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Original Research Paper

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EXPLORING THE LINK BETWEEN ALEXITHYMIA AND ALCOHOL DEPENDENCE: A COMPARATIVE STUDY OF ALEXITHYMIA AND ALCOHOL USE PATTERNS

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ABSTRACT **Objective:** To assess the prevalence and severity of alexithymia among individuals with Alcohol Dependence Syndrome (ADS) compared to healthy controls, and to examine the association of alexithymia with duration of alcohol use and early-onset alcoholism. **Methods:** This cross-sectional study included 112 adult male participants (56 ADS patients and 56 healthy controls) recruited via universal sampling from a tertiary care center. Alexithymia was assessed using the Toronto Alexithymia Scale-20 (TAS-20). Alcohol use patterns, withdrawal severity (CIWA-Ar), and sociodemographic variables were recorded. Group comparisons and correlation analyses were performed using t-tests, chi-square tests, and Pearson's correlation coefficient. **Results:** TAS-20 scores were significantly higher in the ADS group (mean 60.33 ± 10.12) compared to controls (mean 49.78 ± 8.63; $p < 0.001$). True alexithymia was present in 41.1% of ADS participants versus 3.6% of controls. Longer duration of alcohol use positively correlated with higher alexithymia scores ($p = 0.012$). Early-onset alcoholism (initiation before 25 years) was associated with greater emotional processing deficits. CIWA-Ar scores indicated variability in withdrawal severity. **Conclusions:** Alexithymia is highly prevalent and more severe among individuals with alcohol dependence. Chronic alcohol use and early onset of drinking are associated with greater emotional dysregulation. Screening for alexithymia in alcohol use disorder patients may inform targeted emotional regulation interventions and improve clinical outcomes. **Relevance to Clinical Practice:** Incorporating alexithymia assessment into routine evaluations of alcohol-dependent patients can enhance treatment planning. Emotion-focused interventions tailored to address alexithymia may reduce relapse risk and improve long-term recovery outcomes.

KEYWORDS : Alexithymia, Alcohol Dependence Syndrome, Early-Onset Alcoholism, Toronto Alexithymia Scale-20, Emotional Regulation, Substance Use Disorders

INTRODUCTION

Emotion plays a fundamental role in interpersonal relationships and overall health. However, some individuals exhibit significant difficulties in recognizing, expressing, and managing their emotions—a phenomenon termed alexithymia. Derived from the ancient Greek words "a" (without), "lexis" (word), and "thymos" (emotion), alexithymia literally means "no words for emotions." Initially rooted in psychodynamic theories, alexithymia is now conceptualized as a personality trait with wide-reaching implications across psychiatric and neurological disorders. It is frequently observed in individuals with depression, anxiety disorders, autism spectrum disorders, and substance use disorders (SUDs)[1]. Additionally, alexithymic traits have been reported in patients with Alzheimer's disease, Parkinson's disease, multiple sclerosis, and traumatic brain injury[2].

Although alexithymia is not classified as a distinct psychiatric disorder, it remains a psychologically significant yet underexplored phenomenon, affecting an estimated 10% of the global population[3]. The primary challenges associated with alexithymia involve its detrimental effects on emotional regulation and interpersonal relationships. Individuals with alexithymia struggle to identify and verbalize their feelings, leading to poor stress management, limited emotional insight, and difficulties in forming meaningful social bonds[4]. This emotional dysregulation often contributes to maladaptive coping mechanisms such as substance abuse and addiction. Among various SUDs, Alcohol Dependence Syndrome (ADS) shows the strongest association with alexithymia[5].

Studies suggest that individuals with alcohol dependence demonstrate marked deficits in emotional perception and poor adaptive coping strategies, increasing their reliance on alcohol as a means to manage negative emotions[6]. Alcohol dependence poses a significant global health burden, given its wide-ranging medical, psychological, and socio-economic consequences. The connection between alcohol dependence and emotional regulation is well established, with many individuals diagnosed with ADS exhibiting high levels of alexithymia[7]. Difficulties in identifying and processing emotions may render these individuals particularly vulnerable to using alcohol as a maladaptive coping mechanism, thereby exacerbating dependency[8].

Empirical evidence consistently highlights a strong link

between alexithymia and SUDs, with alcohol-dependent individuals typically scoring higher on measures of alexithymia than non-users[9]. Notably, alcohol-dependent individuals show greater emotional unawareness compared to cannabis users, tobacco smokers, and individuals with other substance use disorders, although emotional processing deficits remain a common characteristic across different types of substance users[10]. However, a gap persists in the existing literature. While a positive correlation between alexithymia and alcohol use has been established, questions remain regarding the strength of this correlation, the influence of different drinking patterns, and whether alexithymia is a precursor to or consequence of alcohol dependence[11].

Recognizing and addressing alexithymia in individuals with alcohol dependence is crucial for improving treatment outcomes. Since emotional dysregulation is a core issue in alcohol dependence, therapeutic interventions targeting alexithymia—such as emotion-focused therapy, cognitive-behavioural therapy (CBT), and mindfulness-based approaches—may help reduce relapse rates and promote healthier emotional coping mechanisms[12].

This study aims to assess the prevalence and severity of alexithymia in individuals with alcohol dependence, evaluate its association with the duration of alcohol use, and examine its relationship with early-onset alcoholism. By identifying these patterns, the study seeks to contribute to a more nuanced understanding of the interplay between alexithymia and alcohol dependence, ultimately informing more effective screening, prevention, and treatment strategies for individuals struggling with alcohol-related disorders.

MATERIALS AND METHODS

Study Design and Setting

This comparative cross-sectional study was conducted in the Department of Psychiatry at KVG Medical College, Sullia, Dakshina Kannada, Karnataka. Data collection took place over a period of four months, from May 2024 to August 2024.

The study protocol was reviewed and approved by the Institutional Ethics Committee (IEC No. KVGMCIEC202489), and written informed consent was obtained from all participants prior to enrolment. The study adhered to the ethical principles outlined in the Declaration of Helsinki.

Sampling Method and Participant Recruitment

A systematic random sampling method was employed. Every 3rd eligible individual presenting to the psychiatry outpatient department (OPD), inpatient services, or de-addiction unit (ADS) during the study period was selected for inclusion. This interval-based approach was used to reduce sampling bias and ensure a representative clinical sample.

Recruitment was conducted from May 2024 to August 2024.

Healthy controls were selected using a similar systematic random sampling method. Every 3rd eligible individual from among hospital staff, patient attendants, and members of the surrounding community who had voluntarily expressed interest in the study was approached for participation. All controls were screened for eligibility before enrolment.

Written informed consent was obtained from all participants after explaining the study's objectives, procedures, confidentiality assurances, and the voluntary nature of participation.

Group Division and Diagnostic Criteria

The study sample was divided into two groups:

- Group A (Alcohol Dependence Group): 52 adult male patients diagnosed with Alcohol Dependence Syndrome (ADS).
- Group B (Healthy Control Group): 52 healthy adult males with no history of ADS or any psychiatric disorder.

The diagnosis of ADS was established by a qualified psychiatrist based on the International Classification of Diseases, 10th Revision, Diagnostic Criteria for Research (ICD-10 DCR) guidelines[13]. A detailed clinical interview confirmed the presence of at least three of the following features for at least one month:

- Strong desire or compulsion to take alcohol
- Impaired control over alcohol use
- Physiological withdrawal symptoms upon cessation or reduction
- Evidence of tolerance
- Neglect of alternative pleasures or interests
- Persistent alcohol use despite clear evidence of harm

Control group participants underwent a thorough screening interview to rule out psychiatric or substance use disorders (except occasional, non-problematic alcohol use) and significant medical illnesses.

Inclusion and Exclusion Criteria

Inclusion Criteria

Group A (Alcohol Dependence Group):

- Male gender
- Age 18–60 years
- Diagnosis of ADS according to ICD-10 DCR
- Clinically stable (Clinical Institute Withdrawal Assessment for Alcohol–Revised [CIWA-Ar] score ≤4)
- Ability to provide informed consent

Group B (Healthy Control Group):

- Male gender
- Age 18–60 years
- No current or past psychiatric disorder or substance use disorder
- No diagnosis of ADS

Exclusion Criteria (Both Groups)

- Presence of psychiatric comorbidity (determined by the Mini-International Neuropsychiatric Interview [M.I.N.I.])[14]
- Cognitive impairment (Mini-Mental State Examination [MMSE] score below the established cutoff)[15]
- History of complicated alcohol withdrawal syndromes (e.g., seizures, delirium tremens) within the last month
- Severe or unstable medical conditions (e.g., decompensated liver disease, renal failure, uncontrolled diabetes)
- Language barriers or sensory impairments preventing participation
- Withdrawal of consent at any point

Clinical and Psychometric Assessments

Screening for Psychiatric Comorbidity

The Mini-International Neuropsychiatric Interview (M.I.N.I.)[14] was administered by trained psychiatry residents to exclude psychiatric comorbidities.

Cognitive Screening

Cognitive functioning was assessed using the Mini-Mental State Examination (MMSE)[15]. Participants scoring below the age- and education-adjusted cutoff were excluded.

Assessment of Alexithymia

Alexithymia was assessed using the Toronto Alexithymia Scale–20 (TAS-20)[17], a 20-item self-report scale measuring three dimensions:

- Difficulty Identifying Feelings (DIF)
- Difficulty Describing Feelings (DDF)
- Externally Oriented Thinking (EOT)

Each item is rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

TAS-20 scoring:
- 0–51: Non-alexithymia
- 52–60: Borderline alexithymia
- ≥61: Definite alexithymia

Higher scores indicate greater severity of alexithymia.
Assessment of Alcohol WithdrawalAlcohol withdrawal severity was evaluated using the Clinical Institute Withdrawal Assessment for Alcohol–Revised (CIWA-Ar)[17].

Interpretation of CIWA-Ar Scores:
- 0–9: Absent or mild withdrawal
- 10–19: Moderate withdrawal
- ≥20: Severe withdrawal

Participants were included only if their CIWA-Ar scores were ≤4 to ensure minimal withdrawal symptoms during assessments. CIWA-Ar was used solely to assess withdrawal severity, not for diagnosing ADS.

Collection of Socio-Demographic and Clinical Data
A semi-structured proforma was used to gather information on:
- Age, marital status, education, occupation, socioeconomic background
- Detailed alcohol use history (age of initiation, pattern, quantity, duration, complications)

Special attention was given to the age of onset of alcohol use, as early onset has been associated with greater alexithymia severity in prior studies.

Statistical Analysis
Data were entered into Microsoft Excel 2022 and analysed using IBM SPSS Statistics for Windows, Version 21.0[17].
- Descriptive statistics (mean, standard deviation, frequency, percentage) summarized demographic and clinical characteristics.
- Independent samples t-tests compared continuous variables between groups if normally distributed; otherwise, the Mann–Whitney U test was used.
- Chi-square tests analysed categorical variables.
- Pearson's correlation coefficient assessed relationships between normally distributed continuous variables; Spearman's rank correlation coefficient was used otherwise[17].

Effect sizes were calculated:
- Cohen's d for t-tests
- Phi coefficient for chi-square tests

Statistical significance was set at $p < 0.05$. To account for multiple comparisons, a Bonferroni correction was applied where appropriate.

RESULTS
Sample Characteristics
A total of 112 male participants were included, with 56 in Group A (Alcohol Dependence Syndrome) and 56 in Group B (Healthy Controls). The mean age was 43.64 ± 12.19 years in Group A and 40.35 ± 15.08 years in Group B. The difference was not statistically significant ($p = 0.126$), indicating age was not a confounding factor.

Alcohol use characteristics varied notably between groups. Group A participants had a median alcohol use duration of 19 years, significantly longer than 10 years in Group B ($p = 0.012$). All participants in Group A met criteria for alcohol dependence, whereas 37.5% of Group B reported occasional alcohol use without dependence ($p < 0.001$).

Comparison of Alexithymia Between Groups
Toronto Alexithymia Scale-20 (TAS-20) scores were significantly higher in Group A (60.33 ± 10.12) compared to Group B (49.78 ± 8.63; $p < 0.001$), indicating greater emotional processing deficits among alcohol-dependent individuals (see Table 1).

Subscale analysis further revealed:
- **Difficulty Identifying Feelings (DIF):** Group A: 15.00 ± 4.32, Group B: 13.07 ± 3.89 ($p = 0.0018$)
- **Difficulty Describing Feelings (DDF):** Group A: 18.46 ± 5.28, Group B: 13.39 ± 4.75 ($p < 0.001$)
- **Externally-Oriented Thinking (EOT):** Group A: 26.60 ± 6.17, Group B: 23.90 ± 5.84 ($p = 0.0069$)

These results suggest that alcohol dependence is associated with greater difficulty in identifying and describing emotions, and a stronger inclination toward externally focused thinking[19,21].

Classification of Alexithymia Severity
Analysis of alexithymia categories showed (see Table 2):
- True alexithymia: 41.1% in Group A vs. 3.6% in Group B
- Probable alexithymia: 33.9% in Group A vs. 44.6% in Group B
- No alexithymia: 25% in Group A vs. 51.8% in Group B

The association between alcohol dependence and alexithymia severity was highly significant (Chi-square test, $p < 0.001$)[22,23].

Correlation of Alexithymia With Duration of Alcohol Use
A positive correlation was observed between years of alcohol use and TAS-20 scores ($p = 0.012$), indicating that a longer duration of alcohol consumption was associated with greater alexithymia severity (see Table 3)[24].

Withdrawal History and Early-Onset Alcoholism
Among Group A participants, 64.3% reported a history of complicated alcohol withdrawal, including episodes of delirium tremens, seizures, and severe autonomic instability[25].

Subgroup analysis showed that individuals with early-onset alcoholism (initiation before 25 years of age) had significantly higher TAS-20 scores, suggesting that early exposure to alcohol may impair emotional regulation mechanisms (see Figure 1)[26, 27]. TAS-20 scores were higher among participants with a history of alcohol withdrawal (see Table 4).

Clinical Institute Withdrawal Assessment for Alcohol (CIWA-AR) Scores
Withdrawal severity among Group A participants, assessed via CIWA-AR, was distributed as follows:
- 33.9% scored 2 (mild symptoms)
- 26.8% scored 3 (moderate symptoms)
- 23.2% scored 0 (minimal or no symptoms)

These findings reflect the heterogeneity in withdrawal severity among alcohol-dependent individuals[26,27].

Summary of Key Findings
1. Alexithymia was significantly more prevalent and severe among alcohol-dependent individuals[19,21].
2. Alcohol dependence was associated with greater difficulty in identifying and describing emotions and an increased tendency toward externally oriented thinking[22].
3. True alexithymia was present in 41.1% of alcohol-dependent individuals compared to 3.6% of controls ($p < 0.001$)[23].
4. Longer duration of alcohol use correlated with greater alexithymia severity ($p = 0.012$)[24].
5. A majority (64.3%) of alcohol-dependent participants had a history of complicated withdrawal, indicating higher

addiction severity[21].

6. Early-onset alcohol use was linked to higher alexithymia scores[20,21].
7. CIWA-AR scores demonstrated variability in withdrawal severity among alcohol-dependent individuals[20,21].

These findings suggest that alexithymia is highly prevalent among individuals with alcohol dependence and that chronic alcohol use may exacerbate emotional processing deficits. Screening for alexithymia in alcohol dependence syndrome patients may help guide targeted interventions aimed at improving emotional regulation and reducing dependence severity.

DISCUSSION

This study aimed to investigate the prevalence and severity of alexithymia in individuals with alcohol dependence compared to healthy controls. The findings reveal a significant association between Alcohol Dependence Syndrome (ADS) and elevated alexithymia levels, supporting our hypothesis that individuals with ADS experience notable difficulties in emotional identification and regulation.

Alexithymia and Alcohol Dependence

Participants with alcohol dependence (Group A) demonstrated significantly higher TAS-20 scores (mean 60.33 ± 10.12) than healthy controls, with 41.1% of Group A exhibiting true alexithymia compared to only 3.6% in Group B. These results align with previous research linking alexithymia and substance use disorders (SUDs). El Raasheed[22] and Payer et al.[23] similarly reported elevated alexithymia among individuals with polysubstance and heroin dependence, respectively.

A plausible explanation is that individuals with ADS may use alcohol to manage emotional distress due to impaired emotional awareness. Chronic alcohol consumption likely worsens these deficits, reinforcing the cycle of emotional dysregulation and substance dependence[3].

Association Between Alexithymia Severity and Duration of Alcohol Use

A key finding of this study was the positive correlation between alexithymia severity and the duration of alcohol use. Longer histories of alcohol consumption were associated with higher TAS-20 scores. This supports previous observations by Ghalehban and Besharat[17], suggesting that chronic alcohol use exacerbates emotional processing impairments, possibly through neurotoxic effects on the prefrontal cortex and limbic system[3]. Alcohol-induced reductions in neural plasticity and executive functioning may further impair emotional recognition and expression[17], perpetuating both alexithymia and alcohol dependence[19].

Early-Onset Alcoholism and Alexithymia

Participants who initiated alcohol use at an earlier age exhibited higher alexithymia scores. Early exposure to alcohol may disrupt the development of emotional regulation capacities by affecting brain regions like the prefrontal cortex, amygdala, and hippocampus during critical periods of neurodevelopment[19,24]. Consequently, individuals may adopt maladaptive coping strategies such as continued alcohol use, reinforcing alexithymic traits over time[11,12].

Alexithymia and Alcohol Withdrawal

The study also observed that a significant proportion of alcohol-dependent participants had histories of complicated withdrawal episodes. Although causality could not be established, it is plausible that alexithymia exacerbates withdrawal symptoms by hindering emotional recognition and expression, leading to heightened physiological stress responses[13,14].

Clinical Implications

The association between alexithymia and alcohol dependence emphasizes the importance of screening for alexithymia during assessment and treatment. Individuals with high alexithymia may face challenges in engaging with psychotherapy, maintaining motivation, and developing adaptive coping mechanisms[11,12]. Incorporating emotion-focused interventions could enhance treatment outcomes.

Limitations and Future Directions

Several limitations must be considered. First, the exclusion of female participants limits the generalizability of the findings, as gender differences in emotional regulation and alcohol use are well established[17]. Second, the lack of stratification based on the severity of alcohol dependence may have masked important variability in alexithymia severity[17]. Future studies should explore the neurobiological mechanisms linking alexithymia and alcohol dependence to inform the development of targeted therapeutic approaches[17].

CONCLUSION

This study provides evidence that alexithymia is significantly more prevalent among individuals with alcohol dependence. Chronic alcohol use, early onset of drinking, and withdrawal severity are all associated with higher alexithymia scores. Addressing alexithymia as a core component of intervention strategies may be crucial for improving long-term outcomes in alcohol dependence.

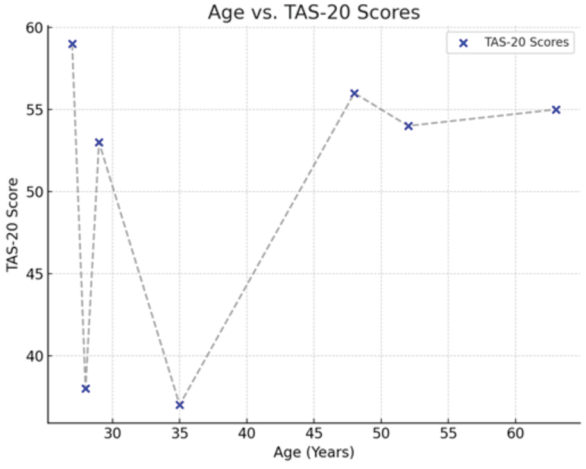

Figure 1 : Age vs. TAS-20 Scores: Variability in Alexithymia Levels Across Different Age Groups.

Table 1: Predictors of Alexithymia – Summary of Logistic and Linear Regression Analyses

Predictor Variable	Binary Logistic Regression (True vs. No Alexithymia) OR (95% CI), p-value	Multiple Linear Regression β (Standardized Coefficient), p-value
Age	1.01 (0.97–1.04), p = 0.68	0.05, p = 0.62
Years of Alcohol Use	1.06 (1.02–1.11), p = 0.01	0.42, p = 0.002
Early-Onset Alcoholism (before 25 yrs)	3.5 (1.5–8.1), p = 0.003	0.30, p = 0.01
CIWA-Ar Score	1.08 (0.91–1.28), p = 0.37	0.08, p = 0.45
Education Level	0.92 (0.83–1.02), p = 0.11	-0.12, p = 0.30
Group (Alcohol-Dependent vs Control)	15.3 (4.11–57.02), p < 0.001	—

Tobacco Use (Yes vs No)	1.81 (0.67–4.92), p = 0.25	—

Interpretation:

- Group membership, early-onset drinking, and years of alcohol use were consistent predictors of alexithymia.
- Predictive strength is more pronounced in binary classification (true alexithymia vs. none).
- Age, CIWA-Ar score, education, and tobacco use did not significantly predict alexithymia in either model.

Table 2: Distribution of TAS-20 Scores Across Alexithymia Categories in Individuals with Alcohol Dependence

Alexithymia Category	Count	Mean	Std Dev	Min	25%	Median	75%	Max
No	4	37.75	3.30	34	36.25	37.5	39.00	42
Probable	8	55.25	2.66	51	53.75	55.0	57.25	59
True	2	78.50	9.19	72	75.25	78.5	81.75	85

Table 3: Relationship Between Age, Drinking Duration, and Alexithymia Scores in Individuals with Alcohol Dependence

Age (Years)	Mean Drinking Years	Mean TAS-20 Score
27	1.0	59.0
28	2.0	38.0
29	5.0	53.0
35	10.0	37.0
48	17.5	56.0
52	23.0	54.0
63	40.0	55.0

Table 4: Alexithymia (TAS-20) Scores Based on Alcohol Withdrawal History

Withdrawal History	Count	Mean TAS-20 Score	Min	Max
No	6	49.33	37	72
Yes	8	56.75	34	85

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