

## A Study of Influence of Alcohol on Depression and Anxiety in Patients with Schizophrenia

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### Abstract:

**Introduction:** Depression, anxiety and substance abuse are common accompaniments of schizophrenic condition and they in turn perturb the clinical picture. Schizophrenic patients who abuse drugs may represent a subgroup of patients with better prognosis and less severe clinical characteristics of schizophrenia, but their drug abuse may adversely affect global outcome. To our knowledge, there is no study in the literature that has explicitly tested the influence of alcohol on depression and anxiety in patients with schizophrenia.

**Methodology:** A sample of 60 male patients diagnosed with schizophrenia was collected from the patients attending the OPD of Government Hospital for Mental Care, Visakhapatnam. Screening was done using AUDIT for alcohol abuse and divided into two groups, Group A (AUDIT > 7) and Group NA (AUDIT < 7). All the patients were assessed for depressive and anxiety symptoms using Hamilton Depression Rating Scale (HAM-D) and Hamilton Anxiety Rating Scale (HAM-A).

**Results:** 8 out of 30 (26.67%) patients from Group A showed depressive and anxiety symptoms. 18 of 30 (60%) patients from Group NA showed depressive and anxiety symptoms. On comparing the groups with chi-square test, results were statistically significant ( $\chi^2 = 6.787$   $P = 0.009$ )

**Conclusion:** Patients with schizophrenia who abuse drugs may actually have milder symptoms and their poorer course is more attributable to the direct effects of drugs on worsening symptoms as well as associated medication non-adherence. Depression and anxiety are more prevalent in patients with schizophrenia without alcohol abuse. Whether the patients with comorbid substance abuse (of which alcohol is the most frequently abused substance) belong to a separate subgroup in patients with schizophrenia syndrome is not known, but addressing comorbidity of alcohol use disorder in schizophrenia with proper screening and integrated treatment interventions for substance use as well as depression and anxiety is critically important.

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### I. Introduction

Schizophrenia is clinically heterogeneous with different constellation of symptoms in different patients. The different sets of symptoms and the interplay among them give way to considerations that these may constitute groups of diseases of generally common phenotypic expression, but of different underlying etiopathology.<sup>1</sup> Depression, anxiety and substance abuse are common accompaniments of schizophrenic condition and they in turn perturb the clinical picture.<sup>2</sup> Patients of schizophrenia who abuse substances have superior premorbid social adjustment compared to schizophrenics who don't abuse drugs.<sup>3</sup> Schizophrenic patients who abuse drugs may represent a subgroup of patients with better prognosis and less severe clinical characteristics of schizophrenia, but their drug abuse may adversely affect global outcome.<sup>4</sup> Schizophrenia patients may have prominent anxiety symptoms or depressive symptoms and also abuse drugs. Alcohol is the most commonly abused substance with approximately 50% of patients have a lifetime alcohol use disorder.<sup>5</sup> There are very few studies which focused on influence of alcohol exclusively and majority of studies don't differentiate between the substances abused. To our knowledge, there is no study in the literature that has explicitly tested the influence of alcohol on depression and anxiety in patients with schizophrenia..

**Aim:** To study the influence of alcohol on depression and anxiety in patients with schizophrenia.

### II. Methodology

A sample of 60 male patients was collected from the patients attending the OPD of Government Hospital for Mental Care, Visakhapatnam, a tertiary care unit and teaching hospital.

### Inclusion criteria:

Male patients

Patients diagnosed with schizophrenia as per ICD-10

**Exclusion criteria:**

Female patients

Patients with comorbid medical conditions

Patients with other comorbid psychiatric disease

Patients with other psychoactive substance abuse

Total 60 patients diagnosed with schizophrenia were taken

Screened with AUDIT (Alcohol Use Disorders Identification Test) for alcohol abuse

Alcohol abuse defined by AUDIT score > 7

Divided into two groups:

Group A - Schizophrenics with alcohol abuse

Group NA - Schizophrenics without alcohol abuse

All the 60 patients were assessed for depressive and anxiety symptoms using Hamilton Depression Rating Scale (HAM-D) and Hamilton Anxiety Rating Scale (HAM-A)

A score of > 13 on HAM-A is taken as significant anxiety

A score > 7 on HAM-D is taken as significant depression

Results were assessed with SPSS version 21 on Windows

**III. Results**

Patients in two groups didn't show significant variations in demographic profiles. ( See Table 1)

8 out of 30 (26.67%) patients from Group A showed depressive and anxiety symptoms

18 of 30 (60%) patients from Group NA showed depressive and anxiety symptoms

On comparing the groups with chi-square test, results were statistically significant ( $X^2 = 6.787$  P = 0.009) (See Table 2)

Most of the patients with anxiety scored 14 to 15 on HAM-A which denotes mild anxiety. Most of the patients with depression scored 8 to 10 on HAM-D which denotes mild depression

Table 1: Table showing demographic variables

Variable	GROUP A	GROUP NA	$X^2$ value (or) <i>t</i> value	p value
AGE (mean)	34.93	33.13	0.780	0.439
LOCATION			0.111	0.739
Rural	25	24		
Urban	5	6		
EDUCATION			0.218	0.640
Literate	28	27		
Illiterate	2	3		
MARITAL STATUS			1.176	0.278
Married	24	27		
Unmarried	6	3		

Table 2: Table showing differences in depression and anxiety

	Group A	Group NA	$X^2$ value	p value
Depression			6.787	0.009
Yes	8	18		
No	22	12		
Anxiety			6.787	0.009
Yes	8	18		
No	22	12		

#### **IV. Discussion**

Depressive symptoms are common in patients with schizophrenia and they add further to the disability of schizophrenia.<sup>1</sup> Among the psychiatric comorbidities in patients with schizophrenia, comorbid depression is estimated to occur in 50% patients, comorbid substance abuse in 47%<sup>1</sup> and comorbid anxiety disorders in 38.3%. Bermanzohn et al. suggested that psychiatric comorbidities are so common that they might be integral to schizophrenia.<sup>13</sup>

It has been explained that patients with schizophrenia who abuse drugs may actually have milder symptoms and their poorer course is more attributable to the direct effects of drugs on worsening symptoms as well as associated medication non-adherence.<sup>1</sup>

Present study attempted to evaluate the influence of alcohol on depression and anxiety symptoms of patients with schizophrenia. The results show that symptoms of depression and anxiety are more prevalent in patients with schizophrenia without alcohol abuse. In a study where neurocognition, anxiety and depression in schizophrenia patients with and without alcohol use, the dually diagnosed schizophrenic group was not more impaired than schizophrenic patients without substance abuse histories.<sup>12</sup> There are many possible explanations for the pattern of results. Sleep disturbance and positive symptoms like auditory hallucinations can cause depressive and anxiety features in schizophrenics. It's possible that alcohol, due to its sedative properties, to some extent, relieves the patients of anxiety and depression caused by positive symptoms and sleep disturbance. The results are in agreement with a previous study by Noordsy et al<sup>6</sup> who studied schizophrenic patients' subjective experiences while using alcohol. 50% of their sample of 75 schizophrenic out patients reported that alcohol improved social anxiety, tension, dysphoria, apathy, anhedonia and sleep difficulties. Other nonpsychiatric experiences were frequently improved as well. Reports on the influence of alcohol on schizophrenia are controversial. A review<sup>5</sup> of 32 studies showed life time prevalence estimates of 12.3 to 50% for alcohol misuse and/or dependence. Some studies suggest a better premorbid function and less severe negative symptoms.<sup>4</sup> This phenomenon may reflect factors whereby more socially oriented patients with schizophrenia are more likely to come into contact with drugs and subsequently develop substance abuse.<sup>5</sup> But other studies failed to demonstrate differences between dual diagnosis patients and patients with only schizophrenia.<sup>9</sup> However, several studies suggest a common basis for schizophrenia and substance abuse, a few studies focussing exclusively on alcohol use and schizophrenia.

In a twin study<sup>10</sup> where co-twins of 34 MZ and 47 DZ index twins with a diagnosis of both schizophrenia and alcoholism were investigated, the results suggest that individuals suffering from schizophrenia and alcoholism have genetic predispositions to both disorders which is of the same nature as that which causes the two disorders when they occur alone. It has been reported that schizophrenia patients with co-occurring alcohol use disorder had higher rates of hospitalization and depression compared to those with schizophrenia only.<sup>11</sup>

Whether the patients with comorbid substance abuse (of which alcohol is the most frequently abused substance) belong to a separate subgroup in patients with schizophrenia syndrome is not known. But schizophrenia patients with alcohol use disorder seem to exhibit certain characteristics like increased tardive dyskinesia with low dose antipsychotics, excessive intoxication with lower amounts of alcohol, increased violence and on the positive side, more positive results and lower psychiatric symptoms and decreased rates of hospitalization once they become abstinent, compared to those who do not drink. Alcohol effects proteins that are associated with a wide variety of neurotransmitters and pathways, which are implicated in depression and anxiety as well as schizophrenia and substance abuse. Even in view of dimensional rather than categorical approach as advocated by DSM 5<sup>14</sup> addressing comorbidity of alcohol use disorder in schizophrenia with proper screening and integrated treatment interventions for substance use as well as depression and anxiety is critically important.

Limitations of the study are small sample size, dependence of alcohol and duration of either alcohol use or schizophrenia are not taken into consideration while assessing for depressive and anxiety symptoms.

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