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Tobacco use among school students in Manipur, North East India: a cross-sectional study

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ABSTRACT

Background: Tobacco use is one of the most common substance abuse indulged by adolescents worldwide. The current tobacco use among youths in the age group of 13-15 years was 14.6% (GYTS 2009, India). The tobacco situation in India is unique because of a vast spectrum of tobacco products available for smoking as well as smokeless use. This study was done to determine the prevalence of tobacco use among school students in Imphal, Manipur, India and to determine the association between tobacco use and socio-demographic characteristics.

Methods: A cross sectional study was conducted among school students studying in class VII to class X in Imphal, Manipur using convenience sampling. Data were collected by questionnaire method. Descriptive statistics like mean, percentages and proportions were used. Chi-square test was used to determine the association and a p value of <0.05 was taken as significant.

Results: The prevalence of ever use of tobacco among school students in Imphal was found to be 19.5%. And 43.4% of the ever users were current users. Ever use of tobacco was significantly associated with older age group (14-17 years), male gender, living in a nuclear family, studying in class X, being in a relationship and whose mother was educated below class X.

Conclusions: Two out of every 10 students in the age group of 10-17 years in the study have ever used any kind of tobacco product. Smokeless form of tobacco was more commonly used as compared to smoked form.

Keywords: Current user, Ever user, Forms of tobacco use, School students, Tobacco use

INTRODUCTION

One of the most common substance abuse indulged by school going children worldwide is tobacco use in various forms. Tobacco use is already in a pandemic height and it is a major health burden and social problem globally. Tobacco use causes more than 7 million deaths every year globally. Cigarette smoking is the most widespread form of drug dependence and a leading cause of preventable death, resulting in an estimated 3 million deaths annually. If smoking all over the world continues in the same pattern, more than 8 million people a year will die from diseases related to tobacco use by 2030. Of these, 70% deaths will occur in developing countries, mainly in the most populous countries like China and India.

Smoking affects nearly every organ of human body directly or indirectly that leads to disease and disability.⁶ The World Health Organization estimated that 70% of premature deaths among adults are due to behavioural patterns that emerge in adolescence, including smoking and violence.⁷ The tobacco use is widespread among Indians because of easy availability of a vast spectrum of tobacco products.^{8,9} Smoking at early age group has been found to be associated with the presence of tobacco use among family members, influence from peer groups, family conflicts, poverty, etc. This results in poor school performance, dropouts and truancy among this age group. 10,11 In India, the current prevalence of any form of tobacco use among school-going students (aged 13-15 years) has been reported to be 17.5%. 12 As per Global Youth Tobacco Survey (GYTS 2009, India), it was found

to be 14.6%.¹³ The prevalence of tobacco use among men and women in the age group of 15-49 years were 44.5% and 6.8%, respectively. For Manipur, it was 70.7% and 48.8%, respectively (NFHS-4).¹⁴ Reliable data on prevalence of tobacco use among school students are meagre. Hence, this study was conducted to determine the prevalence of tobacco use among school students in Imphal and to determine the association between tobacco use and socio-demographic characteristics.

METHODS

A cross sectional study was conducted among the students of class VII to class X studying in the schools of Imphal West and Imphal East districts of Manipur during February and March, 2019. Manipur is a small state in North East India. According to Census of India 2011 the total population of the state was 2,855,794. There were 205 schools recognized by Board of Secondary Education, Manipur (BOSEM) in Imphal West and Imphal East districts of Manipur having classes at least up to X standard. Students who refused to participate and those who were absent on the day of data collection were excluded from the study. Using the formula n=4PQ/L2, and adding 20% non-response rate a sample size of 476 was calculated. Prevalence of 54% from a study conducted by Ningombam et al was used as reference. 15 A convenience sampling was used to select the schools. Age, sex, type of family, type of school, class, relationship status, and parents' education were the independent variables. Tobacco use (ever user, never user, current user, past user) were the outcome variables. A pre-tested structured questionnaire was used for data collection. It consisted of two sections- section A: background characteristics and section B: questions on tobacco use.

Operational definitions

Ever user: Ever user was defined as those who had used any tobacco product in his/her lifetime, even once.

Current user: Current user was defined as one who have used any tobacco product anytime in the last 30 days.

Past user: Past user was defined as one who had used any tobacco product any time but not within the last 30 days.

Never user: Never user was those who have never used any form of tobacco product.

A written permission from the concerned school authorities was taken prior to the study. After explaining the purpose of the study, an informed verbal assent was taken from the participants. The importance of giving honest answers was emphasized. Identifiers like name and address were not taken. Participants were reassured about their anonymity and confidentiality. Only the investigators had accessed to the data. Data collected were checked for consistency and completeness. Data

were analyzed using IBM SPSS for windows version 21.0, Armonk, NY: IBM Corp. Descriptive statistics like percentages, mean with standard deviation were used. Chi-square test was used to determine the association between variables. A p value of <0.05 was considered as statistically significant. Ethics approval was obtained from the Research Ethics Board, RIMS, Imphal.

RESULTS

A total of 885 students from 4 schools were included in our study. Out of these 4 schools only one was government school and the rest were private schools. One was only-girls school and others were co-ed schools. Total number of participants included in the study was 885, out of which 247 (27.9%), 226 (25.5%), 243 (27.5%) and 169 (19.1%) were from school I, II, III and IV, respectively.

Table 1: Socio-demographic characteristics of the participants (n=885).

Socio-demographic characteristics	N (%)
Age group (in completed years)	
10-13	404 (45.6)
14-17	481 (54.4)
Sex	
Male	324 (36.6)
Female	561 (63.4)
Type of family*	
Nuclear	498 (56.2)
Joint	383 (43.3)
Type of school	
Private	624 (70.5)
Government	261 (29.5)
Class	
VII	256 (28.9)
VIII	226 (25.6)
IX	254 (28.7)
X	149 (16.8)
Relationship status [†]	
Single	808 (91.2)
In a relationship	71 (8.0)
Father's education [‡]	
Illiterate	47 (5.3)
Below class X	161 (18.2)
Class X-XII	242 (27.3)
Graduate and above	424 (47.9)
Mother's education§	
Illiterate	73 (8.2)
Below class X	181 (20.5)
Class X-XII	275 (31.1)
Graduate and above	348 (39.3)

^{*}Missing data 4; †Missing data 6; ‡Missing data 11; \$Missing data 8

Mean age of the participants was 13.64 (± 1.27) years. Age range of the students was 10-17 years. Table 1 shows

the socio-demographic characteristics of the participants. More than half of the participants belong to age group 14-17 years (54.4%). Two-thirds of the participants (561, 63.4%) were females. More than half of the participants were from nuclear families (56.2%). Majority of the parents were graduates and above (Table 1).

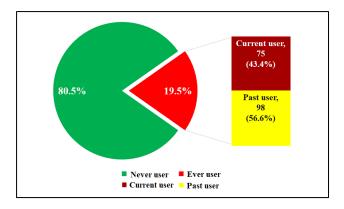


Figure 1: Prevalence of tobacco use (n=885).

Out of 885 participants, there were 173 ever users of tobacco products. Therefore, the prevalence of tobacco use (ever user) in our study was 19.5%. Of these ever users, 75 (43.4%) were current users and 98 (56.6%) were past users (Figure 1).

Table 2: Distribution of the participants by forms of tobacco and tobacco use (n=173).

	Tobacco use*		
Forms of tobacco	Ever user, N (%)	Current user, N (%)	
Cigarette	58 (33.5)	22 (12.7)	
Bidi	6 (3.5)	1 (0.6)	
Zarda paan	50 (28.9)	19 (11.0)	
Paan masala with tobacco	40 (23.1)	18 (10.4)	
Khaini	8 (4.6)	2 (1.2)	
Tobacco leaf with paan	42 (24.3)	22 (12.7)	
Hookah	5 (2.9)	0 (0.0)	
Ganja with tobacco	10 (5.8)	7 (4.0)	
Forms of tobacco use			
Smoked	79 (45.7)	30 (17.3)	
Smokeless	140 (80.9)	61 (35.2)	

^{*}Multiple responses were allowed. Some of the participants were using more than one form of tobacco at one point of time

More than half (57.3%) of the ever user shave started using tobacco at the age of 11-13 years and more than one-fifth (21.1%) had started using tobacco before the age of 10 years.

Smokeless forms of tobacco were more commonly used by the students (80.9%) as compared to smoked forms (45.7%). Some participants were using both smokeless and smoked form of tobacco. Among ever users, zarda paan (28.9%), paan masala with tobacco (23.1%), paan with tobacco leaf (24.3%) and khaini (4.6%) were the

smokeless forms used. Cigarette was the most common smoked form used followed by ganja with tobacco, bidi and hookah (Table 2).

Table 3: Association between tobacco use (ever user and never user) and the socio-demographic characteristics (n=885).

Socio-demographic characteristics	Tobacco use, N (%)		P value	
	Ever user	Never user		
Age group (years)				
10-13	64 (15.8)	340 (84.2)	0.011	
14-17	109 (22.7)	372 (77.3)	0.011	
Sex				
Male	82 (25.3)	242 (74.7)	- 0.001	
Female	91 (16.2)	470 (83.8)	0.001	
Types of family*				
Nuclear	112 (22.5)	386 (77.5)	0.015	
Joint	61 (15.9)	322 (84.1)	0.015	
Types of school				
Private	139 (21.7)	503 (78.3)		
Government	34 (14.0)	209 (86.0)	0.100	
Class				
VII	24 (9.4)	232 (90.6)	0.000	
VIII	63 (27.9)	163 (72.1)		
IX	44 (17.3)	210 (82.7)	0.000	
X	42 (28.2)	107 (71.8)		
Relationship status†				
Single	138 (17.1)	670 (82.9)	0.000	
In a relationship	34 (47.9)	37 (52.1)		
Father's education [‡]				
Illiterate	11 (23.4)	36 (76.6)		
Below class X	37 (23.0)	124 (77.0)	0.220	
Class X-XII	49 (20.2)	193 (79.8)	- 0.320	
Graduate and above	72 (17.0)	352 (83.0)		
Mother's education§				
Illiterate	11 (15.1)	62 (84.9)		
Below class X	53 (29.3)	128 (70.7)	0.002	
Class X-XII	48 (17.5)	227 (82.5)		
Graduate and above	58 (16.7)	290 (83.3)		

^{*}Missing data 4; †Missing data 6; ‡Missing data 11; §Missing data 8

Table 3 shows the association between tobacco use and socio-demographic variables. Ever use of tobacco was significantly higher in the age group 14 to 17 years (p=0.011), among males (p=0.001), among those living in a nuclear family (p=0.015), among those who were studying in class X (p=0.000), among those who were in a relationship (p=0.000) and among those whose mother was educated below class X (p=0.002) (Table 3).

DISCUSSION

The prevalence of ever use of tobacco among school students in this study was 19.5% and similar prevalence

was reported by Pradhan et al (19.7%) and Kumar et al (20.8%).14,16 Slightly lesser prevalences of ever use of tobacco were reported in the studies conducted by Reddy et al (17.5%), Thakur et al (17.6%), Shruti et al (17.9%), Kumar et al and Verma et al (16.4%).^{4,8,12,17,18} Prevalence of ever use of tobacco was also comparatively lower in Global Youth Tobacco Survey (GYTS) conducted in the year 2006 and 2009, which were 13.7% and 14.6%, respectively.¹³ Ningombam et al reported a much higher prevalence of 54% of ever use of tobacco among higher secondary school students.¹⁵ Our study found that among all ever users, the prevalence of current user (43.4%) of tobacco was lower than past user (56.6%). This was consistent with the findings reported in the study conducted by Ningombam et al and Sharma et al. 15,19 However, current user was higher in the study conducted by Kumar et al and Thakur et al.^{4,8}

Our study shows that smokeless form of tobacco was more commonly used as compared to smoked form and similar finding was reported by Shruthi et al and Kumar et al. 14,17 The higher prevalence of smokeless form of tobacco use may be because of the reasons that they can be easily used, are comparatively cheaper and readily available as compared to smoked forms.

In this study, students in the age group of 14-17 years were more likely to consume tobacco as compared to those in younger age group (10-13 years). Similar result was found in a study conducted by Pradhan et al where adolescents in the age group of 16-19 years were more likely to consume tobacco.¹⁶

This study showed that more than one-fifth of the ever users had started using tobacco before the age of 10 years and more than half between the age of 11-13 years. Similar findings were also reported in the study conducted by Shruthi et al.¹⁷

Cigarette was the most common smoked form of tobacco used by the students in our study which was consistent with the study conducted by Kumar et al.⁸ However, bidi was the most commonly used form of smoked tobacco in the study conducted by Kumar et al.¹⁴

There was significant association between ever use of tobacco and male gender. Ningombam et al also found similar association.¹⁵ This maybe because they thought that tobacco use is a normal male behaviour and socially acceptable.

Students who were in a relationship were more likely to use tobacco as compared to those who were single and it may be due to stress associated with having a relationship in younger age or may be an effort to look cool and mature. Those students who belonged to nuclear families were more likely to use tobacco as compared to those from joint families. This may be due to lack of supervision in a nuclear family where children have more privacy and opportunities to experiment and use tobacco.

This study was conducted on large sample size. However, there was less number of participants from government schools as board examination was going on during the study period and majority of the government schools were used as exam centres. Convenience sampling was employed due to time constraint. There were more females in the study population as we included one onlygirls school while all the others were co-ed schools.

The findings of this study may be used for the purpose of advocacy of tobacco control and planning tobacco control interventions among school students. Strict enforcement of law banning the sale of tobacco products to the adolescents and around the school zone should be done. Health education among the school students and their parents to prevent the morbidity and mortality related with the long term use of tobacco products can be taken up. School teachers can be enabled to educate students regularly regarding harmful effects of tobacco use.

CONCLUSION

Two out of every 10 students in the age group of 10-17 years studying in class VII-X have ever used any kind of tobacco product. Smokeless form of tobacco was more commonly used as compared to smoked form. There was significant association between ever use of tobacco and older age group, male gender, nuclear type of family, studying in class X, being in a relationship and whose mother was educated below class X.

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REFERENCES

- 1. Bagchi NN, Ganguly S, Pal S, Chatterjee S. A study on smoking and associated psychosocial factors among adolescent students in Kolkata, India. Indian J Public Health. 2014;58(1):50-3.
- 2. Bartecchi CE, MacKenzie TD, Schrier RW. The human costs of tobacco use. N Engl J Med. 1994;330(3):907-12.
- World Health Organization. Tobacco Free Initiative (TFI): WHO Report on the Global Tobacco Epidemic, 2017. Available at: https://www.who.int/tobacco/global_report/2017/en. Accessed on 17 September 2020.
- 4. Thakur SS, Sachdeva A, Singh H, Barwal V. Prevalence and determinants of tobacco use among school going adolescents in a hilly district of Himalayan region in India. Sch J Appl Med Sci. 2017;5:4074-9.
- 5. Gupta PC, Ball K. India: Tobacco tragedy. Lancet. 1990;335(8689):594-5.
- 6. Centers for Disease Control and Prevention. Smoking and Tobacco use: Diseases and Death.

- Available at: https://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm#diseases.
 Accessed on 28 February 2018.
- 7. Sharma R, Grover VL, Chaturvedi S. Tobacco use among adolescent students and the influence of role models. Indian J Community Med. 2010;35(2):272.
- 8. Kumar V, Talwar R, Roy N, Raut D, Singh S. Psychosocial determinants of tobacco use among school going adolescents in Delhi, India. J Addict. 2014;565(170941):375-81.
- Ibrahim A, Mathew SB, Arekal SS, Kundapur R. A study to assess the awareness of ill effects of tobacco among adolescents and young adults of Mangalore. NUJHS. 2016;6(3):21-7.
- Simantov E, Schoen C, Klein JD. Health-compromising behaviors: Why do adolescents smoke or drink? Identifying underlying risk and protective factors. Arch Pediat Adol Med. 2000;154(10):1025-33.
- 11. Karp I, O'loughlin J, Paradis G, Hanley J, Difranza J. Smoking trajectories of adolescent novice smokers in a longitudinal study of tobacco use. Ann Epidemiol. 2005;15(6):445-52.
- 12. Reddy KS, Arora M. Tobacco use among children in India: a burgeoning epidemic. Indian Pediatr. 2005;42(8):757-61.
- 13. Gajalakshmi V, Kanimozhi CV. A survey of 24,000 students aged 13-15 years in India: Global Youth Tobacco Survey 2006 and 2009. Tobacco Use Insights. 2019;3(9512):23-31.

- 14. Kumar VR, Vasant W, Abhay G, Pramita M, Prajapati K. Prevalence of tobacco consumption among adolescents from rural area of Wardha district. Int J Biomed Res. 2019;5(1):29-36.
- 15. Ningombam S, Hutin Y, Murhekar MV. Prevalence and pattern of substance use among the higher secondary school students of Imphal, Manipur, India. Nat Med J India. 2011;24(1):11-5.
- Pradhan PM, Niraula SR, Ghimire A, Singh SB, Pokharel PK. Tobacco use and associated factors among adolescent students in Dharan, Eastern Nepal: a cross-sectional questionnaire survey. BMJ Open. 2013;3(2):e002123.
- 17. Shruthi MS, Basha R, Thangaraj S, Rangnath TS. Prevalence of tobacco use among Class 10 students in an urban field practice area, Bangalore: a cross sectional study. Med Sci. 2013;2(1):363-73.
- 18. Verma A, Goswami M, Dhillon JK. Tobacco use among school going children. Indian J Dent Res. 2019;30(6):839-47.
- 19. Sharma R, Grover VL, Chaturvedi S. Tobacco use among adolescent students and the influence of role models. Indian J Community Med. 2010;35(2):272-79.

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