

Correlates of Suicidal Ideation in Alcohol Dependence Patients

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ABSTRACT

Background: Increased incidence of suicide has been implicated in older age Alcohol dependence patients compared to other age groups and non-alcohol users. **Aim:** To study positive and negative aspects of suicidal ideas among alcohol dependence patients and compare it with controls. **Method:** In this cross-sectional, analytical study, 120 adults over the age of 18 years were used as cases with alcohol consumption, and an equal number of adults with no alcohol use and no psychiatric disease were used as controls. Alcohol dependence was ruled out in controls using the AUDIT-C test. On both groups, the Positive and Negative Suicidal Ideation Scale (PANSI) was used. Appropriate statistical analysis was performed, on the data. **Results:** In our study, we found that suicidal rates were higher in cases as compared to the control, and was higher in those cases who were married and consuming Alcohol on daily basis, with higher AUDIT scores. **Conclusion:** Older and longstanding alcohol uses have higher risk of suicide as compared to matched control subjects.

Keywords: Alcohol Dependence, Suicidal ideation, AUDIT-C

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Introduction

Suicide is one of the top 20 causes of death worldwide, ranking third among deaths among those aged 15 to 44 years and second among deaths among those aged 10 to 24 years. According to estimates, one million individuals commit suicide each year, giving the global mortality rate of 16 per 100,000—or one death every 40 seconds. The global rate of suicide has climbed by 60% over the previous 45 years, and it is estimated to account for 1.8% of all illness burden. Suicide is a growing public health concern [1-3].

Suicidality may result from drinking because it can cause impulsivity, disinhibition, and impaired judgement. Suicidal ideation refers to a variety of thoughts about death, self-destructive behavior, and other related behaviors. It has been seen as a precursor to suicide behavior and as the main indicator of future suicidal behavior [2]. Older people who

consider suicide often have a history of suicide attempts, depression mainly severe, hopelessness, lethality, substance abuse or dependence, impaired social support, no treatment compliance, poor impulse control, and a recent stressful life event. With age comes an increased risk of suicide related to alcoholism [4]. There may be a hereditary link between abusing alcohol and attempting suicide. Using association and sub-pair linkage analyses on a polymorphism in the intron 7 of the tryptophan hydroxylase (TPH) gene, Nielsen et. al. discovered strong evidence for a connection between drinking, severe suicide attempts, and suicidality [3]. There are significant differences amongst the researches, but the epidemiological evidence currently available indicates that alcohol dependence is linked to an increased risk of suicide. Therefore, a thorough analysis of the relationship between alcoholism and suicide is required [1]. The current study was conducted in this context to evaluate the correlates of suicidal

thoughts in alcoholism patients and compare them to controls.

Materials and Methods

This cross-sectional analytical study was done in a tertiary health care center for a duration of 2 years from August 2020 to September 2022. Before the study began, ethical approval was obtained from the institution's ethics committee. Participants informed written consent was acquired.

Sample

Sample Size was calculated out to be 120.

All patients attending psychiatry OPD & IPD were approached to obtain consent.

Inclusion criteria for case

1. Age > 18 years.
2. Patients scoring >3 on AUDIT-C.
3. All patients who gave written informed consent to participate in this study.

Inclusion criteria for control

1. Age > 18 years
2. Subjects scoring < 3 on AUDIT-C.
3. Subjects who gave written informed consent for participation in this study.

Exclusion criteria for cases and control

Having any other psychiatric disorder or chronic medical condition.

TOOLS USED

Socio demographic proforma

A proforma to record the demographic and clinical details.

AUDITT - Consumption (AUDIT C)

It is a condensed version of the AUDIT that only asks the first three questions on how much and how often you drink, giving a final score of 12. The average inter-item correlation (AIC) for the AUDIT-C was calculated, and the result was 0.33, which is satisfactory. A score of ≥ 4 , was taken as cut off criteria for diagnosing Alcohol Dependence in a patient and higher risk (sensitivity: 0.94 and specificity: 0.80) for both older men and women [6-9].

Quantity & Frequency Questionnaire

There were only two questions in the QFQ. How frequently do you consume one or more alcoholic beverages? was the first question. For the first question, there were six possible answers: never, monthly or less frequently, two to four times a month, once every two to three days, or four times a week

or more frequently (coded as 1, 2, 3, 4 and 5 respectively). Then, individuals that drank were questioned about how many alcoholic drinks (glasses) they typically drank each day. The alternatives for this question's response were: 1, 2, or 3, 4, or 5, or 6, or 8, or 9 or more (coded as 1, 2, 3, 4, and 5 respectively) [10].

Positive and Negative suicidal Ideation

This 14-item self-rating scale has two subscales: the PANSI-PI subscale, which has six items, and the PANSI-NSI subscale, which has eight items. The PANSI-NSI and PANSI-PI items' Cronbach alphas were 0.76 and 0.77, respectively. The cases and controls with a PANSI-NSI score of > 17 and PANSI-PI score of <10, were considered having high suicidal ideations [11,12].

Procedure

A total of 120 patients diagnosed as alcohol dependence and equal number of age & sex matched normal control were taken as controls. Informed consent was taken from both cases and controls. AUDIT-C, The Quantity & Frequency questionnaire and Positive and Negative suicide ideation scale was applied on both cases and controls. All data was compiled on the master chart on Microsoft excel.

Statistical Analysis

Data was analyzed using SPSS 20 (IBM, Atlanta, USA). Chi-square, ANOVA, Multiple regression analysis was used to identify predictors suicidal ideation.

Results

Table 1 shows the demographic details and alcohol habits of the subjects. On the AUDIT-C and Negative suicidal ideation scores were higher in cases and lower in controls, whereas positive suicidal ideation scores were higher in controls compared to cases. Table 2. indicates age, mean of duration of alcohol consumption, Quantity, Frequency questionnaire scores and AUDIT scores were significantly more among high suicidal ideation cases compared to low suicidal ideation cases.

Regression analysis for predictors of Positive suicidal ideation

In order to predict Positive Suicidal Ideation scores from Negative Suicidal Ideation scores and AUDIT scale scores, a multiple regression analysis was conducted. $F(2,117) = 59.178$, $p < 0.0005$, $R^2 = 0.503$ statistically significantly predicted PSIA by these covariates. Both the variables statistically significantly define the prediction, $p < 0.05$.

Regression analysis for predictors of Negative suicidal ideation

To predict Negative Suicidal Ideation Score from Positive

Table 1: Comparing socio-demographic details & scoring of scales among Cases & Controls

		Mean (SD)	p value	
Age (years)	Cases	38.59 (10.81)	0.915	
	Controls	38.77 (14.35)		
Duration of alcohol consumption (years)	Cases	10.78 (6.69)	0.000	
	Controls	1.0 (1.63)		
Quantity questionnaire	Cases	2.78 (1.37)	0.000	
	Controls	0.742 (1.26)		
Frequency questionnaire	Cases	2.18 (0.829)	0.000	
	Controls	0.617 (1.03)		
Audit C	Cases	5.76 (1.55)	0.000	
	Controls	2.08 (0.693)		
Positive suicidal ideation	Cases	10.68 (5.03)	0.000	
	Controls	15.58 (6.74)		
Negative suicidal ideation	Cases	22.42 (7.98)	0.000	
	Controls	16.93 (7.89)		

P<0.05 – S – significant ;
p> 0.05 - NS – not significant

Table 2: Comparing Socio-demographic Details and scores of scales of Cases with High Suicidal & Low Suicidal Ideas

	Cases	Mean	P value	
Age	High suicidal	39.95±11.43	.051	
	Low suicidal	35.8±8.96		
Duration of alcohol consumption	High suicidal	10.73±6.09	.013	
	Low suicidal	7.85±5.4		
Quantity questionnaire	High suicidal	2.93±1.46	0.000	
	Low suicidal	1.92±1.04		
Frequency questionnaire	High suicidal	2.07±0.79	0.003	
	Low suicidal	1.62±0.667		
Audit C	High suicidal	5.63±1.46	0.000	
	Low suicidal	4.62±0.77		

P<0.05 – significant (S);
p>0.05 – not significant(NS)

Table 3: Comparing PANSI-PI and PANSI-NSI scores of High suicidal and Low suicidal cases

		Mean	P value
Positive suicidal ideation	High suicidal	10.68±5.2	0.000
	Low suicidal	16.8±4.08	
Negative suicidal ideation	High suicidal	22.11±7.67	0.000
	Low suicidal	13.82±2.18	

P<0.05 – S – significant ; p> 0.05 - NS – not significant

Table 4: Comparing other socio-demographic details of High suicidal and Low suicidal cases

		High suicidal cases	Low suicidal cases	P value
Marital status	Married	66	30	0.33
	Unmarried	14	10	
Education	Illiterate/primary	27	6	0.005
	Secondary	26	10	
	Senior secondary	15	6	
	Graduate	6	12	
	Post graduate	6	6	
Socio economic status	Lower	39	13	0.341
	Upper lower	15	8	
	Lower middle	13	7	
	Upper middle	7	5	
	Upper	6	7	
Type of drink	Country liquor	68	8	0.00001
	English liquor	12	32	

P<0.05 – S – significant ; p> 0.05 - NS – not significant

Table 5: Regression analysis for predictors of Positive suicidal ideation: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	P value
		B	Std. Error	Beta	
2	(Constant)	22.76	1.33		.000
	NSI	-0.38	0.05	-.604	.000
	ALCOHOL	-0.24	0.189	-.111	.011

^a Dependent Variable : PSIA

Table 6: Regression analysis for predictors of Negative suicidal ideation: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
3	(Constant)	25.75	2.233		0.000
	PSI	-0.919	0.107	-0.580	0.000
	Marital	3.120	1.246	0.157	0.014

^aDependent Variable: NSIA

Suicidal Ideation Score and Marital Status, a multiple regression was done. These factors strongly predicted NSIA statistically, $F(3, 116) = 46.975$, $p < 0.0005$, $R^2 = 0.549$. Both the variables added statistically significantly to the prediction, $p < 0.05$.

Discussion

In our study, 82.5% of the high suicidal ideation cases were married indicating more suicidal intent when compared to the unmarried. Marital status was a predictor of Negative suicidal ideation score in regression analysis, which correctly defines our findings. However, one study, found that amongst the patients with high suicidal ideations, 59.4% were unmarried, which is in contrast with our study [13]. These findings suggest that marital discord and poor interpersonal relationships can lead to increased alcohol dependence in males.

Suicidal ideations in cases were higher among those cases who had secondary education, 53 of them, 66.2% which is depicted in Table 4, and p value was 0.005 (< 0.05) which was statistically significantly, different from lower suicidal ideation cases. According to a hospital-based study [21], most of the patients who were abusing drug and had suicidal ideation were young adults with minimal education, till Intermediate, 41.2% which is in agreement to our study. In our study, 48.75% of high suicidal ideation cases were from lower socio-economic status. Our findings were in agreement to a study where 66.2% were unemployed and belonged to lower socio-economic status [13].

Our sociodemographic profile of the cases with high suicidal ideation was consistent with that reported in other studies [13-15]. The reason for this could be that poor education, joblessness, poor living standard of high suicidal cases made them vulnerable to drinking habits. This was consistent to a study which identified socio-demographic variables of young age, unemployment, and less income as possible risk factors for suicidal ideation [16].

In our study 85% of high suicidal ideation cases were found consuming country liquor for longer durations with higher AUDIT scores, p value was 0.00001 (< 0.05), which was statistically significant and different from the lower suicidal ideation cases. AUDIT-C score was also found to be a

predictor of positive suicidal Ideation score. This was in agreement to earlier studies which found greater AUDIT C linked to higher suicidal rates [17,18].

In this study, according to the chosen cut-offs [12], the mean of PANSI-PI scores of high suicidal cases was 10.68 lower than that of low suicidal cases (16.8) and mean of PANSI-NSI scores of high suicidal cases was 22.11 which was higher than that of low suicidal cases (13.82). Both PANSI-PI and PANSI-NSI scores were statistically significant among high and low suicidal cases ($p < 0.05$). This was in agreement to in a Nigerian study which identified 80% of the Nigerian students with scores more than 17 on PANSI-NSI had thoughts of suicidal ideation [12]. In our study, The suicidal rates were higher upto 66.6% in cases as compared to controls. (Chi-square = 29.41; p is < 0.00001). Our findings were in agreement to a few earlier studies [3,19-22]. In a similar Indian study, 22% of all patients had clinically significant suicidal ideation which was less than our findings [2].

Limitations

Sample size was small, only male patients were included, study was done in COVID pandemic year, were some of the limitations of this study.

Conclusion

A higher Suicidal ideation was seen in Indian patients with Alcohol Dependence Syndrome when matched with healthy controls with a preponderance of male gender, marriage, lower levels of education, poor financial status, consumption of country liquor, heavy drinking, chronic consumption and significantly correlated with a positive marital status and higher AUDIT-C scores.

Conflict of Interest:	All authors declare no COI
Ethics:	There is no ethical violation as it is based on voluntary anonymous interviews
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