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Prevalence and Risk Factors for Tobacco Smoking, Among College Students of South India

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Abstract: **Tobacco use among college students have been increasing worldwide, especially in developing countries like India. Some studies have an association between tobacco use among students and tobacco use among siblings or family members. The risk of tobacco use among students is also increased by having friends who are smokers. Exposures to tobacco advertisements, poor scholastic performance, high pocket money etc are other possible risk factors. A cross sectional study was conducted among 300 male college students from an arts and science college in Pathanamthitta district of Kerala state, to find out the prevalence of tobacco smoking and risk factors for the same. The prevalence of smoking was 26.7% (95% CI 21.6% to 31.8%). The mean age at which they started smoking was found to be 17.43 with the minimum age of 12 and the maximum age of 21 years. 56.3% of the students said they started smoking because of peer pressure while 46.3% said that they started for fun. Also, smoking among respondents was significantly associated with having friends as smokers ($p < 0.001$, OR (95% CI)- 13.72 (6.04 to 31.15)) or family members as smokers. (p- 0.001, OR (95% CI)- 2.33(1.38 to 3.94)). The study points towards a need to have a comprehensive tobacco control policy and stricter implementation of the law, with regards to control of tobacco. The focus should be on limiting the supply as well as the demand, for tobacco products.**

Keywords: **College students, India, smoking, tobacco control.**

1. INTRODUCTION

Tobacco use among school and college students has been increasing worldwide. This trend is especially true in developing countries like India. (1) There have been wide estimates about the prevalence of tobacco use among school and college students in India. A study done among high school students in Kolkata, India showed that the overall prevalence of tobacco smoking was 29.6% with 75% of them getting initiated into this habit before 15 years of age. (1) A multi-centric study among adolescent school children in India, showed that 4.1% of the students were habitual users of tobacco in some form, with 3.1% being smokers. (2) Another study done in Noida, India showed the prevalence of tobacco use to be 11.2% with most of them being smokers. Alarmingly, the study found out that the age at initiation was less than 11 years in many students, which points towards the lax implementation of governmental regulations about sale of tobacco to minors. (3) An extensive study covering 30 schools of Delhi, India in which 3422 randomly selected students were interviewed, it was found that 9.8% of the students had experimented with tobacco at least once in their lifetime and 5.4% were current users of tobacco in some form. (4)A study in Karnataka, India among 13-15 year old school children, revealed that 4.9% of the children were regularly using tobacco in some form and smokeless forms of tobacco were preferred over smoking. (5) Even among medical students, who supposedly learn about the ill-effects of tobacco use, the prevalence of tobacco use is high. A study done in three medical colleges in Orissa, India showed a

prevalence of 8.7% with 34% of the users getting initiated into the habit after joining the medical college. (6) The problem of tobacco use among students have achieved alarming proportions in the North-Eastern states of India. Current smokeless tobacco use ranged from 25.3% in Assam to 49.9% in Nagaland. Mizoram reported the highest current smoking 34.5% and Assam reported the lowest prevalence of 19.7%, again mainly cigarette).

Current smoking among girls was also quite high. (7)

There have been multiple studies to find out the possible risk factors for tobacco use and smoking, among school and college students in India. Some studies have shown a clear association between tobacco use among students and tobacco use among siblings or family members. The risk of tobacco use among students is also increased by having friends who are smokers. (2) Another study done in multiple schools in Delhi and Chennai, India showed that government school students and students from a lower socio-economic background are more likely to get initiated into tobacco use than private school students from affluent backgrounds. (8) Exposure to tobacco advertisements in the form of surrogate television commercials, display boards in shops etc were a significant risk factor for tobacco use among students. (9)A study from Trivandrum, India showed that poor scholastic performance and high pocket money for the students were significant risk factors for tobacco use among students from urban areas. (10)

2. MATERIALS AND METHODS

A cross sectional study was done in the month of October 2014, among students of an Arts and Science College in Pathanamthitta district of Kerala state, India. A total of 300 students from 6 randomly selected classes were included as participants in the study. The participants were given a self-administered questionnaire, which asked for their socio-demographic data, use of habit forming substances and details of use. The questions in the Performa were adapted from Fagerstrom questionnaire, which is a standard tool to measure nicotine dependence. (11) The scoring system of Fagerstrom questionnaire was not used in the study. The study was conducted after taking clearance from the Institutional Ethics Committee and all norms of privacy and confidentiality was followed in the course of data collection and analysis. The data entry and analysis was done using Epi-Info 7.0, free software developed by Centre for Disease Control, Atlanta, USA. For analysis purpose, significance level was set as $p<0.05$.

3. RESULTS

A total of 300 male students from an arts and science college in Pathanamthitta district of Kerala state was included in the study. The response rate for the study was 100%.

Majority (160, 53.3%) of the students who participated in the study were from the science stream, while arts stream contributed 20.7% and commerce stream contributed 26% of the participants. A vast majority of the students were Christians (183, 61%), and this follows the demographic profile observed in Central Kerala. Among the respondents, 54% said that they had at least one family member who was a smoker and a similar number (56%) said that they had a friend who smoked. [Table 1]

Table 1: Baseline characteristics (n=300)

Baseline attributes		**Number(percentage)**
Stream of study	Arts Science Commerce	62 (20.7%) 160(53.3%) 78(26%)
Religion of the participants	Hindu Muslim Christian	102(34%) 15(5%) 183(61%)
Family members who smoke	Yes No	162(54%) 138(46%)
Friends who smoke	Yes No	168(56%) 132(44%)

In the study, 80 respondents gave history of smoking and the overall prevalence of smoking was 26.7% (95% CI 21.6% to 31.8%). The mean age at which they started smoking was found to be 17.43 with the minimum age of 12 and the maximum age of 21. Smoking habits varied from person to person and mean number of cigarettes smoked by them was 3.49 cigarettes/day, the maximum frequency was found to be 7 cigarettes/day and least number was 1cigerette/day. Among the reasons given for initiating the habit of tobacco smoking, 28 (35.0%) gave the reason as stress, while 45 (56.3%) said it was peer pressure. Thirty seven (46.3%) of the participants said they started smoking for fun and 9 (11.3%) gave no specific reason for starting the habit. [Table 2]

Table 2: Reasons to start smoking (n=80)

Attribute	Number	Percentage
Stress	28	35.0%
Peer pressure	45	56.3%
For Fun	37	46.3 %
No specific reason	9	11.3%

The questions derived from the Fagerstrom questionnaire were asked to the participants to assess the general level of nicotine dependence among those who smoke. The scoring system of Fagerstrom questionnaire was not used in the study, as assessment of the level of dependence was outside the scope of the study. The proportion of participants who gave positive responses to specific questions gauging nicotine dependence, ranged from 25% to 55%. A total of 33.7% of the participants said they smoke within one hour of waking up, 38.6% said they smoke more during the first hours of the day, 25.1% said that they find it difficult to refrain from smoking in public places, 55% said that the first cigarette of the day was their favourite smoke and 25% of the respondents found it difficult not to smoke when they are sick. [Table 3]

Table 3: Response to Fagerstrom questions, by students who smoke (n=80)

Fagerstrom questions	Responses	Number(Percentage)
First smoke on waking up	Within one hour After one hour	27(33.7%) 53(66.3%)
More smoking in first hours of the day	Yes No	31(38.6%) 49(61.1%)
Difficult to refrain from smoking in public places	Yes No	20(25.1%) 60(74.9%)
Favourite cigarette	First smoke All/Others	44(55.0%) 36(45.0%)
Difficult to refrain from smoking when sick	Yes No	20(25.0%) 60(75.0%)

During analysis, we tried to find out about the possible attributes for initiation of smoking among college students. The mean age of smokers was found to be 20.0 years and that of non smokers was found to be 20.19 years. Age could not be attributed as a significant risk factor for smoking as this difference was not found to be statistically significant (t-test value- 1.39, p- 0.19). The mean monthly family income of the students was found to be Rs 31810.13 among smokers and Rs 330301.96 among non smokers. The data also shows that the mean income of the student is not an important attribute for the students to start smoking as the mean monthly family incomes of smokers were not statistically different from that of non smokers (t-test value- 0.23, p- 0.81). Among the students who reported that one of their family members was a smoker, 37.7% were smokers while among those who did not have any family members who smoked, only 20.6% were into the habit and this was found to be statistically significant (Chi square value-10.270, p- 0.001, OR (95% CI)- 2.33(1.38 to 3.94)). Among the participants who said that they had friends who smoke, 43.5% were smokers while only

5.3% of those who said they did not have any smoker as a friend, were smokers themselves. Again, this was found to be a statistically significant attribute (Chi square value-55.01, $p < 0.001$, OR (95% CI)- 13.72 (6.04 to 31.15))

4. DISCUSSION AND CONCLUSIONS

The prevalence of tobacco smoking among college students of an arts and science college in Pathanamthitta district of Kerala state, was consistent with the findings from other parts of the country. At 26.7%, it is higher than the prevalence observed in studies from North and Western India (2, 3), but is much lower when compared to the prevalence in the North-East of our country. (7) The trend of early initiation of the habit is also consistent with the findings from other parts of the country. (1,3) In our study, it was found that students with a family member who smoke or with a friend who is a smoker, is more likely to be a smoker himself, as seen in other studies from different parts of the country. (2)

The significant association of smoking as a habit with having friends or family members as smokers, along with the alarming finding that 56% of the respondents cite peer pressure as a reason for initiation, points towards the urgent need to find effective intervention to prevent this menace. The high prevalence of tobacco smoking, along with the positive responses given to Fagerstrom questions by those respondents who were smokers, show that tobacco smoking is becoming a serious issue in our colleges. The ambitious tobacco control policies initiated by the Government of India, needs to be implemented on the ground. (12)The policies should aim at limiting both the supply and demand for tobacco products and strict implementation of the legal measures taken for the same.

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REFERENCES

[1] Bagchi NN, Ganguly S, Pal S, Chatterjee S. A study on smoking and associated psychosocial factors among adolescent bstudents in Kolkata, India. Indian J Public Health. 2014 Jan-Mar;58(1):50-3

[2] Narain R, Sardana S, Gupta S, Sehgal A. Risk factors associated with tobacco habits among adolescents: a cross-sectional school-based study. Natl Med J India. 2013 Jul-Aug; 26(4):197-202.

[3] Narain R, Sardana S, Gupta S, Sehgal A. Age at initiation & prevalence of tobacco use among school children in Noida, India: a cross-sectional questionnaire based survey. Indian J Med Res. 2011 Mar; 133:300-7.

[4] Singh V, Pal HR, Mehta M, Dwivedi SN, Kapil U. Pattern of tobacco use among school children in National Capital Territory (NCT). Indian J Pediatr. 2007 Nov; 74(11):1013-20.

[5] Gururaj G, Girish N. Tobacco use amongst children in Karnataka. Indian J Pediatr. 2007 Dec;74(12):1095-8

[6] Ramakrishna GS, Sankara Sarma P, Thankappan KR. Tobacco use among medical students in Orissa. Natl Med J India. 2005 Nov-Dec;18(6):285-9.

[7] Sinha DN, Gupta PC, Pednekar MS. Tobacco use among students in the eight North-eastern states of India. Indian J Cancer. 2003 Apr-Jun;40(2):43-59.

[8] Mathur C, Stigler MH, Perry CL, Arora M, Reddy KS. Differences in prevalence of tobacco use among Indian urban youth: the role of socioeconomic status. Nicotine Tob Res. 2008 Jan;10(1):109-16.

[9] Madan Kumar PD, Poorni S, Ramachandran S. Tobacco use among school children in Chennai city, India. Indian J Cancer. 2006 Jul-Sep; 43(3):127-31.

[10] Mohan S, Sankara Sarma P, Thankappan KR. Access to pocket money and low educational performance predict tobacco use among adolescent boys in Kerala, India. Prev Med. 2005 Aug; 41(2):685-92.

[11] Fagerstrom KO, Schneider NG. Measuring nicotine dependence: a review of the Fagerstrom Tolerance Questionnaire. J Behav Med. 1989 Apr;12(2):159-82.

[12] Kaur J, Jain DC. Tobacco control policies in India: implementation and challenges. Indian J Public Health. 2011 Jul-Sep;55(3):220-7.