many future victims of tobacco are today's children. Adolescents and young adults of colleges are often targeted by the tobacco industry for marketing.<sup>2</sup> The risks of tobacco use are highest among those who start early and continue its use for a long period.<sup>3</sup> The early age of initiation underscores the urgent need to intervene and protect this vulnerable group from falling prey to this addiction.<sup>1</sup> The

most common reasons cited for children to start using tobacco are peer pressure, parental tobacco habits, and pocket money given to them.<sup>4</sup> Presently, adolescents are increasingly exposed to changing lifestyles that have a negative impact on health.<sup>5</sup>

The National Family Health Survey-3 (2005-06), which was carried out among in the age group of 15-49 years, shows use of any kind of tobacco in women was 10.8% and in men 57.0% and if only smoking is considered it was 1.6% in women and 33.3% in men.<sup>6</sup> A Global Youth Tobacco Survey (GYTS) (2009), in collaboration with WHO, conducted in India in the age group of 13-15 years, shows 6.1% students had ever smoked cigarettes, 14.6% currently use any tobacco product, 4.4% currently

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smoke cigarettes, 12.5% currently use tobacco products other than cigarettes, and 15.5% of never smokers are likely to initiate smoking in the next year.<sup>7</sup>

According to the World Health Organization<sup>8</sup> (WHO) substance abuse is “persistent or sporadic excessive drug use inconsistent with or unrelated to acceptable medical practice”. Man has been using plant derived drugs and alcohol for thousands of years. The recorded history indicates that some of these drugs were used not just for their presumed therapeutic effects, but also for recreational purposes to enhance pleasure and relieve stress.<sup>9</sup> New and often more harmful drugs and patterns of use are replacing traditional practices. In recent years the consumption of licit (tobacco, alcohol) as well as illicit substances has increased greatly throughout the world. Particularly alarming is the fact that the age of initiation into substance abuse is progressively falling.<sup>10</sup>

Substance abuse is a growing problem in India. Earlier considered to be a problem of street children, working children and trafficked children, it has now become a wide spread phenomenon affecting all segments of the society. Substance abuse especially among adolescents has become an issue of concern throughout the world (UNDCP, World Drug Report, 1999).<sup>10</sup>

## 2. Materials and Methods

The present observational cross-sectional study was carried out in Department of Community Medicine, Santosh Medical College, Ghaziabad & Urban area of district Ghaziabad. The unit of the study was selected adolescent students studying in randomly selected schools of Ghaziabad city. Adolescents aged 10 to 19 years studying in the selected schools of urban Ghaziabad were included for the study. The period of study was from November 2011 to October 2012.

### 2.1. Sample size

The proposed study assessed sexual behaviours among the adolescents. In view of the above factors the sample size was calculated by taking mean of the prevalence of the various individual risk behaviours.

1. Mean prevalence of the Substance Abuse = 25.38% (since the prevalence of substance abuse from various studies ranges between 2.28% - 45.9%. The mean prevalence comes out to be 25.38%).
2. Prevalence of Risky Dietary Behaviour = 48% [since the prevalence of malnourishment and anemia among adolescents in studies from National Nutrition Monitoring Bureau (NNMB)].
3. Prevalence of Risky Sexual Behaviour<sup>8</sup> = 15%
4. Prevalence of Physical Activity<sup>9</sup> = 53%

Therefore, mean prevalence (p) = 35%

The sample size for the study was calculated using the formula<sup>11</sup>

$$n = Z \cdot Z \cdot p \cdot q / L \cdot L \text{ or } n = Z^2 p q / L^2$$

$$Z = 2$$

$$n = \text{minimum required sample size}$$

$$p \text{ (prevalence rate)} = 35$$

$$q = 1 - p = 65$$

$$L = \text{Allowable error } 10\% \text{ of } p = 3.5\%$$

$$\text{Desired confidence level} = 95\%$$

$$\text{Hence, minimum sample size (n)}$$

$$= \frac{4 \times 35 \times 65}{3.5 \times 3.5} = 742$$

So minimum required sample size was 742.

For convenience in equal distribution, 750 adolescents, i.e. 375 males and 375 females were taken up for the purpose of study as sample size.

### 2.2. Sampling technique

The required sample was taken using simple random sampling technique.

### 2.3. Inclusion criteria

Adolescents (male and female) between 10 to 19 years of age who volunteered for study at the time of data collection from the selected schools were included in the study.

### 2.4. Exclusion criteria

Adolescents who did not volunteer for study and adolescents studying in the school for less than six months were excluded from the study.

### 2.5. Sampling procedure

The present study was conducted in the Ghaziabad City. All the coeducation schools of Ghaziabad City were included in the sampling frame for the study. Randomly five schools were selected, using lottery method.

These were:

1. Bal Bharti Public School, Ghaziabad
2. Cambridge Public School, Ghaziabad
3. Delhi Public School, Ghaziabad
4. Diwakar Model School, Ghaziabad
5. DAV Public School, Ghaziabad

Then considering absentees and non-response, 150 adolescents were chosen from each selected school. Further 75 male adolescent students and 75 female adolescent students were randomly chosen. A repeat visit was made for the students who were absent.

### 2.6. Methodology

After planning the modus operandi of the survey and after deciding the area of investigation, the next step was

school visits for the active support and participation, it was imperative to explain the aim of the study to the principals of schools and the targets and consent was taken for the same. For the purpose of this study, detailed information was collected on a pre designed structured questionnaire.

The study methodology included-

### 2.7. Data collection

The principals of the identified schools were contacted. They were informed about the purpose of study, and apprised of the fact that anonymity and confidentiality of the respondents will be maintained in the study. The principals were also informed, that following administration of the tools of data collection to the students, an interactive health education session would be held for the students, so that the exercise is mutually beneficial. In each school, adolescents in the class were encouraged to provide honest and unambiguous response to the question.

A written permission and consent from the principals was obtained prior to conducting the study in schools. The investigator administered the tools of data collection and subjects were asked to fill the questionnaire. The opinion of the students was elicited and their queries were sought to be answered as far as possible.

#### 2.7.1. Tools of data collection (Interview schedule)

A pre designed structured questionnaire was used to elicit the necessary information. The questionnaire was divided into following five sections -

#### 2.7.2. Information on socio-demographic factors

Information pertaining to the subject's age, sex, religion, type of family, parent's education and occupation, socio-economic status according to revised Kuppuswamy scale, etc. was gathered.

#### 2.7.3. Information on addiction behavior

Information was collected on use of addicting substance, type of addicting substance used, knowledge of harmful effects of addicting substance, desire to quit addicting substances, etc.

### 2.8. Statistical analysis

Data was analyzed using Microsoft excel 2007 and Epi info version 3.5.3 software. For proportions, Chi square test was applied to find out significant association between independent and dependent variables. A p value of less than 0.05 was considered significant

## 3. Results

The present study was carried out to study addiction behavior practiced, source of inspiration in adolescents aged 10 to 19 years.

538 (71.7%) of the total students were Hindu (262 males and 276 females) whereas 111 (14.8%) were Muslim (61 male and 50 female) and 60 (8%) were Sikh (33 male and 27 female). Only 41 (5.5%) Christian students were found (19 male and 22 female).

Majority of students were from upper middle socioeconomic class 317 (42.3%) followed by upper class 179 (23.8%). Only 59 (7.9%) students were from lower socioeconomic status.

Proportion of use of addicting substance was 243 (64.8%) among males and 127 (33.9%) among females and this association between two sexes was found to be statistically significant ( $X^2 = 71.78$ ,  $df = 1$ ,  $p$  value = 0.001). Prevalence of drugs, smoking, tobacco chewing and drinking among males was 4.2%, 25.6% 14.7% and 20.3% respectively and 0.8%, 17.9%, 4.5% and 10.7% among females respectively. (Table 1)

Among males 32 (58.2%) and 12 (70.6%) females were ever users and 23 (41.8%) males and 5 (29.4%) females were current users, who chewed tobacco. The association between type of tobacco chewer and two sexes was found to be statistically insignificant ( $X^2 = 0.841$ ,  $df = 1$ ,  $p$  value = 0.359). The Table 2 shows that who smoked, 42 (43.7%) males and 40 (59.7%) females were ever users and 54 (56.3%) males and 27 (40.3%) females were current users. The association between two sexes was found to be statistically significant. The current drinkers were 50 (65.82%) males and 14 (35.0%) females whereas 26 (34.2%) males and 26 (65%) females were ever drinkers and this association between two sexes was found to be statistically significant. (Table 3)

Table 4 shows that students who used addicting substance, their encouragement to start its use was maximum from peers 102 (42%) males and 20 (15.7%) females followed by fun and pleasure 44 (18.1%) males and 52 (40.9%) females and relieve stress 48 (19.7%) males and 29 (22.8%) females. The association between the source of encouragement to start using addicting substance and two sexes was found to be statistically significant.

193 (79.4%) males and 86 (67.7%) females, who used addicting substance had knowledge of health hazards of addicting substances and this association between two sexes was found to be statistically significant ( $X^2 = 6.16$ ,  $df = 1$ ,  $p$  value = 0.013). 192 (79.0%) males and 105 (82.7%) females, who used addicting substance had desire to quit. The association between two sexes was found to be statistically insignificant ( $X^2 = 0.71$ ,  $df = 1$ ,  $p$  value = 0.400).

Table 5 shows that 105 (28%) males and 76 (20.3%) females adolescents glorified by seeing the use of addicting substances in movies by actor/actress. 201 (53.6%) males and 252 (67.2%) females perceived that warning mentioned on addicting substances like "Cigarette smoking is injurious to health" helpful in reducing their use. 163 (43.5%) males and 242 (64.5%) females thought ban on sale of addicting

**Table 1:** Distribution of adolescents using addictive substance according to type of substance

Addiction type	Boys (n=375)		Girls (n=375)		Total (n=750)	
	N	%	N	%	N	%
Drugs like Charas, Ganja, etc	16	4.2	03	0.8	19	2.5
Smoking	96	25.6	67	17.9	163	21.7
Tobacco Chewing	55	14.7	17	4.5	72	9.6
Drinking	76	20.3	40	10.7	116	15.5

**Table 2:** Distribution of students who smoked to the type of user

Type of user	Boys (n=96)		Girls (n=67)		Total (n=163)	
	N	%	N	%	N	%
Ever user	42	43.7	40	59.7	82	50.3
Current user	54	56.3	27	40.3	81	49.7

$X^2 = 4.02, df = 1, p \text{ value} = 0.045$

**Table 3:** Distribution of students who took alcohol to the type of user

Type of user	Boys (n=76)		Girls (n=40)		Total (n=116)	
	N	%	N	%	N	%
Ever user	26	34.2	26	65.0	52	44.8
Current user	50	65.8	14	35.0	64	55.2

$X^2 = 10.05, df = 1, p \text{ value} = 0.001$

**Table 4:** Distribution of students who used addicting substance to the source of encouragement to start its use

Encouragement	Boys (n=243)		Girls (n=127)		Total (n=370)	
	N	%	N	%	N	%
Peers	102	42.0	20	15.7	122	33.0
Parents	27	11.1	11	8.8	38	10.3
Teachers	22	9.1	15	11.8	37	10.0
Fun and Pleasure	44	18.1	52	40.9	96	25.9
Relieve stress	48	19.7	29	22.8	77	20.8

$X^2 = 35.67, df = 4, p \text{ value} = 0.001$

substance can stop its rise in use whereas 137 (36.5%) males, 101 (26.9%) females and 75 (20%) males, 32 (8.6%) females considered increasing the cost and health education respectively for stopping the rise in use of addicting substance.

#### 4. Discussion

In this study, proportion of use of addicting substances among adolescents was 49.3% and the proportion was higher (64.8%) in male adolescents in comparison to female adolescents (33.9%). Contrary prevalence rates were revealed by Kapoor SK et al.<sup>12</sup> (1995) 45.8% males than 7.3% females.

The prevalence of drugs among adolescents was 2.5% in this study which is in line with studies of Kalra RM<sup>13</sup> (1997) revealed (4-13% alcohol, tobacco 3-6% and 1-4% minor tranquilizers) among adolescents. However, Saxena V et al.<sup>14</sup> (2010) revealed 46.9% drug abuse in male adolescents on the contrary.

The prevalence of alcohol use was 15.5% in this study which is almost equal to that reported by Kalra RM<sup>13</sup> (1997) that is 4-13% among adolescents, while contrary results were reported by Singh J et al.<sup>15</sup> (2000) 25.11% in urban and 60% in rural area of district Amritsar.

Among the adolescents, who used tobacco chewing, 61.1% of them were ever users and 38.9% were current users. However, Tsering D<sup>16</sup> (2003), Pednekar and MS et al.<sup>17</sup> (2004), reported prevalence of ever tobacco user to be 12.5%, 13.5%, 10.0%, respectively

In the present study students who used smoking, 50.3% of them were ever users and 49.7% were current users. About two-fifth (40.3%) of girls and 56.3% of boys were current users among the adolescents who used smoking while the prevalence of current smoking was found to be more in boys as compared to girls (1.5% vs. 0.8%) in Singh V et al.<sup>18</sup> (2007) study at Delhi, Gururaj G et al.<sup>1</sup> (2007) in Karnataka observed the prevalence of current smoking to be 3.1% among boys while no girl was found to be currently smoking.

**Table 5:** Distribution of Students according to their perception about addicting substances

Perception	Boys (n=375)		Girls (n=375)		Total (n=750)	
	N	%	N	%	N	%
<b>Person using addicting substance in movies glorifies you</b>						
Yes	105	28.0	76	20.3	181	24.1
No	270	72.0	299	79.7	569	75.9
<b>Warning mentioned on addicting substance like “Cigarette smoking is injurious to health” helpful in reducing their use</b>						
Yes	201	53.6	252	67.2	453	60.4
No	174	46.4	123	32.8	297	39.6
<b>Rise in use of addicting substance can be stopped by</b>						
Ban on sale	163	43.5	242	64.5	405	54.0
Increase the cost	137	36.5	101	26.9	238	31.7
Health Education	75	20.0	32	8.6	107	14.3

The current drinkers were more (55.2%) as compared to ever drinkers (44.8%) among the adolescents, who used drinking in this study while Khosla V et al.<sup>19</sup> (2008) in their study among college students in Ludhiana observed the overall prevalence of ever alcohol use to be 31.9%; 49.2% among male students and 5.2% among female students.

In the present study, students who used addicting substance, their encouragement to start addiction was maximum from peers (33.0%) followed by fun and pleasure (25.9%). About one-fifth (20.8%) started to relieve stress. Both parents and teachers had almost equal encouragement for adolescents to start addiction. Similar distribution was also depicted by Khosla V et al.<sup>19</sup> (2008) reported 38.8% from peers, 20.0% for fun, 5.6% to relieve stress, 25% out of curiosity and 10% for celebrations.

About three-fourth (75.4%) of adolescents who used addicting substance had knowledge of health hazards of addicting substances in this study. This result is in line with Hanspal R et al.<sup>20</sup> (2011) reporting 71.4% adolescents, Mukherjee A et al.<sup>21</sup> (2013) reporting 64% students.

More than three-fourth (80.3%) of adolescents who used addicting substance had desired to quit. Desired to quit was more among girls (82.7%) as compared to boys (79.4%) in the present study. This finding is consistent with the findings of Saxena V et al.<sup>19</sup> (2010) revealing 80.2% students desired quitting, Tsering D et al.<sup>22</sup> (2010) reporting 73.07% students quitting. Table 5 shows that 105 (28%) males and 76 (20.3%) females adolescents glorified by seeing the use of addicting substances in movies by actor/actress. 201 (53.6%) males and 252 (67.2%) females perceived that warning mentioned on addicting substances like “Cigarette smoking is injurious to health” helpful in reducing their use. 163 (43.5%) males and 242 (64.5%) females thought ban on sale of addicting substance can stop its rise in use whereas 137 (36.5%) males, 101 (26.9%) females and 75 (20%) males, 32 (8.6%) females considered increasing the cost and health education respectively for stopping the rise in use of addicting substance.

## 5. Conclusion

It was concluded that In this study proportion of use of addicting substances among adolescents was 49.3% and the proportion was higher (64.8%) in male adolescents in comparison to female adolescents (33.9%). The prevalence of drugs, smoking, tobacco chewing and drinking among adolescents was found to be 2.5%, 21.7%, 9.6% and 15.5% respectively.

Among the adolescents, who used tobacco chewing, 61.1% of them were ever users and 38.9% were current users. The students who used smoking, 50.3% of them were ever users and 49.7% were current users. The current drinkers were more (55.2%) as compared to ever drinkers (44.8%) among the adolescents, who used drinking in this study. Students who used addicting substance, their encouragement to start addiction was maximum from peers (33.0%). About three-fourth (75.4%) of adolescents who used addicting substance had knowledge of health hazards of addicting substances.

## 6. Source of Funding

None.

## 7. Conflict of Interest

None.

## 8. Ethical Approval

Permission for the study was obtained from the College authorities prior to commencement.

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