



PREVALENCE OF TOBACCO CONSUMPTION AND ASSOCIATED FACTORS AMONG ADOLESCENT SCHOOL CHILDREN OF AHMEDABAD

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Financial Support: None declared

Conflict of Interest: None declared

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How to cite this article:

Vyas MJ, Patel AB. Prevalence of Tobacco Consumption and Associated Factors among Adolescent School Children of Ahmedabad. Ntl J Community Med 2016; 7(10):802-806.

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Date of Submission: 06-05-16

Date of Acceptance: 13-10-16

Date of Publication: 31-10-16

ABSTRACT

Background: In Ahmedabad city, proportion of students currently using any tobacco products was 14.5%. The study was conducted to find out the prevalence of current and ever used tobacco consumption among the adolescent school children and also factor associated with tobacco consumption

Methodology: A cross sectional study was conducted among 2000 students (12-19 years) of class VIII to XII from 532 schools of Ahmedabad city 1st January 2011 to 31 December 2011.

Results: Prevalence of ever users of any tobacco products was 10.6%. Prevalence of current users of any tobacco products was 8.2%. The major factor found for initiating tobacco consumption among ever tobacco consumers was just for enjoyment & peer pressure (55%). Prevalence in students of Gujarati medium schools (12.1%) was higher than those who studied in English medium schools (7.9%).

Conclusion: Tobacco use is still important risk behaviour among adolescent students. Prevalence of using smokeless tobacco product was more than prevalence in smokers. Evident gender difference (male predominance) was also observed in tobacco use.

Key Words: Tobacco consumption, prevalence, adolescent students, ever user, current user

INTRODUCTION

Tobacco is identified as the single most lethal agent known to humanity. There are 25 tobacco related diseases known till date. Tobacco kills between 8-9 lakhs people each year which will multiply many folds in the next 20 years.¹

Today's adolescents' are tomorrow's citizens. The WHO define 'adolescents' as person who are in the 10 to 19 year age group.² Adolescent constitute one fourth (22.8%) of population of India³ therefore each adolescent should be healthy and educated. Tobacco use in children and adolescent is reaching pandemic levels.² In Gujarat, Global Youth Tobacco Survey (GYTS) data represents the prevalence of ever used tobacco (any form) in adolescent around 19.0%.⁴ In Ahmedabad city, proportion of students currently using any tobacco products was 14.5%.⁴

Of these, the proportion of students using smokeless tobacco products in males was 22.04% and females was 1.7%.⁴ The determinants of tobacco use among youth are associated with parental influence, tobacco use by friend, peer pressure, exposure to media advertisements and tobacco use by school personnel.⁵

The alarming statistics and the prediction of death, diseases and disability it was strongly felt by us to carry out a baseline survey study on tobacco use among adolescents and understanding the initiating factors of tobacco consumption. The present study was carried out with the objectives to study the prevalence of current and ever used tobacco consumption among the adolescent school children and also to study the relationship between tobacco consumption and other associated variables.

MATERIALS AND METHODS

A cross sectional study was conducted among adolescents studying in various schools of Ahmedabad city. The study population for the present study was students (12-19 years) of class VIII to XII in secondary & higher secondary schools of Ahmedabad city. The Study duration was one year from 1st January 2011 to 31 December 2011.

A validated self-administered pre tested structured questionnaire was used to collect the data to assess the prevalence, socio demographic profile & initiating factors regarding tobacco use. A verbal consent was obtained from the principals of the schools and the students. All the questions were explained to the students and total confidentiality was assured.

Sampling method & sample size:

There are total 532 secondary & higher secondary schools in Ahmedabad city distributed in 10 clusters (sankuls) based on data available from District Education Office of Ahmedabad city. On an average there were 53 schools present in each cluster. Total 30 schools were randomly selected by selecting three schools from each of these 10 clusters (sankuls). On an average, students 66 from class VIII to XII were included. From each school all students, irrespective of their actual age were included in the study. Total student population selected was 2267 from 30 randomly selected schools from Ahmedabad city based on previous GYTS survey data where prevalence of current use of tobacco products was 15%. Total 2000 (88.2%) students were finally studied after removing dropouts and non response rate.

Data obtained were compiled and analyzed by Epi-info software version 7. Proportions and chi-square test were used as statistical tests to find out the statistical significance.

RESULTS

Total 2000 students were included in the study from 30 schools of Ahmedabad city. Out of total 2000 students, 78% were male & 22% were female. On analyzing the age distribution, majority of students were from 13-14 year age-group (59%) followed by 15-16 year age group (31%). There were 46% students studied in combine stream schools, whereas 40% from general & only 13.3% from science stream schools.

Information regarding family of study respondents, on socio economic class distribution, around 40% belongs to upper socioeconomic class (I-18%, II-21.6%), class III were 26.8% & rest 30% came from lower socio economic group (IV-25.9%, V-

6.8%). On analyzing occupation distribution of parents of study respondents, Father in job (either government or private) were 27%, in business 19.9%, shopkeeper 9.8%, laborer 18.9%, 7.9% doing farming work & rest 13.2% were doing any other job. Most of mother of study respondents were homemaker (62.1%), while 16.2% doing job (either government or private), 5.2% laborers & only 4.5% were doing any other job.

Table 1: Prevalence of ever tobacco users (once any time in life time) among study respondents (N=2000)

Variables	Ever Tobacco Users			
	Smokers (n=63)(%)	Smokeless (n=134)(%)	Both (n=16)(%)	Total (n=213)(%)
Sex				
Male	55(3.5)	127(8.1)	14(0.9)	196(12.6)
Female	8(1.8)	7(1.6)	2(0.5)	17(3.8)
Age(years)				
11-12 yrs	3(3.1)	6(6.3)	0(0)	9(9.4)
13-14yrs	42(3.5)	53(4.4)	7(0.5)	102(8.6)
15-16yrs	15(2.4)	70(11.2)	7(1.1)	92(14.8)
17-19yrs	3(2.9)	5(4.9)	2(1.9)	10(9.8)
School Class				
8 th	3(2.6)	5(4.3)	1(0.9)	9(7.7)
9 th	43(3.5)	67(5.6)	7(0.6)	117(9.7)
10 th	9(1.8)	54(10.7)	8(1.6)	71(14.1)
11 th	5(4.5)	5(4.5)	0(0)	10(9.0)
12 th	3(4.3)	3(4.3)	0(0)	6(8.6)
Medium of Education*				
Gujarati	46(3.6)	97(7.7)	11(0.8)	154(12.1)
English	17(2.3)	37(5.0)	5(0.7)	59(7.9)
Socio economic class				
I	3(0.80)	8(2.1)	2(0.5)	13(7.7)
II	5(1.15)	10(2.3)	3(0.6)	18(4.1)
III	26(4.8)	54(10.1)	4(0.7)	84(15.6)
IV	24(4.6)	56(10.8)	4(0.8)	84(16.2)
V	5(3.6)	6(4.4)	3(2.2)	14(10.2)

*Association between medium of education and type of ever tobacco user was not significant (p>0.05)

Table 2: Association of ever tobacco consumption with socio-demographic variables (N=2000)

Variables	Ever* Tobacco users	Non tobacco users (%)	OR	P value
Sex				
Male	196(12.5)	1365(87.5)	3.6	<0.0001
Female	17(3.8)	422(96.4)		
Age (years)				
11-14	45(3.5)	1233(96.5)	1.42	0.2
15-19	18(2.5)	704(97.5)		
School Class				
8-10 th	55(3.0)	1765(97.0)	0.67	0.3
11-12 th	8(4.4)	172(95.6)		
Socio economic class				
I- II	8(0.80)	802(99.2)	0.2	<0.0001
III- V	55(4.8)	1135(95.2)		

* Ever Tobacco users (once any time in life time)

Looking at literacy level of parents of study respondents, father of study respondents, out of total, 8.4% studied up to primary level, 34.7 & 32% were from secondary & higher secondary level of education respectively, while 20% were education up to graduate & rest 4.6% had done post graduate studies. On looking at mother side surprisingly 0.53% were illiterate, 21% up to primary, 36%, 26% & 14.7% were up studied up to secondary, higher secondary & graduate level respectively, rest 1.5% did post graduate studies.

Prevalence of ever users of any tobacco products was 10.6%. Among total ever tobacco users, ever smokers were 3.1% & smokeless tobacco users were 6.7%. Out of total ever smokers, prevalence among boys (male) was 3.5%. Among ever smokeless tobacco users, prevalence among boys (male) was 8.1% & among girls (female) was 1.6%. Prevalence of both forms of tobacco was only 0.8%. Highest prevalence was observed in 15-16 year age group (14.8%) followed by 17-19 years age group (9.8%). Highest prevalence of ever tobacco users was found in 10th standard class followed by 9th class. There was no difference in prevalence of tobacco use among Gujarati medium and English medium students. Prevalence of ever tobacco users in upper socioeconomic class (I & II) was (11.8%) lower than prevalence in lower socio economic class (IV & V=26.4%). This difference was found to be statistically significant at 95% confidence limit. ($\chi^2=7.16, p<0.05$) (Table 1).

Ever tobacco consumption was found higher in males compared to females and this difference was highly significant. It was seen lower in upper socioeconomic class compared to lower class and this difference was also highly significant. Age and class standard wise there was no statistically significant difference among ever tobacco users and nonusers (Table 2).

Prevalence of current users of any tobacco products was 8.2%. Among total current tobacco users, current smokers were 2.5% & smokeless tobacco users were 5.7%. Among current smokers, prevalence among boys (male) was 2.9% & among girls (female) was 1.1%. Among current smokeless tobacco users, prevalence among boys (male) was 6.8% & among girls (female) was 1.6%. Highest prevalence was observed in 15-16 year age group (11.9%) followed by 17-19 years age group (7.8%). Highest prevalence of current tobacco users was found in 10th standard class (12.7) followed by 12th class (8.4%), Prevalence of current tobacco users in upper socioeconomic class (I & II) was (11.7%) lower than prevalence in lower socio economic class (IV & V=20%). This difference was found to be statistically significant at 95% confidence limit. ($p<0.05$) (Table 3).

Table 3: Prevalence of current tobacco users among study respondents (N=2000)

Variables	Smokers (%)	Smokeless (%)	Total (%)
Sex			
Male	45(2.9)	107(6.8)	152(9.7)
Female	5(1.1)	7(1.6)	12(2.7)
Total	50(2.5)	114(5.7)	164(8.2)
Age(years)			
11-12yrs	3(3.1)	2(2.1)	5(5.3)
13-14yrs	33(2.8)	44(3.7)	77(6.5)
15-16yrs	11(1.7)	63(10.1)	74(11.9)
17-19yrs	3(3.4)	5(5.1)	8(7.8)
Total	50(2.5)	114(5.7)	164(8.2)
School Class			
8 th	3(2.5)	5(4.3)	8(6.9)
9 th	31(2.6)	46(3.8)	77(6.4)
10 th	8(1.6)	56(11.1)	64(12.7)
11 th	5(4.8)	4(3.6)	9(8.2)
12 th	3(4.2)	3(4.2)	6(8.4)
Total	50(2.5)	114(5.7)	164(8.2)
Medium of Education			
Gujarati	32(2.5)	72(5.7)	104(8.2)
English	18(2.4)	42(5.6)	60(8.1)
Total	50(2.5)	114(5.7)	164(8.2)
Socio economic class			
I	6(1.5)	12(3.2)	18(4.7)
II	11(2.5)	15(3.5)	26(6.0)
III	15(2.8)	38(7.1)	53(9.8)
IV	14(2.7)	45(8.6)	59(11.3)
V	4(2.9)	4(2.9)	8(8.4)
Total	50(2.5)	114(5.7)	164(8.2)

Table 4: Association of current tobacco consumption with socio-demographic variables (N=2000)

Variables	Current Tobacco users	Non tobacco users (%)	OR	P value
Sex				
Male	152(9.7)	1409(90.3)	3.83	<0.0001
Female	12(2.7)	427(97.3)		
Age (years)				
11-14	36(2.8)	1233(97.2)	1.45	0.2
15-19	14(1.9)	704(98.1)		
School Class				
8-10 th	42(2.3)	1765(97.7)	0.52	0.09
11-12 th	8(4.4)	172(95.6)		
Socio economic class				
I- II	17(2.1)	802(97.9)	0.73	0.29
III- V	33(2.8)	1135(97.2)		

Current tobacco consumption was found higher in males compared to females and this difference was highly significant. Age, class standard and socio-economic class wise there was no statistically significant difference among current tobacco users and nonusers (Table 4).

The major factor found for initiating tobacco consumption among ever tobacco consumers was just for enjoyment & peer pressure (55%). One fourth of the students didn't know the exact reason for initiation of tobacco consumption habit (Table 5).

Table 5: Factors initiating tobacco consumption among ever tobacco consumers (n=213)

Factors initiating tobacco consumption	Users (%)
Enjoyment	84(39.4)
Peer pressure	34(15.9)
Influence from advertisement	24(11.2)
To appear grown up/look stylish	11(5.1)
To cover insecurity	9(4.2)
Don't know the reason	51(23.9)
Total ever tobacco consumers	213(100)

DISCUSSION

The study results suggest a wide variation in prevalence of tobacco use. In the present study, the prevalence of ever (once in any point of time in life) users of any tobacco products was 10.6%. This was lower compared to the previous study conducted by Mihir et al (2003)⁴ and by Kapoor et al (1995)⁶ (12%) who took sample from school students as well as college students in 5-20 year age group (15%). There was difference in prevalence of current users of any tobacco products (8.2%) from previous GYTS INDIA study result (in 2003-16.9% & in 2006-14.1%).⁷ In the present study, prevalence of current smokeless tobacco users was 5.7% while in study by Mihir et al (2003)⁴ the prevalence was 13.6%. Major reason for decline in prevalence may be due to increase awareness among youth or having the knowledge of tobacco on health in school curriculum. However, in the present study there was marginal increase in the prevalence of current smokers of 2.5% compared to 2.0% in, Mihir et al (2003)⁴ which was quite surprising.

According to Warren et al (2000)⁸, the results of Global Youth Survey Project conducted on school children of age groups 13-15 in 12 countries (Barbados, China, Costa Rica, Fiji, Jordan, Poland, Russian Federation, South Africa, Sri Lanka, Ukraine, Venezuela and Zimbabwe), current cigarette smoking was found to vary from 10% to 33% and ever-smoking from 15% to 70% across different countries.⁸

In the present study, Prevalence of tobacco use was higher in male than female, Evident gender difference (male predominance) was also observed both in ever & current tobacco users by Mihir et al (2003)⁴ & by Chadda et al (2002).⁷ They mentioned that tobacco use is a male-dominated phenomenon among adolescents in India. In Russian Federation, Sri Lanka and Ukraine, smoking was found to be more common among boys than in girls, whereas it was more common among girls in China, Fiji, Jordan, and Venezuela by Warren et al (2000).⁸

Ever tobacco consumption was found higher in males compared to females in present study. The same finding was observed by others^{9,10}; while in a

study from Spain¹¹, among the 12-year-old age group, there are a significantly higher number of boys than girls who have ever smoked tobacco and figures are higher for girls in the 14-year-old or older age groups. Though in our study there was no such age wise difference.

Current use was also more among boys in our study and other studies¹²⁻¹⁶. Others^{17,18} found little difference between genders. In present study, age, class standard and socioeconomic class wise there was no statistically significant difference among current tobacco users and nonusers. While a study from Delhi¹⁹ reported significant difference for the same. Major reasons for high tobacco consumption in lower socioeconomic class may be poor literacy status, low moral values, more stressful situation, lack of supervision & adolescent care practices among lower socio economic group support for higher tobacco use.

In present study, most common reason for initiating tobacco consumption among ever tobacco consumer was found to be "peer pressure & for enjoyment (55%). In study by Chadda et al (2002)²⁰ 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.

Prevalence of ever & current tobacco users studying in Gujarati medium schools was 12.1% & that in English medium schools was 7.9%. With growing tendency towards expensive English medium of schooling amongst Indian and especially Gujarati communities in recent years, it can be easily assumed that the proportion of students having schooling in local vernacular language could be belonging to lower socio economic class, the probable reasons may be that in Gujarati medium schools many students are from low literacy & lower socio economic class family where high tobacco use prevalence is observed, in contrast to this, Jayant et al²¹ reported a higher prevalence of tobacco abuse in male students from English medium schools (22.5%) compared to the students in private Indian language schools (6.9%) or municipal Indian language schools (13.8%).

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. Evident gender difference (male predominance) was observed in both ever and current tobacco use.

The prevalence of ever tobacco users was more in lower socio economic class than upper socio-economic class. Peer pressure & just for enjoyment were found most common factor for tobacco consumption practices amongst school students.

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