International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

A Study on Prevalence of Tobacco Use and Knowledge, Attitude, Practices among College Students of District Ambala, Haryana

Debnath M[1], Mittal A[2], Grover K[3]

[1]Post Graduate Student, Department of Community Medicine, Maharishi Markandeshwar Institute of Medical Sciences and Research, Mullana

[2]Professor & Head, Department of Community Medicine, Maharishi Markandeshwar Institute of Medical Sciences and Research, Mullana

[3]Associate Professor, Department of Community Medicine, Maharishi Markandeshwar Institute of Medical Sciences and Research Mullana

Abstract: ***Background: Tobacco is a leafy plant grown worldwide. Nicotine, an alkaloid found in tobacco, is the primary psychoactive substance in it. more than one-fifth of individuals aged 15 and older use tobacco in various forms. Tobacco is the leading preventable risk factor for premature illness and death. It poses a significant public health challenge, currently responsible for over 3 million deaths annually worldwide. If current usage trends persist, this number is expected to surpass 10 million by 2030. Rapidly changing social dynamics, evolving societal norms, and other influences have significantly fueled this trend, creating serious challenges for individuals, families, communities, and nations. India ranks as the second-largest consumer of tobacco after China. Methodology: The study was conducted in colleges in MMIMSR Ambala district over a period of one year. College students were given self designed, pre test questionnaires with five sections. The questionnaire covered socio demographic profile, associated factors. Informed consent was obtained from each participant, and confidentiality was maintained. The data was analysed using SPSS version 28.0, and Chi-square test was used to establish associations among qualitative variables. Results: The study results show that out of 455 participants, majority comprising in the age range of 18- 21 years (63.3%). 55.2% are females, Hindus were 69.9%, Physiotherapy and Medical studies are the most prevalent (15.2%), 3rd-year students (25.9%), 70.1% belong to nuclear families. 83.5% are unmarried, 63.3% are residing in hostel, 72.3% belong to the upper class. The prevalence of tobacco use comes out to be 35.6%. Conclusion: The study uncovered a considerable linkage between tobacco use and awareness among college students and several key factors including their course, gender, academic performance, peer pressure. These findings highlight the need for targeted strategies, and promote IEC, BCC among the college students.***

Keywords: Tobacco use, College students.

1. Introduction

Tobacco is a leafy plant grown worldwide. Nicotine, an alkaloid found in tobacco, is the primary psychoactive substance in it. Nicotine has both stimulating and relaxing effects. For some, it enhances focus and attention, while for others, it helps reduce anxiety and irritability. Tobacco is addictive due to its nicotine content, which alters brain function and triggers cravings, similar to substances like heroin or cocaine.

The term "tobacco" is universally recognized across the globe. According to WHO, more than one-fifth of individuals aged 15 and older use tobacco in various forms, such as cigarettes, bidis, hookah, chutta, cigars, cheroots, khaini, gutka, zarda, snus, and snuff. The consumption of tobacco has spread rapidly, resembling a wildfire. Different types of tobacco products originate from the tobacco plant, which is cultivated in various regions worldwide, including parts of India. In total, there are over 70 species of the tobacco plant. Among them, the primary commercial crop is *Nicotiana tabacum* (ibid), while *Nicotiana rustica* is a more potent variety [1].

Tobacco is the leading preventable risk factor for premature illness and death. It poses a significant public health challenge, currently responsible for over 3 million deaths annually worldwide. If current usage trends persist, this number is expected to surpass 10 million by 2030.

Containing over 4,000 chemicals, including carcinogens and 400 other toxins, tobacco has a long history dating back 8,000 years. Europeans were the first to introduce it globally, and in India, the Portuguese brought tobacco to Goa in the 17th century.

India ranks as the second-largest consumer of tobacco after China, with approximately 275 million adults using various tobacco products.

Tobacco is consumed in various forms, including smoking, chewing, applying, sucking, and gargling. It can be industrially produced on both large and small scales. Additionally, it may be prepared by a dealer or directly by the user. **[2]**

All tobacco products are harmful, with no safe level of exposure. While cigarette smoking remains the most prevalent form of tobacco use, other products include waterpipe tobacco, cigars, cigarillos, heated tobacco, roll-your-own tobacco, pipe tobacco, bidis, kreteks, and smokeless tobacco.

Of the 1.3 billion tobacco users worldwide, about 80% reside in low- and middle-income countries, where the impact of

tobacco-related diseases and fatalities is most severe. Tobacco consumption exacerbates poverty by diverting household resources away from essential needs like food and shelter. This financial strain is further intensified by tobacco's highly addictive nature, making it challenging for users to quit.

The economic burden of tobacco use is considerable, encompassing high healthcare expenses for treating tobacco-related diseases and the loss of human capital due to tobacco-related illness and premature death. [4]

2. Methodology

Study Area:
This study was conducted in colleges of district Ambala, Haryana.

Study Subjects:
The study population consists of the college students who are undergraduate specifically.

Inclusion Criteria:
Students enrolled in undergraduate courses in the selected classes.

Exclusion Criteria:
Those students who did not give consent to participate in the session.

Study Design:
Cross sectional study.

Study Period:
The study was carried out over a period of one year and 2 months from December 2024 to February 2025.

Sample Size:
It was a community- based study, the sample size was estimated on the basis of prevalence of tobacco use of college students in previous literature.

According to previous literature, the prevalence of tobacco use was taken to be 47% and absolute precision of 5% , by applying formula $\mathbf{N=4pq/l^2}$

It comes out to be 398, a total of 455 participants were taken.

10 colleges was selected by systematic random sampling. Permission was obtained to conduct the study from education authorities. From each of the selected college 40 and above students was to be selected by simple random sampling technique.

Study Tools:

The study was conducted using a self designed, pre tested questionnaire, consisting of 5 section The socio demographic profile, and associated factors

Participants were explained detail about the study. Confidentiality was ensured.

The data was entered in excel sheet analyzed using spss version 28.0. The study was submitted to the institutional ethics committee of the Maharishi Markandeshwar Institute of Medical Sciences Mullana, Ambala and received the institutional ethics committee certificate under the project number IEC 2777. This study did not impose any financial burden on the participants. Written informed consent was obtained from each participant in their vernacular language. Confidentiality for each participant was maintained throughout the study.

3. Results

Out of the 455 college students, majority comprising in the age group below 21 years ,63.3%(288 individuals), followed by 36.7% (167 individuals) above 21 years.

251 (55.2%) are female, while 204 (44.8%) are male.

Hindus, comprising 69.9% (318 individuals). Sikhs 18.7% (85 individuals), while Muslims represent 7.7% (35 individuals). Christians make up 3.1% (14 individuals), and those classified as "Others" constitute 0.7% (3 individuals) various academic years, The largest group consists of 3rd-year students (118, 25.9%), followed closely by 2nd-year students (117, 25.7%) and 1st-year students (113, 24.8%). The number of students in the 4th year is comparatively lower at 85 (18.7%), while interns represent the smallest segment, with only 22 respondents (4.8%).

83.5% or 380 respondents—are unmarried. Married individuals account for 10.8% of the sample, representing 49 people, while 5.7% (26 respondents) are in live-in relationship.

70.1% (319 individuals), belong to nuclear families. Joint families comprise 26.6% (121 individuals), indicating that a considerable portion still adheres to a traditional extended family arrangement. A much smaller group, 3.3% (15 individuals), resides in three-generation households. 288(63.3%) are residing in hostel, whereas 167 (36.7%) are not.

72.3% (329 individuals) belong to the upper class, this is followed by 22% (100 individuals) in the upper middle class, In contrast, the middle class makes up only 2.9% (13 individuals), while the lower middle and lower classes account for just 2.0% (9 individuals) and 0.9% (4 individuals), respectively. Among the 455 respondents, 64.4% (293 individuals) reported that they do not use tobacco, while 35.6% (162 individuals).

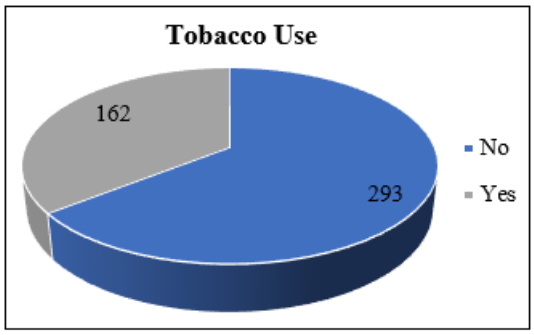

Figure 1: Frequency of tobacco use

Table 1: Knowledge, Attitude and Practices of tobacco use.

Variables	Yes	No
Tobacco ads seen or heard in past month	480 (94.5%)	25 (5.5%)
Knows whether smoking harmful to health	435 (95.6%)	20 (4.4%)
Ever heard about e cigarette	270 (59.3%)	184 (40.4%)
Ever heard about smokeless tobacco	373 (82%)	81 (18%)
Endorsement of regulation to prevent smoking in restaurants and public places	327 (71.9%)	128 (28.1%)
Faced peer pressure for smoking tobacco	191 (42%)	264 (58%)
Used tobacco	162 (35.6%)	293 (64.4%)
Whether regular smoker	115 (25.3%)	340 (74.7%)
Habit of chewing tobacco	78 (17.1%)	377 (82.9%)
Hookah smoker	103 (22.6%)	352 (77.4%)
Tobacco use	162 (35.6%)	293 (64.4%)

Table 2: Associated factors with tobacco use

Variable	Categories	Used tobacco		Total	P value
		Yes	No		
Course	Medical	75 (29%)	187 (71%)	262 (100%)	P= 0.003
	Non- medical	87 (45%)	106 (55%)	193 (100%)	
Age	Below 21 years	99 (34.37%)	189 (65.62%)	288 (100%)	P = 0.4720
	Above 21 years	63 (39%)	104 (62.2%)	167 (100%)	
Sex	Male	114 (55.9%)	90 (44.1%)	204 (100%)	P<0.001
	Female	48 (19.11%)	203 (80.9%)	251 (100%)	
Religion	Hindu	97 (30.5%)	221 (69.5%)	318 (100%)	P = 0.00003
	Muslim	24 (68.6%)	11 (31.4%)	35 (100%)	
	Others	41 (40.1%)	61 (59.8%)	102 (100%)	
Type of family	Nuclear	106 (33.4%)	211 (66.6%)	317 (100%)	P =0.3131
	Joint	46 (41.4%)	65 (58.6%)	111 (100%)	
	Three generation	10 (37%)	17 (63%)	27 (100%)	
Academic performance	Average	86 (47%)	97 (53%)	183 (100%)	P<0.00001
	Failed a year	4 (80%)	1 (20%)	5 (100%)	
	Good	38 (16.8%)	198 (83.2%)	226 (100%)	
	Not so good	34 (83%)	7 (17%)	41 (100%)	
Marital status	Live In relationship	11 (42%)	15(58%)	26 (100%)	P=0.4493
	Married	14 (28.6%)	35 (71.4%)	49 (100%)	
	Unmarried	137 (36.1%)	243 (63.9%)	380 (100%)	
Socio economic status	Upper class	125 (38%)	204 (62%)	329 (100%)	P= 0.3304
	Upper middle class	32 (32%)	68 (68%)	100 (100%)	
	Middle class	2 (15.4%)	11 (84.6%)	13 (100%)	
	Lower class	1 (25%)	3 (75%)	4 (100%)	
Year studying	1st year	41 (36.3%)	72(63.7%)	113 (100%)	P<0.00001
	2nd year	44 (37.6%)	73 (62.4%)	117 (100%)	
	3rd year	81 (68.6%)	37 (31.4%)	118 (100%)	
	4th year	51 (47.6%)	56 (52.3%)	107 (100%)	

The table shows the association between various demographic, academic, and social variables with tobacco use among students. Overall, significant associations were observed between tobacco use and several independent variables, including course of study, sex, religion, academic performance, and year of study. A statistically significant relationship was

found between the course of study and tobacco use (P = 0.003), with a higher proportion of non-medical students (45%) reporting tobacco use compared to medical students (29%). This suggests that medical students, likely due to increased awareness of health risks, may be less inclined to use tobacco. Gender also emerged as a strong predictor, with significantly more males (55.9%) reporting tobacco use than females (19.11%) (P < 0.001). This aligns with existing literature indicating higher tobacco consumption rates among males in many cultural contexts. Religion demonstrated a notable association with tobacco use (P = 0.00003). Muslim students reported the highest prevalence (68.6%), followed by students of 'Other' religions (40.1%) and Hindus (30.5%). These differences may reflect underlying cultural or social norms within religious groups influencing tobacco-related behaviors. Academic performance was another significant factor (P < 0.00001).

Year of study was significantly associated with tobacco use (P < 0.00001). The third-year students exhibited the highest tobacco use prevalence (68.6%), possibly reflecting heightened academic or clinical stress during this phase of education.

4. Discussion

In our study age group of college students 18 years to 25 years and above were taken. Mean age of the study population was 20.65 years. Similar results were seen in the study by **Menon et al** in their study in kerela where mean age of study population was 19.5± 1.9 years. Similar results were seen by **Jaisoorya et al** in a study done in Kerela where the mean age of students was 19.4 years (standard deviation of 1.6 Years). Same were seen in a study conducted by **Biswas S et al** which was 19.9 (with 1.5 standard deviation). While study the conducted by **Sakore DN et al** mean age of study subjects was 18±1.2 years ranging from 17 yrs to 24 yrs. In our study, majority comprising in the age group below 21 years ,63.3% (288 individuals), followed by 36.7% (167 individuals) above 21 years. In the study conducted by **Khude S et al**, 46.4% of the sample belonged to the age group of 22–23 years of age, 27.4% in the age group of 20–21 years, 16.4% in 24–25 years of age, and 9.8% in 18–19 years of age. While a study conducted by **Adhikari P et al** most prevalent age group among participants was 22–25 years (192, 44.9%), followed closely by individuals aged 21 years (173, 40.5%) and those older than 25 years (62, 14.5%).

In our study of the total 455 participants, 55.2% are female and 44.8% are male, indicating a slight predominance of females over males, while the overall distribution remains fairly balanced. While in a study conducted by **Tolani PH et al** of the total study subjects interviewed 62.88% were males and 37.19% were females. In the study by **Khude S et al** 65% of participants were males and 35% compared to females. Similarly, study conducted by **Ahmed W et al** A total of 388 students completed the questionnaire out of them 108 males (27.8%) and 280 females (76.2%).

In our study among the 455 respondents, 64.4% (293 individuals) reported that they do not use tobacco, while 35.6% (162 individuals) indicated that they do. This highlights that tobacco use remains a significant concern, with over a third of the surveyed population engaging in tobacco consumption. While the study conducted by **Ahmed W et al** prevalence of tobacco use was 19.84%. Also, study conducted by **Sagar S et al** the overall prevalence was found to be 16.3% and a study conducted by **James et al** the prevalence was 19.1%. whereas similar study conducted **Khude et al** overall prevalence observed was 48.2%. Also, similarly study conducted by **Grills NJ et al** overall prevalence was 38.9%.

In our study in academic year the largest group is composed of 3rd-year students, totaling 118 respondents (25.9%), closely followed by 2nd-year students with 117 (25.7%) and 1st-year students with 113 (24.8%). In contrast, 4th-year students account for a smaller portion at 107 (23.5%), while interns make up the smallest group, with just 22 respondents (4.8%). While in a study conducted by **Adhikari P et al** academic year distribution showed a relatively even spread, with 1st-year students numbering 104 (24.4%), 2nd-year students at 83 (19.4%), 3rd-year students at 72 (16.9%), 4th-year students at 66 (15.5%), and 5th-year students at 102 (23.9%).

5. Conclusion

This study demonstrates prevalence of tobacco usage among college students, at 35.6%. the findings indicated a strong association between tobacco use and various factors, including course, gender, religion, academic performance, peer pressure. Conversely, other demographic factors did not demonstrate a statistically significant association with tobacco use.

6. Limitation and Recommendation

This study had limitations. First, the cross-sectional design of the study poses restrictions in terms of drawing causal inferences based on study findings. Since all the information related to tobacco were self-reported, any information or reporting bias from the respondents is difficult. Also In this study Smoking and chewing status was by self report, and taboo about tobacco use, particularly in females, might have resulted in underreporting. Present study has shown that tobacco use is a consequence of academic underachievement along with peer pressure faced by the students. So, to inculcate healthy lifestyle choice it is advised to include extra-curricular activities like sports, recreational clubs, motivating peer counselling to find a better alternative for stress management.

References

[1] Avery jr, 1933
[2] Malhi R. Tobacco control in India; a myth or reality- Five year retrospective analysis using WHO MPOWER for tobacco control. JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH . 2015b Jan 1
[3] **Who site overview**
[4] Shivakumar K, Khude S, Pawar R, Patil S, Suresh K, Kadashetti V. Prevalence and pattern of tobacco related

habits among the college students of Satara district. Journal of Indian Association of Public Health Dentistry [Internet]. 2015 Jan 1;13(2):169. Available from: https://doi.org/10.4103/2319-5932.159057

[5] Samara AA, Rachiotis G, Pettemeridou S, Papastamatiou K, Tourlakopoulos K, Chelioti E, et al. Prevalence of tobacco use, exposure to secondhand smoke and knowledge on smoking cessation among students of health professions in Central Greece: a cross-sectional study. BMJ Open [Internet]. 2020b Oct 1;10(10):e036512. Available from: https://doi.org/10.1136/bmjopen-2019-036512

[6] 1 WHO. Tobacco fact sheet (updated May 2017). Available: http:// www.who.int/mediacentre/factsheets/fs339/en/ [Accessed 12 Jan 2017].

[7] James PB, Bah AJ, Kabba JA, Kassim SA, Dalinjong PA. Prevalence and correlates of current tobacco use and non-user susceptibility to using tobacco products among school-going adolescents in 22 African countries: a secondary analysis of the 2013-2018 global youth tobacco surveys. Archives of Public Health [Internet]. 2022 Apr 14;80(1). Available from: https://doi.org/10.1186/s13690-022-00881-8

[8] Arora M, Gupta VK, Nazar GP, Stigler MH, Perry CL, Reddy KS. Impact of tobacco advertisements on tobacco use among urban adolescents in India: results from a longitudinal study. Tobacco Control [Internet]. 2011b Jul 29;21(3):318–24. Available from: https://doi.org/10.1136/tc.2010.040733

[9] Rachiotis G, Barbouni A, Katsioulis A, et al. Prevalence and determinants of current and secondhand smoking in Greece: results from the global adult tobacco survey (GATS) study. BMJ Open 2017;7:e013150

[10] Goyal G. Knowledge, attitude and practice of chewing gutka, areca nut, snuff and tobacco smoking among the young population in the northern India population. PubMed [Internet]. 2016 Nov 1;17(11):4813–8. Available from: https://pubmed.ncbi.nlm.nih.gov/28030904

[11] Ahmad W, Ahmad A, Ali MD, Hassan YA, Albanai RAR, Al-Dossary RB, et al. Cross sectional online survey to determine the prevalence, knowledge, attitude and practice of smoking tobacco among students of Medical Science College in Dammam, Saudi Arabia. Journal of Pharmacy and Bioallied Sciences [Internet]. 2021 Jul 1;13(3):305–11. Available from: https://doi.org/10.4103/jpbs.jpbs_28_21

[12] Adhikari P, Yadav PS, Khadka R, Kafle S, Rayamajhi A, Bhurtel MR, et al. Tobacco use and its associated factors among students of medical college at tertiary care center of Eastern Nepal. PLoS ONE [Internet]. 2024 Jul 31;19(7):e0296592. Available from: https://doi.org/10.1371/journal.pone.0296592

[13] Sagar S, Bhattarai D, Ghimire S, Bhattarai A, Wagle A, Subedi K. Tobacco use, secondhand exposure and knowledge of secondhand and third-hand smoke among medical college students in Western Nepal: a cross-sectional study. BMJ Open [Internet]. 2024b Sep 1;14(9):e086266. Available from: https://doi.org/10.1136/bmjopen-2024-086266