

ORIGINAL RESEARCH ARTICLE

PREVALENCE AND CORRELATES OF TOBACCO AND ALCOHOL USE AMONG ADOLESCENTS IN NAWALPUR DISTRICT, NEPAL

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ABSTRACT

Background: Tobacco and alcohol use are major behavioral risk that contributes to the rapid increase in non communicable diseases in Nepal. This study aimed to assess prevalence and correlates of tobacco and alcohol use among adolescents.

Methods: A cross-sectional study was conducted using the multi-stage probability sampling method. Self-administered questionnaire was used to collect the information among school going adolescent. Data was entered on Epi-data and analyzed using SPSS.

Results: Prevalence of tobacco and alcohol consumption was 11.6% and 16.3% respectively. Male (AOR = 4.8, 95% CI: 2.0-11.5), older adolescents (AOR = 3.4, 95% CI: 1.6-7.2), pocket money of more than Rs. 350 (AOR 4.7, 95% CI 1.6-13.8) and living with other than family members (AOR 3.8, 95% CI 1.7-8.5) had higher odds of tobacco consumption whereas, male (AOR = 5.4, 95% CI: 2.5-11.5), late adolescents (AOR = 2.6, 95% CI: 1.3-5.0), pocket money of more than Rs. 350 (AOR = 5.4, 95% CI: 2.2-13.2) had higher odds of alcohol consumption.

Conclusions: The study found that significant proportion of adolescents was involved in the consumption of tobacco and alcohol. Efforts are needed to find regulating and educational interventions to mitigate the risky behaviors and their health impacts on the adolescents.

INTRODUCTION

World Health Organization has warned of increasing Non-Communicable Diseases (NCDs) among adolescents as a major public health problem.¹ Tobacco use and alcohol consumption are the major behavioral risk factors of NCDs.^{2,3} Tobacco and alcohol use contributing about 8 million NCD related death mostly in the developing countries.³ In the South-East Asia Region (SEARO), tobacco and alcohol use are responsible for almost 2 million NCD-related deaths.⁴ Every year, nearly 27000 people die from tobacco-related deaths and alcohol is responsible for deaths of 6500 people.⁵ The STEPS survey of 2014 shows that 31% of adults are current user of tobacco and 17% are alcohol user in Nepal. Evidence shows that respondents of 10-24 years old remain at substantial risk of morbidity and mortality.⁶

WHO has declared that the prevention and control of tobacco and alcohol use as key strategies to prevent NCDs and its associated deaths.³ In recent years, active efforts have been made from different global health agencies and experts to prevent behavioral determinants of health and NCDs.⁷

⁸ Different evidences shows that tobacco and alcohol use significantly associated with age, gender, type of school and pocket money.^{9,10} The prevalence of behaviors risk factors such as tobacco use and harmful use of alcohol are in increasing trend. However, there is limited information about tobacco and alcohol consumption among adolescent population in Gaindakot municipality. The objective of the study was to identify the prevalence and correlates of tobacco and alcohol use among adolescents.

METHODS

This was a cross-sectional study conducted in different schools of Gaindakot municipality of Nawalpur district, Nepal. The data from the students were collected during the months of June-August 2020. Ethical approval was taken from Nepal Health Research Council (NHRC) and formal permission was taken from Gaindakot municipality and concerned authorities of all selected schools for the study. The sample size was calculated by putting the finite population 3209 considering the prevalence of smoking and alcohol of 0.5, for conservative estimate. Taking Z value 1.96 at 95% confidence interval considering

non-response of 10%, a sample size of 377 was obtained. Multistage probability sampling method was performed to conduct the survey. Step 1: List of all government and private schools of Gaidakot were obtained from education section of municipality. Eight schools including 4 public and 4 privates were selected from the list of total 22 schools using simple random sampling method. Step 2: From the selected schools, number of students were calculated based on proportionate sampling procedure. Step 3: Simple random method was used to select the class and students. WHO STEPS survey self-administered structured questionnaire was used to obtain the information from the students.

Before proceeding for data collection, school was selected through random method and formal and informal visits to school and meeting with school principal was done for the coordination and necessary support. During first day, parent's assent consent form was distributed and the students were asked to take the parent's signature and bring that form the next day. On the second day, parent assent form was collected and the self-administered questionnaire was distributed to the respondent by explaining the purpose of the study clearly and data was collected on the classroom. After the completion, the questionnaire was collected from all the respondents and collected questionnaire were packed without mentioned name and identity.

After completion of data collection, before starting data entry, the entire filled questionnaires were checked for their completeness and accuracy. The data were entered in Epi-data 3.1 then transferred to SPSS 16.0 version for analysis.

Descriptive statistics was applied to calculate the prevalence of tobacco and alcohol consumption. For bivariate analysis, chi-square test was performed to find out the association between outcome and explorative variable at 95% level of confidence. Variables that were found statistically significant with p-value <0.05 during bivariate analysis then further analysis was done using binary logistic regression model.

RESULTS

Of the total number of survey respondents (N=377), 8 were incompletely filled. These cases were excluded in this analysis. Accordingly, analysis was based on a total respondent of 369. More than half (60.2%) of respondents belonged to upper caste groups. Majority (88.3%) of respondent followed Hindu religion. Nearly one third of respondents (65.9%) belong to nuclear family and more than half of respondent (51.2%) were from private school (Table 1).

Table 1: Different characteristics of respondents (n=369)

Characteristics	Number (%)
Gender	
Male	200 (54.2)
Female	169 (45.8)
Age	

12-15	193 (52.3)
16-19	176 (47.7)
Type of school	
Public	180 (48.8)
Private	189 (51.2)
Father education	
Primary or less	123 (33.3)
More than primary	246 (66.7)
Weekly pocket money	
≤ 200	114 (30.9)
200-350	123 (33.3)
>350	132 (35.8)
Place of residence	
Family members	312 (84.6)
Others (rent, hostel)	57 (15.4)

Among respondents, only 11.1% currently smoke tobacco products. Among smokers, more than half respondents (51.2%) start smoking in their middle adolescent period. Most of the respondents start to smoke in the age of 14 years (Table 2).

Table 2: Tobacco use

Characteristics	Number (%)
Currently smoke (n=369)	
Yes	41 (11.1)
No	328 (88.9)
Age of starting smoking (n=41)	
10-13	19 (46.3)
14-17	21 (51.2)
18-19	1 (2.4)
Currently use smokeless tobacco products (n=369)	
Yes	17 (4.6)
No	352 (95.4)
Currently use tobacco products (smoke and smokeless) (n=369)	
Yes	43 (11.7)
No	326 (88.3)

About 21.1 % respondents ever consumed any alcohol. Only 16.3 % respondents consumed alcohol within past 12 months. Among them half (50 %) respondent consume alcohol with past 30 days (Table 3).

Table 3: Alcohol consumption among respondents

Characteristics	Number (%)
Ever consumed any alcohol (n=369)	
Yes	78 (21.1)
No	291 (78.9)
Consumed alcohol within past 12 months (n=78)	
Yes	60 (16.3)
No	309 (83.7)
Consumed alcohol within last 30 days (n=60)	
Yes	30 (50.0)
No	30 (50.0)

Multivariable analysis showed that male (AOR = 4.8, 95% CI:

Table 4: Multivariate analysis of factors associated with tobacco and alcohol consumption

Characteristics	Tobacco use			Alcohol consumption			At least one (tobacco or alcohol)		
	Odds ratio	95% CI		Odds ratio	95% CI		Odds ratio	95% CI	
		Lower	Upper		Lower	Upper		Lower	Upper
Male (Ref: female)	4.81*	2.01	11.51	5.43*	2.55	11.53	4.41*	2.33	8.38
Age(Ref:12-15 years)	3.37*	1.58	7.20	2.59*	1.34	5.02	2.52*	1.50	4.95
Weekly Pocket money (Ref: less than Rs. 200)									
Rs. 200 to Rs. 350	5.84*	1.94	17.61	3.74*	1.53	9.12	4.63*	2.05	10.49
More than Rs. 350	4.71*	1.61	13.76	5.42*	2.21	13.25	4.79*	2.15	10.71
Living with others (Ref: family members)	3.81*	1.70	8.52	-			2.08*	1.02	4.26
All other religion (Ref: Hindu)	-			5.42*	2.31	12.70	-		
Primary or less father education (Ref: more than primary)	-			1.80	0.95	3.42	-		

*Significant at 0.05

2.0-11.5), late adolescents (AOR = 3.4, 95% CI: 1.6-7.2), pocket money of more than Rs. 350 (AOR 4.7, 95% CI 1.6-13.8) and living with other than family members (AOR 3.8, 95% CI 1.7-8.5) had higher odds of tobacco consumption whereas male (AOR = 5.4, 95% CI: 2.5-11.5), late adolescents (AOR = 2.6, 95% CI: 1.3-5.0), pocket money of more than Rs. 350 (AOR = 5.4, 95% CI: 2.2-13.2) had higher odds of alcohol consumption.

After combining two behavioral risk factors (tobacco and alcohol), male (AOR = 4.4, 95% CI: 2.2-8.4), late adolescents (AOR = 2.5, 95% CI: 1.5-4.9), pocket money of more than Rs. 350 (AOR = 4.8, 95% CI: 2.1-10.7), living with other than family members (AOR = 2.1, (95% CI: 1.0-4.3) had higher odds of consumption at least one (Table 4).

DISCUSSION

The proportion of adolescents those were currently smoking was 11.1% in our study which is lower to compare with study conducted in Kathmandu (17.6%),¹¹ Biratnagar (18.5%),¹² Sunsari (19.7%)⁹ and higher to compare with Global school based student health survey, Nepal (6.04%),¹⁰ Kaski (6.1%).¹³ Dissimilarity in the age of study population and availability of pocket money may be the reason of having higher and lower prevalence of smoking.

The prevalence was lower than our study in different countries; Sri Lanka (3%)¹⁴ in Southern Brazil (7.9%),¹⁵ in South east Nigeria (0.2%),¹⁶ in Brazil (3.7%),¹⁷ in Malaysia (8.8%).¹⁸ The prevalence was lower in this population may due to difference in socio-economic characteristics and strict rules and regulation regarding tobacco consumption. The average age of starting smoking is 14 years in our study that is less than compare with WHO STEPS survey conducted in 2019 (17.8 years).¹⁹

Current study shows tobacco use was significantly associated with age, gender, pocket money and living with. Similar to our study tobacco use was associated with age, gender and pocket money in the study conducted in Sunsari district, Nepal⁹ and study conducted in Nepalese adolescents shows association with age and gender.¹⁰ Male respondents were more likely to smoke than female in this study that is consistent with global school based student health survey, Nepal,¹⁰ Kaski,¹³

Kathmandu,¹¹ Dharan.⁹ Late adolescence were more likely to smoke than early adolescence that is consistent with the study in Eastern, Nepal⁹ and global school based student health survey, Nepal.¹⁰ Tobacco use was most common to the adolescents those receiving pocket money more than Rs. 350 that is consistent with the study conducted in eastern, Nepal.⁹ Current study showed that 16.3% respondents currently consumed alcohol which was lower than the study conducted in Kaski (18.9%),¹³ Kathmandu (29.4%).¹¹ This may due to variation in age of study population and their characteristics. The prevalence of alcohol consumption was lower than our study in Global school based student health survey, Nepal (5.29%),¹⁰ Punjab, India (15%).²⁰ The prevalence of alcohol consumption was higher in this study which could be due to small sample size and easily available of alcohol in the market for adolescent.

In this study, Alcohol consumption was associated with gender, age, religion and pocket money. Male respondent of late adolescence was more likely to drink alcohol in our study. The similar finding was found in global school based student health survey, Nepal¹⁰ which shows association of alcohol consumption with age and gender. Contrast to our findings, another study conducted in Kathmandu shows that alcohol consumption was associated with ethnicity.¹¹ The reason might due to majority of respondents in our study were from advantaged group and the majority people's behavior in the society can influence the behavior of minority. Consumption was higher among male adolescents than female adolescents that are similar with the study.²¹ Late adolescence had higher prevalence of alcohol consumption than early adolescence in this study. This finding was supported by another study.¹⁰

CONCLUSION

The study found significant proportion of adolescents was involved in the consumption of tobacco and alcohol. Efforts are needed to find regulating and educational interventions to mitigate the risky behaviors and their health impacts on the adolescents. More specifically, school health programs should emphasize the health risks related to smoking and drinking, and the selling of tobacco and alcohol around the premises of

the schools should be regularly monitored, and the community awareness programs should be implemented. The study also suggests that it would be important to explore the perceptions of parents and school teacher regarding the adolescent risky behavior in home and school. More in-depth studies may also help in better understanding and identifying the interventions

areas to minimize the health risks associated with particularly tobacco and alcohol among the adolescents.

CONFLICT OF INTEREST: None

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