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# Study of Substance Use Disorder in Admitted Patients in Medicine, Surgery and Obstetrics and Gynaecology Department in KDMC Mathura

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## ABSTRACT

**Background:** Substance Use Disorder (SUD) is a chronic and relapsing condition characterized by compulsive use of psychoactive substances despite harmful consequences. It affects brain function, behavior, and leads to physical dependence, tolerance, and withdrawal symptoms. Commonly misused substances include alcohol, nicotine, opioids, cannabis, and sedatives. SUD is known to cause a wide range of medical, psychological, and social issues. This study aimed to examine the prevalence, types, and severity of SUD among patients admitted to the Medicine, Surgery, and Obstetrics & Gynaecology departments at a tertiary care hospital in Mathura.

**Methods:** A cross-sectional study was conducted in the Department of Psychiatry at Kanti Devi Medical College and Hospital, Mathura. Admitted patients with suspected substance use were screened using MINI PLUS SCREEN version 7.0.2. Confirmatory diagnosis and psychiatric comorbidity were assessed using relevant modules of the Mini International Neuropsychiatric Interview (MINI).

**Results:** SUD was identified in a considerable proportion of the study population. The highest prevalence was observed in the Medicine department, followed by Surgery and Obstetrics & Gynaecology. A statistically significant association was found between SUD and the type of medical illness, with chronic conditions showing higher prevalence. Sociodemographic factors such as marital status, religion, and place of residence did not show significant correlations with psychiatric morbidity.

**Conclusion:** SUD is notably prevalent among hospitalized patients, especially those with chronic illnesses. Findings highlight the need for routine psychiatric screening across all clinical departments to enable timely diagnosis and integrated management of substance use in general hospital settings.

**Key-words:** Psychiatric comorbidity; Prevalence; Alcohol use disorder; Depression; Anxiety

## INTRODUCTION

Substance use disorder (SUD) is a chronic, relapsing medical condition marked by compulsive drug or alcohol use despite adverse consequences. It affects brain function, behavior, and overall psychosocial functioning, often leading to tolerance, withdrawal symptoms, and loss of control over substance use [1].

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The most commonly abused substances include alcohol, tobacco, opioids, cannabis, stimulants, and sedatives [2].

In India, the prevalence of substance use has increased significantly over the past two decades. According to the National Survey on Extent and Pattern of Substance Use in India (2019), approximately 14.6% of individuals aged 10–75 years reported alcohol use, with a substantial proportion meeting criteria for dependence [3]. Furthermore, SUD often coexists with psychiatric and medical illnesses, complicating diagnosis, treatment, and prognosis [4].

Despite its widespread presence, SUD remains underdiagnosed and underreported in hospital settings due to social stigma, lack of awareness, inadequate

 

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training of healthcare providers, and the absence of routine screening measures [5]. This underrecognition results in missed opportunities for early intervention and integrated care.

Previous studies have revealed that general hospital inpatients—especially those admitted in Medicine and Surgery—frequently present with psychiatric symptoms, including depression, anxiety, and substance abuse, though these conditions often remain untreated [6]. Young adults, particularly in the 20–40-year age group, are notably vulnerable due to psychosocial stressors and evolving lifestyle habits [7]. Additionally, gender-based disparities have also been observed, with females being more likely to present with mood disorders and males with substance-related conditions [8].

This study aims to explore the prevalence, pattern, and clinical profile of substance use disorders among inpatients admitted to the Medicine, Surgery, and Obstetrics & Gynaecology departments at a tertiary care hospital, thereby identifying associations with medical diagnoses and demographic factors to support early detection and treatment planning.

## MATERIALS AND METHODS

A cross-sectional study was designed to determine the prevalence, pattern, and clinical profile of substance use disorder in patients admitted to the Medicine, Surgery, and Obstetrics/Gynaecology departments of Kanti Devi Medical College, Hospital and Research Center, Mathura. This study was a collaborative project between the Psychiatry Department and the above-mentioned departments.

Data collection occurred over 12 months, followed by a 6-month analysis phase, resulting in an 18-month study duration.

### Inclusion Criteria

- Patient and caregivers who gave written and informed consent
- Adult Participant aged 18 years and above
- Patient well oriented to Time, Place and Person as confirmed by Glasgow Coma Scale
- Pain Scale (Visual Analogue Scale) rating less than 5
- Patient admitted in Medicine, Surgery and Obstetrics/Gynecology Department in KDMC, Mathura.
- Patient admitted for at least 24 hours.

### Exclusion Criteria

- Participants who refused to give consent
- Patient less than 18 yrs of age
- Known case of Any Psychiatric illness
- Patient admitted in strict isolation by treating Doctor
- Patient admitted to Intensive Care
- Patient kept under observation without admission

The desired sample size was reached through a consecutive sampling approach, where all patients who met the study's inclusion criteria were selected from the inpatient wards of the Medicine, Surgery, and Obstetrics/Gynaecology departments at Kanti Devi Medical College, Hospital and Research Center, Mathura. Data was collected via daily interviews with 9 to 15 patients until the sample size was achieved.

**Study Procedure-** The MINI PLUS SCREEN 7.0.2 was used as a primary screening tool for all patients, irrespective of pre-existing psychiatric conditions. Those who screened positive for any psychiatric symptoms were then examined in greater detail using the Mini-International Neuropsychiatric Interview (MINI) modules. The initial evaluation was conducted by the researcher and then independently validated by senior clinicians.

**Glasgow Coma Scale-** This scale was employed to determine the patient's level of consciousness. The assessment was based on evaluations of motor responses, eye-opening responses, and verbal responses.

**Visual Analog Pain Scale-** A psychometric tool was used to measure the varying intensity of pain experienced by the patients.

**Statistical Analysis-** Data, after being collected, was recorded within MS Excel. To fulfill the study's objectives, the data was then processed and interpreted, with the use of tables and graphs generated by appropriate software. Descriptive analysis, which included the determination of means, standard deviations, and rates, was carried out, and appropriate statistical tests were utilized for analysis. Statistical significance was determined at p-value<0.05.

 

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**RESULTS**

Alcohol use disorder was seen in 16.0% (n=49) of patients, whereas 84.0% (n=257) did not have this condition. Substance use disorder was diagnosed in 39.2% (n=124) of the patients, while 60.8% (n=182) did not report substance use. Among the 124 patients with substance use disorder, the most common addiction was use of tobacco products, 98.4% (n=122), followed by cannabis, 10.5% (n=13). Other substances included opioids 1.6% (n=2), steroids 0.8% (n=1), and injectables 0.8% (n=1) (Table 1).

**Table 1:** Distribution of Patients According to Alcohol and Other Substance Use Disorders and Type of Addiction (n=306)

| Substance Use Category | Frequency (n) | Percentage (%) |
|---|---|---|
| Alcohol Use Disorder | | |
| Present | 49 | 16.0 |
| Absent | 257 | 84.0 |
| Substance Use Disorder (excluding alcohol) | | |
| Present | 124 | 39.2 |
| Absent | 182 | 60.8 |
| Type of Addiction (among SUD cases, n=124) | | |
| Tobacco Products | 122 | 98.4 |
| Cannabis | 13 | 10.5 |
| Opioids | 2 | 1.6 |
| Steroid | 1 | 0.8 |
| Injectable | 1 | 0.8 |

Table 2 indicates statistical significance i.e. $p<0.05$. The analysis revealed a statistically significant relationship ($p<0.001$) between the admitting department and the presence of psychiatric disorders. The Medicine department recorded the greatest number of psychiatric cases (104), followed by Surgery (93), and Obstetrics & Gynaecology (41). A similarly significant association ($p<0.001$) was observed between age groups and the incidence of psychiatric disorders. The 20–40-year age group exhibited the highest prevalence (98 individuals), followed by the 40–60 and ≥60-year age groups, each with 63 cases, while the lowest prevalence was observed among patients below 20 years of age (14 individuals). Furthermore, a statistically significant association ($p<0.001$) was found between gender and psychiatric diagnoses, with female participants (124) showing a slightly higher number of psychiatric disorders compared to male participants (114).

**Table 2:** Association of Department, Age Group, and Gender with Psychiatric Disorders (n=306)

| Variable | Category | Psychiatric Disorder Present | Psychiatric Disorder Absent | $\chi^2$ Value | df | p-value |
|---|---|---|---|---|---|---|
| Department | Obstetrics & Gynaecology | 41 | 31 | 23.8 | 2 | <0.001 |
| | Medicine | 104 | 18 | | | |
| | Surgery | 93 | 19 | | | |
| Age Group | < 20 years | 14 | 8 | 18.8 | 3 | <0.001 |
| | 20–40 years | 98 | 44 | | | |
| | 40–60 years | 63 | 7 | | | |

 

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|---|---|---|---|---|---|---|
| | ≥ 60 years | 63 | 9 | | | |
| Gender | Female | 124 | 53 | 14.5 | 1 | <0.001 |
| | Male | 114 | 15 | | | |

No statistically significant association was found between place of residence and psychiatric disorders (p=0.17). Among rural residents, 132 patients had psychiatric disorders, while 106 urban residents were similarly affected. Likewise, religion did not show any significant association with psychiatric morbidity (p=0.54). The majority of cases were among Hindu patients (n=223), followed by Muslims (n=14) and a single case among Sikhs (n=1) (Table 3).

**Table 3:** Association of Residence and Religion with Psychiatric Disorders (n=306)

| Variable | Category | Psychiatric Disorder Present | Psychiatric Disorder Absent | $\chi^2$ value | df | p-value |
|---|---|---|---|---|---|---|
| Residence | Rural | 132 | 44 | 1.85 | 1 | 0.17 |
| | Urban | 106 | 24 | | | |
| Religion | Hindu | 223 | 66 | 1.22 | 2 | 0.54 |
| | Muslim | 14 | 2 | | | |
| | Sikh | 1 | 0 | | | |

A statistically significant association (p<0.001) was observed between occupation and psychiatric disorders. The highest number of psychiatric cases was seen among employed individuals (n=123), followed by homemakers (n=91), students (n=15), retired individuals (n=5), and the unemployed (n=4). In contrast, marital status did not show a statistically significant relationship with psychiatric morbidity (p=0.385). Most cases were among married individuals (n=211), with lower numbers among the unmarried (n=25), widowed (n=1), and divorced (n=1) (Table 4).

**Table 4:** Association of Occupation and Marital Status with Psychiatric Disorders (n=306)

| Variable | Category | Psychiatric Disorder Present | Psychiatric Disorder Absent | $\chi^2$ Value | df | p-value |
|---|---|---|---|---|---|---|
| Occupation | Homemaker | 91 | 42 | 22.8 | 4 | <0.001 |
| | Employed | 123 | 14 | | | |
| | Student | 15 | 10 | | | |
| | Retired | 5 | 1 | | | |
| | Unemployed | 4 | 1 | | | |
| Marital Status | Married | 211 | 56 | 3.04 | 3 | 0.385 |
| | Unmarried | 25 | 12 | | | |
| | Widow | 1 | 0 | | | |
| | Divorcee | 1 | 0 | | | |

A statistically significant association (p<0.001) was observed between the department of admission and the presence of substance use disorder. The highest number of substance use disorder cases was recorded in the Medicine department (n=65), followed by the Surgery department (n=50), and the Obstetrics & Gynaecology department (n=9). Similarly, a significant relationship (p<0.001) was found between the type of medical illness and substance use disorder. Among the patients with chronic illnesses, 99 cases of substance use disorder were reported, compared to 25 cases among those with acute illnesses (Table 5).

 

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**Table 5:** Association of Department of Admission and Type of Medical Illness with Substance Use Disorder (n=306)

| Variable | Category | Substance Use Disorder Present | Substance Use Disorder Absent | $\chi^2$ Value | df | p-value |
|---|---|---|---|---|---|---|
| Department | Obstetrics & Gynaecology | 9 | 63 | 32.5 | 2 | <0.001 |
| | Medicine | 65 | 57 | | | |
| | Surgery | 50 | 62 | | | |
| Medical Illness Type | Acute | 25 | 92 | 28.8 | 1 | <0.001 |
| | Chronic | 99 | 90 | | | |

## DISCUSSION

This study reinforces the growing burden of substance use disorder (SUD) in general hospital settings, with 39.2% of the total patients showing evidence of SUD [9]. Among these, tobacco was the most commonly used substance (98.4%), followed by cannabis, opioids, steroids, and injectables. The predominance of tobacco use reflects its wide accessibility, cultural acceptability, and underestimation of its psychiatric impact, particularly in semi-urban and rural communities [10].

A statistically significant association was observed between the department of admission and the presence of substance use disorder (p<0.001). The Medicine department recorded the highest number of SUD cases (n=65), followed by Surgery (n=50) and Obstetrics & Gynaecology (n=9) [11]. This pattern supports previous studies, which found that medical inpatients often present with psychiatric comorbidities, particularly SUD, due to underlying chronic medical conditions and long-term pharmacological exposures [12].

Chronic medical illness was significantly associated with substance use disorder in this study. Among 124 patients with SUD, 99 had chronic illnesses compared to 25 with acute illnesses [13]. The psychological and physical burden of chronic disease, including persistent pain, emotional stress, and prolonged treatment, may lead patients to adopt maladaptive coping mechanisms such as substance use [14].

Age group analysis revealed the highest psychiatric morbidity in the 20–40-year age group (46.4%). This finding aligns with the pattern observed in previous studies where younger adults displayed higher rates of anxiety, depression, and substance use due to occupational stress, family responsibilities, and relationship conflicts [15]. The vulnerability of this age group calls for focused screening and early intervention approaches in general hospital settings.

Gender-wise comparison showed a higher prevalence of psychiatric disorders in female patients (57.8%) than in males (42.2%). This is consistent with earlier findings suggesting that women are more prone to mood disorders due to hormonal variations, caregiving burdens, and societal pressures [16]. Conversely, men may underreport psychological symptoms or present predominantly with substance-related conditions [17].

Furthermore, a significant relationship was observed between employment status and psychiatric diagnosis (p<0.001), with the highest number of cases reported among employed individuals, followed by homemakers and students. The absence of significant association with marital status, residence, or religion mirrors previous Indian studies that found such sociodemographic factors to be less predictive than medical or psychological variables in hospital-based psychiatric morbidity [18].

Overall, the findings highlight the urgent need for structured screening protocols, liaison psychiatry services, and integrated intervention models in general hospital settings. Special attention should be given to young adults, chronically ill patients, and those admitted to Medicine and Surgery departments, where the psychiatric burden appears to be highest.

## CONCLUSIONS

The research reveals a considerable rate of psychiatric comorbidities among patients in hospital settings, highlighting substance use disorders (39.2%) as the most frequent diagnoses. On the other hand, substance use disorder was significantly associated with the department of admission and type of medical illness, with the highest prevalence among those admitted to the Medicine department and those suffering from chronic illnesses. However, no significant associations were found with residence (rural/urban), religion, or marital status regarding psychiatric morbidity.

 

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