



TOBACCO USE AMONG ADOLESCENT: A BURNING ISSUE IN BHOPAL CITY

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ABSTRACT

Introduction: The young people of today are tomorrow's adults. Tobacco use is the chief preventable cause of illness & death all over the world. Objective of the study to estimate the prevalence and type of tobacco use among adolescent students in grade 8th, 9th and 10th in Bhopal city.

Methods: School-based cross-sectional descriptive study was carried out among 2285 Adolescent students in Bhopal city. Data was collected by an anonymous self administered modified Global Youth Tobacco Survey Questionnaire and Data were analyzed by frequency distribution tables, chi square test and univariate logistic regression as required.

Result: Out of 2285 adolescent student's 415 (18.2%) ever used the tobacco product in one or other form. The use of tobacco was significantly higher amongst boys 335 (80.7%) as compared to girls 80 (19.3%). Use of tobacco was more in governmental schools 257 (61.9%) as compared to non-governmental schools 158 (38.1%). The use of tobacco was most common in age group 12-15 years 355 (85.5%). It is observed in our study that amongst all tobacco users, maximum 199 (47.95%) were experimental users. maximum no. of students 271 (65.3%) were using pan masala and gutkha.

Conclusion: Non-smoking forms of tobacco like pan masala and gutkha, were more commonly used by students. The majorities of them are experimental users, but if not addressed right now will be potential regular users in the future.

Keywords: Adolescents, School health, Smoking, Smokeless tobacco, tobacco chewing.

INTRODUCTION

Recent trends indicate that the smoking prevalence rate among adolescents is rising and age of initiation is becoming younger.¹

The young people of today are tomorrow's adults. Tobacco use is the chief preventable cause of illness & death all over the world. In the Indi-

an context, tobacco use implies a varied range of chewing and smoking forms of tobacco available at different price points, reflecting the varying socio-economic and demographic patterns of consumption.²

Tobacco use among school children is becoming a serious problem in developing countries. Nearly 8-9 lakh people die every year in India due to

diseases related to tobacco use.³ As a result of stringent tobacco control initiatives by the developed countries, the tobacco industry has shifted its base to the developing countries like India. India is the world's second largest consumer and third largest producer of tobacco.⁴

Satyanarayana *et al.* said that 31% of the population aged 15 years and above uses chewing tobacco in the state.⁵ On the revenue the state government will lose due to this step, Pankaj Shukla, chief medical officer (health) and food safety officer, Bhopal says, "The money government spends on treating oral cancer patients exceeds the revenue earned from chewing tobacco companies." However, there is no ban on the sale of pan masala, which does not contain tobacco.⁶ there are only a few studies on prevalence and age of initiation of smoking and smokeless tobacco use among adolescent in our country.⁷ the present study has been planned to explore prevalence and types of tobacco use among adolescents.

METHOD

It is a cross-sectional descriptive study on adolescent student of grade 8th, 9th and 10th from secondary schools in Bhopal city. Students absent on the day of the survey or Students unwilling were excluded from the study.

Two stage simple random sampling was used in the study. In first stage 13 govt. and 13 non govt. schools were selected randomly by the lottery method from the different regions of the city. In second stage 30 students were randomly selected from each grade from selected schools so each school drawn total 90 student. Sample size was calculated by using the formula $4pq/l^2$, Where: p = the prevalence of the tobacco use (smoking +smokeless, 16.5% from Madhya Pradesh (M.P) India GYTS data fact sheet 2003); q = (1-p); l = Allowable error 10%

Assuming 10% Non response rate 2250 students were considered as a final sample size. Finally 2285 questionnaires (1122 from governmental schools and 1163 from non-governmental schools) were included in the analysis. Data collected by an anonymous self-administered questionnaire in Hindi as well as in English language. Data was analyzed using frequency distribution tables, χ^2 (chi-square test) and univariate logistic regression. Permission has been obtained from the RAC (Research advisory committee) and IEC (Institutional ethical committee) of the institu-

tion. Strict confidentiality of data has been maintained.

RESULTS

In the present study 2285 adolescent students were included to determine Socio demographic characteristics, prevalence of tobacco use, type of tobacco products used and various factors affecting the use of tobacco amongst them.

The majority of the respondents 2010 (87.96%) were in the age group of 12-15 years comprising of boys 1253 (54.8%) and girls 1032 (45.2%). 1122 (49.1%) adolescent students were belonging to governmental schools and 1163 (50.9%) non-governmental schools.

Amongst all adolescent students 415 (18.2%) ever used the tobacco product in one or other form and 1870 (81.8%) never used the tobacco. The use of tobacco was found to be higher amongst boys 335 (80.7%) as compared to girls 80 (19.3%) and this association was highly significant. Use of tobacco was more in governmental schools 257 (61.9%) as compared to non-governmental schools 158 (38.1%). The use of tobacco was most common in age group 12-15 years 355 (85.5%) (Table 1).

Table 1: Socio demographic characteristics of tobacco user adolescent students n=2285

Category	Tobacco usage (n=2285)		χ^2 , P value
	Ever user (n=415) (%)	Never user (n=1870) (%)	
Gender			
Boys	335 (80.7)	918 (49.1)	137.21,
Girls	80 (19.3)	952 (50.9)	<0.001
School			
Govt.	257 (61.9)	865 (46.3)	33.37,
Non Govt.	158 (38.1)	1005 (53.7)	<0.001
Age			
12yr	69 (16.6)	422 (22.6)	25.17,
13yr	86 (20.7)	408 (21.8)	<0.001
14yr	77 (18.6)	433 (23.2)	
15yr	123 (29.6)	392 (21.0)	
16yr	56 (13.5)	186 (9.9)	
17yr	4 (1.0)	29 (1.6)	
Grade			
8 th	94 (22.7)	658 (35.2)	34.70,
9 th	138 (33.3)	638 (34.1)	<0.001
10 th	183 (44.1)	574 (30.7)	

Our study showed that amongst all tobacco users, maximum 199 (47.95%) were experimental users followed by current users 189 (45.5%) out

of which 146 (77.2%) were boys and only 43 (22.75%) and a very few 27 (6.5%) were past users. (Table 2).

It is observed that maximum no. of students 271 (65.3%) were using pan masala and gutkha followed by cigarette in 128 (30.8%),

khaini (3.1%), and bidi 0.72%. Pan masala and gutkha was most commonly used by boys 208 (76.8%) as compare to girls 63 (23.2%). The consumption of Pan masala and gutkha was more common in govt. schools 171 (63.1%) then Non Govt. schools 100 (36.9%) (Table 3).

Table 2: Distribution of ever user according to frequency of tobacco use (n=415)

Category	Frequency of tobacco use			χ^2	P value
	Current user* (n=189) (%)	Past user (n=27) (%)	Experimental user (n=199) (%)		
Gender					
Boys	146 (77.2)	22 (81.5)	167 (83.9)	2.907	0.406
Girls	43 (22.75)	5 (18.5)	32 (16.1)		
School					
Govt.	135 (71.4)	18 (66.7)	104 (52.3)	15.397	0.002
Non Govt.	54 (28.6)	9 (33.9)	95 (47.7)		

* Regular users + Occasional users

Table 3: Distribution of tobacco users according to type of tobacco products n=415

Category	Type of tobacco				χ^2	P value
	Cigarette (n=128) (%)	Khaini (n=13) (%)	Pan masala, gutkha (n=271) (%)	Bidi (n=3) (%)		
Gender						
Boys	112 (87.5)	12 (92.3)	208 (76.8)	3 (100)	8.361	0.039
Girls	16 (12.2)	1 (7.7)	63 (23.2)	0 (0.0)		
School						
Govt.	75 (58.6)	9 (69.2)	171 (63.1)	2 (66.7)	1.084	0.781
Non Govt.	53(41.4)	4 (30.8)	100 (36.9)	1 (33.3)		

DISCUSSION

Prevalence of ever user of tobacco in our study is 18.2% for student of grades 8th, 9th and 10th. Most of studies were mainly focused on the current use of tobacco products

The prevalence 18.2% of tobacco use among school adolescents of Bhopal city may be due to the differences in the religious distribution of study population and other confounding factors. The ever use and current use of tobacco was found almost similar the studies conducted by Pednekar and Gupta, 2004⁸ reported 13.5% of ever tobacco use by students and current tobacco use of 4.5%. Madan et al., 2006⁹ reported current users of tobacco product as 41.1% in his study on the students. Pal and Tsering, 2009¹⁰ also reported 18.15% prevalence of ever use of tobacco product which is similar to our study. Biswas and Sarkar, 2010¹¹ also reported 29.7% students as current tobacco Sharma et al., 2010¹² reported the prevalence of tobacco use 20.9% of in his study population which is slightly higher as compare to our study. Narain et al., 2011¹³ re-

ported 11.2% of tobacco use in students in study which is very low as compared to our study.

In our study 80.7% of boys and 19.3% of girls ever used any tobacco product and boys were 4.2 times more likely to use tobacco as compared to girls. The proportion of ever users is higher among boys than girls as boys in Indian culture enjoy higher level of freedom regarding their individual behaviors than girls both from the family and society.

The results is all most similar to Swart et al in 2003¹⁴ reported current users of cigarettes significantly more in 28.3% in male students than 17.5% female students. Madan et al., 2006⁹ reported 41.6% boys and 30.2% girls ever tobacco use. Prevalence was more among boys (46.3%) when compared to that of girls (31.6%). Das et al., 2012¹⁵ reported in his study that boys smoking and chewing habits (32.3%, 43.53%) were higher than girls (4.33%, 12.15%).

In our study 61.9% of students from Government school ever used the tobacco as compare to only 38.1% in non- government schools. Generally,

students of governmental schools are from low socioeconomic families than those at non-governmental schools. Thus, governmental school students may have lower awareness and knowledge as compared to students at non-governmental schools, which may lead to more tobacco use in government school student than non-governmental school students.

Madan et al., 2006⁹ reported prevalence of tobacco users in 36.6% corporation schools as compared to 22.2% of private schools. Narain et al., 2011¹³ also reported ever use of tobacco in 50.5% of govt. schools students as compared to 49.5% of non govt. School students.

In comparison to other tobacco products, use of khaini was less common 3.1% among adolescent students. As some of the products like mouth fresheners and processed betel nuts, which does not contain tobacco, are also available in the market in similar packaging. Adolescent students were using pan masala or gutkha without knowing the ingredients and hazards, as mouth freshener or as processed betel nut. Thus students are not aware which product really contain tobacco and which does not. Thus, they use pan masala unknowingly. The results is all most similar to Makwana et al., 2007¹⁶ reported 66.23% of Tobacco chewing as the most frequent form of tobacco by adolescents than 14.6% smoking. Anees ahmad et al., 2009¹⁷ reported the majority of adolescents used smokeless tobacco (71.1%) of which 70.2% consumed Gutkha, Pan zarda (18.9%), Gul and Khaini 5.4% each. Malhotra et al., 2009¹⁸ reported 40% smokeless tobacco users (chewing tobacco) as compared to smokers which were 38.2%. Das et al., 2012¹⁵ reported more number of students with chewing habits in boys 43.53% & 12.15girls % then smoking (boys 32.3% & 4.33girls %).

CONCLUSION

18.2% of adolescent students were ever-users of tobacco. Non-smoking forms of tobacco like pan masala and gutkha, were more commonly used by these students. The majorities of them are experimental users, but if not addressed right now will be potential regular users in the future.

RECOMMNDATION

Need of School based educational programs focusing on smoked and smokeless forms of tobacco should be planned and implemented. Special

attention and culturally-appropriate education programs should be targeted at the adolescent students. Different intervention programs should focus on different aspects like, cessation programs for older students and programs to discourage the initiation of tobacco amongst young students between 9-12 years of age.

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