ORIGINAL ARTICLE

Psychological Distress and Expressed Emotion Among Persons with Alcohol Dependence Syndrome and Normal Control

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Abstract

Background: Alcohol Dependence Syndrome (ADS) is a pervasive public health issue that affects millions worldwide, contributing to significant physical, psychological, and social challenges. It is crucial to observe expressed emotion and psychological distress for better treatment outcomes in ADS. **Aim:** The aim of this study is to assess psychological distress and expressed emotion among persons with alcohol dependence syndrome. **Materials and Methods:** The present cross-sectional comparative study conducted among persons with ADS on treatment from the inpatient department of the Central India Institute of Mental Health and Neuro Sciences (CIIMHANS), Dewada, Chhattisgarh, India, and normal controls from neighbouring areas (Dewada and Kopedih) of the CIIMHANS. A total of 80 participants (40 persons with ADS and 40 normal controls) were purposefully selected for the study. The sociodemographic datasheet, family emotional involvement and criticism scale, and depression anxiety stress scales were used for the comparative assessment. **Results and Conclusion:** The present study found that significant difference in family expressed emotion (EE) and psychological distress among individuals with ADS and normal control. It highlights that higher levels of emotional involvement and criticism from family members are strongly associated with increased symptoms of depression, anxiety, and stress in individuals with ADS.

Keywords: Alcohol dependence, Depression, Anxiety, Stress, Expressed Emotions.

Introduction

Alcohol dependence syndrome (ADS) is the final stage of alcohol addiction which is characterized by tolerance, that is, increased amount of alcohol consumption to get the same effect. (Edwards, 1986). The World Health Organization reported that harmful alcohol consumption caused 3 million deaths, accounting for 5.3% of all deaths, and led to 132.6 million disability-adjusted life years (DALYs), or 5.1% of all DALYs, in 2016 (WHO, 2019). In India, the National Health Survey 2016 reported a 21.4% prevalence of alcohol use, with 17% of users (around 10.6 million people) being dependent. This survey also noted a 4.65% prevalence of alcohol use disorders (Murthy, 2017; Gautham et al., 2020). Harmful alcohol consumption can also lead to an increased risk of falls and is associated with a higher risk of depression, anxiety, and other mental health problems (Kuerbis et al., 2016; Hallgren et al., 2009).

Psychological distress, defined as the state of emotional suffering characterized by symptoms of depression, anxiety, and stress (Drapeau et al., 2012), is particularly prevalent among individuals with alcohol dependence due to the neurochemical and cognitive changes induced by chronic

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alcohol use (Kessler et al., 2005). Moreover, Chikkerahally et al. (2019), observed that individuals with alcohol dependence exhibited substantially higher psychological distress than normal controls.

Expressed Emotion (EE) is a key factor influencing the psychosocial dynamics of individuals with ADS. It refers to the emotional attitudes and behaviors exhibited by family members toward a person with a mental health condition, which can include criticism, hostility, or emotional over-involvement (Hooley & Parker, 2006). High EE environments, especially those characterized by critical or hostile family interactions, are associated with poorer outcomes in various psychiatric conditions, including substance use disorders (Chassin et al., 2019). Research indicates that individuals with ADS living in high EE environments are more prone to relapse, increased psychological distress, and exacerbation of their symptoms (O'Farrell et al., 1998; Shanmugam et al., 2021).

By comparing persons with Alcohol Dependence Syndrome to normal controls, we can better understand the role of psychological distress and expressed emotion in the course and treatment of alcohol dependence. This knowledge is essential for developing interventions that address both individual psychological health and the emotional climate within families, helping to break the cycle of alcohol dependence and promoting recovery.

Materials And Methods

The present cross-sectional comparative study was conducted among individuals with alcohol dependence syndrome (ADS) who were receiving regular treatment from the outpatient department of the Central India Institute of Mental Health and Neuro Sciences (CIIMHANS), Dewada, Chhattisgarh. The study also included normal controls from neighboring areas, specifically Dewada and Kopedih. A total of 80 participants (40 persons with ADS and 40 normal controls) were purposefully selected for the study. Both groups were informed about the purpose of the research, and written informed consent was obtained from those who agreed to participate. To ensure comparability, participants from both groups were matched based on age, education, marital status, family type, occupation, and family income.

Inclusion criteria

Persons diagnosed with alcohol dependence syndrome according to ICD–10. DCR, only male, Age between 20 to 50 years, Duration of illness at least 2 to 15 years., Able to understand Hindi and Chhattisgarhi and those who gave informed consent form.

Exclusion criteria

Persons with neurological problem, head injury, mental retardation, or other physical illness, Age less than 20 years and Duration of illness less than 2 years.

Instruments

Sociodemographic and clinical datasheet

The sociodemographic datasheet was formulated to understand the details of demographic profile of the persons with ADS. The variables included in the sociodemographic datasheet were age, sex, education, occupation, family type, etc.

Depression Anxiety Stress Scales (DASS-21)

This scale developed by Lovibond and Lovibond (1995), is a 21-item scale designed to measure negative emotional states, including depression, anxiety, and stress. Respondents rate each item on a four-point severity/frequency scale based on their experiences in the past week. Higher scores indicate higher levels of depression, anxiety, and stress. The test-retest reliability of the DASS-21 is 0.48, with Cronbach's alpha for internal consistency ranging from 0.89 to 0.96.

Family Emotional Involvement and Criticism Scale

It is a 14-item Likert-type questionnaire developed by Shields et al. (1994) to assess perceived expressed emotion (EE). The scale is divided into two subscales: Perceived Criticism (PC) and Intensity of Emotional Involvement (EI). Odd-numbered items measure EI, while even-numbered items measure PC. Responses are given on a 5-point Likert scale, ranging from «almost never» to «almost always.» Higher scores indicate greater levels of criticism, emotional involvement, and overall EE.

Statistical analysis

Statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 25.0 for Windows, developed by IBM, New York, USA. Descriptive demographic variables were analyzed using mean, standard deviation (SD), and Chi-square tests. The differences between study variables in both groups were calculated using the mean and SD with a t-test. Pearson's correlation was applied to examine the relationship between psychological distress and expressed emotion in individuals with Alcohol Dependence Syndrome (ADS). A p-value of less than 0.05 was considered statistically significant in this study.

RESULTS

Socio-Demographic Characteristics

Table 1 highlighted the socio-demographic comparison between individuals with Alcohol Dependence Syndrome (ADS) and the normal control group. The mean age of individuals with ADS was 34.67 years (SD = 8.97), compared

Table 1: Comparison of socio-demographic details of persons with alcohol dependence syndrome and normal control

Variables		*Group (N-80)*		*df*	χ^2	*p-value*
		ADS N (%)	*Normal Control N (%)*			
Age (Mean ± SD)		34.67±8.97	32.02±7.62	78	1.424 (t)	0.158NS
Education	Illiterate	2(5.0%)	2(5.0%)	5	1.797	0.876NS
	Primary	4(10.0%)	4(10.0%)			
	Secondary	3(7.5%)	5(12.5%)			
	High secondary	12(30.0%)	14(35.0%)			
	Graduation	10(25.0%)	10(25.0%)			
	PG and above	9(22.5%)	5(12.5%)			
Marital status	Married	30(75.0%)	22(55.0%)	1	3.516	0.061NS
	Unmarried	10(25.0%)	18(45.0%)			
Occupation	Unemployed	21(52.5%)	27(67.5%)	1	1.875	0.171NS
	Employed	19(47.5%)	13(32.5%)			
Domicile	Rural	21(52.5%)	26(65.0%)	2	2.143	0.342NS
	Semi-Urban	4(10.0%)	5(12.5%)			
	Urban	15(37.5%)	9(22.5%)			
Family income	Less than 5000	4(10.0%)	7(17.5%)	3	1.577	0.665NS
	5000 to 15000	9(22.5%)	11(27.5%)			
	15000 to 25000	9(22.5%)	8(20.0%)			
	25000 Above	18(45.0%)	14(35.0%)			
Family type	Joint	21(52.5%)	24(60.0%)	2	0.914	0.633NS
	Nuclear	16(40.0%)	12(30.0%)			
	Extended	3(7.5%)	4(10.5%)			
Family history of illness	Physical illness	4(10.0%)	6(15,0%)	2	2.400	0.301NS
	Psychiatric illness	2(5.0%)	0(.0%)			
	No illness	34(85.0%)	34(85.0%)			

NS = Not significant, df = Degree of freedom, N = Number, % = percentage

to 32.02 years (SD = 7.62) for the normal control group. In terms of education, the majority in the ADS group (30.0%) had completed higher secondary education, while in the normal control group, 35.0% had also reached higher secondary education. Marital status showed that most participants in the ADS group were married (75%), compared to 55% in the normal control group. Regarding employment, 47.5% of the ADS group were employed, while the majority (52.5%) of the normal control group were unemployed. Rural residency was more common in the normal control group (65.0%) compared to the ADS group (52.5%). In terms of family income, 45.0% of the ADS group had an income above ₹25,000, compared to 35.0% in the normal control group. The majority of participants in the ADS group came from joint families (52.5%), as did 40.0% of those in the normal control group. Finally, 85.0% of participants in both the ADS and normal control groups reported no family history of physical illness.

It is clear from the table 1 shows that there is no significant difference between persons with alcohol dependence syndrome and normal control groups based on their age (t= 1.424, p= 0.158), marital status ($\chi^{2=}$ 3.516, p= 0.061), education ($\chi^{2=}$ 1.797, p= 0.876), occupation ($\chi^{2=}$ 1.875, p= 0.876), domicile ($\chi^{2=}$ 2.143, p= 0.342), family income PM ($\chi^{2=}$ 1.577, p= 0.665), family type ($\chi^{2=}$ 0.914, p= 0.633), family history of illness ($\chi^{2=}$ 2.400, p= 0.301).

Table no 3 shows the mean score and SD of the depression anxiety stress scale (DASS) among the persons with alcohol dependence syndrome and normal control groups. DASS has three domains: depression, anxiety and stress. The mean and SD score of Depression domain was found to be 7.60 ± 3.99, anxiety was found to be 7.82 ± 3.99 and stress was 10.22 ± 5.57 in the alcohol dependence syndrome group. Persons with normal control group in the mean and SD score of depression domain was found to be 3.72 ± 2.77, anxiety was found to be

Table 2: Comparison of psychological distress (depression, anxiety and stress) between persons with alcohol dependence syndrome and normal control

Variables	*Group (N=80)*		*t-value*	*df*	*p-value*
	ADS Mean ± SD	*Normal control Mean ± SD*			
Depression	7.60 ± 3.99	3.72 ± 2.77	5.036	78	0.000**
Anxiety	7.82 ± 3.99	2.82 ± 2.72	6.534	78	0.000**
Stress	10.22 ± 5.57	5.12 ± 3.05	5.072	78	0.000**

** Significant at the 0,01 level, SD = Standard Deviation, df = degree of freedom, N = Number

2.82 ± 2.72 and stress was 5.12 ± 3.05 in this scale.

The result reveals that significance difference in depression (t= 5.036. p≤0.01) anxiety (t= 6.534, p≤0.01) and stress (t= 5.072, p≤0.01) among the persons with alcohol dependence syndrome and normal control groups.

Table no 3 shows the mean score and SD of the family emotional involvement and criticism scale among the persons with alcohol dependence syndrome and normal control groups. The mean score and SD of persons with alcohol dependence syndrome in the perceived criticism domain was found to be 13.97 ± 7.33, the mean and SD score of emotional involvement was found to be 11.07 ± 5.07 in this scale. Whereas persons with normal control in the perceived criticism domain was found to be 7.77 ± 2.81 the mean and SD score of emotional involvement was found to be 8.10 ± 3.20 in this scale. The total mean and SD score in family emotional involvement and criticism scale in persons with alcohol dependence syndrome was 24.80 ± 10.66 and in persons with normal control groups 16.67 ± 5.66 were found.

The result reveals that significant difference in perceived criticism (t= 4.992, p≤0.01) and emotional involvement (t= 3.136, p≤0.01) among the persons with alcohol dependence syndrome and normal control. Total family emotional involvement and criticism scale scores (t = 4.254, p≤0.01) reveal that there was significant difference among the persons with alcohol dependence and normal control groups.

Table no 4 shows the correlation between subtests of depression anxiety stress scale with the and family emotional involvement and criticism among persons with alcohol dependence syndrome. Depression was found significant positive correlation with family emotional involvement and criticism scale (r = .643; p=0.00). Further, anxiety was found significant positive correlation with family emotional involvement and criticism scale (r = .707; p= 0.00). In addition to this, stress was found significant positive correlation with family emotional involvement and criticism scale (r = .716; p= 0.002).

Discussion

The present study found a significant difference in psychological distress (depression, anxiety, and stress) between individuals with Alcohol Dependence Syndrome (ADS) and normal controls, with individuals suffering from ADS displaying notably higher levels of distress. These findings are consistent with previous research that has explored the complex relationship between alcohol dependence and mental health issues, particularly concerning depression, anxiety, and stress. Several studies have revealed similar results. For example, Ravikanth and Sultan, (2020) reported that the majority of respondents with alcohol dependence experienced anxiety, followed by depression and perceived stress. Alcohol dependence is frequently co-morbid with various psychiatric disorders, which may contribute to the elevated levels of psychological distress observed in affected individuals (Castillo-Carniglia et al., 2019; Fink et al., 2016). Alpers et al. (2023) found a significant association between alcohol dependence and an increased risk of developing major depressive disorder, anxiety disorders, and heightened stress levels. Other studies, such as those by Kirouac and Witkiewitz (2019) and Witkiewitz and Tucker (2020), similarly highlight the overall psychological distress may decrease during treatment for alcohol dependence and focusing exclusively on reducing alcohol consumption may overlook or even exacerbate the patient's underlying psychological distress.

This study found significant differences in perceived criticism and emotional involvement between individuals with Alcohol

Table 3: Comparison of family emotional involvement and criticism scale among persons with alcohol dependence syndrome and normal control

Variables	*Group (N=80)*		*t-value*	*df*	*p-value*
	ADS Mean ± SD	*Normal control Mean ± SD*			
Perceived Criticism	13.97 ± 7.33	7.77 ± 2.81	4.992	78	0.000**
Emotional Involvement	11.07 ± 5.07	8.10 ± 3.20	3.136	78	0.002**
Total FEICS	24.80 ± 10.66	16.67 ± 5.66	4.254	78	0.000**

** Significant at the 0,01 level, SD = Standard Deviation, df = degree of freedom, N = Number

Table 4: Correlation between psychological distress (depression, anxiety and stress) and family emotional involvement and criticism in the persons with alcohol dependence syndrome (N=40)

Variable	*Depression*	*Anxiety*	*Stress*
Family emotional involvement and criticism	.643**	.707**	.716**

**. Significant at the 0.01 level

Dependence Syndrome (ADS) and normal control groups, as well as significant differences in expressed emotion (EE) scores. Previous studies have reported similar findings. Shanmugam et al. (2021) found that relapse patients had higher scores in perceived lack of emotional support, irritability, intrusiveness, and criticism. Reddy and Jagannathan (2017) noted that older age at first alcohol intake was linked to higher perceived expressed emotion, suggesting that age of first intake is an important predictor of coping and EE in ADS patients. Similarly, such as those by Wang et al. (2021) and Shetty et al. (2022), suggest that higher family expressed emotion is associated with higher drinking levels. Further, Githae (2016) reported that EE levels among key relatives were associated with early relapse rates, with additional factors like living conditions, income, working status, and addiction severity contributing to relapse outcomes.

The present study found a significant positive correlation between depression, anxiety, and stress with family emotional involvement and criticism in individuals with Alcohol Dependence Syndrome (ADS). This suggests that if person with ADS increase family expressed emotion than also increase the depression, anxiety and stress. Previous studies have reported similar findings. Singh et al. (2022), observed the higher levels of family emotional involvement and criticism were significantly associated with greater psychological distress in individuals with alcohol dependence. Similarly, research by Leff et al. (2020) found that patients with alcohol dependence who experienced higher levels of criticism from family members exhibited more severe depressive symptoms (Farhadi et al., 2021; Gharibian et al. 2023).

Clinical Implication

The study reveals a significant positive correlation between high levels of family expressed emotion and psychological distress, suggesting that reducing expressed emotion within families can improve distress tolerance in individuals with ADS. the findings emphasize the importance of both community-level and individual-level interventions. Community-based programs are needed to shift societal attitudes toward alcohol dependence in a more compassionate and understanding direction. Simultaneously, individual therapies should focus on helping patients reshape their self-perception, reducing the harmful impact of stigma on both patients and their families.

LIMITATIONS

The study acknowledges several methodological limitations. Firstly, the small sample size limits the generalizability of the findings, as a larger and more diverse sample would provide more robust results. Additionally, the study was time-bound, restricting its ability to observe long-term effects. Due to the limited sample size, proper stratification of participants was not feasible, which may affect the precision of the results. Another limitation is the use of purposive sampling, which may introduce bias and limit the representativeness of the sample. Finally, the study was hospital-based, meaning only individuals who sought hospital services were included, potentially excluding a broader population of individuals with alcohol dependence syndrome who do not access formal healthcare services.

CONCLUSION

The findings of this study, highlights the significant influence of family expressed emotion (EE) on the mental health and recovery of individuals with alcohol dependence syndrome (ADS). It underscores that higher levels of emotional involvement and criticism from family members are strongly associated with increased symptoms of depression, anxiety, and stress in individuals with ADS. These heightened negative emotions can worsen alcohol dependence and make recovery more difficult. Therefore, the study suggests that addressing and modifying family dynamics, specifically reducing high levels of expressed emotion, should be an essential component of therapeutic interventions to enhance mental health outcomes and support effective treatment for individuals with alcohol dependence.

References

Alpers, S. E., Pallesen, S., Vold, J. H., Haug, E., Lunde, L. H., Skogen, J. C., ... & Fadnes, L. T. (2023). The association between psychological distress and alcohol consumption and physical activity: a population-based cohort study. *Frontiers in Psychiatry*, *14*, 1181046.

Castillo-Carniglia, A., Keyes, K. M., Hasin, D. S., & Cerdá, M. (2019). Psychiatric comorbidities in alcohol use disorder. *The Lancet Psychiatry*, *6*(12), 1068-1080.

Chassin, L., Hussong, A. M., Rothenberg, W. A., & Sternberg, A. (2019). Parenting and substance use disorder. *Handbook of parenting*, 483-516.

Chikkerahally, R. D., Doddamani, B. R., Nanjegowda, R. B., & Basavaraju, M. G. (2019). Prevalence and pattern of alcohol use among adult males in Karnataka. *Journal of Mental Health Research*, *22*(3), 191-197.

Drapeau, A., Marchand, A., & Beaulieu-Prévost, D. (2012). Epidemiology of psychological distress. *Mental illnesses-*

understanding, prediction and control, *69*(2), 105-106.

Edwards, G. (1986). The Alcohol Dependence Syndrome: a concept as stimulus to enquiry. *British journal of addiction*, *81*(2), 171-183.

Farhadi, M., Ahmadi, M., & Karami, A. (2021). Family expressed emotion and its impact on mental health outcomes in patients with alcohol dependence. *Journal of Substance Abuse Treatment*, *123*, 45-52.

Fink, D. S., Gallaway, M. S., Tamburrino, M. B., Liberzon, I., Chan, P., Cohen, G. H., ... & Galea, S. (2016). Onset of alcohol use disorders and comorbid psychiatric disorders in a military cohort: are there critical periods for prevention of alcohol use disorders?. *Prevention science*, *17*(3), 347-356.

Gautham, M. S., Gururaj, G., Varghese, M., Benegal, V., Rao, G. N., & Reddy, J. Y. (2020). National Mental Health Survey of India, 2016: Prevalence, patterns, and outcomes. *Indian Journal of Psychiatry*, *62*(2), 85-95.

Gharibian, H., Ebrahimi, N., & Hedayati, A. (2023). The role of family dynamics and expressed emotion in the mental health of patients with substance use disorders. *Addiction Research & Theory*, *31*(1), 67-75.

Githae, E. N. (2016). Family expressed emotion in relapse of alcoholism. *International Organization of Scientific Research, Journal of Humanities and Social Sciences (IOSR-JHSS)*, *21*(9), 33-41.

Hallgren, M., Högberg, P. I., & Andreasson, S. (2009). Alcohol consumption among elderly European Union citizens: health effects, consumption trends and related issues. *Swedish National Institute of Public Health*.

Hooley, J. M., & Parker, H. A. (2006). Measuring expressed emotion: A review of the shortcuts. *Journal of Family Psychology*, *20*(3), 386-396.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, *62*(6), 593-602.

Kirouac, M., & Witkiewitz, K. (2019). Predictive value of non-consumption outcome measures in alcohol use disorder treatment. *Addiction*, *114*(6), 1086-1092.

Kuerbis, A., Moore, A. A., Sacco, P., & Zanjani, F. (2016). Alcohol and aging. *Clinical and public health perspectives. Cham, Switzerland: Springer. https://doi. org/10, 1007*, 978-3.

Leff, J. P., Sharpe, L., & Kuipers, L. (2020). The impact of family criticism on relapse in alcohol dependence: A longitudinal study. *Alcohol and Alcoholism*, *55*(3), 287-294.

Lovibond, P.F., and S.H. Lovibond. "The Structure of Negative Emotional States: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories." Behaviour Research and Therapy, vol. 33, no. 3, 1995, pp. 335-343

Murthy, R. S. (2017). National mental health survey of India 2015–2016. *Indian journal of psychiatry*, *59*(1), 21-26.

O'Farrell, T. J., Hooley, J. M., Fals-Stewart, W., & Cutter, H. S. G. (1998). Expressed emotion and relapse in alcoholic patients. *Journal of Consulting and Clinical Psychology*, *66*(5), 744-752.

Ravikanth, T., & Sultan, S. (2020). The prevalence of psychiatric comorbidity and its relationship to the severity of alcohol dependence in the population of rural south India. *Middle East Current Psychiatry*, *27*, 1-11.

Reddy, A. S., & Jagannathan, A. (2017). Predictors of coping and perceived expressed emotions in persons with alcohol dependence in India: a pilot study. *Asian Journal of Psychiatry*, *28*, 38-40.

Shanmugam, B., Das, B., Bhattacharjee, D., & Ezhumalai, S. (2021). Expressed emotions and coping among relapsed persons with alcohol dependence syndrome: a comparative study. *Indian journal of mental health*, *8*(4), 429.

Shetty, K. V., Manikappa, S. K., Murthy, S., Anjanappa, J., & Rawat, V. S. (2022). Expressed Emotion among Families of Individuals with Alcohol Dependence Syndrome: A Pilot Study. *Annals of Indian Psychiatry*, *6*(4), 374-377.

Shields, C. G., Franks, P., Harp, J. J., Campbell, T. L., & McDaniel, S. H. (1994). Family Emotional Involvement and Criticism Scale (FEICS): II. Reliability and validity studies. *Family Systems Medicine*, *12*(4), 361.

Singh, P., Gupta, R., & Shankar, R. (2022). Emotional involvement, family criticism, and psychological distress in alcohol dependence: A correlational study. *Indian Journal of Psychological Medicine*, *44*(2), 115-121.

Wahler, E. A., & Otis, M. D. (2014). Social stress, economic hardship, and psychological distress as predictors of sustained abstinence from substance use after treatment. *Substance use & misuse*, *49*(13), 1820-1832.

Wang, G. Y., Premkumar, P., Lee, C. Q., & Griffiths, M. D. (2021). The role of criticism in expressed emotion among psychoactive substance users: An experimental vignette study. *International Journal of Mental Health and Addiction*, 1-15.

Witkiewitz, K., & Tucker, J. A. (2020). Abstinence not required: Expanding the definition of recovery from alcohol use disorder. *Alcoholism, clinical and experimental research*, *44*(1), 36.

World Health Organization (2019). Global status report on alcohol and health 2018. Geneva *World Health Organization*.