Tobacco use and its associated factors among Bachelor's level public health students of Koshi Province

Parth Guragain[1], Aarju Niroula[2], Tara Kafle[1], Baby Bhagat[3], Hulas Agrawal[4]

1. Assistant Professor, Department of Community Medicine, Birat Medical College Teaching Hospital

2. Data Monitoring and Evaluation Specialists, Birat Medical College Teaching Hospital

3. Director, City Care Hospital, Bardibas

4. Resident, Department of Community Medicine, Birat Medical College Teaching Hospital

Abstract

Background:

Tobacco is a pressing global public health issue, contributing significantly to widespread illness and mortality. All forms of tobacco consumption have adverse effects on well-being, resulting in millions of deaths each year. Whether through smoking, smokeless methods, or exposure to secondhand smoke, it is associated with various health complications, including cardiovascular diseases, respiratory disorders, diverse cancers, non-communicable diseases (NCDs), and more. The WHO Framework Convention on Tobacco Control underscores the pivotal role of healthcare practitioners like doctors, dentists, nurses, pharmacists, and optometrists in aiding individuals to quit or preventing tobacco usage through concise counseling or straightforward advice. Providing cessation training to aspiring health professionals could be a pivotal stride towards advancing tobacco control endeavors.

Material & Methods:

This study employed a descriptive, cross-sectional design to investigate the perspectives of public health students regarding global health issues. Bachelor's level public health students of Koshi Province were administered the Global Health Professional Student Survey (GHPSS), a validated instrument designed to assess prevalence, attitudes, and behaviors related to tobacco use and control. Data collection took place over a specified time frame, with participants providing responses anonymously. Statistical analyses using SPSS 20 employed to derive meaningful insights into the tobacco consumption habits of public health students.

Results:

Out of the participants, 14.1% were identified as current smokers. A significant portion (27.6%) had experimented with cigarettes at some point, with the majority initiating cigarette smoking between the ages of 11 and 19 years. In terms of current usage of alternative tobacco products, 8.2% reported ongoing use, while 9.4% had tried them at least once. Male respondents exhibited a 9.05 times higher likelihood of smoking compared to their female counterparts. Furthermore, individuals with friends who engaged in tobacco smoking were 4.02 times more inclined to smoke than those whose friends did not have this habit.

Conclusion:

The research revealed a 14.1% prevalence of current smoking among bachelor level public health students in Koshi Province. As future leaders in health planning and administration, it is imperative for these students to grasp the comprehensive implications of smoking on physical, mental, and societal well-being. To achieve this, academia, healthcare, and policymaking sectors should work in tandem to create an environment that fosters enhanced learning for current public health students. This collaborative effort holds the potential to significantly reduce smoking rates in society.

Key words:

Tobacco, GHPSS, cigarettes smoking , Bachelor of public health students.

***Corresponding Author**

Dr .Parth Guragain

Assistant Professor, Department of Community Medicine,
Birat Medical College Teaching Hospital
Email: parth382821@gmail.com
Orcid ID: https://orcid.org/0000-0001-7771-9134

INTRODUCTION

Tobacco continues to pose a significant global public health concern due to its linked high incidence of illness and death. All types of tobacco consumption have detrimental effects on health, leading to the loss of millions of lives annually.[1] The utilization of tobacco in any form, whether through smoking, smokeless methods, or exposure to secondhand

smoke, has been linked to a range of health problems such as cardiovascular ailments, respiratory conditions, various types of cancers, non-communicable diseases (NCDs), and numerous others.[2]

In 2019, tobacco use (including smoking, secondhand exposure, and chewing) was linked to 8.71 million fatalities worldwide.[3] The Global Burden of Disease Study ranks tobacco smoking as the third major risk for disability-adjusted life-years attributable to Level 2 risks, despite a slight decrease in incidence from 2010 to 2019[4] More specifically, tobacco smoking resulted in 7.69 million deaths and 200 million DALYs, constituting 13.6% of total human fatalities and 7.89% of all DALYs.[5]

In 2015, tobacco use in the South-East Asian region was highest at 31%, with 49.4% prevalence in males and 12.9% in females.[6] The 2019 STEPS survey in Nepal found that 29% of adults aged 15 to 69 used tobacco, with 48% being male and 12% female.[7] Recently, there has been a noticeable shift towards preferring smokeless tobacco over traditional smoking in South-East Asia, including Nepal.[8] In Nepal specifically, the use of smokeless tobacco is notably more widespread than smoking, with a higher prevalence among males (33%) compared to females (5%).[4]

The WHO Framework Convention on Tobacco Control (FCTC) advises that the worldwide tobacco crisis should be tracked through population-wide surveys carried out using the Global Tobacco Surveillance System (GTSS) targeting adults, youth, school staff, and student health practitioners.[9] The WHO FCTC emphasizes the crucial role of healthcare professionals in providing concise counseling and advice to help individuals quit or prevent tobacco use.[10 11] Offering cessation training to student health professionals could be a highly impactful step in advancing tobacco control initiatives.[12] Nevertheless, if health professionals themselves are smokers, they might be hesitant to offer cessation advice and counseling to their patients, as it could be challenging to persuade patients to quit if the providers are smokers themselves.[13] Additionally, student health professionals often possess limited knowledge about diseases linked to smoking and typically receive minimal or no instruction on tobacco cessation methods.[14 15]

While the impact of tobacco on global health is well-documented, there is a gap in understanding the perspectives of bachelor's level public health students in Koshi province, Nepal. The unique challenges and factors influencing tobacco use among this specific demographic remain underexplored. The research aims to shed light on the attitudes and behaviors of this particular group, providing insights that can inform targeted strategies for tobacco control in the region.

MATERIALS AND METHODS

A cross-sectional study was carried out among undergraduate public health students in Koshi Province, Nepal. The study spanned from November 25, 2023, to December 25, 2023. All the students enrolled in the undergraduate public health programs in Koshi Province were approached to participate in the study. A total of 170 undergraduate public health students from Koshi Province participated in the study. Sample size was calculated by using the formula of finite population.

Corrected sample size (n1) = N* n/N-1+n

Where,

$n = Z^2pq/d^2$,

P: Prevalence of tobacco use among adult which is 29 % as per STEPS survey 2019

q = 1-p

d= Absolute error = 5%.

N = Total number of public health undergraduate students of Koshi province = 211

After adding 20% non-response rate the sample size fixed was 154. However, we tried to include all the students among whom 170 responded to the study.

A paper-based questionnaire was distributed to all the available students. This study employed the Global Health Professions Student Survey (GHPSS) questionnaire, a validated self-administered tool designed for screening smoking habits among university students.[16] The same GHPSS questionnaire was used in Nepal in similar setting. [17] It was developed collaboratively by the World Health Organization (WHO), the US Centers for Disease Control and Prevention (CDC), and the Canadian Public Health Association.

The current smokers were defined as those who smoked cigarettes daily or occasionally during the past 30 days preceding the survey. The non-smokers were defined as those who never ever smoked a cigarette in their lifetime. The ever smokers were defined as those who had smoked even a single cigarette in their lifetime. Other tobacco products were defined as products such as chewing tobacco, snuff, bidis, hookah, cigar or pipes. [17 18]

The ethical clearance for the study was obtained from IRC

of Birat Medical College Teaching Hospital. All the participants were informed about the aims and objectives of the study. Participants were aware that their participation was voluntary. The confidentiality of the participants was ensured.

Statistical analysis was performed using IBM SPSS version 20. Descriptive analysis was done by calculating frequency and percentages for categorical variables. Association between categorical independent variables and categorical dependent variables was measured by the Chi-square test followed by binary logistic regression analyses

RESULTS

Demographic characteristics of participants is shown in table 1. A total of 170 public health students responded for the study. Among the respondent the percentage of male was 36.5% and female was 63.5%. The study included 77 (45.3%) students from lower level of education (first and second year) and 93(54.7) students from higher level (third and fourth year). Among the respondents, higher number of the respondents 73(42.9%) were from Brahmin/Chhetri ethnicity group. Majority of the respondent were from urban areas (62.9%). Higher number of study participants were living without family 129(75.9%). Parental use of tobacco product was 28.2% and friends with habit of tobacco use was 51.2%. Majority of study participants had nuclear family (67.0%). Most of the participants got their education from private school (69.4%).

Table 1. Socio demographic characteristics of students. (n=170)

Characteristics	Number (%)
Age groups (years)	
24 years or younger	137(80.6)
25 years and older	33(19.4)
Gender	
Male	62(36.5)
Female	108(63.5)
course of year	
Lower level of education	77(45.3)
Higher level of education	93(54.7)
Ethnicity	
Brahmin/chhetri	73(42.9)
Madhesi	63(37.1)
Others	34(20.0)
Place of residence	
Rural	63(37.1)
Urban	107(62.9)
Current Residential status	
Living with family	41(24.1)
Living without family	129(75.9)
Parental history of tobacco use	48(28.2)
Friends with tobacco using habits	87(51.2)
Types of family	
Nuclear	114(67)
Joint/extended	56(33)
Types of school	
Government school	52(30.6)
Private school	118(69.4)

Table 2. Prevalence of tobacco use n=170

Characteristics	Number (percentage)
Ever tried or experimented smoking cigarette	
Yes	47(27.6)
No	123(72.4)
Students age when initiated smoking	
10 years or younger	5(2.9)
11-19 years	30(17.6)
Above 20 years	11(6.5)
Current smoking status	
Current smoker	24(14.1)
Current non smoker	146(85.9)
Ever tried other tobacco products	
Yes	16(9.4)
No	154(90.6)
Currently using other tobacco products	
Yes	14(8.2)
No	156(91.8)

Among the respondents 14.1% were the current smoker. Almost one third (27.6%) of the respondent had smoked cigarette ever and majority of them had initiated smoking cigarette at the age 11-19 years. Regarding the current use of other tobacco product,8.2% of the respondents currently used it whereas 9.4% had ever tried it.

Table 3. Exposer to tobacco smoke.

Characteristics	Number (percentage)
Exposed to tobacco smoke at home during past week	
Exposed	69(40.6)
Non exposed	101(59.4)
Exposed to tobacco smoke at public places during past week	
Exposed	84(49.4)
Non exposed	86(50.6)

Among the total respondents, 40.6% had exposed to tobacco smoking at home whereas 49.4% had exposed at public places

Table 4. Respondent's behavior regarding smoking cessation

Behavior	Number (%)
Wanting to stop smoking cigarettes now	18(10.6)
Ever tried to stop smoking cigarettes	20(11.1)
Ever received help or advice to stop smoking	22(12.9)

Among the current smokers, 10.6%want to stop smoking cigarette now. Similarly,11.1% have ever tried to stop smoking cigarette and 12.9% ever received help or advice to stop smoking.

Table 5. Association between demographic characteristics and current smoking habits of the respondents.

Characteristics	Status of current smoking		Total	p-value
	Current smoking n (%)	Noncurrent smoking n (%)		
Age				
≤ 24 years	16 (11.7)	121 (88.3)	137	**0.06**
≥25years	8 (24.2)	25 (75.8)	33	
Gender				
Male	20(32.3)	42(67.7)	62	**0.001**
Female	4(3.7)	104(96.3)	108	
Course of year				
Lower level of education	9(11.7)	68(88.3)	77	**0.408**
Higher level of education	15(16.1)	78(83.9)	93	
Ethnicity				
Brahmin /Chhetri	8(11.0)	65(89.0)	73	**0.546**
Madhesi	12(17.4)	57(82.6)	69	
Others	4(14.30)	24(85.7)	28	
Family type				
Nuclear	14(12.3)	100(86.7)	114	**0.225**
Joint /extended	10(17.9)	46(82.1)	56	
Place of residence				
Rural	12(19)	51(81)	63	**0.157**
Urban	12(11.2)	95(88.8)	107	
Current residence status				
Living with family	6(14.6)	35(85.4)	41	**0.546**
Living without family	18(14.0)	111(86.0)	129	
History of Parental Tobacco use				
Yes	6(12.6)	42(87.5)	48	**0.457**
No	18(14.8)	104(85.2)	122	
Friends with tobacco using habits				
Yes	21(24.1)	66(75.9)	87	**0.001**
No	3(3.6)	80(96.4)	83	
Schooling status				
Government school	10(19.2)	42(80.8)	52	**0.151**
Private school	14(11.9)	104(88.1)	118	

In the bivariate analysis between socio-demographic characteristics and current smoking of the respondents, gender and friends with Tobacco using habits were significantly associated with current cigarette smoking at p-value <0.05.

Table 6. Logistic Regression Analysis of current cigarette smoking with Socio-demographic Characteristics.

Characteristics	Expected Beta	Significant	Confidence Interval
Age			
≤24 Years	1		
≥25 Years	1.47	0.512	0.463-4.673
Gender			
Female	1		
Male	9.05	0.000***	2.63-31.17
Friends with habit of tobacco smoking			
No	1		
Yes	4.02	0.050*	1.01-16.14
Place of Residence			
Rural	1		
Urban	2.003	0.210	0.676-5.937
Level of Study			
Lower Level	1		
Higher Level	2.717	0.091	0.851- 8.669

*** = Significant at 99.9% CI

*= Significant at 95% CI

In this study, multivariate analysis (binary logistic regression) was also conducted to find the significant predictor for current cigarette smoking among the public health students. The important variables like age, gender, friends with the habits of tabaco smoking, current place of residence and study level were run for multivariate analysis. Finally, two variables: gender (Ex. B.=9.05, CI: 2.63-31.17 and P<001) and Friends with habit of tobacco smoking (B=4.02, CI: 1.01-16.14 and P=0.05) were found significant predictor/determinants for current cigarette smoking status among public health students. Males and students with friends having tobacco smoking habits were significantly associated with current cigarette smoking of the respondents. Male gender is 9.05 time more likely to smoke than female gender and friends with tobacco smoking habits were 4.02 times more likely to smoke than friends without smoking habit. Though others variables were non-significant but expected odds were observed more among ages more than 25 and greater, urban residents and students in higher level of study.

DISCUSSION

In the present study the prevalence of current cigarette smoking was 14.1% which is similar to the Nepal STEPS survey 2019 for Tabacco use among adults (14.5%) [19]. However, the finding was slight lower than the study done among undergraduate public health students of Kathmandu valley (16.8%)[20] and the study conducted among health professional students in Chitwan (16.3%)[17] .The prevalence of ever smoker was 27.6% which is higher than the study done by Shrestha et.al[16] whereas lower than the study done by Chand et.al.[20] Majority of the current smokers have initiated their smoking at adolescents (11-19years) period which is supported by the various study conducted in Nepal.[17 18 20] Factors like curiosity, need to alleviate stress, and influence from peers could lead to the initiation of smoking at an adolescent age.[18]

This study further revealed that the prevalence of current other Tabacco product such as chewing tobacco, sniffs, bidis etc. is 8.2% which is lower than the studies conducted in Kathmandu and Chitwan.[17,20] and higher than the finding of the study done among Medical Students in a Tertiary Care Teaching Hospital.[16]

In this study, half of the respondent 49.4% had been exposed to tobacco smoke at public places whereas 40.6% had exposure at home, the finding is supported by various study done in Nepal[16 17] and India[21] which also revealed the higher exposer of tobacco smoke at public places than home indicating ineffective implementation of smoking ban in public places.

The present study showed the significant difference between male and female in smoking, where male were nine times more likely to smoke cigarette in comparison to females, the finding was supported by the study done in Nepal[16 17]. Similarly, the study done among Thai university student showed male were more likely to smoke than female. The reason could be societal acceptability for men to smoke and belief among young males that smoking make them look attractive.[22]

Further the present study showed significant association between the smoking cigarette and friends with habit of tobacco smoking. The respondent who has friends with habit of tobacco smoking were 4.02 time more likely to be current smoker. The finding is supported by the study done in Finland[23] and Saudi Arabia[24] . There are various methods through which friends can impact the use of cigarettes, including demonstrating risky behaviors and applying social pressures.[20]

The family type of respondent was not associated with current smoking in the present study which was similar with finding of the study by Chand B et.al[20] whereas the study conducted in Nepal [18] and India [7]. Contrasted the findings. The parental habit of smoking was also not associated with current smoking in the present study which differed with the findings of the study done in China.[25] Similarly, the factors like ethnicity, parental habit of tobacco smoking, place of resident, types of school did not show significant association with current smoking of the respondents.

RECOMMENDATIONS

Based on the findings of this study, it is evident that there exists a significant association between male gender and smoking behavior. Additionally, a noteworthy correlation was observed between individuals who have friends with a smoking habit and their own smoking behavior.

In light of these results, it is strongly recommended that targeted interventions and educational programs be developed to address smoking habits, particularly among males. Moreover, fostering awareness about the influence of peer groups, especially those with smoking habits, should be a key component of any comprehensive smoking prevention strategy. Furthermore, collaboration between healthcare professionals, educators, and policymakers is essential in creating a supportive environment for individuals looking to quit smoking and for preventing new smokers from initiating this harmful habit.

CONCLUSION

This study showed overall current smoking prevalence of 14.1% among bachelor's level public health students of Koshi Province. Public health students are future planners and administrators of health system thus should get proper understanding of physical, mental and social impact of smoking on individual and society. The academic, medical, and policymaking communities should collaborate to establish a more conducive learning environment for current public health students, ultimately contributing to decrease in the incidence of smoking in the society.

LIMITATION OF THE STUDY

The current research had some constraints. All data in this study relied on self-reported information, potentially leading to response and information inaccuracies. Additionally, due to the cross-sectional study design, it was not possible to determine the temporal relationship between the independent variables and tobacco use.

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