

## A Comparative Study of Personality Profile among Patients with Alcohol use Disorder and Opioid use Disorder

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### Abstract:

**Background:** In India, two most common substances for which people seek treatment are alcohol and opioids. The conceptualization of personality in substance users shifted from the notion of an “addictive personality” to recognition that certain personality traits specifically impulsivity, sensation-seeking, novelty-seeking, low agreeableness and conscientiousness, high neuroticism are associated with substance use disorders and influence their development, maintenance and course.

**Methods:** 70 people with alcohol related disorders and 70 patients with opioid related disorders diagnosed by DSM 5 were interviewed with SADQ, LEEDS and NEO FFI3 to assess severity of substance related disorders and personality of those patients.

**Results:** The study showed than neuroticism (32.25±4.22) was more in severe alcohol dependence patients and so was extraversion (31.50±3.94). agreeableness (38.00±5.57) and conscientiousness (40.33±4.73) was more in the mild physical dependency group. Openness to experience had similar ranges in all the 3 dependency groups. Neuroticism (38.25±3.55) was very high in high dependency OUD group and so was extraversion (34.92±3.65). Openness to experience, agreeableness and conscientiousness had neutral findings in all the three dependence category.

**Discussion:** Previous studies showed agreeableness and conscientiousness were high in alcohol related disorders and in Opioid dependant patients neuroticism and extraversion were high. Our findings are also in the same way. Hence, there was significant association between the personality profile factors and the type of substance dependence and severity.

**Keywords:** Alcohol, Personality, Severity, Opioid

### Introduction

In India, two most common substances for which people seek treatment are alcohol and opioids. Various biological, social and psychological factors have been implicated in initiation and maintenance of substance use disorders. The conceptualization of personality in substance users shifted from the notion of an “addictive personality” to recognition that certain

personality traits specifically impulsivity, sensation-seeking, novelty-seeking, low agreeableness and conscientiousness, high neuroticism are associated with substance use disorders and influence their development, maintenance and course. It has also been reported that personality traits have an effect on treatment-seeking, compliance and outcome of substance use disorders. Among various psychoactive substances, the association between personality and

alcohol use has been most widely studied. Studies have found that those with poly-substance use were higher on impulsivity, sensation-seeking and novelty-seeking and lower on socialization as compared to those dependent on a single substance.<sup>1</sup>

The links between these personality dimensions and substance related behaviour appear to be mediated by different reinforcement processes. Neurotic personality traits (e.g., anxiety and depression proneness) have been shown to be linked to drinking behaviour through a negative reinforcement process, in that individuals prone to negative affect report negative reinforcement motives for alcohol and substance. There is also evidence supporting separate anxiety- and depression-related motives for drinking, with each motive being distinctly related to alcohol consumption and alcohol problems in a young adult.<sup>2</sup>

Northeast India is a region with serious drug use problems. Nagaland and Manipur are two sparsely populated states in that region, bordering Burma. These states have the highest prevalence of injecting drug users (IDUs) in India. Unsafe practices, especially needle sharing among IDUs, have been the main drivers of the HIV/AIDS epidemic in the region. Although antiretroviral therapy (ART) is now accessible in Northeast India, many drug users also suffer from hepatitis C infection, now their main cause of mortality, as affordable treatment is not available.<sup>3</sup>

The most unfortunate aspect of the phenomenon of drug addiction has been the alarming rise of addiction among the youths of this region and consequent increase in the drug related crimes. However, these studies have suggested that most of the young drug users started taking drugs between the age of 14 to 18 years and the largest member being found to be at the age of 16 and 17 years. These surveys further suggest that about 35 to 40 percent of the teenagers agreed that they tried gateway drugs like alcohol and tobacco.<sup>4</sup>

Therefore, there arose a need for studying the personality profiles of substance users to differentiate them from general population and formulate different treatment plans to curb the menace of drugs and explosion of drug related violence/ crimes.

## Material and Methods

This is a cross-sectional and non-interventional study. Those seeking treatment for alcohol dependence

and opioid dependence in the Psychiatry outpatient department of Regional Institute of Medical Sciences (RIMS), Imphal, Manipur during September 2019 to August 2020 were included in this study. Patients were recruited through the convenience sampling and were assessed single time. The study protocol was approved by the Ethics Review Board of the Institute. Written consent was taken and those fulfilling the diagnosis of alcohol use disorder and opioid use disorder as per DSM-5 criteria were further assessed. The Inclusion criteria were patients who were diagnosed as alcohol use disorder and opioid use disorder according to DSM-55 criteria in age range of 18yrs to 65yrs. The Exclusion criteria were any patients having major psychiatric/physical disability such as psychosis or organic brain disorders and were dependent on other substances like cannabis, amphetamine type substances (ATS), etc. (except for tobacco). Considering the prevalence of alcohol dependent population in adults (> 18 yrs.) to be 17.1 the sample size was taken as 70 for alcohol dependent population and similarly 70 patients were taken for opioid dependent population. Socio-demographic details like age, sex, marital status, educational level, occupation, income, family type, religion, place of residence were recorded using a semi-structured proforma. Detailed history of substance use was collected from the patient/patient party attending the Department of Psychiatry to establish Alcohol Use Disorder and opioid use disorder as per DSM-5 criteria. SADQ (Severity of alcohol dependence questionnaire)<sup>6</sup> a 20-item questionnaire designed to measure the degree to which help-seeking problem drinkers were experiencing the syndrome of alcohol dependence, was applied to assess the severity of dependence. Leeds dependence questionnaire (LDQ)<sup>7</sup> was used for opioid users. The instrument is sensitive to mild and moderate levels of dependence and so can be helpful in determining treatment goals. In clinical settings, the LDQ can serve as a diagnostic measure of the severity of dependence, an important measure in determining treatment goals, and as a treatment outcome measure that works with abstinent patients. The NEO Five-Factor Inventory-3 (NEO-FFI-3)<sup>8</sup> a 60-item version of the NEO-PI-3 comprising of 60 items, 12 belonging to each of the following five subscales: Neuroticism, Extroversion, Openness to experience, Agreeableness, and Conscientiousness answered on a five-point Likert scale ranging from strongly disagree (0) to strongly agree (4), was applied to the patients to assess their personality profile.

## Statistical analysis

Data was analyzed using SPSS version 23 for Windows. Descriptive statistics like mean, standard deviation, percentage and proportion has been used. Chi-square test/Fisher's exact test, ANOVA test has also been used to test the level of significance. Results on categorical measurements like gender, residence, marital status, employment status, family type, duration of use, frequency of relapse, family history of substance abuse were presented in frequency and percentages. Chi-square test has been used to find the association between study parameters like substance abuse and residence, marital status, employment status, duration of substance abuse, family history of substance abuse, while Fisher's Exact test has been used to find the association between study parameters like substance abuse and age distribution, gender, socioeconomic status, family type, age of initiation, frequency of relapse etc. ANOVA test has been applied to study the association between study parameters like substance abuse with personality profile factors, personality profile factors with severity of substance abuse. P-value of <0.05 is taken as significant.

## Results

In this study a total of 140 patients presenting to the Department of Psychiatry, RIMS, Imphal with history of substance abuse were divided into two groups, each containing 70 patients.

The maximum number of patients with alcohol use disorder belonged to the age range of 31-40 yrs. The majority of patients with opioid use disorder were in the age group of 31-40 yrs. Majority of the patients in both AUD and OUD group were males (98.6% each) with only 1 female in AUD and 1 female in OUD group. Out of 70 patients in AUD group 37 were from rural residence. In the OUD group majority of the patients (78.6%) were from urban residence. 88.6% of patients in AUD group were married with rest 8.6% unmarried and 2.9% divorced. 54.3% patients in OUD group were married, 42.9% were unmarried and 2.9% were divorced. 66 patients were employed in AUD group out of 70, whereas 59 patients were employed in OUD patients out of 70. 78.6% in AUD group belonged to middle class with 20% belonging to lower middle class and 1.4% belonging to upper middle class. In the OUD group 78.6% belonged to middle class, 17.1% belonged to upper middle class and 4.3% belonged to lower middle class. 90%

of patients in AUD belonged to nuclear family and 98.6% of patients in OUD belonged to nuclear family.

## Substance Use Details

Variable		Alcohol use disorder n (%)	Opioid use disorder n (%)	P value
Age of Initiation in years	<20	14(20.0)	49(70.0)	0.000
	21-30	42(60.0)	18(25.7)	
	>31	14(20)	3(4.3)	
Duration of Use (years)	<10	28(40.0)	41(58.6)	0.061
	11-20	31(44.3)	24(34.3)	
	>21	11(15.7)	5(7.1)	
Frequency of Relapse	<4	66(94.3)	53(75.7)	0.004
	≥4	4(5.7)	17(24.3)	
Family history of substance abuse	Yes	56(80)	53(75.7)	0.541
	No	14(20)	17(24.3)	

60% patients had initiated drinking alcohol in 21-30 years of age. In OUD group 70% had initiated use of opioid before 20yrs of age. Majority of the AUD patients (44.3%) had duration of use in 11-20 years range. 58.6% patients in OUD had used the substance for duration less than 10 yrs. 94.3% of AUD patients and 75.7% of OUD patients had relapsed less than 4 times and 5.7% of AUD patients and 24.3% OF OUD patients had relapsed 4 or more times. 80% of AUD patients had family history of substance abuse and 75.7% of OUD patients had family history of substance abuse.

## Comparison of NEO-FFI between 2 groups

variables	Alcohol use disorder (Mean ±SD)	Opioid use disorder (Mean ±SD)	P value
Neuroticism	24.40±5.17	34.21±3.85	0.001
Extraversion	26.74±4.18	30.99±3.98	0.001
Openness to experience	28.97±4.20	28.30±3.73	0.319
Agreeableness	30.23±4.22	25.23±3.6	0.001
Conscientiousness	32.51±4.94	21.61±3.09	0.001

Conscientiousness (32.51±4.94) and agreeableness (30.23±4.22) were high in AUD group. Neuroticism (34.21±3.85) and extraversion (30.99±3.98) were high in patients with OUD. Hence, there exists significant relationship between neuroticism, extraversion, agreeableness, conscientiousness with the type of substance abuse comparison of study variables in SADQ SEVERITY of AUD patients

variables	SADQ SEVERITY			P value
	Mild physical dependency (Mean ±SD)	Moderate dependency (Mean ±SD)	Severe alcohol dependence (Mean ±SD)	
Neuroticism	20.00±2.00	22.93±3.65	32.25±4.22	0.001
Extraversion	27.33±5.13	25.67±3.45	31.50±3.94	0.001
Openness to experience	35.00±3.46	28.73±3.91	28.58±4.80	0.037
Agreeableness	38.00±5.57	30.76±3.52	25.83±2.52	0.001
Conscientiousness	40.33±4.73	33.53±3.77	25.92±3.15	0.001

Patient with mild physical dependency had high conscientiousness (40.33±4.73) followed by agreeableness (38.00±5.57) and openness to experience (35.00±3.46). Patients with severe alcohol dependence had high neuroticism (32.25±4.22) and high extraversion (31.50±3.94).

Hence, there exists significant relationship between neuroticism, extraversion, agreeableness, conscientiousness with the degree of severity of alcohol consumption among the AUD group.

#### A comparison of study variables in LEEDS SEVERITY of OUD patients

variables	LEEDS SEVERITY			P value
	Low dependence (Mean ±SD)	Medium dependence (Mean ±SD)	High dependence (Mean ±SD)	
Neuroticism	32.67±1.15	33.42±3.45	38.25±3.55	0.001
Extraversion	31.00±2.65	30.13±3.62	34.92±3.65	0.001
Openness to experience	28.67±4.04	27.82±3.24	30.42±5.14	0.089
Agreeableness	26.33±2.52	24.98±3.54	26.08±4.17	0.551
Conscientiousness	23.33±2.08	21.98±3.11	19.5±2.32	0.023

Patients with low dependence had high neuroticism (32.67±1.15) and extraversion (31.00±2.65). Patients

with high dependence had very low conscientiousness (19.5±2.32) and very high neuroticism (38.25±3.55). Hence, there exists significant relationship between neuroticism, extraversion, agreeableness, conscientiousness with the degree of severity of opioid consumption among the patients of OUD group.

#### Discussion

The maximum number of patients abusing alcohol were in the age group of 31-40 years (47.1%) followed by 41-50 years (34.3%). The people who were dependent on alcohol under 30 years were 8.6% and 51 years or older were 10%. The maximum number of patients abusing opioids were in the age group of under 30 years (57.1%) followed by 30% in age group of 31-40 years. Number of the patients abusing opioids were very less (1.4%) in the group 51 years and older. In an Indian study conducted by Gupta SK et al11 it was found that majority of the AUD patients were in the age group of 25-45 years (45%) and majority of the patients in the OUD group were in the age group of 20-30 years (50%). This was also supported by other studies done by Bottlender M et al9 and Martin ED et al10.

Male preponderance was seen in this study in both the groups of AUD (98.6%) and OUD (98.6%). This was also consistent with the finding in the study Nevid JS et al11 and Zilberman N et al12 where majority were male patients. In the study done by McCormick RA et al13 males comprised over 97% of the admissions.

Out of 70 patients in the AUD group 37 (52.9%) belonged to rural background and in the OUD group out of 70 patients 15 (21.4%) were belonging to rural background. This was supported by a study done by Gupta SK1 which found that the AUD patients belonged mainly to rural background (50%) and OUD to urban background (76.3%).

In the AUD group 88.6% of the patients were married, 8.6% were unmarries and 2.9% divorced. Around 42.9% were unmarried in OUD group, 54.3% were married and 2.9% divorced. Similar results were shown in study done by Gupta SK6 with 82% patients married in AUD group and only 50% married in OUD group. Western studies by Bottlender M et al9, Martin ED et al10 and Zilberman N et al12 showed similar findings. 32.8% were married or separated, 29.2% were single, and 38% were divorced or widowed in the study done by McCormick RA et al13.

Majority of the patients in AUD group and OUD group were employed. Similar supportive finding were found in studies done by Zilberman N et al<sup>12</sup>, Nevid JS et al<sup>11</sup>, Martin ED et al<sup>10</sup>.

The results showed that majority of AUD patients (78.6%) were from middle class, followed by lower middle class (20%) and upper middle class (1.4%). Majority of OUD patients (78.6%) were from middle class, followed by 17.1% from upper middle class, 4.3% from lower middle class. In the study done by Gupta SK et al<sup>1</sup> both the AUD (75%) and OUD (78%) groups were from middle class background.

Around 90% of AUD patients and 98.6% of OUD patients belonged to nuclear family. This was supported by Gupta SK et al<sup>1</sup>, Martin ED et al<sup>10</sup> and Zilberman N et al<sup>12</sup>.

Majority of the AUD (60%) had age of initiation of alcohol use in 21-30 years age group. In the OUD group 70% had initiated abuse of opioids before 20 years of age. Study done by Bottlender M et al<sup>9</sup> also supports alcohol initiation mean age of 29 years. In study of Gupta SK et al<sup>1</sup> age of initiation for alcohol use was 18-23 yrs and age of initiation of opioids was 15-20 yrs hence supporting the findings of this study.

The study shows 44.3% of AUD patients had duration of alcohol abuse between 11-20 years duration, whereas OUD patients had 58.6% patients with duration of use less than 10 years. Similarities were found in studies conducted by Terraceiano A et al<sup>14</sup> The mean duration of alcohol use was 15 years as per Bottlender M et al<sup>9</sup>

Around 94.3% had relapsed less than 4 times in the AUD patient group and 5.7% had relapsed 4 or more times. In the OUD group 75.7% had relapsed less than 4 times. Number of relapses were more in the OUD group (24.3%). Similar finding of more relapses in the OUD group compared to the AUD groups were found in other studies done by Terraceiano A et al<sup>14</sup> which shows that 43% had relapsed more than 6 times in a year.

The study shows that AUD patient had positive family history of substance abuse in 80% cases whereas the OUD group had positive family history of substance abuse in 75.7% cases. These finding were supported by Raketic D et al<sup>15</sup> who found positive

family history in 82% of AUD patients and 74% of OUD patients. Similarly other studies supporting were done by McCormick RA et al<sup>13</sup> and Martin ED et al<sup>10</sup>.

In the AUD group agreeableness (30.23±4.22) and conscientiousness (35.31±4.94) were much higher. Bozkurt M et al<sup>16</sup> showed that Severity of impulsivity and dimensions of impulsivity were higher in alcohol-dependent inpatients than in healthy controls. There was negative correlation between impulsivity with reward dependence, persistence, self-directedness and cooperativeness, but impulsivity was positively correlated with novelty seeking, harm avoidance, depression and anxiety. Impulsivity was predicted by high depression and temperament dimensions (high novelty seeking, harm avoidance and low reward dependence). Combinations of personality dimensions that predict dimensions of impulsivity differed. The meta-analysis by Malouff JM et al<sup>17</sup> showed alcohol involvement was associated with low conscientiousness, low agreeableness, and high neuroticism. Without adjustment for non-perfect reliability of measures, conscientiousness, agreeableness, and neuroticism explained 5%, 3%, and 2% of the variance in alcohol use, respectively.

The study showed than neuroticism (32.25±4.22) was more in severe alcohol dependence patients and so was extraversion (31.50±3.94). Agreeableness (38.00±5.57) and conscientiousness (40.33±4.73) was more in the mild physical dependency group. In a study conducted by Luchetti M et al<sup>18</sup> Openness to experience had similar ranges in all the 3 dependency groups. higher conscientiousness and openness were associated with reduced risk of heavy drinking. Higher conscientiousness and agreeableness, and lower extraversion and openness were associated with lower probability of alcohol consumption. Impulsiveness was associated with increased risk of heavy alcohol consumption, whereas conscientiousness, the openness, and the assertiveness were associated with reduced the probability of heavy drinking. Self-discipline and deliberation were associated with increased incidence of abstinence, along with lower scores on impulsiveness, excitement seeking, positive emotions, and most facets of openness (except for ideas and values).

The study shows that neuroticism (34.21±3.85) and extraversion (30.99±3.98) were much high in patients with OUD. Openness to experience had neutral value. Neuroticism (38.25±3.55) was very high in high dependency OUD group and so was extraversion (34.92±3.65). Openness to experience, agreeableness and conscientiousness had neutral findings in all the three dependence category. In the study conducted by Gupta SK et al OUD group scored significantly higher on anger hostility, depression, self-consciousness, impulsivity (neuroticism) and excitement seeking (extraversion); and scored lower on fantasy, ideas (openness to experience), trust, straightforwardness, altruism (agreeableness) and on all facets of conscientiousness, namely, competence, order, dutifulness, achievement striving, self-disciplining and deliberation .

### Limitations

The data in the study was collected through self-report questionnaires. Therefore, there is a high chance of distortion. Some participants might be reluctant to disclose their illicit drug use. Comorbid psychiatric disorders were excluded and might have influenced the psychometric findings.

**Conflict of Interest:** Nil

**Source of funding-** Self

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