

Alexithymia and Suicidal Ideation in Alcohol Dependence

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Abstract

Objective: Alexithymia is a multifaceted construct that was first described by Sifneos in 1973 as difficulty identifying and communicating feelings, differentiating feelings and somatic sensations of emotional arousal, a diminution of fantasy and imagination and an externally oriented cognitive style. Alexithymia is linked with multiple psychiatric comorbidities including substance use disorders and suicide. The objective of this study was to evaluate the relationship between alcohol use and alexithymia in Indian population.

Methodology: The study was cross-sectional observational study with sequential recruitment. Patient's aged 18-60 years who met ICD 10 criteria for alcohol dependence were recruited. Participants were assessed using sociodemographic proforma, AUDIT, TAS-20 and for presence of history of past suicide attempt and current suicidal ideation. The collected data was analysed using Jamovi Software and appropriate statistical methods were applied.

Results: The prevalence of alexithymia was thus found to be 18% with another 23% being classified as having probable alexithymia. The prevalence of current suicidal ideation was found to be 16%. Prevalence of history of past suicide attempt was found to be 20%. No statistically significant relation was observed between alexithymia and history of prior suicide attempt. No significant correlation between scores of TAS-20 scale & AUDIT scale were observed. This study also had some limitations, namely lack of female participants, exclusion of people with depressive episode or recurrent depressive disorder, and potential impact of COVID19 pandemic as causes of selection bias.

Conclusion: Prevalence of Alexithymia in users with alcohol dependence syndrome was much lower than that found by previous studies. TAS-20 scores were not correlated with AUDIT scores (and thus severity of alcohol dependence). The study gave valuable information on prevalence of alexithymia and suicidal ideation amongst alcohol dependent persons, however, no significant correlation was found amongst them.

Keywords: Alexithymia, Suicide, Alcohol Dependence

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Introduction

Alcohol is one of the most commonly abused substances worldwide. Globally, the harmful use of alcohol ranks among

the top five risk factors for disease, disability and death. [1] Many individuals have difficulties in recognizing, processing

and regulating their emotions. The term alexithymia is used to describe such personality traits that are characterized by difficulties in identifying and describing feelings to others. Alexithymia is a multifaceted construct that was first described by Sifneos in 1973 as difficulty identifying and communicating feelings, differentiating feelings and somatic sensations of emotional arousal, a diminution of fantasy and imagination and an externally oriented cognitive style. [2] Alexithymia is characterised by a diminished ability to identify, define, and explain one's own emotions, as well as tendency to externalise feelings and experiences. Individuals with alexithymia have poorer regulation of their emotions, possibly due to a state of hyperarousal relating to difficulties in identifying or describing their emotions and adequately reacting to or modulating them. [3] People with alexithymia have a tendency to external and subsequently have a diminished fantasy life and the preoccupation with external details. They have a poorer ability mentally recreate emotions. [4] Alexithymia is linked with multiple psychiatric comorbidities like depression, post-traumatic stress disorder, anxiety and substance use disorders. Rates of alexithymia in general population are estimated to range between 6 and 10%. [5] Research has also focused on identifying the role of alexithymia in substance dependence syndromes, especial alcohol dependence syndrome. The relationship between alexithymia and alcohol dependence syndrome appears to be mediated by cognitive domain of craving or intrusive thoughts about alcohol. Alexithymia alcohol dependent outpatients reported a significantly greater total craving, difficulty controlling drinking related cognitions and impulses, and frequency of alcohol-related cognitive impulse. [6] Heavy alcohol users with alexithymia report more alcohol craving, compulsive drinking urges, and obsessive thoughts about alcohol. [5] Earlier

researches estimated that about 45 – 67 % of alcohol dependent people have alexithymia. [7] However, critical review of more recent studies indicate a slightly lower number between 30 and 49%. [6] Numerous studies have explored the association between alexithymia and substance use and its progression to substance dependence. [7] Alexithymic individuals show significantly higher levels of anxiety, depression, and psychological suffering and there is an increasing evidence that alexithymia may be considered a risk factor for suicide. [8] A positive association between alexithymia and suicide ideation can have potentially important clinical implications. Alexithymia has also been found to be associated with suicidal ideation in alcohol dependent people in limited studies.

Alexithymia is measured with Toronto Alexithymia Scale (TAS – 20). Toronto Alexithymia Scale has been validated in both normal and people with wide variety of psychiatric illnesses. [9,10] The TAS – 20 is 20-item self-rated scale with total score ranging from 20 to 100.

Thorberg et al. (2009) [7] extensively reviewed the empirical research on co-occurrence of alexithymia and problematic alcohol use and alcohol use disorder (AUD) and presented a critical update on the relationship between alexithymia and alcohol use disorders. Their research revealed that although few research studies have comprehensively investigated alexithymia in alcohol use disorders, there is limited research on the association between alexithymia, alcohol consumption and severity of alcohol dependence and on the predictive utility of alexithymia in relation to well established psychological drinking constructs.

Cruise and Becerra (2018) [6] have reviewed more concurrent empirical research examining the co-occurrence of alexithymia and problematic alcohol use and alcohol use disorder (AUD) since Thorberg et al. (2009) [7] original review

article and provided a critical update review of research on alexithymia and problematic alcohol use published since 2009. Compared to Thorberg et al. (2009) [7], who concluded that prevalence rate of alexithymia in alcohol use disorders is between 45 and 67%, Cruise and Becerra (2018) [6] concluded a much lower than originally reported prevalence rates of between 30 and 49%. Cruise and Becerra (2018) also highlighted the indirect relationship between alexithymia and alcohol dependence severity mediated by

various psychological drinking constructs and psychological risk factors for the development of alcohol related problems. The concluded that there is reasonable evidence to support that alexithymia is an independent risk factor for alcohol related problems among clinical samples. More recent studies over last 5 years on this topic that were not covered in the review by Thorberg et al. (2009) [7] and Cruise and Becerra (2018) [6] are summarized in Table 1.

Table 1:

Authors & Year	Methodology	Results
Herman et al. [11] (2020)	174 alcohol drinkers assessed using Alcohol Use Questionnaire, Toronto Alexithymia Scale and Barratt Impulsiveness Scale.	Direct relationships between, both, alexithymia and impulsivity, and binge drinking.
Thorberg et al. [12] (2020)	263 males and 118 females with ADS were assessed for alexithymia, alcohol craving, GHQ-28 (QoL-psychological well-being) and SF-36 (QoL-health status).	Males scored significantly higher on aspects of alexithymia, whereas females reported higher levels of alcohol craving.
Obeid et al. [13] (2020)	789 Lebanese participants with ADS were assessed using AUDIT, TAS-20 and for depression and suicidal ideation.	A high risk of AUD was significantly associated with higher alexithymia (OR = 1.03; CI 1.09-1.05), depression (OR = 1.08; CI 1.05-1.10) and suicidal ideation (OR = 1.25; CI 1.03-1.53).
Thorberg et al. [14] (2019)	355 ADS patients undergoing CBT for alcohol dependence were assessed using TAS-20, Depression Anxiety Stress Scales (DASS-21), Obsessive Compulsive Drinking Scale (OCDS), and AUDIT prior to CBT.	Alexithymia had an indirect effect on alcohol dependence severity, via both negative mood and alcohol craving.
Kajanoja et al. [15] (2019)	994 men in FinnBrain Birth Cohort Study were assessed for alexithymia levels, self-reported quantity and frequency of alcohol use and cigarette smoking status.	Men scoring high on Externally Oriented Thinking style drank more alcohol per occasion, compared to low scorers and were also more likely to be daily smokers.
Knapton et al. [16] (2018)	138 social drinkers evaluated using Toronto Alexithymia Scale, self-report measures of alcohol consumption and a stress-inducing task.	Higher rates of alcohol consumption and increased desire for alcohol before, during and after a social stressor among alexithymic participants.

Betka et al. [17] (2018)	600 alcohol users were assessed using Toronto Alexithymia Scale, the Body Perception Questionnaire, and the Alcohol Use Questionnaire.	Alexithymia was positively correlated with sensitivity to bodily sensations and with alcohol consumption.
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The construct of alexithymia has been recently researched in the Indian population, although mostly in patients of somatoform disorder, chronic pain & psychogenic pain disorder. [18–21] The Hindi version of the Toronto Alexithymia scale was applied on a sample of 285 normal young adults in India for cross-cultural validation by Pandey et al. (1996) and it was found to have excellent cross-language equivalence with the English version. [22] In addition, the TAS-20-H demonstrated adequate internal consistency, good test-retest reliability, and a three-factor structure consistent with the three-factor model of the original scale. [22]

Only one previous study from India, conducted Chaudhury et al., (2006) in 100 male patients diagnosed with alcohol dependence and 100 healthy controls, had included alexithymia (measured by Toronto Alexithymia scale) as one of assessment parameters amongst other parameters (such as State-Trait Anxiety Inventory, Hamilton Rating Scale for Depression, Multiphasic Personality Questionnaire, Maudsley Personality Inventory, Self-esteem Inventory and Presumptive Stressful Life Events scale). [23] This study found that compared to the healthy controls, patients with alcohol dependence had significantly higher levels of alexithymia. However, this study did not further explore the association of alexithymia with other clinical parameters.

Materials and Methods:

Prior to start of the study, ethical approval was obtained from Institute's Ethics Committee. The study was conducted. It was a cross-sectional observational study with Sequential Recruitment. Taking mean

prevalence of alexithymia in alcohol dependence as 30 percent [6] and in general population as 10 percent [5], and taking power as 90% and alpha error as 5%, calculated sample size comes 35. A sample size of 100 was taken because in order to avoid using non-parametric analysis because of small sample size. The diagnosis of alcohol dependence syndrome will be made based on ICD-10 criteria. The inclusion and exclusion criteria are mentioned below.

Inclusion Criteria:

- Diagnosis of alcohol dependence syndrome as per ICD 10.
- Patients of either genders, aged 18-60 years
- Patients who are currently not in an active withdrawal state (ascertained by CIWA-Ar score \leq 8) at the time of interview.
- No other co-morbid substance use (except for tobacco dependence)
- No other psychiatric disorder as per ICD10.
- Willing to provide written informed consent

Exclusion criteria:

- Any severe physical or neurological illness in the patient, interfering with the study.
- Patients meeting criteria for other substance dependence syndrome except nicotine.
- Patients meeting ICD10 criteria for other psychiatric disorder.
- Patients in acute withdrawal from alcohol at the time of interview (CIWA – Ar $>$ 8)
- Patients in acute intoxication at the time of interview.

Males aged 18-60 years diagnosed with Alcohol Dependence by ICD-10 (F10) criteria with CIWA-Ar Score < 8 and not other psychiatric disorder as per ICD10 (except tobacco dependence) were offered participation in the study. Those patients who consented to participation in the study were included in the study and evaluated using sociodemographic proforma, AUDIT, TAS-20 and presence of history of past suicide attempt and current suicidal ideation. The collected data was analysed using Jamovi Software and appropriate statistical methods were applied to discern any correlation between alexithymia, severity of illness, and suicidal ideations in patients with alcohol dependence syndrome.

Results:

Descriptive statistics were used for various socio-demographic and clinical variables. Measures of central tendency and variability were calculated for the continuous variables. Frequency tables were made for the categorical variables. Group comparisons for continuous variables were done using T-test for mean differences between two sub-groups and ANOVA for more than 2 groups. Appropriate non-parametric tests were used in cases where the data was not found to be normally distributed. Similarly, Chi square test was used for group comparison for categorical variables and Fisher's Test was used when individual cell frequencies were less than or equal to 5. In order to assess the relationship of clinical and psychosocial variables amongst themselves and with the continuous variables (scores of TAS-20 scale, AUDIT scale) Pearson Correlation was used and Pearson Product Moment Correlation (r) was calculated. Further post hoc analysis (exploratory) was done and appropriate statistical tests were applied.

The mean age of all the participants enrolled in the study was 37.3 years (range 23 to 59 years). Majority of the enrolled participants (74%) were not graduate. 21%

were educated upto class 5th, 26% were educated upto class 10th and 27% were educated upto class 12th/diploma. Only 26% had education level of graduation or higher. Majority of the enrolled participants (47%) were engaged in a private sector job. A significant fraction (20%) were unemployed at the time of their assessment. 12% of the participants were self employed in their own business and 8% of the participants were government employees. Farmers and labourers constituted 5% and 8% respectively. Majority of the enrolled participant's (54%) annual family income lied between Rs. 50,000 to 10,000. 27% of the participants' annual family income was between Rs. 100,000 and Rs. 50,000 at the time of their assessment. 11% had family income above Rs. 50,000 and 8% had annual family income below Rs. 50,000. All the enrolled participants were male. With regards to religion, the majority of the enrolled participant's (88%) were Hindu. 6% were Sikh, 4% were Muslim and 2% were Christian. Majority of the enrolled participant's (75%) were married. 14% reported being separated from their spouse while 3% reported being widowed. 8% reported never being married. Majority of the enrolled participant's (70%) reported consuming only IMFL while 20% reported consuming both, IMFL & CML. Only 10% reported consuming only CML.

TAS-20 Scores

Figure 1: Distribution of TAS-20 scores amongst the study participants.

The distribution of Toronto Alexithymia Scale-20 scores is illustrated in the figure above. The mean score of all the participants enrolled in the study was 47.5 (CI: 45.2 - 49.9) with a standard deviation of 12.1 and Standard Error of Mean of 1.21. Minimum score obtained was 28 and maximum score obtained was 72. Shapiro-Wilk test to test for normalcy indicated a non-normal distribution of Toronto Alexithymia Scale-20 scores with Shapiro-Wilk W 0.959 with p value of 0.004. The

scores were used to classify presence or absence of alexithymia in the study population using cut-off of 61 and above for presence of alexithymia.

Alexithymia

The prevalence of alexithymia was calculated using the cut-off of 61 or higher score on Toronto Alexithymia scale. Participants evaluated to have score on TAS-20 between 52-60 were classified as "Probable" alexithymia based on the cut-off values provided with the TAS-20 scale. Those with scores below 52 on TAS-20 scale were considered to not have alexithymia. The prevalence of alexithymia was thus found to be 18% with another 23% being classified as having probable alexithymia. Majority of the study participants, i.e. 59% were found

to be not having alexithymia as they scored less than 52 on Toronto Alexithymia Scale.

Figure 2: Distribution of alexithymia amongst the study participants.

The prevalence of current suicidal ideation was found to be 16%. Prevalence of history of past suicide attempt was found to be 20%. Relation between Alexithymia and History of Prior Suicide attempt was evaluated using both, using the TAS-20 Score and Presence/Absence of Alexithymia. Kruskal Wallis Test (Non-parametric one way ANOVA) was used to evaluate the relation between TAS-20 score and scores on its subscales and prior history of suicide attempt. No statistically significant relation was observed. The results of the test are given in the Table 3.

Table 3: Prior Suicide Attempt and TAS-20 & Subscale Score [Kruskal-Wallis]

	χ^2	df	p
TAS	2.238	1	0.135
DIF	0.807	1	0.369
DDF	2.141	1	0.143
EOT	2.349	1	0.125

Fisher's test was applied when treating Alexithymia as categorical variable (present, absent, probable) and results of the test are mentioned in Table 4.

Table 4: Prior Suicide Attempt and Alexithymia

Alexithymia	Prior Attempt		Total
	Absent	Present	
No	45	14	59
Yes	15	3	18
Probable	20	3	23
Total	80	20	100

P value for Fisher's Exact Test: 0.579 [not significant]

No statistically significant relation was found and p value was 0.579.

Relation between Alexithymia and Suicidal Ideation was evaluated in a similar way. No statistically significant relation was observed. The results of the tests are given in the Table 5&6.

Table 5: Suicidal Ideation and TAS-20 & Subscale Score [Kruskal-Wallis]

	χ^2	df	p
TAS	0.121	1	0.728
DIF	0.001	1	0.966
DDF	1.602	1	0.206
EOT	0.042	1	0.836

Table 6: Suicidal Ideation and Alexithymia

Alexithymia	Suicidal Ideation		Total
	Absent	Present	
No	49	10	59
Yes	15	3	18
Probable	20	3	23
Total	84	16	100

P value for Fisher's Exact Test: 1.000 [not significant].

Fisher's test was applied when treating Alexithymia as categorical variable and results of the test are mentioned below. No statistically significant relation was found.

Correlation between scores on AUDIT, TAS-20

The correlation between continuous variables (scores of TAS-20 scale & AUDIT scale) was evaluated using Pearson Correlation and Pearson Product Moment Correlation (r) was calculated to be 0.163 (p=0.105, CI: -0.034 to 0.348) The correlation is plotted on the scatter plots in Figure 1.

Figure 3: Scatterplot comparing AUDIT Score and TAS-20 Score of all participants

Alexithymia

Alexithymia was evaluated for any statistically significant relation with education, occupation, annual family

income, type of alcohol consumed and scores on AUDIT scale. Fisher's exact test was used for comparison of all the afore mentioned variables except AUDIT Scores, which were compared using Kruskal-Wallis Test. No statistically significant relationship was found during this exploratory analysis. The results of the statistical tests are given below in the following tables.

Analysis was also carried out to look for possible correlation between scores on various subscales of Toronto Alexithymia Scale-20 scale and AUDIT (Alcohol use disorder identification test) scale and was evaluated using Pearson Correlation and Pearson Product Moment Correlation (r) was calculated. The correlation matrix for the analysis with Pearson's r and p-value with 95% Confidence intervals is mentioned in the table 7. No Statistically significant correlations were found.

Table 7: Correlation Matrix: DIF, DDF, EOT, AUDIT

		DIF	DDF	EOT	Audit
DIF	Pearson's r	—			
	p-value	—			
	95% CI Upper	—			
	95% CI Lower	—			
DDF	Pearson's r	0.599***	—		
	p-value	< .001	—		
	95% CI Upper	0.712	—		
	95% CI Lower	0.456	—		
EOT	Pearson's r	0.477***	0.524***	—	
	p-value	< .001	< .001	—	
	95% CI Upper	0.616	0.653	—	
	95% CI Lower	0.309	0.365	—	
Audit	Pearson's r	0.040	0.176	0.197	—
	p-value	0.695	0.080	0.050	—
	95% CI Upper	0.234	0.360	0.379	—
	95% CI Lower	-0.158	-0.021	0.001	—

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion:

The study was conducted with aim of studying the association between alexithymia and severity of alcohol dependence and suicidal ideations.

This current study found the prevalence of Alexithymia in users with alcohol dependence syndrome at 18% which is lower than found by earlier studies. Various previous studies have indicated prevalence alexithymia in alcohol use disorders to be typically in range of 45 to 67%. [7] However, critical review of more recent studies indicates a slightly lower number between 30 and 49%. [6] However, it is worth considering that a significant fraction of participants (23%) had Toronto Alexithymia Scale-20 scores lying between 52 and 60, suggesting probable Alexithymia. Majority of the study participants, i.e. 59% were found to be not having alexithymia as they scored less than 52 on Toronto Alexithymia Scale.

16% of the participants reported having suicidal ideation and 20% of the participants reported at-least one suicide attempt in the past. This figure

approximates with the that found by Ziółkowski et al. [24] (2017) and Abdalla et al. [25] (2019) who reported that 12% and 12.4% of patient with ADS as having suicidal thoughts. The figures are much higher than the prevalence of suicidal ideations in normal population. However, the figure was much higher than that reported by Jonas et al. [26] (2014), who reported the prevalence of past history of suicide attempt at 4.2 % and current suicidal ideation at 5.1%. However, the figure was much less than that reported by Al-Sharqi et al. [27] (2012), who reported the prevalence of past history of suicide attempt at 6.2 % and current suicidal ideation at 50.7%. Lack of correlation between alexithymia and suicide attempt was also concluded by Lester [28] (1991), Taiminen et al. [29] (1996) and Sayar et al. [30] (2003). However, this was in sharp contrast to majority of studies mentioned in the review which indicated higher prevalence of suicidal ideation amongst those with alexithymia. Some studies like the one by Na et al. [31] (2013), De Berardis et al. [32] (2014) and Evren & Evren [33] (2006) have even identified correlation with subscales of alexithymia,

however, no such correlation was seen in findings of our study. Contrary to the findings reported by Thorberg et al. [14] (2019), AUDIT scores (and thus severity of alcohol dependence) was not correlated with score on Toronto Alexithymia Scale-20. [34]

It is worth pointing out that patient's meeting ICD10 criteria for any other psychiatric disorder other than Alcohol Dependence Syndrome and Nicotine Dependence Syndrome were excluded from the study. This may have had a significant bearing on the results as many patients with suicidal ideation were those who met the criteria for depressive episode or recurrent depressive disorder and were thus excluded from the study.

Moreover, COVID-19 pandemic may have had a significant impact on the outcome of study as it may introduced a selection bias as the patient population continuing their follow up even during COVID lockdown may not be true representative of the population of alcohol users in general. More importantly, significant difference is also expected between the population of alcohol users who are seeking treatment for their addiction and those in the community who are not under treatment for their dependence.

This study also had some limitations. Firstly, no female subjects was found during the sequential recruitment. This could be an important selection bias resulting from lack of female alcohol dependent patients seeking treatment in government hospital.

Conclusion:

The study was conducted with aim of studying the association between alexithymia and severity of alcohol dependence. This study aimed to fill the significant lacune in existing knowledge, esp. when pertaining to Indian population. This current study found the prevalence of Alexithymia in users with alcohol dependence syndrome at 18% which is

lower than found by earlier studies. AUDIT scores (and thus severity of alcohol dependence) was not correlated with score on Toronto Alexithymia Scale-20. The prevalence of current suicidal ideation was found to be 16%. Prevalence of history of past suicide attempt was found to be 20%. This study also had some limitations, namely lack of female participants, exclusion of people with depressive episode or recurrent depressive disorder, and potential impact of COVID19 pandemic as causes of selection bias. In conclusion, the study gave valuable information on prevalence of alexithymia and suicidal ideation amongst alcohol dependent persons, however, no significant correlation was found amongst them.

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