

A Retrospective Study of Substance Use Disorders and Associated Psychiatric Comorbidities

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Abstract:

Background: Substance Use Disorders (SUDs) are a significant public health problem and are often accompanied by psychiatric comorbidities that can make diagnoses, treatment, and long-term recovery challenging. It is important to understand the pattern of substance use and psychiatric disorders in order to be able to develop effective management strategies and improve the patient outcomes.

Aim: The present study sought to examine the demographic and clinical characteristics of patients with SUD, their pattern of substance use, prevalence of psychiatric comorbidities, and whether the characteristics of substance use are associated with psychiatric comorbidities.

Methodology: This was a retrospective observational study and was conducted for 1 year in the Department of Psychiatry, Himalaya medical College and hospital, Paliganj, Patna, Bihar, India at a hospital setting. One hundred and ten (110) patient records were retrieved using a structured data extraction format, and analyzed in a retrospective manner. Demographic information, substance of abuse, length of time using the substance, psychiatric diagnoses and treatment information were gathered. IBM SPSS version 26.0 was used for statistical analysis. Descriptive statistics were shown as frequency and percentage, and Chi-square or Fisher's Exact tests were used to determine association, with a statistical significance criterion of $p < 0.05$.

Results: Most of the patients were male (85.45%) and in 30-39 years age group (33.64%). The most commonly reported primary drug of abuse was alcohol (39.09%) and opioids (21.82%). The most common psychiatric comorbidities were depressive disorders (30.91%) and anxiety disorders (23.64%). The type of substance used was significantly associated with psychiatric comorbidity ($\chi^2 = 8.47$, $p = 0.037$), and the duration of substance use was significantly associated with psychiatric comorbidity ($\chi^2 = 9.82$, $p = 0.020$).

Conclusion: Findings from the study showed that psychiatric comorbidities were common amongst people with SUD, especially for those who used substances for a long time or had a history of using more than one. The results emphasize the need for regular psychiatric screening, early psychiatric diagnosis, and multimodal approaches to treatment that involve other disciplines for optimal clinical outcomes and long-term recovery in patients with SUDs.

Keywords: Substance Use Disorders; Psychiatric Comorbidities; Alcohol Dependence; Retrospective Study; Mental Health; Psychiatry.

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Introduction

Drug abuse, including substance use disorders (SUDs), is a serious public health problem that has a high impact on social, mental health, and physical health and family relationships and function [1]. These disorders involve the repeated and excessive use of a variety of psychoactive substances [2]. Such as alcohol, opioids, cannabis, tobacco, stimulants, and other addictive substances, causing a loss of control over the use of the substance, dependence and negative health consequences [3]. International health statistics show that every year millions of

people suffer from substance use disorders, resulting in higher morbidity, premature mortality, disability and significant socio-economic burden [4]. Substance dependence also has a significant impact on health services and society because it leads to elevated health service utilisation, lost productivity, criminal activities, and financial instability [5].

One of the great challenges in the clinical management of substance use disorders is the number of psychiatric conditions that are associated with them [6]. Substance dependence is common

with mental health disorders like depression, anxiety disorders, bipolar affective disorder, psychotic disorders, personality disorders, and sleep disorders [7]. This overlying is frequently difficult to detect in the clinic, can lead to delayed timely intervention, a greater risk of relapse and a negative impact on long-term recovery [8]. Substance use/psychiatric illness is thought to be bidirectional, such that psychiatric illness can lead to substance use, and chronic substance use can lead to or aggravate psychiatric symptoms [9]. Thus, psychiatric comorbidities are an increasingly accepted and crucial part of the treatment of addiction [10].

Substance use and related psychiatric disorders vary by geographical region, healthcare facility and patient populations [11]. Retrospective studies can be done in hospitals to identify trends in treatment outcomes, psychiatric comorbidities, demographics, and substance use, and these studies are valuable from a clinical perspective [12]. These studies contribute to the knowledge of dual diagnosis and aid in designing integrated treatment approaches that enhance patient care and rehabilitation [13].

A retrospective hospital-based observational study was conducted in Department of Psychiatry at Himalaya Medical College and Hospital, Paliganj in Patna, Bihar, India, to assess the pattern of SUDs and psychiatric comorbidities in psychiatric patients [14]. The current study also aimed to evaluate the association of type of substance use and psychiatric comorbidities and to provide evidence that might help in the early identification, full psychiatric evaluation and better management of SUDs patients [15].

Methodology

The current study aimed at retrospectively assessing the pattern of SUDs and psychiatric comorbidities among psychiatric patients. Retrospective record review was used to systematically review hospital case records to determine patient demographic, clinical, substance use, and psychiatric comorbidities. The methodology was designed to be scientifically rigorous, reliable and ethically sound with full confidentiality of patient information.

Study Design: This study was conducted as a retrospective observational study in a hospital setting. This included the review and analysis of previously documented medical records of substance use disorder (SUD)-diagnosed patients. The study was conducted without any contact or treatment of the patients; it was completely based on the existing hospital data. Because of the retrospective design, it allowed for an evaluation of clinical trends, psychiatric comorbidities, and information about treatment over the time period of the study.

Study Area: The study was carried out in Department of Psychiatry, Himalaya Medical College and Hospital, Paliganj, Patna, Bihar, India.

Study Duration: This study was carried out during 1 year.

Study Participants: The subjects were made up of individuals whose medical histories met the preset inclusion criteria.

Inclusion Criteria

- Medical records of patients diagnosed with substance use disorders according to standard psychiatric diagnostic criteria documented by consultant psychiatrists.
- Patients aged 18 years and above.
- Records containing complete demographic information, clinical diagnosis, psychiatric assessment, and treatment details.
- Records documenting at least one confirmed psychiatric evaluation during the study period.
- Patients who had complete documentation regarding the primary substance of abuse and associated psychiatric comorbidities.

Exclusion Criteria

- Medical records with incomplete or missing clinical information.
- Records lacking a confirmed diagnosis of substance use disorder.
- Patients below 18 years of age.
- Duplicate patient records or repeated admissions representing the same clinical episode.
- Records with insufficient documentation regarding psychiatric comorbidity assessment.

Sample Size: A total of 110 records were collected from the patients who met the inclusion criteria. These records were obtained using retrospective review of the hospital records available at the department of psychiatry. It should be noted that only complete records that met the inclusion criteria were used for further analysis.

Procedure: Permission was sought from the relevant departments prior to data collection in order to gain access to anonymized patient data stored at the hospitals under investigation. During data collection, confidentiality was ensured through de-identification of all data points prior to extraction and recording.

A comprehensive review of medical records was carried out utilizing a standardized data extraction sheet designed for this purpose. The following variables were extracted: demographic details (age and gender), as well as clinical parameters including drug of choice, length of drug abuse, psychiatric disorder, any psychiatric co-morbidities present,

previous medication used in treatment, and observations made by the psychiatrist.

Co-existing psychiatric disorders recorded from patients' case sheets included depressive disorders, anxiety disorders, bipolar affective disorders, psychosis, personality disorders, sleep disorders, and other psychiatric illnesses wherever applicable. The psychiatric disorders noted down in the medical records had been diagnosed by trained psychiatrists following clinical protocols.

All data points were then verified for accuracy, coding, and computerized data entry prior to analysis. The process of verification involved identifying inconsistencies or errors before data analysis began.

Statistical Analysis: Data were analysed using the IBM Statistical Package for the Social Sciences (SPSS) software version 26.0. Basic descriptive statistics such as means and standard deviations were used to describe the demographics and clinical profiles of patients in both groups. Continuous variables were presented in terms of means $\pm$ SD, while categorical variables were presented as frequencies (%).

The relationship between substance use disorders and psychiatric comorbidity was assessed through chi-square or Fisher's exact tests depending on the suitability. Independent Samples t-test was utilized to compare continuous variables among different groups. Significance was defined as any value less than 0.05 ($p < 0.05$). A 95% confidence level was maintained throughout the study. The results were illustrated in tables and graphs for better interpretation of retrospective clinical data.

Results

The sociodemographic distribution of the study subjects is provided in Table 1 below. It was found that the highest percentage of subjects (33.64%, $n=37$) had an age range between 30 and 39 years, followed by 26.36% ($n=29$) falling within the category of 18-29 years. Male subjects dominated in the current study population (85.45%, $n=94$), while only 14.55% ($n=16$) were female subjects. Moreover, 55.45% ($n=61$) of the participants were married. Therefore, it may be concluded that substance use disorders.

Table 1: Demographic Characteristics of the Study Participants (N = 110)			
Variable	Category	Frequency (n)	Percentage (%)
Age Group (Years)	18-29	29	26.36
	30-39	37	33.64
	40-49	24	21.82
	≥ 50	20	18.18
Gender	Male	94	85.45
	Female	16	14.55
Marital Status	Married	61	55.45
	Unmarried	39	35.45
	Divorced/Widowed	10	9.10

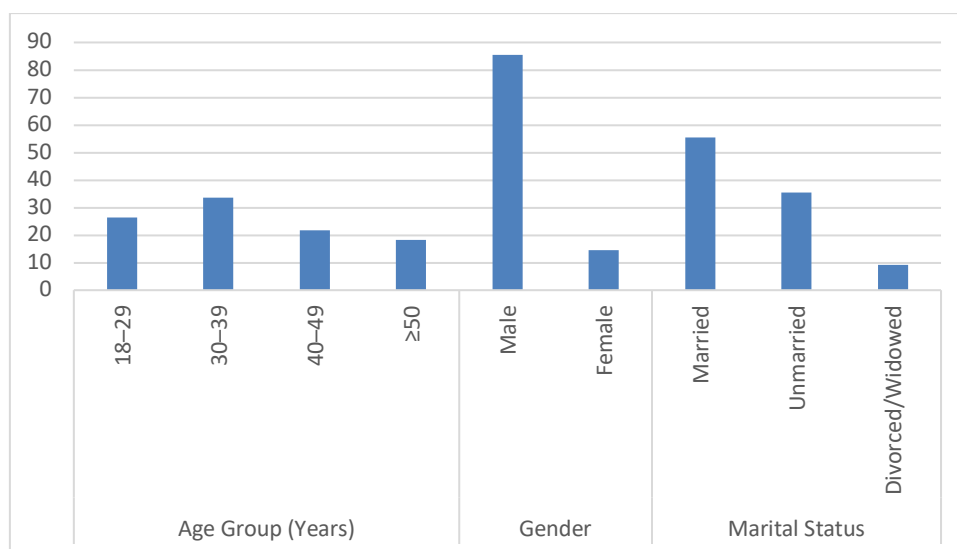


Figure 1: Graphical Representation of Demographic Characteristics of the Study Participants

The distribution of substance use disorders amongst the participants of this study is presented in Table 2 below. It can be observed that alcohol use disorder was diagnosed in 39.09% (n=43) of patients. This finding suggests that alcohol was the most prevalent

substance used by the patients who attended psychiatric clinics. Additionally, opioid dependence occurred in 21.82% (n=24) of cases, followed by cannabis use disorder, which affected 16.36% (n=18) of patients.

Table 2: Distribution of Primary Substance Use Disorders (N = 110)		
Primary Substance	Frequency (n)	Percentage (%)
Alcohol	43	39.09
Opioids	24	21.82
Cannabis	18	16.36
Tobacco (Dependence requiring psychiatric care)	13	11.82
Multiple Substance Use	12	10.91

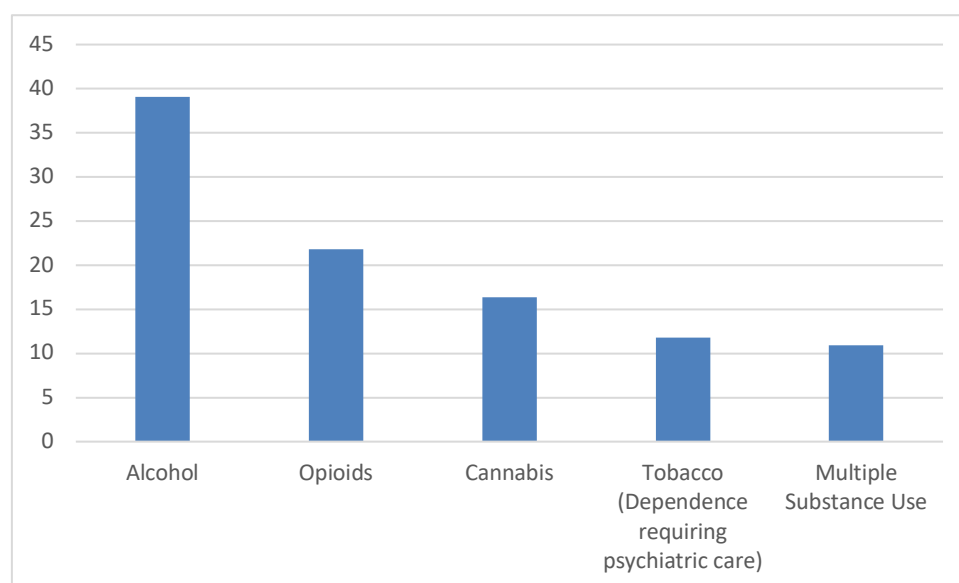


Figure 2: Graphical Representation of Distribution of Primary Substance Use Disorders

Table 3 presents the frequency distribution of psychiatric comorbid conditions among individuals suffering from Substance Use Disorders. The highest prevalence was observed for depressive disorders (30.91%, n=34), whereas anxiety disorders had a prevalence rate of 23.64% (n=26). Bipolar affective disorders and psychotic disorders

affected 12.73% (n=14) and 10.91% (n=12) of the participants, respectively. An insignificant number of individuals (6.36%, n=7) did not suffer from any psychiatric condition, implying that mental disorders were common among the subjects under study.

Table 3: Distribution of Psychiatric Comorbidities among Patients (N = 110)		
Psychiatric Comorbidity	Frequency (n)	Percentage (%)
Depressive Disorders	34	30.91
Anxiety Disorders	26	23.64
Bipolar Affective Disorder	14	12.73
Psychotic Disorders	12	10.91
Personality Disorders	9	8.18
Sleep Disorders	8	7.27
No Psychiatric Comorbidity	7	6.36

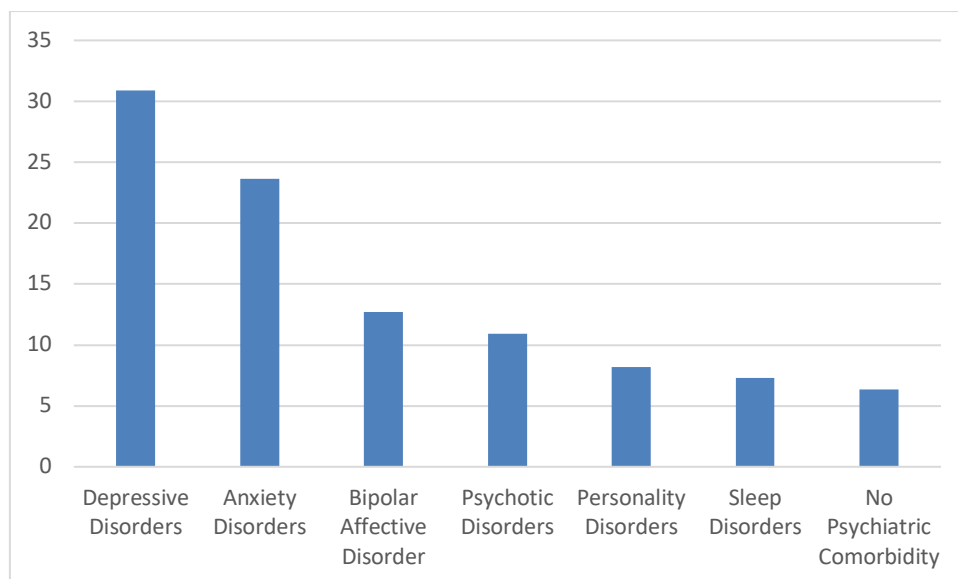


Figure 3: Graphical Representation of Distribution of Psychiatric Comorbidities among Patients

The results presented in Table 4 reveal information regarding the period for which the subjects were engaged in substance use behaviors. The largest percentage of individuals involved in the study (31.82%, n=35) had been using substances between

2-5 years, whereas nearly a similar percentage (29.09%, n=32) was found to be under substance use behaviour between 6-10 years. Almost 22.73% (n=25) had been engaging in such behaviours for more than 10 years.

Table 4: Duration of Substance Use among Patients (N = 110)		
Duration of Substance Use	Frequency (n)	Percentage (%)
Less than 2 years	18	16.36
2-5 years	35	31.82
6-10 years	32	29.09
More than 10 years	25	22.73

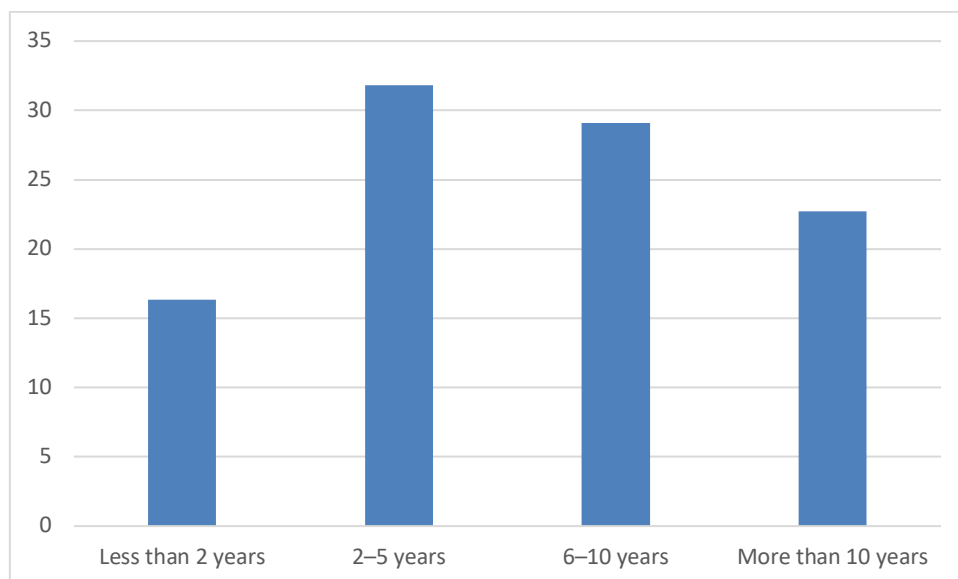


Figure 4: Graphical Representation of Duration of Substance Use among Patients

The data presented in Table 5 provide insights into the relationship between substance use and psychiatric comorbidity. It is worth noting that all patients (100%, n = 12) diagnosed with multiple substance use exhibited psychiatric disorders, while

95.83% (n = 23) of patients suffering from opioid addiction showed signs of psychiatric comorbidity. Additionally, 93.02% (n = 40) of those abusing alcohol exhibited psychiatric disorders. Statistical analysis employing the Chi-square test

demonstrated a statistically significant relationship between substance use and psychiatric comorbidity ($\chi^2 = 8.47$, $p = 0.037$).

Table 5: Association between Primary Substance Use and Presence of Psychiatric Comorbidity (N = 110)						
Primary Substance	Psychiatric Comorbidity Present n (%)	No Psychiatric Comorbidity n (%)	Total	χ^2	p-value	
Alcohol	40 (93.02)	3 (6.98)	43			
Opioids	23 (95.83)	1 (4.17)	24			
Cannabis	16 (88.89)	2 (11.11)	18			
Tobacco	11 (84.62)	2 (15.38)	13			
Multiple Substance Use	13 (100.00)	0 (0.00)	12	8.47	0.037*	

In Table 6, the relationship between substance use duration and comorbid psychiatric disorders has been discussed. Out of 18 patients using substances for less than two years, psychiatric disorders were observed in 77.78%. In contrast, in the case of 6-10 years of substance use duration, the prevalence rate

of psychiatric comorbidity was found to be 96.88% (n=31). Similarly, a very high percentage of psychiatric illness was seen in patients who had used substances for over 10 years (96%, n=24). The correlation was found to be statistically significant ($\chi^2=9.82$, $p=0.020$).

Table 6: Association between Duration of Substance Use and Psychiatric Comorbidity						
Duration of Substance Use	Psychiatric Comorbidity Present n (%)	No Psychiatric Comorbidity n (%)	Total	χ^2	p-value	
Less than 2 years	14 (77.78)	4 (22.22)	18			
2-5 years	32 (91.43)	3 (8.57)	35			
6-10 years	31 (96.88)	1 (3.12)	32			
More than 10 years	24 (96.00)	1 (4.00)	25	9.82	0.020*	

Treatment status of the patients was reviewed using Table 7. Over half of the patients were found to be actively undergoing treatment (50.91%, n = 56), whereas 29.09% (n = 32) had successfully followed up on their treatment. Treatment discontinuation,

however, was reported among 20.00% (n = 22) of the patients. Based on these results, it may be concluded that while most of the patients continued with their mental health treatment, many discontinued their treatment.

Table 7: Distribution of Treatment Status at Record Review (N = 110)		
Treatment Status	Frequency (n)	Percentage (%)
Ongoing Treatment	56	50.91
Regular Follow-up Completed	32	29.09
Treatment Discontinued	22	20.00

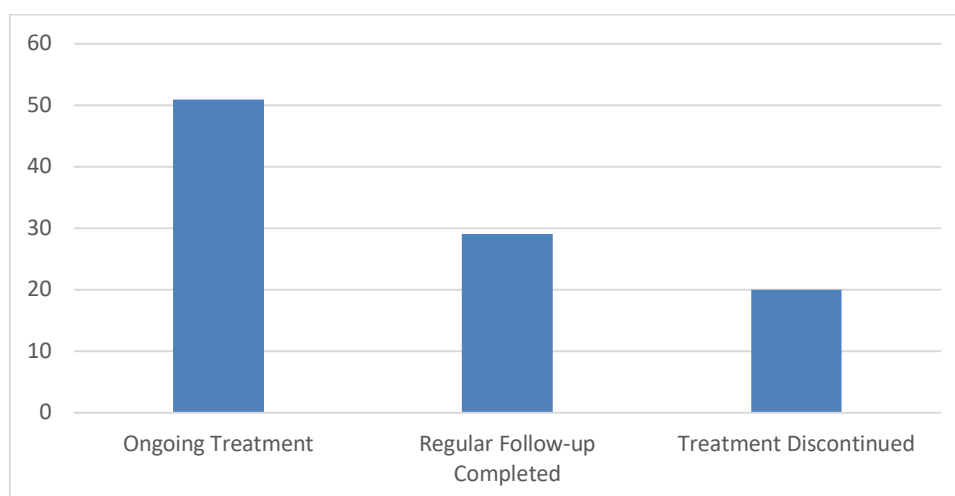


Figure 5: Graphical representation of Distribution of Treatment Status at Record Review

Discussion

Background information obtained during the retrospective review of medical records offered useful insights into the epidemiology of substance use disorders. In terms of gender distribution, it became evident that most patients were males (85.45%). Moreover, substance use disorders were mainly prevalent among adults aged between 30–39 years (33.64%). Additionally, most of the patients included in the sample were either single (37.27%) or married (55.45%). This indicated that substance use disorders primarily impacted economically productive adults with significant familial and societal obligations Swendsen et al. (2010) [16]. With regard to the types of substances utilized by the patients, alcohol was the most common substance (39.09%), followed by opioids (21.82%) and cannabis (16.36%). In relation to the duration of substance use, almost one-third of the patients had used substances for 2–5 years (31.82%), whereas the majority (55.45%) had used substances for more than five years Kimmel et al. (2020) [17]. Based on these results, it could be inferred that substance use disorders generally progressed over many years before specialized psychiatric care was obtained.

One of the main observations made in this study concerned the presence of psychiatric comorbidities in patients diagnosed with substance use disorders Lin et al. (2011) [18]. Specifically, depressive disorders accounted for the largest percentage of all cases (30.91%), followed by anxiety disorders (23.64%), bipolar affective disorder (12.73%), and psychotic disorders (10.91%). Less than one-tenth (6.36%) of the subjects did not suffer from any psychiatric comorbidities. These findings indicated that psychiatric disorders were highly prevalent among individuals with substance use disorders Butwicka et al. (2017) [19]. This suggested the existence of bidirectional relationships between substance use disorders and mental illnesses, where psychiatric conditions may predispose patients to higher risks of substance abuse and vice versa. Thus, it was imperative to consider comprehensive psychiatric assessments in the diagnosis and management of patients with substance use disorders.

Statistical analysis of clinical features revealed several significant associations with psychiatric comorbidity. Specifically, there were extremely strong correlations between the presence of psychiatric comorbidities and multiple substance use (100.00%), use of opioids (95.83%), and use of alcohol (93.02%). In addition, there were strong positive correlations between psychiatric comorbidities and extended periods of substance use Nock et al. (2010) [20]. As the duration of substance use increased, the percentage of patients with psychiatric disorders rose from 77.78% among patients who had used substances for less than two

years to 96.88% among patients who had consumed substances for 6–10 years. Statistical tests confirmed the presence of statistically significant differences between psychiatric comorbidity and type of substance ($\chi^2 = 8.47$, $p = 0.037$), and psychiatric comorbidity and duration of substance use ($\chi^2 = 9.82$, $p = 0.020$).

Conclusion

A retrospective analysis found that substance use disorders affected primarily male adult patients with alcohol as the most commonly abused substance. It became evident that there is a high incidence of psychiatric co-morbidities, especially involving depression and anxiety disorders, in patients suffering from substance use disorders. This evidence points towards the high occurrence rate of psychiatric conditions alongside substance use disorders, making it crucial for clinicians to consider mental health concerns during the assessment process. Moreover, there was statistical significance between different types of substances, duration of abuse, and occurrence of psychiatric co-morbidities, suggesting that more severe cases of substance use disorders correlate strongly with greater incidences of psychiatric illness. It implies that patients with complex histories of substance abuse should receive additional attention regarding psychiatric screening and treatment planning to enhance patient care and alleviate medical burden.

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