

Prevalence and Determinants of Tobacco, Alcohol, and Substance Abuse Among Male Youth in Dehradun, Uttarakhand: A Cross-Sectional Study

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ABSTRACT

Background: Youth are particularly vulnerable to health risk behaviors such as tobacco, alcohol, and illicit drug use, which can have long-term consequences on physical, emotional, and social well-being. Understanding the patterns and determinants of substance use is crucial for developing targeted interventions. **Objective:** To assess the prevalence and determinants of tobacco use, alcohol consumption, and illicit drug abuse among male youth aged 15–24 years in rural and urban areas of Dehradun district, Uttarakhand. **Methods:** This community-based cross-sectional study was conducted over six months and included 1,800 male participants selected using multistage stratified random sampling from higher secondary schools, colleges, and urban/rural communities. A modified version of the Youth Risk Behavior Surveillance System (YRBSS) and Big Five Inventory was used. Data were analyzed using SPSS version 20 with descriptive and inferential statistics (Chi-square test, $p < 0.05$). **Results:** The prevalence of ever use of tobacco was 33.8%, current smoking 25.2%, and ever alcohol use 26.0%, with significantly higher rates among urban youth compared to rural ($p < 0.0001$). Early initiation before 18 years was common across substances. Illicit drug use was reported by 6.3% of participants, with opium being the most frequently abused substance. Significant associations were observed with place of residence, age group, academic profile, and personality traits (extroversion, lack of direction, neuroticism). **Conclusion:** Substance abuse is alarmingly prevalent among male youth in Dehradun, with urban residence, older age, and certain personality traits as key risk factors. These findings underscore the urgent need for comprehensive, youth-focused health promotion strategies, regular screening, and psychosocial interventions.

KEYWORDS

Substance Abuse; Youth; Health Risk Behavior; Tobacco

INTRODUCTION

The most active and productive segment of a society is its youth. The number and strength of a nation's youth population determines its capacity and potential for growth. Developing nations with sizable youth populations are thought to have enormous growth potential if they make investments in the health and education of their youth. (1) The world's greatest youth population is found in India. Youth between the ages of 15 and 29 make up 27.2% of the population in 2021, according to a Ministry of Health and Family Welfare research. By 2036, that percentage is predicted to drop to 22.7 percent, but 345 million people still fall into this age range. (1) The World Health Organization (WHO) and UNICEF emphasize that investing in the healthy development of youth is among the most critical actions a nation can take, warning that neglect in this area can lead to significant economic and social consequences (2).

In the Asian region, young people face many of the same health challenges as their counterparts in developed countries. Factors such as the widespread availability of tobacco, alcohol, and other psychoactive substances, a growing burden of chronic illnesses, and persistent issues like poverty and conflict pose serious obstacles to youth development. These concerns have brought youth health into the global spotlight in recent years (3).

The term "substance abuse" describes the dangerous or damaging use of psychoactive substances, such as alcohol and narcotics, which can result in issues with one's social life, physical health, emotions, and career. Given that people of all demographics utilize different substances, substance misuse is one of India's biggest public health issues. Compared to the overall population, children and adolescents are more likely to abuse substances. (4) The typical age at which people start using drugs is 18, and the prevalence of substance usage is 32.8%. 75.5% of

substance users started using drugs before they reached adolescence. Commonly used substances include alcohol (26.1%), tobacco (26.4%), and cannabis (9.5%). (3) According to the Global Youth Tobacco Survey (2019), 9% of men and 7% of women smoke tobacco. (2) According to NFHS-5, alcohol use is 0.3% among Indian women and 18.8% among men. Commonly used substances include alcohol (26.1%), tobacco (26.4%), and cannabis (9.5%). (3) According to NFHS-5, alcohol use is 0.3% among women and 25.5% among men in Uttarakhand, and 1.3% among women and 18.8% among men in India. (5) The reason for this is that youth is a period of experimentation and identity formation. Adolescents view substance misuse as a means of escape from a life of suffering or as a coping mechanism for the daily cycles of sexual, physical, and mental abuse. (4) This study is aligned with the objective to find out the prevalence and determinants of tobacco, alcohol and other substance abuse in youth in district of Dehradun, Uttarakhand.

MATERIAL & METHODS

Study Design: This was a cross-sectional study conducted over six months in both rural and urban areas of District Dehradun, following approval from the Institutional Ethics Committee.

Sample Size: The sample size was determined assuming a 50% prevalence of health risk behaviors among youth, with a 95% confidence interval and 5% precision. Accounting for a 10% non-response rate, the calculated sample size was 1,760, which was rounded up to 1,800 for the final study.

Sampling Technique: A multistage stratified random sampling method was employed to select the participants. The study included 1,800 male youths aged 15–24 years, with an equal number of participants drawn randomly from higher secondary schools, professional and non-professional colleges, and from both rural and urban areas to ensure balanced representation and meaningful comparisons.

Methodology : Male youth were surveyed using a self-administered questionnaire (YRBSS and The Big Five Inventory, both of which were modified to meet local needs) following an explanation of the study's objectives, participant consent, and approval from the education department's appropriate authorities. The risk behaviours we selected from the YRBSS for our study included tobacco use, alcohol and other substance abuse in addition to sociodemographic and personality traits. To maintain the confidentiality, participants were allowed to sit separately and the survey was kept unanimous.

Data management: Following the data collection, the Statistical Package for Social Sciences (SPSS) version 20 software was used to enter the data.

Interpretation and analysis of obtained results was carried out using Software (SPSS version 20), and statistical tests of significance were applied. Application of descriptive methods was done for all variables. Chi-square test was applied for establishing association and comparing the data between rural – urban, higher-secondary – professional degree – non-professional degree, age-groups (15-19 years and 20-24 years) and various personality traits (extrovert – introvert, conscientious – lack of direction and neuroticism –

emotional stability) for all categorical variables. Qualitative data was presented in the form of frequency and percentages. Quantitative data (e.g. age) was expressed in the form of means. Statistically significant level was assumed at $p < 0.05$.

RESULTS

Out of the 1,800 male youth participants, the mean age was 18.68 ± 2.26 years. The majority of participants belonged to the 15–19 years age group, were Hindu by religion (92.1%), residing at home (71.3%), and belonged to nuclear families (61.8%).

Table 1: Distribution of subjects by tobacco use and area of residence

VARIABLE	RURAL (N ₁ =900)	URBAN (N ₂ =900)	TOTAL (N=1800)
EVER USE OF TOBACCO			
Yes	267 (29.7%)	342 (38.0%)	609 (33.8%)
No	633 (70.3%)	558 (62.0%)	1191 (66.2%)
$\chi^2 - 13.959, df - 1, p\text{-value} < 0.0001^*$			
Ever Smoker			
Yes	199 (22.1%)	305 (33.9%)	504 (28.0%)
No	701 (77.9%)	595 (66.1%)	1296 (72.0%)
$\chi^2 - 30.963, df - 1, p\text{-value} < 0.0001^*$			
Current Smoker			
Yes	174 (19.3%)	278 (30.9%)	452 (25.2%)
No	726 (80.7%)	622 (69.1%)	1348 (74.8%)
$\chi^2 - 31.953, df - 1, p\text{-value} < 0.0001^*$			
Form of Tobacco use			
	n1=267	n2=342	n=609
Smoking	173 (64.8%)	305 (89.2%)	478 (78.5%)
Smokeless	68 (25.5%)	37 (10.8%)	105 (17.2%)
Both	26 (9.7%)	00 (0.0%)	26 (4.3%)
$\chi^2 - 63.328, df - 2, p\text{-value} < 0.0001^*$			
Age at Initiation of Tobacco			
11-12yrs	04 (1.5%)	02 (0.6%)	06 (0.9%)
13-14yrs	33 (12.4%)	64 (18.7%)	97 (15.9%)
15-17yrs	168 (62.9%)	200 (58.5%)	368 (60.5%)
18yrs or older	62 (23.2%)	76 (22.2%)	138 (22.7%)
$\chi^2 - 5.626, df - 3, p\text{-value} > 0.131$			
Ever Tried To Quit Tobacco			
Yes	89 (33.3%)	44 (12.9%)	133 (21.8%)
No	178 (66.7%)	298 (87.1%)	476 (78.2%)
$\chi^2 - 36.799, df - 1, p\text{-value} < 0.0001^*$			
Family history of Tobacco use			
Yes	149 (55.8%)	237 (69.3%)	386 (63.4%)
No	118 (44.2%)	105 (30.7%)	223 (36.6%)
$\chi^2 - 11.762, df - 1, p\text{-value} < 0.001^*$			
Daily Smoker			
	n1=174	n2=278	n=452
Yes	159 (91.4%)	241 (86.7%)	400 (88.5%)
No	15 (8.6%)	37 (13.3%)	52 (11.5%)
$\chi^2 - 2.311, df - 1, p\text{-value} > 0.128$			
No. of days Smoked During Past 30 Days			
1-5days	01 (0.6%)	08 (2.9%)	09 (1.9%)
6-9days	02 (1.1%)	06 (2.2%)	08 (1.8%)
10-19days	12 (6.9%)	23 (8.3%)	35 (7.7%)
20-30days	159 (91.4%)	241 (86.6%)	400 (88.6%)
$\chi^2 - 12.621, df - 5, p\text{-value} < 0.027^*$			
No. of Cigarettes Smoked per Day (Past 30 days)			
<1 or 1 cigarette	00 (0.0%)	21 (7.6%)	21 (4.6%)
2-5 cigarettes	107 (61.5%)	131 (47.1%)	238 (52.7%)
6-10 cigarettes	53 (30.5%)	65 (23.4%)	118 (26.1%)
>10 cigarettes	14 (8.0%)	61 (21.9%)	75 (16.6%)
$\chi^2 - 31.851, df - 3, p\text{-value} < 0.0001^*$			

Overall 33.8% of the subjects reported ever use of tobacco, the prevalence being higher in urban (38.0%) than rural (29.7%) area. The prevalence of ever smoking

was found to be 28.0% (33.9% in urban and 22.1% in rural area) whereas for current smoking the prevalence was 25.2%. Prevalence was higher in urban (30.9%) than rural (19.3%) area. Amongst all the 609 ever tobacco user (33.8%), 77.3% reported using tobacco earlier than the age of 18yrs. Out of the 609 ever users of tobacco, 78.5% reported use of tobacco in smoking form followed by smokeless form (17.2%) whereas 4.3% reported use of tobacco in both smoke and smokeless form. 21.8% of the ever tobacco users tried to quit tobacco. 63.4% of ever smokers were found to be having any member in the family who had a history of tobacco use. Family history was found to be more among urban (69.3%) as compared to rural youth (55.8%). (Table 1)

Amongst the current smokers (25.2%), 88.5% reported smoking daily. 16.6% of the current smokers reported smoking of more than 10 cigarettes a day. Majority of the current smokers (48.5%) reported buying cigarette from a store followed by 40.7% who made someone else buy it for them. All of these differences in health risk behaviours related to the use of tobacco were found to be statistically significant ($p < 0.05$) for urban and rural study participants except for age of initiation of tobacco and daily smoking. (Table 1)

Table 2: Distribution of subjects by alcohol and illicit drug abuse and area of residence

VARIABLE	RURAL (N ₁ =900)	URBAN (N ₂ =900)	TOTAL (N=1800)
EVER CONSUMPTION OF ALCOHOL			
Yes	184 (20.4%)	284 (31.6%)	468 (26.0%)
No	716 (79.6%)	616 (68.4%)	1332 (74.0%)
$\chi^2 - 28.875, df - 1, p\text{-value} < 0.0001 *$			
CURRENT CONSUMPTION OF ALCOHOL (last 12 months)			
Yes	158 (17.6%)	196 (21.8%)	354 (19.7%)
No	742 (82.4%)	704 (78.2%)	1446 (80.3%)
$\chi^2 - 5.078, df - 1, p\text{-value} < 0.024 *$			
ALCOHOL CONSUMPTION IN LAST 30 DAYS (at least one drink of alcohol)			
Yes	158 (17.6%)	196 (21.8%)	354 (19.7%)
No	742 (82.4%)	704 (78.2%)	1446 (80.3%)
$\chi^2 - 5.078, df - 1, p\text{-value} < 0.024 *$			
AGE AT INITIATION OF ALCOHOL			
	n1=184	n2=284	n=468
13-14yrs	13 (7.1%)	24 (8.5%)	37 (7.9%)
15-17yrs	141 (76.6%)	221 (77.8%)	362 (77.4%)
18yrs or older	30 (16.3%)	39 (13.7%)	69 (14.7%)
$\chi^2 - 1.324, df - 3, p\text{-value} > 0.723$			
FAMILY HISTORY OF ALCOHOL CONSUMPTION			
Yes	143 (77.7%)	163 (57.4%)	306 (65.4%)
No	41 (22.3%)	121 (42.6%)	162 (34.6%)
$\chi^2 - 20.376, df - 1, p\text{-value} < 0.0001 *$			
FREQUENCY OF ALCOHOL CONSUMPTION (last 30 days)			
	n1=158	n2=196	n=354
1-5days	131 (82.9%)	191 (97.4%)	322 (90.9%)
6-9days	22 (13.9%)	00 (0.0%)	22 (6.3%)
10-19days	04 (2.5%)	00 (0.0%)	04 (1.1%)
20-30days	01 (0.6%)	05 (2.6%)	06 (1.7%)
$\chi^2 - 71.285, df - 4, p\text{-value} < 0.0001 *$			
BINGE DRINKING OF ALCOHOL (last 30 days)			
Yes	74 (46.8%)	95 (48.5%)	169 (47.7%)
No	84 (53.2%)	101 (51.5%)	185 (52.3%)
$\chi^2 - 0.094, df - 1, p\text{-value} > 0.760$			
EVER ABUSE OF ILLICIT DRUG			
	n1=900	n2=900	n=1800
Yes	38 (4.2%)	75 (8.3%)	113 (6.3%)
No	862 (95.8%)	825 (91.7%)	1687 (93.7%)
$\chi^2 - 12.927, df - 1, p\text{-value} < 0.0001 *$			
EVER INJECTED DRUG THROUGH INTRAVENOUS ROUTE			

Yes	09 (1.0%)	14 (1.5%)	23 (1.3%)
No	891 (99.0%)	886 (98.4%)	1777 (98.7%)

$\chi^2 - 1.101, df - 1, p\text{-value} > 0.294$

TYPE OF ILLICIT DRUG ABUSED

	n1=38	n2=75	n=113
Marijuana	14 (36.8%)	25 (33.4%)	39 (34.5%)
Cocaine	03 (7.9%)	07 (9.3%)	10 (8.8%)
LSD (Lysergic acid diethylamide)	00 (0.0%)	04 (5.3%)	04 (3.5%)
Prescription drug eg. Cough syrup etc	01 (2.6%)	02 (2.7%)	03 (2.7%)
Opium	20 (52.7%)	37 (49.3%)	56 (49.5%)

Prevalence of ever consumption of alcohol was 26.0%.

Urban respondents (31.6%) were found to be higher at risk as compared to their rural counterpart (20.4%). The difference in the prevalence of ever consumption of alcohol was found to be statistically significant ($p < 0.0001$) for rural and urban study subjects. Out of all these ever alcoholics (26.0%), 85.3% reported initiation of alcohol consumption before the age of 18yrs. (Table 2)

Significant difference between rural and urban participants ($p < 0.024$) for current consumption of alcohol was found showing an overall prevalence of 19.7% (21.8% in urban and 17.6% in rural population). Out of these, 47.7% were found to be binge drinkers of alcohol. More than half of ever alcoholic reported having history of alcoholism in their family and the difference in the history of alcoholism among rural and urban participants was found to be statistically significant ($p < 0.0001$). (Table 2)

Prevalence of ever abuse of illicit drug was found to be 6.3% with statistically significant difference in rural and urban study participants ($p < 0.0001$). Prevalence was found to be almost two times higher in urban area than among rural subjects. The maximum abused substance found to be was Opium (49.5%) followed by marijuana (34.5%), cocaine (8.8%), LSD (3.5%) and prescription drugs (2.7%). 1.3% of total study subjects accepted injecting illicit drugs through intra-venous route. (Table 2)

Table 3: Distribution of subjects by tobacco use and academic profile

VARIABLE	HIGHER SECONDARY (N ₁ =600)	PROFESSIONAL COURSE (N ₂ =600)	NON-PROFESSIONAL DEGREE (N ₃ =600)	TOTAL (N=1800)
EVER USE OF TOBACCO				
Yes	212 (35.3%)	201 (33.5%)	196 (32.7%)	609 (33.8%)
No	388 (64.7%)	399 (66.5%)	404 (67.3%)	1191 (66.2%)
$\chi^2 - 0.998, df - 2, p\text{-value} > 0.607$				
EVER SMOKER				
Yes	160 (26.7%)	171 (28.5%)	173 (28.8%)	504 (28.0%)
No	440 (73.3%)	429 (71.5%)	427 (71.2%)	1296 (72.0%)
$\chi^2 - 0.810, df - 2, p\text{-value} > 0.667$				
CURRENT SMOKER				
Yes	110 (18.3%)	169 (28.2%)	173 (28.8%)	452 (25.2%)
No	490 (81.7%)	431 (71.8%)	427 (71.2%)	1348 (74.8%)
$\chi^2 - 22.056, df - 2, p\text{-value} < 0.0001 *$				
FORM OF TOBACCO USE				

	n1=212	n2=201	n3=196	n=609
Smoking	149 (70.3%)	164 (81.6%)	165 (84.2%)	478 (78.5%)
Smokeless	52 (24.5%)	30 (14.9%)	23 (11.7%)	105 (17.2%)
Both	11 (5.1%)	07 (3.5%)	08 (4.1%)	26 (4.3%)
χ² – 14.204, df - 4, p-value < 0.007 *				
AGE AT INITIATION OF TOBACCO				
11-12yrs	04 (1.9%)	02 (1.0%)	00 (0.0%)	06 (0.9%)
13-14yrs	44 (20.8%)	29 (14.4%)	24 (12.2%)	97 (15.9%)
15-17yrs	159 (75.0%)	105 (52.2%)	104 (53.1%)	368 (60.5%)
18yrs or older	05 (2.3%)	65 (30.7%)	68 (34.7%)	138 (22.7%)
χ² – 79.569, df - 6, p-value < 0.0001 *				
EVER TRIED TO QUIT TOBACCO				
Yes	93 (43.9%)	22 (10.9%)	18 (9.2%)	133 (21.8%)
No	119 (56.1%)	179 (89.1%)	178 (90.8%)	476 (78.2%)
χ² – 92.634, df - 2, p-value < 0.0001 *				
FAMILY HISTORY OF TOBACCO USE				
Yes	118 (55.7%)	134 (66.7%)	134 (68.4%)	386 (63.4%)
No	94 (44.3%)	67 (33.3%)	62 (31.6%)	223 (36.6%)
χ² – 8.479, df - 2, p-value < 0.014 *				
DAILY SMOKER				
	n1=110	n2=169	n3=173	n=452
Yes	73 (66.4%)	161 (95.3%)	166 (95.9%)	400 (88.5%)
No	37 (33.6%)	08 (4.7%)	07 (4.1%)	52 (11.5%)
χ² – 69.985, df - 2, p-value < 0.0001 *				
NO. OF DAYS SMOKED DURING PAST 30 DAYS				
1-5days	08 (7.3%)	01 (0.6%)	00 (0.0%)	09 (1.9%)
6-9days	05 (4.5%)	02 (1.2%)	01 (0.6%)	08 (1.8%)
10-19days	24 (21.8%)	05 (3.0%)	06 (3.5%)	35 (7.7%)
20-30days	73 (66.4%)	161 (95.2%)	166 (95.9%)	400 (88.6%)
χ² – 233.006, df - 10, p-value < 0.0001 *				
NO. OF CIGARETTES SMOKED PER DAY (past 30 days)				
< or = 1 cigarette	10 (9.1%)	05 (2.9%)	06 (3.5%)	21 (4.6%)
2-5 cigarettes	54 (49.1%)	90 (53.3%)	94 (54.3%)	238 (52.7%)
6-10 cigarettes	28 (25.5%)	45 (26.6%)	45 (26.0%)	118 (26.1%)
>10 cigarettes	18 (16.4%)	29 (17.2%)	28 (16.2%)	75 (16.6%)
χ² – 6.689, df - 6, p-value > 0.351				

The prevalence of ever use of tobacco was found to be highest in higher secondary (35.3%) followed by professional degree (33.5%) and non-professional degree (32.7%). Whereas the prevalence of ever smoking was found to be highest in non-professional (28.8%) followed by professional degree (28.5%) and higher secondary (26.7%). The prevalence of current smoking was found to be statistically significant for academic profile (p<0.0001), being more amongst non-professional degree (28.8%) followed by professional degree (28.2%) and higher

secondary (18.3%). The maximum used form of tobacco was found to be smoking in all the three strata viz. higher secondary, professional and non-professional degree followed by smokeless tobacco whereas some of the study subjects (5.1%, 4.1% and 3.5% in higher secondary, non-professional and professional degree respectively) also reported use of both the forms of tobacco. These findings were found to be highly significant statistically (p<0.007). (Table 3)

Amongst these ever users of tobacco, the minimum age of initiation of tobacco was found to be 11yrs. Majority of the respondents initiated use of tobacco even before the age of 18yrs in higher secondary (97.7%) followed by professional degree (67.6%) and non-professional degree (65.3%). This association between age of initiation of tobacco and academic profile of the subjects was found to be statistically significant (p<0.0001). (Table 3)

Out of all the 609 (33.8%) ever tobacco users, majority of the subjects who tried to quit tobacco belong to higher secondary (43.9%) followed by professional degree (10.9%) and non-professional degree (9.2%) being highly significant statistically (p < 0.0001). (Table 3)

Out of all the 452 (25.2%) study subjects who were found to be at risk for smoking currently, majority of the respondents who smoked more than 10 cigarettes a day were found to be in professional degree (17.2%) followed by higher secondary (16.4%) and non-professional degree (16.2%). Majority (88.5%) of these current smokers were found to be smoking daily being highest among non-professional degree (95.9%) followed by professional degree (95.3%) and higher secondary (66.4%). These findings for daily smoking were found to be statistically significant (p<0.0001). Majority of the respondents in all the three strata reported buying cigarettes from a store (48.5%) as mean of getting the cigarettes followed by someone else bought cigarettes for them (40.7%) and borrowing (9.3%). (Table 3)

Table 4 Distribution of subjects by alcohol and illicit drug abuse and academic profile

VARIABLE	HIGHER SECONDARY (N1=600)	PROFESSIONAL COURSE (N2=600)	NON-PROFESSIONAL COURSE (N3=600)	TOTAL (N=1800)
EVER CONSUMPTION OF ALCOHOL				
Yes	133 (22.2%)	167 (27.8%)	168 (28.0%)	468 (26.0%)
No	467 (77.8%)	433 (72.2%)	432 (72.0%)	1332 (74.0%)
χ² – 6.878, df - 2, p-value < 0.032 *				
CURRENT CONSUMPTION OF ALCOHOL (last 12 months)				
Yes	77 (12.8%)	137 (22.8%)	140 (23.3%)	354 (19.7%)
No	523 (87.2%)	463 (77.2%)	460 (76.7%)	1446 (80.3%)
χ² – 26.647, df - 2, p-value < 0.0001 *				
ALCOHOL CONSUMPTION IN LAST 30 DAYS (at least one drink of alcohol)				
Yes	77 (12.8%)	137 (22.8%)	140 (23.3%)	354 (19.7%)
No	523 (87.2%)	463 (77.2%)	460 (76.7%)	1446 (80.3%)
χ² – 26.647, df - 2, p-value < 0.0001 *				
AGE AT INITIATION OF ALCOHOL				
	n1=133	n2=167	n3=168	n=468

13-14yrs	19 (14.3%)	08 (4.8%)	10 (6.0%)	37 (7.9%)
15-17yrs	114 (85.7%)	131 (78.4%)	117 (69.6%)	362 (77.4%)
18yrs or older	00 (0.0%)	28 (16.8%)	41 (24.4%)	69 (14.7%)
χ² – 44.135, df - 6, p-value < 0.0001 *				
FAMILY HISTORY OF ALCOHOL CONSUMPTION				
Yes	87 (65.4%)	109 (65.3%)	110 (65.5%)	306 (65.4%)
No	46 (34.6%)	58 (34.7%)	58 (34.5%)	162 (34.6%)
χ² – 0.002, df - 2, p-value > 0.999				
NO. OF DAYS CONSUMED ALCOHOL (last 30 days)				
	n1=77	n2=137	n3=140	n=354
1-5days	75 (97.4%)	120 (87.6%)	127 (90.7%)	322 (90.9%)
6-9days	01 (1.3%)	11 (8.0%)	10 (7.1%)	22 (6.3%)
10-19days	01 (1.3%)	01 (0.7%)	02 (1.4%)	04 (1.1%)
20-30days	00 (0.0%)	05 (3.7%)	01 (0.7%)	06 (1.7%)
χ² – 39.177, df - 8, p-value < 0.0001 *				
BINGE DRINKING OF ALCOHOL (last 30 days)				
Yes	35 (45.5%)	66 (48.2%)	68 (48.6%)	169 (47.7%)
No	42 (54.5%)	71 (51.8%)	72 (51.4%)	185 (52.3%)
χ² – 0.210, df - 2, p-value > 0.900				
EVER ABUSE OF ILLICIT DRUG				
	n1=600	n2=600	n3=600	n=1800
Yes	37 (6.2%)	35 (5.8%)	41 (6.8%)	113 (6.3%)
No	563 (93.8%)	565 (94.2%)	559 (93.2%)	1687 (93.7%)
χ² – 0.529, df - 2, p-value > 0.768				
EVER INJECTED DRUG THROUGH INTRAVENOUS ROUTE				
Yes	07 (1.2%)	12 (2.0%)	04 (0.7%)	23 (1.3%)
No	593 (98.8%)	588 (98.0%)	596 (99.3%)	1777 (98.7%)
χ² – 4.316, df - 2, p-value > 0.116				
TYPE OF ILLICIT DRUG ABUSED				
	n1=37	n2=35	n3=41	n=113
Marijuana	10 (27.0%)	11 (31.4%)	18 (43.9%)	39 (34.5%)
Cocaine	04 (10.8%)	04 (11.4%)	02 (4.9%)	10 (8.8%)
LSD	00 (0.0%)	00 (0.0%)	04 (9.8%)	04 (3.5%)
Prescription drug eg. Cough syrup etc	02 (5.4%)	00 (0.0%)	01 (2.4%)	03 (2.7%)
Opium	21 (56.8%)	20 (57.2%)	16 (39.0%)	57 (49.5%)

Ever consumption of alcohol was found to be statistically associated with academic profile of the respondents (p<0.032). The highest prevalence of ever consumption of alcohol was found to be amongst non-professional degree respondents (28.0%), closely followed by professional degree (27.8%) and higher secondary (22.2%). Similarly, the current prevalence was found to be highest in non-professional degree (23.3%) followed by professional (22.8%) and higher secondary (12.8%). These findings were found to be highly significant statistically (p<0.0001). (Table 4)

Amongst all the 468 (26.0%) ever alcoholics, the minimum age of initiation of alcohol was found to be 13yrs in all the three strata whereas the majority of the respondents initiated consumption of alcohol in the age group of 15-17yrs in all the three strata (85.7%, 78.4% and 69.6% in higher secondary, professional degree and non-professional degree respectively), findings being statistically highly significant (p<0.0001). (Table 4)

Out of all the 354 current alcoholics, the habit of binge drinking was found to be maximum in non-professional degree (48.6%) followed by professional degree (48.2%) and higher secondary (45.5%). Majority of the respondents in all the three strata reported buying from a liquor store as a maximum used mean of getting the alcohol followed by buying at a bar and being bought or given by someone else. (Table 4)

The prevalence of ever abuse of illicit drug was found to be maximum in non-professional degree (6.8%) followed by higher secondary (6.2%) and professional degree (5.8%). Majority of the subjects who ever injected illicit drug through intravenous route was found to be among professional degree (2.0%) followed by higher secondary (1.2%) and non-professional degree (0.7%). The maximum used illicit drug was found to be opium and other drugs in all the three strata followed by marijuana, cocaine, LSD and prescription drugs. (Table 4)

Table 5 Distribution of tobacco use & age-group

VARIABLE	AGE GROUP		TOTAL (N=1800)
	15-19yrs (n1=1191)	20-24yrs (n2=609)	
EVER USE OF TOBACCO			
Yes	390 (32.7%)	219 (36.0%)	609 (33.8%)
No	801 (67.3%)	390 (64.0%)	1191 (66.2%)
χ² – 1.861, df - 1, p-value > 0.173			
EVER SMOKER			
Yes	304 (25.5%)	200 (32.8%)	504 (28.0%)
No	887 (74.5%)	409 (67.2%)	1296 (72.0%)
χ² – 10.698, df - 1, p-value < 0.001 *			
CURRENT SMOKER			
Yes	252 (21.2%)	200 (32.8%)	452 (25.2%)
No	939 (78.8%)	409 (67.2%)	1348 (74.8%)
χ² – 29.242, df - 2, p-value < 0.0001 *			
FORM OF TOBACCO USE			
Smoking	286 (24.0%)	192 (31.5%)	478 (26.5%)
Smokeless	86 (7.2%)	19 (3.1%)	105 (5.8%)
Both	18 (1.5%)	08 (1.3%)	26 (1.4%)
χ² – 18.530, df - 2, p-value < 0.0001 *			
AGE AT INITIATION OF TOBACCO			
	n1=390	n2=219	n=609
11-12yrs	06 (1.5%)	00 (0.0%)	06 (0.9%)
13-14yrs	71 (18.2%)	26 (11.8%)	97 (15.9%)
15-17yrs	252 (64.6%)	116 (53.0%)	368 (60.5%)
18yrs or older	61 (15.6%)	77 (35.2%)	138 (22.7%)
χ² – 33.629, df - 3, p-value < 0.0001 *			
EVER TRIED TO QUIT TOBACCO			
Yes	115 (29.5%)	18 (8.2%)	133 (21.8%)
No	275 (70.5%)	201 (91.8%)	476 (78.2%)
χ² – 37.164, df - 1, p-value < 0.0001 *			
FAMILY HISTORY OF TOBACCO USE			
Yes	230 (59.0%)	156 (71.2%)	386 (63.4%)
No	160 (41.0%)	63 (28.2%)	223 (36.6%)
χ² – 9.081, df - 1, p-value < 0.003 *			
DAILY SMOKER			
	n1=252	n2=200	n=452
Yes	208 (82.5%)	192 (96.0%)	400 (88.5%)
No	44 (17.5%)	08 (4.0%)	52 (11.5%)
χ² – 19.843, df - 1, p-value < 0.0001 *			

NO. OF DAYS SMOKED DURING PAST 30 DAYS			
1-5days	09 (3.6%)	00 (0.0%)	09 (1.9%)
6-9days	07 (2.8%)	01 (0.5%)	08 (1.8%)
10-19days	28 (11.1%)	07 (3.5%)	35 (7.7%)
20-30days	208 (82.5%)	192 (95.5%)	400 (88.6%)
$\chi^2 - 61.346, df - 5, p\text{-value} < 0.0001 *$			
NO. OF CIGARETTES SMOKED PER DAY (past past 30 days)			
< or = 1 cigarette	16 (6.3%)	05 (2.5%)	21 (4.6%)
2-5 cigarettes	127 (50.4%)	111 (55.5%)	238 (52.7%)
6-10 cigarettes	63 (25.0%)	55 (27.5%)	118 (26.1%)
>10 cigarettes	46 (18.3%)	29 (14.5%)	75 (16.6%)
$\chi^2 - 5.321, df - 3, p\text{-value} > 0.150$			

Prevalence of ever use of tobacco was found to be highest among 20-24yrs age group (36.0%) as compared to the prevalence of 15-19yrs age group (32.7%). Similarly, the prevalence of ever smoking was also found to be highest among 20-24yrs age group respondents (32.8%) followed by 15-19yrs (25.5%). These findings for ever smoking were found to be statistically significant ($p < 0.001$). The prevalence of current smokers was also found to be highest among 20-24yrs age group (32.8%), findings being statistically significant ($p < 0.0001$). Predominantly in both the age-groups, smoking was found to be the maximum used form of tobacco followed by smokeless. Some of the respondents (1.5% and 1.3% respectively in 15-19 and 20-24yrs age groups) also reported use of both smoke and smokeless form of tobacco. (Table 5)

Out of all 609 ever smokers, majority of the respondents among the age-group 15-19yrs initiated smoking before the age of 18yrs (84.4%) as compared to 20-24yrs age – group (64.8%). Out of ever smokers, majority of the respondents who tried to quit tobacco were found to be in the age-group of 15-19yrs (29.5%) as compared to 8.2% of 20-24yrs age group. Majority of the current smokers were found to be daily smokers and this habit was found to be prevalent among 20-24yrs age group (96.0%). These findings were found to be highly significant statistically ($p < 0.0001$). (Table 5)

Majority of the respondents were found to be smoking 2-5 cigarettes per day in both the age groups. However, smoking more than 10 cigarettes a day was found to be more prevalent among 15-19yrs age group. Majority of the respondents reported buying cigarette from store as a most common mean of getting cigarette followed by bought by someone else and borrowing. (Table 5)

Table 6: Distribution of subjects by alcohol and illicit drug abuse and age-group

VARIABLE	AGE GROUP		TOTAL (N=1800)
	15-19yrs (n1=1191)	20-24yrs (n2=609)	
Ever consumption of alcohol			
Yes	273 (22.9%)	195 (32.0%)	468 (26.0%)
No	918 (77.1%)	414 (68.0%)	1332 (74.0%)
$\chi^2 - 17.335, df - 1, p\text{-value} < 0.0001 *$			
Current consumption of alcohol (last 12 months)			
Yes	192 (16.1%)	162 (26.6%)	354 (19.7%)
No	999 (83.9%)	447 (73.4%)	1446 (80.3%)
$\chi^2 - 28.013, df - 1, p\text{-value} < 0.0001 *$			
Alcohol consumption in last 30 days (at least one drink of alcohol)			

Yes	192 (16.1%)	162 (26.6%)	354 (19.7%)
No	999 (83.9%)	447 (73.4%)	1446 (80.3%)
$\chi^2 - 28.013, df - 1, p\text{-value} < 0.0001 *$			
Age at initiation of alcohol			
	n1=273	n2=195	n=468
13-14yrs	32 (11.7%)	05 (2.6%)	37 (7.9%)
15-17yrs	218 (79.9%)	144 (73.8%)	362 (77.4%)
18yrs or older	23 (8.4%)	46 (23.6%)	69 (14.7%)
$\chi^2 - 30.416, df - 3, p\text{-value} < 0.0001 *$			
Family history of alcohol consumption			
Yes	177 (64.8%)	129 (66.2%)	306 (65.4%)
No	96 (35.2%)	66 (33.8%)	162 (34.6%)
$\chi^2 - 0.087, df - 1, p\text{-value} > 0.768$			
No. Of days consumed alcohol (last 30 days)			
	n1=192	n2=162	n=354
1-5days	180 (93.8%)	142 (87.7%)	322 (90.9%)
6-9days	08 (4.2%)	14 (8.6%)	22 (6.3%)
10-19days	02 (1.0%)	02 (1.2%)	04 (1.1%)
20-30days	02 (1.0%)	04 (2.5%)	06 (1.7%)
$\chi^2 - 6.424, df - 4, p\text{-value} > 0.170$			
Binge drinking of alcohol (last 30 days)			
Yes	93 (48.4%)	76 (46.9%)	169 (47.7%)
No	99 (51.6%)	86 (53.1%)	185 (52.3%)
$\chi^2 - 0.082, df - 1, p\text{-value} > 0.775$			
EVER ABUSE OF ILLICIT DRUG			
	n1=1191	n2=609	n=1800
Yes	70 (5.9%)	43 (7.1%)	113 (6.3%)
No	1121 (94.1%)	566 (92.9%)	1687 (93.7%)
$\chi^2 - 0.959, df - 1, p\text{-value} > 0.327$			
Ever Injected Illicit Drug Through The Intravenous Route			
Yes	17 (1.4%)	06 (1.0%)	23 (1.3%)
No	1174 (98.6%)	603 (99.0%)	1777 (98.7%)
$\chi^2 - 0.624, df - 1, p\text{-value} > 0.429$			
Type of illicit drug abused			
	n1=70	n2=43	n=113
Marijuana	23 (32.8%)	16 (37.2%)	39 (34.5%)
Cocaine	07 (10.0%)	03 (7.0%)	10 (8.8%)
LSD	02 (2.9%)	02 (4.7%)	04 (3.5%)
Prescription drug eg. Cough syrup etc	03 (4.3%)	00 (0.0%)	03 (2.7%)
Opium	35 (50.0%)	22 (51.1%)	57 (49.5%)

Prevalence of ever consumption of alcohol was found to be highest among 20-24yrs (32.0%) as compared to 15-19yrs age-group (22.9%). Similarly, current consumption of alcohol was found to be prevalent among 20-24yrs (26.6%) as compared to 15-19yrs (16.1%). These findings were found to be statistically highly significant ($p < 0.0001$). (Table 6)

Among all the 468(26.0%) ever alcoholics, the age of initiation found to be most prevalent was 15-17 years, however the minimum age of initiation was found to be 13 years among both the age-groups i.e. 15-19 and 20-24yrs. Binge drinking was reported most dominantly by 15-19yrs age group (48.4%). (Table 6)

Prevalence of ever abuse of illicit drug was found to be highest among youth in the age-group of 20- 24 years (7.1%) as compared to 20- 24 years (5.9%). Whereas, the

prevalence of abuse of illicit drugs through the intravenous route was found to be highest among the 15-19-year age group. The majority of the respondents reported opium abuse in both the age-groups (51.1% in 20-24 years and 50.0% in 15-19 yrs age group), followed by marijuana, cocaine, LSD, and prescription drugs. Prescription drug abuse was found to be prevalent only in the age group 15-19 years. Risk-taking is a common behaviour among youth as their cognitive abilities and physical development are still developing. Due to these immature and underdeveloped cognitive levels, youth are not able to perceive the consequences of health risk behaviour (12). These health risk behaviours have multi-factorial causation and hence, a multi-faceted approach is needed to be applied to tackle these health risk behaviours. The present study attempts to estimate the prevalence of various health risk behaviours among male youth (aged 15-24 yrs) population of District Dehradun and to identify its determinants. (Table 6)

DISCUSSION

A total of 1800 male youth in the age group of 15-24 years were included in the study. There were 900 participants from rural and 900 from urban area. Within these two broad strata, there was equal number of participants in various educational institutes (higher secondary school, professional college and non-professional college). In the present study, behaviors that contribute to tobacco use and alcohol and other drug use as major health risk behaviours were taken into consideration. Comparison studies between rural and urban youth population regarding various health risk behaviours could not be traced in published literature. However, studies are available for rural and urban population separately. Tobacco is the leading preventable cause of morbidity and mortality and a large numbers of studies have been carried out to investigate tobacco use among youth in India. In this study, Overall 33.8% of the subjects reported ever use of tobacco, the prevalence being higher in urban (38.0%) than rural (29.7%) area. The prevalence of ever smoking was found to be 28.0% (33.9% in urban and 22.1% in rural area) whereas for current smoking the prevalence was 25.2%. Prevalence was higher in urban (30.9%) than rural (19.3%) area. Amongst all the 609 ever tobacco users (33.8%), 77.3% reported using tobacco earlier than the age of 18 yrs. Out of the 609 ever users of tobacco, 78.5% reported use of tobacco in smoking form followed by smokeless form (17.2%) whereas 4.3% reported use of tobacco in both smoke and smokeless form. 21.8% of the ever tobacco users tried to quit tobacco. 63.4% of ever smokers were found to be having any member in the family who had a history of tobacco use. Family history was found to be more among urban (69.3%) as compared to rural youth (55.8%). Amongst the current smokers (25.2%), 88.5% reported smoking daily. Out of all, 16.6% of the current smokers reported smoking of more than 10 cigarettes a day. Majority of the current smokers (48.5%) reported buying cigarette from a store followed by 40.7% who made someone else buy it for them. All these health risk behaviours related to the use of tobacco were found to be statistically significant ($p < 0.05$) for place of residence except age of initiation of tobacco and daily smoking.

Synonymous findings were reported by Sinha D N et al in a review article on the findings of GATS – SEAR (6), prevalence of tobacco use being highest in Bangladesh (43.3%), followed by India (34.6%) and Thailand (27.2%). Yet in another study by Sharma R et al in Delhi (7), the prevalence of tobacco use was found to be less (20.9%) than our study. A total of 16.0% students reported having ever tried cigarette or bidi smoking. The prevalence of current smoking was 7.1%. Exactly 10% of the students reported having ever used smokeless forms of tobacco. Our findings regarding health risk caused due to use of tobacco were in contrast to that of NFHS-4 in Uttarakhand (8). It revealed that a higher number (43.7%) of the respondents reported use of tobacco, prevalence being higher in urban (46.6%) as compared to rural (39.4%). Again a slightly higher number (33.7%) of the participants reported quitting tobacco in any of its form. These variations in the findings may be due to different age – groups in both the studies as NFHS-4 included adult age group (15-49 years) whereas our study included only youth age group (15-24 years).

In another contrast study by Yadav JK et al in Nellore, Andhra Pradesh (9), the prevalence of ever users (55.4%) and current users (34%) of tobacco was found to be higher than our study. Most commonly used tobacco product among current users was cigarette (59.4%). Most of the current users (51.8%) of tobacco were aware of adverse effects of tobacco.

These findings differ from a study by Kelkar DS et al in Pune (10) where prevalence of tobacco consumption was found to be quite lower (4.2%) than our study. The variations that were found may be due to the difference in age-group of the participants included in the study. In another study by Narain R et al in Noida (11), very low prevalence of tobacco use was reported as compared to our study reason being the study sample was school going children whereas our study included both school and college going students. In their study any kind of tobacco use was found in 11.2% students; 8.8% were 'ever smokers (including current smokers)', 4.6% were 'ever tobacco chewers (including current chewers', 3.7% were 'exclusive smokers' and 2.5% were 'exclusive tobacco chewers'.

Our study findings are slightly higher than those of the WHO country report for India on global tobacco epidemic 2015. This report claims current tobacco use to be 19.0% and current smoking prevalence 5.8% whereas current smokeless tobacco use was found to be 11.1%. Similarly in a contrast study by Raphael L et al in Thrissur, Kerala (12), a low (16.2%) prevalence of smoking was reported out of which a lesser number of subjects (34.4%) reported daily smoking.

Habit of daily smoking was found to be much less (35.3%) than our study in a study by Raphael L et al in Kerala (12). This may be due to study participants in our study were an assortment of school and college going youth whereas their study only included college going youth as study subjects.

Similarly in a study by Kumar C et al in Tirupati, Andhra Pradesh (13), lower prevalence (12.7%) of tobacco was found as compared to our study.

A combination of factors such as weak enforcement of tobacco control policies, continuing affordability of

tobacco products and inadequate knowledge about the harmful effects of tobacco products were all contributing to the seriousness of the problem among youth.

Alcohol and illicit drug abuse among youth is of concern to both researchers and policy makers. Regarding health risks caused due to alcohol and other illicit drug abuse, significant findings were obtained in our study. Alcohol use during early adulthood can lead to poor performances in academics, as well as social and emotional disturbances and often leads to involvement in high risk behaviors and impairment in psychosocial development. Prevalence of ever consumption of alcohol was 26.0%. Urban respondents (31.6%) were found to be at higher risk as compared to their rural counterpart (20.4%). Ever consumption of alcohol was found to be statistically significant ($p < 0.0001$) for place of residence. Out of all these ever alcoholics (26.0%), 85.3% reported initiation of alcohol consumption before the age of 18yrs. Significant association ($p < 0.024$) of current consumption of alcohol was found with place of residence of study subjects showing an overall prevalence of current consumption of alcohol 19.7% (21.8% in urban and 17.6% in rural population). Out of these, 47.7% were found to be binge drinkers of alcohol. 65.4% of ever alcoholic reported having history of alcoholism in their family. Family history of alcoholism was found to be highly statistically significant for place of residence ($p < 0.0001$). Prevalence of ever abuse of illicit drug was found to be 6.3% with a statistically significant association with place of residence ($p < 0.0001$). Prevalence was found to be almost two times higher in urban area than among rural subjects. The highest abuse among illicit drugs was of Opium and other drugs (49.5%) followed by marijuana (34.5%), cocaine (8.8%), LSD (3.5%) and prescription drugs (2.7%). 1.3% of total study subjects accepted injecting illicit drugs through intra-venous route. These findings mirror the results of a study by Nagalingam S et al in Chennai (14) who estimated that nearly 26% of the study participants had the habit of drinking alcohol. They reported marijuana abuse to be 17.3%.

The prevalence of alcohol consumption was much higher in our study as compared to a study by Mohanan P et al in Udupi, Karnataka (15) who reported prevalence of alcohol consumption as 5.85%. Similarly, in another study by Cacodcar J A et al in Goa (16), it was found that a higher number (50.3%) of study participants consumed alcohol in lifetime; Current consumption of alcohol was reported by lesser number (7%) of the participants whereas binge drinking was found among only 1.6% of the participants. Among the study subjects, 8.0% of study participants had a first drink of alcohol at the age of 13-14 years as compared to our study where it was 7.9%. In their study less number (0.6%) of the participants had drugs ever as compared to our study (5.9%). These variations may have occurred due to different socio-cultural beliefs in both the study areas. The habit increased as the age advanced. Ever alcoholism was higher in their study may be due to easy availability, affordability and accessibility of alcohol in Goa.

Similarly, in another study, Raphael L et al in Thrissur, Kerala (12) found that 31.8% were having the habit of substance abuse of which a higher number (27.4%) of the

subjects reported consuming alcohol whereas a lesser number (2.98%) of the participants reported abuse of narcotic drugs.

Psychoactive substance abuse at early age increases risk of dependence in adult life. Accidents, violence and sexual risk behaviour occur more frequently among youth after consumption of any substance. 39.8% of the respondents who had experienced sexual intercourse reported use of alcohol or other illicit drug before the act of sexual intercourse.

There are important patterns in these health risk behaviours by place of residence. For almost all health risk behaviors, there is a pattern of substantially higher prevalence in urban areas compared with rural areas. These differences may reflect easier access to alcohol and drugs in urban areas, different cultural attitudes in urban vs. rural areas, or a greater ability to engage in these behaviors discretely in urban settings.

Substantial variation by age, academic profile, and place of residence were found amongst youth. Engagement in these health risk behaviours were consistently much higher for older youth (20-24years age-group) than younger (15-19 years age-group), higher for college (professional and non-professional degree) students than school (higher secondary) students and higher in urban areas than in rural areas. Although no studies regarding comparison of health risk behaviours with that of academic profile and age-group of youth could be traced in the published literature, the findings in our study were found to be statistically significant. It was seen in our study that the health risk behaviours were prevalent among professional and non-professional degree students as compared to their higher –secondary school counterparts. Similarly, a significant association of HRBs with age-group was found in the present study.

Psychosocial correlates of various health risk behaviours were also explored for the first time in Indian context in this study. Personality traits (extroversion, lack of direction and neuroticism) were turned out to be important determinants of HRBs among youth in the present study.

HRBs were found more among extroverts as compared to introverts as extrovert personality trait includes gregariousness, forcefulness, energetic, adventurous, enthusiastic and warmth. These facets of personality may have led to the HRBs. Similarly 'lack of direction' as a personality trait is explained by inefficiency, unorganized, carelessness, stubbornness and show-off. All these traits may be the reason for high prevalence of HRBs among lack of direction personality trait as compared to their conscientious counterparts. Neuroticism personality trait comprises of tense, irritable, not-contented or depressed, impulsive and vulnerable behaviour hence explains well the higher prevalence of HRBs among their emotionally stable counterparts.

For all youth sub-groups, the findings pointed towards substance abuse, sexual health and unintentional injuries related health risk behaviours as key behaviours deserving of focused attention as these have direct health implications and should be carefully paid attention to formulate appropriate interventions. Other risk behaviours which appeared relatively low also remain a

source of concern as these also have deteriorating effects on health and development of youth.

Awareness regarding various HRBs was found to be more among urban respondents as compared to their rural counterparts, because urban youth have access to various media (social, electronic and print). Similarly, professional degree respondents were found to be more aware regarding HRBs as compared to their non-professional degree and higher-secondary school counterparts. It was also seen in the present study that as the age increases, increases the awareness regarding various HRBs, may be due to exposure to various mass media with increase in age.

In our study, awareness regarding health hazards of tobacco and alcohol was found to be among 82.4% and 78.6% of study subjects respectively. Our study subjects were found less aware regarding these health consequences of substance abuse as compared to those in a study by Raphael L *et al* in Kerala (12), where 96.1% of the students were aware of health consequences of substance abuse. These differences in the awareness may be due to variation in the age-group of both the studies. Also Kerala being the highest literacy bearer state, the exposure to media and awareness is more there. The findings of our study highlight that the health services and standalone awareness programmes do not seem to bring in the necessary positive change in youth behaviour associated with tobacco, alcohol and other substance abuse. This study provides a bird's eye view of youths' engagement in a range of health risk behaviors related with tobacco, alcohol and other substance abuse.

CONCLUSION

According to this community-based study, male youth in District Dehradun had a high prevalence of alcohol, tobacco, and other substance misuse. Our results point to the necessity of a cumulative strategic plan, particularly for young people.

RECOMMENDATION

This plan can involve regular screenings followed by parent and adolescent counseling. It is important to implement health programs that specifically educate instructors and students about the negative impacts of alcohol, tobacco, and other substance addiction.

LIMITATION OF THE STUDY

Limitation of the present study is that it could not describe causal association as independent interview was required to find out the reasons for various health risk behaviours and it was not feasible being an epidemiological study including a larger sample.

AUTHORS CONTRIBUTION

All authors have contributed equally.

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Nil

CONFLICT OF INTEREST

There are no conflicts of interest.

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DECLARATION OF GENERATIVE AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors haven't used any generative AI/AI assisted technologies in the writing process.

REFERENCES

1. Edmund Rice Education Australia. Youth Plus Director's Introduction. Available at <http://www.youthplus.edu.au/schools-services-details/youth-schools-network/youth-plus-directors-introduction.html/>. Accessed Sep 15 2015.
2. Knowles JC, Behrman JR. The economic returns to investing in youth in developing countries: A review of the literature. Washington, DC: World Bank; 2005 Jan.
3. Phongsavan P, Olatunbosun-Alakija A, Havea D, Bauman A, Smith BJ, Galea G, Chen J. Health behaviour and lifestyle of Pacific youth surveys: a resource for capacity building. Health Promotion International. 2005 Mar 14;20(3):238-48.
4. Press Information Bureau. Government of India. Ministry of Youth Affairs and Sports, Speech of Shri Sarbananda Sonowal at "Youth Pravasi Bharatiya Divas" at Gandhinagar, Gujarat. Available at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=114397/>. Accessed Sep 5 2015.
5. The Hindu. India is set to become the youngest country by 2020. The Hindu. Available at <http://www.thehindu.com/news/national/india-is-set-to-become-the-youngest-country-by-2020/article4624347.ece/>. April 17, 2013/ Accessed Sep 2 2015.
6. WHO. Highlights of Global Adult Tobacco Survey, GATS-2 India 2016-17. Available at http://www.searo.who.int/india/media-centre/events/2017/gats2_india.pdf?ua=1. Accessed July 15 2017.
7. Sharma R, Grover VL, Chaturvedi S. Tobacco use among adolescent students and the influence of role models. Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine. 2010 Apr;35(2):272-75.
8. MoHFW(Gol). International Institute of Population Sciences, Mumbai. National Family Health Survey-4 (2015-16). Uttarakhand
9. Yadav JK, Vijaya K, Kiran ER. Prevalence of Use of Tobacco Among Males Aged 15 Years And Above In Nellore City, Andhra Pradesh. Nat J Res Com Med 2013;2(1):1-78.
10. Kelkar DS, Patwardhan M, Joshi VD. Prevalence and causalities of tobacco consumption (TC) among adolescents: a cross sectional study at Pune. The Journal of the Association of Physicians of India. 2013 Mar;61(3):174-8.
11. Narain R, Sardana S, Gupta S, Sehgal A. Age at initiation & prevalence of tobacco use among school children in Noida, India: A cross-sectional questionnaire based survey. The Indian journal of medical research. 2011 Mar;133(3):300-307.
12. Raphael L, Raveendran R, Sajna MV. Prevalence and determinants of substance abuse among youth in Central Kerala, India. Int J Community Med Public Health 2017;4(3):747-51.
13. Kumar C, Prabhu GR. Prevalence of Drug Abuse Among Male Youth in Tirupati, AP. Indian Journal of Community Medicine. 2006;31(4):281
14. Nagalingam S, Arumugam B, Khanna R, Krishnasamy S. Appraisal of risky behaviour of youth populace: a vulnerable venture. International Journal of Community Medicine And Public Health. 2017 Feb 3;3(5):1195-9.
15. Mohanan P, Swain S, Sanah N, Sharma V, Ghosh D. A study on the prevalence of alcohol consumption, tobacco use and sexual behaviour among adolescents in urban areas of the Udipi District, Karnataka, India. Sultan Qaboos University Medical Journal. 2014 Feb;14(1):e104-e112.
16. Cacodcar JA, Colaco S. Prevalence of Adolescent Health Risk Behavior in Rural Goa. Indian Journal of Youth & Adolescent Health. 2015 Aug 2;2(1&2):24-32.