

## Original article

# Pattern of alcohol use and smoking among analgesic misusers in urban young adults of East Sikkim

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## Abstract

**Background:** Behaviors that can have lifelong implications are often begun in adolescence and young adulthood. Two common health-risk behaviors that are frequently initiated are cigarette smoking and the alcohol consumption. Current alcohol and tobacco use (i.e., any use in the past month) is endorsed by 39% and 10% of adolescents, respectively.

**Aims and Objectives:** The aim of this study was to recognize and describe the pattern of alcohol use and smoking among analgesic misusers in urban young adults of East Sikkim.

**Methods:** A pre-devised validated case record form was administered to n=700 subjects. Data was statistically analyzed using Statistical Package of Social Sciences software.

**Results:** Statistically significant results were obtained for alcohol lifetime use in years ( $\chi^2 = 18.556$ ,  $df=2$ ,  $P<0.001$ ), smoking past month ( $\chi^2 = 14.430$ ,  $df=2$ ,  $P=0.001$ ), smoking lifetime use ( $\chi^2 = 14.430$ ,  $df=2$ ,  $P=0.001$ ).

**Conclusion:** Both alcohol consumption and smoking are reported significantly in analgesic misusers as compared to non-misusers.

**Keywords:** Alcohol, misuse, Sikkim

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## Introduction

Behaviors that can have lifelong implications are often begun in adolescence and young adulthood. Two common health-risk behaviors that are frequently initiated are cigarette smoking and the alcohol consumption. The long-term negative health consequences of these behaviors have been well documented and it is beginning to emerge in the literature that health-risk behaviors are also occurring among youth and adults with chronic health conditions <sup>[1]</sup>.

Current alcohol and tobacco use (i.e., any use in the past month) is endorsed by 39% <sup>[2]</sup> and 10% <sup>[3]</sup> of adolescents, respectively. Social motives and peer influences are primary drivers of alcohol and tobacco use among healthy youth and social functioning is impaired among youth with chronic

pain, adolescents with chronic pain might use substances to a lesser extent than youth without chronic pain <sup>[1]</sup>. A large body of research suggests that adolescents who participate in one health-risk behavior are more likely to engage in additional risk behaviors <sup>[4, 5, 6]</sup>. According to the CDC <sup>[7]</sup>, 75% of high school students report drinking alcoholic beverages at least once. The co-occurrence of alcohol consumption and cigarette smoking documented in the general adolescent population is now being reported among chronically ill youth <sup>[8]</sup>. Recent studies have shown that adolescents' engagement in health-risk behaviors may be influenced by the social pressures from peers and by their parent role models <sup>[9, 10, 11]</sup>. Specifically, children who have parents and friends who smoke cigarettes are more likely than others to smoke

themselves<sup>[10]</sup>. Low parental monitoring has been associated with high school students' reports of smoking cigarettes, using other tobacco products, drinking alcohol.

### **Aims and Objectives**

This study was aimed to understand the pattern of alcohol use and smoking among analgesic misusers in urban young adults of East Sikkim.

### **Material and Methods**

**Selection of study subjects:** Youth is defined as men and women in the age group of 15 – 24 years;<sup>[12]</sup> and young adults are considered up to the age of 40 years.<sup>[13]</sup> In this study only young adults (15 – 40 years of age) of either sex was enrolled as participants as this population were less likely to have co-morbid age-related chronic medical conditions requiring regular analgesic use; more likely to develop adverse consequences of regular analgesic use like gastrointestinal and renal adverse events as well as dependence over their lifetime; and this population was the best group for prevention measures.

**Sampling Method & Size:** Current population of Gangtok is approximately 98,658,<sup>[14]</sup> i.e., approximately 1,00,000. According to current population pyramid of India approximately 35% of the total population belongs to the age group of 15 – 40 years.<sup>[15]</sup> Therefore, in Gangtok, an approximate 35,000 people are expected to be in the age group of 15 – 40. Prevalence of regular analgesic use in age groups above 14 years has been reported in the range of 7.2 to 34.8% in European studies. Therefore, considering a younger age group of our study population (15 – 40 years) we assume an estimated prevalence of 5% analgesic misuse with an acceptable lower limit of 2% in both rural and urban sites. To detect this prevalence at a 95% confidence interval the study enrolled n=700 subjects at the urban Gangtok site. Further stratification according to age groups and

gender was carried out during recruitment and stratification was adjusted according to actual percentage of population according to gender and age groups (15 – 20 years, 21 – 30 years and 31 – 40 years).

The sampling strategy involved identification of sampling locations in each site. Sampling locations mostly included schools (age group 15 – 17 years), colleges (age group 18 – 22 years) and households where people in the age group of 15 – 40 years commonly aggregate and live. The study did not involve only a household survey, but assumed a more ethnographic approach. Any subject satisfying the age criteria for inclusion was eligible for the study.

**Instruments:** The source document was a validated case record form constituting the following:

- A generic socio-demographics section (e.g., age, gender, education, ethnicity etc.), which is a 21-item questionnaire including questions on alcohol use and smoking.
  - A generic analgesic misuse questionnaire, comprising measures of non-steroidal and opioid analgesic use without medical advice, which is a 21-item questionnaire including information on treatment of pain and ease of availability of analgesics.
- The socio-demographic questionnaire on population survey on analgesic use was used for analgesic users and comprised of the few following questions:
- Lifetime use of alcohol and smoking by the respondent.
  - Past 30 days use of alcohol and smoking by the respondent.
  - Age of first use of alcohol and smoking by the respondent.

### **Ethical Issues**

The study consisted of only interviews and subsequent data analysis from questionnaires and

did not involve any patient contact, medical, behavioral, therapeutic or instrumental intervention. The study protocol, instruments/questionnaire, informed consent was duly approved by Institutional Ethics Committee (IEC).

**Design and Study Sites:** The study was a cross-sectional general population survey. Proposed study site included an urban area in East Sikkim. The selected urban site was Gangtok and its surroundings, East Sikkim, the most important city in Sikkim. Identification as urban site was based on criteria provided by Urban Development and Housing Department, Government of Sikkim, Gangtok.

The study was conducted during a period of 2013 to 2015. A total of n=700 subjects were screened during this period. They are the target population of the study.

**Data Collection:** Data collection was based on personal interviews with the participants. Before interview, the participants were explained about the nature and objective of the study and the nature of questions involved. Confidentiality was ensured and it was also mentioned that they have the freedom of refraining from any response. The respondents were also briefed about the need of their honest answers in order to get correct

information. The interview was initiated only after the participant understood, voluntarily agreed and signed (or left thumb impression) the informed consent form. Informed consent was obtained from competent person. The informed consent form was originally made in English language and then was translated to Hindi and Nepali language for a better understanding of the participants. They were given a copy of the signed informed consent. During interview local Nepali language, Hindi or English was used as per the convenience of the participant. Questionnaire on socio-demographic profile; i.e., information on religion, ethnicity, age, gender, marital status, average monthly income, status of education, occupation etc. from each of the study participants were recorded on the printed paper questionnaire form. Participants were not given any monetary or other compensation in lieu of participation in the study.

**Statistics:** Data was fed in Statistical Package for the Social Sciences (SPSS), version 20, IBM Corp. Before analysis all entries were checked and cleaned by ignoring or putting missing value codes for inconsistent or ambiguous values. Chi-square was run for nonparametric data to show the significant difference, if any. Level of significance was set at  $p \leq 0.05$ .

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## Research Bib

**Results**

**Table 1: Descriptive statistics for the pattern of alcohol use along with smoking among participants (n=700)**

Variables	Range	Mean (SD)
Age of respondents (years)	15-40	28.58 (7.01)
Age of First Use, Alcohol (years)	16-37	23.54 (4.27)
Alcohol use, past month (drink/day/week)	01-23	1.99 (2.24)
Alcohol, lifetime use in years (exclude last 30 days)	01-15	4.79 (3.59)
Age of First Smoking (years)	17-36	23.22 (3.06)
Smoking, past month (no. of times)	01-23	7.15 (4.78)
Smoking, lifetime use (exclude last 30 days)	01-17	3.54 (3.37)

**Table 2: Alcohol use and smoking between misusers and non-misusers of analgesics**

Characteristics	Analgesic Misuse (%)	No Misuse (%)	P
<b>Alcohol use, past month (drink/day/week)</b>			$\chi^2 = 5.031, df=2, P=0.081$
No use	45 (49.45)	355 (58.29)	
Less than 3drinks/day/week	34 (37.36)	211(34.65)	
More than or equal to 3drinks/day/week	12 (13.19)	43 (7.06)	
<b>Alcohol, lifetime use in years (exclude last 30 days)</b>			$\chi^2 = 18.556, df=2, P<0.001$
No use	45 (49.45)	355 (58.29)	
1 year to 10 years	25 (27.47)	203 (33.34)	
More than 10 years	21 (23.08)	51 (8.37)	

<b>Smoking, past month (no. of times)</b>			
None	44 (48.35)	407 (66.83)	$\chi^2 = 14.430, df=2,$ <b>P=0.001</b>
Less than 10 times	21 (23.08)	113 (18.56)	
10 times and more	26 (28.57)	89 (14.61)	
<b>Smoking, lifetime use (exclude last 30 days)</b>			
No use			$\chi^2 = 46.434, df=4,$ <b>P&lt;0.001</b>
1 year to less than 3 years	56 (61.54)	394 (64.70)	
3 years to less than 8 years	06 (6.59)	105 (17.24)	
8 years to less than 15 years	12 (13.19)	83 (13.63)	
15 years and more	09 (9.89)	24 (3.94)	
	08 (8.79)	03 (0.49)	

**Table 3: Alcohol use and smoking between subjects having pain and no pain**

Characteristics	Subjects with pain (%)	No pain (%)	P
<b>Alcohol use, past month (drink/day/week)</b>			$\chi^2 = 1.910, df=2,$ <b>P=0.385</b>
No use	246 (49.45)	154 (59.46)	
Less than 3drinks/day/week	156 (35.37)	89 (34.36)	
More than or equal to 3drinks/day/week	39 (8.84)	16 (6.18)	
<b>Alcohol, lifetime use in years (exclude last 30 days)</b>			$\chi^2 = 1.092, df=2,$ <b>P=0.579</b>
No use	247 (56.00)	153 (59.07)	
1 year to 10 years	145 (32.88)	83 (32.05)	
More than 10 years	49 (11.12)	23 (8.88)	
<b>Smoking, past month (no. of times)</b>			$\chi^2 = 4.537, df=2,$ <b>P=0.103</b>
None	272 (61.68)	179 (69.11)	
Less than 10 times	88 (19.95)	46 (17.76)	

10 times and more	81 (18.37)	34 (13.13)	$\chi^2 = 3.468, df=4, P=0.483$
<b>Smoking, lifetime use (exclude last 30 days)</b>			
No use	280 (63.49)	170 (65.64)	
1 year to less than 3 years	66 (14.97)	45 (17.37)	
3 years to less than 8 years	63 (14.29)	32 (12.36)	
8 years to less than 15 years	23 (5.22)	10 (3.86)	
15 years and more	09 (2.04)	02 (0.77)	

[Table 1] shows history and pattern of use of alcohol and smoking. mean age of first use of alcohol was 23.54 (SD=4.27), mean age of first smoking was 23.22 (SD=3.06).

Mean analgesic of use in the past one month was 7.20 (SD=4.77), mean alcohol use in the past one month was 1.79 (SD=1.04), mean incidence of smoking in the past one month was 7.15 (SD=4.78). Mean lifetime use of analgesic was 2.61(SD=2.25), mean lifetime use of alcohol was 4.79 (SD=3.58), mean lifetime smoking was 3.54 (SD=3.37)

[Table 2] shows the alcohol use and smoking between misusers and non-misusers of analgesics. Alcohol use past month ( $\chi^2 = 5.031, df=2, P=0.081$ ), alcohol lifetime use in years ( $\chi^2 = 18.556, df=2, P<0.001$ ), Smoking past month ( $\chi^2 = 14.430, df=2, P=0.001$ ), smoking lifetime use ( $\chi^2 = 14.430, df=2, P=0.001$ ).

[Table 3] shows the alcohol use and smoking between subjects having pain and no pain. Alcohol use past month ( $\chi^2 = 1.910, df=2, P=0.385$ ), alcohol lifetime use in years ( $\chi^2 = 1.092, df=2, P=0.579$ ), smoking past month ( $\chi^2 = 4.537, df=2, P=0.103$ ), smoking lifetime use ( $\chi^2 = 3.468, df=4, P=0.483$ ).

**Discussion**

Significant statistical differences were observed in lifetime alcohol use in years, smoking in the past month and lifetime smoking. A study by Dart reported that the effects of analgesic use were higher in those who consume alcohol. [16] Another survey of drug/psychoactive substance use among adolescent students in a south-west province of China reported that the life-time use of at least 15 times during in any one month of tobacco 6.3%, non-steroid anti-inflammatory drugs (NSAID) 2.9%, alcohol 2.9%, which showed that drug misuse has appeared among adolescent students with lifetime consumption of alcohol and smoking. [17]

Another study conducted at a medical center in the Pacific Northwest showed that the rates of current alcohol use were significantly lower among youth with chronic pain (7.4%) as compared with youth without chronic pain (22%). However rates of tobacco use were similar between groups [18]. The results of this study showed that alcohol use in the past month in subjects with pain (44.21%) and those without pain (40.54%), which is almost comparable between the two groups. Also tobacco use between groups were seen to be almost similar

with a slight increase in subjects with pain (38.32%) and (30.89%) without pain.

### Conclusion

Lifetime alcohol use and smoking could be correlated with the climatic and geographical location of Sikkim. However, both alcohol consumption and smoking are reported significantly in analgesic misusers as compared to

non-misusers. Youth with chronic pain are at risk for continued pain in the future, and thus may incur higher risk over time for substance use-related problems. Further research is needed to identify psychosocial and pain-related risk factors for the maintenance of substance use among individuals with chronic pain.

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