

Original Research

Prevalence of tobacco usage among adolescent of 10-18 years in Lucknow

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ABSTRACT:

Aim and Objective: India ranks third in global tobacco production and consumes almost 50% of its produce domestically. Smoking tobacco exposes the smoker to more than 7,000 chemicals, of which nearly 250 and nearly 69 chemicals are proven harmful and carcinogenic respectively. In India adolescent group 13–15 year has ever smoked cigarettes and almost half of these report initiating tobacco use before 10 year of age. The present cross-sectional study was done to find the patterns of tobacco use and prevalence of tobacco usage among adolescent of 10-18 years in Lucknow. **Material and Method:** A cross-sectional study was conducted among the adolescent aged 10 to 18 years in Lucknow. The study was conducted in the government and private schools in Lucknow. There are around 4000-5000 schools in Lucknow. Eligible school children were stratified according to age and gender, and randomly selected in proportion to the total number of 10 to 18 years old students to reach sample size of 1500 students. **Result:** The study comprised 1500 individuals. Data entered were qualitative in nature. The data was entered in SPSS 23.0 and Chi square was applied to see if there was any association between response and gender. 69.94% of the participants have experimented with cigarette smoking, even one or two puffs. The prevalence was higher among male. 56.7% of the population has used smokeless tobacco products associate with gender. **Conclusion:** Addiction to tobacco and harmful non-tobacco products by youth is assuming alarming proportion in India. A number of factors are found to influence the use of tobacco by adolescents. Some of these are the family history of tobacco use by elders, peer influence, experimentation, and easy access to such products along with personality factors and underlying emotional and psychosocial problems. Lower general self-efficacy and self-esteem, dependency, powerlessness, and social isolation all increase the tendency to any substance use behavior including tobacco use

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INTRODUCTION

The World Health Organization (WHO) attributes approximately 5 million deaths a year to tobacco. The number is expected to exceed 10 million deaths by 2030, with approximately 70% of these deaths occurring in developing countries¹. India is the second largest consumer of tobacco in the world. Addiction to tobacco and harmful non-tobacco products by youth is assuming alarming proportion in India² Adolescents who reported low levels of parental support, affection, monitoring, and more family control and conflict are prematurely impelled to develop all kinds of antisocial activities including tobacco use. Many studies have reported association between tobacco use and

psychosocial determinants and also with lower general self-efficacy among adolescent³. Based on a median initiation age of 16 to 17 years, the predicted duration of smoking is 16 and 20 years for 50% of the males and females respectively. Prevention of the onset of adolescent smoking is thus an essential component of efforts to reduce the overall prevalence of smoking and its attendant morbidity and mortality.⁴ The prevention of tobacco use in young people appears to be the single greatest opportunity for preventing non-communicable disease in the world today. Adolescents are adopting behavioral patterns that are comparable from country to country. To counteract this effect in India as well as in the rest of

developing world, there is an urgent need for good, scientifically sound data about tobacco use pattern that would allow cross-country and within country comparison⁵. The tobacco usage habit tends to continue into adulthood with 9 out of 10 smokers smoking their first before the age of 18 years⁶. In India, 14.6% of adolescents use some form of tobacco, of which, 12.5% is in the form of smokeless tobacco. Mere 4.4% of school going children smokes cigarettes, which showcases the importance of accounting for other forms of tobacco in India and south East Asia regions. The prevalence of tobacco usage among youth has increased between 2006 and 2009.⁷ Therefore the present study was conducted with the objectives of finding the patterns of tobacco use and prevalence of tobacco usage among adolescent of 10-18 years in Lucknow.

AIM AND OBJECTIVE

The present cross-sectional study was done to find the patterns of tobacco use and prevalence of tobacco usage among adolescent of 10-18 years in Lucknow.

STUDY AREA & DESIGN

Lucknow is the capital city of the Indian state of Uttar Pradesh. According to the provisional report of 2011 Census of India, Lucknow city had a population of 2,815,601, of which 1,470,133 were men and 1,345,468 women. A descriptive cross-sectional epidemiological study was conducted among adolescent aged 10 to 18 years in Lucknow.

METHODOLOGY

The study was conducted in the government and private schools in Lucknow. There are around 4000 schools in Lucknow city. Schools from each region were randomly selected to obtain the desired sample size. They were randomly selected in proportion to the total number of 10 to 18 years old students to reach sample size of 1500 students. **Inclusion criteria were** adolescent of 10-18 years of Lucknow, adolescent of both genders, children willing to participate in the study with consent from parents. **Exclusion criteria were** those children who refused to participate will be excluded, medically compromised children. Ethical clearance was given by the Institutional Ethical committee of Babu Banarasi Das College of Dental Sciences. Verbal Informed consent was obtained from the participating population and permission was taken from the school authorities. A pilot study was conducted on 50 participants to check the feasibility of the study and also to calculate the reliability of the study. The questionnaire was pretested on target population using Cronbach's alpha for reliability. The Cronbach's alpha came to 0.91 indicating an excellent reliability. Split half technique was also used to check for reliability. Examiner calibration and training of recording clerks has been done at the same time. The team of the survey consisted of administrators, coordinators, examiners and recorders participated in

the pilot study. A pilot study saves precious time, identify potential difficulties and prompt modifications that may be necessary before the actual survey is initiated.

SAMPLING TECHNIQUE

A cluster random sampling technique was used to collect the sample. Cluster sampling is applicable when preparing the sampling frame is difficult. In it, geographical area is divided into small area called cluster like in our study Lucknow city was divided into geographical area: North, East, West, South and Central Population divided into several "clusters" in our study clusters are school. Each cluster representative of the population. Simple random sample selected from each. The samples are combined into one. The advantage is that cost of study is reduced. The collection of data was carried for study and should take 5-7 minutes in filling of the total questions. Daily and weekly schedules were prepared. The schedule was made available to school authorities. The schedules allowed for some flexibility, so that unexpected delays do not cause major upsets in the survey timetable. The plan for scheduling the time survey included: Introducing the examining team to the school director and class teachers concerned; travelling to the next school. Sample size was calculated based on previous study using G Power analysis. The level of confidence was kept at 95% with a margin of error (d) = 0.05. Power of the study = 80% and Proportion (p) = 19.6%. The total sample size came to 1385. It was rounded to make the sample size 1500.

CALIBRATION AND TRAINING

The calibration of the principal investigator was done by the research head that had conducted various epidemiological study and has thorough knowledge of the subject. Research head that was trained in accordance with the recommended methods and have done several studies and survey on tobacco, tobacco cessation was appointed to act as a validator for the survey team.

INTRA-EXAMINER REPRODUCIBILITY

These subjects were pre-selected so that they collectively represent the full range of conditions expected to be assessed in the actual survey. By comparing the results of the two examinations, the examiner can obtain an estimate of the extent and nature of the reliability of the questionnaire.

QUESTIONNAIRE

Pre validated questionnaire from GATS survey by WHO was used. Adequate number of questionnaires was taken for the survey. A form of questionnaire was also formed on the internet through Google forms in case of any shortage questionnaire prepare in Google forms was used. The entire questionnaire was explained to the students and total confidentiality was

assured. Study participants were instructed to choose only a single answer to each question. Considering the sensitivity of the topic, the school authorities were requested not to be present in the class during the procedure of filling the questionnaire. The examination was carried in the class room or field of the school premises with consistent lighting. The principal investigator and Recording clerk will be present at the site. Teachers were not allowed near the examination area. An adequate supply of assessment forms, hardboard bases and clips, sharpened pencils, erasers and copies of the recording instructions, coding lists was readily available

DATA ANALYSIS

The data collected were entered in IBM SPSS

statistics 20 Descriptive analysis of qualitative variable is shown as number and percentages. Descriptive statistics represents the total number of participants, gender wise distribution, types of school: government or private. P value less than 0.05 was considered statistically significant. All the data were reported with exact p-values and 95% confidence intervals (CI) and 5% margin of error (z).

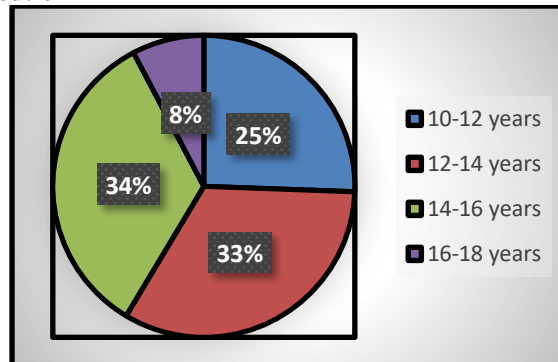
RESULT AND OBSERVATION

The study comprised 1500 individuals. Data entered were qualitative in nature. The data was entered in SPSS 23.0 and Chi square was applied to see if there was any association between response and gender. The study included more male patients compared to females as depicted in.

Table 1: Gender wise distribution of participants

Age	Frequency	Percentage
10-12	422	28.13%
12-14	395	26.33%
14-16	556	37.07%
16-18	127	8.47%
Gender	Frequency	Percentage
Male	891	59.4%
Female	609	40.6%

Graph 1: Age Range Distribution



Graph 2: Gender Based Distribution

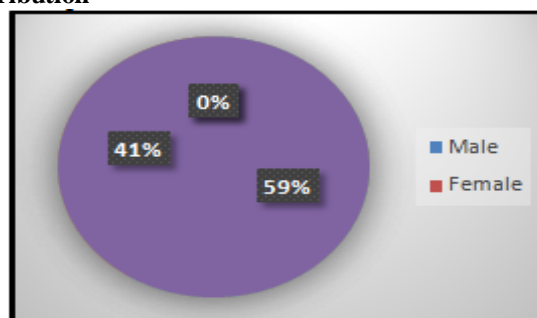


Table 2: Have you ever tried or experimented with cigarette smoking, even one or two puffs?

Response	Frequency	Percentage	
Yes	1049	69.94%	
No	451	30.06%	
Response	Frequency Male (percentage)	Frequency Female (percentage)	Chi Square

Yes	708 (67.49%)	341 (32.51%)	
No	183 (40.58%)	268 (59.42%)	

Graph 3: Have you ever tried or experimented with cigarette smoking, even one or two puffs?

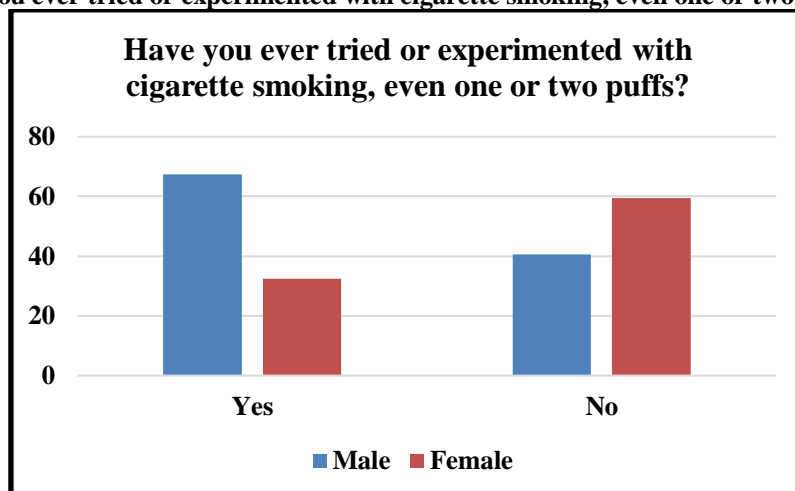


Table 3: How old were you when you first tried cigarette?

Response	Frequency	Percentage
I have never tried smoking a cigarette	451	30.06%
7 years old or younger	59	5.62%
8 or 9 years old	86	8.19%
10 or 11 years old	171	16.30%
12 or 13 years old	166	15.82%
14 or 15 years old	169	16.11%
16 years old or older	398	37.94%

Response	Frequency Male (percentage)	Frequency Female (percentage)	Chi Square
I have never tried smoking a cigarette	183 (20.54%)	268 (44.0%)	
7 years old or younger	39(4.38%)	20 (3.28%)	
8 or 9 years old	64(7.18%)	22 (3.61%)	
10 or 11 years old	102(11.45%)	69 (11.33%)	
12 or 13 years old	99(11.11%)	67 (11.0%)	
14 or 15 years old	140(15.71%)	29 (4.76%)	
16 years old or older	264(29.63%)	134 (22.0%)	

Graph 4: How old were you when you first tried cigarette?

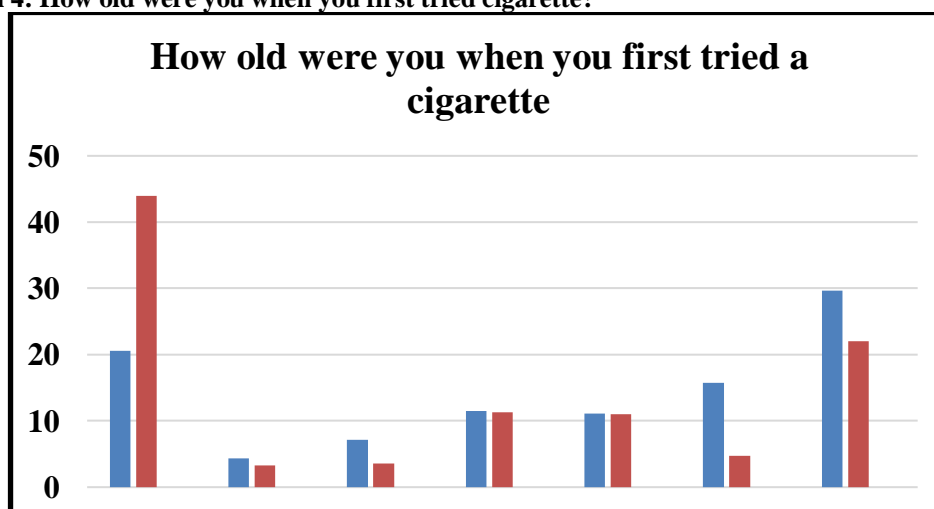
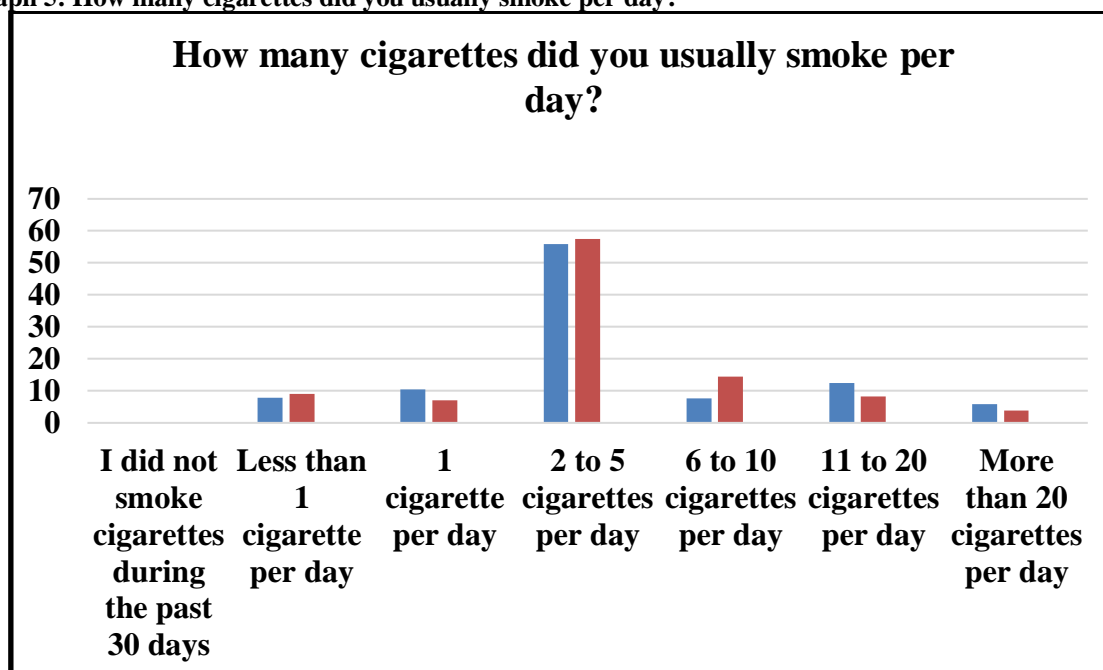


Table 4: During the past 30 days, on how many days did you smoke cigarettes? (How many cigarettes did you usually smoke per day?)

Response	Frequency	Percentage	
I did not smoke cigarettes during the past 30days	0	0%	
Less than 1 cigarette per day	87	8.29%	
1 cigarette per day	98	9.34%	
2 to 5 cigarettes per day	591	56.33%	
6 to 10 cigarettes per day	103	9.81%	
11 to 20 cigarettes per day	116	11.05%	
More than 20 cigarettes per day	54	5.14%	
Response	Frequency Male (percentage)	Frequency Female (percentage)	Chi Square
I did not smoke cigarettes during the past 30days	0(0%)	0(0%)	
Less than 1 cigarette perday	56(7.91%)	31(9.0%)	
1 cigarette perday	74(10.45%)	24(7.04%)	
2 to 5 cigarettes perday	395(55.79%)	196(57.47%)	
6 to 10 cigarettes perday	54(7.63%)	49(14.37%)	
11 to 20 cigarettes perday	88(12.43%)	28(8.21%)	
More than 20 cigarettes perday	41(5.79%)	13(3.81%)	

Graph 5: How many cigarettes did you usually smoke per day?



DISCUSSION

Tobacco use, especially smoking, is a male-dominated phenomenon among children and adolescents in India unlike the West, where its distribution is equal among both genders. In some countries like China, Fiji, Jordan, and Venezuela, smoking is rather more common among females⁸. In our study, we have found ever tobacco use to be significantly higher among male students (20.6%) than female students (11.4%). Similar results have also been obtained in other studies done among school going adolescents in Kolkata⁹. But recent studies have also shown that tobacco use is on rise among female adolescents in India¹⁰. The increasing prevalence of smoking among

youth as reported in our study is consistent with findings from multiple studies done in India and other countries. Gender also emerged as an important predictor of tobacco use in our study with males being more likely to use any form of tobacco as compared with females. Tobacco use, particularly smoking, is a male-dominated phenomenon among children and adolescents in India.¹¹ However, there have been noted exceptions such as Goa and North-Eastern States which have reported almost equal prevalence, similar to the gender distribution seen in studies from Western countries.¹² The findings of this study have implications beyond the immediate tobacco use behaviors of school-going children. Tobacco use at a

young age can establish a lifelong habit and increase the risk of tobacco-related diseases later in life. Therefore, understanding the psychosocial determinants of tobacco use in this population can contribute to long-term public health efforts aimed at reducing the overall burden of tobacco-related diseases. The school environment and education were identified as important factors influencing tobacco use behaviors. The availability and accessibility of tobacco products in and around schools, along with inadequate anti-tobacco education, contribute to higher rates of tobacco use among students. Implementing comprehensive tobacco-free policies in schools, enforcing regulations on tobacco advertising near schools, and conducting anti-tobacco education programs can create a supportive and tobacco-free environment.¹³ Additionally, providing cessation support for students who want to quit smoking can be effective in reducing tobacco use prevalence. Family dynamics and parental behavior also play a crucial role in children's tobacco use. Children with parents who smoke are more likely to engage in tobacco use themselves, indicating the need for targeted interventions for parents. Educating parents about the harmful effects of tobacco use, promoting positive parenting practices, and encouraging open communication within the family can be effective strategies. Additionally, providing support and resources for parents who want to quit smoking can contribute to creating a tobacco-free family environment.¹⁴ Study conducted in Spain found that the higher the levels of visibility of teacher smoking, the more likely a middle school or high school student is to be a smoker.¹⁰ Teacher smoking was also found to be the determinant of smoking among elementary school students.²⁶ However, no consistent findings have been produced or instance, a study in Taiwan found that the effect.⁶

CONCLUSION

Smoking is a lifestyle component that refers to the intake of smoke from burning tobacco into the lungs orally. The most common form of tobacco products are cigarettes (Cg), water-pipe (Wp), and recently heated tobacco products. In addition, electronic nicotine delivery systems, also known as electronic cigarettes (ECg), are becoming popular all over the globe. Tobacco use in children and adolescents is reaching pandemic levels. The World Bank has reported that nearly 82,000–99,000 children and adolescents all over the world begin smoking every day. Low socio-economy, illiteracy, unskilled manpower, socio-cultural support to some forms of

tobacco is tobacco use boosters. Its prevalence in teenagers and young adults is no less. Peer pressure, imitation, fantasy, advertisements, and stress encourage today's adults to have such habits. This ultimately causes oral diseases, malignancy, and even deaths and sadly the future appears worse.

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