

## Attitude and Use of Tobacco Products among School Youths: A School Based Cross-Sectional Study in Municipality of Nepal

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**Abstract:** The epidemic of tobacco use is one of the greatest threats to global health today. Youths are vulnerable to tobacco addiction and they are in a period of transition between adolescence and adulthood, where behavior is influenced by accelerated changes affecting emotional, cognitive, and social functions. This study aimed to assess the attitude and use of tobacco products among school youths (13-17 yrs) of Grade 8-10 in Rajbiraj Municipality of Nepal. It is a cross-sectional school-based study done among randomly sampled school youths (13-17 yrs) of Grade 8-10 in Nepal. Total 340 sample size derived using the formula:  $n = N / (1 + Ne^2)$ . Youth Tobacco questionnaire was the self-administered data collection tool. The purpose of the study was explained to respondents. Ethical approval was obtained through the Ethical Review Board of Nepal Health Research Council. Data were analyzed on Scientific Package for Social Science version-20. Twenty six percent of school youths think that the smoking cigarette makes young people look cool or fit and 59.7% of them perceived that young people who smoke cigarette have more friends. In addition, 80.5% agreed all tobacco products are dangerous for health. Thirty nine percent of the school youths use any tobacco product and current cigarette smokers were 9.7%. School youths have false perception and unfavorable attitude about the tobacco and remarkable proportion of youths have used tobacco products, suggesting an urgent need to improve the level of comprehensive knowledge and an appropriate attitude regarding tobacco use among school youths in Nepal.

**Keywords:** Attitude, Nepal, School youths, Use of tobacco products

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### I. Introduction

The tobacco epidemic is one of the biggest public health threats the world has ever faced, killing more than 8 million people a year around the world. More than 7 million of those deaths are the result of direct tobacco use while around 1.2 million are the result of non-smokers being exposed to second-hand smoke.<sup>[1]</sup> Use of tobacco is a major risk factor for multiple non-communicable diseases (NCDs) including cancer, chronic respiratory diseases, cardiovascular diseases and diabetes.<sup>[2-4]</sup> In response to the globalization of the tobacco epidemic, World Health Organization (WHO) unanimously adopted the WHO Framework Convention on Tobacco Control (FCTC) in May 2003. WHO Framework Convention on Tobacco Control (FCTC) is the world's first public health treaty on tobacco control.<sup>[5]</sup> It provides a global response to the pandemic of tobacco-induced death and disease. The WHO FCTC urges countries to develop action plans for public policies, such as bans on direct and indirect tobacco advertising, tobacco tax and price increases, promoting smoke-free public places and workplaces, and placing health messages on tobacco packaging. The treaty embodies a coordinated, effective, and urgent action plan to curb tobacco consumption and lays out cost effective tobacco control strategies for public policies.<sup>[6]</sup> WHO, the US Centers for Disease Control and Prevention, and the Canadian Public Health Association developed the Global Tobacco Surveillance System (GTSS) to assist all 192 World Health Organization member states in establishing continuous tobacco control surveillance and monitoring.<sup>[7]</sup> The Global Tobacco Surveillance System (GTSS) aims to enhance country capacity to design, implement, and evaluate tobacco control interventions, and monitor key articles of the World Health Organization's (WHO) Framework Convention on Tobacco Control (FCTC) and components of the WHO MPOWER technical package. The GTSS includes collection of data through three surveys: the Global Youth Tobacco Survey (GYTS) for youth, and the Global School Personnel Survey and the Global Health Professional Survey for

adults. The Global Youth Tobacco Survey (GYTS) has been developed to gather information about tobacco control and prevention from youths studying in schools. [7-9]

In this context, annually, an estimated 27 100 deaths (14.9% of all deaths) are attributed to tobacco-related diseases in Nepal. The top three causes of death, ischemic heart disease, chronic respiratory disease and cardiovascular diseases (CVD), are associated with tobacco consumption. [10] It is very essential to understand access, and use of tobacco products among school youths in Nepal. Thus, this school-based Youth Tobacco Survey (YTS) has been conducted to assess the information on access, attitude and use of tobacco products by youths studying in schools among in Rajbiraj Municipality of Nepal.

## II. Materials and Methods

We conducted this cross-sectional school-based survey among school youths (13-17 yrs) of Grade 8-10 in both public and private Schools in Rajbiraj Municipality of Nepal. Based on the record of District Education Office, there were all total 26 (both private and public) secondary schools within the Municipality area. All school youths (13-17 yrs) of Grade 8-10 in these 26 schools were the study population. All students of 8-10 grades attending school during the survey were eligible to participate. Student participation was voluntary and anonymous using self-administered data-collection procedures. For cross-site comparisons, students' age was limited to 13 to 17 years age and others were excluded while sampling from study population. A total of 340 sample was derived by using formula; Yamane formula  $(n) = N / (1 + Ne^2)$  (i.e., N= population under study, n = sample size, e = 5% level of precision with 95% confidence and P=0.5) [11]. Desired numbers of students from each school were identified through Probability Proportional to Size (PPS) technique. Finally, a simple random sampling technique was used to select students from all 26 schools for data collection. Based on The Youth Tobacco Survey Handbook [12] and Youth Tobacco Survey (YTS) questionnaire [13]; a set of survey questionnaire was developed, pretested and translated in Nepali language for data collection. Survey questionnaire was self-administered by the school youths (13-17 yrs) of Grade 8-10. The purpose of the study was explained to the respondents before data collection; verbal consent had been obtained from the respondents and ethical approval from Ethical Review Board of Nepal Health Research Council (NHRC)/Nepal had been received. Respondents were instructed to return the questionnaire after completion. For completeness, the collected data were edited, reviewed, and checked. To assure anonymity, code numbers were given on completed questionnaires after they were returned to the investigator. Statistical Package for Social Sciences (SPSS) version 20 was used to analyze the data. We used percent distribution and made comparisons for descriptive analysis.

## III. Results

### Perception and attitude about use of tobacco products

Table-1 shows that 89 (26.1%) school students think that smoking cigarette makes young people look cool or fit. More than half (59.7%) perceive that young people who smoke cigarette have more friends. On the other hand, 274 (80.5%) agree that all tobacco products are dangerous for health. However, 46.4% of the students perceived that smokeless tobacco are less harmful than smoking tobacco products and 7.6% believe that breathing smoke from other people's cigarette or other tobacco products causes no harm to health.

**Table1: Perception and attitude about tobacco use (n=340)**

Variables	smoking cigarettes makes young people look cool or fit		young people who smoke cigarettes have more friends		Agree that all tobacco products are dangerous		Smokeless tobacco are less harmful than smoking tobacco products		Breathing smoke from other people's cigarettes or other tobacco products causes NO harm		
	N	%	N	%	N	%	N	%	N	%	
Age (yrs)	13	16	18.0	42	20.7	66	24.1	37	23.4	6	23.1
	14	39	43.8	66	32.5	100	36.5	60	38.0	9	34.6
	15	15	16.9	48	23.6	61	22.3	35	22.2	3	11.5
	16	17	19.1	39	19.2	38	13.9	19	12.0	7	26.9
	17	2	2.2	8	3.9	9	3.3	7	4.4	1	3.8
Sex	Girls	33	37.1	68	33.5	102	37.2	56	35.4	6	23.1
	Boys	56	62.9	135	66.5	172	62.8	102	64.6	20	76.9

Grade	8	23	25.8	61	30.0	89	32.5	58	36.7	9	34.6
	9	30	33.7	60	29.6	93	33.9	55	34.8	8	30.8
	10	36	40.4	82	40.4	92	33.6	45	28.5	9	34.6
Caste/ ethnicity	B/C*	10	11.2	18	8.9	33	12.0	23	14.6	2	7.7
	Madhesi	68	76.4	158	77.8	214	78.1	119	75.3	22	84.6
	A/J**	4	4.5	12	5.9	13	4.7	7	4.4	1	3.8
Religion	Dalit	4	4.5	7	3.4	7	2.6	5	3.2	0	0.0
	Muslim	3	3.4	8	3.9	7	2.6	4	2.5	1	3.8
	Hindu	85	95.5	193	95.1	265	96.7	152	96.2	24	92.3
	Muslim	3	3.4	8	3.9	7	2.6	4	2.5	1	3.8
	Buddhist	1	1.1	1	0.5	1	0.4	1	0.6	1	3.8
	Christian	0	0.0	1	0.5	1	0.4	1	0.6	0	0.0
Total		89	100.0	203	100.0	274	100.0	158	100.0	26	100.0

\*= Brahmin/Chhetri, \*\*= Adhibasi/janjati

### Use of tobacco products by school youths

Tables -2 reveal that 39.1 percent of the school students use any tobacco product; however, current cigarette smokers were 9.7 percent. By sex girls were found more (13.2%) cigarette smokers than boys but boys were using more (40.2%) any tobacco product currently. Grade nine students were found more (11.2%) cigarette smokers compare to others and any tobacco users were found higher (39.6%) at grade 10 than other grades. Similarly, any tobacco users have no remarkable variation by caste/rthnicity; however, cigarette smokers were found higher among Adibashi (13.0%) and Janajati (10.1%) ethnic group school students. Hindu school students use any tobacco products higher (40.3%) proportion than others'; however, there is not notifiable difference among students in cigarette smokers by religion.

**Table 2: Use of tobacco products (n=340)**

Variables		Ever smoked cigarettes		Current any tobacco users		Current cigarettes smokers		Never smokers, susceptible to start smoking next year		Total Participants	
		N	%	N	%	N	%	N	%	N	%
Age (yrs)	13	11	29.7	13	35.1	4	10.8	9	24.3	37	10.9
	14	18	24.0	30	40.0	6	8.0	21	28.0	75	22.1
	15	24	22.6	43	40.6	10	9.4	29	27.4	106	31.2
	16	24	28.2	39	45.9	12	14.1	10	11.8	85	25.0
	17	22	59.5	8	21.6	1	2.7	6	16.2	37	10.9
Sex	Girls	42	30.9	51	37.5	18	13.2	25	18.4	136	40.0
	Boys	57	27.9	82	40.2	15	7.4	50	24.5	204	60.0
Grade	8	19	27.5	18	26.1	5	7.2	27	39.1	69	20.3
	9	38	28.8	60	0.0	15	11.4	19	14.4	132	38.8
	10	42	30.2	55	39.6	13	9.4	29	20.9	139	40.9
Caste/ ethnicity	B/C*	17	29.8	23	40.4	5	8.8	12	21.1	57	16.8
	Madhesi	69	29.1	93	39.2	24	10.1	51	21.5	237	69.7
	A/J**	9	39.1	8	34.8	3	13.0	3	13.0	23	6.8
	Dalit	2	0.0	5	38.5	1	7.7	5	38.5	13	3.8
	Muslim	2	20.0	4	40.0	0	0.0	4	40.0	10	2.9
Religion	Hindu	89	28.4	126	40.3	31	9.9	67	21.4	313	92.1

Muslim	4	36.4	4	36.4	0	0.0	3	27.3	11	3.2
Budhist	6	0.0	3	21.4	2	14.3	3	21.4	14	4.1
Christian	0	0.0	0	0.0	0	0.0	2	100.0	2	0.6
Total	99	29.1	133	39.1	33	9.7	75	22.1	340	100.0

\*= Brahmin/Chhetri, \*\*= Adhibasi/janjati

### Types of tobacco products used by school youths

Table-3 disclosed that out of 133 any types of tobacco user school students; chewing tobacco is found highest (36.1%) among school students followed by cigarette (34.6%). Girls were using more cigarettes (39.2%) than boys and boys were using more chewing tobacco (37.8%) than girls. Grade 8 students' uses higher cigarrate (50.0%) than other grades students and chewing tobacco is higher among grade 9 (36.7%) and grade 10 (36.4%). Similarly, cigarette smoking is higher among Adibashi/janajati students (50.0%) and chewing tobacco is higher among Muslim school students by caste/ethnicity.

**Table 3: Types of tobacco used by current users (n=133)**

Variables	Types of tobacco used										
	Ciggrate		Bidi		Hookah		Chewing		Total		
	N	%	N	%	N	%	N	%	N	%	
Age ( yrs)	13	4	30.8	0	0.0	3	23.1	6	0.5	13	9.8
	14	8	26.7	7	23.3	2	6.7	13	43.3	30	22.6
	15	16	37.2	9	20.9	3	7.0	15	34.9	43	32.3
	16	16	41.0	7	17.9	4	10.3	12	30.8	39	29.3
	17	2	25.0	2	25.0	2	25.0	2	25.0	8	6.0
Sex	Girls	20	39.2	9	17.6	5	9.8	17	33.3	51	38.3
	Boys	26	31.7	16	19.5	9	11.0	31	37.8	82	61.7
Grade	8	9	50.0	2	11.1	1	5.6	6	33.3	18	13.5
	9	19	31.7	11	18.3	8	13.3	22	36.7	60	45.1
	10	18	32.7	12	21.8	5	9.1	20	36.4	55	41.4
Caste/ ethnicity	B/C*	8	34.8	6	26.1	2	8.7	7	30.4	23	17.3
	Madhesi	32	34.4	15	16.1	11	11.8	35	37.6	93	69.9
	A/J**	4	50.0	0	0.0	1	12.5	3	37.5	8	6.0
	Dalit	1	0.0	3	60.0	0	0.0	1	40.0	5	3.8
Religion	Muslim	1	25.0	1	25.0	0	0.0	2	50.0	4	3.0
	Hindu	43	34.1	24	19.0	13	10.3	46	36.5	126	94.7
	Muslim	1	25.0	1	25.0	1	25.0	1	25.0	4	3.0
	Buddhist	2	66.7	0	0.0	0	0.0	1	33.3	3	2.3
Christian	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
Total	46	34.6	25	18.8	14	10.5	48	36.1	133	100.0	

\*= Brahmin/Chhetri, \*\*= Adhibasi/janjati

### Access of tobacco products among school youths

Out of the 340 school students, only 26 (7.6%) expressed that tobacco seller has refused to sell tobacco products to them. More than one quarter (38.8%) easily buy tobacco product from the shops; however, it is found easier to boys compared to girls to buy the tobacco products. However, 208 (61.2%) of the school students felt difficulty to buy tobacco products from the shop (Table-4).

**Table 4: Access of tobacco products (n=340)**

Variables	Shop keeper refused to sell tobaaco	Easy to buy tobacco product	Difficult to buy tobacco product
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	N	%	N	%	N	%	
Age (yrs)	13	1	3.8	18	13.6	59	28.4
	14	12	46.2	42	31.8	83	39.9
	15	0	0.0	36	27.3	32	15.4
	16	12	46.2	32	24.2	29	13.9
	17	1	3.8	4	3.0	5	2.4
Sex	Girls	9	34.6	46	34.8	82	39.4
	Boys	17	65.4	86	65.2	126	60.6
Grade	8	6	23.1	26	19.7	80	38.5
	9	12	46.2	42	31.8	72	34.4
	10	8	30.8	64	48.5	56	26.9
Caste/ ethnicity	B/C*	5	19.2	22	16.7	19	9.1
	Madhesi	16	61.5	97	73.5	161	77.4
	A/J**	3	11.5	4	3.0	13	6.3
	Dalit	0	0.0	5	3.8	7	3.4
	Muslim	2	7.7	4	3.0	8	3.8
Religion	Hindu	23	88.5	127	96.2	197	94.7
	Muslim	2	7.7	4	3.0	8	3.8
	Buddhist	1	3.8	1	0.8	2	1.0
	Christian	0	0.0	0	0.0	1	0.5
Total	26	100.0	132	100.0	208	100.0	

\*= Brahmin/Chhetri, \*\*= Adhibasi/janjati

#### IV. Discussion

WHO framework convention on tobacco control intends to protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco consumption and exposure to tobacco smoke by providing a framework for tobacco control measures to be implemented by the parties at the national, regional and international levels in order to reduce continually and substantially the prevalence of tobacco use and exposure to tobacco smoke.<sup>[14]</sup> But youth smoking continues to be a widespread public health problem. Globally, an estimated 7.0% of children aged 13–15 smoke; the Americas (13.0%) and the European region (9.8%) demonstrate the highest prevalence of smoking among children<sup>[15]</sup> and youth smoking continues to be a widespread public health problem.<sup>[16]</sup> Several empirical studies suggest that the major factors predicting onset of smoking are socio-environmental factors, including perception and attitude that tobacco use is the norm, access of tobacco products, and exposure to smoker, peer and school settings.

In this context, current study showed that one fourth of the school youths think that smoking cigarette makes young people look cool or fit and more than half of them also perceived that young people who smoke cigarette have more friends. In addition, seven out of ten of the youths think that smokeless tobacco is less harmful than smoking tobacco products and eight out of ten belied that breathing smoke from other people's cigarette to other tobacco products causes no harm to health. Study results from Vietnam pointed a substantial percentage of school youths thought that other people's tobacco smoking might be harmful to them and smoking is harmful to health (89.4% and 89.6% respectively) and more than half of the youths reported that young smokers have fewer friends than others and smoking makes them less attractive as well as less comfortable in social events.<sup>[17]</sup> Previous study done in Karnataka, India reported that the attitude of the students was statistically associated with their favorable or unfavorable attitude towards not using tobacco products.<sup>[18]</sup> Another study of Denmark pointed as adolescents' perceived exposure to teachers smoking outdoors on the school premises was significantly associated with daily smoking, having adjusted for sex, exposure to teachers smoking indoors at school and pupils smoking outdoors at school, as well as the smoking behavior of a mother, father, and best friend (odds ratio (OR) 1.8, 95% confidence interval 1.2 to 2.8).<sup>[19]</sup>

Concerning about the use of tobacco products by youths, current study revealed that one fourth (39.1%) of the school youths use any tobacco product currently and 9.7 percent are current cigarette smokers. Similarly, chewing tobacco (36.1%) and cigerrate smoking (34.6%) were most common types of tobacco used by school youths. A cross-sectional study done in Rajasthan, India disclosed that the 30.8 percent of the school youths currently use any tobacco products<sup>[20]</sup> and this figure was found 24 percent in Poland.<sup>[21]</sup> Likewise, in 2020,

nearly 7 of every 100 middle school students (6.7%) and about 23 of every 100 high school students (23.6%) reported current use of a tobacco product.<sup>[22,23]</sup> In addition, while compared to the results of our study, the study results conducted in the European region have indicated higher percentages of current smokers in Slovakia (24%) and Slovenia (22%), higher in Bulgaria (48%) and Czech Republic (20%).<sup>[24]</sup>

The late 1980s marked the beginning of a sea change in research and intervention on tobacco use by young people, when the first studies were published demonstrating the ease with which adolescents could purchase cigarettes. Since then, concern with the commercial availability of tobacco products to youth have grown, becoming deeply entrenched in both research and policy efforts.<sup>[25]</sup> Regarding to the access of tobacco products, this study showed that only 7.5 percent of tobacco products seller had refused to sell tobacco products to the youths, 61.2 percent of the school youth felt difficulty to buy tobacco products from the shop and 38.8 percent of the school youths easily received tobacco product from the shops. As commercial access to tobacco is a strong predictor tobacco use<sup>[26]</sup> and youth access restrictions appear likely to reduce young people's ability to use tobacco and supply others.<sup>[27]</sup> Previous study results suggest that youth access restrictions have directly reduced smoking prevalence and recommend more rigorous compliance checks and to reduce smoking initiation further.<sup>[28,29]</sup> However, another study suggests access restrictions create and reinforce perceptions that tobacco is difficult to obtain; these, in turn, denormalise smoking by reducing its perceived acceptability and prevalence.<sup>[30]</sup>

Our current study finding is based on probability sampling techniques and is conducted among school youths (13-17 yrs) of City area. We conducted this non-interventional cross-sectional school-based study in schools of City in Nepal and findings are based on Youth Tobacco Survey (YTS) questionnaire. Percent comparisons are done for descriptive analysis between the variables. Therefore, association and causality cannot be established regarding the risk factors through this study design. Future research might apply to different study design (i.e., interventional, longitudinal designs) to identify the contributing factors.

## V. Conclusions

School youths have false perception and unfavorable attitude about the tobacco and remarkable proportion of youths have used tobacco products. Despite relatively high awareness about smoking harms, effective educational communication is still highly needed to improve the level of comprehensive knowledge and an appropriate attitude regarding tobacco use among school youths in Nepal.

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## Abbreviations

CVD: Cardiovascular Disease; FCTC: Framework Convention on Tobacco Control; GTSS: Global Tobacco Surveillance System; GYTS: Global Youth Tobacco Survey; NCD: Non-Communicable Disease; NHRC: Nepal Health Research Council; SPSS: Statistical Package for Social Sciences; YTS: Youth Tobacco Survey; WHO: World Health Organization

## Availability of data and materials

The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

## Competing interests

The authors have no competing interests to disclose.

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