

# Correlation of Alcohol Dependence and Delusions of Infidelity: A Cross-sectional Study

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## ABSTRACT

**Introduction:** Delusions of infidelity are harmful malfunctioning beliefs that can bear significant impact on an individual's interpersonal, social and occupational functioning. The exact prevalence is not known, due to the lack of community surveys but is not uncommonly seen by practicing physicians. However, they are more common in male alcoholics, morbid jealousy is encountered mostly in old age psychiatry and clinicians should be familiar with its recognition and management.

**Aim:** To identify the correlation of delusion of infidelity in patients with alcohol dependence syndrome.

**Materials and Methods:** A cross-sectional study was conducted at Psychiatry Outpatient Department (OPD), SRM Medical College, Hospital and Research Centre, Chennai, Tamil Nadu, India, for duration of one month in March 2020. Male patients attending the Psychiatric OPD, diagnosed with alcohol dependence syndrome as per International Classification of

Diseases-10 (ICD-10) guidelines were selected. A total of 30 patients who attended the OPD in one month were screened by Mini-International Neuropsychiatric Inventory (MINI). Alcohol Dependence Scale (ADS) for alcohol dependence as well as Browns Assessment of Beliefs Scale (BABS) to assess their delusion was applied. Statistical analysis using regression analysis and correlation coefficient was done.

**Results:** The mean of age of study group was 32.47 years with a standard deviation of 5.05 years. Out of the 30 male alcoholic patients, 13 patients had delusions of infidelity. The mean alcohol dependence score of study population was 27.6±11.51 and the mean BABS of study population was 9±10.77.

**Conclusion:** There was a weak positive correlation between alcohol dependence and the delusions of infidelity. Physicians must have sufficient knowledge in identifying alcohol dependence syndrome.

**Keywords:** Browns assessment of beliefs scale, Males, Morbid jealousy

## INTRODUCTION

Jealousy is considered a normal human emotional experience. The past decade has undergone various developments via neurological and neuroscientific approaches with regard to the concept of jealousy. According to Silva AJ et al., global homicide statistics depict jealousy as the most frequent catalyst of spousal homicide worldwide [1].

A delusion is a fixed, false and firm belief that is unshakeable, despite contradictory evidence and is out of keeping with the patient's social and cultural background [2]. Delusions of infidelity (pure delusional jealousy), is characterised by an unshakable false belief of infidelity, without any sort of hallucinations and mood disturbance, and not associated with alcohol or any other drug abuse or any co-morbid illness [3]. Morbid jealousy is a rare entity. Though commonly encountered by clinicians, the prevalence is not known due to the lack of community surveys [4]. Substance dependence is reportedly more common among males with delusion of infidelity. According to Jellinek, alcohol is harmful to the individual, society, and/or both [5].

In 2014, according to the Global Status report, about 38.3% of the world's population is reported to consume alcohol regularly [6]. On an average, an individual consumption amounts to 6.2 liters of alcohol each year. The Organisation for Economic Cooperation and Development (OECD) released a report in 2015 that documented a significant rise in alcoholism by approximately 55% between 1992 and 2012. This became a major concern amongst the youth. In the past, alcohol use, though not very common among the youth, was a common practice in middle aged adults. Today, it is estimated worldwide that drinking alcohol in excessive amounts among the youth has doubled compared to previous statistics [7]. Apart from this, male alcoholics seem likely to develop these kinds of delusions depending on many factors like severity of alcohol consumption

and relationship with partner. Once developed, its effects on any social or cultural setting should not be ignored, as it may disrupt the integrity of a marriage which could eventually lead to dire consequences [1]. Authors feel emphasis must be placed upon the social as well cultural consequences, and awareness to be created among medical professionals to promote prompt referral and treatment.

A person with morbid jealousy is commonly characterised by a range of irrational thoughts and behaviours in which the predominant theme is a preoccupation with their partner's fidelity irrespective of the evidence provided to them [8]. A point to be noted is that individuals who suffer from morbid jealousy even when their partner is being unfaithful, provided that the evidence that they cite for unfaithfulness is incorrect and the response to such evidence on the part of the accuser is excessive or irrational. Healthy people become jealous, only in response to concrete evidence, are prepared to alter their beliefs and reactions as new information becomes available [9]. In contrast, those with morbid jealousy form their own interpretations even though sufficient evidence is provided and are fixed with their beliefs. This, in turn, leads to interpersonal problems in the dyadic relationship [10].

Many alcoholics have been encountered in clinical practice, who suspects the loyalty of their partners, especially when intoxicated [11]. There is lack of literature on the association between these two entities. Thus, the aim of the present study was to find out the correlation between delusions of infidelity and alcohol dependence in male alcoholics.

## MATERIALS AND METHODS

This cross-sectional study was conducted in the Psychiatry Outpatient Department (OPD), SRM Medical College, Hospital and

Research Centre, Chennai, Tamil Nadu, India, for duration of one month in March 2020. It was a short-term study. Ethical clearance was obtained from Institutional Ethical Committee (2115/IEC/2020). A convenient sample of 30 male patients was considered.

**Inclusion criteria:** Males attending the Psychiatry Outpatient Department (OPD in the study month, diagnosed with alcohol dependence syndrome according to International Classification of Disease-10 (ICD-10) [12], patients between the ages of 20-50 years and those who gave consent to participate in the study were included in the study.

**Exclusion criteria:** Patients with co-morbid mental and behavioural disturbances and those who did not give informed consent were excluded from the study.

## Study Procedure

The questionnaires included general information of each participant. Mini-International Neuropsychiatric Inventory (MINI) was given to rule out any other psychopathology [13]. MINI is a short structured diagnostic interview, developed jointly by Psychiatrists and clinicians in the United States and Europe, for Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV) and ICD-10 psychiatric disorders; the administration of which takes approximately 15 minutes.

Alcohol Dependence Scale (ADS) was assessed for all the male alcoholics. The ADS assess the severity of alcohol dependence based on the DSM criteria for alcohol dependence syndrome. It consists of 25 items which covers broad areas of ADS. The instruction can be used in different ways for instance, initial assessment is asked for the period of 12 months, and outcome measures at three different levels for example 6 months, 12 months and 24 months for the treatment follow-up. The total ADS scores range from 0 to 47 and as taken following order: low 1-9, Intermediate 10-19, Substantial 20-29 and Severe 30 and above [14]. The item scores as 0-1; three-point scale scores as 0-1-2; and four-point scale scored as 0-1-2-3. The Brown's Assessment of Beliefs Scale (BABS) was given to assess their delusions of infidelity, developed by Eisen JL et al., [15]. The BABS consists of seven items in which the first six are totaled to get the final score. A score from 0 to 4 (from least to most severe) is used to rate each item. The instrument is semi-structured. Rate each item according to the patient's experience during the past week and including the time of the interview. The interviewer determines, what the patient actually believes, not what she has been told is true.

**Method of collection of data:** The present study has been performed in a tertiary care center in South India. Each participant was informed of the voluntary nature of their participation, the protection of participant's confidentiality and the intended use of the information. After obtaining informed consent, the relevant data were collected and then, evaluated accordingly.

## STATISTICAL ANALYSIS

The obtained data was organised in an Microsoft Excel sheet initially and then analysed using Machines IB. IBM Statistical Package for the Social Sciences (SPSS) Statistics for Windows, version 22.0. IBM Corp Armonk, NY; 2013. ADS and BABS were considered as the primary outcome variable. Demographic age, religion and delusions of infidelity were recorded. The association between categorical explanatory variables and quantitative outcome was assessed by comparing the mean values. The mean differences along with their 95% CI were presented. Pearson's correlation coefficient was used to determine the correlation between quantitative explanatory and outcome variables. Linear regression analysis was done. Regression coefficient, along with its 95% CI and p-values are presented. The p-value <0.05 was considered statistically significant.

## RESULTS

The mean±Standard Deviation (SD) age of the study population was 32.47±5.05 years. The youngest person was 23-year-old, and the oldest person was 42-year-old [Table/Fig-1].

Parameter	Mean±SD	Median	Min	Max	95% CI for Exp (B)	
					Lower	Upper
Age (years)	32.47±5.05	32.50	23	42	30.58	34.35

[Table/Fig-1]: Descriptive analysis for age in study population (N=30).

Among the study population, 6 (20%) people were unemployed. The number of shopkeepers, teachers, auto drivers, bus drivers, car drivers, milkmen, students, attenders, meat sellers and mechanics were 7 (23.33%), 3 (10%), 2 (6.67%) and 1 (3.33%), respectively [Table/Fig-2]. Among the study population, 17 (56.67%) people were Hindus [Table/Fig-2].

Occupation	n (%)
Unemployed	6 (20)
Shopkeeper	7 (23.33)
Teacher	3 (10)
Auto driver	3 (10)
Bus driver	2 (6.67)
Car driver	2 (6.67)
Milkman	2 (6.67)
Student	2 (6.67)
Attender	1 (3.33)
Meat seller	1 (3.33)
Mechanic	1 (3.33)
Religion	
Hindu	17 (56.67)
Muslim	6 (20)
Christian	7 (23.33)

[Table/Fig-2]: Descriptive analysis of occupation and religion in study population (N=30).

Among the study population, 13 (43.33%) people had positive of delusions of infidelity and 17 (56.67%) people had negative of delusions of infidelity [Table/Fig-3].

The mean ADS score of study population was 27.6±11.51 with minimum 10 and maximum of 44 ADS [Table/Fig-4].

Delusions of infidelity	n (%)
Positive	13 (43.33)
Negative	17 (56.67)

[Table/Fig-3]: Descriptive analysis of delusions of infidelity in study population (N=30).

Parameter	Mean±SD	Median	Min	Max	95% CI for EXP(B)	
					Lower	Upper
Alcohol Dependence Scale (ADS)	27.6±11.51	26	10	44	23.30	31.90

[Table/Fig-4]: Descriptive analysis for alcohol dependence scale in study population (N=30).

The mean BABS of study population was 9±10.77 with minimum 0 and maximum of 26 BABS [Table/Fig-5].

Parameter	Mean±SD	Median	Min	Max	95% CI for EXP (B)	
					Lower	Upper
Browns Assessment of Beliefs Scale	9±10.77	0	0	26	4.98	13.02

[Table/Fig-5]: Descriptive analysis for BABS in study population (N=30).

Among the study population, 56.67% strongly displayed conviction, perception of others' views of belief, explanation of differing

views, fixity of ideas and attempt to disapprove ideas individually [Table/Fig-6].

Conviction Q1	n (%)
0	17 (56.67)
2	1 (3.33)
3	5 (16.67)
4	7 (23.33)
<b>Perception of others views of belief Q2</b>	
0	17 (56.67)
2	1 (3.33)
3	5 (16.67)
4	7 (23.33)
<b>Explanation of differing views Q3</b>	
0	17 (56.67)
2	1 (3.33)
3	5 (16.67)
4	7 (23.33)
<b>Fixity of ideas Q4</b>	
0	17 (56.67)
2	3 (10)
3	5 (16.67)
4	5 (16.67)
<b>Attempt to disapprove ideas Q5</b>	
0	17 (56.67)
2	1 (3.33)
3	3 (10)
4	8 (26.67)
5	1 (3.33)
<b>Insight Q6</b>	
0	17 (56.67)
2	1 (3.33)
3	5 (16.67)
4	6 (20)
5	1 (3.33)

[Table/Fig-6]: Descriptive analysis of question 1 (conviction, perception of others views of belief, explanation of differing views, fixity of ideas, attempt to disapprove ideas and insight) in study population (N=30).

Among the study population, 5 (16.67%) people had low level of ADS. The number of ADS of intermediate, substantial level and severe level was 5 (16.67%), 7 (23.33%) and 13 (43.33%), respectively [Table/Fig-7].

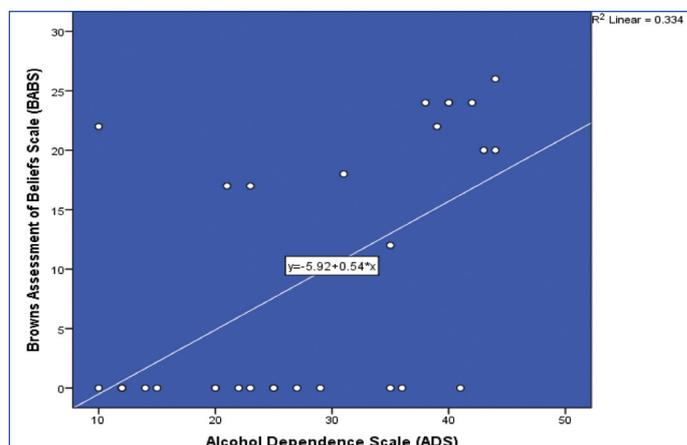
Alcohol Dependence Scale (ADS)	n (%)
Low level	5 (16.67)
Intermediate level	5 (16.67)
Substantial level	7 (23.33)
Severe level	13 (43.33)

[Table/Fig-7]: Descriptive analysis of ADS in study population (N=30).

There was a weak positive correlation between ADS and BABS, which was statistically significant (r-value=0.578 and p-value <0.001) [Table/Fig-8]. The median BABS of low level was 0 (0 to 11). The number of median of interdicted, substantial and severe level was 0, 0 and 20 (6 to 24), respectively. The difference between BABS and ADS statistically significant (p-value=0.008) [Table/Fig-9,10].

## DISCUSSION

In the present study, 56.67% strongly displayed conviction, perception of others views of belief, explanation of differing views, fixity of ideas and attempt to disapprove ideas individually. A weak

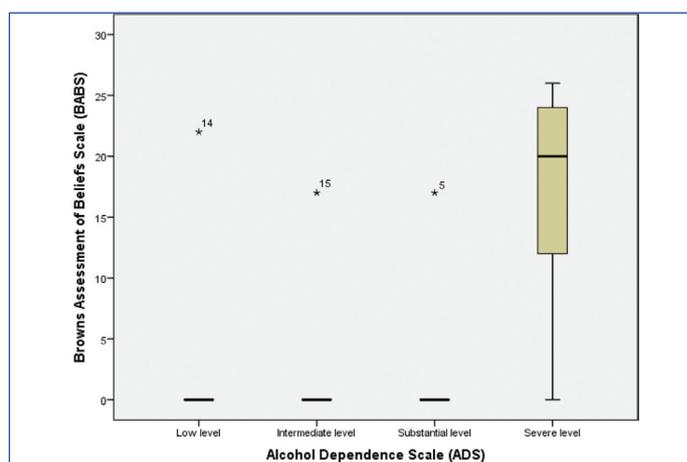


[Table/Fig-8]: Correlation between ADS and BABS (N=30).

Alcohol Dependence Scale (ADS)	Browns Assessment of Beliefs Scale, Median (IQR)	p-value (Kruskal-Wallis test)
Low level	0 (0 to 11)	0.008*
Intermediate level	0 (0 to 8.50)	
Substantial level	0	
Severe level	20 (6 to 24)	

[Table/Fig-9]: Comparison of ADS and BABS (N=30).

\*p-value <0.05 was considered statistically significant



[Table/Fig-10]: Box and whisker plot of ADS and BABS (N=30).

positive correlation was found between the ADS and BABS, which was statistically significant (r-value=0.578 and p-value <0.001). It was also found that, the difference between BABS and ADS was statistically significant (p-value=0.008).

Jealousy is an affective state that is normal. It is an emotion that if not present for an individual can be interpreted as having been repressed and hence may play a role in unconsciously causing certain behavioural disturbances [16]. Delusions of infidelity can be seen in many psychiatric disorders. A recent study of 8134 psychiatric inpatients from Munich, Germany [17] showed the prevalence of delusional jealousy in different psychiatric disorders (1.1) organic psychoses (7.0%), paranoid disorders (6.7%), alcohol psychosis (5.6%), and schizophrenia (2.5%); whereas affective disorders, showed only 0.1% [17]. As schizophrenia and affective disorders were the most common diagnoses, most patients with delusions of jealousy were schizophrenics. In schizophrenia, women were more likely to suffer from delusional jealousy, while in alcoholic psychosis men were more likely to suffer. In the current study, authors compared the correlation between these delusions with alcohol dependence, instead of assessing its prevalence.

There is a lack of literature in India to show, the effect alcohol has on their personal life, as well as, the socio-cultural consequences, as male alcoholics are prone to develop delusions of infidelity. It is well-known that, morbid jealousy is responsible for a great number of

crimes of violence against women [18]. Somasundaram O, reported approximately 526 murderers in Tamil Nadu. Out of 500 male murderers, 71 killed their wives and 10 killed their wives' paramours. Six offenders were below 17 years, of which three killed their wives. Of the 20 murderesses, four killed their husbands, three had killed the paramours, and one had killed the co-wife [18]. Another study by Somasundaram O, about the 'Men who kill their wives,' reported of 41 murderers, of which 13 were due to sexual jealousy and four were due to morbid delusional jealousy [19]. The above study did not address the correlation with alcohol dependence, but instead highlighted the forensic aspects of murders. In the indexed study, no person murdered their wife, but a high number of alcoholic males were found to be more physically abusive towards spouse. This interpretation was based on the history, taken by the clinician from patients visiting the psychiatric OPD during the time of the study.

In a study done by Michael A et al., studied 71 morbidly jealous individuals and found that alcohol brought about jealousy in 28% of the cases, while the rest were jealous, even when sober. They concluded that, alcohol plays an etiological role in the development of morbid jealousy and once detected when an individual is under the influence of alcohol has preventive implications [20]. Another study by Soyka M and Schmidt P, reported 72 individuals with delusional jealousy (0.5% of the whole sample). The prevalence was most significant in those with schizophrenia and other psychoses (1.3%). In addition, it was noted that most with delusional jealousy were men (43 of 72, 59.7%) [21]. In the present study, the authors found that out of a total of 30 male alcoholics, 13 patients had delusions of infidelity (43.33%).

Mooney HB concluded that, chronic alcoholism and the occurrence of jealousy were found in 22.5% and 15.9% of the combined sample of delusional and non delusional jealousy subjects, respectively [22]. Control group was not included in the present study, out of the 30 males meeting the criteria for alcohol dependence, 43.33% had delusions of infidelity.

Another study, on the cultural differences and similarities on the correlates of infidelity, by Valor-Segura I et al., reported that infidelity by women is evaluated more negatively than men. It also showed, the effect of various factors like personality characteristics, socio-economic status, religiosity, gender and relational satisfaction had on infidelity [23]. There is no study that, specifically studied the influence of alcohol use and its severity on infidelity.

### Limitation(s)

The present study sample size was small, due to which there was a positive correlation. The study can be done in a community setting, as it may be biased in this sample, as it was conducted at a tertiary hospital, where more severely ill patients come for treatment.

## CONCLUSION(S)

A weak positive correlation between the delusions of infidelity and alcohol dependence was found in the present study. All physicians must have sufficient knowledge in identifying ADS and its consequences, as well as, prompt referrals to the Psychiatrist.

## REFERENCES

- [1] Silva AJ, Ferrari MM, Leong GB, Penny G. The dangerousness of persons with delusional jealousy. *J Am Acad Psychiatry Law*. 1998;26(4):607-23. PMID: 9894217.
- [2] Patricia Casey and Brendan Kelly, signs and symptoms in psychiatry, Fish's clinical psychopathology, 3<sup>rd</sup> edition, Page 18.
- [3] Femi Oyeboode, Sim's symptoms in the mind, Textbook of Descriptive Psychopathology, 5<sup>th</sup> edition, Page 111.
- [4] Enoch MD and Trethowan. *Uncommon Psychiatric Syndromes* (2<sup>nd</sup> edition), Pages: 25-40 Bristol: John Wright, Pages: 25-40.
- [5] González-Rodríguez A, Molina-Andreu O, Imaz Gurrutxaga ML, Catalán Campos R, Arroyo MB. A descriptive retrospective study of the treatment and outpatient service use in a clinical group of delusional disorder patients. *Rev Psiquiatr Salud Ment*. 2014;7(2):64-71.
- [6] The World Health Organization or the WHO released its Global Status report on Alcohol and Health, 2014.
- [7] Substance Abuse and Mental Health Services Administration (SAMHSA) [Internet]. Screening, brief intervention and referral to treatment; 2016 July 01 cited 2017 April 8. <http://www.samhsa.gov/sbirt>.
- [8] Cobb J. Morbid jealousy. *British Journal of Hospital Medicine*. 1979;21:511-18.
- [9] Kingham M, Gordon H. Aspects of morbid jealousy. *Advances in Psychiatric Treatment*. 2004;10:207-15.
- [10] Vauhkonen K. On the pathogenesis of morbid jealousy. *Acta Psychiatrica Scandinavica Supplementum*. 1968;202:02-261.
- [11] International Classification of Disorder 10<sup>th</sup> Edition. Clinical description and diagnostic guidelines. World Health Organization, Geneva 2007.
- [12] Center for Disease Control Prevention [Internet]. Atlanta, USA: Page last reviewed: May 18, 2012 (archived document). Available: <https://www.cdc.gov/csels/dsepd/ss1978/lesson3/section2.html>.
- [13] Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, et al. The Mini-International Neuropsychiatric Interview (M.I.N.I.): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *J Clin Psychiatry*. 1998;59Suppl20:22-33; quiz 34-57. PMID: 9881538.
- [14] Skinner HA, Horn JL. *Alcohol Dependence Scale: Users Guide*. Toronto, Canada: Addiction Research Foundation, (1984).
- [15] Eisen JL, Phillips KA, Beer D, Atala KD, Rasmussen SA, Baer L. The Brown assessment of belief scale- reliability and validity. *American Journal of Psychiatry*. 1998;155:102-08.
- [16] Somasundaram O. Facets of morbid jealousy: With an anecdote from historical Tamil romance. *Indian Journal of Psychiatry*. 2010;52(3):284-88.
- [17] Soyka M, Nabber G, Volcker A. Prevalence of delusional jealousy in different psychiatric disorders: An analysis of 93 cases. *Br J Psychiatry*. 1991;158:549-53.
- [18] Somasundaram O. Murder in Tamil Nadu: A study of murder trials of 1968. *Indian J Psychiatry*. 1980;22:288-94.
- [19] Somasundaram O. Men who kill their wives. *Indian J Psychiatry*. 1970;12:125.
- [20] Michael A, Mirza S, Mirza KA, Babu VS, Vithayathil E. Morbid jealousy in alcoholism. *The British Journal of Psychiatry*. 1995;167(5):668-72. Doi: 10.1192/bjp.167.5.668.
- [21] Soyka M, Schmidt P. Prevalence of delusional jealousy in psychiatric disorders. *Journal of Forensic Sciences*. 2011;56(2):450-52.
- [22] Mooney HB. Pathologic jealousy and psycho-chemotherapy. *Br J Psychiatry*. 1965;11:1023-42.
- [23] Valor-Segura I, Saez G, Buunk AP. Cultural differences and similarities on the correlates of infidelity. Chapter 7, *The Oxford Handbook of Infidelity*, 2022.

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