

Assessment of social determinants and prevalence of tobacco use among upper primary school students of Ahmedabad city, Gujarat, India

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Abstract

Background: Today's adolescents are tomorrow's citizens. Pandemic levels of tobacco use in children and adolescent have been reached. Violence within the family, stressful life events, negative peer influence, and so on are significantly associated with tobacco use and high-risk behavior.

Objective: (1) To study the sociodemographic profiles of the adolescent school students; (2) to study the social determinants responsible for tobacco addiction among adolescents; (3) to study the prevalence of tobacco consumption among them; and (4) to study the relationship between tobacco consumption and other associated variables.

Materials and Methods: By using multistage sampling method, a cross-sectional study was carried out among adolescent school students of Ahmedabad. According to the global study of Shah and Jathal (*Global Youth Tobacco Survey, 2006*), the prevalence of tobacco users was 14.6%; a sample size was calculated, and 2,842 adolescent school students studying in 18 municipal and grant-in-aid schools from all geographical zones of Ahmedabad were enrolled. Predesigned, structured questionnaires were given to students to be filled and collected back for data analysis. For raising awareness, health education session was organized by using audiovisual aids (PowerPoint presentation) regarding harmful effects of tobacco. Data were analyzed by using appropriate statistical software. The study was conducted during February 2013 to December 2014 after obtaining ethical consideration from the Education Officer of Ahmedabad city and principals of the respective schools by considering them as a legally acceptable guardian.

Result: Prevalence of tobacco use was 12.2%. The prevalence of tobacco use among boys was 16.2%; among girls, it was 6.5%. Use of both forms of tobacco and smoking was two- to threefold more in boys when compared with girls. Students initiated tobacco use as early as 8 years in either sex; 400 (14.1%) students motivated others to initiate chewing and 78 (2.7%) for smoking. About 19.8% students revealed their family members as tobacco consumers and 1,001 (35.2%) students have ever bought tobacco products either for themselves or for others. Among them, 124 (4.4%) were buying tobacco products daily, and 643 (65%) were asked to buy tobacco products by their family members. Half of the consumers confessed that they are unable to quit. All these factors influence the tobacco consumption among the young students.

Conclusion: This study found a significant association of tobacco use by the adolescents with family, which had one or more members who consume tobacco. Evident gender difference (male predominance) was also observed in tobacco use. Peer pressure and just for enjoyment were found the most common factors for tobacco consumption practices amongst school students.

KEY WORDS: Tobacco, family member, peer pressure, awareness, adolescents

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Introduction

Tobacco is identified as the single most lethal agent known to humanity. Young people are the most vulnerable segment, and adolescence is found to be the most susceptible time for initiating tobacco use.^[1] Nearly, 6 million deaths owing to tobacco use occur every year, which may increase to 8 million deaths/year by 2030.^[2] Of these, 70% deaths will occur in the

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developing countries, mainly China and India.^[3,4] Various socioeconomic conditions, exposure to childhood abuse, violence within the family, depressive symptoms, stressful life events, poor academic performance, negative peer influence, and so on are significantly associated high risk of regular smoking and associated high-risk behavior, with parental support acting as a proactive factor.^[5,6] The WHO define “adolescents” as person who are in the 10- to 19-year age group.^[7] Adolescent constitute one-fourth (22.8%) of population of India.^[8] In Gujarat, Global Youth Tobacco Survey (GYTS) data represent the prevalence of ever-used tobacco (any form) in adolescent was around 19.0%. In Ahmedabad city, proportion of students currently using any tobacco products was 14.5%.^[9] The alarming statistics of tobacco use by adolescents motivated us to carry out a baseline survey study on tobacco use among adolescent primary school students, understanding the initiating factors, knowledge of adverse effects, and attitude towards tobacco use among them would help to plan and implement various methods of awareness programs in the school to save the youth from the clutches of this evil addiction.

Objective

(1) To study the sociodemographic profile of the adolescent school students; (2) to study the social determinants responsible for tobacco addiction among adolescents; (3) to study the prevalence of tobacco consumption among them; and (4) to study the relationship between tobacco consumption and other associated variables.

Materials and Methods

By using multistage sampling method, a cross-sectional study was carried out among adolescent school students of Ahmedabad, Gujarat, India. According to the global study of Shah and Jathal, the prevalence of tobacco users were 14.6%, a sample size was calculated, and 2,842 adolescent school students studying in 18 municipal and grant-in-aid schools from all geographical zones of Ahmedabad were enrolled. Predesigned, structured questionnaire were given to students to be filled and collected back for data analysis. For raising awareness, health education session was organized by using audiovisual aids (PowerPoint presentation) regarding harmful effects of tobacco. Data were analyzed by using appropriate statistical software. The study was conducted during February 2013 to December 2014 after obtaining ethical consideration from the Education Officer of Ahmedabad city and principals of the respective schools by considering them as a legally acceptable guardian.

Result

A cross-sectional study was carried out and sample size determined by using prevalence of tobacco consumption according to GYTS as 14.6%.^[2] A sample size of 2,247 was

calculated, and finally, 2,842 students studying in 5th to 8th standards from 18 schools of 6 zones of Ahmedabad were enrolled in this study; 58.4% of students were from municipal schools and the rest from grant-in-aid schools. Here, 38% belonged to upper socioeconomic classes (classes I and II); the rest were from lower socioeconomic classes. While only 20% of students' fathers and 8.7% of their mothers possessed university degree, the rest revealed lower literacy levels [Table 1].

Overall prevalence of tobacco was 12.2%. While it was 16.2% among all the male students, it was 6.5% in female students. There was difference in prevalence of current users of any tobacco products (12.2%) from previous GYTS India study result (in 2003, 16.9%, and in 2006, 14.1%) [Table 2].^[3] Tobacco consumption was 3.5 times more prevalent in boys when compared with girls (77.7% of consumers were boys and 22.3% girls). The most prevalent form of tobacco use was practiced by nearly three-fourths (73.4%) of all consumers. Smoker constituted 18%, and 8.7% practiced use of both forms. While 91% of all girls and 68.4% of all boys were using smokeless forms, 21.6% of boys and 5.2% of girls were smokers among all tobacco consumers. While assessing the social determinants, tobacco prevalence increased with decreasing socioeconomic status of the students. The prevalence was 6.1% in class I and steadily increased to 33% in class V. Major reasons for high tobacco consumption in lower socioeconomic class may be low literacy status and high tobacco use among their family members and peer groups [Table 3]. There is a significant linear trend in the socioeconomic class and the number of tobacco consumers.

Peer group pressure was observed to be the most important contributing factor, accounting for 46.5% for the use of tobacco by the students. Nearly, 37% students cited that use of tobacco products make the person look smart. Some 17% consumed tobacco to get release from the stress [Tables 4 and 5]. The students initiated the use as early as 8 years in either sex. It is observed that nearly 25% of boys and 35% of girls has initiated tobacco use by the age of 10 years or less. This is alarming fact that school children taste tobacco at such tender age and become addicted to it for life. The mean age of initiation of tobacco habit in students was 11.66 ± 1.89 years. The median age was 11.23 years. Minimum age of initiation was 8 years in both the schools, which is the great matter of concern as, from very young age, the students had started tobacco consumption. Even though selling of tobacco product is strictly prohibited within 100-m radius around school, 53.7% of students replied that tobacco products are accessible very close to the school premises.

Of total 2,842 students, 19.8% students revealed their family members as tobacco consumers and 1,001 (35.2%) students have ever bought tobacco products either for themselves or for others. Of these 1,001 students, 124 (4.4%) were buying tobacco products daily, and 643 (65%) students were asked to buy tobacco products by their family members [Table 6]. Of total tobacco consumers, 35.4% have tried to quit tobacco. Half of the consumers confessed that they are unable to quit. All these factors influence the tobacco consumption among the young students.

Table 1: Information regarding socioeconomic status of students

Variables	Frequency		Percentage	
Socioeconomic class ^a (modified Prasad's classification)				
• I	403		14.2	
• II	674		23.7	
• III	833		29.3	
• IV	702		24.7	
• V	230		8.1	
Characteristics	Father		Mother	
	Frequency	%	Frequency	%
Occupation (parents of study respondents)				
• Government employee	361	12.7	270	9.5
• Private employee	307	10.8	233	8.2
• Own business	429	15.1	122	4.3
• Shopkeeper	421	14.8	23	0.8
• Laborer	841	29.6	375	13.2
• House maker	0	0	1469	51.7
• Unemployed	205	7.2	315	11.1
• Any other	279	9.8	34	1.2
Literacy level (parents of study respondents)				
• Illiterate	429	15.1	1654	58.2
• Up to primary	583	20.5	475	16.7
• Up to secondary	833	29.3	244	8.6
• Up to higher secondary	438	15.4	222	7.8
• Up to graduate	307	10.8	151	5.3
• Up to postgraduate	253	8.9	97	3.4

^aAll India Consumer Price Index for industrial worker (base 1982 = 100) shows current All India Consumer Price Index as 1046 in April 2013.

Table 2: Prevalence of current tobacco consumer

Tobacco	Boys		Girls		Total	
	Frequency	%	Frequency	%	Frequency	%
Consumers	269	16.2	77	6.5	346	12.2
Nonconsumers	1390	83.8	1106	93.5	2496	87.8
Total	1659	100.0	1183	100.0	2842	100.0

χ^2 -test: $\chi^2 = 60.84$, $df = 1$, $p < 0.0001$.

Table 3: Prevalence of the tobacco consumer according to their socioeconomic class

Socioeconomic class	Students ($n = 2842$), frequency	Tobacco consumers					
		Boys		Girls		Total	
		Frequency	%	Frequency	%	Frequency	%
I	404	18	4.5	7	1.7	25	6.1
II	674	35	5.2	13	1.9	48	7.1
III	832	67	8.1	13	1.6	80	9.6
IV	702	92	13.1	25	3.6	117	16.6
V	230	57	24.8	19	8.3	76	33.0
Total	2842	269	16.2	77	6.5	346	12.2

Percentages are computed from each individual class.

χ^2 -test for independence: $\chi^2 = 141.66$, $df = 4$, $p < 0.0001$.

Table 4: Factors affecting practice of tobacco consumption

According to students, the responsible factors for the initiation of tobacco habits among youth						
Responses	Boys (n = 1659)		Girls (n = 1183)		Total (n = 2842)	
	Frequency	%	Frequency	%	Frequency	%
Advertisement board	529	31.9	750	63.4	1279	45.0
Family members	833	50.2	893	75.5	1726	60.7
Friends	1015	61.2	757	64.0	1772	62.4
Newspaper	260	15.7	186	15.7	446	15.7
Others	75	4.5	111	9.4	186	6.5
TV	561	33.8	619	52.3	1180	41.5

Total percentage is more than 100 owing to multiple responses.

Table 5: Reasons for tobacco use according to tobacco consumers (n = 346)

Responses	Boys (n = 269)		Girls (n = 77)		Total (n = 346)	
	Frequency	%	Frequency	%	Frequency	%
Peer group pressure	130	48.3	31	40.3	161	46.5
To look smart	106	39.4	22	28.6	128	37.0
For increasing reputation	73	27.1	12	15.6	85	24.6
To release stress of study	45	16.7	17	22.1	62	17.9
Other reasons	22	8.2	6	7.8	28	8.1

Total percentage is more than 100 owing to multiple responses.

Table 6: Distribution of students according to use of tobacco by their family members

Responses	Boys		Girls		Total	
	Frequency	%	Frequency	%	Frequency	%
Does anyone in your family consume tobacco?						
• Yes	393	23.7	170	14.4	563	19.8
• No	1266	76.3	1013	85.6	2279	80.2
• Total	1659	100	1183	100	2842	100
Have you ever bought tobacco for anyone?						
• No, never	981	59.1	860	72.7	1841	64.8
• Sometimes	412	24.8	152	12.8	564	19.8
• Many times	197	11.9	116	9.8	313	11.0
• Daily	69	4.2	55	4.6	124	4.4
• Total	1659	100.0	1183	100.0	2842	100.0
Who asked you to buy tobacco?						
• Father	271	40.0	44	13.6	315	31.5
• Brother	89	13.1	82	25.4	171	17.1
• Other relatives	71	10.5	86	26.6	157	15.7
• Friends	247	36.4	111	34.4	358	35.8
• Total	678	100.0	323	100.0	1001	100.0

Discussion

In this study, prevalence of current smokeless tobacco users was 284 (9.9%) while in study by Shah and Jathal (GYTS 2003),^[10] the prevalence was 13.6%. However, there was a marginal increase in the prevalence of current smokers [92 (3.2%)] compared with 2.0% in the same study.^[11] In the

study by Chadda and Sengupta,^[11] common reasons were family history of tobacco use by elders, peer influence, experimentation, easy access to such products, personality factors, underlying emotional and psychological problems, accompanied risk-taking behaviors, and, most importantly, the aggressive marketing strategies of the tobacco industry. In this study, 10–14 years was found to be the most common age group

(79.2%) for initiation of tobacco consumption among current tobacco users. While Gavarsana et al.^[12] and Hanspal et al.^[13] mentioned that 64% of users started this habit in 10–12 years, and similarly, Singhi et al.^[14] mentioned that 80% of users started this habit in 10–14 years. India is a country where childhood years of formative education are of utmost importance. This trend of early age of initiation is alarming and must be carefully addressed in the future policy making and antitobacco legislations. Of total 2,842, 19.8% students revealed their family members as tobacco consumers, and 1,001 (35.2%) students have ever bought tobacco products either for themselves or for others. Of these 1,001 students, 124 (4.4%) were buying tobacco products daily, and 643 (65%) students were asked to buy tobacco products by their family members. All these factors influence the tobacco consumption among the young students. Similar findings were observed by Kapoor et al.^[15] and Jayant et al.,^[16] and they mentioned that tobacco use by parents or an elder sibling increases the likelihood that a child begins smoking.

Of total tobacco consumers, 35.4% have tried to quit tobacco. Half of the consumers confessed that they are unable to quit. Sergen et al.^[17] reported in their study that only 25.7% of current smokers wanted to quit smoking whereas in GYTS India 2006,^[18] 70% of current smokers wanted to quit smoking. Of 346 tobacco consumers, 107 (30.9%) admitted that they were taught about danger of tobacco consumption in past. Of them, only 19.6% were motivated by school teachers in their school life regarding quitting of tobacco use. This was a positive finding, which may be very helpful in near future for creating awareness among students. In contrast to this, study done by Shah and Jathal,^[10] 68% of students were taught in class, about dangers of smoking or chewing tobacco, whereas GYTS 2006^[18] report of India observed 54.4% of same.

Conclusion

The findings in the study suggest that tobacco use is still important risk behavior among adolescent students. Prevalence of using smokeless tobacco product was more than prevalence in smokers. This study found a significant association of tobacco use by the adolescents with family that had one or more members who consume tobacco. Evident gender difference (male predominance) was also observed in tobacco use. Peer pressure and just for enjoyment were found most common factors for tobacco consumption practices among school students.

Recommendations

Strict enforcement of law banning sale of tobacco products in the vicinity of school premises [COTPA section 6(b)]. Stricter implementation of ban on sale of tobacco products to minors [COTPA section 6(a)]. Changing community/parental norms regarding tobacco use through increasing public awareness about harmful health consequences of tobacco use in children. Strict enforcement of law on prohibition of

smoking in public places (COTPA section 4). A comprehensive ban on advertisement of any tobacco containing product in any medium of mass media communication including surrogate advertising (COTPA section 5). A youth antitobacco use cessation program should be implemented at school level.

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