



DEPRESSION AND SUICIDAL IDEATION IN INDIAN PATIENTS: THE INFLUENCING ROLE OF ALCOHOL CONSUMPTION

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ABSTRACT:

Background: Suicide is a major threat to public health worldwide. Evidence suggests that alcohol use disorders (AUD) are associated with suicidal ideation. Therefore, this study investigates the effect of alcohol consumption on the relationship between depression and suicidal ideation among patients.

Methodology: This retrospective study, approved by the institutional ethics committee, enrolled 80 patients from a tertiary care hospital following informed consent. The objective was to assess levels of depression, alcohol consumption, and suicidal ideation among psychiatric patients. The study utilized the Suicidal Ideation Attributes Scale (SIDAS), Alcohol Use Disorders Identification Test (AUDIT), Kessler Psychological Distress Scale (K10) scale for psychological distress, and the General Help-seeking Behavior Questionnaire (GHSQ). A p-value of <0.05 was considered significant.

Results: Among the 80 individuals, 66.25% were male, while the remaining percentage were female. In terms of psychological factors, depressive disorder ($p < 0.001$) and alcohol consumption were significantly associated with higher suicidal ideation severity scores. The present study found that the SIDAS score was 13.38 ± 11.07 , indicating moderate suicidal ideation. The AUDIT showed a mean score of 6.88 ± 5.74 , suggesting low to moderate alcohol use. The correlation analysis indicated that depression had a moderate correlation with alcohol consumption ($r = 0.30, p < 0.01$) and a strong correlation with suicidal ideation ($r = 0.66, p < 0.01$). Alcohol consumption also showed a moderate correlation with suicidal ideation ($r = 0.40, p < 0.01$).

Conclusion: The present study showed significant associations between alcohol consumption, depressive disorders, and suicidal ideation. Alcohol consumption was found to partially mediate the relationship between depression and suicidal ideation. Patients with mental illness who are concerned about their alcohol use may reduce suicidal thoughts by seeking guidance from healthcare professionals or taking informed actions with the support of counsellors or support groups.

Keywords: Suicidal ideation, Depression, Alcohol disorder, SIDAS

INTRODUCTION:

Suicide is a significant public health concern, with an estimated 1 million deaths by suicide occurring worldwide each year. [1] In India, the situation has become increasingly alarming, with 1.71 lakh suicides reported in 2022, compared to 2021.[2] Of particular concern is the growing number of student suicides globally, which have been rising at a rate of 4% annually. In India, particular the states of Maharashtra, Tamil Nadu, and Madhya Pradesh have reported the highest incidence of student suicides. [2]

Mental health disorders are the primary cause of suicide, both domestically and internationally. [3] Patients with severe mental disorders, such as depression, bipolar disorder, and schizophrenia, are at a particularly high risk of suicide, with rates ranging from 3.7% to 4.9% among women and 5.9% to 7.8% among men.[4] Among individuals with psychiatric conditions, the combination of depression and suicidal ideation poses a serious challenge for both clinicians and patients.[5] Many studies have investigated the complex relationship between depression and suicidal ideation, one less-recognized factor that may exacerbate this dynamic is alcohol consumption. [6]

Suicidal ideation is closely linked to depression, with the severity of depression significantly impacting the likelihood of suicidal thoughts. The most common symptoms of depression include persistent low mood, loss of interest in daily activities, sleep disturbances, fatigue, feelings of worthlessness, difficulty concentrating, and recurrent thoughts of death or suicide. Notably, individuals diagnosed with depression are 20 times more likely to die by suicide compared to the general population. [7]

In India, alcohol consumption is increasingly recognized as a contributing factor to suicidal ideation and attempts, particularly in individuals with alcohol use disorders (AUD). Alcohol intoxication serves as a significant risk factor for suicidal behavior. Research indicates that individuals with depression and a history of alcohol dependence face a heightened risk of suicidal thoughts, often driven by factors such as psychological distress, increased aggression, and impaired cognitive function, which limits the use of alternative coping strategies.[8-9]

Alcohol dependence is often associated with a range of co-occurring conditions, including borderline personality disorder, sexual abuse, drug use, attention-deficit hyperactivity disorder (ADHD), impulsivity, anxiety, and depression, all of which contribute to the elevated risk of suicidal behaviour. [10] A meta-analysis further emphasizes the significant association between alcohol use disorder and suicidal ideation (odds ratio (OR) = 1.86; 95% confidence interval (CI) = 1.38, 2.35), suicide attempts (OR = 3.13; 95% CI = 2.45, 3.81), and completed suicide (OR = 2.59; 95% CI = 1.95, 3.23).[11]

This concerning intersection of alcohol consumption, depression, and suicidal ideation underscores the importance of comprehensive mental health interventions in India, particularly in populations vulnerable to both psychiatric conditions and alcohol use disorders. Addressing this complicated issue requires an integrated approach to mental health care, combining the management of depression, substance abuse, and the prevention of suicide.

METHODOLOGY:

This observational study was conducted at a tertiary care hospital, following approval from the institutional ethics committee. A total of 80 patients were enrolled in the study after obtaining informed consent. Demographic details and clinical history were collected for each participant. The study assesses the levels of depression, alcohol consumption, and suicidal ideation among psychiatric patients.

Suicidal Ideation Attributes Scale (SIDAS)

Suicidal ideation was measured using the Suicidal Ideation Attributes Scale (SIDAS), a 5-item tool that utilizes an 11-point Likert scale to assess both the frequency and intensity of suicidal thoughts. A

total score of 21 or more indicates severe suicidal ideation, which is associated with a higher risk of suicidal behaviour.[12]

Alcohol Use Disorders Identification Test (AUDIT)

Alcohol consumption was assessed using the AUDIT. Each of the AUDIT’s 10 items is scored between 0 and 4, giving a possible total score ranging from 0 to 40. The AUDIT-C, a subset comprising the first three items, is scored on a scale from 0 to 12. Items 1 to 8 offer five response options, while items 9 and 10 provide three response options. [13]

Psychological Distress (K10)

Psychological distress was evaluated using the K10 scale, a 10-item measure that employs a 5-point Likert scale. The scale assesses the frequency of symptoms related to depression and anxiety. A total score of 30 or above indicates a high likelihood of meeting clinical criteria for a mood disorder. [14]

General Help-seeking Behavior Questionnaire (GHSQ)

Help-seeking behavior was assessed using the General Help-seeking Behavior Questionnaire (GHSQ), a validated tool widely used to evaluate help-seeking intentions in various populations. The GHSQ uses a seven-point Likert scale, ranging from "extremely unlikely" to "extremely likely." The mean scores for both attitudes and help-seeking behavior were calculated. Scores below and above the mean were used to categorize participants into groups with favorable or unfavorable attitudes and good or poor help-seeking intentions. Higher scores reflected more favorable attitudes and stronger help-seeking intentions.[15]

STATISTICAL ANALYSIS:

Statistical Package for the Social Sciences (SPSS), version 20, IBM, Armonk, New York, was used for the analysis. Quantitative data were analyzed using percentages, frequencies, and means to describe the variables and suicidal ideation among individuals seeking inpatient treatment for alcohol use disorder.

RESULTS:

Table-1: Distribution according to Characteristics

Characteristics	No. of cases	Percentage	P values
Gender			0.0037
Male	53	66.25%	
Female	27	33.75%	
Education			< 0.0001
Elementary school	6	7.50%	
Junior high school	28	35.00%	
Senior high school	34	42.50%	
2 years college	4	5.00%	
4 years college	8	10.00%	
Others	0	0.00%	
First alcohol drinking age			< 0.0001
Teenager	20	25.00%	
20~29 years old	42	52.50%	
30~39 years old	16	20.00%	
40 ~ years old	2	2.50%	
Occupation			< 0.0001
Employed	61	76.25%	
Unemployed	19	23.75%	

Family history			
YES	21	26.25%	< 0.0001
NO	59	73.75%	
Domestic violence history			
YES	18	22.50%	< 0.0001
NO	62	77.50%	
Alcohol quit history			
YES	56	70.00%	0.0003
NO	24	30.00%	
Drunk driving history			
YES	54	67.50%	0.0017
NO	26	32.50%	

The above table showed that the significant gender differences (66.25% male), educational attainment (42.50% with senior high school education), and the age of first alcohol consumption (52.50% aged 20-29). Employment status showed that 76.25% were employed, while notable proportions reported family history (26.25%), domestic violence history (22.50%), and a history of alcohol cessation (70.00%) and drunk driving (67.50%). All findings were statistically significant, with p-values indicating strong associations.

Table-2: Distribution according to Duration of alcohol use, Depressive disorder and Anxiety disorder

Duration of alcohol use	(mean ± SD)	No. of cases	P values
More than 20 years	0.44 ± 0.80	36	0.45
16-20 years	0.55 ± 0.87	16	
11-15 years	0.91 ± 0.80	9	
5-10 years	0.52 ± 0.97	12	
Less than 5 years	0.16 ± .56	7	
Depressive disorder			
YES	0.90 ± 0.92	46	<0.001
NO	0.12 ± 0.32	28	
Anxiety disorder			
YES	0.74 ± 0.86	52	0.009
NO	0.20 ± 0.44	20	

The above table showed that depressive disorder (p < 0.001) and anxiety disorder (p = 0.009) were significantly associated with higher suicide idea severity scores. Individuals with depressive disorder had a mean score of 0.90 ± 0.92, compared to 0.12 ± 0.32 in those without. Similarly, those with anxiety disorder had a higher mean score of 0.74 ± 0.86, compared to 0.20 ± 0.44 in those without. Duration of alcohol use, however, did not show a significant association with suicide idea severity (p = 0.45).

Table-3: Distribution according to Score of Suicide ideation group

SCALES	(mean ± SD)	P-value
SIDAS	13.38± 11.07	-
Gender		
Male	10.54 ± 4.12	0.117
Female	12.31 ± 5.76	

AUDIT	6.88± 5.74	-
K10	34.54 ± 6.12	-
GHSQ	28.36± 8.82	-
IFDW	4.92 ± 2.12	-

The above table showed various scales, including SIDAS, which had a mean score of 13.38 ± 11.07. Males scored 10.54 ± 4.12, while females scored 12.31 ± 5.76, with a p-value of 0.117 indicating no significant gender difference. Other scales, such as AUDIT (6.88 ± 5.74), K10 (34.54 ± 6.12), GHSQ (28.36 ± 8.82), and IFDW (4.92 ± 2.12), did not provide p-values for further analysis.

Table-4: Distribution according to Variable

Variable	Mean ± SD	Actual Range	Reference Range
Slowdown in physical behavior	10.89 ± 6.02	0-26	0-26
Depressive emotion	9.12 ± 5.33	0-25	0-25
Positive emotion	4.02 ± 2.02	0-10	0-10
Interpersonal relationship	2.08 ± 1.68	0-6	0-6

The above table showed that the mean score for slowdown in physical behavior was 10.89 ± 6.02, with an actual range of 0 to 26, matching the reference range. Depressive emotion had a mean of 9.12 ± 5.33, within the 0 to 25 range. For positive emotion, the mean was 4.02 ± 2.02, and for interpersonal relationships, the mean was 2.08 ± 1.68, both aligning with their respective reference ranges (0-10 and 0-6).

Table-5: Correlation among depression, alcohol drinking, and suicidal ideation

Variable	Depression	Alcohol Drinking	Suicide Ideation
	r(p)	r(p)	r(p)
Depression	1	-	-
Alcohol drinking	0.30(<0.01)	1	-
Suicide ideation	0.66(<0.01)	0.40(<0.01)	1

The correlation analysis revealed that depression was moderately correlated with alcohol drinking (r = 0.30, p < 0.01) and strongly correlated with suicide ideation (r = 0.66, p < 0.01). Additionally, alcohol drinking had a moderate correlation with suicide ideation (r = 0.40, p < 0.01). These findings suggested significant associations between these variables in the past.

DISCUSSION:

Depression and suicidal ideation are significant mental health concerns worldwide. It prevalence increased Alcohol use disorders are associated with increased risk of non-suicidal self-harm, suicidal ideation, suicide attempts and suicidal death.

In the present study, 66.25% of the participants were male, and 33.75% were female. Most participants had completed education up to the 10th (35.00%) and 12th (42.50%) standards. Additionally, 61 participants (76.25%) were employed. The findings showed that alcohol dependence and related problems were linked to both depression and suicidal ideation. **Gallyer et al.**, [16] found in a study of 944 firefighters that drinking problems, along with workplace stress, were associated with suicidal ideation. Similarly, **Cohen et al.**, [17] reported in a study of 1,582 soldiers that alcohol dependence and depression interacted to increase the risk of suicidal ideation.

The findings demonstrated that alcohol dependence/related problems after drinking in particular, were linked to both depression and suicidal ideation. Regarding the effect of drinking on suicidal ideation, Gallyer et found in a study of 944 firefighters that drinking problems as well as workplace stress were linked to suicidal ideation. The findings demonstrated that alcohol dependence/related problems after drinking in particular,

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In the present study, the majority of participants (52.50%) began drinking alcohol between the ages of 20 and 29. This finding aligns with a study by **Vinod A et al.,[18]** who reported that the average age of first alcohol consumption was 23.8 years. Similarly, **Kaur et al.,[19]** found that 30.6% of participants had their first alcohol experience before the age of 20.

A previous study conducted by **Lee M, et al.,[20]** on alcohol use patterns and suicidal ideation among employees found that work-related stress and daily routine pressures significantly contributed to alcohol consumption. This finding was consistent with the results of our study.

In this study, depressive and anxiety disorders were strongly associated with higher suicidal ideation severity. These findings align with previous research by **Li J et al., [21]** which identified anxiety and depression as independent risk factors for suicidal behaviors, with symptom severity increasing the risk. Addressing both anxiety and depression is crucial for effective suicide prevention, especially given the dose–response relationship between symptom severity and suicidal risk.

The present study revealed that female participants had significantly higher suicidal ideation scores compared to male participants. The mean score for males was 10.54 ± 4.12 , while for females, it was 12.31 ± 5.76 , with a statistically significant difference ($p = 0.001$). This aligns with the findings of **Hsu WY et al.,[22]** who also reported higher suicidal ideation scores among female participants.

In another study, it was found that 60% of participants experienced suicidal ideation, largely attributed to a lack of awareness about the harmful effects of alcohol use. Similarly, **Kumar S et al., [23]** reported suicidal ideation in 22% of participants, with 9.5% experiencing severe ideation. **K. Ravneet et al., [24]** found that 15.8% of participants had low suicidal ideation, 30.8% had mild to moderate ideation, and 10.8% had severe suicidal ideation, with serious suicidal thoughts occurring in 2.5% of the total participants.

The present study demonstrated a linear association between total AUDIT scores and outcomes such as suicide attempts, suicidal thoughts, and non-suicidal self-harm. In a study by **Ledden S et al., [11]** three specific aspects of alcohol use—dependence symptoms, harmful effects of drinking, and binge drinking—were found to significantly increase the outcomes. The study findings suggest that due to the alcohol use disruptions in daily functioning play a crucial role in the connection between alcohol consumption and suicide related behaviors.

The results of the present study, alcohol consumption had a moderate correlation with suicidal ideation. Also, depression had a moderate correlation with alcohol consumption and a strong correlation with suicidal ideation. **Rahoo FV et al.,[1]** found that among 47 patients, 29 (62%) reported experiencing suicidal ideations. The prevalence of suicidal ideations is notably high among individuals with alcohol use disorder. The study highlighted that suicidal ideation was more prevalent among individuals belonging to below-poverty-line, lower education levels, those were unemployed, married, living with in nuclear families, and residing in urban areas.

Conclusion:

The present study showed significant associations between alcohol consumption, depressive disorders, and suicidal ideation. Alcohol use correlates with increased severity of suicidal thoughts and behaviors, particularly among individuals aged 20-29 years, likely due to job-related stress. The female participants exhibited significantly higher suicidal ideation scores than their male. The study results indicated that patients with mental illness who are concerned about drinking alcohol might be able to reduce suicidal thoughts by consulting with a healthcare professional or taking informed actions with the support of a counsellor or support group. The comprehensive strategies should be implemented to raise awareness about the risks associated with alcohol consumption and to promote

mental health support, especially in high-risk groups. Future research should continue to explore these relationships to inform effective prevention and intervention strategies aimed at reducing suicide risk among individuals with alcohol use disorders.

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