

■ **Review Article**

Alcohol ab/use in eastern Nepal: a review of studies

DR Shakya
Department of Psychiatry, BPKIHS, Nepal

Abstract

Alcohol ab/use is common in eastern Nepal, rather reported remarkably high. Hence, various aspects of this problem have been the topic of search, study, survey and research in this part of the country, both in community and clinical settings. This article aims to review the journal articles published, research projects presented in scientific forum or conferences, thesis articles submitted and other research works related to alcohol from eastern Nepal coming into the knowledge of the author. The basis of this review were medical journals including Health Renaissance (HR), abstract books of various medical meets, internet search and personal communication with various departments of BP Koirala Institute of Health Sciences (BPKIHS), a prominent centre for the research projects carried out both by students and faculty members in this area. Overarching the objective would be to point out some important needs and areas for future research studies in next article.

Global alcohol ab/use

Alcohol ab/use has been a part of human life immemorially and alcohol use is a global phenomenon in current day world. Various forms of alcohol are used in different parts of the world. Alcohol is one of the two, with tobacco topping the list among licit substances and according to the United Nations Office on Drugs and Crime (UNODC) report of 2011, about 2 billion people use alcohol globally.¹ In 2005, the worldwide total consumption was equal to 6.13 litres of pure alcohol per person of 15 years and older age.² Alcohol is the world's third largest risk factor for disease burden (after childhood underweight and unsafe sex), responsible for about 4.5% Disability- Adjusted Life Years (DALY) in 2009, more than tobacco and far more than illegal drugs.³ Today, hardly any society is spared of its use and problem, and Nepal is no exception. Rather, some parts like eastern Nepal are reported with remarkably high prevalence of alcohol problems.⁴

Nepal and eastern Nepal- a glance

Nepal is a landlocked country sandwiched between China from the north and India from other three sides. In its relatively small total area of 147,181 sq. kms, it has a rich cultural heritage and bio-diversity.⁵ Nepal is known for its multi-ethnic, multi-cultural, multi-linguistic and multi-religious environments and for its geographical diversity.

Eastern Region of Nepal constitutes an important part of the country in terms of economic and other resources. It occupies about one fifth of the country's area and one fourth of its population. It has multi-ethnic and multi-lingual population, with about half from 'Matawali' category. Alcohol use is not only permissible but also encouraged in 'Matawali' tradition. Traditional barrier for alcohol use among the traditionally alcohol non-using community 'Tagadhari' is getting weaker in current Nepal.⁶

National scenario of alcohol problem

There are limited number of systematic community based studies in Nepal to estimate alcohol use and related problems. Available reports both clinical setting and community based studies, though limited in number show that alcohol ab/use and related problems are prevalent in Nepal. Alcohol is the

Address for correspondence
Dr Dhana Ratna Shakya, MD
Associate professor, Department of Psychiatry,
BPK Institute of Health Sciences (BPKIHS), Dharan, Nepal.
Email: drdhanashakya@yahoo.com

number one problem substance in the country owing to its extent and magnitude.^{7,8}

The breach between the problem and the response is clearly large. There is barely any effort and hence, any solid plan and program to address this problem. Except imposing additional levy and banning electronic advertisement, hardly any substantial policy and strategies have been made from the Government to limit its production, distribution and consumption. Civil society also does not show much concern except sporadic campaign against alcohol use, mainly by female activists and at one time by Maoist cadres. Some places of the country are known for its production and some societies for its rampant use. With modernization and urbanization, industry products of alcoholic beverages are making a huge presence besides home products. It grossly showed less success in achieving the goal of 'substance/alcohol-free society'. There are few NGOs in the region which work in substance-related field. Moreover, their efforts are directed mainly towards rehabilitative management of opioid abusers, with little emphasis on primary and secondary prevention of alcohol problem.

Alcohol- problem situation and research in eastern Nepal

Alcohol ab/use is huge in eastern Nepal and this fact has been evident in the alcohol literature from this part. BPK Institute of health sciences is situated in this region and it is known as a centre of research and medical education in this part. This fact has played a great role in having some commendable research work in this common but usually neglected topic from this region. Here, attempt has been made to review the available literature about various aspects of alcohol use and related problems in eastern Nepal.

Alcohol ab/use in community

Intensive study about the extent of alcohol use in different sects in eastern Nepal is yet to be carried out. However, a report on a community-based survey is available which looked into alcohol use disorder by using the CAGE questionnaire among 2344 randomized household samples of Dharan. According to this study by Jhingan HP et al (1999), the prevalence of current alcohol use problem was 25.8% with heavy drinking (e" 2 CAGE) in 19.5% (male 28.4% and female 11.67%). The prevalence was

seen higher among those with the status of increasing age, lower levels of education, widowers, divorcees and those from 'Matawali' community.⁴ Niraula SR et al (2002) reported prevalence of alcohol consumption in 17% of 2340 cluster samples of women of age more than 15 years in Dharan, with higher rates among women from hilly ethnic groups, divorcees and smokers. A striking proportion of pregnant women, i.e. 9% reported to drink alcoholic beverages.⁹ Shakya DR (2011) reported 5% health camp attendees with alcohol/ substance use disorders in this region.¹⁰

Alcohol ab/use in clinical settings and subjects

Pradhan B et al (2011) found alcohol abuse in 8% and alcohol dependence in 32.3% of the hospital based samples using the AUDIT and SCID for alcohol abuse and dependence.¹¹ In clinical settings; 8% of referred psychiatry OPD cases,¹² 17% of psychiatry in-patients,¹³ 24% of psychiatric consultation liaison¹⁴ and 29.5% of the cases seen in psychiatric emergencies¹⁵ were diagnosed with substance, mainly alcohol use disorders. Substance, i.e. alcohol related disorder was found to be the most common diagnosis in people seen in consultation liaison psychiatry and psychiatric emergency in BPKIHS in the studies by Shakya et al.^{14,15}

A report of Sharma A et al (1999) showed a significant alcohol problem in 18% of surgical and medical in/out patients of BPKIHS using the AUDIT.¹⁶ Shakya DR et al (2010/11) reported that 32% of the people living with HIV/AIDS and seeking help from HIV clinic of BPKIHS had the CAGE score of e" 2, i.e. alcohol related problem state (alcohol use disorders).¹⁷ According to other study of Shakya DR, a remarkably higher proportion of elder OPD psychiatric patients (14%) also had alcohol problems.¹⁸ About 40% admitted currently drinking alcohol and 4% had alcohol use disorder as a primary diagnosis among mentally ill female spouses of Nepalese abroad workers seeking help from Psychiatric department of BPKIHS.¹⁹ Overwhelming majority of cirrhosis (86%) in BPKIHS was found to be alcoholic cirrhosis by Maskey R et al.²⁰

Alcohol ab/use among medical students

Shyangwa PM et al reported that 63.5% of medical students and junior doctors of BPKIHS had 'ever

used' substance, 56.5% used 'last year' and 42.5% in 'last month'. Alcohol was the most preferred substance (90.9%). Nearly one third of females also had 'ever used' substance.²¹ Similar findings were seen in other comprehensive study among medical students of BPKIHS by Shakya DR et al.²²

Research in various aspects of alcohol and its ab/use

Along with other studies, thesis studies/ researches of post-graduate and under-graduate students of BPKIHS are of special mention here because it caters 16 districts of eastern region not only as service area but also as teaching districts. Among the studies conducted on psycho-active substances, alcohol has naturally been the focus of attention. Various aspects of alcohol and its use have been the area of search. Some relevant areas will be discussed here to highlight different aspects of its use, abuse, cause, effect, management etc in this region.

Causes and circumstances of alcohol ab/use

Shakya DR reported that most problem-drinkers first drink in the pretext of the social custom of alcoholic beverage as food, the peer pressure, the stressful situation and easy availability in eastern Nepal. Males start drinking at younger age (average age 15.96 for male and 18.68 for female) and the first drink was more associated with stressors among females (1% male vs. 13% female). More female reported various stressors predisposing, precipitating or perpetuating the disorder (27.5% male vs. 40% female).²³ In a thesis work, Sharma R et al (2011)²⁴ and Shyangwa PM et al in another study pointed out psychiatric comorbidity, family history of alcohol dependence syndrome (ADS) and pre-morbid personality disorders as important factors for the relapse of ADS.²⁵ Thapa KB et al found various factors, viz. higher daily alcohol intake, physical co-morbidity and higher serum AST and Bilirubin to be significantly associated with the development of delirium tremens in alcohol withdrawal state.²⁶

Co-morbidity in alcohol use disorder

Shakya DR et al (2005) found diverse socio-demographic groups to be affected by alcohol dependence, including female (16%) in hospital setting. Three fourths of them used other substances besides alcohol; main being nicotine, opioid and

cannabis. Majority presented to hospital only when they had some complications, like: physical, mental and at times social, occupational, and many others.⁵ Eighty percent subjects had other psychiatric comorbidities, besides ADS (62% other psychiatric disorders and 51% personality problems). Main comorbid psychiatric disorders are anxiety, mood affective and psychotic disorders. Among the personality problems, dissocial plus narcissistic, and anxious group were common.²⁷ Among 85% of the cases admitted for ADS who had physical comorbidities, majority had diseases of GIT and hepatobiliary system; followed by CNS and CVS.²⁸ Subsequent and other studies also show remarkable co-morbidities in varying rates here.^{24,26}

Alcohol use- a great threat for health

Singh PM et al concluded in a thesis study that the hazardous alcohol use was significantly higher in panic disorder group than in depressive disorder and normal subject groups.²⁹ Thapa B et al concluded that the alcohol consuming habit has a significant effect on the adherence to treatment regimen and blood sugar control in type 2 diabetes mellitus.³⁰ Shakya DR reported a role of alcohol use in suicidal behavior and phenomenon. An association of alcohol use was seen in about 30% of deliberate self harm (DSH) attempters. Out of total, 5.5% had used alcohol for the first time prior to the attempt, 9% had harmful use and other 5.5% ADS.³¹

Help seeking in alcohol problem

In a review study of medical record of 21 women (1997/98) with alcohol related disorder, Sharma S et al revealed that they sought help only when they developed physical (liver or gastro-intestinal problem) or psychiatric problems.³² According to a report of Shakya DR et al, the main reason for delay in help seeking for ADS in eastern Nepal is the lack of realization that drinking and its consequences are at all any problem. Before reaching this service, 96% had used some home remedies, e.g. rituals, visiting temples, using traditional herbal preparations, even giving soft drinks or other substances in place of more concentrated alcoholic beverages, etc.³³

Gender comparison study about alcohol

In a study, Shakya DR et al concluded that Nepalese males start drinking at younger ages than females

and the first drink was more associated with stressors in females. Presence of perceived stressor was significantly more among females influencing the course of the disorder as reported by the subjects and their family (54.66% male vs. 80.00% female, P-value 0.001). Common stressors among males were: strained inter-personal relationship, substance use by near and dear, own's disease, death of some near and dear and recent festivals; and among females: strained relationship, death of near and dear, other life events, some near and dear away from home etc. Females reported strained relationship and death of near and dear as stressors more than males though they were reported also by many males. Onset of problem use was gradual and pattern of alcohol use continuous in both genders.³⁴ Joshi R et al's thesis study on female alcohol revealed that more than half of female subjects had psychiatric co-morbidity (common being mood and other substance) and nearly half had physical co-morbidity. The attitude towards alcohol use even among females was positive however, the knowledge regarding health hazards was inadequate.³⁵

Knowledge, attitude and practice study about alcohol

Bridel C et al (2003), in their qualitative study, have unraveled the opinion of 'great concern' among Dharan's people regarding drug abuse, being more concerned about social and medical consequences of alcohol than of other drugs. They urged to take alcohol and other drug problem seriously and to increase preventive measures: awareness programs and collaboration between different concerned sides.³⁶ Deo BK et al (2003/4) reported in a KAP study, the current use of alcohol to be 11.1% with random sampling method among 1889 school students of Dharan. The main cause of the abuse (in 73.63%) is bad companion and positive attitude towards abusers.³⁷

Management of alcohol problem

Baral N et al concluded in a study that the levels of Gamma GT and MCV are increased in alcohol liver disease (ALD). Increased Gamma GT (e" 25 IU/I) and MCV (e" 100 fl/I) and an AST to ALT ratio (> 1) show a strong association with ALD. The degree of elevation of AST was found higher than that of ALT in ALD³⁸ which supports the similar finding of Majhi et al concluding that mild to moderate disproportionate elevation of AST than ALT (De Ritis Ratio > 2:1), supported by reversal of Albumin/globulin ratio facilitates the diagnosis of ALD.³⁹ The study carried by Thapa KB et al found both Chlordiazepoxide and Lorazepam to be equally effective in the treatment of delirium tremens (DT).²⁶ Niraula SR et al in a review of secondary data emphasized the role of local services of Deaddiction unit of BPKIHS, KYC (Kirat Yakthung Chumlung) and DYC (Dharan Youth Club) to curb this problem in this area.⁴⁰

Other publications and studies on alcohol

Rai M and Quyyoom Z et al (2001) revealed premarital sexual relationship in 66.7%, extra-marital 58.8%, multiple partners 51.3%, contact with CSW 21.7% and that with known HIV/HBV positive 9.6% among abusers from rehabilitation centers. About 30.0% drive drunken, 61.7% of intravenous drug users (IVDU) exchanged needles and 41.5% reused and high proportion was involved in anti-social behaviors.⁴¹

In a case report, Shakya DR highlighted 'empty nest syndrome' as an obstacle for alcohol abstinence for a middle aged lady⁴² and in other psychiatric co-morbidity of anxiety.⁴³ Shyangwa PM and Shakya DR discussed about the substance ab/use in eastern Nepal in terms of current situation, responses and future strategies in a review article.⁴⁴

Studies about alcohol ab/use in eastern Nepal

Reference No. and Authors	Study type	Sample	Tools	Major findings
4. Jhingan HP, Shyangwa PM, Sharma A, Prasad KMR, Khandelwal SK	Community based prevalence study	2344. Random sampling of households	CAGE	Prevalence of current use = 25.8% Mean age of drinking population = 37.44 yrs. Heavy drinking (≥ 2 on CAGE) = 19.5%. Male- 28.4% and Female- 11.67%.
6. Shakya DR, Shyangwa PM, Sen B	Descriptive hospital based study	51 in 12 months	ICD-10, Semi-structured proforma	Distributed in socio-demographic profiles. Psychiatric co-morbidity in 80%, common being: anxiety, depression and psychosis. Majority of patients present only when had problem. Very few presented only for quitting alcohol
9. Niraula SR, Shyangwa PM, Jha N, Paudel RK, Pokharel PK	Community based Prevalence	2340 of ≥ 15 yrs women. Cluster sampling	Self designed questionnaire	Prevalence of alcohol consumptions in 17% women. Alcohol use more prevalent among females of hilly ethnic groups. Nearly $\frac{1}{2}$ of divorced women and 9% of pregnant women consume alcohol.
11. Pradhan B, Chappius F, Karki P, Rijal S, Baral DD, Hadengue A, Gache A	Prevalence study	1332	AUDIT, SCID	Alcohol abuse was present in 8% and alcohol dependence in 32.3% of the subjects as suggested by using AUDIT and SCID for alcohol abuse/dependence.
16. Sharma A, Shah B, Joshi M, Khandelwal SK	Prevalence in medical & surgical	308 Hospital based	AUDIT	18% had significant drinking problem M : F = 3 : 1 Particularly common in hilly native women.
21. Shyangwa PM, Joshi D, Lal R	Cross sectional, descriptive	193 Institution based	Structured proforma (ICMR)	Prevalence rate: ever used (63.5%). Last year used (56.5%). Last month used (42.5%) The most preferred substance alcohol (90%) Females ever using (32.2%)
23. Shakya DR	Hospital based descriptive	100 male + 100 female	Self designed questionnaire	Most problem drinkers first drink in pretext of custom of alcoholic beverage as food, peer pressure, stressful situation and easy availability. Males start drinking at younger age and the first drink was more associated with stressors among females.
24. Sharma R, Pandey AK, Shyangwa PM	Hospital based prospective study	50	DSM-IV, BPRS, BDI, BAI, GAF	Psychiatric co-morbidity, family history of ADS and pre-morbid personality disorders were important factors for the relapse of ADS.
25. Shyangwa PM, Sharma R, Mallick L, Pandey AK, Adhikari BR, Shakya DR, Sapkota N, Deo BK, Joshi R	Cross-sectional descriptive hospital based	70	Review of medical records	43% came in complicated withdrawal, 46% in uncomplicated and 11% in intoxication. Among complicated withdrawal 27% had GTCS, 23% DT and 50% both GTCS & DT. Amount and pattern of alcohol use were found predisposing to complicated withdrawal.

26. Thapa KB, Sen B, Shyangwa PM	Random sampling descriptive	ADS without DT 30 + ADS with DT 27= 57	ICD- 10, CIWA - R	Daily alcohol intake, Co-morbid physical illness and Blood levels of Bilirubin & AST were significantly greater in ADS patients with DT than those without. Both Chlordiazepoxide & Lorazepam were effective in decreasing symptoms of DT.
27. Shakya DR, Shyangwa PM, Sen B.	Hospital based	60 consecutive inpatients	ICD-10	Three fourths use other substance too. 80% (63% axis-I, 48% axis-II) had psychiatric co-morbidity. Anxiety, mood, psychotic are mental and dissocial, narcissistic and anxious are main personality problems.
28. Shakya DR, Shyangwa PM, Sen B.	Hospital based	60 consecutive inpatients	ICD-10	85% had one or other or more than one diagnosable physical illness requiring medical attention. Common diseases are of GIT and hepato-biliary, CNS and CVS system
29. Singh PM, B Sen, Das SK, Shyangwa PM	Descriptive, cross sectional hospital based	PD 50+ DD50+ NS 50 = 150	DSM-IV AUDIT PSLE G Singh 1983	The hazardous alcohol use was significantly higher in panic disorder compared to depressive disorder and normal subject groups.
30. Thapa B, Pokharel P, Jha N, Paudel I, Sharma S, Shyangwa P, Sangraula H, Sharma A.	descriptive cross sectional hospital based	300 DM clinic patients	Self designed interview	Alcohol played a significant role in non-adherence. Blood glucose level among drinkers was found significantly higher than others.
31. Shakya DR	Hospital based-cross sectional descriptive study	120	Self designed interview	An association of alcohol use was seen in about 30% of deliberate self harm attempters. 5.5% used alcohol for first time prior to attempt and 9% had ADS.
32. Sharma S	Cross-sectional descriptive	42 of ALD cases	Review medical records	Presented with GI bleed (17/42) & HE (14/42) Commonest c/o – ascitis (22/42), jaundice (21/42). Mortality high (11/42).
33. Shakya DR, Shyangwa PM, Sen B.	Hospital based descriptive study	51 consecutive ADS in-patients	ICD-10, Self designed	96% used some home remedies prior to hospital admission. 59% received services from 2 or less. Main reason for treatment delay was lack of realization of drinking as a problem.
34. Shakya DR, Shyangwa PM, Sen B.	Hospital based comparative study	75 female + 75 male	ICD-10, Self designed	Nepalese males start drinking at younger ages than females and first use was more associated with stressors in females. Onset of problem use was gradual and pattern of alcohol use continuous in both genders.
35. Gautam R, Shyangwa PM, Shakya DR, Smith S, Pradhan B.	Hospital based descriptive study	51	T-ACE, ICD-10, semi-structured proforma	>1/2 female subjects had psychiatric co-morbidity (common mood and other substance) and nearly half physical co-morbidity. The attitude towards alcohol use was positive and the knowledge was inadequate.
36. Bridel C, Tschopp V, Waber LR, Schibler M	Descriptive qualitative		Local data, Observation, Structured interview of key persons	People have a great concern for drug abuse. Problem by alcohol abuse less noticed because of its higher cultural acceptance. All intervention measures should be strengthened.

37. Deo BK, Shyangwa PM, Kumar R, Jha N	Cross sectional descriptive study	1889	Interview by semi structured proforma	Alcohol use reported by 11.1%, smoking by 0.42% Mean age 15.5 year. Cause of abuse- bad companion 73.63% Knowledge about drug abuse – good, attitude towards abusers – positive
38. Baral N, Pokharel S, Lamsal M, Yadav BN, Sah SP.	Case-control	87 patients + 100 control	Lab and other related investigations	Gamma GT (≥ 25 IU/l) and MCV (≥ 100 fl/l) levels and AST to ALT ratio (> 1) are increased in alcohol liver disease. The degree of elevation of AST was found higher than that of ALT in ALD.
39. Majhi S, Baral N, Lamsal M, Mehta KD.	Case-control	103 patients + 73 control	Lab and other related investigations	A mild to moderate disproportionate elevation of AST than ALT activity making De Ritis Ratio $> 2:1$, supported by reversal of Albumin/globulin ratio facilitates the diagnosis.
40. Niraula SR, Chhetri DB, Singh GK, Nagesh S, Shyangwa PM	Review of records			The role of 3 centers – DYC, KYC-PJK and De-addiction centre BPKIHS is important in this area.
41. Rai M, Quyyoom Z	Cross sectional descriptive convenience/ purposive sampling.	145	CAGE Semi structured proforma	M = 98.6%. 21-25 yrs = 44.1%. All literate, majority unemployed, joint family 82.8%, unmarried 62.1%, married 35.2%. Premarital sexual contact in 66.7%, extra marital 58.8%, multiple partners 51.3%, CSW 21.7%, homosexual 13%, with known HIV/HBV positive 9.6%. Driving during drunken 29.2%. Antisocial behaviors in high proportion. Factors preventing from seeking help- Financial constraint, stigma, ignorance

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