International Journal of Community Medicine and Public Health
Carl AM et al. Int J Community Med Public Health. 2023 Dec;10(12):4767-4773
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20233777

Original Research Article

Frequency of high risk behaviour in patients with alcohol dependence syndrome: a cross sectional study

Ashwitha Melrine Carl*, Safeekh A. T.

Department of Psychiatry, Father Muller Medical College Hospital, Mangalore, Karnataka, India

Received: 15 September 2023
Accepted: 10 November 2023

***Correspondence:**
Dr. Ashwitha Melrine Carl,
E-mail: ashucarl@gmail.com

ABSTRACT

Background: Alcohol use and high-risk behaviour has been shown to have an association. Severity of alcohol dependence has an association with frequency of risk-taking behaviour. Objectives were to evaluate the frequency of high risk behaviour in alcohol dependence syndrome and to find any correlation between psychosocial variables and high risk behaviour.
Methods: 100 individuals with ICD 10 diagnosis of alcohol dependence syndrome were studied using semi structured interview. High risk behaviour was assessed using violent risk appraisal guide and deliberate self-harm inventory. The age of onset of initiation of alcohol use and dependence and severity of alcohol dependence syndrome were assessed and analyzed by frequency and Chi square test.
Results: In 100 subjects with alcohol dependence syndrome, 4 (17.4%) and 7 (30.4%) of subjects with severe dependence had road traffic accidents and risky sexual and violent behaviour respectively. There was a statistically significant association between age of onset, age of dependence and high-risk behaviour.
Conclusions: The present study concluded that most individuals with alcohol dependence syndrome had high risk behaviour. Road traffic accident was the most common followed by risky sexual and violent behaviour. There was a significant association between severity of alcohol dependence and high risk behaviour.

Keywords: Alcohol dependence syndrome, High risk behaviour, Road traffic accidents, Self injurious behaviour, Sexual behaviour

INTRODUCTION

Alcohol has been identified as accounting for 1.5% of global deaths, premature mortality of 2.1% and Disability adjusted life years of 3.5%. Alcohol in high-risk behaviour has been found to be prevalent worldwide. High risk behaviour has been found to be a result of drinking itself, the result of drinking or drinking in everyday situation. Alcohol increases the risk of doing something risky or alcohol in itself might increase harm probability.[1] The link between alcohol use and high-risk behaviour such as traffic accidents, crime and high-risk sexual behaviour is partly related to the morbidity and mortality due to alcoholism.[2,3]

High risk implies an occurrence of an event with harm which has a causality relationship to alcohol consumption. Alcohol has an effect on maternal and child health, infectious diseases, injuries, non-communicable diseases and mental health. In 2016, 57% of the global population aged 15 years or more had abstinence from alcohol in the previous 12 months.[4] Alcoholism related morbidity and mortality is related to alcohol use and high-risk behaviour. The current drinkers account for about 2.3 billion. In the world, in people aged over 15 years, the total alcohol per capita consumption was found to be have increased from 5.5 litres of alcohol in 2005 to 6.4 litres in 2010 and 6.4 litres in 2016. About 40% of alcohol attributable Disability adjusted life years are due to are due to injuries and 49% due to mental health issues and

non-communicable diseases and it was responsible for 7.2% of all premature mortality in population aged 65 years or less.[5] In a review reported, it is shown that not all heavy drinking results in risky sexual behaviour. Also there was no significant difference in unprotected sex among people who were under the influence of alcohol and those who were not or between risky and safe events. Usually young men are overrepresented as offenders of crime, violent behaviour, high risk sexual behaviour and traffic accidents.[2]

Most of the studies in India focus on the psychiatric comorbidity associated with alcohol dependence syndrome. There is a paucity of studies in India that have conclusively studied the association between high-risk behaviours and alcohol dependence syndrome. Also the frequency of high risk behaviour in type I and type II alcoholism has not been studied often. Hence this study helps in contributing to the literature of high-risk behaviour among alcohol dependence syndrome.

Objectives of the study

To evaluate the frequency of high-risk behaviour in patients with alcohol dependence syndrome. To find out whether there is any correlation between psycho-socio-clinical variables and high-risk behaviour in patients with alcohol dependence syndrome.

METHODS

The study was conducted in the psychiatric ward of a tertiary care hospital, Mangalore. It was a cross sectional observational, descriptive study conducted between November 2019 and August 2021 with a sample size of 100.

Inclusion criteria

dult male patients aged 18-60 years meeting criteria for Alcohol dependence syndrome according to ICD 10 and those consenting for the study were included.

Exclusion criteria

Patients meeting criteria for other psychiatric disorders except for Nicotine dependence / use, chronic debilitating medical illness, intellectual disability and cognitive deficits were excluded.

Procedure

The institutional ethical committee clearance was obtained. The design and nature of the study was explained and written informed consent was obtained from patients with alcohol dependence syndrome. Semi-structured proforma was used to collect socio-demographic data and clinical information. MINI screen scale was used to rule out psychiatric illness in the subjects except for nicotine dependence syndrome. clinical institute of withdrawal assessment was used to assess alcohol withdrawal and exclude those in withdrawal (score of more than 10) and mini mental state examination was applied to measure cognitive impairment.

Grant et al defines the age of onset of initiation as the age at which an individual first started drinking excluding the small tastes or sips of alcohol.[7] The age of onset of problem drinking and the age of onset of alcohol dependence was assessed according to the alcohol-use section of schedules for clinical assessment in neuropsychiatry.[8]

Tools for assessment:

The mini international neuropsychiatric interview (MINI)

It is a brief structured diagnostic interview organized in diagnostic sections. Using branching tree logic, MINI has two to four screening questions per disorder.[9]

Violent risk appraisal guide

The violence risk appraisal guide is a tool used for estimation of risk of recidivism. It is a 12 items scale with a risk of re-offending. It involves mathematical technique to determine factors present in offenders and hence is an actuarial assessment of risk.[10]

Deliberate self-harm inventory

The deliberate self-harm inventory (DSHI) is a17-item scale. It is a self-report questionnaire. This scale assesses the frequency, severity, type and duration of self-harm. A score of ‘one’ is assigned to participants who answer ‘yes’ to any of the questions, and a score of ‘zero’ if the answer is ‘no’.[11]

Clinical institute withdrawal assessment of alcohol scale, revised (CIWA-Ar)

This scale is used to measure severity of withdrawal. It includes ten items of signs and symptoms of alcohol withdrawal. It is easy to administer (5 minutes). Absent to minimum withdrawal is indicated by a score of 0-9, mild to moderate withdrawal by 10-19 and severe withdrawal by scores 20 or more.[12]

Mini mental state examination

The mini-mental state examination (MMSE) is useful to know the cognitive impairment. It measures various areas of cognitive functioning. It also has good sensitivity and specificity and good test-retest reliability (0.80-0.95).[13]

Severity of alcohol dependence questionnaire (SADQ)

The SADQ is a self-administered, short, 20-item questionnaire designed to measure severity of dependence

on alcohol. It has five subscales and each has four items each: a) physical withdrawal, b) affective withdrawal, c) withdrawal relief drinking, d) alcohol consumption, e) rapidity of reinstatement.

Each item was scored on a 4-point scale with a score of 0 to 3. Score more than 30 correlates with clinician rating of severe alcohol dependence. It has a test-retest reliability of 0.85.[6]

RESULTS

The study included 100 individuals diagnosed with alcohol dependence syndrome. The socio demographic details are given in Table 1.

Majority (60%) of the study participants had age of onset less than 25 years and 43 (43%) and 35 (35%) of the study participants age of dependence in the age group 29 to 40 years and 18 to 25 years respectively.

Table 1: Distribution of study participants according to socio-demographic variables, n=100.

Socio-demographic variables		Frequency	Percent
Age groups (in years)	18-25	5	5.0
	26-40	40	40.0
	41-60	55	55.0
Level of education	Primary	20	20.0
	Secondary	42	42.0
	Higher secondary	15	15.0
	College	23	23.0
Occupation	Unskilled	44	44.0
	Skilled	33	33.0
	Professional	23	23.0
Marital status	Married	64	64.0
	Separated/ divorce	4	3.0
	Single	32	32.0
Type of family	Joint	23	22.0
	Nuclear	77	72.0
Family history of alcohol harmful use/ alcohol dependence syndrome	Absent	41	41.0
	Present	59	59.0

Table 2: Frequency of occurrence of high-risk behaviour and severity of alcohol dependence syndrome among the sample.

Study variables		Frequency (n=100)	Percentage
SADQ	Mild	37	37.0
	Moderate	40	40.0
	Severe	23	23.0
High risk behavior	Nil	49	49.0
	Road traffic accident	25	25.0
	Self-injurious Behavior	10	10.0
	Risky sexual and violent behavior	16	16.0

SADQ: Severity of alcohol dependence.

SADQ score revealed that 23% of the study participants had severe alcohol dependence, 40% had moderate while 37% of study participants had mild alcohol dependence. Among the different high-risk behaviours among the study participants, road traffic accident was the most common (25%) followed by risky sexual and violent behaviour (16%) and self-injurious behaviour (10%). 49% of the study participants did not have any high-risk behaviours (Table 2).

There was a statistically significant difference between the age groups (Fishers exact test=14.394, p value= 0.012, occupation (Fishers exact test=16.923, p value= 0.007), family history of alcohol harmful use/alcohol dependence syndrome (Fishers exact test=10.157, p value =0.016) and high risk behavior. It was seen that High-risk behaviour was common among the age group 26 to 40 years. 21 (35.6%) of the study participants with family history of alcohol harmful use/alcohol dependence syndrome had high-risk behaviour of road traffic accident, 4 (6.8%) of the study participants with family

history of alcohol harmful use/alcohol dependence syndrome had self-injurious behaviour and 7 (11.9%) of the study participants with family history of alcohol harmful use/alcohol dependence syndrome had risky sexual behaviour. It was found that high risk behaviour was significantly more common among the study participants who are unskilled workers (Fishers exact test =16.923, p=0.007). However, the study found no statistical significant difference between level of education (p=0.180), type of family (p value =0.543) and high risk behaviour (Table 3).

On comparing high-risk behaviour with age of onset and age of dependence, the study found that there was a statistical significant association between age of onset (p value <0.0001), age of dependence (p value =0.002) and high-risk behaviour (Table 4).

Table 3: Association between high-risk behaviour and socio-demographic variables.

Socio-demographic variables		High-risk behavior				Fishers exact test	P value
		Nil	Road traffic accident	Self-injurious behavior	Risky sexual and violent behavior		
Age groups (in years)	18-25	1 (20.0)	2 (40.0)	1 (20.0)	1 (20.0)	14.394	0.012*
	26-40	14 (35.0)	14 (35.0)	2 (5.0)	10 (25.0)		
	41-60	34 (61.8)	9 (16.4)	7 (12.7)	5 (9.1)		
Level of education	Primary	12 (60.0)	5 (25.0)	1 (5.0)	2 (10.0)	12.081	0.180
	Secondary	21 (50.0)	10 (23.8)	3 (7.1)	8 (19.0)		
	Higher secondary	9 (60.0)	1 (6.7)	4 (26.7)	1 (6.7)		
	College	7 (30.4)	9 (39.1)	2 (8.7)	5 (21.7)		
Occupation	Unskilled	26 (59.1)	8 (18.2)	5 (11.4)	5 (11.4)	16.923	0.007*
	Skilled	16 (48.5)	4 (12.1)	4 (12.1)	9 (27.3)		
	Professional	7 (30.4)	13 (56.5)	1 (4.3)	2 (8.7)		
Marital status	Married	35 (54.6)	11 (17.1)	5 (7.8)	13 (20.3)	-	-
	Separated/ divorce	3 (100)	0	0	0		
	Single	11 (34.3)	14 (43.7)	5 (15.6)	3 (9.4)		
Type of family	Joint	13 (59.1)	4 (18.1)	3 (13.6)	2 (9.1)	0.258	0.543
	Nuclear	36 (46.2)	21 (26.9)	7 (9.0)	14 (17.9)		
Family history of alcohol use	Absent	22 (53.7)	4 (9.8)	6 (14.6)	9 (22.0)	10.157	0.016*
	Present	27 (45.8)	21 (35.6)	4 (6.8)	7 (11.9)		

P<0.05 is significant

Table 4: Association between high-risk behaviour and clinical variables.

		High-risk behavior				Fishers exact test	P value
		Nil	Road traffic accident	Self-injurious behavior	Risky sexual and violent behavior		
Age of onset (in years)	<25	36 (60)	6 (10)	8 (13.3)	10 (16.7)	18.422	<0.0001*
	≥25	13 (32.5)	19 (47.5)	2 (5.0)	6 (15.0)		
Age of dependence (in years)	18-25	24 (63.2)	7 (18.4)	4 (10.5)	3 (7.9)	19.540	0.002*
	26-40	12 (27.9)	17 (39.5)	3 (7.0)	11 (25.6)		
	>41	13 (68.4)	1 (5.3)	3 (15.8)	2 (10.5)		

P<0.05 is significant

Table 5: Association between high-risk behaviour and severity of alcohol dependence syndrome.

		High-risk behavior				Fishers exact test	P value
		Nil	Road traffic accident	Self-injurious behavior	Risky sexual and violent behavior		
SADQ	Mild	15 (40.5)	12 (32.4)	2 (5.4)	8 (21.6)	23.085	<0.0001*
	Moderate	28 (70.0)	9 (22.5)	1 (2.5)	2 (5.0)		
	Severe	6 (26.1)	4 (17.4)	7 (30.4)	6 (26.1)		

P<0.05 is significant

The severity of alcohol dependence was found to be significantly associated with high-risk behaviour such as road traffic accident, self-injurious behaviour and risky sexual and violent behaviour (p<0.0001). 4 (17.4%) and 7 (30.4%) of study participants with road traffic accident and self-injurious behaviour as high-risk behaviour had severe alcohol dependence syndrome respectively (Table 5).

DISCUSSION

Socio demographic and clinical variables

The study showed that among the 100 study participants, majority (42%) had completed secondary level of education followed by college (23%) and 44% were unskilled workers which was in contrast with the study by Chandrashekar et al which had majority of the samples (35%) who were graduates followed by primary education and 26.7% of the individuals were in business field followed by agriculture (25%).[14] This could be due to the kind of study population who get admitted in our hospital.

72% of the study participants were living in nuclear family and most of the study participants were married (64%), 32 (32%) were single and 3 (3%) of the study participants were divorced/separated which was in line with a study which showed that majority of the study participants were from nuclear families (82%) and married (79%).[15] In the present study 59% had a family history of alcohol harmful use/alcohol dependence syndrome and 41% had no family history of alcohol harmful use/alcohol dependence syndrome which was in line with a previous study. Age of initiation of drinking was less than 25 years for 60% of the study participants and the age of dependence was 43% for participants aged 29-40 years and 35% for 18-25 years which was consistent with the findings of previous study.[14]

Alcohol and high risk behaviour

Alcohol harmful use is one of the leading risk factors for population health and has an impact on health-related targets of the sustainable development goals (SDGs). Alcohol use increases sexual risks and could increase the likelihood of unprotected sex. Higher sexual risk is predicted by quantity of alcohol than frequency of drinking. Alcohol intoxication is known to increase cognitive dysfunction, impulsivity and intensity of suicidal ideation. Attention and driving skills of a driver are determined by how many drinks he or she has had before driving. Sexual aggression and sexual victimization are associated with drinking in conjunction with sex.[5]

The severity of alcohol dependence questionnaire (SADQ) score revealed that 23% of the study participants had severe dependence, 40% had moderate while 37% of study participants had mild dependence. Among the different high-risk behaviour among the study participants road traffic accident was the most common (25%) followed by risky sexual and violent behaviour (16%) and self-injurious behaviour (10%). 49% of the study participants did not have any high-risk behaviours. A study done by Korlakunta and Reddy revealed that 21% of the sample had road traffic accidents, followed by crime and violence (15%).[16]

The study showed that there was a statistically significant difference between the age groups (p=0.012), occupation (0.007), family history of alcohol harmful use/alcohol dependence syndrome (p=0.016) and high-risk behaviour. Road traffic accidents and risky sexual and violent behaviour was more common among age group 26 to 40 years which could be due to increased prevalence of drinking among this age group. Self-injurious behaviour was found to be more prevalent among 41 to 60 years. 21 (35.6%) of the study participants with family history of alcohol harmful use/alcohol dependence syndrome had high-risk behaviour of road traffic accident, 4 (6.8%) had self-injurious behaviour and 7 (11.9%) risky sexual and violent behaviour. Also, it was found that road traffic accident was significantly more common among professionals and this could be as a result of increased stress among the professionals. Self-injurious behaviour was statistically significant among unskilled workers and risky sexual and violent behaviour among skilled workers. However, the study found no statistically significant difference between level of education (p=0.180), type of family (p value =0.543) and high-risk behaviour. Korlakunta et al reported that there was a significant association between age (p=0.001), marital status (p=0.001), education (p=0), and high-risk behaviour. But there was no significant association between gender (p=0.113), occupation (p=0.451), family type (p=0.425), and high-risk behaviour.[16]

On comparing high-risk behaviour with age of onset and age of dependence the study found that there was a statistically significant association between age of onset (p<0.0001), age of dependence (p =0.002) and high-risk behaviour. A previous study found association between the duration of dependence and high-risk behaviour (p=0). However, no association was found between age of initiation of drink, age at dependence and high-risk behaviour.[16] Hingson studied the association and revealed that even after controlling for personal characters associated with onset of drinking, there was a 4.8 times higher risk of injury in subjects who started drinking before the age of 14 years as compared to the ones who started drinking after 21 years of age. The risk was increased by 4.9 times for injury under the influence of alcohol.[17]

In another study done in the same institute it was found that majority of the sample was unskilled labourers and most were in the age group of 31-40 years (40%). Majority of the sample was married (70%). Most of the study population (86.7%) had below 25 years of onset of

alcohol dependence syndrome and deliberate self-harm was found in 30%.[18]

In the study it was found that the severity of alcohol dependence was significantly associated with high-risk behaviour such as road traffic accident, self-injurious behaviour and risky sexual and violent behaviour ($p<0.0001$). 4 (17.4%) and 7 (30.4%) of study participants with road traffic accident and self-injurious behaviour as high-risk behaviour had severe alcohol dependence syndrome respectively. 9% of study participants with road traffic accident had moderate alcohol dependence and 2% of risky sexual and violent behaviour had moderate alcohol dependence. In a study, it was seen that there was a significant association between severity of alcohol dependence syndrome and high-risk behaviour such as road traffic accidents, crime, self-injurious behaviour and risky sexual behaviour. However, the study did not look for individual association between the severity of dependence and each risk factor.[16]

This study is one of the few studies done to assess high risk behaviour in alcohol dependence syndrome. The diagnosis was made by structured psychiatric interview schedule and scales that allowed us to rule out comorbid conditions. The inclusion and exclusion criteria were specific. No sample bias was ensured due to recruitment of consecutive patients. All the tools used in the study were administered by trained professionals and the scales had good reliability and validity scores. Self-rated questionnaire method was used but it maybe a crude method and open to distortion due to poor recall and misinterpretation.

The study has some limitations. The sample size of 100 was small and as it was done in inpatient hospital population; the results of the study cannot be generalised. There was a lack of a comparison group that would have helped to draw a better conclusion about the relationship between alcohol abuse and high-risk behaviour.

CONCLUSION

The present study concluded that most individuals with alcohol dependence syndrome have high risk behaviour. Road traffic accident was the most common followed by risky sexual and violent behaviour. There was a significant association between severity of alcohol dependence syndrome and high-risk behaviour. Among the demographic variables age, occupation and family history of alcohol harmful use/alcohol dependence syndrome had statistically significant association with high-risk behaviour.

ACKNOWLEDGEMENTS

The authors are grateful to the institute for support and subjects who participated in the study.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Lopez A, Mathers C, Ezzati M, Jamison D, Murray C. Global and regional burden of disease and risk factors, 2001: systematic analysis of population health data. Lancet. 2006;367(9524):1747-57.
2. Leigh B. Peril, chance, adventure: concepts of risk, alcohol use and risky behavior in young adults. Addiction. 1999;94(3):371-83.
3. Greenfield TK, Weisner C. Drinking problems and self-reported criminal behavior, arrests and convictions: 1990 US alcohol and 1989 county surveys. Addiction. 1995;90(3):361-73.
4. Leigh B. Alcohol consumption and sexual activity as reported with a diary technique. J Abnorm Psychol. 1993;102(3):490-3.
5. Global status report on alcohol and health 2018. Geneva: World Health Organization; 2018.
6. Stockwell T, Murphy D, Hodgson R. The severity of alcohol dependence questionnaire: its use, reliability and validity. Br J Addict. 1983;78(2):145-55.
7. Grant BF. The impact of a family history of alcoholism on the relationship between age at onset of alcohol use and DSM-IV alcohol dependence: results from the National Longitudinal Alcohol Epidemiologic Survey. Alcohol Health Res World. 1998;22(2):144.
8. World Health Organization. Schedules for clinical assessment in neuropsychiatry. 1st edn. American Psychiatric Association Publishing; 1994.
9. Sheehan DV, Lecrubier Y, Sheehan KH, Janavs J, Weiller E, Keskiner A, et al. The validity of the Mini International Neuropsychiatric Interview (MINI) according to the SCID-P and its reliability. Eur Psychiatr. 1997;12(5):232-41.
10. MacDonald DK. Using the Violence Risk Appraisal Guide (VRAG). Dustin K MacDonald. 2021. Available from: http://dustinkmacdonald.com/using-violence-risk-appraisal-guide-vrag/. Accessed on 26 October 2021.
11. Gratz KL. Measurement of deliberate self-harm: preliminary data on the deliberate self-harm inventory. J Psychopathol Behav Assess. 2001;23:253-63.
12. Kattimani S, Bharadwaj B. Clinical management of alcohol withdrawal: a systematic review. Indian Psychiatr J. 2013;22(2):100-8.
13. Baek M, Kim K, Park Y, Kim S. The validity and reliability of the mini-mental state examination-2 for detecting mild cognitive impairment and Alzheimer's disease in a Korean population. PLoS One. 2016;11(9):e0163792.
14. Chandra Sekhar A, Ravula ER. Association between high-risk behavior and alcohol dependence syndrome. Int J Intg Med Sc.i 2018;5:678-86.

15. Poulose B, Srinivasan K. High risk behaviors following alcohol use in alcohol dependent men. Indian J Med Res. 2009;129(4):376-81.
16. Korlakunta A, Reddy CM. High-risk behavior in patients with alcohol dependence. Indian J Psychiatr. 2019;61:125-30.
17. Hingson R. Age of drinking onset and unintentional injury involvement after drinking. JAMA. 2000;284(12):1527.
18. Koganti CT, Mittal S, Safeekh AT, Rao P, Chandini. Prevalence of deliberate self-harm in alcohol dependence syndrome patients. Int J Scient Res Pub. 2015;5:1-6.

Cite this article as: Carl AM, Safeekh AT. Frequency of high risk behaviour in patients with alcohol dependence syndrome: a cross sectional study. Int J Community Med Public Health 2023;10:4767-73.