

Original Research Article

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A comparative study on tobacco use among school boys in single sex and co-education school in Bengaluru

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ABSTRACT

Background: Adolescent boys are more inclined towards risky behaviors like smoking than girls and those who initiate smoking early in life are more likely to continue to smoke as adults. Peers in schools have a major role on influencing, initiating and continuation of smoking among boys. Therefore, the present study was undertaken to compare the prevalence of tobacco use among boys studying in single-sex school and co-education school and to study the factors associated with tobacco use in both the schools.

Methods: A comparative study was conducted in two randomly selected high schools in the urban field practice area of the medical institution; one of it being boys only (single-sex) and another co-education (co-ed) school. All the students studying in 8th, 9th and 10th standard were included in the study. A self-administered, pretested, structured questionnaire adapted from the WHO youth tobacco questionnaire was used to collect the data on tobacco usage, knowledge and attitude along with socio-demographic profile. Data was entered into Microsoft excel and analyzed using EPI info 6.

Results: A total of 467 boys participated in the study. Over all prevalence of tobacco use was 21.8% from both the schools. Tobacco use was found to be more in boys' school 68 (25.7%) when compared to co-education school (16.8%). Prevalence of smoking was found to be 38 (14.4%) and 17 (8.4%) in the two schools, this difference was found to be statistically significant with $\chi^2=4.59$, $p=0.032$.

Conclusions: Vulnerability of boys to smoking and risky behaviours in general, more so in single sex schools need to be emphasized and apt interventions designed to prevent its use among boys in various settings ought to be explored.

Keywords: Tobacco use, Smoking, Co-education schools, Single-sex schools, Adolescent boys

INTRODUCTION

Adolescence is a period of rapid change physically, emotionally and psychologically. It is also an important and crucial phase of learning and development. Tobacco is the single largest preventable cause of death and disease in the world today and recent estimates reveal that 6 million people die due to tobacco every year and this figure will increase to 8.3 million deaths by 2030.¹ Global Youth Tobacco Survey (GYTS) in India found

that any form of tobacco use increased from 16.8% in GYTS 2006 to 19% in GYTS 2009. Smokeless tobacco use has increased from 10.7% to 11.1% among youth between 13- 15 years.² Center for Disease Control and Prevention (CDC) in the United States (USA) had reported a significant increase in the percentage of high school students in 1999 (34.8%) when compared to 1991 (27.5%).³

Several studies have demonstrated that school contexts influence adolescents' risky behaviors such as smoking,

drinking, and other substance use.⁴ It has been further identified that approximately 43% of early initiators of smoking during adolescence will continue to smoke into adulthood and quitting becomes difficult.^{5,6} It has been observed that initial smoking experience by the adolescents is an important factor that predicts the progression and maintenance of smoking.⁶

Social aspects with respect to adolescent smoking are unique in terms of other adolescents providing access, opportunity and reinforcement.⁷ It has been showed that an increase in smoking rates by 10% among an individual's close friends and classmates increases the likelihood of smoking by 5% and 3% respectively.⁸ Boys, as such are more inclined to risky behaviors, and are more concerned about their image than girls: boys want to look 'cool' and want to behave in a 'cool' manner.⁹

Single sex schools are perceived to benefit both sexes, more so for girls in terms of better peer interactions, a stronger emphasis on academic behaviors, a greater degree of order and control, socio-emotional benefits, and safe behavior.¹⁰ Research on the impact of single-sex schooling on health and health behaviors is meager. Therefore, it would be desirable and interesting to know if gender composition of a school might have any influence on adolescents getting inclined towards risky behaviors. In the light of this the present study was taken up to know if boys from single sex schools are any different from their counterparts in co-education schools in using tobacco, in particularly smoking.

Objectives

1. To compare the prevalence of tobacco use among boys studying in single-sex school and co-education school.
2. To study the factors associated with tobacco use in both the schools.

METHODS

A cross-sectional study was conducted in two randomly selected schools in the urban field practice area of a

medical college in Bengaluru during September 2013 to March 2014. One of which was a single-sex school and other a co-education school. All the boys studying in 8th, 9th and 10th standards in the two schools were included in the study. A total of 467 students aged between 13-16 years participated in the study. A self-administered, pretested, structured questionnaire adapted from the WHO youth tobacco questionnaire was used to collect the data on tobacco usage, knowledge and attitude along with socio-demographic profile. Ethical permission was obtained from the institution's ethical committee. School principals were explained about the study purpose and procedure, required permission and co-operation was taken for the same. Informed consent was obtained from the parents and students. Boys were assured of the anonymity of the study and were requested to answer all the questions truthfully. The questionnaire was administered in the class rooms. Two students were made to sit on one bench to prevent discussion among the participants while answering. Data was entered into Microsoft excel and analyzed using EPI info 6.

RESULTS

In the present study comprising of 467 students aged between 13 to 16 years, 264 (56.5%) belonged to boys only school and 203 (43.5%) were from co-education school. Proportion of boys aged 13, 14, 15 and 16 years were 35 (13.2%), 86 (32.6%), 81 (30.6%) and 62 (23.5%) from boys school and 60 (29.5%), 50 (24.6%), 68 (33.5%) and 25 (12.3%) in co-ed school respectively.

Of the total number of boys, 68 (25.7%) students in Boys' school were currently (in the past one month) using any form of tobacco, 42 (15.9%) used chewable form of tobacco and 12 (4.5%) used both forms of tobacco i.e., smoking and chewable. In co-ed school 34 (16.8%) of boys were current users of tobacco in any form, 21 (10.4%) were chewable tobacco users and 4 (2%) used both forms of tobacco (Table 1). The prevalence of different forms of tobacco use was found to be comparatively higher among students of Boys' school (14.4%) than boys of co-ed school (8.4%). This association was found to be statistically significant ($\chi^2=5.4$, $p=0.0019$, df-1).

Table 1: Prevalence of tobacco use in schools.

Tobacco usage	Boys school		Co-education school		Total
	N	%	N	%	
None	196	74.2	169	83.3	
Smoking tobacco	26	9.8	13	6.4	
Chewing tobacco	30	11.4	17	8.4	
Both forms of tobacco	12	4.5	4	2.0	
Total	264	100.0	203	100.0	

Distribution of the students who smoked in the past one month according to their ages is presented in Table 2. Difference of smoking between both the schools was found to be statistically significant ($\chi^2=4.59$, $p=0.032$ df-

1). Prevalence of smoking among the students aged between 15 and 16 years was 28 (10.6%) and 13 (6.4%) in boys and co-education school respectively (Table 2). Of those who smoked tobacco, 17 (44.7%) in boys school

and 6 (35.2%) in co-ed school had initiated before they were 11 years old (Table 3). 26 (68.4%) and 7 (41.2%) had smoked ≤ 1 cigarette in the past one month and 3

(7.8%) and 1 (5.8%) boys had smoked more than one cigarette (Table 4).

Table 2: Distribution of boys according to age group and smoking.

Age (in years)	Smoking								
	Boys school			Co-education school					
	No	Yes	Total	No	Yes	Total	N	%	N (%)
13	31	11.7	4	1.5	35 (13.2)	58	28.5	2	1 (29.5)
14	80	30.3	6	2.3	86 (32.6)	48	23.6	2	1 (24.6)
15	69	26.1	12	4.5	81 (30.6)	59	29.1	9	4.4 (33.5)
16	46	17.4	16	6.1	62 (23.5)	21	10.3	4	2 (12.3)
Total	226	85.0	38	14.4	264 (100)	186	91.6	17	8.4 (100)

Table 3: Comparison of age of initiation among current smokers.

Age of initiation (in years)	Boys school		Co-education school		Total
	N	%	N	%	
<11	17	44.7	6	35.2	23
12-14	12	31.5	7	41.1	19
>15	9	23.7	4	23.5	13
Total	38	100	17	100	55

Table 4: Comparison of study subjects based on number of cigarettes smoked.

No of cigarettes	Boys school		Co-education school	
	N	%	N	%
<1	26	68.4	7	41.2
2-5	9	23.7	9	52.9
>5	3	7.8	1	5.8
Total	38	100.0	17	100.0

Table 5: Association of peers and family members and boys in both schools using tobacco.

Tobacco use				
Smoking among peers and family members		Boys school		Co-education school
Peers smoking	No	No (%)	Yes (%)	No (%)
	yes	90 (34.1)	31 (11.7)	32 (15.8)
	Total	226 (85.6)	38 (14.4)	186 (91.6)
$\chi^2=22.8$ P value <0.0				$\chi^2=26.1$ P value <0.0
Family member smoking	No	103 (39)	13 (4.9)	115 (56.5)
	yes	123 (46.6)	25 (9.5)	71 (35)
Total	226 (85.6)	38 (14.4)	186 (91.6)	17 (8.4)
$\chi^2=1.7$ P value =0.192				$\chi^2=6.7$ P value =0.009

Table 6: Knowledge and perception on smoking.

Knowledge and perception on smoking	Boys school				Co-education school			
	No		Yes		No		Yes	
	N	%	N	%	N	%	N	%
Smoking produce relaxation	217	82.2	47	17.8	181	89.2	22	13.4
It is difficult to quit once started to smoke	133	50.4	131	49.6	150	73.9	53	32.3
Smoking is harmful to health	71	26.9	193	73.1	80	39.4	123	75.0
Smoke from others is harmful to us	62	23.5	202	76.5	55	27.1	148	90.2
Will smoke if offered a cigarette	238	90.2	26	9.8	188	92.6	15	9.1

Of those who smoked, friends influence was stated to be one of the reasons for starting to smoke by 31 (11.7%) and 12 (5.9%) of the boys from the two schools respectively. 9 (23.6%) from boys school and 5 (29.4%) from co-ed school said they were curious to try smoking. Significant association was found between current smokers and their peers in both the schools. However, in boys schools, there was no statistical association between family members who smoked and current smokers (Table 5).

Knowledge and perception about smoking is presented in table 6, 131 (49.6%) students in boys school felt it was difficult to quit smoking once started when compared to 53 (32.3%) students in co-education school. However, this difference was not found to be statistically significant among current smokers ($\chi^2=0.0$, $p=0.9$). 120 (45.5%) and 80 (39.4%) students from boys school and co-education school respectively told that they had received some information about tobacco use either from teacher or family member in the past one year. Smoking was perceived to be harmful to self and others (passive smoking) by more than 70% of the boys in both the schools.

DISCUSSION

In the present study, prevalence of current tobacco users among boys in the two schools was found to be 21.8% (102) which is lesser when compared to a study done by Biswas who found a prevalence of 29.7%.¹¹ Chadda et al in their paper mention that the prevalence of tobacco use among boys varies between 6.9-22.5%.¹² In the present study we found the prevalence of tobacco use to be higher in all boys' school (25.7%) when compared to co-education school (16.8%). Also, higher prevalence of smoking (9.8%), chewing (11.4%), both (4.5%) was found in boys school than in co-ed school (6.4%, 8.4%, 2% respectively). A study done by Rajeshwari et al in a co-education school also found similar results with respect to tobacco use (smoking: 7.7%, chewing: 8.1%, both forms: 3.4%).¹ Similar to the current study, Shruthi et al also found a higher usage of smokeless form of tobacco (17.9%) among high school boys.¹³ Higher use in boys school could be because of ease of access to tobacco products among other boys and the perception of tobacco use being normal and acceptable in the group.

Boys who had initiated to smoke before 11 years was higher in boys school than in co-ed school (44.7% vs 35.2%), similar results were found in other studies in India (Narain et al, Rajeshwari et al). It has been observed that majority of the boys had smoked less than one cigarette. This as an opportunity can be used to intervene in preventing the boys from becoming chronic or heavy smokers in future with quality education and behavior change as most of them are still in the stage of experimentation and initiation.

More no of smokers were found above 15 years (28, 10.6%) in boys school when compared to co-ed school (13, 6.4%). Similar results were seen in a study done by Kelkar et al where the prevalence increased with increase in age from 2.1% at <14 years to 9.8% at 18 to 20 years of age.¹⁴ This is probably because of the reinforcement from other adolescents to smoke as they grow older. Young adolescents tend to be influenced by their seniors in taking up smoking. Repeated educative sessions in different creative forms might help adolescents from refraining from picking up the habit.

Similar to studies done by Mukherjee et al, Muttappallymyalil et al, we found that peers and family played a major role in initiation and continuation of smoking among the boys.^{15,16} Predominance of peer pressure in schools is not be ignored when imparting education programs in schools for prevention of tobacco use. Role of skill based education for adolescents goes long way in building their strength to cope from peer pressure.

It was noted that less than 50% of the boys from both the schools had received information about the cons of using tobacco. This is an evident gap that needs to be bridged by delivering information in schools about the consequences of smoking and other ill effects of using tobacco in adolescence period as well as its impact on chronic illnesses. Majority of the boys in both the schools had knowledge of smoking being harmful for self as well as others. Students who were taught about the dangers of smoking and tobacco use had much lower prevalence of smoking and other forms of tobacco use in contrast with students who were not taught.¹⁷ We found that proportion of boys who admitted quitting to be difficult was higher in boys only school than in co-education school. This probably could be their attempts at trying to quit smoking.

Limitation of the study

Generalization could not be made because of limited study area and limited sample size. Similar studies in larger sample size, extending the research question to other areas of health risk behaviors will be of interest.

CONCLUSION

Vulnerability of boys to smoking and risky behaviors in general, more so in single sex schools need to be emphasized and apt interventions designed to prevent its use among boys in various settings ought to be explored. Peer pressure is an important factor influencing the boys from taking up smoking. Importance of skill based education to tackle peer pressure and other stresses should not be ignored. There is a need for a strong policy to accentuate on imbibing life skills education into the school curriculum.

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