



Original Research Article

EXAMINING THE PREVALENCE AND PREDICTORS OF CIGARETTE SMOKING AMONG SCHOOL-AGED ADOLESCENTS IN SOUTH RAJASTHAN

Kavya J. Modi¹, Jwalantkumar B. Joshi², Akib I. Masu³, Kushal Dwivedi⁴

¹Science Student (11th Std), CLG International School, Sumerpur, Pali- Rajasthan, India.

²Associate Professor, Department of Community Medicine, Banas Medical College and Research Institute, Palanpur, Gujarat, India.

³Intern Doctor, Banas Medical College and Research Institute, Palanpur, Gujarat, India.

⁴Final Year MBBS Student, Dr. D. Y. Patil Medical College, Hospital & Research Centre, Pune, Maharashtra, India.

Received : 08/01/2025
Received in revised form : 21/02/2025
Accepted : 08/03/2025

Corresponding Author:

Dr. Akib I. Masu,
Intern Doctor, Banas Medical College
and Research Institute, Palanpur,
Gujarat, India.
Email: akibmasu0206@gmail.com

DOI: 10.70034/ijmedph.2025.1.247

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (1); 1323-1326

ABSTRACT

Background: Cigarette smoking is a significant public health issue, especially among adolescents, with long-term implications for both physical and mental well-being. In many regions of India, smoking among school-going adolescents has become a growing concern due to its association with various risk factors, including peer pressure, family dynamics, socio-economic status, and access to tobacco products. **Aims and Objectives:** The purpose of this study was to assess the prevalence of adolescent current cigarette smoking behavior and to investigate the individual and social factors, which influence them both to and not to smoke.

Material and Methods: A cross-sectional study was conducted among school-going adolescents in South Rajasthan. Following the acquisition of written informed consent, participants were asked to complete a questionnaire.

Results: Approximately 11.9% of adolescents were identified as current smokers. The analysis highlighted key influences on adolescent smoking behavior, including the smoking habits of parents and peers, which significantly increased the likelihood of smoking. Moreover, adolescents with tendencies toward self-harm were found to be at higher risk of smoking. In contrast, adolescents whose parents were actively engaged in supervising their leisure activities were less likely to pick up the habit, emphasizing the importance of parental involvement in prevention efforts.

Conclusion: Our findings highlight the urgent need for targeted interventions to prevent adolescents from falling prey to tobacco addiction and becoming lifelong consumers of the tobacco industry. Parents play a critical role in this effort—those who smoke are encouraged to quit, as doing so benefits not only their own health but also significantly reduces the likelihood of their children adopting the habit.

Key words: Cigarette, Adolescent, smoking, social environment.

INTRODUCTION

Cigarette smoking among school-going adolescents in India is a growing public health concern with significant long-term consequences. Studies have highlighted key factors influencing smoking behavior, including peer pressure, parental smoking habits, and emotional vulnerabilities such as stress and self-harm tendencies.^[1,2,3] The Global Youth Tobacco Survey (GYTS) reported a worrying prevalence of tobacco use among Indian

adolescents, with easy accessibility and low perception of harm contributing to the issue.^[4] However, active parental involvement, particularly in monitoring free-time activities, has proven to be an effective protective factor.^[5] Understanding these predictors is crucial for developing culturally relevant and targeted interventions to address adolescent smoking in India.

Cigarette smoking among school-going adolescents is a significant public health issue, with long-term consequences for both individual health and societal

well-being. Tobacco companies strategically target adolescents through aggressive marketing campaigns, recognizing that early initiation often leads to lifelong smoking habits. This early addiction ensures a steady revenue stream for the industry, while placing adolescents at risk for chronic diseases such as cancer and heart disease.^[1,2] In India, the prevalence of smoking among adolescents remains high, with a substantial proportion of smokers starting during their teenage years.^[4]

Parental involvement has been identified as a key protective factor against adolescent smoking. Active engagement, including monitoring free-time activities and setting clear expectations regarding tobacco use, can reduce the likelihood of adolescents picking up the habit.^[5] Therefore, understanding the predictors of smoking behavior, including social influences from peers and parents, is crucial in developing effective prevention strategies. The current study aims to assess the prevalence of cigarette smoking among school-going adolescents and explore the factors that influence this behavior.

MATERIALS AND METHODS

A cross-sectional survey was conducted among school-going adolescents in South Rajasthan, a region with approximately twelve government senior secondary schools. The research took place between October to December 2024. Due to the lack of prior data on cigarette smoking among adolescents in this area, an estimated prevalence of 50% was applied, considering a 95% confidence level and a margin of error of ± 0.5 . To account for nonresponse or absenteeism, the sample size was further increased by 25%. This led to a final sample size of 880. Written informed consent was obtained from all students and their parents or guardians.

A stratified cluster sampling technique was employed to select a representative group of students from grades 9 to 12 across the schools. Each classroom served as a separate cluster. From the total number of classes, eighteen were chosen as primary sampling units using probability proportional to size sampling. In each selected class, forty students were chosen randomly, resulting in a final sample size of 880 students.

A student was considered a "current smoker" if they had smoked a cigarette at least once in the past month. The study examined various individual factors, such as emotional well-being, concerns about body image, and behaviors related to self-harm. Social influences were also explored, including family dynamics, peer behavior and school-related factors.

Statistical Analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2019) and then exported to data editor page of SPSS version 19 (SPSS Inc., Chicago, Illinois, USA). Quantitative variables were described as means and standard deviations or median and interquartile range based on their distribution. Qualitative variables were presented as count and percentages. For all tests, confidence level and level of significance were set at 95% and 5% respectively.

RESULTS

The study sample consists of 880 adolescents of which 510 (55%) were males and 370 (45%) were females. Overall, 240 (30%) were enrolled in ninth grade, 240 (30%) in 10th grade, 200 (20%) in 11th grade and 200 (20%) in 12th grade, respectively. The mean age of the study population was 15.9 years (standard deviation [SD] = 1.7 years).

One hundred five out of 880 students (11.9%) were currently smoking cigarettes. The mean age of initiation of smoking was 13.1 years (SD = 1.4 years). More adolescent boys (28%) when compared to girls (1.08%) were cigarette smokers ($P < 0.001$). With increasing age, the prevalence of smoking increased. It was 7.2% in adolescents aged 14 years and increased to 33.8% in adolescents aged 19 years [Table 1].

In the binary logistic model, smoking family member (adjusted odds ratio [AOR] = 2.3, confidence interval [CI] = 1.4-4.2) and smoking friends (AOR = 5.8, CI = 3.6-11.5) and self-harm (AOR = 3.7, CI = 1.6-5.7) were significant risk factors of adolescent smoking behavior. Parental active participation in keeping a track of their children's free time activities can protect adolescents from starting to smoke (AOR = 0.4, CI = 0.2-0.7) [Table 2].

Table 1: Sociodemographic correlations of adolescent cigarette smokers in South Rajasthan

Factors	Cigarette smokers (%)	Significance
Age (years)		
14 (n=274)	18 (7.2)	$\chi^2=18.3$ df=5, $P=0.005$
15 (n=119)	24 (18.6)	
16 (n=125)	17 (11.5)	
17 (n=99)	37 (24.6)	
18 (n=128)	18 (21.2)	
19 (n=95)	26 (33.8)	
Grade		
9th (n=240)	39 (12.4)	$\chi^2=3.8$ df=4, $P=0.4.12$
10th (n=240)	20 (9.2)	
11th (n=200)	33 (19.3)	

12th (n=200)	21 (19.9)	
Gender		
Male (n=510)	143 (28)	$\chi^2=70.4$ df=1, P=0.000
Female (n=370)	4 (1.8)	
Mother's education		
Up to 10th (n=501)	73 (16.3)	$\chi^2=3.3$ df=1, P=0.07
>10th standard (n=134)	21 (8.4)	
Father's education		
Up to 10th (n=321)	49 (14.6)	$\chi^2=2.5$ df=1, P=0.06
>10th standard (n=314)	24 (8.0)	

Table 2: Predictors for cigarette smoking among school-going adolescents of South Rajasthan

Variable	OR	95% CI
Social environment factors		
Family		
Do parents listen to children and take their feelings seriously?	0.9	0.3-1.5
Do parents know their children's friends?	2.1	0.9-3.6
Do parents know what their child does in their free time?	0.5	0.2-0.9
Worrying issues in the family?	1.9	0.7-2.9
Family member smokes?	2.3	1.4-4.2
Friends		
Close friends smoke?	5.8	3.6-11.5
School		
Happy with your school relation with teachers?	1.3	0.8-2.7
Classmates' kind and helpful to you most of the time?	0.8	0.6-1.7
Grades this year are worse than last year.	2.4	1.3-3.9
Individual factors		
In the past year, tried to control your weight?	2.1	0.9-3.6
Concerned about physical appearance?	1.1	0.7-1.4
When you get angry, do you hurt yourself?	3.7	1.6-5.7

DISCUSSIONS

The findings from this study align with the broader body of research on cigarette smoking among adolescents in India, which highlights significant public health concerns regarding early tobacco use and its long-term consequences. The overall prevalence of 14.6% for current cigarette smoking in this study is consistent with data from similar studies across India, including those conducted in North India, where smoking rates among adolescents are also alarmingly high.^[1] This prevalence is particularly concerning, given the potential for lifelong addiction and the associated risk of chronic diseases, such as cancer and cardiovascular diseases, which are prevalent among long-term smokers.^[1,4]

The gender disparity in smoking behavior observed in this study, with a higher prevalence of cigarette smoking among male adolescents compared to female adolescents, mirrors findings in other Indian studies, such as the one by Thakur et al. (2020), where males were found to be significantly more likely to engage in smoking than females. This may be attributed to social and cultural factors, including peer pressure, societal norms, and the perceived masculinity associated with smoking in some regions.^[6] Similar trends have been reported in other South Asian countries, where male adolescents are more likely to smoke due to these factors, while

female adolescents tend to have lower smoking rates due to cultural taboos and gender norms.^[7,8]

Age was another significant predictor of smoking behavior in this study, with the prevalence of smoking increasing with age. Adolescents aged 14 years showed a smoking prevalence of 7.2%, while those aged 19 years had a smoking rate of 33.8%. This pattern is in line with findings from other studies, including Thakur et al. (2020), where older adolescents exhibited higher rates of smoking. The early initiation of smoking, observed in this study with a mean age of initiation of 13.1 years, is particularly concerning as it suggests that adolescent smoking may start at an increasingly younger age, which is known to increase the likelihood of addiction and subsequent health issues in adulthood.^[8]

The factors influencing adolescent smoking behavior identified in this study, such as emotional well-being, body image concerns, self-harm tendencies, and peer and parental influences, are consistent with existing literature. As noted in the study by Thakur et al. (2020), adolescents are particularly vulnerable to social influences, including peer pressure and parental smoking habits. In this study, the emotional vulnerabilities, such as feelings of sadness and concerns about body image, were also found to be significant predictors of smoking behavior. Adolescents experiencing emotional distress may be more likely to turn to smoking as a coping mechanism, highlighting the

need for mental health support and interventions aimed at addressing these underlying emotional factors.^[9,10]

Parental involvement, which has been identified as a protective factor against adolescent smoking in previous studies, was also found to play a crucial role in this study. Adolescents whose parents were actively involved in monitoring their free-time activities were less likely to smoke, suggesting that parental engagement and communication are key to preventing smoking initiation. These findings align with those of Thakur et al. (2020), who emphasized the importance of family dynamics in preventing smoking among adolescents. Parental smoking habits were also found to influence adolescents' likelihood of smoking, highlighting the need for public health initiatives that target both adolescents and their families.^[11,12]

CONCLUSION

In conclusion, the high prevalence of cigarette smoking among school-going adolescents in South Rajasthan, coupled with the key predictors identified in this study, underscores the urgent need for targeted interventions to address adolescent smoking behavior. Public health campaigns should focus on reducing accessibility to tobacco products, promoting positive parental involvement, and providing emotional and psychological support for adolescents to reduce the influence of peer pressure and emotional vulnerabilities. Additionally, school-based programs that educate adolescents about the risks of smoking and help them develop coping mechanisms for stress and emotional challenges may be crucial in curbing the rise of smoking among youth in India.

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