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TOBACCO AND ALCOHOL USE PATTERNS AMONG COLLEGE STUDENTS AND THEIR HEALTH CONSEQUENCES

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ABSTRACT

Background:
Tobacco and alcohol consumption are major preventable risk factors contributing to significant morbidity and mortality worldwide. College students represent a vulnerable group for the initiation and continuation of substance use due to increased independence, peer influence, and academic stress. Understanding the patterns of tobacco and alcohol use and their associated health consequences among this population is essential for planning effective preventive strategies. The aim was to assess the prevalence and patterns of tobacco and alcohol use among college students and to evaluate their associated health consequences.

Methods: A college-based cross-sectional study was conducted among 100 undergraduate students aged 18–25 years. Data were collected using a pre-designed, pre-tested, semi-structured questionnaire. Tobacco and alcohol use were assessed using the WHO Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). Data were analyzed using SPSS version [xx]. Categorical variables were expressed as frequency and percentage, while continuous variables were summarized as mean ± standard deviation. Associations were assessed using the Chi-square test, and a p-value of <0.05 was considered statistically significant.

Results: The mean age of participants was 21.1 ± 1.9 years, with males constituting 56% of the study population. Overall, 52% of students reported the use of tobacco and/or alcohol. Tobacco use alone was observed in 18%, alcohol use alone in 14%, and combined use in 20% of participants. Among tobacco users, 39.5% were hazardous users and 13.1% were dependent users. Health complaints were significantly more common among substance users compared to non-users (69.2% vs. 37.5%; $p = 0.002$), with sleep disturbances, respiratory symptoms, and psychological distress being the most frequently reported problems.

Conclusion: A high prevalence of tobacco and alcohol use was observed among college students, with significant associated health consequences. These findings underscore the need for early, targeted, campus-based preventive and health promotion interventions to reduce substance use among young adults.

Keywords: Tobacco use, Alcohol consumption, College students, Health consequences, Substance use prevention

Introduction:

Tobacco and alcohol consumption constitute two of the most important preventable risk factors contributing to the global burden of disease. Tobacco use is causally associated with a wide range of chronic conditions, including cancers, coronary heart disease, stroke, diabetes, tuberculosis, and premature mortality. A disproportionate burden of tobacco-related morbidity and mortality is borne

by low- and middle-income countries, where nearly 80% of the world's tobacco users reside, making it a major public health concern in countries like India.(1,2) Alcohol use similarly contributes substantially to disease burden through liver disease, injuries, mental health disorders, and other non-communicable diseases, and its concurrent use with tobacco further amplifies health risks.(3,4)
The transition from adolescence to early adulthood, particularly during college years, represents a critical window for the initiation and consolidation of risk behaviours such as tobacco and alcohol use. Evidence indicates that the vast majority of tobacco users initiate consumption early in life, with nearly all beginning before the age of 26 years.(5) Early onset of substance use has been linked to greater severity of dependence, longer duration of use, and poorer cessation outcomes, underscoring the vulnerability of young adults to long-term adverse health consequences. Factors such as peer influence, increased autonomy, academic stress, and exposure to permissive social environments play a significant role in shaping these behaviours among college students.(6)In the Indian context, tobacco remains the most commonly used psychoactive substance, with substantial prevalence among young adults. National data indicate a significant proportion of individuals aged 18–29 years exhibit dependent patterns of tobacco use, highlighting the early emergence of substance-related health risks.(7) College campuses, which host large numbers of young adults in a shared social and academic environment, represent a strategic setting for the initiation as well as prevention of tobacco and alcohol use. Alcohol use among college students has also been consistently associated with tobacco use, psychological distress, academic difficulties, and other risk behaviours, compounding the overall health impact.(8,9)Understanding the patterns of tobacco and alcohol use and their associated health consequences among college students is therefore essential for effective public health planning. Generating evidence on prevalence, patterns of use, and related health outcomes can inform targeted health education, campus-based interventions, and policy-level tobacco and alcohol control strategies. In this context, the present study was undertaken to assess the patterns of tobacco and alcohol consumption and their health consequences among college students, with the aim of contributing evidence to support preventive and promotive health interventions in this vulnerable population.

Method and material

A college-based cross-sectional study was conducted among undergraduate students enrolled in selected colleges affiliated with a tertiary-care teaching institution. The study population comprised college students aged 18–25 years who were present on the day of data collection and consented to participate. Students who were severely ill, absent during data collection, or unwilling to participate were excluded from the study.Total 100 students were enrolled in this study.

Study Tool and Data Collection

Data were collected using a pre-designed, pre-tested, semi-structured questionnaire, administered through self-reporting in a classroom setting. The questionnaire consisted of the following sections:
• Sociodemographic details: age, sex, year of study, place of residence, and family type
• Substance use assessment: Tobacco and alcohol use were assessed using the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) developed by the World Health Organisation
• Pattern of use: type of substance used, age of initiation, frequency, and duration
• Health consequences: self-reported respiratory symptoms, gastrointestinal symptoms, sleep disturbances, psychological distress, academic difficulties, and absenteeismThe ASSIST tool was used to categorise substance use into low-risk, hazardous, and dependent use based on standardised scoring.

Statistical Analysis

The collected data were entered into Microsoft Excel and analysed using the Statistical Package for the Social Sciences (SPSS) version26. Categorical variables were described using frequencies and percentages, whereas continuous variables were summarized as mean ± standard deviation. Associations between tobacco and alcohol use and selected sociodemographic and health-related

variables were evaluated using the Chi-square test. A *p*-value of <0.05 was considered statistically significant.

RESULTS

A total of 100 college students were included in the present study. As shown in Table 1**,** the mean age of the participants was 21.1 ± 1.9 years, with a median age of 21 years (IQR: 20–23 years). The majority of students belonged to the 20–21 years age group (38%), followed by 22–23 years (26%), 18–19 years (22%), and 24–25 years (14%). Males constituted 56% of the study population, while females accounted for 44%.The prevalence and patterns of tobacco and alcohol use among the study participants are summarized in Table 2. Overall, 52% of students reported the use of tobacco and/or alcohol. Tobacco use alone was observed in 18% of participants, alcohol use alone in 14%, and concurrent use of both tobacco and alcohol in 20%, while 48% reported no substance use. Among tobacco users (n = 38), smoking was the most common form of tobacco consumption (42.1%), followed by smokeless tobacco use (31.6%), and the use of both forms (26.3%). Based on ASSIST risk categorization, 47.4% of tobacco users were classified as low-risk users, 39.5% as hazardous users, and 13.1% as dependent users.The association between substance use and health consequences is presented in Table 3**.** Health-related complaints were significantly more frequent among substance users compared to non-users. Overall, 69.2% of substance users reported at least one health complaint, as opposed to 37.5% among non-users, and this difference was statistically significant (p = 0.002). Sleep disturbances were the most commonly reported health consequence among substance users (53.8%), followed by respiratory symptoms such as cough or breathlessness (46.2%), psychological distress (42.3%), gastrointestinal symptoms (38.5%), and academic difficulties or absenteeism (34.6%). These findings demonstrate a significant association between tobacco and alcohol use and adverse health outcomes among college students.

DISCUSSION

The present study highlights a considerable prevalence of tobacco and alcohol use among college students, emphasizing the continued public health relevance of substance use in young adults. Tobacco and alcohol are well-established preventable risk factors contributing substantially to global morbidity and mortality, particularly through non-communicable diseases, injuries, and mental health disorders. The findings of the present study are consistent with global and national evidence indicating that low- and middle-income countries bear a disproportionate burden of tobacco-related harm, with India being a major contributor to this burden.(1,2)In this study, more than half of the participants reported the use of tobacco and/or alcohol, either alone or in combination. This finding aligns with national data from the Global Adult Tobacco Survey (GATS 2), which reported a significant prevalence of tobacco use among young adults in India, including dependent patterns of use in the 18–29 years age group.(3) Similar observations have been reported by the National Mental Health Survey of India, which highlighted the early onset of substance use and its association with adverse mental health outcomes among young adults.(4) The persistence of substance use in college populations suggests that existing tobacco and alcohol control measures may not be sufficiently effective in this vulnerable group.The college years represent a critical developmental period during which experimentation with substances often begins and may progress to regular use. Evidence suggests that the majority of tobacco users initiate use before the age of 26 years, and early initiation is associated with greater severity of dependence and poorer cessation outcomes.(5) The findings of the present study support this observation, as a substantial proportion of tobacco users were categorized as hazardous or dependent users based on ASSIST scoring. Early intervention during this stage is therefore crucial, as preventive strategies are known to be more effective before substance use behaviors become entrenched.(6)The present study also demonstrated a significant association between substance use and adverse health consequences, including sleep disturbances, respiratory symptoms, gastrointestinal complaints, psychological distress, and academic difficulties. These findings are in agreement with previous evidence indicating that tobacco and alcohol use among young people adversely affects physical health, mental well-being, and academic performance.(1,6)

The clustering of tobacco and alcohol use observed in this study further supports existing literature that highlights the co-occurrence of multiple risk behaviors among college students.(8)India's rapidly expanding higher education sector, with millions of students enrolled across colleges and universities, provides both a challenge and an opportunity for substance use prevention.(7) Socioeconomic and cultural factors, including peer influence, social acceptability of certain forms of tobacco, and changing lifestyle patterns, play an important role in shaping substance use behaviors among Indian youth.(9) The findings of the present study underscore the need for targeted, campus-based interventions that address both tobacco and alcohol use, with a focus on early identification, health education, and behavior change communication.

CONCLUSION

The present study demonstrated a substantial prevalence of tobacco and alcohol use among college students, with a significant proportion exhibiting hazardous or dependent patterns of use. Substance use was found to be significantly associated with adverse health consequences, including sleep disturbances, respiratory symptoms, psychological distress, and academic difficulties. These findings highlight the need for early, targeted, campus-based preventive interventions to reduce tobacco and alcohol use and mitigate their long-term health and social consequences among young adults.

LIMITATIONS

The study was cross-sectional in design, which limits the ability to establish causal relationships between substance use and health outcomes. Data were based on self-reported information and were therefore subject to recall and reporting bias. Additionally, the study was conducted in a limited number of colleges, which may restrict the generalizability of the findings to all college student populations.

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Table 1. Sociodemographic Characteristics of the Study Participants (n = 100)

Variable	Category	Number (n)	Percentage (%)
Age group (years)	18–19	22	22.0
	20–21	38	38.0
	22–23	26	26.0
	24–25	14	14.0
Sex	Male	56	56.0
	Female	44	44.0
Age (years)	Mean ± SD	21.1 ± 1.9	
	Median (IQR)	21 (20–23)	

Table 2. Pattern and Prevalence of Tobacco and Alcohol Use among Participants (n = 100)

Variable	Category	Number (n)	Percentage (%)
Substance use pattern	Tobacco use only	18	18.0
	Alcohol use only	14	14.0
	Both tobacco & alcohol use	20	20.0
	Neither tobacco nor alcohol	48	48.0
Type of tobacco use *(n = 38)*	Smoking only	16	42.1
	Smokeless only	12	31.6
	Both forms	10	26.3
ASSIST risk category (tobacco) *(n = 38)*	Low risk	18	47.4
	Hazardous use	15	39.5
	Dependent use	5	13.1

Table 3. Health Consequences and Association with Substance Use (n = 100)

Variable	Substance users (n = 52) n (%)	Non-users (n = 48) n (%)	p-value
Any health complaint	36 (69.2)	18 (37.5)	0.002
Respiratory symptoms	24 (46.2)	10 (20.8)	
Gastrointestinal symptoms	20 (38.5)	8 (16.7)	
Sleep disturbances	28 (53.8)	12 (25.0)	
Psychological distress	22 (42.3)	9 (18.8)	
Academic difficulties / absenteeism	18 (34.6)	7 (14.6)	