

# Tobacco use among Pre-university Students in Kannur, Kerala: A Cross-sectional Study

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## Abstract

**Introduction:** The data available on tobacco use by school children are weak, except in very few developing countries. Studies show that the more adolescents are exposed to tobacco marketing, the more likely they will smoke as adults.

**Objectives:** To estimate the prevalence of tobacco use among pre-university students in Kannur, Kerala and to estimate the knowledge about the ill effects and law to control tobacco products.

**Materials and Methods:** It was a cross-sectional study. The study subjects were the students of two higher secondary schools of Kannur, Kerala. The sample included all the students of the 11<sup>th</sup> and 12<sup>th</sup> class of the selected schools which amounted to 775. A questionnaire based on the WHO Global Youth Tobacco Survey questionnaire was administered to fetch socio-demographic profile and data related to tobacco use and knowledge, attitude, and practices toward act to control tobacco products.

**Results:** Out of 775 students, males were 43.35% and females 56.65%. Mean age was 16.32 ± 0.656 years. 11.7% students tried smoking or chewing tobacco at least once. Among boys, the prevalence of tobacco use of any form is 19.04%. Among females, the prevalence of smoking is 5.92%. 88.12% were aware of the act regarding tobacco products. Majority of the students were aware of the prohibition of smoking in public places (90.12%). Majority of the study participants said that tobacco has ill effects (97.16%). Majority of the students do not know about tobacco use by other students of their class (69.29%).

**Conclusion:** Prevalence of tobacco use especially smoking form in higher secondary school students is high.

**Key words:** Pre-university students, Smoking, Tobacco use

## INTRODUCTION

Tobacco products are made totally or partially from dried leaves of the plant *Nicotina tabacum*, as a raw material, which is intended to be smoked, chewed, or snuffed. All these products have Nicotine, a highly addictive psychoactive agent. Tobacco use is one of the main risk factors for a number of chronic diseases including cancer, lung diseases, and cardiovascular diseases.<sup>1</sup> Tobacco is cultivated in many regions around the world and can be legally bought in most of the countries.<sup>2</sup> Beedi, cigars, cigarettes, and hookah

are few smoking forms of tobacco and chewing tobacco, dipping tobaccos, gutka, and snuff are non-smoking forms. While the prevalence of tobacco use has declined in some high-income countries, it is increasing in some low and middle-income countries, especially among young people and women.<sup>2</sup> Among these different forms of tobacco, the common products available and used are beedis, cigarettes, chewing forms, and gutka. The increase in usage of these products occurs due to various reasons. For example, the sale of single cigarettes is an important way of attracting children who cannot afford to buy a whole packet of cigarettes.

Studies show that the more adolescents are exposed to tobacco marketing, the more likely they will smoke as adults. In many countries, the vast majority of adult smokers begin smoking before the age of 18.<sup>3</sup> In India alone, nearly 1 in 10 adolescents in the age group 13-15 years have ever smoked cigarettes and almost half of these reports initiating tobacco use before 10 years of age.<sup>4</sup>

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There are only a few studies on prevalence and initiation of smoking and smokeless tobacco use among children in our country.<sup>5,6</sup> The risks of tobacco use are highest among those who start early and continue its use for a long period.<sup>7</sup> The early age of initiation underscores the urgent need to intervene and protect this vulnerable group from falling prey to this addiction.<sup>8</sup> The most common reasons cited for children to start using tobacco are peer pressure, parental tobacco habits, and pocket money given to children.<sup>9</sup>

The present cross-sectional study was undertaken to determine the prevalence and age at initiation of tobacco smoking or tobacco chewing among school children in Kannur city in south India.

## MATERIALS AND METHODS

A cross-sectional study was conducted among students of two pre-university schools of Kannur, Kerala. Two schools were selected by random sampling from the city. The principals of the schools were informed in writing about the importance of the survey. The schools were given prior intimation about the date of study to have a maximum number of participants. However, the topic of the study was not informed to the students. Students were told to participate in the study voluntarily and informed consent from the students and school authorities was obtained. The study participants were explained about how to fill up the questionnaire and to provide authentic information. They were assured that all information would be kept confidential.

The sample included all the students of the 11<sup>th</sup> and 12<sup>th</sup> class of the selected schools who were present on the days of study. Sample from the first school was 387. Absentees were 33. A sample size of the second school was 388. Absentees were 32. Hence, the total sample size amounted to 775. The response rate was 100% among the students who were present on the day of data collection.

A pre-tested, anonymous, self-administered, and semi-structured questionnaire was prepared based on the WHO Global Youth Tobacco Survey<sup>4</sup> questionnaires, which included age, gender, type of family, and questions related to tobacco use and knowledge, attitude, and practices toward act to control tobacco products. No changes were made in questions, but some were excluded. The questionnaire was translated into Malayalam and was reviewed by two Malayalam teachers. A pilot study was done on 50 students to see the feasibility of the study.

The data were collected on age, gender, type of family, and weekly pocket money. Data were also collected regarding the use of tobacco, age at initiation, smoking habits of

parents and siblings, peer influence, places of tobacco consumption, purchase of tobacco for elders at home and teachers, etc. 'Ever use of tobacco' was defined as the use of tobacco even once including current tobacco use. Tobacco consumption was broadly classified into three categories: Smoking, chewing, and more than one form of tobacco use. Tobacco smoking includes cigarettes, beedis, and others such as hookah, chillum, and ganja. Smokeless tobacco use includes gutka, khaini, and zarda.

Data were entered in excel sheet after coding. Analysis was done using SPSS V. 17.0 trial version. The categorical outcomes were summarized by rates. Numerical outcomes were summarized by mean and standard deviation.

## RESULTS

Out of 775 students, males were 336 (43.35%) and females were 439 (56.65%). Mean age of the students was  $16.32 \pm 0.65$  years (range - 15-18 years). The majority of the students were from nuclear family ( $n = 587$ , 75.74%). 23.3% of them were from joint families and only 7 (0.09%) were from broken families.

In our study, the majority of the students (579, 74.72%) spent up to Rs. 100 a week as per their wish. 90 (11.7%) students tried smoking or chewing tobacco at least once. Among boys, the prevalence of tobacco use of any form is 19.04% and prevalence of only smoking is 18.15%. Among females, the prevalence of smoking is 5.92%.

Most of the students who used tobacco were cigarette smokers ( $n = 85$ , 94.45%). Only 2 of them were beedi smokers, 2 were maava users, and only 1 student used both cigarette and chewing forms of tobacco.

In our study, the majority (64, 71.11%) students started using tobacco when they were more than 15-year-old. Out of 90 ever users of tobacco, 40 (44.44%) did not use tobacco in last 30 days, 30 (33.33%) used for 1-5 days, 8 (8.89%) used for 6-15 days, 4 (4.44%) used for 16-29 days, and 8 (8.90%) used tobacco on all 30 days. About one-fourth of the ever users of tobacco (24.5%) used tobacco products in school premises. Less than half of the students were willing to quit tobacco (46.67%).

In the present study, about two-thirds ( $n = 32$ , 68.08%) of the study subjects said that their friends knew about their habit, in 12.77% family members knew, only 3 (6.38%) said that their teachers knew, and 6 (12.77%) said that nobody knew about their habit of tobacco. Among the users of tobacco, only 47 have got advice from somebody. Out of these 47, 8 (17.02%) said they had got from a program, 12 (25.53%) had got advice from their friends, 8 (17.02%)

got from family members, 6 (12.77%) got from teachers, 7 (14.89%) got from all of the above, and 6 (12.77%) have not got any advice regarding the cessation of tobacco use.

Among 775 students, most of the students ( $n = 668$ , 86.19%) do not have someone who uses tobacco products at home and 107 (13.81%) have family members using tobacco products and among them majority 85 (79.44%) said their father uses tobacco, 5 (4.67%) said their uncle uses tobacco, 13 (12.15%) said their grandfather uses tobacco products, and 4 (3.74%) said their brother uses tobacco products.

In the present study, 24 students (22.43%) said they have not seen any family member using tobacco for the past 7 days, 45 (42.06%) have seen 1-3 times, 22 (20.56%) have seen 4-6 times, and 16 (14.95%) have seen more than 7 times. When asked about the mode of starting the habit of using tobacco, 25 (27.78%) said they started with their own wish, 10 (11.11%) by peer pressure, 28 (31.11%) by seeing parents, and 27 (30.0%) due to the influence of the media.

In our study, majority 37 (41.11%) of the study subjects got the tobacco products from a nearby shop, 16 (17.78%) from a street vendor, 25 (27.78%) got from friends, and 12 (13.33%) got through other ways like stealing.

Among the current 47 users, 20 (42.55%) said they have been refused to buy tobacco products and more than half of them (27, 57.45%) said that they have not been refused to buy tobacco products by the vendors due to their age.

In our study, 683(88.12%) students are aware of the act regarding tobacco products and 92 (11.88%) are not aware. Among those, who are aware, 126 (16.25%) got the information from newspaper, 147 (18.99%) from television, 32 (4.12%) from friends, and 378 (48.77%) from multiple sources. The majority of the students were aware of the prohibition of smoking in public places (699, 90.12%) and remaining 76 (9.88%) were not aware. More than half of the students 409 (52.65%) were of the opinion that the pictorial warnings on the tobacco products will not help quit tobacco. 173 (22.32%) said the pictorial warnings will help quit tobacco, 193 (24.91%) said they do not know whether the warnings will help or not.

About the chance of using a tobacco product on offering by a friend, 63 (8.13%) said they will definitely use, 35 (4.52%) said probably yes, 54 (6.97%) said probably no, and 623 (80.38%) said they will not use definitely. The majority of the study participants said that tobacco has ill effects ( $n = 753$ , 97.16%); 22 (2.84%) gave the opinion that tobacco products have no ill effects.

More than two-third of the students knew the ill effect of tobacco as cancer (516, 68.53%) and 141 (18.46%) of students did not mention any ill effect of tobacco. Regarding the easiness of obtaining tobacco products, 85 (10.97%) said it is very difficult to get, 76(9.81%) said fairly difficult, 386 (49.81%) said fairly easy, and 228 (29.41%) said very easy to obtain. Majority 537 (69.29%) of the students do not have knowledge about the use of tobacco by the other students of their class. Among the remaining students, 33 (4.26%) were of the opinion that most of the class use tobacco, 29 (3.74%) said half of the class, 92 (11.87%) said some of them in the class, and 84 (10.84%) none of the students use tobacco. The majority of students 676 (87.23%) have the opinion that use of tobacco products does not make them more attractive and 99 (12.77%) thinks it makes them attractive (Tables 1 and 2, Figures 1-4).

## DISCUSSION

The data available on tobacco use by school children are weak, except in very few developing countries. This study was conducted as means of providing baseline information on higher secondary students and their tobacco use.

This study demonstrates that the prevalence of tobacco use among 15-18 years old pre-university students (corresponding to grades 11-12) in Kannur, is high. However, the prevalence is less than in the studies conducted in Gujarat,<sup>10</sup> Karnataka, Uttar Pradesh,<sup>11</sup> and other North-Eastern states.<sup>10</sup> But still, this is of concern because, younger the age of initiation of tobacco use, more likely are they become addicted and die due to the diseases caused by tobacco. The strategies to

**Table 1: Money spent by the students a week as their own wish**

Money spent weekly as per wish	Number of students (%)
No money	127 (16.38)
Below 50 rupees	462 (59.63)
50-100 rupees	117 (15.09)
100-200 rupees	42 (5.42)
More than 200 rupees	27 (3.48)

**Table 2: ill effects of tobacco use known by the study participants**

ill effects of tobacco use known to the students	Number of students, %
Cancer	516, 68.53
Bronchial asthma	56, 7.44
Bronchitis	9, 1.19
Death	29, 3.85
Coronary artery disease	4, 0.53
Do not know	141, 18.46

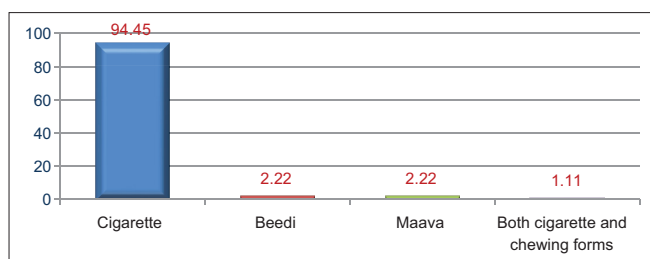


Figure 1: Different types of tobacco use among the study participants (n = 90)

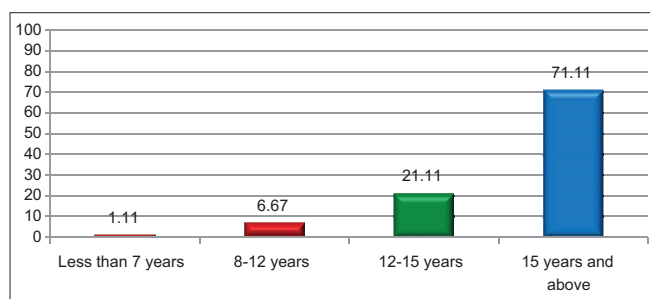


Figure 2: Age at which the participants started using tobacco (n = 90)

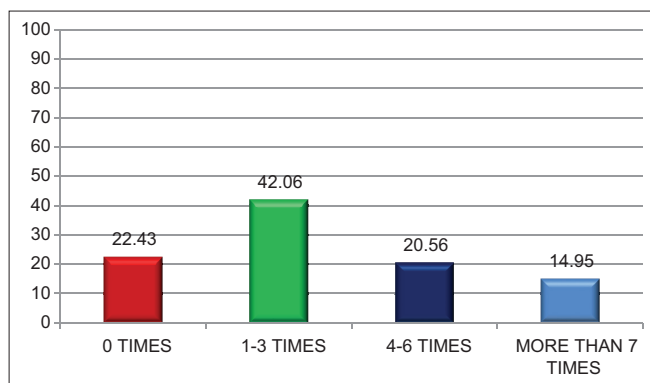


Figure 3: Number of times family members used tobacco in last 1 week (n = 90)

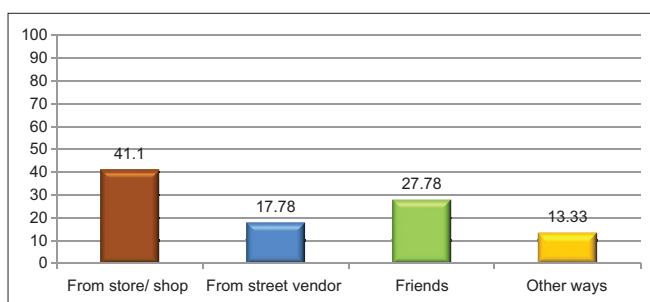


Figure 4: Major source of obtaining tobacco product (n = 90)

reduce initiation of tobacco use needs to be targeted more toward younger age groups.

Cigarette smoking outside the school campus was reported by a high percentage of the youth in the present study. It

is not known whether this smoking was practiced in the presence of family members. Most of them do not have difficulty in procuring the tobacco products despite their young age, and this indicates that laws restricting sale of tobacco products to minors were not implemented adequately. The share of students who wanted to give up tobacco varied considerably. A similar difference was evident in receiving help or advice to give up tobacco usage. This indicates that the programs and interventions targeting young people need to expand their focus to include prevention of initiation as well as offering tobacco cessation programs in young.

There are numerous recent reports, predicting a rise in oral cancer incidence in India. This is based on the observation of an increase prevalence of oral submucous fibrosis, especially in younger individuals, caused by industrially manufactured smokeless tobacco products.<sup>12,13</sup> In the present study, the tobacco chewers are very less in number, which differs from the nation-wide trend.

Possibly little can be done about exposure at home except to educate the public on the needs to restrict smoking at home for health reasons, but for preventing contact in public places, there is already imposed ban by Hon'ble Supreme Court of India on smoking in public places, along with ban on selling tobacco products to minors. This needs to be implemented robustly while the public needs to be informed about the dangers of tobacco smoke.

In western set up, intervention programs have been successful, at least in delaying initiation of tobacco use. A comprehensive school tobacco control strategy comprising a combination of tobacco-free school policies and an evidence-based syllabus linked to community-wide programs involving families, peers, and organizations with counter-marketing campaigns and community-based activities have succeeded in reducing tobacco in schools.<sup>14</sup> There is greater potential for school-based awareness programs in Kannur city as well as the whole of India followed by cessation initiatives.

## CONCLUSION

The prevalence of tobacco use especially smoking form in higher secondary school students is high. The findings of this study will help to design, implement, and evaluate tobacco control and prevention programs in a standard format. It also offers a unique tool to improve the information base on tobacco use among young people, which will support medium-term and long-term programing and advocacy actions for youth-targeted tobacco control.

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