

# Prevalence of Substances Use among Youths in Selected Ward of Gadhi Rural Municipality, Sunsari, Nepal: A Descriptive Cross-sectional Study

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## Abstract

**Background:** Tobacco and alcohol are the most prevalent substances in Nepal and their use is becoming a serious health problem. We aimed to find out the prevalence of substance use among youths and assess the association with selected demographic variables.

**Methods:** A descriptive cross-sectional study was conducted among 813 youths residing in Gadhi Rural Municipality, ward number 1. The youths were selected through total enumerative sampling and eligible candidates were interviewed using semi-structured questionnaires on substance use. Data were analyzed using descriptive and inferential statistics.

**Results:** Nearly 54% of the youths belonged to the age group 16-25 years and 51.2% were females. Tarai Janajati ethnic group represented 64.2%, and 99.8% were Hindu by religion. The prevalence of substance use was 26.4%. The majority of the youths (62.2%) had started the consumption of substances between the age of 13-20 years. Many (36.2%) had been using the substances for 6-10 years. Almost two-thirds (62.2%) had a family history of substance use. Curiosity was the main reason (29.7%) for the youths to consume the substance. Nearly 37% of the youths were found to be alcohol dependent. Age, sex, ethnicity, and income were significantly associated with substance use ( $p < 0.05$ ).

**Conclusion:** About one in every four youths was involved in substance use. In addition, it was more prevalent in male youths and the majority had started using substances at the age of 13 to 20 years.

**Keywords:** alcohol, substance use, tobacco, youth

Globally, substance use of products such as alcohol and cigarette has become a major public health concern with accompanying socio-economic problems. Substance use in youths is harmful leading to decreased academic performance<sup>1</sup>, increased risk of contracting Human Immunodeficiency Virus and other sexually transmitted diseases, or psychiatric disorders such as lethargy, hopelessness, insomnia, and depressive symptoms.<sup>2</sup>

A recent data shows that substance use remains a persistent and pressing problem for many youths.<sup>3</sup> According to the 2018 US national survey on drug use and

health, 2 in 5 young adults used an illicit drug in one year and more than one-third of the youths reported binge drinking [a pattern of drinking that brings a person's blood alcohol concentration to 0.08 g/dl or above] in one month.<sup>3</sup> Experimentation is the major reason for the use of most of the substances.<sup>4</sup> Several major determinants, for example, the policy on the availability of alcohol, have an impact on the levels and patterns of alcohol consumption.

Worldwide, tobacco use causes more than 7 million deaths per year.<sup>5</sup> Nearly all tobacco use begins during youth and progresses during young adulthood. Each day more than 3,200 children of age 18 or younger smoke their first cigarette. Nearly 9 out of 10 smokers start before the age of 18 years and almost all start smoking by age 26.<sup>6</sup> If smoking continues at the current rate, 1 out of every 13 children will ultimately die prematurely from a

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smoking-related illness.<sup>6</sup>

E-cigarettes have been the most commonly used tobacco product among youths since 2014. In 2020, 4.7% of middle school students reported using e-cigarettes in one month and nearly 7% of middle school students and 23% of high school students reported current use of a tobacco product.<sup>6</sup>

To date, only a few studies from Nepal have reported the prevalence of substance use among adolescents.<sup>7,8</sup> However, little is known about the Nepali youth population residing in the eastern region. Hence, we aimed to examine the prevalence of substance use among youths residing in Gadhi Municipality, as well as associations between substance use and selected socio-demographic variables.

## METHODS

This descriptive, cross-sectional study was conducted in ward number 1 of Gadhi Rural Municipality which is located in Sunsari District of province number 1 of Nepal. There are six wards and this ward was selected as per the feasibility of the researchers. A door-to-door survey was conducted and 813 youths were selected using the total enumerative sampling technique.

In Nepal, 16 years of age is considered a legal age to obtain citizenship. We enrolled youths who were between the age of 16-35 years. Those who were unable to hear or speak, unavailable on three consecutive visits during the data collection period, or refused to provide consent were excluded from the study.

A face-to-face interview technique was used to collect the information on substance use. A predefined questionnaire was used as the research instrument. It consisted of three sections. Section A consisted of the socio-demographic profile, section B was related to questions on substance use, and section C was on the Cutdown-Annoyed-Guilty-Eye-opener (CAGE) questionnaire. CAGE is a series of four questions used to check for possible alcohol dependency.<sup>9</sup> The questions were designed to be less obtrusive than directly asking someone if they had a problem with alcohol. Each question required a simple 'yes' or 'no' answer. Each 'yes' answer increases the chances that someone may have an alcohol dependency. Two or more positive answers suggest heavy alcohol use disorder. CAGE is a standardized tool and has demonstrated high test-retest reliability (0.80 - 0.95).<sup>9</sup>

Data was checked for completeness and entered in Microsoft Excel 2007 version and converted into Statistical Package for Social Sciences 11.5 version. Descriptive and inferential statistics were calculated at 95% confidence

interval and 5% permissible error. Descriptive statistics in the form of frequency and percentages were calculated. The Pearson's chi-square test or Fisher exact test was applied to find out the association between two variables.  $p$  values  $< 0.05$  were considered statistically significant.

## RESULTS

We approached 813 participants. The response rate was 100%. There was no missing data. The demography of the participants was as shown in table 1.

The prevalence of substance use in our study population was 26.45%. Substance use was more prevalent in males (64.6%). The majority (80.5%) of the youths used tobacco while 37.8% consumed alcohol. The majority (62.2%) had started using substances between the age of 13-20 years. Only 13% of the youths started using substances after 21 years of age. More than half of the substance users (57.6%) had not tried to stop substance use in the past twelve months. Forty-eight percent of respondents had never received an advice to quit substance use during any visit to the doctor or by any other health worker in the past twelve months. Most of the youths (75.5%) were using substances daily. Almost two-thirds of respondents (62.2%) had a family history of substance use. Curiosity (29.7%) was the main reason for the respondents to consume substances, followed by imitation (25.4%) and peer pressure (21.4%) (Table 2).

The response to the CAGE questionnaire showed nearly 37% of the substance users were dependent substance users (Table 3).

Substance use was significantly associated with income ( $p < 0.001$ ), gender ( $p = 0.001$ ), age ( $p = 0.004$ ), and ethnicity ( $p = 0.04$ ) (Table 4).

## DISCUSSION

Our study reported the majority (64.6%) of the substance users were male. This finding is supported by similar studies reporting 55 to 90 % of substance users as males.<sup>10,11</sup>

In our study, the majority of the youths (62.2%) were using tobacco products alone. Other studies have reported a lower prevalence of tobacco use (12% to 46%) in youths.<sup>8,12</sup> In our study 37.8% used alcohol. Our finding is similar to that of another study from Eastern Nepal, reporting a prevalence of 37% of youth as alcohol users.<sup>8</sup> Similarly, 39.4% of students of Goa, India also reported alcohol use.<sup>13</sup> A study on school adolescents in Ethiopia reported a lifetime prevalence of alcohol use as 40.9%.<sup>2</sup> The reason for the difference in tobacco and alcohol consumption

**Table 1.** Socio-demographic profile of the youths (n=813)

Characteristics	Frequency	Percentage	
Age group (y)	16-25 / 26-35	436 / 377	53.7 / 46.3
Gender	Female / Male	416 / 397	51.2 / 48.8
Ethnicity	Tarai Janajati	522	64.2
	Terai Madhesi Dalit	142	17.4
	Others	149	18.4
Religion	Hindu / Christian	811 / 2	99.8 / 0.2
Family type	Nuclear / Joint	441 / 372	54.3 / 45.7
Education	Illiterate	183	22.5
	Primary	128	15.8
	Secondary	365	44.8
	Higher secondary and above	137	16.9
Marital status	Married / Unmarried	514 / 299	63.2 / 36.8
Occupation	Service holder	116	14.2
	Daily wages	164	20.1
	Home maker	258	31.8
	Student	150	18.5
	Others	125	15.4
Income (NRs / month)	< 10,000	292	35.9
	10,000-20,000	483	59.4
	> 20,000	38	4.7
Substance (alcohol and / or tobacco) use	Yes/ No	215 / 598	26.45 / 73.55

**Table 2.** Characteristics of substance use among youths (n=215)

Questions asked	Options	Frequency	Percentage
What is your gender?	Male / Female	139 / 76	64.6 / 35.4
What type of substance are you using?	Alcohol	42	19.5
	Tobacco	134	62.2
	Both alcohol and tobacco	39	18.3
What was your age when you first started to use substances?	≤ 12 y	12	5.6
	13-20 y	134	62.2
	≥ 21 y	28	13.0
	Don't know	41	19.2
Have you tried to stop substance use?	Yes / No	91 / 124	42.4 / 57.6
Have you received any advice to quit substances from health personnel?	Yes / No	112 / 103	52.0 / 48.0
Are you using substances daily?	Yes / No	162 / 53	75.5 / 24.5
What is the duration of substance use?	< 1 y	29	13.6
	1-5 y	37	17.0
	6-10 y	78	36.2
	≥ 10 y	71	33.2
Do you have a family history of substance use?	Yes / No	134 / 81	62.2 / 37.8
What was the main reason for consuming substances?	Curiosity	64	29.7
	Release of tension	23	10.8
	Seeking pleasure	27	12.7
	Imitation	55	25.4
	Peer pressure	46	21.4

**Table 3.** Substance dependency based on CAGE Questionnaire (n=215)

Substance dependency (CAGE Score)	Frequency	Percentage
Yes ( $\geq 2$ )	79	36.7
No ( $< 2$ )	136	63.3

**Table 4.** Association of substance use with selected demographic characteristics

Characteristics	Substance use		p value	
	Users	Non-users		
Age group (y)	16-25 / 26-35	97 / 118	339 / 259	0.004
Gender	Male / Female	139 / 76	258 / 340	0.001
Ethnicity	Terai janajati / Others	166 / 49	417 / 181	0.04
Education	Illiterate / Literate	56 / 159	127 / 471	0.15
Marital Status	Unmarried / Married	70 / 145	229 / 369	0.13
Income (NRs / month)	< 10000	95	197	< 0.001
	10,000-20,000	100	383	
	> 20,000	20	18	

patterns may be due to differences in culture, ethnicity and the population selected for the study.

An interesting finding of our study was that the majority (62.2%) reported their age of starting substance use as 13-20 years. Similar to our findings, 67.14% of young adults started to consume alcohol before the age of 18 years in Mangalore, India.<sup>14</sup> Another study from India found the age of initiation of tobacco use as 19 years of age.<sup>10</sup> A similar study also reported the age of initiation of alcohol and tobacco use was 17 years of age.<sup>12</sup>

We found that 62.2% had a family history of substance use. A similar finding was also reported in Eastern Nepal.<sup>8</sup> Another study reported that 67.5% of youths had a family history of alcohol use which was especially seen in their fathers.<sup>13</sup>

In our study, the majority (29.7%) reported curiosity as the main reason followed by imitation (25.4%) and peer pressure (21.4%) for using substances. A study in Mangalore, India reported 58.5% of people started to consume alcohol to try something new, while 31.8% due to peer pressure.<sup>14</sup> Interestingly, 32% of males reported thrill or adventure as the main reason, and 28% of male students and 13% of female students reported peer pressure as a reason for alcohol consumption.<sup>13</sup> In a study from south India, 96.9% reported peer pressure while 39% reported mass media to influence their consumption of alcohol.<sup>15</sup>

Our study has some limitations. All the youths interviewed in this study were from the rural region of only one ward and hence this finding cannot be generalized. Secondly, environmental factors and substance availability were not covered in this paper.

The results of the study will help the health personnel in conducting awareness programs among youths residing in the community through a better understanding of various factors associated with substance use. A large-scale study on substance use among youths residing in the rural areas of Nepal is recommended. A focused group discussion on various factors associated with substance use can be done and followed by counseling sessions which can be recommended among youths.

## CONCLUSION

About one in every four youths was involved in substance use. In addition, it was more prevalent in male youths and the majority had started using substances at 13 to 20 years of age.

## DECLARATIONS

**Ethics approval and consent to participate:** Ethical approval obtained from the Institutional Review Committee, B. P. Koirala Institute of Health Sciences (BPKIHS). Written informed consent taken from each participant before enrollment.

**Consent for publication:** Not applicable

**Availability of data and materials:** The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request. All relevant data are within the manuscript and its supporting information files.

**Competing interest:** None

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**Authors' contributions:** SS: concept, design, data acquisition, manuscript preparation. NP: design, manuscript preparation. SL: data handling, manuscript review/ editing. RS: data acquisition, data analysis. All authors have read and approved the final manuscript.

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