



Determinants of smoking and chewing habits among rural school children in Bankura district of West Bengal, India

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ABSTRACT

Objectives The present study was undertaken to assess the prevalence of smoking and chewing habits and causes of addiction among the school children of rural areas.

Methods This cross-sectional study was conducted in four secondary schools from rural areas of Bankura District, West Bengal during August 2012 to September 2012. Total 1674 students studying in 5th to 10th standard (age group of 10-15 years) were enrolled in the present study. A self-administered questionnaire was applied for data collection.

Results The study showed that 18.45%, 27.95% and 67.56% of the students were smokers, chewer and non-addicted, respectively. Considerable number of boys were addicted with smoking (boys 32.3% vs 4.33girls %) and chewing habits (boys 43.53% vs 12.15girls %). In case of boys, these habits were increased with advancement of ages. Students were more attracted to *bidi* and tobacco with pan-masala among different types of smoking and chewing agents. The most familiar reasons for tobacco user were: influenced by friends (22.88%), influenced by family members (16.32%) and stress relief (10.88%).

Conclusion This study indicated that smoking and chewing habits among school children in rural areas is looming public health issue. Adverse health effect of tobacco use may be incorporated in school secondary curriculum to change the attraction with tobacco among the young generation.

Keywords: Smoking, chewing, school children, rural.

INTRODUCTION

The rise in smoking and chewing habits among students are growing public health, education and social concern Worldwide, especially in developing countries.^{1,2} Centre for Disease Control and Prevention (CDC) in the United States (USA) has reported that there is a significant increase in the percentage of high school students that accounted prevalence of cigarette smoking raised from 27.5% in the year 1991 to 34.8% in 1999.³ Recent studies in India demonstrated that use of tobacco among school children is increasing distressingly.⁴ It is estimated

that 5500 adolescents start using tobacco every day in India, about 4 million young people under the age of 15 already are regularly using tobacco.⁵

Tobacco use is the single avoidable cause of death and disability of the most important public health issue in the present time.⁶ The World Health Organization (WHO) estimates that in every 8 seconds somebody dies from a tobacco-related disease globally.⁷ WHO described tobacco smoking as pandemic with an anticipated three million of deaths per annum globally because of smoking. This figure is estimated to ascend to 10 million by the year 2020 or early 2030, if the

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present trends of smoking continue, seventy percent of these deaths will occur in the developing countries.⁸ Tobacco use causes approximately one million deaths annually in India, which is much than the collective mortality due to malaria, TB and HIV/AIDS. The Tobacco Free Initiative of the World Health Organization (WHO) in collaboration with Centers for Diseases Control, USA has undertaken the Global Youth Tobacco Survey (GYTS). As per GYTS, 2009 in India, about 14.6% of 13-15 years school going children used tobacco.⁹ The habit usually starts in adolescence and rapidly escalates thereafter.⁴

Due to high addiction potential of nicotine, tobacco use leads to chronic dependence which requires treatment. Only 5% of the world's population is estimated to have access to treatment for tobacco dependence.¹⁰ Existing tobacco cessation services in India, both in public and private sector are grossly inadequate. Proper efforts to control the addiction of smoking and chewing at early stage of life are lacking.

In developing countries, few studies^[1,6,11-13] has been conducted to find out the magnitude and understand this problem but there are dearth of data from India^[4,14,15] and especially in rural West Bengal.

Therefore, this study was undertaken to assess the prevalence of smoking and chewing habits and to explore the rationale for such addiction among rural school children of Bankura district, West Bengal.

METHODS

Sample

This cross-sectional study was conducted in rural areas of Bankura District under the province of West Bengal, India. In the present study, four schools were selected by random sampling procedure out of eight Government-approved secondary schools under the Bankura-I block of Bankura District. The study was carried out during the period of August 2012 to September 2012. School records were utilized to ascertain the age of students. Total 1674 school children studying in 5th to 10th standard, with age group of 10 to 15 years were enrolled in the present study.

Questionnaire

A questionnaire method was applied to assess the prevalence and rationale behind the addiction to smoking and chewing. The questionnaire contained following topics: practice of smoking and chewing, types of addiction, frequency of addiction and causes for starting addiction and continuance.

Ethical Consideration

Students were approached about protocol of the study and verbal consent was obtained before the collection of data. School authorities' permission was also obtained prior the commencement of study.

RESULTS

Table 1 showed the characteristics of study participants. Of the 1674 subjects enrolled in the study, 843 subjects were boys (50.3%) and 831 were girls (49.6%). The mean age was 12.68±3.7 years with range of 10-15 years. Majority of respondents (20.7%) were in the age of 10 year and studying at 5th standard.

Table1 Characteristics of study participants (n=1674)

Variables	No.	Percentage (%)	Variables	No.	Percentage (%)
Age (years)			Class		
10	347	20.72	V	327	19.53
11	282	16.84	VI	269	16.06
12	291	17.38	VII	314	18.75
13	280	16.72	VIII	308	18.39
14	263	15.71	IX	247	14.75
15	211	12.60	X	209	12.48
Gender					
Boys	843	50.35			
Girls	831	49.65			

Table 2 represented the prevalence of smoking and chewing habit among the participants. Boys were more addicted than girls. About 32.3% of boys were smokers, 43.5% of boys were chewers and 13.5% of boys were both categories where only 4.3% and 12.1% of girls were smoker and chewer respectively. In case of boys smoking and chewing habits was increased with age. In case of girls, highest frequency of chewing habit was observed in early age.

Table 3 showed the types of smoking and chewing habit amongst the participants. Types of smoking were divided into cigarette and *bidi* and chewing were divided into raw tobacco, tobacco with *pan-masala*, as tobacco-mixed tooth powder. Smoking of cigarette and *bidi* were reported in 273 boys (6.28% and 26.09%) and 36 girls (0.36% and 3.9%). *Bidi* and tobacco with *pan-masala* user was more common in both boys (26.09% and 28.23%) and girls (3.97% and 8.78%).

Frequency of smoking and chewing habits was presented in table 4. Maximum of the subjects (smoking 45.9% and chewing 44.2%) accounted that

they used tobacco 3-5 times per day. Only 5.5% of students reported that they smoke occasionally.

Table 5 illustrated the main causal factors for addiction with tobacco which are divided into personal and social factors. Personal reasons include feeling relaxed/stress, feeling strong, spending free time, interested with special smell, to attract attention of others and social reasons are seeing smoking by family member, friends, teachers and influenced by advertisement. By exploring personal reasons, we observed that the majority confessed they used tobacco for relaxation (10.8%) followed by to attract opposite sex/others (9%). Also, few respondents (5.4%) mentioned that they used tobacco for spending free time. Under the social aspect, many children used tobacco by the improvisation of seeing from their friends (22.8%) or by family members (16.3%) and by advertisement (7.8%). About 9.9% of participants were reported that they used tobacco without any specific reasons.

Table 2 Age wise prevalence of smoking and chewing habit among participants

Age (year)	Smoking		Chewing		Both		Non-addicted	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
10	21(11.60)	-	33(18.23)	23(13.85)	19(10.49)	-	146(80.66)	143(86.14)
11	17(11.25)	-	24(15.89)	19(14.50)	15(9.93)	-	125(82.78)	112(85.49)
12	41(28.08)	9(6.20)	62(42.46)	19(13.10)	37(25.34)	7(4.82)	63(43.15)	124(85.51)
13	51(36.69)	16(11.34)	79(56.83)	16(11.24)	39(28.05)	13(9.21)	48(34.53)	122(86.52)
14	81(60.44)	-	88(65.67)	11(8.52)	59(44.02)	-	24(17.91)	118(91.47)
15	62(67.39)	11(9.24)	81(88.04)	13(10.92)	57(61.95)	11(9.24)	6(6.52)	100(84.03)
Total	273(32.3)	36(4.33)	367(43.53)	101(12.15)	226(13.5)	31(18.51)	412(24.61)	719(42.95)

Table 3 Different types of smoking and chewing habit amongst the boys (n=843) and girls (n=831)

Variables	Boys (%)	Girls (%)
Types of smoking		
Cigarette	53(6.28)	3(0.36)
Bidi	220(26.09)	33(3.97)
Total	273(32.38)	36(4.33)
Types of chewing		
Raw tobacco (<i>zarda</i>)	92(10.91)	17(2.04)
Tobacco with pan-masala (<i>gutka</i>)	238(28.23)	73(8.78)
Tobacco tooth-powder	37(4.38)	11(1.32)
Total	367(43.53)	101(12.15)

Table 4 Frequency of habits of tobacco use per day by participants

Particulars	Regular			Occasionally
	2≤ day	3-5/day	≥5/day	
Smoking (n=309)	89(28.8)	142(45.95)	61(19.74)	17(5.5)
Chewing (n=468)	96(20.51)	207(44.23)	138(29.48)	27(5.76)

Table 5 Reasons for addiction to smoking and chewing of tobacco (n=533)

Reasons	Percentage (%)
Personal aspect	
Feel relaxed/ Stress relief	58 (10.88)
Feeling strong	41 (7.69)
Free time spending	29 (5.44)
Interest special smell	31(5.81)
To attract opposite sex/others	48 (9)
Total	207 (38.83)
Social aspect	
Influenced by family members	87 (16.32)
Influenced by Teachers	22 (4.12)
Influence by friends	122 (22.88)
Influenced by Advertisement/ Mimic others	42 (7.87)
Total	273 (52.21)
No specific reason	53 (9.94)

DISCUSSION

The Global Tobacco Youth Study (GTYS), reported that smoking is the predominant form of tobacco use among adolescent children in developed countries while in developing countries the use of smokeless tobacco is equally prevalent.¹⁶

Present study demonstrated an alarming picture on tobacco addiction among rural school children of West Bengal. About 18.4% and 27.9% of students were addicted with smoking and chewing, respectively. In a nationwide survey conducted in 2002, it was found that the prevalence of smoking among 15 year-olds and above was 45.3% among males and 18.3% among females.¹ George *et al* conducted a study in children at poor coastal community in Kerala and reported that tobacco chewing and smoking were 29% and 2% respectively.¹⁵ Another investigation among school children in Goa reported that 13.4% boys and 9.5% girls use tobacco.¹⁷

Among the study participants 45.9% were smoked 3-5 sticks of cigarette or bidi daily and 44.2% of children consume 2-3 packets *gutka* daily. The

majority of the tobacco chewer reported chewing as *gutka*. In a study conducted in Nigeria, stated that 62.5% of the college students smoked 1-5 sticks of cigarette daily.¹³

A noteworthy point was that in boys both smoking and chewing habits was increased with the advancement of age. Previous studies also found that positive relationship between years at school and an increased rate of smoking.¹ Other important findings of the study is that less number of girls were addicted with smoking than boys. This difference may be attributed that tobacco use by girls is not culturally acceptable in our society. A similar study in Bihar, demonstrated that 8% of girls students were usually smoked and 49% of girls used smokeless tobacco.¹⁴ Though gender gap in tobacco use is narrowing globally¹⁴ which may be due to the globalization.

In this study we also evaluated the rationale behind the tobacco addiction among the school students which depicted that, 38.8% and 52.2% of students used tobacco due to personal and social factors respectively. Most of the students stated that they were influenced by peer groups (22.8%) and family

members (16.3%). Most studies have showed that the family history of smoking is strongly associated with youth smoking.¹¹ Harakeh *et al.*¹⁸ found that smoking of the family member influenced smoking to the younger sibling. However, this study also found that considerable numbers of 7.8% of smoker were influenced by advertisement. Which strongly supports that social influences were large impact among those who reported starting or increasing their smoking.

To manage the tobacco dependence at early age of life appropriate health knowledge and counseling are required. Presently in secondary school curriculum does not address various aspects related to the addiction with tobacco. So, we recommend that to include the adverse health effect of tobacco smoking and chewing in school curriculum.

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