

## Substance Abuse among Senior School Students in a Rural Area of west Bengal, India.

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### Abstract:

**Introduction:** Today the world is witnessing a virtual epidemic of drug abuse. The incidence of substance abuse varies from place to place. It is difficult to estimate the numbers of drug abusers to formulate a comprehensive approach to deal with the issue primarily because it involves a hidden population that does not seek help and hence remains under-reported.

**Objectives:** The present study was conducted to estimate the prevalence of substance abuse among senior school students in a rural area of West Bengal, to assess their awareness about the harmful effects of abusive substances and willingness of substance-abusing students to quit the habit.

**Methodology:** A total of 743 students of class IX, X & XII from two schools under Ranaghat Block of Nadia district of West Bengal were taken in this descriptive study. After getting the written consent, data was collected using a predesigned & pretested questionnaire from the students. Data analysis was done using standard statistical methods in MS Excel software.

**Result:** Among the senior school students 49.6% ever used any addictive substances; male & female being 55.6% & 33.3% respectively; 20.1% used any abusive substance in the last 3 months, male & female being 23.8% & 7.9% respectively. Some of the harmful effects of tobacco were known to 91.6% of students but majority were unaware about the harmful effects of other abusive substances. Among the substance users 73.1% were willing to quit the habit.

**Conclusion:** The high prevalence of substance abuse among the senior school students points toward the need for a comprehensive approach to minimize the problem. Behavior change communication strategy has to be directed towards the students and teachers may be trained to act as counselor in this regard.

**Keywords:** Substance abuse, senior school students, West Bengal.

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### I. Introduction

Substance refers to the spectrum of drugs that can be potentially abused such as illicit drugs (marijuana, heroin), licit drugs (alcohol, tobacco), and prescription drugs; 'abuse' refers to the use of substance when it is not medically indicated or when its use exceeds socially acceptable limits. Its effects are detrimental to the individual's physical or mental health or welfare of others.<sup>(1)</sup>

Changing cultural values, increasing economic stress and dwindling supportive bonds generally lead to substance abuse. Drug use, misuse or abuse is also primarily due to the nature of the drug abused, the personality of the individual and the addict's immediate environment. The processes of industrialization, urbanization and migration result in loosening of traditional methods of social control rendering an individual vulnerable to stresses and strains of modern life.<sup>(2)</sup> People start on drugs, what begins as abuse can often lead to dependence.<sup>(3)</sup>

Today world is witnessing a virtual epidemic of drug abuse.<sup>(4)</sup> Substances used for abuse among children and adolescent in India include tobacco, alcohol, ganja, bhang, opium, heroin, cough syrups, pain relief ointments, glue, paint, cleaning fluids etc.<sup>(5)</sup> By the time most boys reach the ninth grade, about 50% of them tried at least one of the gateway drugs.<sup>(6)</sup> 32.1% children below 18 years tasted alcohol, bhang, ganja, heroin or other form of narcotics.<sup>(3)</sup>

Drug abuse causes a range of health complications – weakness, loss of body weight and respiratory disorders. Often, under the influence of drugs, addicts also indulge in high risk behaviors such as unsafe sex and needle sharing, which contributes to the spread of infectious diseases such as HIV/AIDS and hepatitis C. One of the most important effects of drug abuse is impaired judgment and a lack of rational thinking. Addicts develop psychological problems such as depression, anxiety and irritability, apart from personality problems.<sup>(3)</sup>

Though abuse prevalence is wide cutting across age, class and gender, yet it is difficult to estimate the numbers of drug abusers.<sup>(3, 7)</sup> This makes it difficult to assess the problem, estimate costs, both social and design intervention strategies.<sup>(3)</sup> With this background, the current study was conducted to get an estimate of the size of the problem of substance abuse among the senior school students of a rural area of West Bengal, India.

## **II. Methodology**

It is a descriptive observational study, cross-sectional in design, conducted in two high schools under Ranaghat-II Block of Nadia district, West Bengal, over two months from 01.07.2015 to 31.08.2015 with the following objectives of estimating the prevalence of substance abuse among school students and to assess their socio-demographic factors related to such abuse; assessing awareness of the students about the harmful effects of addictive substances and willingness of the substance-abusing students to get rid of the habit.

All 747 students studying in class IX, X & XII of selected two high schools present during the period of data collection and gave written consent comprised the study population. Due to incompleteness of response 4 cases were dropped from the analysis to have 743 final study subjects. A pre-designed & pre-tested self-administered anonymous questionnaire, translated into local vernacular (Bengali) used to collect data. Data were compiled & analyzed using Microsoft Excel software package in computer.

## **III. Result**

Among 743 students under study, 566 (76.18%) were male and 177 (23.82%) were female. Mean age of whole students group was  $15.19 \pm 2.90$  years; where mean age for the male students was  $15.14 \pm 2.92$  years and that for female students was  $15.33 \pm 2.76$  years. Among the students 331 (55.85%) were in the age group of 14 & 15 years, 5 (0.67%) students were below 13 years of age and 3 (0.4%) students were above 19 years of age. There were no female students above the age group of 18 years. Among students 372 (50.07%) were reading in class IX, 216 (29.07%) in class X and rest in class XII. Among male, 372 (54.77%) students were in class IX, 216 (28.45%) in class X and 155 (20.86%) in class XII. Among female 62 (35.03%) students were in class IX, 55 (31.07%) in class X and rest in class XII. (Table 1) It was observed that majority of the students i.e. 683 (91.92%) were Hindu, whereas 59 (7.94%) were Muslim and 1 (0.13%) was Christian. Regarding family type 562 (75.64%) belonged to nuclear families, rest i.e. 181 (24.36%) came from joint families. 478 (64.33%) belonged to families with family members of 4 to 5 persons; in 88 (11.84%) families, number of family members were up to 3; whereas in 147 (19.78%) families it was 6 to 10 and in 30 (4.04%) families, the number of members was above 10. (Figure 1) Regarding the level of education of the parents, majority of the fathers i.e. 286 (38.49%) and mothers i.e. 313 (42.13%) had education level of class 5 to 10. Among fathers 100 (13.46%) were illiterate compared to 122 (16.42%) of mothers; 159 (21.4%) of the fathers were just literate compared to 163 (21.94%) of mothers. It was also observed that 66 (8.88%) fathers were graduate compared to 30 (4.04%) mothers; and 12 (1.62%) fathers and 14 (1.88%) mothers had post graduation. It was observed that 442 (59.49%) students' fathers were unskilled laborers by occupation and 175 (23.55%) were businessmen. Among mothers, 646 (94%) were home maker and 38 (5.11%) were unskilled laborers. Among fathers 70 (9.42%) had service compared to 20 (2.69%) mothers; 5 (0.67%) of fathers were unemployed or retired. (Table 2) According to socio-economic status it was observed that 166 (22.34%) families of the students belonged to Class V, 135 (18.17%) to class IV, 41 (5.52%) to class II and 47 (6.33%) to class I of Prasad's Socio-economic scale. 165 (22.2%) students were not aware about the monthly income of their families. (Figure 2) All the students were from rural areas; 20 (0.27%) each had present residence at mess and relative's house; rests stayed with their family.

According to money earning activity, 696 (93.67%) students were not engaged in money earning activity, 33 (4.44%) used to do tuition, 2 (0.27%) were in business, 5 (0.67%) used to work in field and another 5 (0.67%) students were engaged in bidi-making. Regarding knowledge about the name of substances of abuse, all the students knew about smoking tobacco and 730 (98.25%) & 718 (98.64%) students knew about pan masala/opium/khaini and alcohol respectively. 514 (69.18%) students knew about ganja-bhang/opium/heroin, whereas 155 (20.86%) knew about pain relief ointment/glue, 169 (22.75%) about injection/tablets. (Table 4) Regarding students' knowledge about the harmful effects of substances of abuse, 681 (91.66%) & 36 (4.84%) of students knew tobacco smoking as causative agent for cancer and lung disease (excluding lung cancer) respectively. Regarding harmful effects of tobacco chewing, 123 (16.55%) & 147 (19.78%) students knew tobacco chewing is responsible for disease of teeth and oral cancer respectively. Regarding harmful effects of alcohol, 104 (13.99%) & 20 (2.69%) students knew alcohol as responsible for liver disease and gastric ulcer respectively. 54 (7.28%) students responded that alcohol causes drunkenness. A huge proportion of students i.e. 618 (83.17%) didn't have any idea about the harmful effects of ganja-bhang/opium/heroin. 44 (5.92%) & 53 (7.13%) students knew these substances as causative agents for dizziness and lung disease respectively. 724 (97.44%) had no idea about the harmful effects of injecting drugs; 12 (1.61%) students knew it as responsible for causing infection including AIDS. (Table 4) Among study subjects 374 (49.67%) had ever experience of using addictive substances; among them 315 (55.65%) was male and 59 (33.33%) female students. Among male students 135 (23.85%) and 14 (7.91%) female students given history of addicting substance use in last 3 months. It was observed that 64 (17.20%) of class IX, 44 (20.37%) of class X and 41 (26.45%) of class XII students used any addictive substances in last 3 months.

Among the students who had given ever use of abusive substance, 280 (74.87%) & 121 (32.35%) took pan masala and bidi-cigarette respectively as the first substance; 49 (13.1%) & 5 (1.34%) took alcohol and ganja-

bhang respectively; 1(0.27%) took opium as the first abusive substance. Among the students who ever had used any substances, 131(35.03%) started it at 11-13 years of age; 80(21.39%) and 100(26.74%) students started it at 8-10 and 14-16 years of age respectively. Six (1.6%) students started taking substance at an age below 5 years. Mean age of initiation was 11.75±7 years. Majority i.e. 161(43.05%) had started it due to their curiosity, 85(22.73%) due to peer-pressure, 9(2.41%) –to cope-up frustration and 6(1.6%) used it for excitement. (Table 5) Among students who consumed any abusive substances in last 3 months, 71(47.65%) used Bidi-cigarette, 89(59.73%) took pan masala, 35(23.49%) of them drank alcohol, 19(12.75%) took khaini, 10(6.71%) took ganja-bhang and 8(5.37%) took opium. According to monthly expenses for addiction in last 3 months, 35(23.49%) had monthly expenses below 20 rupees, 39(26.17%) 20-49 rupees, 18(12.08%) had expenses 100-200 rupees and 10(6.71%) had monthly expenses more than 200 rupees. 108(72.48%) of substance abusing students got the substances from market, 42(28.19%) from their friends and 4(2.68%) from their home. It was found that 102(68.50%) of substance abusing students used their pocket money for addiction, 7(4.70%) used their own earning, 16(10.74%) of got money from their friend and 10(6.71%) took unfair means for acquiring money. (Table 6)

Regarding the frequency of addiction among students in past 3 months, among smokers 19(26.76%) used it daily, 11(15.49%) in some days in a week and 41(57.75%) smoked occasionally. Regarding alcohol, 25(71.43%) drank in occasions, 4(11.43%) on some days in a week and the rest i.e. 6(17.14%) used it daily. Among 116 students who used chewing tobacco (Pan masala, zarda&khaini), 18(15.52%) used it daily, 26(22.41%) used it some days in the week and 72(62.07%) used it occasionally. Regarding ganja-bhang, 2(20%) student used it daily, 7(70%) students used it occasionally and 1(10%) on some days of week. All 8 students who used opium, they took it occasionally.

Among 149 substance abusing students in last 3 months, 49(32.89%) had been punished sometimes for addiction; 109(73.15%) were willing to quit the habit and rest 40(26.85%) thought to continue the habit. Among students who were willing to quit the habit, 47(43.12%) thought that they need external help for quitting it; 52(47.71%) had unsuccessful attempts in quitting.

Among 149 the substance abusing students in past 3 months, 71(47.65%) of had faced some side effects; 21(29.58%) of them felt weakness, 8(11.27) lost weight, 11(15.49%) had respiratory trouble. It was also observed that 9(12.08%) of them were suffering from insomnia, 17(23.94%) from anxiety and 14(19.72%) from depression. 15(21.13%) of them thought, sometimes there occurred hampering of prestige and 16(22.54%) had problems in family. 39(54.93%) of them felt that they suffered from an economic loss for buying the addictive substances.

Regarding the addiction history of family members and close relatives, it was observed that 473(64.47%) of fathers, 63(8.48%) mothers had some addiction; 53(7.13%) of siblings and 512(68.91%) of close relatives of the students had history of addiction.

#### **IV. Discussion**

The mean age of initiation of substance ranged from 11.5 to 15 years in the current study, which was almost similar to studies by other authors which ranged from 12 to 14 years.<sup>(8, 9)</sup> The current substance abuse in any form among male students exceeded their female counterparts, which was evident from the results of similar studies.<sup>(9, 10, 11)</sup> Pan masala or Gutkha was the most commonly abused drug by the students, which was also observed in other similar studies.<sup>(9)</sup> It was observed that proportion of substance abuse by students increased with advancement in classes, which might be due to their exposure and experience for longer period of time. Majority of the fathers and close relatives of the students had history of substance(s) abuse which may have an influence in initiating of abusing substances by the students. A majority of the students used tobacco in spite of having the knowledge about their harmful effects; similar findings have been cited in other studies.<sup>(10)</sup> Though, a huge proportion of the students had no idea about the harmful effects of other abusive substances like pan masala, alcohol, ganja-bhang, injecting drugs etc. Curiosity and peer influence was found to be important reasons in initiating substance abuse, which was also seen in similar studies.<sup>(8, 10)</sup> Pocket money was stated as the most frequent source for buying substances. Students even took unfair means (e.g. theft etc.) for acquiring the money which reveals that substance use results in such behaviors, which was also observed in other studies.<sup>(12)</sup> Students reported of acquiring substances from neighborhood market; moreover, they also collected the abusive substances from easily accessible places like home and peers. These were important predictors of increases in substance use and intentions over time. Similar findings were also seen in other studies.<sup>(10)</sup> It was good to see that majority of substances abusing students were willful to quit the habit.

#### **V. Conclusion**

Curiosity and peer group effects were contingent on both initiation and continuation of substance abuse among senior school students. High prevalence of Pan masala use and tobacco smoking points out the necessity for a comprehensive strategy to curb the problem. Additionally, availability of substances in neighborhood,

especially the licit ones, acts as facilitators for substance use. A planned and systemic approach especially directed towards the school students and their family members should be there to contain the problem. Proper information about the harmful effects of the abusing substance should be provided to the students. Early onset of use of substances abuse is associated with a clustering of health risk behaviors in the future. Greater attention for reducing social access to substances by the students is needed for prevention efforts prior to and during high school education. Legislation on substance abuse should be used more strictly. The students who need external help to quit the habit of using substance abuse should be identified and proper care and treatment should be directed to them through proper channels.

**Tables:** Table 1. Distribution of students according to class, age and gender.  
(n=743)

Variables	Gender		Total No.(%)
	Male No.(%)	Female No.(%)	
<b>Class</b>			
IX	310(54.77)	62(35.03)	372(50.07)
X	161(28.45)	55(31.07)	216(29.07)
XII	95(16.78)	60(33.9)	155(20.86)
Total	566(100)	177(100)	743(100)
<b>Age (in years)</b>			
<13	5(0.67)	--	5(0.67)
13	40(5.38)	16(2.15)	56(7.54)
14	180(24.23)	40(5.38)	220(29.61)
15	151(20.32)	44(5.92)	195(26.24)
16	74(9.96)	30(4.04)	104(14.00)
17	79(10.63)	40(5.38)	119(16.02)
18	27(3.63)	7(0.94)	34(4.58)
19	7(0.94)	--	7(0.94)
>19	3(0.4)	--	3(0.4)
Total	566(76.18)	177(23.82)	743(100.00)

**Table 2.** Distribution of parents of the students by their occupation.  
(n=743)

Occupation	Father* No.(%)	Mother* No.(%)
Business	175(23.55)	4(0.54)
Service	70(9.42)	20(2.69)
Self employed	13(1.75)	6(0.81)
Skilled labour	27(3.63)	25(3.36)
Unskilled labour	442(59.49)	38(5.11)
Un-employed / retired	5(0.67)	--
Home maker	--	646(86.94)
Total	732	739

\*11(1.75%) of students' fathers and 4(0.54%) of students' mothers had died.

**Table 3.** Distribution of students according to knowledge about names of addicting substances.(n=743)

Knew about the names of substances of abuse	Students No.(%)
Bidi-cigarette (smoking)	743(100)
Pan masala / zarda / khaini	730(98.25)
Alcohol	718(96.64)
Ganja-bhang / opium / heroin	514(69.18)
Pain relief ointment / glue	155(20.86)
Injection / tablets	169(22.75)

**Table 4.** Distribution of students by their knowledge about the harmful effects of the substances of abuse.  
(n=743)

Harmful effects	Students No.(%)
<b>Tobacco smoking (bidi-cigarette)</b>	
Cancer	681(91.66)
Lung Disease (excluding lung cancer)	36(4.84)
Other correct responses	2593.36
Doubtful responses	49(0.54)
Incorrect responses	18(2.42)
Non-response	6(0.8)
<b>Tobacco chewing (Pan Masala / Zarda / Khaini)</b>	

Disease of teeth	123(16.55)
Cancer (oral/gum)	147(19.78)
Other correct responses	15(2.01)
Doubtful responses	7(0.94)
Incorrect responses	18(2.42)
Non-response	440(59.2)
<b>Alcohol</b>	
Liver disease	104(13.99)
Gastric ulcer	20(2.69)
Drunken-ness	54(7.28)
Other correct responses	13(1.75)
Doubtful responses	06(0.81)
Incorrect response	19(2.56)
Non-response	476(64.06)
<b>Ganja-bhang /heroin / opium</b>	
Dizziness	44(5.92)
Lung disease	53(7.13)
Other correct responses	06(0.81)
Doubtful responses	12(1.61)
<b>Injecting drugs:</b>	
Infection including AIDS	12(1.61)
Weakness	6(0.87)
Doubtful responses	2(0.27)
Non-response	724(97.44)

**Table 5.** Distribution of students by the type of substances use, age at initiation and reason for starting. (n=374)

Types of substance use	No.(%)
Bidi-cigarette	121(32.35)
Pan masala	280(74.87)
Zarda	5(1.34)
Khaini	13(3.48)
Alcohol	49(13.1)
Ganja-bhang	5(1.34)
Opium	1(0.27)
<b>Age at 1<sup>st</sup> use(in years)</b>	
<5	6(1.6)
5-7	11(2.94)
8-10	80(21.39)
11-13	131(35.03)
14-16	100(26.74)
>16	10(2.67)
Couldn't recall	36(9.63)
<b>Reasons for starting</b>	
Curiosity	161(43.05)
Mimicking friends	31(8.29)
Peer-pressure	85(22.73)
Frustration	9(2.41)
Excitement	6(1.6)
Coping with stress	20(5.35)
Following celebrities	8(2.14)
In ceremonial occasion	54(14.44)
Couldn't remember	7(1.87)

**Table 6.** Distribution of students by the type of abusive substances, monthly expenses, source of money, source of acquiring the substance they used in last 3 months.

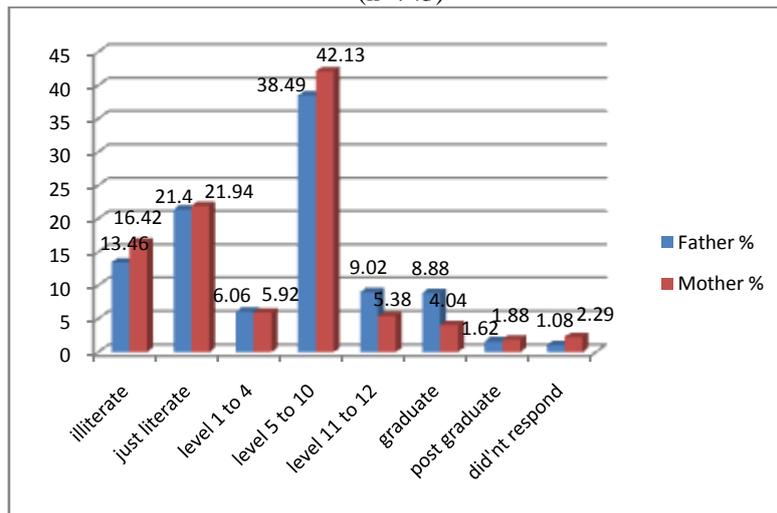
(n=149)

Type of addicting substances	No.(%)
Bidi-cigarette	71(47.65)
Pan masala	89(59.73)
Zarda	8(5.37)
Khaini	19(12.75)
Alcohol	35(23.49)
Ganja-bhang	10(6.71)
Opium	8(5.37)
<b>Monthly expenses (in Rs.)</b>	
<20	35(23.49)
20-49	39(26.17)
50-99	24(16.11)
100-200	18(12.08)

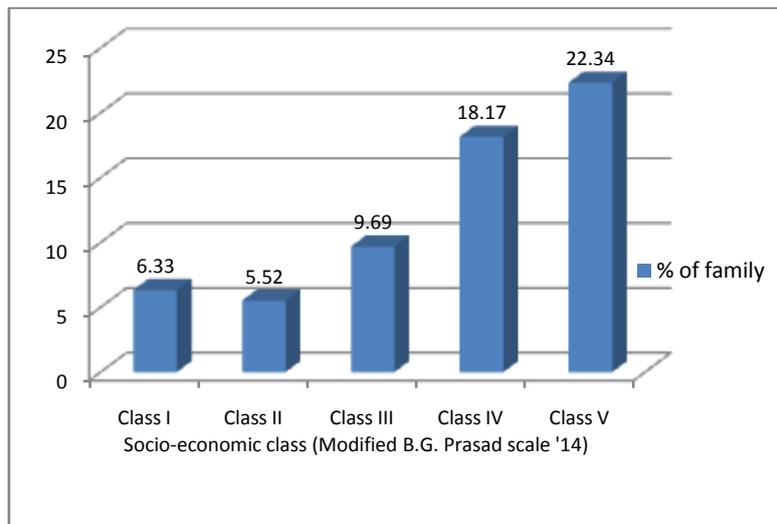
>200	10(6.71)
Couldn't specify	23(15.44)
<b>Source of money</b>	
V vgg	102(68.50)
Own earning	7(4.70)
Friend	16(10.74)
By unfair means	10(6.71)
Didn't respond	14(9.40)
<b>Source of substance</b>	
Market	108(72.48)
Friend	42(28.19)
Home	4(2.68)
Free distribution during ceremonial occasion	3(2.61)

**Figures:**

**Figure 1.** Multiple bar diagram showing distribution of parents of the students by their level of education. (n=743)



**Figure 2.** Bar diagram showing distribution of students by the socio-economic status of their families. (n=743)



[N.B: 22.2% of the students were not aware about the monthly income of their families.]

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