

A CROSS-SECTIONAL STUDY OF PSYCHOSIS AND PERSONALITY PROFILE IN PATIENTS DIAGNOSED WITH ALCOHOL USE DISORDER

PRIYA MADAVI^{id}, ABHISHEK SOMANI*^{id}, PRAVIN VERMA^{id}, ANAND SAOJI^{id}

Department of Psychiatry, Indira Gandhi Government Medical College, Nagpur, Maharashtra, India.

*Corresponding author: Abhishek Somani; Email: drabhisheksomani@gmail.com

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ABSTRACT

Objectives: The objectives of the study are (1) to study personality profile in patients diagnosed with alcohol use disorder (AUD) and (2) to study incidence of psychosis in patients with AUD.

Methods: This was a cross-sectional study conducted in the department of psychiatry of a tertiary care medical college. 70 patients presenting with a history of alcohol intake underwent diagnosis according to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) criteria for AUD were enrolled in the study on the basis of pre-defined inclusion and exclusion criteria. Post a 2-week detoxification period, psychiatric symptoms encompassing depression, anxiety, hallucinations, and unusual behavior were assessed using the brief psychiatric rating scale (BPRS), while personality profiles were evaluated with the NEO Personality Inventory-3. Alcohol dependence levels were measured using the Severity of Alcohol Dependence Questionnaire.

Results: There were 60 (85.71%) males and 10 (14.29%) females. There was a significant male preponderance in studied cases with M:F ratio of 1:0.16. Highest number of patients, i.e., 63 (90%) patients were married, followed by 4 (5.71%) patients were unmarried and 3 (4.29%) patients were divorced. Among 70 studied cases, 5 (7.14%) patients were found to have some or the other degree of psychotic symptoms. There was a significant correlation between being unskilled worker and having low literacy or low income and AUD ($p < 0.05$). There was no statistically significant association between severity of AUD and education ($p = 0.70$), occupation ($p = 0.94$), income ($p = 0.84$), and family history of alcohol consumption ($p = 0.58$). Participants have mild severity shown low to average score on neuroticism, average scores on extraversion, very low to low scores on openness, high to very high scores on agreeableness, and high to very high scores on conscientiousness.

Conclusion: We found a significant correlation of AUD with increasing age, male gender, early alcohol initiation, and prolonged dependence. Lower education and unskilled occupations were also linked to AUD. Personality trait analysis revealed distinct patterns based on the severity of physical dependency.

Keywords: Alcohol use disorder, Personality traits, Psychosis, Neuroticism.

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INTRODUCTION

Alcohol abuse is a pervasive problem that is taking an increasing toll on the world's population. After heart disease and cancer, alcohol-related disorders constitute the third largest health problem in most parts of the world today [1]. The prevalence of alcohol use disorder (AUD) (dependence and harmful use/alcohol abuse) was 4.6%, and the prevalence of AUDs in males was 9% as against 0.5% in females. Substance use disorders, contributed mainly by alcohol and tobacco, were more common in middle-aged (40–59) individuals (29%), among males (35.67%), and in rural areas (24.12%) [2].

AUD represents a pervasive and challenging public health issue with significant implications for individual well-being. Characterized by a problematic pattern of alcohol consumption leading to clinically significant impairment or distress, AUD encompasses a spectrum ranging from mild to severe [3]. The condition not only inflicts substantial physical health consequences but also contributes to a myriad of social and psychological challenges. Psychosis, a severe mental condition involving a detachment from reality, and variations in personality profiles are intriguing aspects of AUD that warrants focused investigation. Understanding the interplay between AUD, psychosis, and personality is crucial for developing targeted interventions and enhancing treatment outcomes for affected individuals [4].

Addiction was thought to be a symptom of underlying personality disorder evidenced by maladjustment, neurotic character traits, emotional

immaturity, or infantilism. As a result, treatment models of that time implied side stepping the drinking a merely a symptom and treating the assumed underlying conflicts instead of the substance abuse [5]. Contemporary scientific views of the cause of addiction can be best described as biopsychosocial a phenomenon. According to this model of addiction, the onset and course of the addiction were thought to result from continuous reciprocal interaction between the individual's biological and psychological vulnerabilities. Personality factors play an important role in our current thinking about the nature of addiction. The interest in such co-occurrence of personality disorders among alcohol abusers is driven by the idea that studying the co-morbidity will lead to a better understanding of the etiology of both alcohol use and personality disorders [6].

Despite the recognized impact of AUD on mental health, there is a notable gap in our understanding of the specific manifestations of psychosis and the nuances of personality profiles in individuals diagnosed with AUD. The complex interrelationships between alcohol-induced psychosis and distinct personality traits remain insufficiently explored, posing a challenge in tailoring effective interventions for this subgroup of patients. Given the potential implications of untreated psychosis and unaddressed personality factors on the course and prognosis of AUD, a comprehensive investigation into these aspects becomes imperative for refining therapeutic approaches and optimizing de-addiction strategies [7].

The existing literature on AUD often lacks in-depth exploration into the intricate connections between psychosis and specific personality profiles in affected individuals [8]. This study aims to address this

knowledge gap by conducting a comprehensive examination of the psychosis spectrum and distinct personality dimensions in patients diagnosed with AUD. Through a rigorous analysis of these factors, the study intends to unravel patterns, associations, and potential predictive markers that can enhance our understanding of the heterogeneity within the AUD population. By bridging this gap in knowledge, our research aspires to contribute valuable insights that can inform tailored interventions, ultimately optimizing the efficacy of de-addiction strategies and improving the overall mental health outcomes for individuals grappling with AUD.

METHODS

This was a cross-sectional study conducted in the department of psychiatry of a tertiary care medical college. 70 patients with AUD as per DSM V criteria were included in this study on the basis of pre-defined inclusion and exclusion criteria. Institutional ethical committee approved the study and written informed consent was obtained either by the patient or the caregiver. The sample size was calculated by formula $n = Z^2 P(1-P)/d^2$ using OPENEPI software version 3 on the basis of pilot studies done on the topic of alcohol abuse disorder assuming 90% power and 95% confidence interval, and the sample size required was 60 patients. Based on limit theorem, sample size was determined to be enough if it was more than 60; thus, we included 70 patients in our study.

Patients presenting with a history of alcohol intake underwent diagnosis according to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) criteria for AUD were enrolled in the study. Utilizing a self-prepared semi-structured proforma, comprehensive data on sociodemographic factors and usage patterns were systematically collected. Post a 2-week detoxification period, psychiatric symptoms encompassing depression, anxiety, hallucinations, and unusual behavior were assessed using the brief psychiatric rating scale (BPRS), while personality profiles were evaluated with the NEO personality inventory-3. Alcohol dependence levels were measured using the Severity of Alcohol Dependence Questionnaire (SADQ-C). The gathered data underwent tabulation, and subsequent statistical analyses were performed to derive conclusive insights from the study, facilitating a comprehensive understanding of the interplay between alcohol use, psychiatric symptoms, and personality traits in this patient cohort.

Microsoft Excel was used for tabulation of data and preparation of tables and charts. SPSS version 16 was used for coding and statistical analysis. Then, data were categorized into two types, namely categorical and numerical. Categorical data were cross-tabulated and Chi-square test was applied to test the significant correlation between variables. Numerical data were tested for normality, and then, independent t-test and one-way ANOVA were applied if the grouping variables were 2 and >2, respectively. A $p < 0.05$ was considered statistically significant.

Inclusion criteria

1. Patients fulfilling the DSM V diagnostic criteria for AUD attending psychiatry ward of tertiary care teaching hospital
2. Age 18–55 years, both males and females
3. Literacy level - Ability to understand, read, write, and communicate in English, Marathi, and Hindi.
4. Those who gave informed and written consent to be part of study.

Exclusion criteria

1. Any medical illness or other substances causing psychosis
2. Coexisting substance use or dependence
3. Comorbid psychiatric disorders, schizophrenia, delusional disorders, anxiety disorders, and mood disorders including dysthymia and illnesses which may interfere with evaluations.

RESULTS

In our study of 70 patients with AUD, there were 60 (85.71%) males and 10 (14.29%) females. There was a significant male preponderance in studied cases with a M:F ratio of 1:0.16 (Fig. 1).

Among 70 patients, 34 patients (48.54%) were from age group of 40–<50 years, followed by 25 patients (35.71%) from 30–<40 age groups, followed by 7 patients (10%) from 50–<60 age groups, and minimum number of patients, i.e., 4 (5.71%) patients were from 20–<30 age groups. Among 70 patients, highest number, i.e., 63 (90%) of patients were married, followed by 4 (5.71%) patients were unmarried and 3 (4.29%) patients were divorced. Highest number, i.e., 44 (62.86%) of patients were Hindu, followed by 23 (32.86%) patients were Muslim followed by 3 (4.28%) patients who were Christian by religion, 32 patients (45.71%) were unskilled workers, 25 (35.71%) patients were semiskilled workers, followed by 9 (12.87%) were skilled workers and 4 patients (5.71%) were professional. 27 patients (38.56%) had monthly income Rs. <1000, 23 patients (32.56%) had income Rs. 1001–3000, 16 patients (22.86%) had income Rs. 5001–10,000 followed by 2 patients (2.86%) had income Rs. <1000, and 2 patients (2.86%) had income >10000 (Table 1).

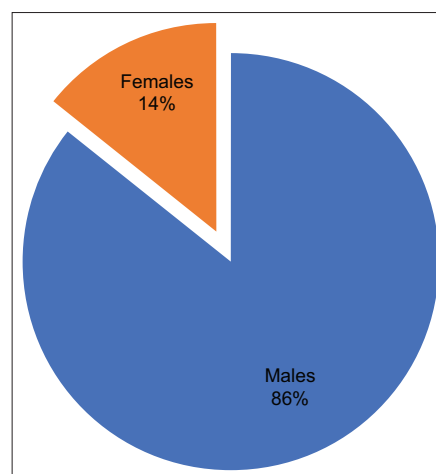


Fig. 1: Gender distribution of the studied cases

Table 1: Sociodemographic details of the studied cases

Sociodemographic details	Age (years)	No. of patients	Percentage
Age distribution	20–<30	4	5.71
	30–<40	25	35.71
	40–<50	34	48.58
	50–<60	7	10
	Total	70	100
Marital status	Divorced	3	4.29
	Married	63	90
	Unmarried	4	5.71
	Total	70	100
Religion	Christian	3	4.28
	Hindu	44	62.86
	Muslim	23	32.86
	Total	70	100
Occupation	Unskilled	32	45.71
	Semiskilled	25	35.71
	Skilled	9	12.87
	Professional	4	5.71
	Total	70	100
Education	Illiterate	5	7.14
	Primary	19	27.14
	SSLC	26	37.14
	PUC	14	20
	Degree	6	8.58
Total	70	100	
Income (Rupees)	<1000	2	2.86
	1001–3000	23	32.86
	3001–5000	27	38.56
	5001–10,000	16	22.86
	>10,000	2	2.86
	Total	70	100

More than half, i.e., 38 (54.29%) started alcohol consumption at the age of 17–21 years, followed by 25 patients (35.71%) whose age of initiation of alcohol intake was <17 years and only 7 (10%) started taking alcohol at the age of >21 years. More than half, i.e., 47 (67.14%) patients had a positive family history of alcohol consumption and 23 patients (32.86%) had no family history of alcohol consumption. 49 patients, i.e., 49 patients (70%) have duration of alcohol dependence of 14–22 years, followed by 13 patients (18.57%) having <14 years of alcohol dependence and 8 patients (11.43%) having >22 years of alcohol dependence. 52 patients (74.29) were classified as mild physical dependence, 14 patients (20%) were classified as moderate alcohol dependence, and 4 patients (5.71%) were classified as severe alcohol dependence. In our study, we found that 5 patients (07.14%)

were showing score of >50 which shows significant pathology and 65 patients (85.71%) were showing score of <50 which shows no significant pathology. Among 70 studied cases, 5 (7.14%) patients were found to have some or the other degree of psychotic symptoms (Table 2).

Correlation of severity of alcohol use and age groups on Chi square gave a p value of 0.048 showing high statistical significance between the two variables. In our study, around 34 patients (50%) of the sample were aged between 40 and 50 years which showed significant correlation to severe severity of AUD. Correlation of severity of alcohol use assessed by SADQ and gender on Chi square gave a p value of 0.031 showing statistical significance between the two variables. In our study, there were 10 female and 60 male patients, who were categorized by SADQ, and significant correlation was found between severe severity of alcohol consumption and male genders as 46 males out of 60 males were found to be severe alcoholics. In our study, it was found that 49 patients among 70 patients had initiated their alcohol consumption at 10–20 years of age, suggesting early age of initiation having severe AUD. Correlation of severity of AUD assessed by SADQ and duration of alcohol dependence on Chi square gave a p value of 0.041 showing statistical significance between the two variables. Correlation of severity of AUD assessed by SADQ and BPRS score on Chi square gave a p value of 0.5 and showed no statistical significance between the two variables (Table 3).

The analysis of the patients on the basis of AUD and factors such as occupation, literacy, and income showed that there was a significant correlation between being unskilled worker and having low literacy or low income and AUD. The correlation was found to be statistically significant (p<0.05) (Table 4).

There was no statistically significant association between severity of AUD and education (p=0.70), occupation (p=0.94), income (p=0.84), and family history of alcohol consumption (0.58) (Table 5).

Participants have mild severity shown low to average scores on neuroticism, average scores on extraversion, very low to low scores on openness, high to very high scores on agreeableness, and high to very high scores on conscientiousness. Participants having moderate dependence as assessed by SADQ have shown average to high scores

Table 2: History, SADQ score, and BPRS scores of the studied cases

History, SADQ score, and BPRS scores	Age (years)	No. of patients	Percentage
Age of initiation	<17	25	35.71
	17–21	38	54.29
	>21	7	10
	Total	70	100
Family history	Yes	47	67.14
	No	23	32.86
	Total	70	100
Duration	<14	13	18.57
	14–22	49	70
	>22	8	11.43
	Total	70	100
SADQ score	Mild	5	7.14
	Moderate	14	20
	Severe	51	72.85
	Total	70	100
BPRS score	<50 (no significant psychopathology)	65	92.85
	>50 (significant psychopathology)	5	7.14
	Total	70	100

SADQ-C: Severity of Alcohol Dependence Questionnaire, BPRS: Brief psychiatric rating scale

Table 3: Correlation of SADQ score with various factors

Correlation of factors with SADQ score	SADQ score				p
	Mild	Moderate	Severe	Total	
Age groups (years)					p=0.048 (Significant)
20–<30	0	3	1	4	
30–<40	2	4	19	19	
40–<50	2	4	28	34	
50–<60	1	3	3	7	
Total	5	14	51	70	
Gender					p=0.031 (Significant)
Females	0	5	5	10	
Males	5	9	46	60	
Total	5	14	51	70	
Age of initiation					p=0.039 Significant
10–<20	1	10	38	49	
20–<30	4	4	13	21	
Total	5	14	51	70	
Duration of alcohol dependence					p=0.041 Significant
0–<10	1	4	1	6	
10–<20	2	5	33	40	
20–<30	2	4	16	22	
30–<40	0	1	1	2	
Total	5	14	51	70	
BPRS score					p=0.5 Not significant
0–<50 (No significant psychopathology)	4	13	48	65	
50 – and above (significant psychopathology)	1	1	3	5	
Total	5	14	51	70	

SADQ-C: Severity of Alcohol Dependence Questionnaire, BPRS: Brief psychiatric rating scale

Table 4: Correlation of AUD with various factors

Correlation of factors with AUD	No. of patients	Mean	SD	p
Occupation				p = 0.04 Significant
Unskilled	32	17.69	4.95	
Semiskilled	25	16.48	4.34	
Skilled	9	13.78	4.08	
Profession	4	20.75	2.06	
Literacy				p = 0.004 Significant
Illiterate	5	21.60	5.98	
Primary	19	18.74	5.14	
SSLC	25	15.76	3.60	
PUC	14	15.57	5.45	
Degree	6	16.33	4.71	
Income				p = 0.002 Significant
<1000	2	18.00	1.41	
1001-3000	23	19.09	4.62	
3001-5000	27	15.15	4.61	
5001-10,000	16	16.19	4.23	
>10,000	2	21.00	2.25	

AUD: Alcohol use disorder

Table 5: Correlation of severity AUD with various factors

Severity of AUD and various factors	SADQ score			p value
	Mild	Moderate	Severe	
Occupation				0.94
Unskilled	3	6	23	
Semiskilled	1	6	18	
Skilled	1	1	7	
Profession	0	1	3	
Total	5	14	51	
Education				0.70
Illiterate	0	0	5	
Primary	2	5	12	
SSLC	2	6	18	
PUC	1	1	12	
Degree	0	2	4	
Total	5	14	51	
Income (Rs)				0.84
< 1000	0	0	2	
1001-3000	3	4	16	
3001-5000	2	6	19	
5001-10,000	0	4	12	
> 10,000	0	0	2	
Family History				0.58
Total	5	14	51	
Yes	3	11	33	
No	2	3	18	
Total	5	14	51	

AUD: Alcohol use disorder

on neuroticism, low to average scores on extraversion, low to average scores on openness, high to very high scores on agreeableness, and average to high scores on conscientiousness. Participants having severe alcohol dependence as assessed by SADQ have shown high to very high scores on neuroticism, high scores on extraversion, average scores on openness, low scores on agreeableness, and very low to low scores on conscientiousness (Table 6).

DISCUSSION

In our study, encompassing 70 participants diagnosed with AUD, we observed notable associations between sociodemographic factors, severity of alcohol use, and personality profiles. A significant correlation was identified between age groups and the severity of AUD, with individuals aged 40-50 exhibiting a higher preponderance. This contradicts conventional findings where younger age groups are often associated with increased alcohol consumption, suggesting a nuanced

Table 6: Correlation of severity of alcohol dependence and personality domains

Personality domains in various degrees of alcohol dependence (SADQ)	T scores	T scores
	2 cases	3 cases
Mild alcohol dependence (SADQ)		
Neuroticism	40	50
Extraversion	50	50
Openness	30	40
Agreeableness	70	60
Conscientiousness	60	70
	7 cases	7 cases
Moderate alcohol dependence (SADQ)		
Neuroticism	60	50
Extraversion	50	40
Openness	40	50
Agreeableness	70	60
Conscientiousness	50	60
	23 cases	28 cases
Severe alcohol dependence (SADQ)		
Neuroticism	70	80
Extraversion	60	60
Openness	50	50
Agreeableness	40	40
Conscientiousness	40	30

SADQ-C: Severity of Alcohol Dependence Questionnaire, BPRS: Brief psychiatric rating scale

relationship influenced by factors such as aging, genetics, psychosocial demands, and comorbidities [9].

Gender disparities were evident, with a majority (85.71%) being male. The correlation analysis revealed a significant association between male gender and severe alcohol use, aligning with established patterns associating male sex with a higher risk of alcohol, cannabis, and cocaine use. Cultural and societal factors, as well as risk-taking behaviors, may contribute to these gender-based differences. Male predominance in AUDs has also been reported by the authors such as Wilsnack *et al.* [10] and Weijers *et al.* [11].

Religious affiliation showed that there was a higher prevalence of alcohol consumption among Hindus (62.86%) of the sample followed by Muslims (32.86%) and Christians (4.28%). Similar religion-based distribution was also reported by the authors such as Haber *et al.* [12] and Baena *et al.* [13].

Marital status demonstrated a preponderance of AUD among married individuals (90%). However, this finding needs careful interpretation, considering the small sample size and the potential impact of distribution bias. Similar studies have often reported higher consumption levels among divorced individuals, suggesting the need for more extensive research in varied populations [14].

Education, occupation, and income exhibited significant correlations with AUD, indicating a higher prevalence among individuals with lower educational, occupational, and income statuses. This aligns with established associations between substance use disorders and socioeconomic factors, with lower educational levels often identified as a risk factor. The bidirectional relationship between unemployment and substance use underscores the complex interplay of these variables. A similar association between low income and lower education and AUD has also been reported by authors such as Allen *et al.* [15] and Crum *et al.* [16].

A family history of alcohol consumption did not correlate significantly with the severity of AUD. This challenges the notion that the severity of alcohol addiction within families directly influences individual outcomes. The study suggests that even occasional or milder forms of substance use within families can pose a risk, emphasizing the need

for preventive measures. The duration of alcohol dependence did not determine the severity of AUD, highlighting the complexity of factors influencing addiction progression. Early age of initiation (10–20 years) demonstrated a significant correlation with severe AUD, supporting existing literature linking early initiation to increased risk of alcohol-related problems. A similar association between early age of initiation and severity of AUD has also been reported by authors such as Chatterjee *et al.* [17] and Donovan *et al.* [18].

Personality profiles were assessed using the NEO Personality Inventory-3, revealing distinct patterns among individuals with mild, moderate, and severe alcohol dependence. Neuroticism, extraversion, openness, agreeableness, and conscientiousness demonstrated varying associations with the severity of alcohol dependence. These findings align with previous research, suggesting that personality traits play a role in alcohol consumption patterns [19].

The incidence of alcohol-induced psychosis in 7.14% of the sample underscores the psychiatric complications associated with AUD. However, no significant correlation was found between the severity of alcohol use (SADQ score) and BPRS scores, indicating that the interplay of personality, genetic predisposition, and alcohol may contribute to the development of alcohol-induced psychosis [20].

CONCLUSION

The study on AUD identified key demographic and clinical factors that influence its prevalence as well as severity. Significantly high rates of AUD were observed in married Hindu males between the ages of 40–50 years. Correlations were found between AUD severity and increasing age, male gender, early initiation of alcohol consumption, and extended duration of dependence. Lower education and unskilled occupations were associated with AUD. The investigation also delved into personality traits which revealed significantly distinct patterns based on the severity of physical dependency.

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CONFLICT OF INTEREST

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