

Suicidal Ideation and its Correlates in Patients of Alcohol Dependence Syndrome

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ABSTRACT

Introduction: Risk of suicide among addicts is higher than in the general population and patients of alcohol dependence are not exception. The large population of individuals with alcohol use disorders, the relative higher frequency of suicides and suicide-related behaviours in this population, and the devastating effects of attempted and completed suicides on individuals, families, and society make this a topic of immense importance. This study aims to find out suicidal ideation and different factors associated with it among patients of alcohol dependence who visited Psychiatry OPD.

Material and Methods: The study sample consisted of 50 consecutive male patients of alcohol dependence syndrome who visited Psychiatry OPD and were neither in withdrawal state nor in acute intoxication. A similar number of age, sex and education level matched healthy persons were kept as control. After obtaining informed consent, both study sample and control subjects were assessed for suicidal ideation, depression and anxiety with the help of 'Scale for Suicidal Ideation (SSI)', 'Beck's Depression Inventory-Short Form (BDI-SF)' and 'State-Trait Anxiety Inventory (STAI)' respectively.

Results: In comparison to normal controls, the patients of alcohol dependence syndrome had significantly higher mean scores on the SSI ($t=2.858$, $df=98$, $p<0.01$), BDI-SF ($t=3.082$, $df=98$, $p<0.01$) and the State subscale ($t=3.465$, $df=98$, $p<0.01$) as well as the Trait subscale ($t=3.508$, $df=98$, $p<0.01$) of STAI. In comparison of control subjects, significantly more number of the patients had clinically significant suicidal ideation ($\chi^2=9.470$; $df=1$; $p<0.01$) as well as clinically significant depression ($\chi^2=18.316$; $df=1$; $p<0.001$). A significant positive correlation of suicidal ideation (SSI total score) was found with SADQ total score ($r=0.835$, $p<0.001$), BDI-SF total score ($r=0.934$, $p<0.001$), STAI-State score ($r=0.952$, $p<0.001$), and STAI-Trait score ($r=0.921$, $p<0.001$) in the patients ($N=50$).

Conclusion: Overall, the male patients of alcohol dependence syndrome had significantly higher suicidal ideation, depression and state and trait anxiety scores as compared to normal controls. A statistically significant positive correlation of suicidal ideation was found with levels of depression, anxiety as well as severity of alcohol dependence in the patients. These issues should carefully be enquired for during therapy and follow up of patients with alcohol use disorders.

Key words: Suicidal ideation, Depression, Anxiety, Alcohol Dependence Syndrome, Male

decades and it is now a fact that alcohol use disorders are an important risk factor for suicidal behaviour. According to some researchers, risk of suicide in alcohol-dependent subjects is even higher than in patients with depression.⁶

The risk for suicide among alcohol-dependent subjects varies from 7% to 18%.⁶⁻⁹ Murphy and Wetzel¹⁰ reviewed the epidemiological literature and found that the lifetime risk of suicide among individuals with alcohol dependence treated in out-patient and in-patient settings was 2.2 and 3.4%, respectively.

Several factors have been hypothesized to be associated with increased suicidality among patients of alcohol dependence. For example a recent study suggests that the risk for suicide associated with alcohol dependence increases with age.¹¹ Further, alcoholism and depression are frequently comorbid.¹²⁻¹⁴ and such comorbidity is now claimed to be a major risk factor for suicide.¹⁵ This can happen in two ways- both the patients of alcohol dependence with comorbid depression as well as the patients of depressive disorders with history of alcoholism are at increased risk of suicidality. Several researchers have pointed out that among alcohol-dependent individuals who committed suicide, 45-70% meet the criteria of major depressive episode before a suicide.¹⁶⁻¹⁸ In a recent study, Sher et al¹⁹ found that depressed subjects with a history of alcoholism had higher current suicide ideation scale scores compared with depressed subjects without a history of alcoholism. They also found that being male and older than approximately 50 years of age increases the risk for completed suicide.

In a recent study in India, Kaur et al.²⁰ have found that around 10% of the patients of alcohol dependence syndrome expressed suicidal thoughts or ideas, out of which 7% reported to have attempted suicide. Such suicidal behaviour was evaluated after one to one interview with a psychiatrist. It was further seen that the group which expressed suicidality, either suicidal thoughts/ideas or attempted suicide, was significantly ($p<0.01$) associated with comorbidity of other psychiatric diagnoses like mood disorders. Suicidality among alcoholics is a burning topic of current scenario in view of rising population exposed to alcohol.

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There may be multiple relationships between alcohol dependence and suicidality. In a recent article by Gossop²¹ it has been emphasized that effect of alcohol use and suicidality is a bidirectional phenomenon as well as alcohol use and suicidality can themselves be affected by any third factor like some underlying disorder. The large population of individuals with alcohol use disorders, the relative frequency of suicides and suicide-related behaviours in this population, and the devastating effects of attempted and completed suicides on individuals, families, and society make this a topic of immense importance. However, the number of publications on the relation between alcoholism and suicidality remains relatively small, and most of these publications discuss only certain aspects of the problem. The exploration of suicidality and its correlates in patients of alcohol use disorders merits future research. This study aims to find out suicidal ideation and different factors associated with it among patients of alcohol dependence who visited Psychiatry OPD of a tertiary care medical institute at Rohilkhand Region of Uttar Pradesh in India.

MATERIAL AND METHODS

Sample consisted of 50 male patients of alcohol dependence syndrome who visited Psychiatry OPD (Out Patient Department) of a tertiary care medical institute at Bareilly in Uttar Pradesh (India). It was a hospital based cross-sectional descriptive study. Study was done after taking informed consent from the patients and obtaining the ethical approval from the Institutional Ethical Board. Purposive sampling technique was used to select sample.

Inclusion Criteria (for both the patients and control subjects)

- Male gender
- Educated at least to primary level
- Giving informed consent to participate in study
- Overtly healthy to complete study protocols

Exclusion criteria

- Patients of alcohol dependence who were either in acute intoxication or in withdrawal state of alcohol
- Patients of alcohol dependence who were dependent on other psychoactive substances
- Normal control subjects who were dependent on any psychoactive substance

All subjects of both groups went through a thorough physical and mental status examination and they were administered following tools of assessment:

Socio-demographic and Clinical Data Sheet (self-prepared): This was especially prepared for this study. In this datasheet, socio-demographic details like age, sex, race, standard (education), living pattern, domicile and socio-economic status etc. as well as clinical details like age of onset and total duration of alcohol intake, duration of alcohol dependence, severity of alcohol dependence syndrome etc. were recorded.

Severity of Alcohol Dependence Questionnaire (SADQ; Stockwell et al)²²: It is a short, easy-to-complete, self-administered, 20-item questionnaire designed to measure severity of dependence on alcohol. Its questions cover the follow-

ing aspects of dependency syndrome: - physical withdrawal symptoms, affective withdrawal symptoms, relief drinking, frequency of alcohol consumption, and speed of onset of withdrawal symptoms. Ratings of each question were done on a four-point scale: almost never-0, sometimes-1, often-2, and nearly always-3. Thus the range of total score is 0-60. The level of dependence is ascertained as Mild (total score <16), Moderated (total score 16-30) and Severe (>30). The questionnaire takes between 2 and 5 minutes to administer. During administration of the questionnaire it is ensured that the patients focus on a recent period of drinking that is typical of their heavy drinking. The SADQ has been applied on inpatient, outpatient, and community-based treatment agencies' attendees in several countries with test-retest reliability of 0.85 and internal consistency of items as well as content, criterion, and construct validity derived. It is probably most useful as an assessment tool for use with problem drinkers rather than a screening instrument.

Scale for Suicide Ideation (SSI; Beck et al, 1979)²²: This is a 19-item clinician rating instrument designed to quantify and assess suicidal ideation. For each item, there are three alternative statements graded in intensity from 0 to 2. The total score is computed by adding the individual item scores. Thus, the possible range of scores is 0-38. It has high internal consistency and moderately high correlations with clinical ratings of suicide risk and self-administered measures of self-harm. Its factor analysis yielded three meaningful factors: active suicidal desire, specific plans for suicide, and passive suicidal desire. A score of 6 or more has been found to be a cutoff threshold for clinically significant suicidal ideation in adults in some previous studies.²⁴ In this scale, the first 5 items show attitudes toward living and dying and they have been used to screen patients about any desire to make an active (item no. 4) or passive (item no. 5) suicide attempt before applying the full scale on them.²⁵

Beck Depression Inventory-Short Form (BDI-SF): The Beck Depression Inventory (BDI)²⁶ is a widely used self-rating scale for measuring depression. The BDI is divided in two subscales: the cognitive-affective (items 1 to 13) and the somatic-performance (items 14 to 21).²⁷ The cognitive-affective subscale (items 1 to 13) is called BDI short-form (BDI-SF) and has been proposed to assess depression in the medically ill subjects with scores higher than 10 associated with moderate and severe depressive syndromes.²⁸

State-Trait Anxiety Inventory (STAI; Spielberger et al.)²⁹: The STAI has been extensively used in research and clinical practice. It comprises separate self-report scales for measuring state and trait anxiety. The S-Anxiety scale (STAI form Y-1) consists of twenty statements that evaluate how respondents feel "right now, at this moment". The T-Anxiety scale (STAI form Y-2) consists of twenty statements that assess how people generally feel. Each STAI item is given a weighted score of 1 to 4. Scores on both the scales can vary from a minimum of 20 to a maximum of 80.

After data collection, it was statistically analysed using IBM Statistical Package for Social Science (SPSS) version 21.00 for Window 8.1 with parametric and nonparametric tests being used as applicable.

RESULTS

Table 1 shows comparison of socio-demographic details of the participants of this study. The mean (\pm SD) age of the patients of alcohol dependence syndrome was 40.06 (\pm 8.39) years while that of the control subjects was 38.5 (\pm 8.18) years. The age range of all the subjects of both groups was 25-62 years. The mean (\pm SD) education-years of the study group and control group was 8.62 (\pm 3.31) and 8.54 (\pm 3.58) respectively and they were at least primarily educated. Majority of the patients were unskilled, married Hindu belonging to middle class nuclear family and semi-urban/urban background of Uttar Pradesh (India). The control subjects were comparable to the study group in these socio-demographic details.

The clinical details of the patients of alcohol dependence syndrome have been shown in table 2. They started intake of alcohol at age range of 16-35 years with a mean (\pm SD) age

of the same being 22.78 (\pm 4.46) years. The mean (\pm SD) duration of alcohol dependence was 11.9 (\pm 5.92) years. Sixty percent of the patients gave history of any withdrawal treatment prior to current OPD consultation. The mean (\pm SD) of total score on SADQ (Severity of Alcohol Dependence Questionnaire) was 22.46 (\pm 8.11) and majority (77%) of the patients had moderate level of severity of alcohol dependence.

Table 3 gives comparative clinical details of male patients of alcohol dependence syndrome and normal control subjects. In comparison to normal controls, the patients had significantly higher ($p < .01$) mean scores on psychiatric assessment tools like the Scale for Suicidal Ideation (SSI), Beck's Depression Inventory-Short Form (BDI-SF) and both the State and Trait subscales of the State-Trait Anxiety Inventory (STAI). Overall 11 (22% of total) patients had clinically significant suicidal ideation in comparison to only a single of normal controls and it was statistically significant ($\chi^2=9.470$;

Socio-demographic Variables		Male patients of ADS (N=50)	Control Subjects (N = 50)	t/ χ^2	df	
		Mean \pm SD	Mean \pm SD			
Age (in years)		40.06 \pm 8.39	38.50 \pm 8.18	.942	98	.349
Education (in years)		8.62 \pm 3.31	8.54 \pm 3.58	.116	98	.908
		n%	n%			
Religion	Hindu	46(92%)	45(90%)	.154	2	.926
	Muslim	3(6%)	4(8%)			
	Sikh	1(2%)	1(2%)			
Marital status	Single	10(20%)	16(32.0%)	5.068	3	.167
	Married	29(58%)	30(60%)			
	Separated	5(10%)	1(2%)			
	Divorced	6(12%)	3(6%)			
Occupation	Unemployed	12(24%)	8(16%)	1.371	2	.504
	Unskilled Employment	26(52%)	26(52%)			
	Skilled Employment	12(24%)	16(32%)			
Residence	Rural	12(24%)	15(30%)	.459	2	.795
	Semi-urban	15(30%)	14(28%)			
	Urban	23(46%)	21(42%)			
State	Uttar Pradesh	45(90%)	43(86%)	.379	1	.538
	Uttarakhand	5(10%)	7(14%)			
Socio-economic status	Low	7(14%)	13(26%)	4.592	2	.101
	Middle	36(72%)	35(70%)			
	High	7(14%)	2(4%)			
Family type	Nuclear	34(68%)	30(60%)	.694	1	.405
	Joint	16(32%)	20(40%)			

Table-1: Comparison of Socio-demographic details of Male Patients of Alcohol Dependence Syndrome (ADS) and Control Subjects

Clinical Variables	Male Patients with ADS (N=50)		
	Minimum	Maximum	
Age of onset of alcohol intake (in years)	16	35	22.78 \pm 4.46
Duration of alcohol dependence (in years)	2	21	11.90 \pm 5.92
Total score on SADQ	7	45	22.46 \pm 8.11
			n%
History of previous withdrawal treatment			30 (60%)
Severity of ADS	Mild (SADQ total score <16)		6(12%)
	Moderate (SADQ total score = 16-30)		39(77%)
	Severe (SADQ total score >30)		5(10%)
SADQ: Severity of Alcohol Dependence Questionnaire			

Table-2: Clinical Details of Male Patients of Alcohol Dependence Syndrome (ADS; N=50)

df=1; $p < 0.01$). On screening the individuals for depression on BDI-SF, overall 46% of the patients and only 8% of normal controls had clinically significant depression and this comparison was statistically significant ($\chi^2=18.316$; df=1; $p < 0.001$).

Further, in comparison to normal controls, significantly more number of the patients gave history of occasional use other substances (like tobacco, cannabis, sedative and hypnotics etc.; $\chi^2=9.004$; df=1; $p < 0.01$). A statistical trend ($\chi^2=4.762$; df=1; $p=.054$) of more number of the patients giving history of significant past medical illnesses (like major injuries, hypertension, seizure disorder, HIV positive status etc.) was found.

Table 4 shows that there was a significant positive correlation of suicidal ideation with SADQ total score ($r=0.835$, $p < .001$), BDI-SF total score ($r=0.934$, $p < .001$), STAI-State score ($r=0.952$, $p < .001$), and STAI-Trait score ($r=0.921$, $p < .001$) in male patients of alcohol dependence syndrome.

No statistically significant correlation of suicidal ideation was observed either with age or with education-years or with age of onset of alcohol intake or with total duration of alcohol dependence in male patients of alcohol dependence syndrome.

DISCUSSION

The major finding of this study was that overall 22% of all male patients of alcohol dependence syndrome had clinically significant suicidal ideation and 46% of all of the patients had clinically significant depression. Also they had significantly higher state and trait anxiety in comparison to normal control subjects.

Presence of significantly more number of patients of alcohol dependence syndrome to have suicidal ideation in this study is in line of a very recent Indian research work by Kaur et

al.²⁰ In comparison to ours, Kaur et al.²⁰ assessed a larger sample size and found that around 10% of the patients of alcohol dependence syndrome expressed suicidal thoughts or ideas, out of which 7% reported to have attempted suicide. Suicidal ideation has been viewed as initial stage on a continuum of suicidality and a primary marker for future suicidal behaviour.²⁻⁵ In this sense timely assessment and intervention of suicidal ideation can prevent suicidal attempt. A lifetime risk of suicide in individuals with alcohol dependence treated in out-patient and in-patient settings has also been mentioned to be 2.2 and 3.4% respectively in a review article by Murphy and Wetzel.¹⁰

Recently many factors closing associated with suicidal behaviour among subjects with alcoholism has been proposed.¹⁸ The predisposing factors linked to increased risk of suicidality among individuals with alcoholism have been grouped as predominantly externalizing constructs like aggression/impulsivity and alcoholism as well as predominantly internalizing constructs like negative affect and hopelessness. Precipitating factors for suicidality among alcoholics have also been conceptualized such as major depressive episodes and stressful life events – particularly interpersonal difficulties. This model of suicidality among these patients is consistent with the stress-diathesis model of suicidal behaviour.³⁰⁻³¹

Biological vulnerability of suicidal behaviour among patients of alcohol dependence has also been suggested. Multiple research works now point out that lower serotonin activity is tied to increased aggression/ impulsivity which in turn are presumed to enhance the probability of suicidal behaviour in patients of alcohol dependence.³² A low level of 5-HIAA in CSF has been found in abstinent individuals with a history of alcohol dependence of both sexes.³³ Moreover, impulsive offenders with alcohol dependence had lower CSF 5-HIAA

Clinical Variables	Male patients of ADS (N=50)	Control Subjects (N=50)	t	df	
	Mean \pm SD				
SSI total score	40.58 \pm 5.88	2.06 \pm 2.64	2.858	98	.005*
BDI-SF total score	8.84 \pm 8.93	4.52 \pm 4.29	3.082	98	.003*
STAI-State score	31.46 \pm 15.08	23.80 \pm 4.13	3.465	98	.001*
STAI-Trait score	29.22 \pm 13.15	22.52 \pm 3.04	3.508	98	.001*
	n%	n%	χ^2		
Significant suicidal ideation (SSI total score= 6 or more)	11(22%)	1(2%)	9.470	1	.004*
Presence of Depression (BDI-SF total score >10)	23(46%)	4(8%)	18.316	1	.000**
Occasional use of other substances	32 (64%)	17(34%)	9.004	1	.005*
Significant past medical history	12(24%)	4(8%)	4.762	1	.054

*Significant at $p < .01$ (2-tailed); **Significant at $p < .001$ (2-tailed); SSI: Scale for Suicidal Ideation; BDI-SF: Beck Depression Inventory-Short Form; STAI: State-Trait Anxiety Inventory

Table-3: Comparison of Clinical Details of Male Patients of Alcohol Dependence Syndrome (ADS; N=50) and Control Subjects (N=50)

Variables	SADQ total score	BDI-SF total score	STAI-State score	STAI-Trait score
	r	R	r	r
Suicidal Ideation (SSI Total Score)	0.835**	0.934**	0.952**	0.921**

**Significant at $p < .001$ (2-tailed); r: Pearson's correlation coefficient

Table-4: Correlation of Suicidal Ideation (SSI Total Score) with SADQ total score, BDI-SF total score, STAI-State score and STAI-Trait score In Male Patients of Alcohol Dependence Syndrome (N=50)

levels than non-impulsive offenders with alcohol dependence.³⁴ A lower CSF 5-HIAA levels have also been found in high-lethality depressed suicide attempters with comorbid alcoholism compared with low lethality depressed suicide attempters with comorbid alcoholism.³⁵

A finding of positive relationship between suicidal ideation and levels of depression and anxiety in patients of alcohol dependence syndrome in this study merits further discussion. Among the various factors associated with a risk of suicidality in patients of alcoholism, mood disorders, especially depression, are of prime importance. Several researchers have pointed out that among alcohol-dependent individuals who committed suicide, 45–70% meet the criteria of major depressive episode before a suicide.¹⁶⁻¹⁸ Unfortunately alcoholism and depression are frequently comorbid.¹²⁻¹⁴ Recently in India, Kaur et al.²⁰ have pointed out that an overall presence of psychiatric comorbidity is significantly associated with suicidal ideation as well as suicide attempt in patients of alcohol dependence syndrome. A highly significant relationship of suicidal ideation with state and trait anxiety was a unique finding of this study and warrants further detailed evaluation. Earlier it has been found that the risk for suicide associated with alcohol dependence increases with age¹¹ but we could not find such relationship. Severity of alcoholism has been proposed as one of many predisposing factors associated with risk of suicide among subjects with alcoholism by many previous researchers.^{1,18,30,31} A finding of positive correlation of severity of alcohol dependence with suicidal ideation among patients of our study further supports this notion.

The finding of significantly higher depression scores in alcohol dependents of this study supports some noted earlier research works from both India,³⁶⁻³⁹ and abroad.^{40,41} It is now clear from research evidences that alcohol is used as self-medication for comorbid depressive disorders as well as alcohol itself may produce clinically significant depression in patients of alcohol dependence syndrome. Without proper address of this significant issue we cannot expect holistic management of this patient group.

Presence of significantly higher trait and state anxiety scores in male patients of alcohol dependence syndrome of this study is in line of findings earlier studies^{42,43} and emphasizes that this can be etiologically significant in alcohol dependence. It has been suggested that anxiety can be an important factor in the initial development and subsequent maintenance of alcohol abuse and dependence. Some patients use alcohol as a medication for the treatment of anxiety while some anxiety symptoms may be secondary to alcohol withdrawal too. Since we excluded those patients of alcohol dependence who were in withdrawal state, a finding of significantly higher state or trait anxiety in the patients of this study gives impression of presence of primary anxiety disorders in such patients. Researchers across the globe have now acknowledged the presence of common comorbid primary anxiety disorders like panic disorder, phobia, social anxiety disorder, generalized anxiety disorder, posttraumatic stress disorder and obsessive compulsive disorder in patients of alcohol dependence syndrome.^{13,36,44,45,37} This is important from long term treatment perspective of such individuals.

CONCLUSION

The present study showed that male patients of alcohol dependence syndrome had significantly higher suicidal ideation, depression and state and trait anxiety scores as compared to normal controls. Overall, clinically significant suicidal ideation was present in 22% of all male patients of alcohol dependence syndrome and 46% of all of the patients had clinically significant depression. A statistically significant positive correlation of suicidal ideation was found with levels of depression, anxiety as well as severity of alcohol dependence in these patients. In view of high levels of depression, anxiety and suicidal ideation as well as a positive relationship of suicidal ideation with levels of depression and anxiety, it is recommended that these should be carefully enquired for during therapy and follow up of patients with alcohol use disorders. This knowledge should be better disseminated among subjects at risk for deterrent purposes. The inclusion of only male patients in this study limits generalization of the findings on individuals of both genders.

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