# Occurrence of Alcohol Dependence, Pattern of Alcohol Use, and Psychiatric Comorbidity in a Tertiary Care Centre in Upper Assam, India

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**ABSTRACT**

**BACKGROUND**

There has been an increased rate of diagnosis of alcohol dependent syndrome (ADS) observed in our psychiatry clinic constituting a major portion of them into inpatients care. Evaluation of psychiatric complaints in patients with alcohol dependant syndrome is challenging at times. Depression has been found to be a common psychological association seen in them. Suicidality and other self-harming behaviour as a co morbidity are also not uncommon. There is dearth of information available on occurrence of alcohol dependent syndrome in psychiatry attendees and pattern of alcohol use especially from this part of north-eastern region of Assam. We wanted to assess the occurrence and pattern of alcohol use disorder amongst patients attending psychiatry unit of a tertiary care centre in upper Assam, estimate its bed occupancy rate, and determine psychiatric comorbidity among them.

**METHODS**

A hospital based cross sectional study was conducted among 104 consecutive subjects attending Psychiatry department of Jorhat Medical College, Assam. After thorough examination and informed written consent subjects were administered with alcohol use disorder identification test (AUDIT) and MINI plus. Semi structured socio demographic Proforma was used to collect information on demographic data and different variables. As it was a descriptive study, data collected were organized in frequency tables and analysed using percentage.

**RESULTS**

In present study, prevalence of alcohol dependent syndrome in psychiatry set up was 12.68 % and bed occupancy rate of ADS was 13 %. Majority were between the age 28 and 47 years, males, Hindus, married, belonged to nuclear family and hailed from upper lower social class followed by lower middle class. Approximately 18 % of cases had psychiatric co morbidity and majority of them had depression and suicidality.

**CONCLUSIONS**

A major number of alcohol dependant patients attended psychiatry OPD and occupied almost half of the beds as inpatients of a tertiary care hospital. Mood disorder was the commonest comorbid condition in these patients. Though the results cannot be generalized, it may definitely reflect the magnitude of alcohol use in this region. Hence forth a psychiatry unit like ours warrant a full-fledged department for treatment of ADS and alcohol related problems and some policy to work for its prevention.

**KEYWORDS**

ADS, Occurrence, Bed Occupancy, Psychiatric Co-Morbidity

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## BACKGROUND

Alcohol use disorder represents a spectrum of disorders that includes social drinking, drinking at hazardous level to alcohol dependence. Alcohol dependence is defined as a cluster of behavioural, cognitive and physiological phenomena that develop after repeated alcohol use (Saunders and Asland et al. 1993).[1] Alcohol use and related disorders has been a major public health problem across the country,[2] in middle aged and elderly[3,4] and this part of north eastern region as well. In our set up of a tertiary care health centre, the psychiatry unit has observed good number of patients presenting with alcohol use disorder with psychiatric co morbidities. Approximately 2 - 3 out of 10 patients were observed to be presenting with alcohol related disorder and that majority of our beds were occupied by patients with alcohol use disorder in the inpatient ward.

### Objectives

1. To determine occurrence and pattern of alcohol use disorder amongst patients attending psychiatry unit of a tertiary care centre in upper Assam.
2. To assess the socio-demographic correlates of these patients with alcohol use disorder
3. To determine the co morbid condition associated with alcohol use disorder
4. To determine bed occupancy rate of patient with alcohol use disorder.

## METHODS

The cross sectional, descriptive study was conducted in the Department of Psychiatry, JMCH, Jorhat over a period of 3 months from October 2018 to December 2018. Through consecutive sampling method all patients presenting during the study period, diagnosed as alcohol dependent syndrome as per ICD 10 were taken for the study. Those who gave written informed consent and of age 18 yrs. onwards of both the sexes were included in the study. Those not able to give history and persons with mental retardation were excluded from the study. A total of 104 patients with diagnosis of alcohol dependent syndrome were studied during the study period.

### Procedure

After subject was identified in the outpatient and those admitted through emergency, detail history taking and examination were done and diagnosis was made as per ICD 10. Written informed consent was taken from each participant and enrolled him / her for further evaluation. A semi structured socio demographic Proforma was administered to obtain data on their age, sex, marital status, locality, income, family type etc. AUDIT was then administered to see the risk level of alcohol use. Further MINI plus was administered to all participants for presence of psychiatric co morbidity.

### Data Analysis

Data obtained were descriptive in nature. Data were organized in frequency tables and analysed using percentage. chi-square test was used wherever needed in bivariate analysis.

## RESULTS

In our study a total of outpatients and inpatients admitted through emergency diagnosed as alcohol dependent syndrome was 148 (125 + 23) against the total patients of 1167 (outpatients and admitted through emergency) during the study period. Thus, prevalence of persons with alcohol dependence was calculated as follows - Occurrence = No of persons with alcohol dependence syndrome÷ total no of persons attended X 100. So in our study, hospital based prevalence of ADS among psychiatric population was 148 / 1167 X 100 = 12.682 %.

In the present study, out of total 148, in 17 cases wives of patients refused to participate, 19 cases were referred to medicine for presence of dominated physical problems (oedematous leg, presence of icterus, increased blood pressure etc.) and 8 subjects left the hospital when asked for admission. Thus only 104 persons were studied. Bed occupancy rate of patients with ADS = Total no of admitted patients in a month X average days of length of hospital stay / number of beds X total no of days in month.
So in our study bed occupancy of ADS for three months was calculated as 37 X 8 / 25 X 91 = 296 / 2275 X 100 = 13.01 % (Total number of beds in our set up is 25)

| | Age, N 104 | Frequency | Percentage (%) |
|---|---|---|---|
| | 18 - 27 | 10 | 9.6 |
| | 28 - 37 | 33 | 31.7 |
| | 38 - 47 | 42 | 40.3 |
| | 48 - 57 | 16 | 15.3 |
| | 58 - 67 | 3 | 2.8 |
| Sex, N 104 | Male | 102 | 98.0 |
| | Female | 2 | 1.9 |
| Religion, N 104 | Hindu | 98 | 94.2 |
| | Muslim | 5 | 4.8 |
| | Christian | 0 | 0 |
| | Others | 1 | 0.96 |
| Marital status, N 104 | Married | 89 | 85.5 |
| | Unmarried | 15 | 14.4 |
| | Divorced | 0 | 0 |
| | Separated | 0 | 0 |
| Type of family, N 104 | Nuclear | 69 | 66.3 |
| | Joint | 28 | 26.9 |
| | extended | 7 | 6.7 |

***Table 1. Distribution of Patients According to Socio Demographic Profile***

In our study, majority of the sample was in the age range 28 – 47 yrs., predominantly Male, Hindu, Married, belonging to nuclear family type and majority (50 %) hailed from Upper lower social class followed by lower middle class. Majority of them were brought by family members (Table 1, 2 & 3).

| Source | Number | Percentage |
|---|---|---|
| Self | 32 | 30.7 |
| Family member | 50 | 48 |
| GP | 10 | 9.6 |
| Specialist | 11 | 10.5 |
| Legal authority | 1 | 0.96 |

***Table 2. Source of Referral***

N = 104

| Social Class | Frequency | Percentage |
|---|---|---|
| I Upper | 0 | 0 |
| II Upper middle | 21 | 20.1 |
| III Lower middle | 29 | 27.8 |
| IV Upper lower | 53 | 50.9 |
| V lower | 1 | 0.96 |

***Table 3. Distribution of Patients as Per Socio-Economic Status***

Majorities of the respondents fell into the category of lower SES followed by middle SES.

| Type of Alcohol Preferred | Frequency | Percentage |
|---|---|---|
| Country liquor | 50 | 48 |
| Brandy | 2 | 1.9 |
| Whisky | 16 | 15.3 |
| Rum | 5 | 4.8 |
| Mixed (illicit & country liquor) | 31 | 29.8 |
| Age of Onset | Mean 21 | SD 6.56 |
| Duration of harmful alcohol consumption | Mean 5.6 | SD 4.05 |
| Audit score / Risk level | Frequency | Percentage |
| Zone 1- 0 to 7 | 0 | 0 |
| Zone 2- 8 to 15 | 12 | 11.5 |
| Zone 3 - 16 to 19 | 9 | 8.6 |
| Zone 4 - 20 to 40 | 83 | 79.8 |
| Course of Alcohol Use | Frequency | Percentage |
| Continuous | 97 | 93.2 |
| Frequent heavy drinking | 3 | 2.8 |
| Frequent intoxication | 2 | 1.9 |
| Episodic drinking | 2 | 1.9 |

***Table 4. Pattern of Alcohol Use***

As regard to pattern of alcohol use, majority consumed local made brand (country liquor made from rice and jaggery) 48 %, followed by mixed variety 29.8 %. Mean age of onset was 21 yrs. though duration of harmful use was 6 yrs. Majority (80 %) of patients were in risk level Zone IV (AUDIT) means they needed specialized care. Only 2 patients out of 104 were episodic drinkers, rest were continuous drinkers that included frequent intoxication and frequent heavy drinking (Table 4).

When evaluated for prevalence of psychiatric co morbid condition on MINI Plus, it was found that broadly 19 cases had co morbidities. They were mood disorders 9.4 % (2.8 + 2.8 + 3.84), psychotic disorders 3 %, GAD 6 % (Table 5).

| Psychiatric Co morbidity (MINI Plus) | Frequency | Percentage |
|---|---|---|
| With No Comorbidity | 85 | 81.7 |
| Major depressive disorder | 3 | 2.8 |
| Suicidality | 3 | 2.8 |
| Substance Induced Mood Disorder | 4 | 3.84 |
| Substance induced GAD | 6 | 5.76 |
| Substance induced Psychotic disorder | 3 | 2.8 |
| **Total** | **104** | **100** |

***Table 5. Prevalence of Comorbidity in Alcohol Use Disorder in MINI Plus***

In Table 6 while doing bivariate analysis as regard to the age of the respondent and level of alcohol use, it has been seen that majority of the subjects belonged to adolescent group and had likelihood of alcohol dependence. The chi-square test revealed that the age of the respondent was not statistically associated with level of alcohol use.

| Age | Level of Alcohol Use | | | Total |
|---|---|---|---|---|
| | Zone 2 | Zone 3 | Zone 4 | |
| 18 - 27 | 3 | 2 | 5 | 10 |
| 28 - 37 | 2 | 2 | 29 | 33 |
| 38 - 47 | 2 | 2 | 38 | 42 |
| 48 - 57 | 4 | 2 | 10 | 16 |
| 58 - 67 | 1 | 1 | 1 | 3 |
| **Total** | **12** | **9** | **83** | **104** |

***Table 6. Age of the Respondent and Level of Alcohol Use***

$X^2$ -.629, df- 2

| Level of Alcohol Use | Comorbidity | | | | | | |
|---|---|---|---|---|---|---|---|
| | No Comorbidity | Suicidality | Major Depressive Disorder | Substance Induced GAD | Substance Induced Psychosis | Substance Induced Mood Disorder | Total |
| Zone 2 | 3 | 2 | 1 | 4 | 1 | 1 | 12 |
| Zone 3 | 2 | 0 | 2 | 1 | 1 | 3 | 9 |
| Zone 4 | 80 | [1] | 0 | 1 | 1 | 0 | 83 |
| **Total** | **85** | **3** | **3** | **6** | **3** | **4** | **104** |

***Table 7. Level of Alcohol Use and Comorbidity***

$X^2$ -.776, df- 4

Table 7 shows bivariate analysis as regard to the level of alcohol use and psychiatric comorbidity. Majority of the subjects do not have Substance induced comorbid conditions. The chi-square test reveals that there is nil significant association between level of alcohol use and psychiatric comorbidity. However, majority of psychiatric comorbidities tend to fall into the low-risk group of alcohol use.

| Education | Pattern of Use | | | | |
|---|---|---|---|---|---|
| | Continuous Drinking | Frequent Heavy Drinking | Frequent Intoxication | Episodic Drinking | Total |
| Illiterate | 5 | 0 | 0 | 1 | 6 |
| Primary | 9 | 0 | 1 | 0 | 10 |
| High school | 22 | 1 | 0 | 0 | 23 |
| Graduation | 53 | 2 | 1 | 1 | 57 |
| PG | 8 | 0 | 0 | 0 | 8 |
| **Total** | **97** | **3** | **2** | **2** | **104** |

***Table 8. Education of the Respondents and Their Pattern of Alcohol Use***

$X^2$ -.381, df- 8

Table 8 shows that majority of respondents who studied up to graduation are continuous drinkers and in almost all levels of education, continuous use of alcohol predominates. Only few numbers are frequent heavy drinkers, frequently intoxicated and episodic drinkers. Nevertheless, this association is not statistically significant.

## DISCUSSION

The present study was hospital based, attempted with the background of seeing many individuals presenting with history of alcohol abuse in our department. It was therefore aimed at assessing occurrence of it in a psychiatry care set up, to study pattern of alcohol abuse and psychiatric co morbidity associated with it. In present study, occurrence of alcohol dependent syndrome in

psychiatry unit was 12.68 %. Hospital based studies were available mainly to assess profile of alcohol use but ADS in psychiatry attendees were hardly any. In India Sampath 2007 in a tertiary hospital study showed 17.6 % admitted patients had hazardous alcohol use.[5] 13.01 % of beds were occupied (Total number of beds in our set up is 25) by ADS patients in Psychiatric IPD. Majority of our subjects with ADS were in the age range between 30's and 40's. It almost replicates in other studies where mean age of ADS found was 44.34 (Nishant and Tharayil 2014).[6] Our subjects hailed predominantly from upper lower social class that was similar to other studies that showed majority (73.9 %) belonged to low socio-economic status (below poverty line) in a hospital-based study. This could be because of mobilization of poor patients to government hospital. Similar to earlier studies, our subjects were mostly Hindus and belonged to nuclear families and rural background. Study reported that heavy drinking was more common in slum and rural areas (Girish et al. 2009).[7] The most common form of alcohol used was country liquor (50 %) followed by mixed form (country and illicit liquor). In other studies, also most of the patients were found consuming local country made liquor (Nityanand and Malhotra P 2015).[8] This form of alcohol was cheaper than Indian made foreign liquor (IMFL) and our patients were mostly from lower social class. This was somewhat similar with earlier studies (Mohan, Chopra, Ray, Sethi 2001)[9] though in general population in India. Age of onset was 21 years and mean duration of harmful alcohol use was almost 6 yrs. in our study. Majority of them were in the risk level 4 and continuous drinkers. This was in contrast to the community-based study from Tamil nadu, India, where it was shown that majority were in the risk level 1 in AUDIT. And only 30 % and 33.7 % had hazardous drinking levels and dependency drinking respectively (Ganesh kumar ś and Premarajan 2013).[10] This was perhaps due to increased literacy in south India and thus had knowledge of consequences of hazardous drinking than northeastern part of the country where literacy rate is low compared to southern India. Moreover, our study sample was hospital based and so more severe cases dominated it. In fact, in all levels of education continuous drinking pattern predominated and majority of continuous drinkers were studied up to graduation level though statistically not significant. This was perhaps due to the fact that those who studied higher still remained unemployed and under employed. 18 % of the patients in our study had psychiatric disorders of which majority (9 %) suffered from mood disorders especially depressive disorder and suicidality. Other co morbid psychiatric conditions were anxiety disorders and psychosis. Prevalence of Psychiatric co morbidity was seen to be varied across studies (Nishant and Harrish 2014; Sachin and Ajab Dhabarde, 2019)[6,11] though mood disorders were commonest in them as well, as seen in our study. A study from northeast India showed 92 % psychiatric co morbidity in alcohol dependent patients and depressive disorder (26 %) were commonest followed by antisocial personality disorder (21 %) which was greater than our results.[12] However, the striking observation in the present study is that majority of the respondents did not have associated psychiatric comorbid conditions (82 %).

## CONCLUSIONS

Patients with alcohol dependence syndrome constituted a great number in the psychiatry attendees of unit of a tertiary care centre and occupied major seats as inpatients. Comorbidity has been a challenge and treatment of these patients is concerning. Hence, a psychiatry unit like ours needs a fully-fledged department for treatment of ADS and alcohol related problems.

### Limitations

It was a hospital-based study. This study was attempted to see the diagnosis of ADS in psychiatric attendees; hence, prevalence cannot be generalized. Study period was short. Perhaps a whole year data would give more accurate results.

Data sharing statement provided by the authors is available with the full text of this article at jebmh.com.
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Disclosure forms provided by the authors are available with the full text of this article at jebmh.com.

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