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Suicidal Ideation among Patients of Alcohol Dependence Syndrome: A Hospital Based Case Series Study

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Abstract

Background: Alcohol use has been recorded since ancient times in India. The chronic and heavy use of alcohol has tremendous impact on the medical and social well-being of the individual. Alcohol dependence results in suicidal behaviour leading to serious effects on individuals, families, and society, making it a topic of immense importance.

Aims: This study aims to assess the socio-demographic profile, risk of suicidal ideation and different correlates associated with it, and the severity of depressive symptoms in patients of alcohol dependence syndrome.

Methodology: A total of 120 out-patients' alcohol dependence syndrome according to ICD-10 were assessed for severity of dependence using Severity of Alcohol-Dependence Questionnaire (SADQ) and Assessment of suicidal ideation and depressive symptoms was conducted using Modified Scale for Suicidal Ideation (MSSI) and Hamilton Depression Rating Scale (HAM-D) respectively. Relationship between the severity of alcohol dependence, suicidal ideation and depressive symptoms are analyzed using SPSS software.

Results: Suicidal ideations and depressive symptoms were present in 60.0% and 75.0% of the study participants respectively. Suicidal ideation was associated with socioeconomic status, religion, age at first alcohol use, severity of alcohol dependence and severity of depressive symptoms.

Conclusions: This study had shown that the individuals with alcohol abuse reported to suffer from depression and suicidal ideation.

Keywords: Alcoholism • Suicidal ideation • Depression • Mental health • Motivational interviewing

Introduction

Use of alcohol has been recorded since ancient times in India and around the World. In India, estimates have shown a prevalence rate of 16-50% for alcohol dependence [1]. Study in southern rural India reported that 14.2% of the population sample had showed hazardous alcohol use [2]. Alcohol dependence has been found to cause adverse mental health consequences with prevalence rates for psychiatric co-morbidity as high as 57% - 84% [3-5].

Suicide has been an escalating public health problem, and alcohol dependence noted to be precipitating factor for suicidal behaviour. Predisposing factors for increased risk of suicide represent externalizing and internalizing constructs. Predominant Externalizing constructs being disinhibition, impulsiveness and impaired judgment, and internalizing constructs being negative affect and hopelessness. Alcohol may also be used as a means to ease the distress associated with committing an act of suicide [6]. Suicidal ideation has been viewed as an initial stage on a continuum of suicidality and a primary marker for future suicidal behaviour. Major depressive episodes and interpersonal difficulties have been conceptualized as precipitating factors [7, 8]

Alcohol use is known to exert significant effect on serotonin metabolism which is also seen in patients with depression [9, 10]. Therefore, compared to those depressed patients who do not use alcohol depressed patients with co-morbid alcohol dependence had more severe hypofrontality [11].

There are various studies that have glanced into suicidal behaviour due to use of alcohol but those reported from India are scarce. To the best of our knowledge, studies which tried to find the risk of suicidality in male patient with alcohol dependence syndrome are scanty and in country like India where alcohol consumption is high, an insight into the matter of suicidality caused by alcohol can act as motivational factors to quit alcohol hence the present study will be carried out. This study was undertaken to determine risk of suicidal ideation and severity of depressive symptoms in patients with alcohol dependence.

Methodology

Cross sectional hospital based observational study design was used in this study. This study was conducted after obtaining written informed consent and institutional ethics committee approval. Sample size was calculated as 120 by using open EPI version 2.3.1 at 95% confidence level

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on the basis of prevalence of alcohol consumption (17.1%) [12]. Patients with age 21 years and above suffering from alcohol dependence attending psychiatry OPD over a period of 6 months (October 2019 till March 2020) were included in the study. Patient with acute intoxication, withdrawal state, signs and symptoms suggestive of alcoholic cirrhosis, a clinical diagnosis of endocrine disorders, other systemic illness, schizophrenia, delusional disorder, and prior anxiety & depressive disorders and those with substance use other than alcohol and tobacco were excluded. Structured proforma containing socio-demographic details and details of physical and mental status examination used for psychiatric evaluation. Psychiatric diagnosis was made as per ICD-10 and severity of illness was assessed on the basis of severity of alcohol dependence Questionnaire (SAD-Q), Hamilton Depression Rating Scale (HAM-D) and Modified Scale for Suicidal Ideation (MSSI) [13-15]. MSSI included 18 items. An MSSI score of 0 was considered as normal, 0 – 8 was considered as low, 8 – 20 was considered as mild to moderate and more than 20 was considered as severe suicidal ideation. Results were tabulated and analysed using Microsoft excel. IBM SPSS Statistics for Windows (Trial Version 20.0) was used for statistical analysis. Mean and standard deviation were calculated for quantitative measures. Chi-square test and Fisher's exact test were used to analyze categorical values and check the association between two variables. A regression analysis was used to find the association between MSSI scores and SAD – Q and HAM – D scores after checking all the assumptions. A p-value of <0.05 is considered as statistically significant.

Results and Discussion

In our study it was noted most of the participants were aged between 31 to 40 years (Table 1). The mean age of the study subjects was 35.22 years. About 61.7% of the participants were married and staying with spouse. It was found that 45.8% of the participants are referred by family members to the outpatient department.

The mean age at first drink was 23.8 years in this study. The mean SADQ score of the study participants was 32.88 with a standard deviation of 11.36. It was noted that 60% of participants reported severe alcohol dependence (Table 2).

Suicidal ideations were present in 60.0% of alcohol dependents. About 30.8% had mild to moderate suicidal ideation and 10.8% with severe suicidal ideation. The mean modified scale for suicidal ideation (MSSI) score of study participant was 9.53 with standard deviation of 11.26. Suicidal ideation was present in 36 (81.8%) participants belonging to lower

Table 1. Sociodemographic variable of study participants

Age(in years)	Frequency	Percent
23-30	37	30.9
31-40	49	40.9
41-47	34	28.2
Socio economic status		
Upper middle	2	1.7
Middle	50	41.7
Lower middle	44	36.7
Lower	24	20
Educational Status		
Illiterate	13	10.8
Primary	40	33.3
6-10th	51	42.5
Higher secondary	15	12.5
Graduate	1	0.8
Domicile		
Rural	61	50.8
Semi urban	41	34.2
Urban	18	15
Occupation		
Unemployed	3	2.5
Farmer	22	18.3
Unskilled	10	8.3
Semiskilled	19	15.8
Skilled	44	36.7
Clerical	5	4.2
Professional	1	0.8
Business	16	13.3

Table 2. Psychoactive substance related variable in study participants.

Alcohol related variables	% (n=120)
1. Age at first drink	23.8 years
2. Chronic alcoholics	61.70%
3. SADQ scores	
Severe alcohol dependence	60.00%
Moderate alcohol dependence	30.80%
Mild alcohol dependence	9.20%

Table 3. Association of severity of alcohol dependence with severity of suicidal ideation in study participants.

SAD-Q	Severity of suicidal ideation							
	No suicidal ideation		Low suicidal ideation		Mild to Moderate		Severe suicidal ideation	
	Count	%	Count	%	Count	%	Count	%
Mild	11	22.9	0	0	0	0	0	0
Moderate	36	75	0	0	0	0	0	0
Severe	1	2.1	19	100	37	51.4	16	100
Total	48	40	19	15.8	37	30.8	16	13.3
p<(0.001) Fischer exact test**								

Table 4. Association of severity of alcohol dependence with severity of depressive symptoms in study participants.

SAD-Q	HAM-D									
	Normal		Mild		Moderate		Severe		Very severe	
	Count	%	Count	%	Count	%	Count	%	Count	%
Mild	11	36.7	0	0	0	0	0	0	0	0
Moderate	19	63.3	17	94.4	0	0	0	0	0	0
Severe	0	0	1	5.6	52	100	12	100	8	100
Total	30	25	18	15	52	43.3	12	10	8	6.7
p<(0.001) Fischer exact test**										

middle socioeconomic status which was statistically significant (p=0.003). This study had shown that, 65.7% participants with suicidal ideation were Hindus by religion. Suicidal ideation was seen more in participants who had similar amount of alcohol every day and unable to abstain except due to unavailability of money than participants who use alcohol infrequently when available. About 75.0% of the participants who had their first use of alcohol at the age below 20 years had suicidal ideations while 57.5% of the study participants who had their first alcohol use between the ages 21 to 30 years reported to have suicidal ideation.

A Fischer exact test was performed to examine the association between suicidal ideation with various study variables. A significant association was found between suicidal ideation and socio-economic status (p= 0.003), religion (p= 0.001), pattern of alcohol use (p= 0.001), age at first alcohol use (p= 0.03).

A chi-square test (Fischer exact test) was performed to examine the association between severity of alcohol dependence and severity of suicidal ideation. Significant association ($p<0.001$) was seen between severity of alcohol dependence and suicidal ideation. About 51.4% of the participants showed with mild to moderate suicidal ideation had severe SAD – Q scores, all with severe suicidal ideation had severe SAD-Q scores and remaining showed low suicidal ideation (Table 3).

Our study also showed75.0% of the patients had clinically significant depression. Out of which 43.3% had moderate depression and 10.0% showed severe depression. The mean HAM-D score was 13.41 ± 7.00.

A Fischer exact test was performed to examine the association between severity of alcohol dependence and severity of depressive symptoms. A significant association was found between these variables (p<0.001). All patients with severe alcohol dependence had moderate depressive symptoms, 12 (100%) had severe depressive symptoms and remaining showed very severe depressive symptoms (Table 4).

Fischer exact test performed to examine the association between severity of depressive symptoms and severity of suicidal ideation showed significant association (p<0.001). In alcohol dependence syndrome with very severe depressive symptoms, about 8 (50%) showed severe suicidal ideation (Table-5).

MSSI scores had no significant association with Severity of alcohol dependence scores but had a significant association with the HAM – D scores (Table 6).

Discussion

In this study,120 alcohol dependence patients were evaluated in the one sitting using semi structured proforma and various rating scales to determine the risk and severity of suicidal ideation and depressive symptoms.

In our study, the mean age of participants was 35 years (35± 6.69 years). Mean age of study conducted by Kumar S et al was 40 years (40.06±8.39) [16].

All the participants in our study were males; majority had education up to 10th standard (42.5%), were employed (97.0%) out of which 44 were skilled workers, and most of them are getting daily earnings which are an important risk factor for daily consumption of alcohol. 50.8% are from rural background, 41.7% belonged to middle socioeconomic class. It was noted that 61.7% were married; single and divorced being 25% and 8.3% respectively. 5% were married but separated from the spouse.

The mean age at first drink in this study was 23.8 years which correlates with Kaur R et al study which showed 30.6% of participants had their first alcohol consumption below the age of 20 years [17]. About 61.7% of our study participants had pattern of consuming similar amount of alcohol every day and were unable to abstain due to unavailability of money.

About 27.5% of our study individuals episodically consumed alcohol with significant gaps in between where alcohol consumption was for 2 days without sobering up and 10.8% consumed alcohol infrequently whenever available. About 60.0% study group have severe alcohol dependence, 30.8% and 9.2% of participants had moderate and mild alcohol dependence. In Kumar S et al study 23%, 70%, 7% of participants were diagnosed to be having mild, moderate, and severe alcohol dependence respectively [16]. Our study mean SAD-Q score was 32.88 (32.88 ± 11.36) with minimum and maximum score of 8 and 56 respectively. In Kumar S et al study mean SAD-Q score was 22.46 (22.46±8.11) with minimum and maximum SAD-Q score of 7 and 45 respectively [16].

Suicidal ideation was present in 60.0% of the study participants mostly because of less awareness of hazardous effects of alcohol use among rural population whereas Kumar S et al reported suicidal ideation of 22% and 9.5% of participants [16]. In a study conducted by K Ravneet et al.15.8%, 30.8%, 10.8% of our study participants had low, mild to moderate and severe suicidal ideation respectively. Serious suicidal ideations were seen in 2.5% of total participants. The Mean Modified Scale for Suicidal Ideation (MSSI)

Table 5. Association of severity of depressive symptoms and severity of suicidal ideation in patients of alcohol dependence syndrome

HAM-D	Severity of suicidal ideation							
	No suicidal ideation		Low suicidal ideation		Mild to Moderate		Severe suicidal ideation	
	Count	%	Count	%	Count	%	Count	%
Normal	30	62.5	0	0	0	0	0	0
Mild	18	37.5	0	0	0	0	0	0
Moderate	0	0	19	100	33	89.2	0	0
Severe	0	0	0	0	4	10.8	8	50
Very severe	0	0	0	0	0	0	8	50
Total	48	40	19	15.8	37	30.8	16	13.3
p<(0.001) Fischer exact test**								

Table 6. Correlates of suicidal ideation

Variables	N	Beta coeffcient	Significance
Dependent = Suicidal ideation			**(p)**
SAD – Q scores	120	0.107	0.315
HAM – D scores	120	0.829	0.000**

score of study participant was 9.53 with standard deviation of 11.26 (9.53 ± 11.26). The maximum and minimum scores were 0 and 45 respectively.

Clinically significant depression was reported in 75% of the study participants, out of which 15%, 43.3%, and10% had mild, moderate and severe depressive symptoms respectively. Very severe depressive symptom was seen in 6.7%. The mean HAM-D score of study participants was 13.41 ± 7.00 with minimum and maximum scores of 2 and 38 respectively. Whereas in a study conducted by Kumar S et al depression was seen in 46.0%. Significant association was seen with suicidal ideation and socioeconomic status (p=0.003) and religion (p=0.001). Suicidal ideation was found more in lower middle class probably because of their awareness and less stigmatizing attitude toward disclosing about interpersonal matters, and reasons for alcohol intake which might have reported more freely regarding the suicidal ideation. Also suicidal ideation had significant association with severity of alcohol dependence (p= <0.001), age at first use of alcohol (p=0.03), and pattern of alcohol use (p= <0.001) (Table-3). Whereas Kumar S et al showed no significant association with factors such as age at first use of alcohol and pattern of alcohol use. In a Korean cohort study, it was found that increased frequency of drinking, larger quantity of alcohol consumption per drinking day, and a large amount of average alcohol consumption were associated with a higher risk of suicide which is similar to the findings in the current study [18]. There was a significant positive correlation of suicidal ideation with severity of alcohol dependence (r =0.765, p= 0.000). This finding agrees with the earlier studies [16, 17]. A significant positive correlation was reported between severity of alcohol dependence and severity of depressive symptoms (r= 0.818, p= 0.000) and suicidal ideation and severity of depressive symptoms (r =0.911, p= 0.000) in our study as well. The positive correlation may be explained by neurotoxic effect of alcohol with significant effect of alcohol on serotonin metabolism results in reduced serotonin transporter binding in the hippocampus.

Strength of the study

Our study was able to establish strong association between suicidal ideation and socioeconomic status and religion which was lacking in previous studies. This helps in proper management of suicidal ideations in alcohol dependence.

Limitations

Study cannot be generalized as it was conducted in one institution and included only male participants'. Cross sectional nature of our study shows association rather than causality. A long term prospective research will put better insight into the causality of suicidal ideation due to alcohol dependence. Exploring various contributory factors for suicidal ideation in alcohol dependence syndrome like personality, psychopathology, coping strategy employed by the spouse, family dynamics, marital functioning and other environmental and psychosocial elements will help in proper management. A comparison with age and sex matched sober individuals as a control group would have given more significant results. Our study sample had co-morbid tobacco use in about 92.5% of individuals which could not be excluded. The data which is obtained from our study on alcohol, tobacco and suicidal ideation and depressive symptoms related parameters were based on self-report, which is vulnerable for bias.

Conclusion

The present study showed that male patients of alcohol dependence syndrome higher suicidal ideation which was not significant and but significant depression scores. Our study highlights the hazardous effects of alcohol on the cognitive functioning and effect of individual, and this knowledge can be used while explaining medical model during motivational interviewing and motivational enhancement therapy session of patients with alcohol dependence syndrome. Suicide risk assessment can be routinely carried out in these patients so that suicide prevention technique can be addressed and cognitive behavioural therapy can be planned.

Source of support

Nil

Declaration of interest

None

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