

## ■ Original Articles

# Substance use and associated diseases among injured persons

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## Abstract

**Introduction:** Alcohol use and alcohol use disorders are associated with increased risks of mortality and morbidity from injury and violence. Chronic health conditions are taken as risk factors for injury as well as the consequences of the injury. Very few studies have noted about diseases among injured person. **Objectives:** To find out the use of alcohol among injured persons and to explore the associated diseases among injured persons. **Methods:** In this study 10% of the households of Dharan i.e. 1398 household were selected as the sample size. A systematic random sampling was used to select the 10% household from each ward. A pre-tested questionnaire was used to collect demographic information and information related to injuries to the persons suffered from injuries, alcohol intake prior to injury and whether they suffered from any chronic diseases or not. **Results:** Among 299 injured persons, 20.4% of them used to take alcohol. It was noted that 5.4% consumed alcohol prior to the injury. About 8 % injured persons were hypertensive and 7.7% of them suffered from visual problem. About 10 % of the major injured persons were suffering from physical disability. **Conclusion:** Consumption of alcohol, chronic health problems like hypertension, visual impairment and physical disability are common among the injured persons.

**Keywords:** injuries, alcohol, associated diseases.

## Introduction

Alcohol has a range of psycho-motor and cognitive effects that increase accident risk on reaction times, cognitive processing, coordination, vigilance, vision and hearing. It is estimated that alcohol is responsible for 1.5 per cent of all deaths and 3.5 per cent of the total disability adjusted life years (DALYs).<sup>1</sup> Raised risk of accident can also remain some time even after drinking. Alcohol is responsible for trauma deaths and nonfatal injuries.<sup>2-4</sup>

Alcohol use and alcohol use disorders are associated with increased risks of mortality and morbidity from injury and violence and alcohol is a factor in the need for emergency care world wide.<sup>5, 6</sup> Alcohol consumption plays a role in motor vehicle accidents

and assaults and half of trauma patients are injured under the influence of alcohol.<sup>7-9</sup> Alcohol consumption has been found to be a major risk factor for both intentional and unintentional injuries in emergency department settings.<sup>10-12</sup>

A study among the injured drivers eastern region of Nepal found that 16.9% injured drivers had consumed alcohol.<sup>13</sup>

In a Norwegian study among drivers involved in fatal car accidents, showed that drivers (12%) died from natural causes, the main cause being acute cardiovascular disease and 7% death were due to serious cardiac disease and others being CNS pathology, diabetic complications.<sup>14</sup>

A hospital based study in western Nepal showed that 10 (17.2%) out of 58 motor cycles riders who got injured had consumed alcohol.<sup>15</sup>

Alcohol consumption and engagement in dangerous driving and violence related risk behaviours were the strongest predictors of injury status. Catastrophic

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injuries have major consequences that are so serious that survivors of these injuries require lifetime care and support. Many acute injuries are consequences of chronic diseases, and many acute injuries have chronic consequences.<sup>16</sup>

There are few studies about injury and co morbidities which are only related to fractures and osteoporosis. Osteoporosis increases risk of fractures of the hip, spine, humerus, forearm and wrist.<sup>17</sup> The combined lifetime risk for these fractures being treated clinically is about 40%, equivalent to the risk of cardiovascular disease.<sup>18</sup>

Accident is shown to occur among alcohol consumers. Very few studies have noted about diseases among injured person. Chronic conditions are known as risk factors for injury as well as the consequences of injury.

Objectives were to find out the use of alcohol among injured persons and to explore the associated diseases among them.

### Methodology

This was a community based cross-sectional study conducted during July 2004 to June 2005 in Dharan municipality, eastern region of Nepal. In this study 10% of the households of Dharan i.e. 1398

households were selected. A systematic random sampling was used to select the 10% household from each ward. House to house visits were done to include a total of 229 adult injured persons from the selected 1398 households.

Semi-structured questionnaires were used to collect information about smoking, smokeless tobacco, consumption of alcohol and illicit drugs, injuries, and diseases among the injured subjects. Verbal consent was taken prior to interview. Categorization of severity of injury was as 'minor' if resulting in less than 30 days of lost of activity and 'major' if resulting in 30 or more days of lost activity.<sup>19</sup>

Analysis was done using SPSS version 11.5 was used for analysis. Percentage and proportions were calculated.

### Results

A total of 299 injured persons were enrolled in the study. Most of them (83.6%) suffered from minor injuries.

Table 1 shows that about 20 % of injured persons were alcohol consumers followed by smokers (17.4%), tobacco chewers (11.7%) and illicit drug consumers (0.7%).

**Table 1: Habit of substance use among injured persons\***

Substance use	Minor injury (n=250)		Major injury (n=49)		Total (N=299)	
	No.	%	No.	%	No.	%
Smoking	44	17.6	8	16.3	52	17.4
Chewing of Tobacco	25	10.0	10	20.4	35	11.7
Consumption of alcohol	49	19.6	12	24.5	61	20.4
Consumption of Illicit drugs	1	0.4	1	1.0	2	0.7

(\* Multiple responses)

About 95% of injured persons had had not consumed alcohol prior to occurrence of injury (Table 2).

**Table 2: Consumption of alcohol by injured persons prior to the occurrence of injury**

Alcohol consumption	Type of injury					
	Minor		Major		Total	
	No.	%	No.	%	No.	%
Yes	15	6.0	1	2.0	16	5.4
No	235	94.0	48	98.0	283	94.6
Total	250	100.0	49	100.0	299	100.0

Table 3 shows that 8.4% of injured persons suffered hypertension, followed by visual problem (7.7%) and physical disability (3.8%). Similarly the history of

diabetes, hard of hearing and other problems (like epilepsy and psychiatric problems) were present in 3.3%, 2.0% and 1.3% of the cases respectively.

**Table 3: Injured persons with associated diseases \***

Disease	Type of injury					
	Minor(n=250)		Major(n=49)		Total (N=299)	
	No.	%	No.	%	No.	%
Hypertension	22	8.8	3	6.1	25	8.4
Visual problem	21	8.4	2	4.1	23	7.7
Diabetes	10	4.0	0	0	10	3.3
Physical disability	6	2.5	5	10.4	11	3.8
Hard of hearing	4	1.6	2	4.1	6	2.0
Other problem**	2	0.8	2	4.0	4	1.3

(\*Multiple responses) (\*\*Others: Epilepsy, Psychiatric problems)

### Discussion

Injury and chronic health problems are public health problems. Alcohol consumption is prevalent among injured persons.

In our study about 20 % of injured persons were alcohol consumers followed by smokers (17.4%), tobacco chewers (11.7%) and illicit drug consumers (0.7%). Studies on alcohol use in Dharan found that almost 17% of women were alcohol drinkers.<sup>20, 21</sup> A study revealed that 24.8% of college students in Dharan were current users of tobacco.<sup>22</sup> Risky behavior among the people of Dharan is a matter of concern.

Sixteen persons (5.4%) had consumed alcohol prior to injury in our study. A study among injured drivers in eastern region of Nepal showed that 16.9% had consumed alcohol.<sup>13</sup> A study in western Nepal showed that about 17.2% of injured motor cycle riders had consumed alcohol.<sup>15</sup> Another study done in South India found that 14.9% of drivers were found to have consumed alcohol prior to the accident.<sup>23</sup> The risk of accidents is higher in youngsters and elderly people. However, risk estimation was not done among the injured persons with different age group. The reason for the less number of injured persons consuming alcohol prior to injury in our study as compared to the above mentioned studies might be due to the inclusion of only case of road traffic accidents (RTAs) in their studies. RTA is quite common after drinking.

Hospital based study in Mexico City found the estimated relative risk of injury for patients who

reported having consumed alcohol within 6 hours prior to injury was 3.97 (95% CI: 2.88, 5.48).<sup>24</sup> This increase in the relative risk was concentrated within the first 2 hours after drinking; there was a positive association of increasing risk with increasing number of drinks consumed. However, our study did not measure any alcohol drinks and related to injury.

Our study revealed that among the injured persons, 8.4% were hypertensive and 7.7% suffered from visual problems and 10.4% of the major injured persons were suffering from physical disability. Diabetes, hard of hearing and other problems (like epilepsy and psychiatric problems) were present in 3.3%, 2.0% and 1.3% of the cases respectively.

A study among drivers involved in fatal car accidents, showed that drivers (12%) died from natural causes, the main cause being acute cardiovascular disease and 7% death were due to serious cardiac disease and others being CNS pathology, diabetic complications.<sup>14</sup> There are reported conditions indicating at least a moderately elevated risk of crash involvement due to chronic illness. These were alcohol abuse and dependence, dementia, epilepsy, multiple sclerosis, psychiatric disorders (considered as a group), schizophrenia, sleep apnoea, and cataracts.<sup>25</sup> There were studies to show that health impairments were associated with a statistical significant increase in the risk of being involved in a road accident. Alcoholism, neurological diseases, mental disorders and drugs and medicines all belong to the high-risk group, while vision impairment, arthritis, locomotors disability, hearing impairment and

cardiovascular diseases all belong to the low-risk group. Diabetes mellitus lay in between the high-risk and the low-risk group with a relative risk of 1.56.<sup>26</sup> Osteoporosis increases risk of fractures of the hip, spine, humerus, forearm and wrist.<sup>17</sup> Many acute injuries are consequences of chronic diseases, and many acute injuries have chronic consequences.<sup>16</sup> Our study was limited to explore and reveal the co morbid conditions among the injured ones. Relationship between the human behavior and comorbidities with injury was not inquired in our study. Further detail studies could establish relationship between the possible factors and injuries.

### Conclusion

Consumption of alcohol is prevalent among injured persons in Dharan. Chronic health problems like hypertension, visual impairment and physical disability are common among the injured ones. Assessment of consequences of chronic illness and chronic consequences of injuries is required. It is always needed to prevent risky human behavior and morbidity associated with injury.

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