



## FREQUENCY OF SUBSTANCE ABUSE IN PATIENTS PRESENTING TO THE EMERGENCY DEPARTMENT WITH SUICIDE ATTEMPT AT ABBASI SHAHEED HOSPITAL, KARACHI

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### ABSTRACT

**Aim:** To determine the frequency of substance abuse in patients presenting to the emergency department with suicide attempt at Abbasi Shaheed Hospital, Karachi.

**Methodology:** This study is a descriptive cross-sectional study conducted at Abbasi Shaheed Hospital, Karachi, in patients aged between 20-50 years presenting to the emergency department following a suicide attempt. This study consisted of 107 male and female patients. Inclusion criteria were patients' history of a suicide attempt and exclusion criteria were schizophrenia, mania, major depressive disorder, cognitive, personality disorder or prior suicide attempts. Data collection involved structured interviews and medical records review. Frequencies were calculated for types of substance abuse and the use of descriptive statistics. Data were analyzed using SPSS version 26.0.

**Results:** The participants were 107 in numbers with a mean age of 36.53 years, comprising of (62) male: (45) female with gender distribution being (57.9%): (42.1%) respectively Mood disorders (32.7%) were the most common diagnosis followed by anxiety disorders (19.6%). Psychiatric disorders were present in 21.5% of the participants and 12.1% had a substance use disorder. Personality disorders occurred in 7.5%, schizophrenia in 6.5%, organic mental disorders in 2.8% and other psychotic disorders in 4.7%. There were 13 patients (12.1%) with a history of substance use.

**Conclusion:** The results indicated that a notable proportion of these patients had a history of substance use. Additionally, mood disorders were the most common diagnosis, followed by anxiety disorders, and a significant number of participants had various psychiatric disorders. These findings underscore the importance of addressing substance abuse as a critical factor in the management and prevention of suicide attempts.

**Keywords:** Abuse, Attempt, Substance, Suicide, Prevalence

## INTRODUCTION

Approximately 40% of people seeking treatment for substance use disorder (SUD) had made suicide attempts at some point in their lives [1-2]. Suicide attempts among individuals with Substance Use Disorder (SUD) can be partially attributed to a tumultuous life situation characterised by insecure housing and living arrangements, intense substance abuse, violence, physical and emotional trauma, and the presence of other mental health issues [3-4]. Engaging in suicide attempts can potentially result in suicide, making it a significant clinical issue among this specific group of patients [5]. There is a limited amount of research available on the frequency of suicide attempts across different populations with Substance Use Disorders (SUD), and there is a significant absence of attention given to the importance of related risk factors [6].

Mental health issues are the predominant and extensively studied risk factor linked to suicidal thoughts, suicide attempts, and completed suicide. Approximately 90% of those who die by suicide fulfilled the diagnostic criteria for one or more psychiatric illnesses [7]. Individuals who engage in alcohol and/or drug addiction, or have a dependency on these substances, are roughly six times more likely to attempt suicide compared to those who do not abuse such substances. The suicide mortality rate is 2 to 3 times greater among individuals with addiction compared to males without addiction. Among the female population. Substance use significantly elevates the likelihood of suicide by 6.5 to 9 times in comparison to women who do not have addiction issues [8-9].

Typically, individuals with drug addiction often try to end their lives by intentionally consuming an excessive amount of drugs, known as an overdose, or by combining drugs with pills. However, there are certain instances where the method used for suicide is not directly linked to drug usage [10]. While there is a correlation between drug abuse disorder and suicidal behaviour, it is important to note that a significant proportion of individuals with addiction issues will not make any suicide attempts. Therefore, it is crucial to identify persons who have the condition resulting from substance use and who may be more prone to suicide [11-12].

Several risk factors associated with suicide in the general population are equally applicable to those with substance use disorders. Another crucial aspect to consider in relation to suicide attempts is the specific substance employed. Heroin and sedatives are the substances most commonly used in suicide attempts, while other drugs are less frequently involved [13]. Individuals with suicidal tendencies often exhibit certain emotional and behavioural issues that significantly impact their actions, particularly through impulsive responses and a lack of behavioural control [14]. In their study, Pooja et al discovered that the prevalence of substance addiction among patients who attempted suicide was 11.2% [15].

Owing to legal and religious ramifications, the incidence of attempted suicides in Pakistan is not accurately documented. However, it is crucial to gather precise statistics in order to analyse and mitigate the factors contributing to this grave national crisis. The issue of substance misuse as a precursor to suicide is significantly overlooked and little studied in Pakistan. The objective of this study was to examine the prevalence of substance usage among individuals who had attempted suicide. This information can assist clinicians in providing more effective counselling and treatment to patients, as well as developing preventive measures.

## METHODOLOGY

This descriptive cross-sectional study was conducted in the Department of Psychiatry Department Abbasi Shaheed Hospital Karachi from May 2023 to November 2023, and aim is to find out the frequency of substance abuse among patients admitted following suicide attempt in Emergency Dept. This study included 107 patients, aged between 20 and 50 years, regardless of gender meeting the inclusion criteria.

Excluded were those with a history of schizophrenia, mania, major depressive disorder, cognitive disorder or personality disorder and who had attempted suicide.

Eligible patients will be recruited through the emergency department (ED) on arrival before obtaining informed consent. A structured questionnaire will be used to categorize the demographic data (age, sex, residence status, family monthly income, occupation status, marital status, educational history) and family background substance usage.

The data collection will be mainly aimed at determining the status of substance abuse amongst the patients. A questionnaire will be specifically designed to ask patients what substances they have been abusing along with the frequency.

The data should be analyzed by SPSS Version 26.0 software. Descriptive statistics including mean and standard deviation will be reported for age and duration of substance use.

Frequencies and percentages will be performed for gender, residence status, family monthly income, occupational status, marital status, educational background, family history of substance abuse and substance abuse status. Statistical test of significance will be used at 5% level of significance.

## RESULTS

The study reveals a broad distribution of participants from various age groups with the largest proportion found in the cohort that are between the ages of 18 and 25 years (43.9 %) followed by those who are over 50 years (20.6% of sample). The data are skewed slightly male (57.9% of participants vs 42.1% female) & also by self-reported geographic location; the majority of participants were from the Central district (43.9%), followed by the South (26.2%), West (19.6%) and finally East district (10.3%). There were almost equal numbers of married and unmarried participants (45% each) with fewer divorced or widowed. A history of substance use in the family was reported in (13.1%). Regarding income 65.4% with a monthly family income of less than 50000 and 34.6% earning more than 50000 in family income per month. **(TABLE 1)**

These findings suggest a substantial burden of mental health disorders in the study participants. The most frequent conditions are mood disorders 32.7%, followed by anxiety disorders at 19.6%. In total, 21.5% of participants have a comorbid psychiatric disorder, and 12.1% have substance use disorder. Infrequent are personality and schizophrenia disorders at 7.5%, 6.5% respectively organic mental disorder in 2.8 %, and other psychotic disorders for 4.7%. **(FIGURE 1)**

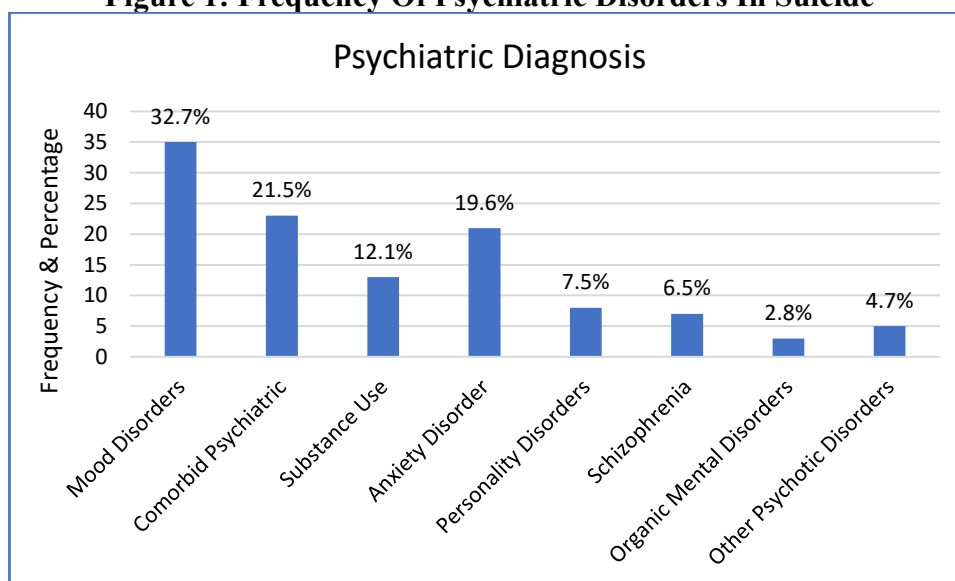
The analysis of psychiatric diagnoses by gender reveals interesting trends within the study population. While there were no significant gender differences observed in the prevalence of mood disorders ( $p = 0.889$ ), comorbid psychiatric disorders ( $p = 0.241$ ), personality disorders ( $p = 0.397$ ), schizophrenia ( $p = 0.626$ ), organic mental disorders ( $p = 0.622$ ), or other psychotic disorders ( $p = 0.652$ ), significant differences were found in the prevalence of anxiety disorders ( $p = 0.001$ ) and substance use disorders ( $p = 0.150$ ). Specifically, anxiety disorders were more prevalent among females (61.9%) compared to males (38.1%), while substance use disorders were more common among males (76.9%) compared to females (23.1%). **(TABLE 2)**

**Table 1. Demographic Characteristics Of Study Population**

DEMOGRAPHIC DATA		FREQUENCY	PERCENTAGE
Age Group	18 – 25 Years	47	43.9%
	26 – 30 Years	14	13.1%
	31 – 35 Years	4	3.7%
	36 – 40 Years	6	5.6%
	41 - 50 Years	14	13.1%
	> 50 Years	22	20.6%
Gender	Male	62	57.9%
	Female	45	42.1%
District	South	28	26.2%
	East	11	10.3%

	West	21	19.6%
	Central	47	43.9%
<b>Marital Status</b>	Married	49	45.8%
	Unmarried	48	44.9%
	Divorced	5	4.7%
	Widowed	5	4.7%
<b>Family History of Substance Use</b>	Positive	14	13.1%
	Negative	93	86.9%
<b>Family Monthly Income</b>	<50,000	70	65.4%
	≥50,000	37	34.6%

**Figure 1: Frequency Of Psychiatric Disorders In Suicide**



**Table 2. Comparison Of Psychiatric Diagnosis Of Patients With Gender**

Psychiatric Diagnosis n (%)	Male (N=) n (%)	Female (N=) n (%)	Total n (%)	P-value
Mood Disorders	20 (57.1%)	15 (42.9%)	35 (32.7%)	0.889
Comorbid Psychiatric	11 (47.8%)	12 (52.2%)	23 (21.5%)	0.241
Substance Use	10 (76.9%)	3 (23.1%)	13 (12.1%)	0.150
Anxiety Disorder	8 (38.1%)	13 (61.9%)	21 (19.6%)	0.001
Personality Disorders	4 (50.0%)	4 (50.0%)	8 (7.5%)	0.397
Schizophrenia	4 (57.1%)	3 (42.9%)	7 (6.5%)	0.626
Organic Mental Disorders	2 (66.7%)	1 (33.3%)	3 (2.8%)	0.622
Other Psychotic Disorders	3 (60.0%)	2 (40.0%)	5 (4.7%)	0.652

## DISCUSSION

The prevalence of substance use among patients seeking treatment for overdose and/or attempted suicide in the Emergency Department (ED) is a pressing issue for both primary care and public health. The occurrence of suicidal behaviour is impacted and moderated by the presence or absence of a range of risk and protective factors. Despite limited knowledge regarding the impact of substance usage on the characteristics and progression of suicidal behaviour. The link between the severity and management of suicide development has received less attention [16]. Acquiring this knowledge is essential for developing more effective intervention and treatment options for persons who are at risk.

There is a strong correlation between substance misuse and suicidal behaviour, as indicated by numerous research studies. Studies have indicated that those who have drug use disorders have a higher likelihood of dying by suicide compared to those who do not have these issues. The range of numbers is from 17 to 18. The use of substances, such as alcohol, opioids, benzodiazepines, and illicit drugs, affects decision-making and promotes impulsive behaviour. This can further complicate underlying psychiatric disorders, perhaps contributing to suicidal thoughts or actions.

Substance abuse rates are already elevated among patients who arrive at the emergency department after a suicide attempt. History of substance usage and drug tests conducted before arrival at the hospital Multiple studies have indicated that a substantial proportion (95%) of these patients experience issues with substance abuse [19,20]. For instance, certain research indicate that 40-60% of individuals who attempt suicide also have a coexisting substance use illness [19-21].

The complex interconnections between emergency department/outpatient facility network providers and the influence of concurrent substance abuse and suicidal behaviour present inherent difficulties in the emergency department. Individuals who engage in suicidal behaviour with substances may necessitate the expertise of addiction professionals and necessitate hospitalisation for interventions such as detoxification and substance abuse therapy. The existence of substances can further complicate the evaluation and management of patients with suicidal conduct by imitating mental symptoms or concealing underlying concerns from attending clinicians.

Moreover, substance addiction can impact the choice and efficacy of therapies for suicidal behaviour. This encompasses pharmaceuticals utilised in the treatment of substance use disorders that may potentially interact with psychiatric medications or impact the metabolism of substances often employed in suicide attempts. An essential approach is the implementation of integrated treatment that specifically targets the co-occurrence of substance abuse and suicidal behaviour.

Furthermore, the utilisation of substances by individuals who arrive at the emergency department after a suicide attempt typically indicates underlying issues in their psychological circumstances, whether from traumatic events, interpersonal disputes, or financial hardships. These characteristics may increase the likelihood of an individual developing both substance addiction disorder and engaging in suicide behaviour [22]. Hence, it is imperative to conduct a thorough examination of the individual's psychosocial background in order to ascertain the root causes and determine the most suitable therapeutic strategy.

According to our findings, a total of 13 individuals, accounting for 12.1% of the sample, reported substance usage. In the study conducted with ADI, the prevalence of substance addiction was determined to be 11.2% [15], although another study found it to be 4% [23]. Another study [13] reported that 59% of the patients in the article by Tadros A, et al. were also using at least one substance. A study revealed that 56% of males and 46% of females were found to have substance addiction issues [24].

An alarming finding among patients treated following a suicide attempt in the emergency room is the high prevalence of alcohol and substance misuse, which has significant implications for both patient care and public health. Substance use increases the likelihood of suicide thoughts and behaviours and may impact how they are assessed and treated in the emergency department. A multi-disciplinary team must convene to address the diverse medical, psychological, and substance abuse needs of these patient populations. Furthermore, incorporating measures to deter and address substance misuse and its detrimental consequences can contribute to a comprehensive approach aimed at reducing suicide rates. Further investigation is required to gain a more thorough comprehension of the intricate relationship between substance use and suicidal behaviours, as well as to provide guidance for the creation of therapies targeted at treating these interconnected issues.

## CONCLUSION

The results indicated that a notable proportion of these patients had a history of substance use. Additionally, mood disorders were the most common diagnosis, followed by anxiety disorders, and a significant number of participants had various psychiatric disorders. These findings underscore the importance of addressing substance abuse as a critical factor in the management and prevention of suicide attempts.

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