

Prevalence of Tobacco Use & Its Age of Initiation among School Children in Raipur City, India: A Cross-Sectional Study

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ABSTRACT

Background & objectives: Tobacco use is the chief preventable cause of morbidity and mortality in the world. Youth in general and adolescents in particular fall prey to this habit with severe physical, psychological and economic implications. Hence the present study was undertaken to assess the prevalence of tobacco use & their age of initiation of these habits among school students.

Methods: It was a cross sectional observational study done in 1081 students of selected 16 high schools of Raipur city chosen through two stage cluster sampling. Study tool - Predesigned Pretested questionnaire. Data was entered in Microsoft excel sheet and analyzed.

Results: The prevalence of tobacco consumption was 16% and were significantly more in boys as compared to girls ($P < 0.05$). Ever smokers comprised 419 (8.4%), Ever tobacco chewers comprised 105 (9.7%) student. 'Exclusive ever smokers' comprised 75 (6.9%), 'exclusive ever tobacco chewers' 89 (8.23%) and 'ever both smoking and tobacco chewing forms' were 16 (1.48%) The mean age of initiation of tobacco habits were 13 years (SD1.414), in both boys and girls. Majority students 64% initiated this tobacco habit between 11 to 14 years of age and were below 15 years of age, this shows downward shift of age of initiation.

Conclusions: The study reveals a recent downward shift in the age at initiation of tobacco uptake and rising prevalence among girls. Further epidemiological exploration and interventions to curb tobacco use among growing future generations is the call of the day.

Keywords: Prevalence, Age of initiation, tobacco use

INTRODUCTION

Health and socio economic development in India are so closely intertwined that it is impossible to achieve one without other worldwide, and in India, the consumption of tobacco products is the behaviour with the single greatest impact on health inequalities. ^[1]

The World Health Organisation (WHO) has identified tobacco use as one of the major preventable causes of death and diseases in the world, currently accounting for nearly 5 million deaths annually and projected to escalate to 10 million by 2030. Seventy percent of these deaths are likely to occur in developing countries. ^[2,3]

Tobacco consumption is growing very fast among the developing countries

like India. Everyday about 80,000 -100,000 young people become long term smokers globally, mostly in developing countries. Global tobacco marketing, particularly in developing countries is often specially targeted at children and youths. Because of the increasing levels of use and the dire public health implications, tobacco use among youth has been referred to both as a "pediatric disease" and a "pediatric epidemic".^[4]

The risks of tobacco use are highest among those who start early and continue its use for a long period. ^[5] The early age of initiation underscores the urgent need to intervene and protect this vulnerable group from falling prey to this addiction. ^[6] Hence the present study is to determine the

prevalence and age at initiation of tobacco habits among school children in Raipur city in central India.

The specific objectives were (i) to assess the prevalence of tobacco habits among school children.(ii) to determine the age of initiation of these habits, and (iii) to compare the age of initiation between students who were more than 15 and \leq 15 year of age.

MATERIAL & METHODS

The present study was a cross-sectional observational study, conducted in 16 selected high schools (12 Government, 4 Private) of Raipur city from December 2013 to March 2014. Two stage cluster sample design was used. In the first stage schools were selected according to probability proportionate to size and in the second stage classes were randomly selected, only one class including all section was selected, a total 1081 were interviewed. Prior informed consent from school authorities were taken, Study tool were Predesigned, Pretested questionnaires.

Working Definition:

Ever user: Person who used tobacco in any form even once in lifetime.

Never user: Those who never tried any form of tobacco in their lifetime.

Data Collection Method

Data was collected by using an anonymous self-administered questionnaire. The anonymous self-administered questionnaires were distributed to the student of selected classes after explaining the purpose of study and the instructions to fill in the questionnaire. Considering the sensitivity of the issue, the school authority was requested not to be presented in the class. During the filling of the questionnaire, one class period (45 min approx) was provided to fill in the questionnaire. Students were assured that information they provided would remain confidential and thus were encouraged to be truthful in their responses. They were informed that their participation was completely voluntary and they could quit at anytime.

Study Criteria:

Inclusion criteria: all students of selected class

Exclusion criteria:

Any student absent on the day of the survey was excluded from the study.

Any student refuses for filling questionnaire

Statistical Analysis:

Collected data were entered into MS Windows Excel Sheet in the form of codes, Analysis was done using EPI info version 7, chi square test were used for evaluating statistical significance of the association between the independent and the dependent factors, for all the tests, two sided P value < 0.05 was considered significant.

RESULTS

School response rate was 100%. Overall 1166 questionnaire were distributed and 1146 were filled in and submitted to the researcher, 20 students did not fill the questionnaire because they had to participate in sports competition at the time of survey, 65 questionnaires either do not have the basic information (Tobacco use) or were not clear, thus excluded from study, finally 1081 questionnaire were included in analysis.

Out of 1081 subject 824 (76.3%) belongs to Government schools & 257 (23.7%) were Private schools students. The mean age of students in the study was 15 years with SD (1.23) nearly equal proportion of females 52.90% and 47.08% male participated in the study.

Majority students 674 (62.34%) belongs to low socioeconomic status, only 27 (2.49%) were of upper high class socioeconomic status. Proportion of Hindus was maximum (92.78%) followed by other (Sikh Christian) 4.45% and Muslim 2.77%. Majority of student father's education 24.6% were of middle school (13.78%) were illiterate. Majority fathers 330 (30.53%) were Labourer by occupation. Out of total students 1081, 117 (10.8%) were of class 8; 632 (58.2%) were of class 9 & rest 332 (30.7%) were of 10th standard.

Table I. Prevalence of ever tobacco use gender wise

Tobacco habits	Males N=509	Females N= 572	Total N=1081
Exclusive smokers (A)	73(14.3)	2 (0.34)	75(6.9)
Exclusive tobacco chewers (B)	70(13.7)	19(3.32)	89 (8.23)
Use of both forms of tobacco (smoking and chewing simultaneously) (C)	15(3)	1(0.17)	16(1.48)
Ever smokers (A+C)	88(17.2)	3(0.52)	91(8.4)
Ever tobacco chewers (B+C)	85(16.6)	20(3.49)	105 (9.7)
Ever tobacco users (smoking or chewing or both) (A+B+C)	158(31)	22(3.84)	180(16.65)
Never user	351(69)	550(96)	901(83.3)
$\chi^2=143.52, df=1, p=0.00, (highly\ significant)$			

Figures in parentheses indicate per cent; Out of total 1081 students, 180 (16%) were ever tobacco user, of which 52 (28%) were current tobacco users. Ever smokers comprised 419 (8.4%), Ever tobacco chewers comprised 105(9.7%) student. 'Exclusive ever smokers' comprised 75(6.9 %), 'exclusive ever tobacco chewers' 89 (8.23%) and 'ever both smoking and tobacco chewing forms' were 16 (1.48%). Overall, the prevalence of tobacco use in any form was significantly more in boys as compared to girls ($P<0.05$).

Table 2 Distribution Based On Different Tobacco Products Among Users

Tobacco Products	Male N=128	Female N=52	Total n=180
Pan masala, Gutka	29(22.6)	20(38.4)	49(27.2)
khaini	26(20.3)	14(27)	40(22.2)
Cigarette/Bidi/cigar	58(45.3)	17(32.6)	75(41.6)
Tobacco both forms	15(11.7)	1(2)	16(8.8)
$\chi^2=9.52, df=3, p=0.02\ significant$			

Figures in parentheses indicate per cent;

Among ever user nearly 50% students were using smokeless tobacco forms like pan masala, gutkha and khaini. It is evident that girls use more pan masala and gutkha (38.4%) than boys (22.6%). While among boys cigarettes and bidi smoking (45.3%) was more prevalent (Table 2).

Table 3: Distribution Based On Age of Initiation of Tobacco Habit and Sex Wise

Age of Initiation (in years)	No of students		Total
	Males	Females	
	No (%)	No (%)	
8-10	14 (8.86)	2 (9.09)	16
11-12	38 (24.05)	6 (27.27)	44
13-14	61 (38.60)	11 (50)	72
15-18	45 (28.48)	3 (13.63)	48
Total	158 (100)	22 (100)	180
	Mean=13.32 SD=1.414	Mean=13. SD=1.414	Mean=13.28 SD=2.05
$\chi^2=2.306, df=3, P=0.5115 (insignificant)$			

Table 4: Distribution of Age of Initiation of Tobacco Habit Based On Type of School

Age of initiation in years	School Type		Total
	Government	Private	
	No %	No %	
8-10	21 (13.81)	7 (25)	28
11-14	84 (55.26)	20 (71.42)	104
15-18	47 (30.92)	1 (3.57)	48
Total	152 (100)	28 (100)	180
$\chi^2=3.14, df =1, p=0.07 (insignificant)$			

Table 5: Association of age of students with their age of initiation of tobacco habits

Age of Initiation (Tobacco habits)	Age of students		Total
	≤15yrs	>15yrs	
	No (%)	No (%)	
8-10	8 (50)	8 (50)	16
11-14	85 (73.2)	31 (26.7)	116
15-18	4 (8.3)	44 (91.6)	48
Total	97 (53.8)	83 (46.1)	180
$\chi^2=57.17 df =2, p=0.001 (significant)$			

The mean age of initiation of tobacco habits were 13 years, SD 1.414, in both boys and girls. However the difference was found insignificant. The present study also revealed no significant difference was observed with the age of initiation and school type. Majority students 64% initiated this tobacco habit between 11 to 14 years of age and were below 15 years of age, this shows downward shift of age of initiation. However 91.6% students of age initiated the habit in late adolescence, but the difference was found significant.

DISCUSSION

The present study shows the prevalence of 'ever use of tobacco' was 16%. This finding is close to the finding in study by U.M. Bhojaniet al 2009^[7] and Gupteshwar Singh et al 2005^[8] in which prevalence of ever user were 15.7% .Boys were using tobacco 10 times more than girls (table no1), a very strong association were found, the reason could be, as boys enjoy

higher level of freedom due to their individual behaviour than Girls both from the family and society. The overall prevalence of 'ever smoking' (8.4%) in the present study was found low in comparison to studies done in Haryana (12.0%)^[9] and Jamnagar (14.6%).^[10]

About 49.4% students in the current study were using smokeless tobacco forms, in which the proportion of girls were significantly higher than boys. The reason could be readily availability of smokeless forms and societal binding for smoking among girls. This finding was found in contrast with the finding by Zahirruddin QS et al.^[11] Among the Indian studies, the mean age of initiation of tobacco use has been found to vary from 8 to 15 yr.^[12-14] The majority of the tobacco users worldwide have reportedly first tried tobacco prior to age 18, some starting as young as 10 years.

In the present study, no significant gender differences and school type were observed in the overall mean ages of initiation. Similar finding seen in study by Raj Narain et al 2011^[15] in which there was no significant gender difference in the age of uptake of overall tobacco habits. The above findings reflect a recent downward shift in age at uptake of tobacco habit among students which is supported by a study at Gujarat State, India, a matter of serious concern.^[16]

CONCLUSIONS

The observations of the present study indicate a downward shift in the age at uptake of tobacco habit by children and rising prevalence. This could be attributed due to fact that experimentation with tobacco, enjoyment and curiosity of taking substance usually starts in teenage 13-15 years of age which may be attributed to the behavioural change in the children from childhood to early and late adolescence. Hence health impact due to the tobacco may be bigger than projected if these school going children carry on consuming it as young adults. Further epidemiological

exploration and interventions to curb tobacco use among growing future generations is the call of the day.

Efforts should be made for administrative and political sensitization for strict implementation of tobacco control law. Community based formative research primarily focusing on tobacco use environments and causal factors encouraging tobacco use should be conducted at local as well as national level.

Limitation of study: The self-administered questionnaire was used, so there was a possibility of reporting false information. However every effort was made to motivate the respondents to provide true information.

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