Original Article

Identification of alcohol problem among long route bus drivers and staffs of Dharan, eastern Nepal: Assessing from the CAGE and DSM-IV tools

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ABSTRACT

Background: Alcohol use remains a major cause of preventable death worldwide occurring prematurely. Despite its global burden, alcohol still is a legal drug. Various studies have also shown that factors like education, occupation, influence from films and family, for stress relief, pleasure during alcohol use, better self-esteem, and occupational boredom are associated with alcohol use. The consumption of alcohol, even in relatively small amounts, increases the risk of being involved in a crash for motorists and pedestrians. It is also associated with impaired judgments and so is often linked to road traffic accident. **Objectives:** To assess the prevalence, type of alcohol use, and the associated factors for the initiation of alcohol use among bus drivers and staffs of long route bus of Dharan. To assess the knowledge, attitude, and practice regarding alcohol use for their willingness to quit it with medical help. **Materials and Methods:** The cross-sectional survey was conducted in 250 long route drivers and staffs in Dharan Bus Park in 2016 with the help of a self-designed questionnaire in Nepali language. The sample size was preliminarily estimated on the basis of the prevalence of alcohol use. The "Alcohol consumer" refers to drivers who used alcohol at least once in the previous year. **Results:** Alcohol dependency among Hindu was found to be significantly more than other religious group. The prevalence of alcohol consumption was found to be 78%. About 51% drivers are likely to have alcohol problems, 39% are alcohol abuser, and 45% are alcohol dependent. **Conclusion:** Drinking and driving increase the vulnerability to injury and death on the road. The study creates awareness among drivers about the harmful use of alcohol and psychosocial consequences.

Keywords: Alcohol, harmful effects, long route drivers

Introduction

Alcohol use remains a major cause of preventable death worldwide occurring prematurely. Despite its global burden, alcohol still is a legal drug. Various studies have shown that prevalence of initiation of alcohol use in early adolescence is higher in Nepal. Those studies have also shown that factors like education, occupation, influence from films and family, for stress relief, pleasure during alcohol use, better self-esteem, and occupational boredom are associated with alcohol use. Similarly, reasons for not quitting alcohol use, being unaware of the adverse effects of its use, lack of information or methods of quitting, lack of motivation to quit, and unsuccessful attempts. On the basis of reasons for alcohol use and not quitting it, drivers and staffs of long route bus (night coach) is one of the high-risk occupational groups for alcohol use.

The consumption of alcohol, even in relatively small amounts, increases the risk of being involved in a crash for motorists and pedestrians. Not only does alcohol impair processes critical

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to safe road use, such as vision and reaction time, it is also associated with impaired judgments and so is often linked to other high-risk road use behaviors such as speeding or not using seat belts.

World health assembly declared alcohol-related problems to be a major public health concern all over the world. Though, the trend of use of alcohol has decreased in developed world but it is increasing in developing world like Nepal. Consumption of alcoholic beverages is a major problematic worldwide health issue.

Some people in Nepal generally believe that alcohol is a medicine for cold, pain, tension, and tiredness; some believe that celebration, party, and festival are success if alcohol is served. The use of alcohol may lead to addiction. In Nepal, alcohol consumption is associated since long time. It has deep-rooted religious, cultural, traditional dimensions, as well as social implications.

Materials and Methods

Study population and sampling

The study is a cross-sectional survey, conducted in Dharan Bus Park in 2016. The sample size was preliminarily estimated on the basis of the prevalence of alcohol use among bus driver and staffs in urban areas of the Sunsari district, which includes Dharan, too.

Sample size technique is used to represent the target population. Considering the design effect, 10% of non-response rates, 250 long route drivers, and staffs were interviewed by trained investigators after getting verbal consents to enquire for alcohol consumption. The "Alcohol consumer" refers to drivers who used alcohol at least once in the previous year.

The data collection instrument was a self-designed questionnaire in Nepali language. They are interviewed in the following headings like age, sex, address, marital status, ethnicity, religion, cast, education, type, frequency, duration and quantity of alcohol consumed, reason to start alcohol, problematic alcohol drinker, alcohol abuser, alcohol dependency, tobacco chewing and/or smoking habit, and self-reported health problems of the drivers.

The questionnaire was pre-tested on 20 drivers at nearby city, Itahari. Overall participants were consistently responded to questionnaire items. The reliability was tested using the Guttmann split-half reliability coefficient.

Results

Sample characteristics

The overall sample consisted of 250 drivers and their staffs among whom nearly 82% were in the age group of 20–40 years

[Table 1]. About 79% are bus drivers. Most of the subjects were male (56%) and married (78%). The Hindu (83%) and Chhetri (39%), hill ethnic group subjects were dominated the sample. Among drivers, 40% has secondary level qualification, whereas 32% are literate (able to read and write).

The prevalence of alcohol consumption was found to be 78%. Regarding the type of alcohol consumption, 38% uses English beverages, whereas 31% uses traditional beverages (local raksi), 59% are influenced by peer pressure, 12.3% are influenced by curiosity, 54% drivers felt intoxicated, and 21% got relief from stress after taking alcohol.

Out of 250 drivers, 51% drivers are likely to have alcohol problems, 39% are alcohol abuser, and 45% are alcohol dependent. Alcohol dependency among Hindu was found to be significantly more than other religious group. There is no significant difference among alcohol dependency with age groups. It is significantly associated with education status of drivers in Dharan. Prevalence is more among illiterate group.

Demographic information

Their demographic characteristics are as follows: age, gender, address: Sunsari/other districts.

Age group

Predominant age group is (20–40 years) which is 82%.

Religion and caste

Regarding religion, out of 250 drivers, Hindu was 208 (83%), whereas Buddhist 15 (6%). Among cast, out of 250 drivers and staffs, majority is Chhetri which is 92 (37%) and Rai is 17% [Tables 1 and 2].

Marital status

Out of 250 drivers and staffs, 194 (78%) are married, whereas 58 (22%) are unmarried [Table 3].

Education [Table 4]

Out of 250 drivers and staffs, 98 (40%) has secondary level qualification, whereas 82 (33%) are literate (able to read and write), 38 (15%) has higher secondary level qualification.

Type of vehicle used [Table 5]

Regarding type of vehicles used, bus drivers are198 (79%) and microbus drivers are 33 (13%).

Alcohol [Table 6]

Out of 250 long route driver, 194 (78%) were alcohol drinkers, whereas 56 (22%) were not alcohol drinkers.

Type of alcohol consumption

While analyzing the type of alcohol used by drivers. Local Raksi users are 119 (31%), traditional beverage like Tonga, chhyang, jhad are 117 (30%), whereas English beverages are 38%.

Reason to start alcohol intake

Reason to start alcohol intake are influenced by peer pressure 120 (59%), due to curiosity 25 (12.3%), and influenced by family/relatives 24 (11.8%) [Table 7].

Feelings after alcohol consumption

About 54% drivers felt intoxicated, 21% drivers get relief from stress, and 10% drivers took alcohol to get entertainment [Table 8].

CAGE screening

With application of the CAGE questioners for detection of problematic alcohol drinkers, 128 (51%) drivers are likely to have alcohol problems, whereas 122 (49%) are not likely to have alcohol problems [Table 9].

Table 1: Age group

		Frequency	Percent	Valid percent	Cumulative percent
Valid	≤20	21	8.4	8.4	8.4
	21-30	95	38.0	38.0	46.4
	31-40	90	36.0	36.0	82.4
	41-50	29	11.6	11.6	94.0
	>50	15	6.0	6.0	100.0
	Total	250	100.0	100.0	

Table 2: Region and caste

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Hindu	208	83.2	83.2	83.2
	Muslim	4	1.6	1.6	84.8
	Buddhist	15	6.0	6.0	90.8
	Kirat	14	5.6	5.6	96.4
	Christian	9	3.6	3.6	100.0
	Total	250	100.0	100.0	

Table 3: Marital status

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Unmarried	56	22.4	22.4	22.4
	Married	194	77.6	77.6	100.0
	Total	250	100.0	100.0	

Table 4: Education

	Frequency	Percent	Valid percent	Cumulative percent
Valid Illiterate	30	12.0	12.0	12.0
Literate	82	32.8	32.8	44.8
Secondary	98	39.2	39.2	84.0
Higher secondary	38	15.2	15.2	99.2
Bachelor and above	2	0.8	0.8	100.0
Total	250	100.0	100.0	

Table 5: Type of vehicle used

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Bus	198	79.2	79.2	79.2
	Truck	19	7.6	7.6	86.8
	Microbus	33	13.2	13.2	100.0
	Total	250	100.0	100.0	

Table 6: Alcohol

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Yes	194	77.6	77.6	77.6
	No	56	22.4	22.4	100.0
	Total	250	100.0	100.0	

Table 7: Reason to start alcohol intake

		Responses		Percent of cases (%)
		n	Percentage	
Reason for start alcohol	Peer pressure	120	58.8	62.5
	Influenced by family/relatives	24	11.8	12.5
	Due to curiosity	25	12.3	13.0
	Influence by film	3	1.5	1.6
	For fashion	8	3.9	4.2
	Due to tension	3	1.5	1.6
	For entertainment	12	5.9	6.3
	For relax	5	2.5	2.6
	Self-interested	4	2.0	2.1
Total		204	100.0	106.3

Table 8: Feelings after alcohol consumption

		Responses		Percent of cases (%)
		n	Percentage	
Feelings after Alcohol consumption	Intoxicated feel	108	54.0	56.0
	To feel mature	18	9.0	9.3
	To get relief from stress	42	21.0	21.8
	To relief from tiredness	6	3.0	3.1
	Habituated	4	2.0	2.1
	Due to family burden	2	1.0	1.0
	To entertainment	20	10.0	10.4
Total		200	100.0	103.6

Table 9: CAGE screening

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Likely to have alcohol problem	128	51.2	51.2	51.2
	Not likely to have alcohol problem	122	48.8	48.8	100.0
	Total	250	100.0	100.0	

Table 10: Problematic alcohol drinkers

		Alcohol		Total
		Yes	No	
Cage	Likely to have alcohol problem	128	0	128
	Not likely to have alcohol problem	66	56	122
Total		194	56	250

Table 11: Alcohol abuse

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Alcohol abuse	98	39.2	39.2	39.2
	Not alcohol abuse	152	60.8	60.8	100.0
	Total	250	100.0	100.0	

Table 12: Alcohol dependency according to caste

			Dependent		Total
			Alcohol dependent	Not dependent	
Caste	Brahmin	Count	7	17	24
		% within caste	29.2%	70.8%	100.0%
	Chhetri	Count	40	52	92
		% within caste	43.5%	56.5%	100.0%
	Rai	Count	24	18	42
		% within caste	57.1%	42.9%	100.0%
	Limbu	Count	11	11	22
		% within caste	50.0%	50.0%	100.0%
	Chaudhary	Count	5	5	10
		% within caste	50.0%	50.0%	100.0%
	Tamang	Count	2	5	7
		% within caste	28.6%	71.4%	100.0%
	Shrestha	Count	3	8	11
		% within caste	27.3%	72.7%	100.0%
	Others	Count	20	22	42
		% within caste	47.6%	52.4%	100.0%
Total		Count	112	138	250
		% within caste	44.8%	55.2%	100.0%

Table 13: Alcohol dependent

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Alcohol dependent	112	44.8	44.8	44.8
	Not dependent	138	55.2	55.2	100.0
	Total	250	100.0	100.0	

Problematic alcohol drinkers: Application of the CAGE questionnaire

Application of the CAGE questionnaire to detect problematic alcohol drinkers, 128 are likely to have alcohol problem and 122 drivers are not having alcohol problems [Table 10].

Alcohol dependent

With the application of the DSM criteria for detection of alcohol dependent, out of 250 drivers, 112 (45%) are alcohol dependent, whereas 138 (55%) are not alcohol dependent [Tables 11 and 12].

Alcohol dependency according to age group

There is no significant difference among alcohol dependency with age groups [Table 13].

Alcohol dependency according to caste

No significant difference is observed for alcohol dependent according to caste and type of vehicle [Table 14].

Table 14: Alcohol dependency according to age group

			Dependent		Total
			Alcohol dependent	Not dependent	
Age group	≤20	Count	6	15	21
		% within age group	28.6%	71.4%	100.0%
	21-30	Count	41	54	95
		% within age group	43.2%	56.8%	100.0%
	31-40	Count	45	45	90
		% within age group	50.0%	50.0%	100.0%
	41-50	Count	10	19	29
		% within age group	34.5%	65.5%	100.0%
	>50	Count	10	5	15
		% within age group	66.7%	33.3%	100.0%
Total		Count	112	138	250
		% within age group	44.8%	55.2%	100.0%

Table 15: Alcohol dependency according to religion

			Dependent		Total
			Alcohol dependent	Not dependent	
Religion	Hindu	Count	101	107	208
		% within religion	48.6%	51.4%	100.0%
	Others	Count	11	31	42
		% within religion	26.2%	73.8%	100.0%
Total		Count	112	138	250
		% within religion	44.8%	55.2%	100.0%

Table 16: Alcohol dependency according to education

			Dependent		Total
			Alcohol dependent	Not dependent	
Education	Illiterate	Count	18	12	30
		% within education	60.0%	40.0%	100.0%
	Literate	Count	46	36	82
		% within education	56.1%	43.9%	100.0%
	Secondary	Count	38	60	98
		% within education	38.8%	61.2%	100.0%
	Higher secondary and above	Count	10	30	40
		% within education	25.0%	75.0%	100.0%
Total		Count	112	138	250
		% within education	44.8%	55.2%	100.0%

Alcohol dependency according to religion

Alcohol dependency among Hindu was found to be significantly more than other religious group [Table 15].

Alcohol dependency according to education

Alcohol dependency is significantly associated with education status of drivers in Dharan. Prevalence is more among illiterate group [Table 16].

Discussion

Alcohol use remains a major cause of preventable death worldwide occurring prematurely. Despite its global burden, alcohol still is a legal drug. Various studies have shown that prevalence of initiation of alcohol use in early adolescence is higher in Nepal.

World health assembly declared alcohol-related problems to be a major public health concern all over the world. Though, the trend of use of alcohol has decreased in developed world but it is increasing in the developing world like Nepal. Consumption of alcoholic beverages is a major problematic worldwide health issue.

Some people in Nepal generally believe that alcohol is a medicine for cold, pain, tension, and tiredness; some believe that celebration, party, and festival are success if alcohol is served. The use of alcohol may lead to addiction. In Nepal, alcohol consumption is associated since long time. It has deep-rooted religious, cultural, traditional dimensions, as well as social implications.

The overall sample consisted of 250 drivers and their staffs among whom nearly 82% were in the age group of 20–40 years. About 79% are bus drivers. Most of the subjects were male (56%) and married (78%). The Hindu (83%) and Chhetri (39%), hill ethnic group subjects were dominated the sample. Among drivers, 40% has secondary level qualification, whereas 32% are literate (able to read and write).

The prevalence of alcohol consumption was found to be 78%. Regarding the type of alcohol consumption 38% uses English beverages, whereas 31% uses traditional beverages (local raksi), 59% are influenced by peer pressure, 12.3% are influenced by curiosity, 54% drivers felt intoxicated, and 21% got relief from stress after taking alcohol.

Out of 250 drivers, 51% drivers have likely to be alcohol problems, 39% are alcohol abuser, and 45% are alcohol dependent. Alcohol dependency among Hindu was found to be significantly more than other religious group. There is no significant difference among alcohol dependency with age groups. It is significantly associated with education status of drivers in Dharan. Prevalence is more among illiterate group.

Inaccurate belief about normative drinking could promote excessive drinking. Road users who are impaired by alcohol have a significantly higher risk of being involved in a crash. A survey of studies conducted in low- and middle-income countries found that alcohol was present in the blood of 4–69% of injured drivers, 18–90% of crash-injured pedestrians, and 10–28% of injured motorcyclists.[1]

In most high-income countries, about 20% of fatally injured drivers have excess alcohol in their blood[1] i.e., blood alcohol concentration (BAS) in excess of legal limit. In contrast, studies in low- and middle-income countries have shown that between 33–69% of fatally injured drivers and between 8–29% of non-fatal injured drivers had consumed alcohol during their crash.

World health assembly declared alcohol-related problems to be a major public health concern all over the world. Though, the trend of use of alcohol has decreased in developed world but it is increasing in the developing world like Nepal.[1,2]

A study conducted in Dharan shows that nearly 26% of females are alcohol dependent (CAGE 2).[3-5] Since 1970, 47% of developing countries in transition and 35% of developed countries have increased their consumption of absolute alcohol per adult.[6] Increasing consumption of alcoholic beverages is a major problematic worldwide health issue.

About 4–8 million working days are lost annually due to alcohol-related problems. With regard to safety up to 25% of workplace accidents and around 60% of total accidents at work may be associated with alcohol.[2] It has been found that the pattern of increased alcohol problem with age among people in developed country.[7] Problems (medical, behavioral, and social problems) caused by alcohol that may require early treatment.[8,9] It is estimated that alcohol is responsible for 1.5% of all deaths and 3.5% of the total disability adjusted life years (DALYs).[10]

Raised risk of accident can also remain some time even after drinking. Various studies show that accident is shown to occur among alcohol consumers. Alcohol is responsible for trauma, deaths, and non-fatal injuries.[11,12] Alcohol use and alcohol use disorders are associated with increased risks of mortality and morbidity from injury and violence. Alcohol is a factor in the need for emergency care worldwide.[13]

Alcohol consumption plays a role in motor vehicle accidents and assaults and half of trauma patients are injured under the influence of alcohol.[14-16] Alcohol consumption has been found to be a major risk factor for both intentional and unintentional injuries in the emergency department settings.[16-18]

A study among the injured drivers in eastern region of Nepal found that 16.9% injured drivers had consumed alcohol.[19] Alcohol consumption and engagement in dangerous driving and violence-related risk behaviors are the strongest predictors of injury status. Catastrophic injuries have major consequences that are so serious that survivors of these injuries require lifetime care and support.[20]

A study conducted in Nigeria reported that the commonest substances used were stimulants, nicotine, and alcohol. A statistically significant proportion of drivers who were aware of the risks associated with drugged-driving wished to continue drug use (P < 0.007). Most drivers had been using substances before they commenced long distance driving.[21,22]

Motor vehicle accident (MVA) is a significant cause of mortality and morbidity in our environment, and driving under the influence

of central nervous system (CNS) active agents such as alcohol has been implicated in the occurrence of MVAs.[23] The current use of sedatives drugs were significantly associated with poor mental health of long distance vehicle driver as reported by a Nigerian study.[24,25]

The consumption of alcohol, even in relatively small amounts, increases the risk of being involved in a crash for motorists and pedestrians. Alcohol is also associated with impaired judgments and so is often linked to other high-risk road use behaviors such as speeding or not using seat belts.

Unfortunately, in many developing countries, like ours, the scale of the problem is not well understood, there is a little public awareness of the problem and legislation and enforcement are often inadequate.

Conclusion

In many developing countries, like ours, the scale of the problem is not well understood, there is a little public awareness of the problem and legislation and enforcement are often inadequate.

The consumption of alcohol, even in relatively small amounts, increases the risk of being involved in a crash for motorists and pedestrians. Not only does alcohol impair processes critical to safe road use, such as vision and reaction time, it is also associated with impaired judgments and so is often linked to other high-risk road use behaviors such as speeding or not using seat belts.

Drinking and driving increase the vulnerability to injury and death on the road. The study will create public awareness about the harmful use of alcohol and its health and social consequences. This report will clear the fundamental concepts of road traffic injury prevention, the impact of road traffic injuries, the main causes and risk factors for road traffic crashes, and proven and effective intervention strategies. Such type of study will provide health education to drivers and staffs. This study will help in formulation of strategies for stopping initiation and quitting alcohol use.

Limitation

It was difficult to explain and interview drivers because most of them were illiterate, arrogant, and under influence of alcohol so that not trying to grab educational materials and massage. Time constraint was another limitation of the study given by traffic police in the Bus Park.

Recommendation

We encourage them that driving and drinking should not mix together. Educational material regarding alcohol use can be given through distribution of educational leaflets, use of radio and television to the drivers and staffs which helps in reduction of road traffic accident and ultimately reduction in morbidity and mortality of passengers in developing country like ours. Formulation of strategies for stopping initiation and quitting alcohol use can be strengthened more from this study.

Conflicts of interest

There are no conflicts of interest.

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