

Examining Tobacco Use among Secondary School Teachers: A Case Study of Nepalgunj Sub-Metropolitan City

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Abstract

Tobacco consumption is the most significant preventable risk factor for morbidity and mortality worldwide, affecting both developing and developed countries. Among school teachers, the use of tobacco products represents not only a detrimental habit but also a poor financial decision, a severe health risk, and a negative example for students. This cross-sectional, analytical study examines the prevalence and associated factors of tobacco use among 148 secondary school teachers in Nepalgunj Sub-Metropolitan City. Data were collected through structured questionnaires, and prevalence rates were calculated using SPSS. Chi-square tests were employed to analyze the associated factors. The overall prevalence of tobacco use in any form among the teachers was 17.6%, with nearly all users being male. Female teachers were found to be 13.12 times less likely to use tobacco compared to their male counterparts. Specifically, 15 respondents reported smoking tobacco products, 17 reported using smokeless tobacco products, and 6 used both forms. More than 62% of respondents began using tobacco between the ages of 16 and 25. The reasons for initiating tobacco use included pleasure (42.3%), stress reduction (30.79%), curiosity (15.38%), and peer pressure (11.53%). The high prevalence of tobacco use among secondary school teachers in Nepalgunj is concerning, especially given their educational background. Only 1% of female teachers reported using any form of tobacco, likely due to prevailing social norms. Despite their education, many teachers indicated the need for specific training to effectively teach students about the dangers of tobacco use. This underscores the necessity for targeted training programs to equip teachers with the skills and techniques needed to discourage tobacco use among students.

Keywords: Secondary school teachers, tobacco use, influencing factors, social norms

Introduction

Tobacco, derived from the leaves of the tobacco plant, is a widely used product consumed in various forms, including smoking, chewing, sucking, or snuffing. All tobacco products contain nicotine, a highly addictive psychoactive substance, and are known to significantly increase the risk of numerous chronic illnesses, such as cancer, lung disease, and cardiovascular disease.

The detrimental effects of smoking on health and its wastefulness have long been recognized (Jacobson, 1983; Kumar et al., 1996; Sah, 2007). Within communities, teachers are held in high regard and exert considerable influence on various aspects of life. They play a pivotal role in shaping school tobacco control policies, supporting tobacco prevention initiatives, and serving as role models for students (The GTSS Collaborative Group, Tobacco Control, 2006).

Tobacco refers to a group of plants in the *Nicotiana* genus, notably including *Nicotiana rustica* and *Nicotiana tabacum*. The leaves of these plants are processed and dried to create various tobacco products. The primary methods of tobacco use include smoking (cigarettes, cigars, pipes), smokeless tobacco (chewing tobacco, snuff), and electronic nicotine delivery systems (e-cigarettes or vaping). Tobacco contains nicotine, a highly addictive stimulant, alongside numerous toxic compounds that contribute to a range of health issues, including cancer, respiratory disorders, and cardiovascular diseases.

Understanding the prevalence and impact of tobacco use among school teachers is crucial due to the potential health risks for the teachers themselves and the negative influence their tobacco use can have on students. Teachers who use tobacco may inadvertently model unhealthy behaviors, making it imperative to implement tobacco-free policies within educational institutions to foster a healthy and supportive environment. Such measures not only protect teachers' physical health but also promote positive behaviors among students.

The World Health Organization (WHO) reports that tobacco use is responsible for 4.9 million deaths annually, equating to one death every eight seconds. If current trends continue, this figure is expected to rise to one death every three seconds by 2030, with three-quarters of these deaths occurring in developing countries. By that time, the annual death toll from tobacco use is projected to exceed 10 million (World Health Organization, 1997).

Adolescent tobacco use represents a significant public health concern, particularly given its early onset. Profiles of tobacco consumption among youth often correlate with parental smoking, alcohol consumption, and poor academic performance. These factors are crucial for developing effective smoking cessation strategies for young people.

This research aims to explore the prevalence of tobacco use among secondary school teachers in Nepal, Southeast Asia, and globally. The study seeks to provide a comprehensive review and analysis of existing literature, highlighting the socio-cultural, economic, and policy-related determinants that may differ across regions. The ultimate goal is to contribute valuable insights to inform evidence-based interventions, policies, and educational initiatives aimed at reducing tobacco use among secondary school teachers worldwide.

In Nepal, Southeast Asia, and globally, tobacco use among secondary school teachers poses a significant public health concern. Despite global efforts to reduce tobacco consumption, research specifically addressing the unique challenges and patterns of tobacco use among secondary school teachers remains limited. This scarcity of comprehensive studies hinders the development of targeted interventions and policy initiatives. Understanding the prevalence of tobacco use among teachers is essential for devising strategies to promote their well-being and create a healthier educational environment.

Addressing this issue is urgent due to its potential impact on teacher health, educational outcomes, and the transmission of tobacco-related behaviors to students. Recognizing the global significance of this problem, it is imperative to investigate not only the prevalence of tobacco use but also the socio-cultural, economic, and policy-related determinants that vary across regions. This research aims to fill the existing knowledge gap by conducting a thorough review and analysis of tobacco use among secondary school teachers in Nepal, Southeast Asia, and the broader global context.

Young people often adopt smoking habits from their role models. Educators, as role models, hold significant responsibility in tobacco prevention efforts. Teachers frequently interact with students and can effectively discourage smoking. However, despite their awareness of tobacco's harmful effects, some teachers continue to use tobacco products, inadvertently setting a poor example for students. Adequate training for teachers on tobacco prohibition campaigns remains insufficient (Vinaya, Guarav & et al., 2019).

In Nepal, districts like Banke are subject to national tobacco control policies, such as the Tobacco Product Control and Regulatory Act, which imposes restrictions on public smoking and tobacco advertising. Cigarette smoking and hand-rolled cigarettes (bidis) are the most common forms of tobacco use in Nepal. Additionally, various types of smokeless tobacco (SLT) products, such as gutkha, zarda paan, khaini, and sokha, are consumed, which have been linked to several oral disorders, including cancers of the head, neck, esophagus, and pancreas (Nipun, Suresh & et al., 2019).

Teachers and administrators serve as key opinion leaders in tobacco control policies, interacting daily with students and thus holding a significant influence (Sorensen, Gupta, Sinha, & et al., 2005). Tobacco use is a major contributor to the rise of non-communicable diseases, responsible for 6.0% of global disability-adjusted life years (DALYs) and 11.5% of all deaths in 2015. The majority of these deaths occur in low- and middle-income countries with limited access to healthcare. The WHO Framework Convention on Tobacco Control (WHO FCTC), ratified in 2003, aims to combat the tobacco epidemic.

Teachers who smoke can influence students' attitudes toward smoking, leading them to perceive it as normal and desirable. This significantly increases the likelihood of students starting to smoke. Teachers who smoke raise the risk of smoking among teenagers by 2.51 times, especially among their students. According to the Nepal Demographic and Health Survey (NDHS, 2016), tobacco use is a leading cause of premature death globally, killing 15,000 Nepalese annually. Men are the predominant users of tobacco. This study aims to determine the prevalence and associated factors of tobacco use among Nepalese men aged 15-49 years.

Given the importance of teachers as role models, it is crucial to discourage tobacco use among them. Limited research has been conducted on tobacco use among teachers, and it is often overlooked as an important aspect of tobacco control. This study seeks to determine the prevalence and knowledge of the health consequences of tobacco use among secondary school teachers in Nepalgunj Sub-Metropolitan City.

Objectives of the Study

- To evaluate the prevalence and understanding of the health consequences of tobacco use among secondary school teachers.
- To determine the prevalence of tobacco use among secondary school teachers.
- To analyze the factors associated with the habit of tobacco use among secondary school teachers.
- To assess the knowledge regarding the health consequences of tobacco use among secondary school teachers.

Limitations of the Study

- Teachers who were unwilling to participate were excluded from the study.
- Confidentiality was maintained during the study period and will continue to be upheld in the future.
- Teachers who were on leave during the data collection period were excluded from the study.

Literature Review

Sah (2007) conducted a cross-sectional descriptive study in the Mahottary district involving 210 teachers from 85 schools using a multistage proportional random sample approach. The overall prevalence of tobacco use among these teachers was 57%, with 64.9% of male teachers and no female teachers using tobacco, largely due to societal norms. The prevalence of tobacco use was 66.1% among primary teachers, 63.9% among lower secondary teachers, and 61.8% among secondary teachers. Peer pressure and job dissatisfaction were significant factors contributing to tobacco use, and 60.8% of teachers used tobacco products on school property, potentially influencing students to start using tobacco.

Shrestha (2006) conducted a cross-sectional study among teachers in Kritipur Ward No. 17. The study found that 25.3% of teachers (32.3% of men and 5.2% of women) were current smokers, with 9.7% smoking daily. Additionally, 30.7% of teachers used any form of tobacco, and 19.9% used both cigarettes and other tobacco products. Most teachers acknowledged the dangers of secondhand smoke (96.9%) and supported policies against student tobacco use (90.9%), although only 28.5% had access to resources for tobacco prevention education. The study highlights the need for school- and community-based tobacco control interventions.

Rahman (2011) conducted a two-stage cluster sampling study in Bangladesh, involving 559 teachers from 60 schools. The study found a smoking prevalence of 17% among teachers, with 48.4% smoking daily. Graduate school teachers were 2.179 times more likely to smoke than those with master's degrees. The study indicated a high prevalence of smoking among teachers and suggested that school curricula had limited impact on smoking cessation.

Kwamanga (1996) carried out a descriptive cross-sectional study to examine tobacco use among primary school teachers in Nairobi. Among the 800 teachers surveyed, 50% of male and

3% of female teachers smoked. Most teachers started smoking between the ages of 15 and 24, typically while they were secondary school or university students. The study recommended the implementation of anti-smoking education programs in secondary schools and colleges.

Ghouth (2006) conducted a study on smoking among secondary school teachers in Yemen's Hadramout coastal regions, involving 317 teachers. The study found that 8% of teachers smoked, with a higher prevalence among males (14%). Only 10% of teachers had received training on preventing student smoking. The study concluded that secondary schools could leverage teachers' positive attitudes towards smoking prevention to implement effective strategies.

Smith (2013) conducted a descriptive cross-sectional study among 3100 school teachers in Botswana. The study found a low prevalence of smoking among teachers, with 3.2% being current smokers, 5.3% ex-smokers, and 91.5% never having smoked. The study highlighted the need for ongoing tobacco control efforts in educational settings.

Barrueco (2000) conducted a cross-sectional study in Spain using a self-administered anonymous questionnaire sent to the headmasters of 8,000 randomly selected school centers. The study found that 29.7% of Spanish teachers were smokers, with a higher prevalence in secondary education than in primary education. The study emphasized the influence of teachers' smoking habits on students and called for stricter enforcement of non-smoking regulations and health education in schools.

Mihaltan (1994) conducted a cross-sectional survey among 214 headmasters and teachers in Bucharest, Romania. The study found that 38.9% of headmasters and 33% of teachers smoked, with significant smoking behavior observed among both age groups under 20 and over 35. Despite recognizing the health risks of smoking, many teachers continued to smoke in front of students, underscoring the need for serious attention to teachers' smoking habits.

Despite extensive research on tobacco use among teachers in various regions, there remains a significant gap in understanding the specific socio-cultural, economic, and policy-related determinants of tobacco use among secondary school teachers in Nepal. Additionally, there is a lack of comprehensive studies that explore effective intervention strategies tailored to this demographic. Addressing these gaps is crucial for developing targeted policies and educational initiatives to reduce tobacco use among teachers and, consequently, their students.

Research Methodology

Selection of Study Area

Secondary schools located at Nepalgunj, Sub-Metropolitan city.

Research Design

A descriptive cross-sectional study design was adopted. Teachers of secondary level school were the study Population.

Universe and Sample size

Non probability convenient sampling technique was applied for the purpose of the study.

The statistical formula used was;

$$n = \frac{z^2 pq}{d^2}$$

Where,

$$z = 1.96$$

$$p = 0.57 \text{ (57\%)}$$

$$q = 1 - p = 0.43$$

$$d = 8\% \text{ (0.08)}$$

The sample size was 148.

Nature and Sources of data

Quantitative data was collected for the purpose of the study. Primary data was collected as the main source of data for the purpose of the study.

Data collection tools and techniques

Structured questionnaire among teachers of secondary level was distributed to fill own self to collect the data. The data was from primary sources. Primary sources contain the interview & questionnaire include report analysis, review of other related papers and literature review, Data entry, analysis and interpretation

Interview

Interview schedule was one of the tools used for the collection of data structured and closed ended questions were prepared to seek the information on various aspects of tobacco use among secondary school teachers. The questionnaire was filled through interviews themselves.

Questionnaire

The structured questionnaires, with closed ended questions, were prepared for the information collection of the study area. The respondents and key informants of the study area were requested to fill up the questionnaire.

Field Visit and Observation Method

As the study is based on the primary data, that were collected from visiting the study area. The respondents were in the school premises while collecting the data and were requested to fill the questionnaire after taking their verbal as well as written consent form.

Data Analysis and Interpretation

During this study quantitative data and information were collected through various methods and techniques. A descriptive cross sectional method was used. The data was entered in SPSS and analyzed using the SPSS version 16. Descriptive Statistics (including means, standard deviations, frequencies and percentage) was calculated for the socio-demographic and environmental variables.

Data Analysis and Presentation**Socio Demographic Characteristic****Table 1***Socio demographical characteristic*

S.N	Variables	Frequency (n=148)	Percentage%	mean±SD	
1	Age	20-30 years	54	36.5	35.95±9.201
		30-40years	50	33.8	
		40-50years	32	21.6	
		50 above	12	8.1	
2	Sex	Male	105	70.9	
		Female	43	29.1	
3	Marital status	Married	86	58.1	
		Unmarried	61	41.2	
		Separated	1	0.07	
4	Religion	Hindu	134	90.5	
		Buddhist	1	0.07	
		Christian	4	2.7	
		Muslim	8	5.4	
		Others	1	0.07	
5	Caste	Brahmin	36	24.3	
		Chhetri	59	39.9	
		Janajati	24	16.2	
		Madhesi	25	16.9	
		Dalit	3	2.0	
		Others	1	0.07	
6	Living with	Family	135	91.2	
		Friend	1	0.07	
		Relatives	5	3.4	
		Single	7	4.7	
7	Education Level	Higher Secondary	48	32.4	
		Higher Education	100	67.6	

The table summarizes the demographics of 148 individuals, including age, gender, marital status, religion, caste, living arrangements, and education level. Most participants are aged 20-30 (36.5%) and 30-40 (33.8%), with an average age of 35.95 years. The sample is predominantly male (70.9%) and mostly married (58.1%). Most identify as Hindu (90.5%), with significant representation from the Chhetri caste (39.9%). The majority live with family (91.2%) and hold higher education degrees (67.6%). This overview provides key insights into the sample's demographic diversity.

Table 2*Consumed Tobacco*

	Frequency	Percent
Yes	26	17.6
No	122	82.4
Total	148	100

When the respondents were asked, if they consumed tobacco. 26 respondents said yes and 122 respondents said no. The prevalence of using tobacco was 17.6%.

Table 3*First Age of Tobacco Consumed*

Age	Frequency	Percent
16-20	8	30.76
21-25	8	30.76
26 above	7	26.92
Don't know	3	11.53

The table provides a breakdown of age distribution among a sample, presenting frequencies and percentages for each age category. The majority of respondents fall within the age range of 16-20, constituting 30.76% of the sample. Similarly, the age group of 21-25 also comprises 30.76% of the participants. Those aged 26 and above represent 26.92% of the sample. A smaller proportion, 11.53%, responded with "Don't know" about their age. Overall, the data suggests a relatively even distribution of participants across the specified age groups, with a slight concentration in the younger age brackets.

Table 4*Association between Socio-demographic variables and knowledge on tobacco consumption*

Co-variates	Knowledge		Chi-square	P value
	Good knowledge	Average knowledge		
Age				
20-30 yrs	41 (29.5)	5 (3.6)	1.819	0.611
30-40 yrs	45 (32.4)	4 (2.9)		
40-50 yrs	28 (20.1)	4 (2.9)		
>50 yrs	12 (8.6)	0		
Sex				
Male	95(68.3)	8(5.8)	1.179	0.278
Female	31(22.3)	5(3.6)		
Marital status				
Never married	52(37.4)	5(3.6)	0.152	0.927
Married	73(52.5)	8(5.8)		
Separated	1(0.7)	0		
Caste				
Brahmin	27(19.4)	4(2.9)	2.895	0.716
Chhetri	50(36.0)	7(5.0)		
Janajati	21(15.1)	1(0.7)		
Madhesi	24(17.3)	1(0.07)		
Dalit	3(2.2)	0		
Others	1(0.07)	0		

Above table The table outlines the distribution of knowledge levels across different co-variates. For the age variable, individuals aged 20-30 years exhibit 41 (29.5%) with good knowledge and 5 (3.6%) with average knowledge, resulting in a non-significant Chi-square value of 1.819 and a P-value of 0.611. Similarly, for the 30-40 years' age group, the corresponding values are 45 (32.4%) and 4 (2.9%). The analysis by gender indicates that 68.3% of males possess good knowledge, compared to 5.8% with average knowledge, yielding a non-significant Chi-square of 1.179 and a P-value of 0.278. Marital status and caste variables also show non-significant associations with knowledge levels. Overall, the table provides insights into the distribution of knowledge among different demographic categories, with associated Chi-square values and P-values indicating the strength and significance of these associations.

Table 5*Association of Religion, Education level with Knowledge*

Co-variates	Knowledge Good knowledge	Average knowledge	Chi-square	P value
Religion				
Hindu	113(81.3)	12(8.6)	11.043	0.026
Buddhist	1(0.7)	0		
Christian	4(2.9)	0		
Muslim	8(5.8)	0		
Others	0	1(0.7)		
Education Level				
Higher secondary	38(27.3)	5(3.6)	0.380	0.537
Higher Education	88(63.3)	8(5.8)		

The table presents the distribution of knowledge levels concerning religion and education. Among Hindus, 81.3% have good knowledge compared to 8.6% with average knowledge, resulting in a significant Chi-square value of 11.043 and a P-value of 0.026. In contrast, the knowledge distribution among Buddhists, Christians, and Muslims shows no significant association. Regarding education level, 27.3% with higher secondary education have good knowledge, and 3.6% have average knowledge, resulting in a non-significant Chi-square value of 0.380 and a P-value of 0.537. The table offers insights into the interplay between knowledge levels and religion, emphasizing a significant association among Hindus, while education level does not exhibit a significant relationship with knowledge. From the above table it is evident that majority of them, i.e 90.6 % had good knowledge.

Table 6*Association between Education Level and tobacco consumed*

The below table shows the P value is 0.842 which is more than 0 .05. It shows there is no association between Education level of respondents and tobacco consumption.

Education Level	Tobacco consumed		Chi-square	P value
	Yes	No		
Higher secondary	8(5.4)	40(27.0)	0.040	0.842
Higher Education	18(12.2)	82(55.4)		

Table 7*Intention to Quit Using Tobacco*

The respondents were asked what intension to quit using tobacco is there. Among 148 respondents 26 were current tobacco users (smoke and smokeless) and 14 of them gave positive attitude to quit tobacco whereas, 134 have Negative attitude to quite tobacco consumption.

Attitude	Frequency	Percent
Negative attitude	134	90.5
Positive attitude	14	9.5
Total	148	100

Table 8*Tobacco should be Banned in Public Place*

Attitude	Frequency	Percent
Positive	148	100

Among 148 respondents all of them said that tobacco smoking should be banned in public places. The responses were 100 percent positive because as we know teachers are well educated. Almost 67.6 percent have completed their higher education level.

Table 9*Factors that Influences for Tobacco Consumption*

Co-variates	Tobacco use	Chi-square	P value
	Yes		
Factors related			
Peer pressure	3(11.53)		
Curiosity	4(15.38)		
Parental smoking	0(0.0)	62.942	0.0003
To reduced stress	8(30.79)		
Pleasure	11(42.30)		
Total	26(100)		

Exposed to tobacco related advertisement during past 30 days		2.217	0.3300
Yes	72(48.6)		
No	76(51.4)		
Advertisement can be a factor for tobacco use		1.537	0.215044
Yes	139(93.9)		
No	9(6.1)		
Teachers need specific training to teach students to avoid using tobacco		1.633	0.20122
Yes	120(81.1)		
No	28(18.9)		

The above given table shows that factors that influences tobacco consumption where total 26 respondents consumed tobacco. 3(11.53%) of total respondents were influenced by peer pressure, 4(15.38%) were influenced by curiosity likewise 8(30.79%) used tobacco to reduce stress and majority 11(42.30%) of respondents consumed tobacco for pleasure. However, given factors and consumption of tobacco are associated in between. When respondents were asked if they were exposed to tobacco related advertisement during past 30days,72(48.6%) said Yes they were and 76(51.4%) said No they were not. Table shows that P value is 0.3300 which is greater than 0.05. Hence there is no association with consumption of tobacco. When respondents were asked, can advertisement be a factor for tobacco use,139 (93.9%) said Yes and 9(6.1%) said NO. Table shows the P value is 0.2150 which is greater than 0.05. Hence, advertisement is not associated factor tobacco consumption. The table also shows that 120(81.1%) of total respondents said teachers need specific training to teach students to avoid using tobacco whereas, 28(18.0%) said they don't need.

Findings

A total of 148 participants were studied in the research.70.9% were male (n=105) and 29.1% were female (n=43). Most of the respondent were between the age group 20-30years old i.e. 54. Similarly, 50 respondents were between the age group 30-40 years i.e. 50, 32 respondents were between age group 40- 50 years old and 12 respondents were age above 50 years old. The major ethical groups included Brahmin (24.3%), Chhetri (39.2%), Janajati (16.9%) and Madhesi (16.9%). Majority of the respondent were married (59.1%), followed by unmarried (41.2%) and separated (0.7%). Among total respondents, (91.2%) were living with family, (4.7%) with single, (3.4%) with relatives and (0.07%) with friend. Most of the

respondent have Higher education level (67.6%) and remaining (32.4%) Higher secondary level completed. No significant association between age, marital status, and education level with tobacco consumption and all the socio-demographic variables are also no significant association with knowledge on tobacco consumption. Most of the respondent i.e. 90.6% has good knowledge and 9.4% have average knowledge on tobacco and its effect due to consumption.

Conclusion

In conclusion, the results of this study indicate that the prevalence of tobacco use among secondary school teachers is quite high is about 18%. Among them 16 respondents try tobacco at the age between 16 to 25 years. 6 respondents consumed both smoke and smokeless products. Although most of the teachers are nonsmokers but they are aware of harmful effects of tobacco consumption because all respondents are well educated. Even though if teachers don't smoke they still not risk free because all school teachers are exposed to the tobacco consumption. That's the reason why 100% of the teachers were favor of banning tobacco in public place. Most of the respondents about 43% consumed tobacco to get pleasure and about 94% respondent's answer that advertisement related to tobacco consumption can be a factor for tobacco use. Hence, the study shows that advertisement is not associated factor for tobacco consumption. As we know teachers are well educated even though more than 81% of teachers answer that they need specific training to teach students to avoid using tobacco. It seems that teachers should train with special skill and technique to teach students to avoid using tobacco.

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