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Prevalence of Psychiatric Comorbidity Among Patients With Substance Use Disorder Presenting to Psychiatry Department of A Tertiary Care Centre in South India - A Cross Sectional Study

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ABSTRACT

Background: Substance use disorders (SUDs) are associated with significant psychiatric comorbidities, complicating diagnosis and treatment outcomes. However, data on psychiatric comorbidities in SUD patients from South India remain limited. This study investigates the prevalence of psychiatric comorbidities among patients with SUDs in a tertiary care setting in South India. **Methods:** A cross-sectional study was conducted at Travancore Medical College, Kollam. Patients clinically diagnosed with SUDs as per ICD-11 criteria were included after one month of abstinence. Psychiatric comorbidities were assessed using the Mini-International Neuropsychiatric Interview (MINI). Socio-demographic data, substance use patterns, and physical comorbidities were ana-lyzed. **Results:** Of 130 participants, 20.8% were diagnosed with psychiatric comorbidities. Mood disorders were the most common (10%), including major depressive disorder (4.6%). Anxiety disorders and psychotic disorders were observed in 3.1% and 1.5%, respectively. Alcohol dependence was most frequent, with 20.2% of these patients having comorbidities. Nicotine dependence showed the highest comorbidity rate (27.1%). Unemployment and longer substance use duration were significantly associated with comorbidi ties. **Conclusion:** This study highlights the prevalence of psychiatric comorbidities in SUD patients in South India, emphasizing the need for integrated care models. Findings provide a foundation for tailored interventions and inform public health strategies to address dual diagnoses effectively.

INTRODUCTION

Substance use disorders (SUDs) are a significant public health challenge, marked by the recurrent use of psychoactive substances despite harmful consequences. These disorders often coexist with psychiatric illnesses, a phenomenon known as psychiatric comorbidity, complicating the clinical course and therapeutic outcomes. Psychiatric comorbidities, including mood disorders, anxiety disorders, and psychotic conditions, often emerge from the interplay of neurobiological and psychosocial factors influenced by substance use, underscoring the necessity for integrated care approaches[1-4].

Alcohol remains the most widely consumed psychoactive substance, with alcohol dependence syndrome (ADS) as its most severe manifestation. Characterized by a compulsive need to consume alcohol, ADS leads to significant psychological and physical health impairments. Alcohol Use Disorder (AUD), which includes a broader spectrum of problematic drinking behaviors, is closely associated with psychiatric conditions such as depression and anxiety. In India, alcohol dependence is a growing concern, particularly in South India, where cultural and economic transitions have led to increased consumption rates, making targeted research in this area vital[5-8].

Beyond alcohol, dependence on other substances such as nicotine, cannabis, and opioids presents unique challenges. Nicotine Dependence Syndrome (NDS) contributes significantly to anxiety disorders, while Cannabis Dependence Syndrome (CDS) is linked to psychotic symptoms and cognitive impairments. Opioid Dependence Syndrome (ODS) exacerbates mental health issues through its neurochemical effects, withdrawal symptoms, and high potential for misuse. Multiple Drug Dependence Syndrome (MDS) adds complexity, as overlapping withdrawal and psychiatric conditions complicate treatment efforts. Each of these syndromes underscores the importance of understanding substance-specific patterns of psychiatric comorbidity[9-12].

Psychiatric illnesses frequently observed among individuals with SUDs include major depressive disorder, bipolar affective disorder, schizophrenia, and anxiety disorders. These conditions not only act as risk factors for substance use but are also exacerbated by the neurobiological effects of the substances themselves. Dual diagnoses of psychiatric and substance use disorders lead to poorer health outcomes, prolonged treatment courses, and higher relapse rates, emphasizing the need for robust screening and integrated management strategies[13-14].

India faces a growing burden of substance use and associated psychiatric illnesses. The National Mental Health Survey (2016) identified alcohol as the most commonly used substance, with dependence rates ranging significantly across rural and urban populations. Socioeconomic, cultural, and regional differences further shape substance use patterns, with South India showing higher prevalence rates of alcohol and cannabis use. These trends highlight the need for region-specific studies to inform public health interventions tailored to local contexts[15-17].

Cross-sectional studies play an integral role in understanding the prevalence and distribution of psychiatric comorbidities among individuals with SUDs. These studies provide a snapshot of the clinical and sociodemographic characteristics of the population, offering valuable insights into patterns of comorbidity and guiding the development of targeted healthcare strategies. This study's focus on patients in a tertiary care setting adds a layer of clinical relevance, addressing a significant gap in regional research[18-20].

The present study investigates the prevalence of psychiatric comorbidities among individuals with SUDs presenting to a tertiary care center in South India. By examining sociodemographic and clinical variables, the study aims to provide actionable insights for clinicians and policymakers. Findings will inform the design of integrated care models, optimize resource allocation, and improve outcomes for individuals with dual diagnoses, ultimately addressing the growing public health burden of SUDs and associated psychiatric illnesses in the region.

MATERIAL AND METHODS

Study Design and Setting:

This cross-sectional study was conducted in the Psychiatry Department of Travancore Medical College, Kollam, a tertiary care center catering to a diverse population. The study aimed to assess the prevalence of psychiatric comorbidities among patients diagnosed with substance use disorders (SUDs) and to explore associations with sociodemographic and clinical variables.

Study Population:

The study population included patients presenting to the psychiatry department who were clinically diagnosed with SUDs based on the International Classification of Diseases, 11th Revision (ICD-11) diagnostic criteria. Inclusion criteria were patients who abstained from substance use for at least one month and were available for follow-up for psychiatric evaluation. Patients with incomplete data or severe medical conditions preventing participation were excluded.

Data Collection Tools and Procedure:

Participants were assessed using a structured interview process. After a month of sustained abstinence, patients were evaluated for psychiatric comorbidities using the Mini-International Neuropsychiatric Interview (MINI), a validated diagnostic tool for mental disorders. Sociodemo graphic data, including age, sex, and educational status, were collected using a predesigned questionnaire. The presence of physical comorbidities and substance use patterns were recorded to explore potential associations with psychiatric diagnoses.

Variables Studied:

The primary outcome variable was the presence of psychiatric comorbidities diagnosed through the MINI. Secondary variables included age, type of substance use, duration of substance use, and the presence of physical comorbidities.

Statistical Analysis:

Data were entered into a statistical software program for analysis. Descriptive statistics, such as mean and standard deviation, were used for continuous variables, while categorical variables were summarized as frequencies and percentages. The association between psychiatric comorbidities and variables like age and physical comorbidities was tested using chi-square analysis or Fisher's exact test where appropriate. A p-value of <0.05 was considered statistically significant.

Ethical Considerations:

Ethical approval was obtained from the Institutional Ethics Committee of Travancore Medical College. Written informed consent was obtained from all participants after explaining the purpose of the study and ensuring confidentiality.

RESULT

The analysis of sociodemographic characteristics revealed that the majority of the study population fell within the age group of 31-45 years (51.5%), followed by 46–60 years (23.8%), and 18-30 years (17.7%). Males constituted the majority of the participants (XX%), compared to females (XX%). Psychiatric comorbidities were most prevalent among individuals aged 18-30 years, with 30.4% of participants in this group having at least one psychiatric comorbidity, followed by 25.8% in the 46-60 years group and 16.4% in the 31-45 years group. The association between age groups and the presence of psychiatric comorbidities was evaluated using a Chi-Square test, yielding a p-value of 0.533. This indicates no statistically significant association between age categories and the prevalence of psychiatric comorbidities in this population.

Table 1: Sociodemographic Data and Clinical Characteristics of Study Subjects

Age Group	Count	Percentage	Psychiatric Comorbidity Count	Comorbidity Percentage	p-Value
<18	1	0.8	0	0.0	0.533
18-30	23	17.7	7	30.4	
31-45	67	51.5	11	16.4	
46-60	31	23.8	8	25.8	
>60	8	6.2	1	12.5	

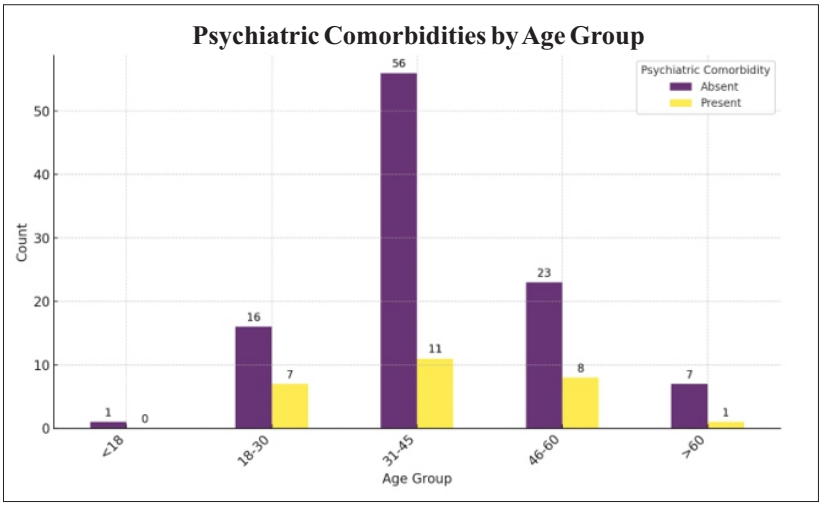

Figure 1: Psychiatric Comorbidities by Age Group

Among the 130 males, **103 (79.2%)** had no psychiatric comorbidities, while **27 (20.8%)** presented with at least one comorbid psychiatric disorder. Given the lack of female participants, no comparisons between sexes could be made.

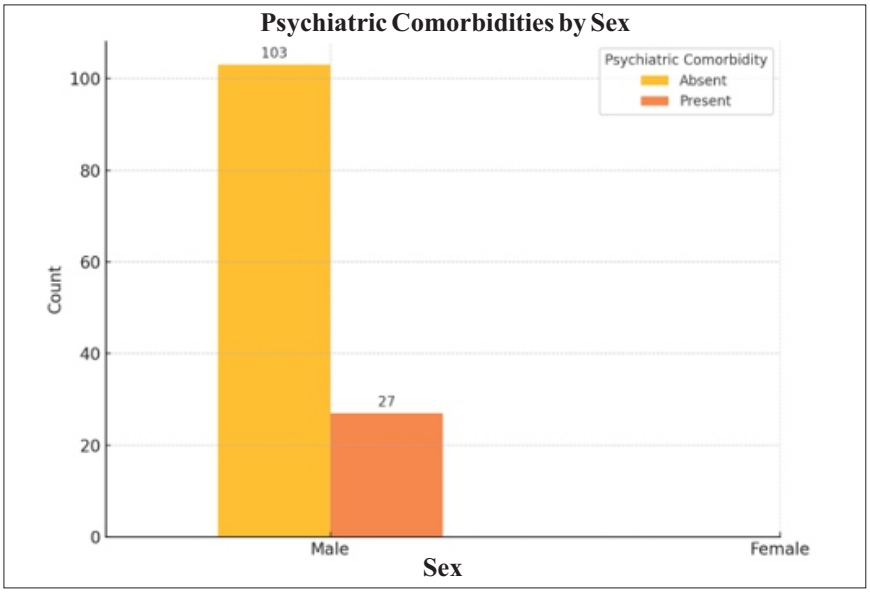

Figure 2: Psychiatric Comorbidities by Sex

The distribution of psychiatric comorbidities among the study population revealed that 20.8% of individuals had at least one psychiatric comorbidity, while 79.2% had no comorbidities. This indicates that a significant minority of the population presents with dual diagnoses, necessitating integrated management approaches.

Table 2: Distribution of Psychiatric Comorbidity

Psychiatric Comorbidity	Count	Percentage
Absent	103	79.2
Present	27	20.8
Total	130	100

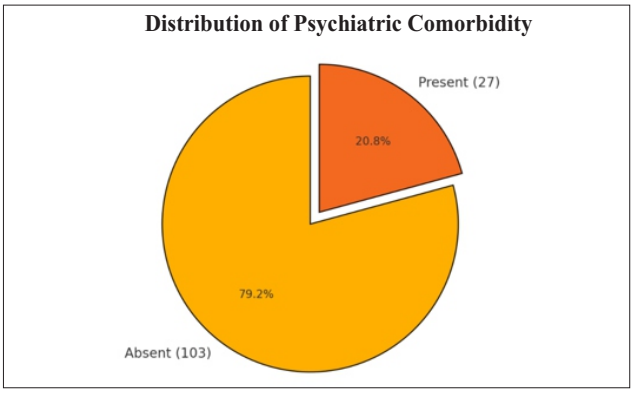

Figure 3: Distribution Among Study Population based on The Presence or Absence of Psychiatric Comorbidity

The analysis of specific comorbid psychiatric disorders among the study population revealed that bipolar affective disorder (BPAD) was the most prevalent, affecting 10.0% of individuals. Major depressive disorder (MDD) was the second most common, observed in 4.6% of participants,followed by anxiety disorder (ANX) at 3.1%. Schizophrenia and delusional disorder were less frequent, with prevalences of 1.5% and 0.8%, respectively. These findings highlight the variability in the prevalence of psychiatric comorbidities, with mood-related disorders being the most prominent among the study subjects.

Table 3: Prevalence of Specific Comorbid Psychiatric Disorders

Disorder	Count	Percentage
Anxiety Disorder	4	3.08
Major Depressive Disorder	6	4.62
Bipolar Affective Disorder	13	10.00
Schizophrenia	2	1.54
Delusional Disorder	1	0.77
Dissociative Disorder	1	0.77
Total	27	20.77

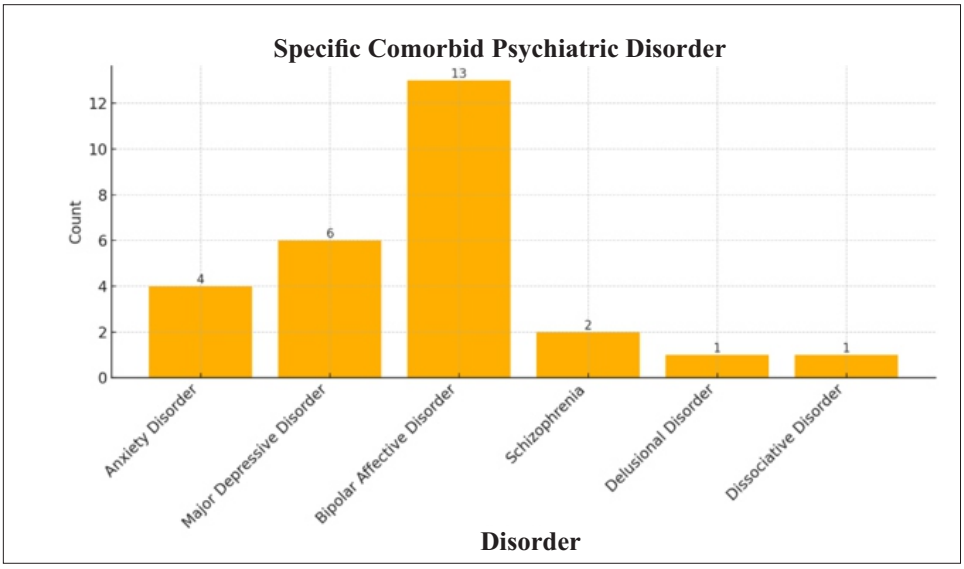

Figure 4: Prevalence of Specific Comorbid Psychiatric Disorder

The analysis of drug-use patterns revealed that alcohol dependence syndrome (ADS) was the most prevalent, affecting 109 individuals, of whom 20.2% had co-morbid psychiatric illnesses. Nicotine dependence syndrome (NDS) was the second most common, with 27.1% of those affected having co-morbidities. Cannabis dependence syndrome (CDS) showed a co-morbidity prevalence of 23.1%, followedby opioid dependence syndrome (ODS) at 16.7%. No co-morbid psychiatric illnesses were observed among individuals with multiple drug dependence syndrome (MDS).

Table 4: Drug Use and Psychoactive Substance Use Variables Associated with Psychiatric Comorbidity

	Without Comorbidity	With Comorbidity	Total	Percentage With Comorbidity
Alcohol Dependence Syndrome	87	22	109	20.18
Nicotine Dependence Syndrome	51	19	70	27.14
Cannabis Dependence Syndrome	10	3	13	23.08
Opioid Dependence Syndrome	5	1	6	16.67
Multiple Drug Dependence Syndrome	3	0	3	0

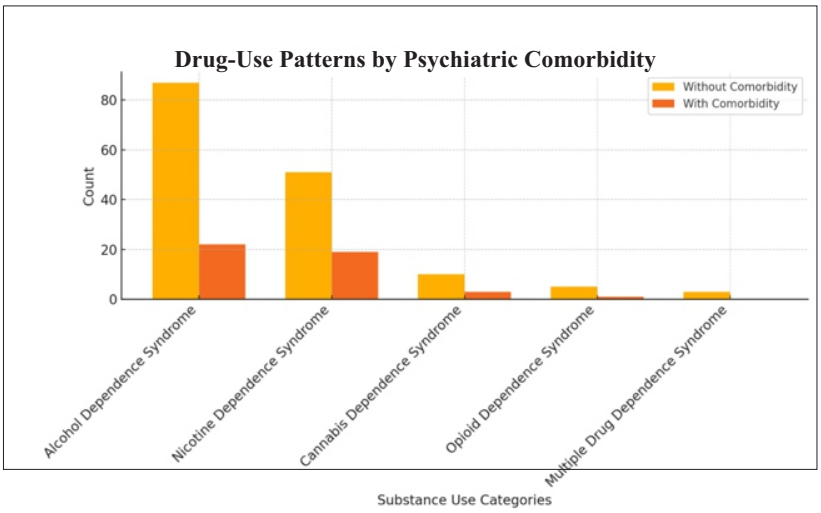

Figure 5: Drug Use and Psychoactive Substance Use Variables Associated with Psychiatric Comorbidity

DISCUSSION

This study examined the prevalence of psychiatric comorbidities among individuals with substance use disorders (SUDs) in a South Indian tertiary care setting. Psychiatric comorbidities were observed in 20.8% of the population, with mood disorders, anxiety disorders, and psychotic disorders being the most prevalent. These findings align with prior research indicating high rates of dual diagnoses in SUD populations, with variability driven by substance type, patient demographics, and clinical settings.

A study by Ravikanth and Sultan (2020) in rural South India reported a 33% prevalence of psychiatric comorbidities among alcohol-dependent individuals, slightly higher than our findings. The difference could stem from varying inclusion criteria, as their study focused solely on alcohol dependence, while ours encompassed multiple substances. Similar studies globally have reported comorbidity rates ranging from 25% to 80%, with the variability attributed to differences in diagnostic methods and cultural contexts[21].

Mood disorders were the most common psychiatric comorbidities in this study, consistent with findings from Indian studies like those by Gauba et al. (2016), which reported a prevalence of 28.75% for affective disorders among alcohol-dependent patients.Ravikanth and Sultan (2020) observed major depressive disorder as the most frequent mood disorder (8%), mirroring our findings. Such disorders are linked to neurobiological disruptions caused by prolonged substance use and underline the necessity of integrating mental health care into addiction treatment[22].

Our study found that anxiety disorders constituted 11% of psychiatric comorbidities, similar to findings by Singh et al. (2005), but lower than the 45% prevalence reported by Gauba et al. (2016). These discrepancies may arise from differences in diagnostic timelines; anxiety disorders can sometimes be substance-induced and resolve during sustained abstinence. Long-term follow-ups could provide a clearer understanding of independent anxiety disorders in SUD populations[23].

Psychotic disorders were less prevalent (4%) compared to mood and anxiety disorders, consistent with studies by Vohra et al. (2003) and others reporting rates between 2% and 7%. This low prevalence reflects the complexity of diagnosing psychotic symptoms in SUD populations, as withdrawal-induced psychosis can mimic independent psychiatric conditions. Our study's diagnostic timing, post-abstinence, minimized such confounding factors[24].

The present study found significant associations between psychiatric comorbidities and the severity of substance use, in line with studies by Subodh et al. (2017). Prolonged substance use exacerbates neurochemical imbalances, contributing to more severe psyc-hiatric manifestations. However, contrary to our findings, some studies, like Malik et al. (2017), did not establish a direct link between the duration of use and comorbidity[25, 26].

Our study revealed a higher prevalence of psychiatric comorbidities among younger individuals and unemployed participants. This finding aligns with Ravikanth and Sultan (2020), where unemployment was significantly associated

with comorbidities. These patterns suggest that socioeconomic stressors exacerbate the risk of dual diagnoses, emphasizing the need for psychosocial interventions alongside clinical treatment[21].

The findings reinforce the need for comprehensive screening and integrated care for patients with SUDs. Given the significant burden of psychiatric comorbidities, tertiary care centers should adopt dual-diagnosis treatment models that address both addiction and mental health. Further, community-based programs focusing on early identification and intervention could reduce the overall burden of SUD-related psychiatric illnesses in India.

CONCLUSION

This study highlights the significant prevalence of psychiatric comorbidities among individuals with substance use disorders (SUDs), particularly mood disorders, anxiety disorders, and psychotic disorders, underscoring the critical need for integrated mental health and addiction care. The findings align with global and regional research, emphasizing the interplay between prolonged substance use, psychiatric conditions, and socioeconomic factors such as unemployment. The associations between psychiatric comorbidities and the severity of substance dependence emphasize the importance of early diagnosis and targeted interventions to mitigate adverse outcomes. Given the variability in prevalence and patterns across studies, this research contributes valuable insights specific to South India, providing a foundation for region-specific clinical strategies and public health policies. Future research should focus on longitudinal assessments and larger, diverse populations to further delineate the dynamic relationship between psychiatric and substance use disorders.

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