Incidence of suicidal desire and associated factors among illicit drug users Integrative literature review

Incidência de desejo suicida e fatores associados entre usuários de drogas ilícitas - Revisão integrativa da literatura

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ABSTRACT: Objective: The study aimed to conduct an integrative literature review on the incidence of suicidal desire in illicit drug users and the main associated factors, noting that there is a scarcity of studies that specifically address this public, being of paramount importance for public health. **Methods**: Research carried out on the proposed theme, in an orderly and comprehensive way, an integrative and exploratory study, carried out from a bibliographic survey in *the Medline, Lilacs and Scielo* databases. The following keywords were described according to the DeCS: Suicidal desire / Suicidal desire / Suicidal desire, risk factors/ risk factors/risk factors, Drug Users/Drug Users/Drug Users. **Results:** Data were found that suggest a strong association of suicidal ideation in illicit drug users, even if they were in treatment, the most reported substances were heroin, marijuana, methamphetamine, cocaine and hallucinogens, the associated factors were childhood abuse, initiation drug, depression among others. **Conclusion:** Empathy in the medical services provided can provide the individual with an unconstrained exposure of their real condition. Drug users naturally tend to isolate themselves, and not seek help, this accentuates the chances of suicide in this population.

KEY WORDS: Suicidal desire; Risk factors; Drug Users.

RESUMO: Objetivo: O estudo teve como objetivo realizar uma revisão integrativa de literatura sobre a incidência de desejo suicida em usuário de drogas ilícitas e os principais fatores associados, nota-se que há uma escassez de estudos que aborde especificamente este público, sendo de suma importância para saúde pública. **Métodos:** Pesquisas realizadas sobre o tema proposto, de forma ordenada e abrangente, um estudo integrativo e exploratório, realizado a partir de levantamento bibliográfico nas bases de dados *Medline, Lilacs e Scielo.* Foram utilizadas, conforme DeCS as seguintes palavras-chave: *Desejo Suicida / Suicidal desire / Deseo Suicida, fatores de risco/, risk factors/ factores de riesgo, Usuários de Drogas/Drug Users/Consumidores de Drogas*. **Resultados**: Foram encontrados dados que sugerem uma forte associação de desejo suicida em usuários de drogas ilícitas, ainda que estivessem em tratamento, as substâncias mais relatadas foram heroínas, maconha, metanfetamina, cocaína e alucinógenos, os fatores associados foram abuso na infância, droga de iniciação, depressão entre outros. **Conclusão:** A empatia nos serviços médicos prestados pode proporcionar ao indivíduo uma exposição sem constrangimento de sua real condição. Os usuários de drogas tendem naturalmente a se isolar, e não buscarem ajuda, isso acentua as chances de suicídio nesta população.

PALAVRAS-CHAVE: Desejo Suicida; Fatores de risco; Usuários de drogas.

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Introduction

It is indisputable that suicidal ideation, as well as attempted suicide and completed suicide, are serious public health problems worldwide. This phenomenon can stem from various factors and is perceived as a non-conscious act[1].

Suicidal ideation frequently precedes suicidal behavior and serves as an important indicator for subsequent suicide attempts[2]. However, only a small proportion of individuals with such ideation will progress to an attempt[3]. Literature indicates that approximately 32% of individuals with suicidal ideation attempt suicide throughout their lives. This underscores the importance of studying the phenomenon. A proper understanding of suicidal ideation can help prevent other associated problems that can have an impact on families, society and public health[4].

Emerging research endeavors to investigate the factors that distinguish attempters from ideators[2]. Understanding these differences can provide significant insights into improving suicide prevention[3].

Suicidal behavior is conceptualized as a continuum of thoughts and behaviors ranging from suicidal ideation to completed suicide[4]. Suicide is among the top ten causes of death worldwide, with an estimated range of 10 to 20 million people having attempted it at least once in their lives. Moreover, there is an upward trend in the number of suicide cases among young people aged between 15 and 35 worldwide[5].

Suicide is defined as any self-inflicted injury with the intention, even if ambivalent, of causing death. It is a multifactorial and complex phenomenon that affects families, communities, and countries, with social and emotional repercussions for those closely connected to the victims[8].

Records on suicides are often inaccurate due to the sensitive nature of the phenomenon, which can lead to loss of rights and insurance coverage denial, as it is considered illegal in some countries, such as Brazil. Furthermore, occurrences may be under-reported due to their classification as undetermined cause of death or accident[5]. In fact, suicide is one of the leading causes of death in Brazil. This issue must be addressed globally, with both clinical and non-clinical approaches. Most people who have died by suicide had accessed the healthcare system for some reason within the twelve months prior to their death. Suicide is not attributed to a single cause; rather, the literature underscores a complex interplay of correlated factors, including clinical factors, such as pre-existing conditions, and genetic, psychological, social, and environmental factors[7].

Understanding the factors associated with suicidal ideation enhances the ability to accurately identify individuals who are at high risk of attempting suicide. Therefore, it can be a crucial component in guiding efficient prevention strategies[8]. Research indicates that the use of illicit drugs may be associated with an increased risk of suicide. Several drugs, such as cocaine, crack, heroin, among others, are illegally present in our society, hence their classification as illicit[11]. Drug dependence is associated with illnesses, unemployment, criminal activity, and death; however, the damage it inflicts, and the emotional and social costs it imposes on the individual and society are immeasurable[10].

A significant proportion of "violent deaths" among young adults are associated with the use of psychoactive drugs. This data has gained attention at both national and international levels. The prevention and reduction of premature mortality requires recognizing the associated factors and seeing this predisposition as a primary risk[11,12].

In this context, the present study aims to conduct an integrative literature review on the incidence of suicidal ideation among users of illicit drugs and the main associated factors. It is noted that there is scarce research addressing this specific population, which is essential for the creation of effective public health strategies.

Method

This is an integrative literature review aiming to synthesize research findings on the proposed topic in a systematic and comprehensive manner. It is an exploratory study conducted through a bibliographic survey of the *Medline, Lilacs and Scielo* databases. For this, the following DeCS keywords were used: *Desejo Suicida / Suicidal Desire / Deseo Suicida, fatores de risco/, risk factors/ factores de riesgo, Usuários de Drogas/Drug Users/Consumidores de Drogas.*

This search yielded 20 studies that were published in the last ten years (2013-2023) in English, Portuguese and Spanish and addressed the subject matter. The search process included exploratory readings to determine whether the compiled material met the study's inclusion and exclusion criteria.

To standardize the data, all the selected studies were longitudinal and retrospective and employed valid and reliable methods to verify the incidence of suicidal ideation among drug users, as well as the respective associated factors. All studies involving adults aged 18 and above were included, provided they contained data on suicidal ideation among illicit drug users, even if these individuals had other concurrent psychiatric disorders (such as anxiety, depression, or others). This approach allowed for correlation and elucidation of the data.

During the selective reading of the studies, the type of study, method of sample selection, sample size, and instruments used were considered. After reviewing the articles, nine studies in the selected languages remained and proceeded to the final reading stage. An analytical reading allowed extracting the results and presenting them in tables to facilitate understanding and illustrate the data. Subsequently, to construct the discussion, a critical analysis of the articles was carried out to develop texts consistent with the existing literature on the topic.

Results

The characteristics of the studies are presented chronologically, in Tables: 1 - General data from the studies analyzed, 2 - Incidence and characteristics of the studies regarding the instruments and criteria used to assess suicidal ideation, 3 - Risk factors associated with illicit drug use and suicidal ideation, respectively.

Table 1 - General data from the studies analyzed.

Study	Setting	n Initial - Follow up		Mean age	Duration of the study
1. Shane Darke, Michelle Torok, *et al* 2013	Sydney- Nova Gales do Sul (Australia)	300	- 300	37.1 years	12 months
2. Kirsten C. Morley, Gomathi Sitharthan *et al, 2018*	Sydney- New South Wales (Australia)	185	- 185	38.2 years	30 months
3. Jose Alejandro Valdevila, Figueira, Omar Ruiz Barzola *et al* 2021	Guayaquil, Ecuador	922	- 922	35.0 years	36 months
4. Renato R.Abdala, André C.Miguel *et al,* 2019	São Paulo- Brazil	4.607 - 4.225		37.8 years	12 months
5. Xiao Zhang ,Huifang Xu , *et al* 2016	Guangdong - China.	900	- 648	30. 0 years	6 months
6. Jing Gu, Joseph TF Lau *et al*, 2014	Liuzhou, China.	234	- 200	33.9 years	6 months
7. Shane Darke, Joanne Ross et al 2015	Sydney- New South Wales (Australia)	615	- 431	40.0 years	11 years
8. Gregory Armstrong, Amenla Nuken, *et al* , 2013	Delhi- India	420	- 420	36.7 years	12 months
9. Adam Carmel ,Richard Ries *et al* 2016	Seattle, Washington (USA)	867	- 867	47 years	36 months

The most common substances used included heroin, marijuana, methamphetamine, cocaine, and hallucinogens. Associated factors included childhood abuse, gateway drug, depression, among others. Relationships between suicidal ideation and childhood abuse were found among drug users. Childhood abuse was reported by 74.3% of participants, with a mean age of onset of 6.7 years (SD 2.4, range 3 to 15)[13].

A randomized study analyzed 185 individuals, including 117 men and 68 women. After data compilation, it was found that 94 individuals were categorized as suicide ideators. There were significant differences between attempters and ideators for the categorical outcomes of gender ($\chi 2$ 14.42, p.<0.0001), plans for last suicidal ideation ($\chi 2$ 4.61, p.<0.05) and psychostimulant (MDMA, amphetamine, cocaine) use in the last 7 days ($\chi 2$ 1= 5.25p<0.05)[14].

A study identified significant associations between suicidal ideation and gateway drug (p-value = 0.0487), depression (p- value = 0.0003), and personality disorder (p-value = 0.0003)[15].

In a study analyzing the association between suicidal ideation, illicit drug use and possible related factors, a notable finding was the concurrent use of other substances among cocaine users. A family history of attempted suicide showed a strong association with the female gender and major depression, as evidenced by the prevalence ratio of suicidal ideation. Specifically, marijuana (OR = 3.5; 95% CI 2.5-5, 0) and cocaine use (OR = 4.3; 95%CI 2.9-6.3) were associated with suicidal ideation. Socio-demographic characteristics analyzed through univariate odds ratio (OR) revealed correlations between suicidal ideation and limited family support, (ORm = 0.37), early drug use, (ORm = 0.85), and partially with depression, with an OR closer to 1.0[16]. The mean age of the participants was 33.9 years (SD = 5.3 years); 86.5% were residents of Liuzhou; and 81% were ethnic Han (Zhuang: 8.5%; Miao: 7%; Yao: 2%; Dong: 1.5%). Moreover, 78.8% and 69.5% had engaged in sex work and drug use for at least 10 years, respectively. Additionally, 44.7% had experienced suicidal ideation in the last six months, and divorced status was marginally associated with suicidal ideation (OR=1.90, 95% CI: 0.95–4.12)[20].

After an 11-year follow-up, a cohort study demonstrated that females were more likely to attempt suicide. Notably, suicidal ideation was shown to be associated with extensive polydrug use and current diagnosis of major depression. It is important to highlight that the current level of major depression was markedly elevated compared to that reported at 3-year follow-up (21.9 vs. 8.5%)[17].

Table 2 - Incidence and characteristics of studies regarding the instruments and criteria used to assess suicidal ideation.

	Study	Instrument used	Types of drugs	Incidence
1.	Shane Darke , Michelle Torok, *et al* 2013	Own structured questionnaire validated in previous studies.	Heroin, marijuana, methamphetamine, alcohol, cocaine, benzodiazepines, MDMA, hallucinogens	25.7%
2.	Kirsten C. Morley, Gomathi Sitharthan *et al, 2018*	Beck Scale for Suicidal Ideation (BSSI))	Alcohol, marijuana, cocaine, amphetamine.	23%
3.	Jose Alejandro Valdevila , Figueira, Omar Ruiz- Barzola *et al* 2021	Data obtained from the clinical histories of each participant.	Marijuana, cocaine, and heroin.	58.2% -H 61%- M
4.	Renato R.Abdala , André C.Miguel *et al,* 2019	Questions about suicidal behavior were privately self-reported by participants.	Marijuana and cocaine.	9.9 %
5.	Xiao Zhang, Huifang Xu , Jing Gu *et al* 2016	Suicidal ideation was measured in a self-reported manner. Question: "Have you thought of committing suicide in the last six months?" (Hong, Li, Fang, and Zhao, 2007).	Heroin.	15.3%
6.	Jing Gu , Joseph TF Lau , *et al ,* 2014	Suicidal ideation was measured in a self-reported manner. Questions: 'Have you thought of committing suicide in the last six months?' and 'Have you attempted suicide in the last six months?' The answers were binary ('Yes' and 'No'). (Hong et al., 2007).	Heroin and similar injectables.	44.7%)
7.	Shane Darke , Joanne Ross, *et al* 2015	Composite International Diagnostic Interview 2.1 (World Health Organization, 1998).	Heroin.	42.2%
8.	Gregory ArmstrongAmenla Nuken , *et al* , 2013	Interviewer-administered structured questionnaire. Approved by the Human Research Ethics Committee at The University of Melbourn, Australia	Heroin and similar injectables.	27%
9.	Adam Carmel, Richard Ries *et al* 2016	Addiction Severity Index Lite (ASI)	Illicit drugs, alcohol and tobacco.	12%

[A] **Beck Scale for Suicidal Ideation:** a self-report scale designed to assess the presence of suicidal ideation. [B] **Composite International Diagnostic Interview**: a scale used for cognitive screening for episodes of depression, generalized anxiety disorders, panic disorder and bipolar disorder . [W] **Addiction Severity Index Lite**: instrument used to assess substance abuse.

Depression is prevalent among illicit drug users, as indicated by the PHQ-9 scale, which presented satisfactory reliability (Cronbach's alpha coefficient = 0.73). The mean PHQ-9 score was 14.7 out of a total possible score of 27, with a range of 1 to 25 and a median of 15. Suicidal ideation during the past 12 months was common. The data showed that 53% of the sample had thought about killing themselves, with 15% reporting frequent thoughts and 7% reporting very frequent thoughts. A substantial proportion reported to have attempted to kill themselves (36%) in the past 12 months[18].

In a study, participants were divided into the categories: (1) low risk; (2) moderate-low (suicidal ideation in the past 30 days); (3) moderate-high (history of a lifetime suicide attempt); and (4) high risk (history of a lifetime suicide attempt and suicidal ideation in the past 30 days). Of the 867 individuals included in the study, 43% were classified as having a moderate-low risk for suicide. Based on this categorization system, the data indicated that around 40% had attempted suicide in their lifetime. Individuals in the most prone group, with moderate-high suicide risk, were more likely to be female[19].

Table 3 - Risk factors associated with illicit drug use and suicidal desire.

Study	Associated risk factor	Statistical significance	Statistical model
Shane Darke * , Michelle Torok, 2013	Childhood physical abuse	p< 0.05	Simultaneous logistic regressions with backwards elimination.
Kirsten C. Morley, Gomathi Sitharthan *et al, 2018*	Impulsivity	p<0.05)	Logistic Regression.
Jose Alejandro Valdevila -Figueira, Omar Ruiz- Barzola *et al* 2021	Gateway drug Depression Personality disorder	p<0.0487 p<0.0003 p<0.0003	Ward's method. Chi-squared automatic interaction detection (CHAID).
Renato R.Abdala , André C.Miguel *et al,* 2019	History of depression Family history of suicide	p<0.05) p<0.05)	STATA version 13.
Xiao Zhang, Huifang Xu , Jing Gu *et al* 2016	Early drug use Limited social support	ORm = 0.37 Orm = 0.85	Univariate logistic regression adjusted for socio-demographic variables with P<. 05.
Jing Gu , Joseph T. F. Lau *et al* , 2014	Divorced Sex work for > 10 years	p<0.012 p<0.050	Univariate logistic regression.
Shane Darke , Joanne Ross et al 2015	Diagnosis of major depression	p< 0.001	IBM SPSS Statistics 22.0
Gregory ArmstrongAmenla Nuken , *et al* , 2013	Depression	ORm : 0.73	STATA version 13
Adam Carmel, Richard Ries *et al* 2016	Female gender	p<0.05)	SPSS Statistics 21.0

[A] – ***Ward's method:*** statistical software capable of clustering quantitative and qualitative variables. [B] - ***STATA version 13:*** statistical software for data analysis and manipulation [C] - ***IBM SPSS Statistics*** 22.0: statistical software [D] - ***SPSS Statistics 21.0***: statistical software.

Discussion

Statistics reveal that 46% of individuals experiencing suicidal ideation report some type of childhood abuse, with half of them reporting physical injuries and approximately one-third experiencing abuse weekly. These numbers surpass population estimates[25]. Despite the occurrence of childhood and adolescence abuse, the mean age of attempted suicide was 20 years, after the initiation of drug use and other associated risk factors[26].

Other variables may influence the relationship between drug use and suicidal ideation, such as family history[27]. Physiological comorbidities and socioeconomic situations can act as moderators of alcohol and other drug use disorders, as well as generate depressive symptoms[28]. Some studies indicate significant correlations between the age at drug use initiation and the duration of exposure to increased risk and suicidal behavior[27].

The use of certain drugs, such as marijuana, in conjunction with other illicit substances like amphetamines, markedly increases the risk of suicidal ideation when compared to individuals not using drugs[20]. Similarly, opioid use significantly increases suicidal thoughts, regardless of gender or age, with recent consumption shown to substantially elevate suicidal symptoms. However, few studies consider external factors and their contribution to suicidal ideation[22].

The presence of depressive symptoms, certain traits of impulsivity, and specific stressors can serve as mental triggers for drug use, potentially influencing suicidal thoughts. Additionally, other studies indicate that these thoughts may be correlated with being female and having a family history of suicide. The literature has previously outlined the association between drug abuse and suicidal ideation, suggesting that the excessive use of alcohol and other substances can biologically trigger suicidal thoughts and lead to attempts. This phenomenon may be linked to impulsivity and reduced risk perception[23].

Reduced social and family support can elevate the risk

of depression and foster suicidal ideation among drug users. In this context, it is undeniable that psychological services play a crucial role in fostering connection, bolstering family support, and promoting the individual's acceptance[25].

Various factors have been identified as triggers for suicidal ideation, including drug abuse, depression, family violence, and impulsivity[26].

Psychological factors affect suicide ideation/attempt through depression, while dysfunctional family dynamics, such as violence, and lack of support can directly impact suicidal ideation independently of depression[26].

Preventing suicide is the best way to deal with this problem in society. This includes psychological support and practical assistance to deal with life events. Additionally, engagement in sex work is identified as another factor associated with suicidal ideation in drug users, depending on exposure and length of time working in the profession[27]. Furthermore, the severity of psychoactive drug use increases the risk of suicide, as individuals become more prone to cravings[28].

Conclusion

Based on the reviewed articles, it is evident there are several factors associated with drug use and suicidal ideation. Further studies are necessary to explore additional variables for other possible outcomes, and to create effective public health strategies with the aim of preventing and managing this condition, which is often clouded by stigma. Empathetic medical services can allow the individual to show their real condition without shame. Drug users typically tend to isolate themselves and refrain from seeking help, and that increases the risk of suicide in this population.

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