The Unseen Threat: Prevalence of Suicidal Risk among Substance Use Patients

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Abstract

Background: Background: Substance Use Disorders are serious medical issues that have been associated with a variety of clinical correlations and mental health comorbidities. Suicide was one of the most significant health risks associated with substance addiction. **Aim of the study**: explore the suicidal risk among substance use patients. **Subject and Methods**: Research design: Cross-sectional design. Setting: The study was conducted at El-Azazi Hospital for Mental Health in Abo Hamad City, Sharkia Governorate, Egypt. **Subjects:** A purposive sample of 186 patients with substance use disorders. **Tools of data collection**: Two tools were used for data collection, Tool (I): composed of two parts (personal characteristic data sheet and history of substance abuse). Tool (II): Columbia Suicide Severity Rating Scale (C-SSRS). **Results:** Heroin was the most commonly used substance. Among patients, 25.8% reported suicidal ideation, 16.7% had attempted suicide, and 25.8% had some level of suicidal risk (22% moderate to high, 3.8% low). Suicidal risk was significantly associated with marital status. **Conclusion:** Heroin was the most commonly used substance. Suicidal ideation and attempts were reported in a notable portion of patients, with 25.8% showing suicidal risk mainly at moderate to high levels. Marital status was significantly associated with suicidal risk. The domain of actual suicidal risk had a positive effect on suicidal risk and time of relapses. **Recommendations:** Regularly assessing individuals with SUDs for suicidal thoughts and behaviors as part of standard clinical practice.

Keywords: *Prevalence, Suicidal risk, Substance use Patients.*

Introduction

Substance use disorders (SUDs) are a major cause of preventable mortality and disability worldwide, posing a significant threat to public health. Substance use increases the risk of various infections, including human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), viral hepatitis, and infectious endocarditis particularly through unsafe practices such as injecting drugs with non-sterile equipment **(Panpanichkul et al., 2025).**

According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), SUDs are characterized by problematic patterns of substance use, including impaired control, risky use, social dysfunction, tolerance, and withdrawal. Individuals with SUD not only suffer from physical and psychological consequences but also face significant social stigma both from others and internalized self-stigma which can intensify their struggles **(Sukut and Buzlu, 2022).**

Suicide is a major global public health issue with devastating consequences for individuals, families, and communities. It is influenced by a variety of risk factors, including psychiatric disorders, emotional distress**,** substance use, genetic predisposition, and socio-cultural variables **(Baslam et al., 2025).**

Suicidal risk is the likelihood or probability that an individual would participate in suicidal behavior, which might include suicidal ideation, suicide attempts, or suicide. It is measured using a variety of criteria, including the presence and intensity of suicidal thoughts, prior suicide attempts, mental health disorders, emotional state, environmental stressors, and protective factors **(Soreff, Basit and Attia, 2023).**

Suicide is the 10th leading cause of death globally, with nearly 800,000 deaths each yearequating to one death every 40 seconds. Suicidal behaviors range from ideation to attempts and completed suicide. Alarmingly, up to 45% of individuals with SUD report suicidal behaviors, particularly those who use injectable drugs, amphetamines, heroin, or multiple substances **(Armoon et al., 2021).**

Several studies have established a strong association between SUDs and suicidal behavior. Recent research using electronic health records found that substance use disorders had one of the highest correlations with suicide attempts and deaths. Specific diagnoses such as drug poisoning, withdrawal syndromes, and cocaine dependence were frequently linked to suicidal behaviors. Familial and genetic factors are also believed to contribute to this co-occurrence **(Edwards et al., 2023).**

Substance use problems and other mental illnesses linked to the majority of suicides. Suicide is a complicated behavior that most likely results from a combination of environmental and psychological influences as well as biological elements, such as hereditary predisposition **(Atia and Ahmed, 2020).**

Significance of the Study:

Substance use disorders are extremely prevalent and have a significant negative impact on people's health, social functioning, and general well-being. The most commonly used substance is alcohol, which is currently consumed by an estimated 2.3 billion individuals globally (40 percent of adults), with significant variations between nations ranging from 80% to less than 1% of adults **(Volkow and Blanco, 2023).** Egypt is facing an increase in the use of pharmaceutical opioids for non-medical purposes, such as Tramadol, and illicit drugs like cannabis, hashish heroin, amphetamine-type compounds, and synthetic cannabinoids like Voodoo and Strox. The Ministry of Social Solidarity in Egypt reported that 5.9% of the population used illegal substances in 2022. Additionally, according to the Freedom Drugs and HIV program, 2.8% of Egyptians, or about 2.4 million people, struggle significantly with drug use and dependence **(El-Zoghby et al., 2024).** There is a significant lack of validated screening tools tailored for different populations with substance use, insufficient longitudinal studies on the transition from ideation to attempt, and limited research on effective pharmacological and psychosocial interventions for co-occurring suicidal ideation and substance use disorders. There are significant gaps in understanding how to decrease risk during and after substance use treatment, when risk appears to be high. This study adds to the growing body of evidence about the relationship between substance use and mental health, with a specific emphasis on suicide risk. While earlier research has found a link between substance use disorders (SUDs) and higher suicide rates, the purpose of this study is to provide updated and context-specific statistics on the incidence of suicidal ideation and behavior among people with substance use issues. So, this study conducted to explore the suicidal risk among substance use disorder.

Aim of the study:
To explore the suicidal risk among substance, use disorder.

Research questions:

1. What is the most prevalent type of substance use?
2. What is the prevalence of suicidal ideation, actual suicide attempt and suicidal risk among substance use Patients?

3- What is the frequency distribution of suicidal risk according to (severity, intensity of suicidal ideation, actual suicidal attempt, suicidal behavior and lethality).
4- What is the relation between socio-demographic data and history of substance abuse of the studied substance use patients and their suicidal risk?

Subjects and methods:

Research design:
To conduct this study Cross-sectional design was utilized.

Study setting:
The current study was carried out at El-Azazi Hospital for Mental Health in Abo Hamad City; sharkia Governorate, Egypt.

Study subjects:
The sample composed of 186 patients with substance use disorders from the above mentioned settings who fulfill the following inclusion criteria:
Individuals diagnosed with substance use disorder, male patients aged (22-42) years old to target a specific demographic, willing to participate in the study, individuals receiving treatment for substance use disorder (Inpatient detox-rehabilitation) and all educational levels.
The sample size was calculated by the following equation:
The estimated sample size is 186 patients out from 360 patients who attend the previous mentioned setting, at confidence level 95% **(Thompson, 2012).**

$$n = \frac{N \times p(1-p)}{\left[\left[N-1 \times \left(d^2 \div z^2\right)\right] + p(1-p)\right]}$$

360*(0.50*0.50) = **90**

n= ——————————————————— **186**

359*(0.0025 / 3.8416) = 359*0.000651= 0.233709+0.25= **0.483709**

Which:
n= Sample size
N= Total Population
Z= The standard value corresponding to confidence level 95% which is (1.96).
d= Margin of Error 5%
p= Population Proportion= 0.50.

Tools for data collection:

Tool I: part (A) Personal characteristic data sheet:
It includes personal characteristics of substance use patients as age, marital status, educational level, occupation, residence and age at onset of addiction.

Part (B) History of substance abuse:
It includes family history for substance use, type of substance use, duration of substance use, frequency of relapse, number of hospital admission and motives for substance use.

Tool II: Columbia Suicide Severity Rating Scale (C-SSRS):

This scale created by **Posner et al., (2008)**, it was designed to distinguish the domains of suicidal ideation and suicidal behavior. Four constructs are measured. The first is the severity of ideation (hereafter referred to as the "severity subscale"), which is rated on a 5-point ordinal scale in which 1=wish to be dead, 2=nonspecific active suicidal thoughts, 3=suicidal thoughts with methods, 4=suicidal intent, and 5=suicidal intent with plan. The second is the intensity of ideation subscale (hereafter referred to as the "intensity subscale"), which comprises 5 items, each rated on a 5-point ordinal scale: frequency, duration, controllability, deterrents, and reason for ideation. The third is the behavior subscale, which is rated on a nominal scale that includes actual, aborted, and interrupted attempts; preparatory behavior; and non-suicidal self-injurious behavior. And the fourth is the lethality subscale, which assesses actual attempts; actual lethality is rated on a 6-point ordinal scale, and if actual lethality is zero, potential lethality of attempts is rated on a 3-point ordinal scale.

Scoring system:

The C-SSRS Screener is comprised of between 2 - 5 self-reported "Yes" or "No" questions and the scoring is based on the answers to these questions, with the most worrisome answers indicating a higher risk. Specifically, a recent (past month) "yes" to question 4 or 5 on ideation severity and/or any recent (past 3 months) behavior indicates a high risk score. Low risk: no affirmative answers to questions about suicidal ideation or behavior, moderate risk: one or more affirmative answers to questions about suicidal ideation or behavior, but no recent (past month) suicidal behavior and high risk: recent (past month) suicidal behavior, including any affirmative answers to questions about suicidal ideation or behavior.

Content validity and reliability:

Tools were translated into Arabic using translation and reverse translation techniques to confirm their original validity. Prior to the pilot study and data collection, content validity was checked. The tools were revised by five-person expert panels who distributed the two tools together with a covering letter and explanation sheet explaining the study's goal included: Professor of Psychiatry, Faculty of Medicine, Zagazig University; a Professor of Mental Health, Faculty of Education, Zagazig University; a Professor of Psychology, Faculty of Arts, Zagazig University; an Assistant Professor of Mental Health, Faculty of Education, Zagazig University; and a Psychiatric and Addiction Specialist, formerly at El-Azazi hospital and currently at Zefta hospital. They revised the tools for clarity, relevance, applicability, comprehensiveness, and requested minor modifications to the tools such as correcting some spelling errors. The suggested recommendations were applied accordingly.

Testing the reliability of the tools through Alpha Cronbach reliability analysis. Which revealed a good level of reliability as follows:

Tools	Alpha Cronbach	Internal consistency
Columbia Suicide Severity Rating Scale (C-SSRS)	0.944	Excellent

Field work:

A. Preparatory phase:

Following the acquisition of the necessary authorization to carry out this investigation, the researcher met with the manager and head nurse of the hospital to explain the purpose and methods of the study, as well as the information collection forms, to secure their cooperation and gain written consent before beginning data collection. The researcher then conducted interviews with the chosen patients, gave her introduction, and described the nature and goal of the study. After then, the researcher got the chosen patients' written consent to participate in the study.

B- Assessment phase:

To gather data, the researcher visited El-Azazi Hospital twice a week (Saturday and Wednesday) between 9:30 a.m. and 2 p.m. The data sheet was finished concurrently with the distribution. The evaluation process took six months to complete, beginning in August 2024 and ending in February 2025.

The researcher built a trustworthy relationship with the chosen patients before beginning data collecting. After carefully explaining each item on the data collecting forms and conducting one-on-one interviews with each patient, the researcher marked the response that best fit each patient with a (√). To gain participation in completing the study's instruments, a thorough explanation was provided.

The time required to complete the two questionnaires ranges from 10 to 15 minutes. First tool take five minutes to finish which split into two sections: part (A) asked about the patient's personal traits, and part (B) asked about patient history of drug use. Second tool Columbia-Suicide Severity Rating Scale (C-SSRS) is takes ten minutes to complete.

Pilot study:

A pilot study was conducted on a sample of 18 patients with SUD, roughly 10% of the entire sample size that was determined. Tests of the tools' viability and clarity, item comprehension, and the precise amount of time needed to complete the data collection forms were the objectives. The results of the pilot study showed that it took roughly 20 to 30 minutes to complete the tools. Since the data collecting form didn't require any changes, the patients who took part in the pilot study were added to the study sample.

Administration and ethical consideration:

An official permission to carry out this study was obtained by submitting an official letter from the Dean of the Faculty of Nursing at Zagazig University to the director of the General Secretariat of Mental Health and Addiction Treatment in Cairo City. Consequently, approval for performing the study were received from the director of the General Secretariat of Mental Health and Addiction Treatment, followed the application of all needed procedures and documents, which took around 2 months. Then, approvals were obtained from the hospital director and the nursing director of El-Azazi Hospital for Mental Health. Patients' voluntary participation was confirmed. Clear instructions on how to complete the scales were given. The research instruments used in the study did not cause any harm, distress, or raise any religious or cultural concerns among the sampled patients. The Ethical Committee of Zagazig University's Faculty of Nursing gave its approval to the study proposal with code M.DZU.NUR/223/10/6/2024.

Statistical analysis:

The statistical analysis of data was done by using the computer software of Microsoft Excel Program and Statistical Package for Social Science (SPSS) version 25. Data were presented using descriptive statistics in the form of frequencies and percentage for categorical data, the arithmetic mean (X) and standard deviation (SD) for quantitative data. Chi square test used to test association between two variables. Shapiro-Wilk test used to measure normality distribution. Correlation coefficient test (r) was used to test the correlation between studied variables. Linear regression model used to measure the strength of the association between predictors and the outcome variable. Reliability of the study tools was done using Cronbach's Alpha.

Results:

Figure 1 presents that near half (59.1%) of substance use patients were using heroin.

Figure 2illustrates that the prevalence of suicidal ideation was 25.8% among substance use patients.

Figure 3 displays the prevalence of actual suicidal attempt was 16.7%.

Figure 4 represent that the prevalence of suicidal risk among substance use patients was 22.0% moderate to high risk and 3.8% of them had low risk. While 74.2% of them don't have suicidal risk.

Table 1 showed that, 41.4% of the studied substance use patients were at the age of 35-42 years old, the mean SD of age was 32.25±5.83 years. Also, 47.9% of them were single. Also, 61.8% of them had secondary education. Moreover, 68.3% of them were manual worker. Moreover, 57.0% of them resided urban areas.

Table 2 presented that, 78.0% of the studied substance use patients were at the age of < 20 years old at onset of addiction. Also, 45.2% had family history for substance use. Also, 85.5% had been taking drugs for more than 5 years. Moreover, 59.1% of them were using heroin. Furthermore, 43.0% of them were taking drugs because of bad friends, 57.0% relapsed one to five times. Moreover, 39.2% of them were hospitalized once

for addiction treatment or follow-up. Additionally, 88.2% of them started addiction treatment less than 10 days ago.

Table 3 showed that, 25.8% of the studied substance use patients wished for death and had non-specific active suicidal thoughts. Also, 31.3% thought about hanging themselves with ropes. Moreover, 20.4% of them had active suicidal ideation with any methods (not plan) without intent to act.

Table 4 shows that, 62.5% of the studied patients who had suicidal thoughts had these thoughts less than once a week, 41.7% who had suicidal thoughts had these thoughts less than 1 hour/some of time. Also, 93.8% of the studied patients who had suicidal thoughts had these thoughts because of getting attention, revenge or a reaction from others. Moreover, 16.7% had history of actual suicidal attempt, 29.0% of them hanging themselves with ropes.

Table 5 reveals that, 7.0% of the studied substance use patients had interrupted suicidal attempt, 69.2% of them were prevented by others. Also, 6.5% had aborted or self-interrupted attempt, 66.7% of them were fear of death. Moreover, 8.1% had preparatory acts or behavior, 40.0% of them bought rope. While, 100.0% of them don't had suicidal behavior present during the evaluation period. Additionally, 48.4% who had actual suicidal attempt don't have physical damage or very minor physical damage (e.g., surface scratches). Also, 67.7% who had actual suicidal attempt had behavior likely to result in death despite available medical care.

Table 6 reveals that, there was statistically significant relation between suicidal risk of the studied substance use patients and their socio-demographic data as marital status. While, there was no statistically significant relation with their age, educational level, occupation and residence.

Table 7 points that there was highly statistically significant relation between suicidal risk of the studied substance use patients and their family history for substance use and times of hospitalization. Also, there was statistically significant relation with their times of relapses.

Table 8 Multiple linear regression model examining associations of substance use patients' characteristics and total suicidal risk score.

Table 9 The results revealed that the data were normally distributed (0.057).

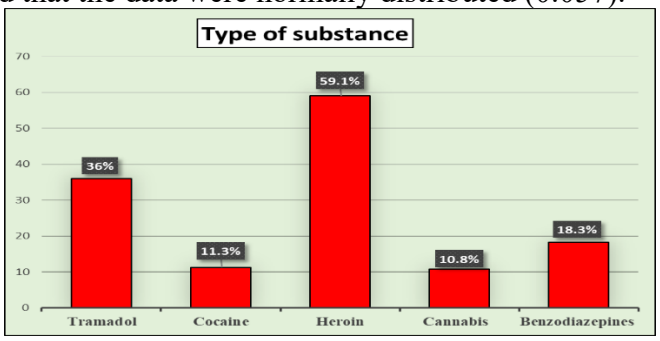

Figure 1 Type of substance use as reported by substance use patients **(n=186).**

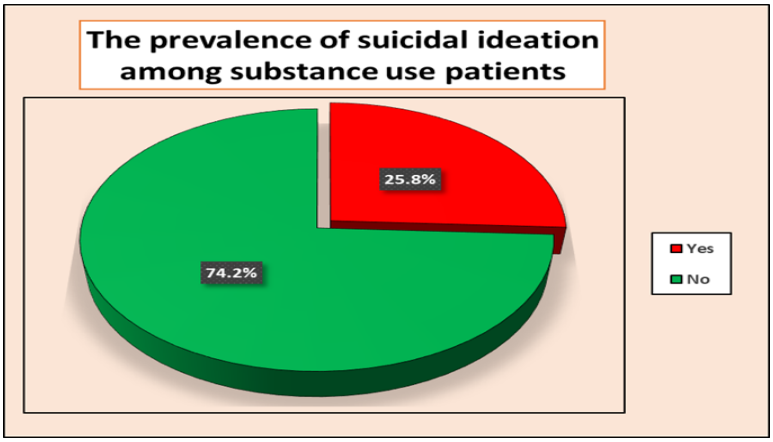

Figure 2 The prevalence of suicidal ideation among substance use patients **(n=186).**

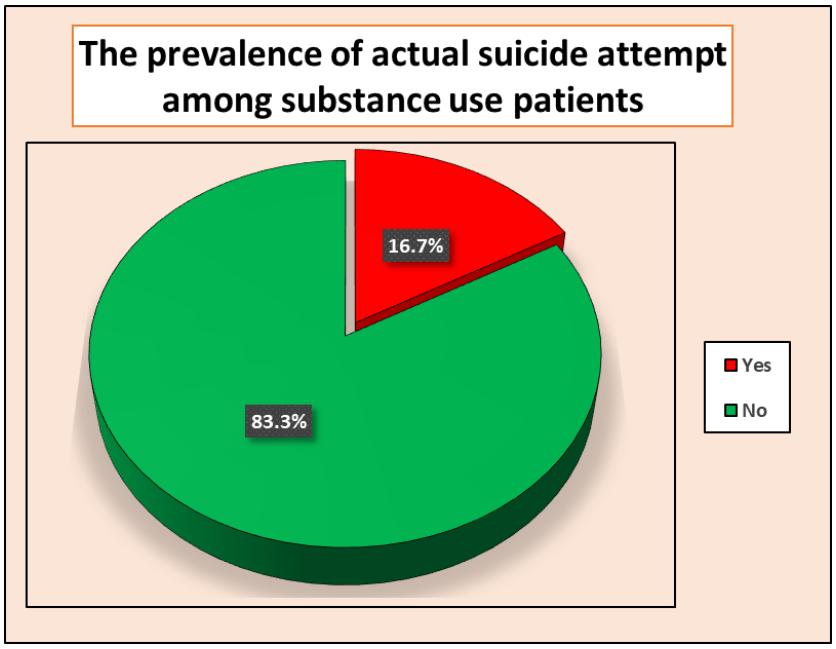

Figure 3 The prevalence of actual suicide attempt among substance uses patients (n=186).

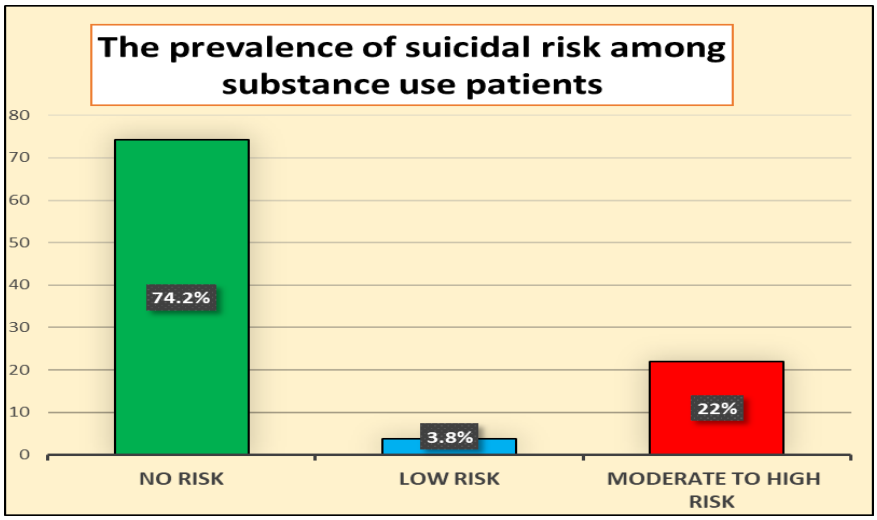

Figure 4 The prevalence of suicidal risk among substance use patients (n=186).

Table 1: Frequency of the studied substance use patients according to their personal characteristics (n=186).

Personal characteristics	No.	%
Age (Years)		
<25	21	11.3
25-<30	45	24.2
30-<35	43	23.1
35-42	**77**	**41.4**
Range	**(19-42)**	
Mean ± SD	**32.25±5.83**	
Marital status		
Single	**89**	**47.9**
Married	78	41.9
Divorced	16	8.6
Widowed	3	1.6
Educational level		
Illiterate	14	7.5
Read and write	23	12.4
Secondary education	**115**	**61.8**
High education	34	18.3
Occupation		
Student	3	1.6
Employee	32	17.2
Don't work	24	12.9
Manual worker	**127**	**68.3**
Residence		
Rural	80	43.0
Urban	**106**	**57.0**

Table 2: Frequency of the studied substance use patients according to their history of substance abuse (n=186).

History of substance abuse	No.	%
Age at onset of addiction		
< 20 years	**145**	**78.0**
20 - 40 years	37	19.9
> 40 years	4	2.1
Family history for substance use		
Yes	**84**	**45.2**
No	102	54.8
Duration of substance use		
< 6 months	4	2.1
6 months to 1 year	3	1.6
1 year to 5 years	20	10.8
> 5 years	**159**	**85.5**
***substance use motives**		
Bad role models from parents	8	4.3
Parental addiction	0	0.0
Family breakup	4	2.1
Bad friends	**80**	**43.0**
Unity	42	22.6
Weak faith	2	1.1
Curiosity	5	2.7
Dependence on hypnotics	2	1.1
Desire to experiment	51	27.4
Times of substance relapses		
None	73	39.2
1-5	**106**	**57.0**
6-10	7	3.8
Number of times admitted to the hospital for addiction treatment, or follow-up		
Once	**73**	**39.2**
Twice	67	36.0
Three times	25	13.4
Four and more times	21	11.3
Starting of substance use treatment (days)		
<10	**164**	**88.2**
10-20	15	8.1
>20	7	3.8

Table 3: Frequency of suicidal risk according to severity of suicidal ideation among the substance use patients (n=186).

Severity of suicidal ideation		No.	%
Wish to be dead	Yes	**48**	**25.8**
	No	138	74.2
Non-specific active suicidal thoughts	Yes	**48**	**25.8**
	No	138	74.2
If yes, what did you do? **(n=48).**	Hanging with rope	15	**31.3**
	Intravenous air injection	2	4.2
	Electric shock	3	6.2
	Car accident	6	12.5
	Self-injury	8	16.7
	Poison	3	6.2
	Drug overdose	8	16.7
	Fire	1	2.1
	Drowning	2	4.2
Active suicidal ideation with any methods (not plan) without intent to act	Yes	**38**	**20.4**
	No	148	79.6
If yes, what did you do? **(n=38).**	Hanging with rope	11	28.9
	Intravenous air injection	2	5.3
	Electric shock	3	7.9
	Car accident	5	13.1
	Self-injury	8	21.1
	Poison	3	7.9
	Drug overdose	3	7.9
	Fire	1	2.6
	Drowning	2	5.3
Active suicidal ideation with some intent to act, without specific plan	Yes	**27**	**14.5**
	No	159	85.5
If yes, what did you do? **(n=27).**	Hanging with rope	7	25.9
	Intravenous air injection	2	7.4
	Electric shock	2	7.4
	Car accident	4	14.9
	Self-injury	7	25.9
	Poison	2	7.4
	Drug overdose	3	11.1
Active suicidal ideation with specific plan and intent	Yes	**31**	**16.7**
	No	155	83.3
If yes, what did you do? **(n=31).**	Hanging with rope	9	29.0
	Intravenous air injection	2	6.5
	Electric shock	3	9.7
	Self-injury	7	22.6
	Poison	3	9.7
	Drug overdose	5	16.1
	Fire	1	3.2
	Drowning	1	3.22

Table 4: Frequency of the studied substance use patients according to intensity of suicidal ideation (n=48) and actual suicidal attempt (n=186).

Intensity of suicidal ideation		**No.**	**%**
Frequency	Less than once a week	**30**	**62.5**
	Once a week	2	4.2
	2-5 times in week	5	10.4
	Daily or almost daily	9	18.7
	Many times, each day	2	4.2
Duration	Fleeting - few seconds or minutes	9	18.7
	Less than 1 hour/some of time	**20**	**41.7**
	1-4 hours/a lot of time	19	39.6
Controllability	Easily able to control thoughts	25	52.1
	Can control thoughts with little difficulty	15	31.2
	Can control thoughts with some difficulty	8	16.7
Deterrents	Deterrents definitely stopped you from attempting suicide	19	39.6
	Deterrents probably stopped you	21	42.7
	Uncertain that deterrents stopped you	8	16.7
Reasons for Ideation	Completely to get attention, revenge or a reaction from others	0	0.0
	Mostly to get attention, revenge or a reaction from others	3	6.2
	Equally to get attention, revenge or a reaction from others	**45**	**93.8**
Actual suicidal attempt			
Have you made a suicide attempt?	Yes	**31**	**16.7**
	No	155	83.3
Have you done anything to harm yourself?	Yes	**31**	**16.7**
	No	155	83.3
Have you done anything dangerous where you could have died?	Yes	**31**	**16.7**
	No	155	83.3
If yes, what did you do? **(n=31).**	Hanging with rope	**9**	**29.0**
	Intravenous air injection	2	6.5
	Electric shock	3	9.7
	Self-injury	7	22.6
	Poison	3	9.7
	Drug overdose	5	16.1
	Fire	1	3.2
	Drowning	1	3.22
Did you as a way to end your life?	Yes	31	16.7
	No	155	83.3
Did you want to die (even a little)	Yes	31	16.7
	No	155	83.3
Did you think it was possible you could have died from?	Yes	31	16.7
	No	155	83.3
Did you do it purely for other reasons / without ANY intention of killing yourself (like to relieve stress, feel better, get sympathy, or get something else to happen)? (Self-Injurious Behavior without suicidal intent)	Yes	6	3.2
	No	180	96.8
*If yes, describe? **(n=6).**	Relieve stress	2	33.3
	Attract attention	4	66.7
	Escape from problems	1	16.7
Has subject engaged in Non-Suicidal Self-Injurious Behavior?	Yes	**6**	**3.2**
	No	180	96.8

Discussion:

Regarding type of substance abuse, the present study results showed that, near two fifth of studied substance use patients were used heroin. This may be due to a variety of aspects; including the fact, that heroin binds to opioid receptors in the brain to produce quick and strong euphoria. Furthermore, heroin is easily accessible and attractive to users who want quick relief because it may be smoked, snorted, or injected, and its effects felt instantaneously.

This result was consistent with the study of **Abdelmouttelb, Elewa and Abdelsalhen (2022)** at El Abbasia Psychiatric Hospital in Cairo, about "Relation between Substance Use craving and self-efficacy in Addict Patients" revealed that the most common substance abuse among the addict patients was heroin.

These results differ from the study performed in Nigeria by **Olanrewaju et al., (2022)** about " An assessment of drug and substance abuse prevalence" which found that three fifth of abused substance commonly used alcohol and one fourth used cannabis. As well, **Washburn House, (2023)** who stated that alcohol is the most commonly abused drug in the world Also it is one of the most easily accessed drugs since it is legal and no prescription is required.

Furthermore, these results contrary to the study the Egyptian study by **Gemeay et al., (2019)** about "Effect of Psych-educational Program on Self-Efficacy of Patient with Substance Use Disorders", found that the first line of used substances was tramadol that present less than three fourth of substance use patients. Also, the study in Egypt by **AbddelMoneim et al., (2020),** which showed that tramadol and cannabis are the most common substance use.

Regarding the prevalence of suicidal ideation, the current study results presented that, one fourth of the studied substance use patients had suicidal ideation. This may be due to certain substances can induce mood disturbances such as depression or anxiety which can increase the risk of suicidal ideation and environmental triggers such as exposure to peers still using drugs, unresolved trauma or living in high stress environments can also provoke crisis situations that heighten the risk of thinking about suicide.

This result was in accordance with the study by **Onaemo, Fawehinmi, and D'Arcy, (2022)**, about "Risk of suicide ideation in comorbid substance use disorder and major depression" stated that more than one fourth had probability of a lifetime suicide ideation with isolated diagnosis of a SUD

In the opposite a study by **Baslam et al., (2025)**, about "Suicidal Ideation and Substance Use Among Middle and High School Students in Morocco" stated that less than one fifth of studied patients had prevalence of suicidal ideation.

Regarding the prevalence of actual suicidal attempt, the current study results revealed that less than one fifth of the studied substance use patients had history from actual suicide attempt. This is may be due to substance use can impair judgment and increase impulsivity leading to a higher risk of suicidal behavior and patients who have experienced suicidal ideation may be more likely to attempt suicide.

The current study result were in harmony with the study by the study by **Colizzi et al., (2021)** who study about "Further evidence on the interplay between benzodiazepine and Z-drug abuse and emotion dysregulation" which found that more than one fifth of patients had history of actual suicidal attempt. As well, the study by **Leza et al., (2025)**, which revealed that one fifth of patients reported actual suicide attempts.,

Regarding the prevalence of suicidal risk, the current study results showed that, showed that, more than one fifth of the studied substance use patients had moderate to high suicidal risk. Also, 3.8% of them had low risk. While, near three quarter of them don't have suicidal risk. The moderate to high suicidal risk among patients may be linked to limited mental health resources in Egypt, where addiction treatment often lacks psychological support and suicide risk screening. In contrast, the absence of suicidal risk in some patients may be attributed to protective factors such as strong family support, religious beliefs, and personal responsibilities, which can help reduce suicidal tendencies.

These findings were incongruent with an Egyptian study conducted by **El Sebaie and Abdelfatah (2021)**, about "The Impact of Alexithymia and Perceived Social Support on Suicidal Probability of Drug Abusers'

Patients", which showed that more than two third of substance use patients had moderate level of suicidal risk and only 8% had severe level.

Additionally, the study by **Soboka et al., (2024)**, in Nova Scotia indicated in their study entitled "Substance use and risk of suicide among adults who sought mental health and addiction", that near one third of substance use patients had mild to moderate suicide risk.

Regarding relation between socio-demographic data of the studied substance use patients and their levels of suicidal risk, the current study results presented that, there was statistically significant relation between suicidal risk of the studied substance use patients and their socio-demographic data as marital status. This is may be due to marriage can provide emotional stability and a sense of belonging which can help reduce suicidal risk. Unmarried individuals may experience greater emotional instability and increasing their suicidal risk.

This current study result was in harmony with a study the study by **Kelly et al., (2020)** about "Correlates and predictors of suicidal ideation and substance use among adults seeking substance use treatment with varying levels of suicidality" which revealed that no significant relation in suicidal group with age and educational level. As well, the study conducted in Canada by **Onaemo, Fawehinmi and D'Arcy, (2022)** about "Risk of suicide ideation in comorbid substance use disorder and major depression" documented that married status was protective against suicidal thoughts over a period of 12 months.

In the opposite a study by **Leza et al., (2024)** about "Substance use disorder and lifetime suicidal behavior" showed that patients who had suicide thoughts were more likely to be unmarried than married person.

Regarding relation between patient's history of substance abuse and their levels of suicidal risk, the current result results revealed that, there was highly statistically significant relation between suicidal risk of the studied substance use patients and their family history for substance use and times of hospitalization at ($P= < 0.01$). This is may be due to individuals with a family history of substance use may experience early life exposure to dysfunctional coping patterns which can increase susceptibility to suicidal thoughts or behaviors. Furthermore, frequent hospitalization can reinforce a sense of chronic illness and diminished hope for recovery, thereby elevating suicidal risk.

These findings are consistent with the study conducted by **(Szlyk et al., 2023)** about "Principal component regression analysis of familial psychiatric histories and suicide risk factors among adults with opioid use disorder" and revealed that half of the studied substance use patients had tried suicide and one third of studied patients had a family history of substance use and have suicide attempts. Also, the study by **Ramsewak, Putteeraj and Somanah, (2020)** about "Exploring substance use disorders and relapse in Mauritian male addicts", which revealed that individuals who relapse quickly may be suffering with more severe addiction that might exacerbate suicide thoughts and attempts.

Regarding associations of substance use patients' characteristics and total suicidal risk score; the current study findings showed that the domain of actual suicidal attempt had a strong positive effect on patients' suicidal risk. This is may be due to fact that a history of suicidal attempt reflects entrenched despair and diminished fear of death which when combined with emotional impairments from substance use intensifies the risk of future suicidal behavior.

These results were supported by a study performed by **Kelly et al., (2020)** which investigated "Correlates and predictors of suicidal ideation and substance use among adults seeking substance use treatment with varying levels of suicidality" and found that individuals with a history of suicide attempt reported greater severity of substance use problems, present more suicidal risk. Also, a study conducted by **Soboka et al., (2024)** entitled "Substance use and risk of suicide among adults who sought mental health and addiction specialty services through a centralised intake process in Nova Scotia" clarified that substance abuse may also be an independent risk factor for suicide risk and attempt. Suicide risk includes previous suicide attempts.

The current study findings showed that the domain of actual suicidal attempt had a strong positive effect on times of relapses. This is may be due to high suicidal risk reflects profound psychological distress and maladaptive coping which undermine recovery stability and make relapse cycles more frequent in SUD.

These results were congruent with a study conducted by **Aaltonen et al., (2024)** entitled Variations in suicide risk and risk factors after hospitalization for depression in Finland clarified that the risk of suicidal behavior may increase during transitions, such as relapse episodes. Also, the study by **Ali et al., (2024)** about "Ostracism predicting suicidal behavior and risk of relapse in substance use disorders" which found that time of relapses positively predicted both of suicidal risk and suicidal attempt.

Conclusion:

In light of the study's findings and answer to the research question, it was concluded that Heroin was the most commonly used substance. Suicidal ideation and attempts were reported in a notable portion of patients, with 25.8% showing suicidal risk mainly at moderate to high levels. Marital status was significantly associated with suicidal risk. The domain of actual suicidal risk had a positive effect on suicidal risk and time of relapses.

Recommendations:

Based on the study findings, it was recommended to:

- Offering counseling and awareness programs tailored to adults and individuals with lower educational backgrounds to address substance abuse and suicidal risk and their consequences.
- Establishing annual screening tests for substance abuse among adults to detect problems early.
- Regularly assessing individuals with SUDs for suicidal thoughts and behaviors as part of standard clinical practice.
- Encouraging the exploration of psychological and environmental triggers that may increase the risk of suicide in this population.
- Evaluating the long-term effectiveness of various psychosocial and therapeutic interventions in patients with SUDs

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S.E. designed the study, assessed and interviewed the sample, gathered and analyzed the data, interpreted the findings, and updated the article; she is also the corresponding author. Professor N. A., H. H., and Doctor B. A. proposed the research idea; they also played an important part in data collection and article composition, as well as contributing to study design, data collection, and analysis for the paper. All writers read and approved the final manuscript.

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