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Epidemiological profile of suicide attempts in a municipality in southwest Paraná, from 2017 to 2020

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SUMMARY

OBJECTIVE: This study aimed to analyze the epidemiological profile and psychological disorder of the suicide attempt cases in Francisco Beltrão, Paraná.

METHODS: This is an epidemiological descriptive/qualitative study of suicide attempts conducted between 2017 and 2020. This study used data from the Brazilian Information system for notifications involving suicide attempts (Sistema de Informação de Agravos de Notificação, SINAN) and 447 notifications were obtained. An analysis of the electronic medical record of these patients was performed in order to investigate the mental disorders, using a questionnaire.

RESULTS: Of the 447 notifications, 382 were eligible for the study. Using the 95% confidence interval, there was a higher frequency of females with 71.7% aged between 18 and 35 years representing 48.4%, with 77.2% white race/color, the singles appeared in the majority with 47.6% with a history of previous suicide attempts, using exogenous intoxication as a method in the attempt with 67.5%. Regarding mental health, 66.5% of the patients had some mental disorders, with the highest prevalence of recurrent depressive disorder found in 40.6%.

CONCLUSION: It was observed that there is a need for training of health professionals and implementation of programs and preventive measures aimed primarily at females aged between 18 and 35 years with mental disorders, especially with recurrent depressive disorder and with a history of previous suicide attempt.

KEYWORDS: Public health. Mental disorder. Depressive disorders. Suicide.

INTRODUCTION

Understanding the reasons why a person commits suicide is very complex. As a self-inflicted disease, suicide has become a big public health problem. There is no single cause of reason, and it can result from a complex multifactorial interaction. However, most suicides are preventable[1].

More than 700,000 people die globally due to suicide every year, which means that every 40 s a person dies. In 2016, the Word Health Organization (WHO) found that suicide was the fourth leading cause of death among young people aged 15–29 years. About 77% of suicides in the world occur in low- and middle-income countries[2].

It is a phenomenon with great relevance to public health, due to its magnitude, the seriousness of the cases, hospitalizations and sequelae, and emotional damage caused to the victims and their families, thereby causing numerous psychological, social, and economic problems[3].

Suicide can be understood as a deliberate act that is performed by the individual, whose main intention is death, consciously and intentionally, even if ambivalent, using means or method that the individual believes to be lethal[4,5]. The Brazilian population has been showing a prevalence of suicidal behavior, with 17% of people having thought of suicide at some point in their lives, and only 1% was seen in the emergency department[4].

The principal risk factors for suicide are as follows: history of attempted suicide and mental disorder[1,4,6]. Previous attempt is the most important predictive factor, indicating that this patient is five to six times more likely to try again[4,5,7,8]. Besides mental disorders, other factors such as social and psychological aspects and health conditions, even impulsive acts, are involved[2,4].

The most frequently mental disorders associated with suicide are depression, bipolar mood disorder, dependence on alcohol and other psychoactive drugs, schizophrenia, and personality disorder. The risk becomes even bigger for patients with multiple psychiatric comorbidities[4].

Suicide prevention efforts are mainly focused on identifying people with mental health problems and on the availability of

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care and treatment, but there are also other forms of prevention, such as those aimed at other basic needs of each individual[9,10].

Thus, given this scenario, the main purpose of this study was to analyze the epidemiological profile, identify the existence of mental disorders, and investigate factors associated with suicidal behavior in the municipality of Francisco Beltrão, Paraná.

METHODS

This is a descriptive, quantitative, cross-sectional epidemiological study of suicide attempts that occurred in the municipality of Francisco Beltrão, Paraná, between 2017 and 2020.

This study was conducted using the database on notifications involving suicide attempts, through the SINAN database, from 2017 to 2020. These data were provided by the Municipal Health Department of Francisco Beltrão. SINAN is updated through notifications realized by the multidisciplinary teams of health units that provide care to these victims, filling out the specific Interpersonal/Self-Inflicted Violence form. Through this report, the following variables were extracted: sex, marital status, age group, method used in the suicide attempt, and if it occurred other times.

Then, for the analysis of information regarding mental disorders and multidisciplinary care, data collection was carried out through the verification of the electronic medical record using the operating system of the municipal health secretary, the electronic medical record of each patient individually since 2017, using a closed questionnaire, answering questions related to diagnosis of mental disorder, suicide attempts and/or reports of suicidal ideation, use of psychotropic medication for mental disorders, monitoring by a psychiatrist, psychologist and by the referral health unit of the patient.

Mental disorders were classified as described by the WHO in relation to those with the highest prevalence in cases of attempted suicide, and using the ICD — *International Classification of Diseases*[1], as follows: F19: Mental and behavioral disorders resulting from the use of psychoactive substances; F20: Schizophrenia; F31: Bipolar affective disorder; F33: Recurrent depressive disorder; F39: Unspecified "affective" mood disorders; F41: Anxiety disorders; and F60: Personality disorders.

The methods used in the suicide attempt were classified as Gunshot wounds, Knife wounds, Hanging, Exogenous intoxication (ingestion of drug overdose or other intoxication), Precipitation from high places, and other methods.

The inclusion criteria included all patients notified as a suicide attempt in the municipality of Francisco Beltrão, Paraná, from January 2017 to December 2020. Exclusion criteria used were notifications made for cases of accidental intoxication and interpersonal violence. Thus, of the 447 notifications extracted from the SINAN for interpersonal or self-inflicted violence, only 382 were considered eligible for suicide attempts, due to some notifications that did not qualify as a suicide attempt and/or duplicate.

Being a documentary research, without direct contact with patients, it did not preset any risk to patients, as well as those related to breaches of confidentiality, safeguarding the ethical and moral precept throughout its execution, not being necessary the approval by the ethics committee.

Maintaining the ethical and legal precepts, the identity of the subjects was kept confidential and the information collated reliably as shown in the notification forms in SINAN and in the electronic records of notified patients.

The collected data were analyzed using the statistical program IBM SPSS (Statistical Package for the Social Sciences), version 21. Absolute (n) and relative (%) frequencies were calculated to describe the sample profile. The chi-square test with continuity correction was performed to compare and cross-reference patients with a diagnosis of mental disorder and categorical variables, with values that presented $p<0.05$ being considered statistically significant.

RESULTS

A total of 382 patients who attempted suicides were analyzed. The general and clinical characteristics of the patients are shown in Table 1.

Of patients diagnosed with mental disorder (n=254), recurrent depressive disorder had the highest prevalence with 40.6% of cases (n=103), followed by anxiety disorder with 20.5% (n=52), disorder affective bipolar with 15.3% (n=39), unspecified "affective" mood disorder with 10.6% (n=27), and the other disorders added up to 13% (n=33).

Regarding the means used in suicide attempts, it was found that exogenous intoxication is the most prevalent with 67.5% (n=258), followed by knife wounds with 11.3% (n=43), hanging with 10.7% (n=41), and the other methods or association of methods with 10.5% (n=40).

When correlating patients diagnosed with mental disorder with the other characteristics of the sample, a statistically significant difference was observed in relation to variables related to age, follow-up, and recurrences (Table 2).

DISCUSSION

The prevalence of cases of suicide attempts in females can be explained by the fact that in males, suicide prevails as a fait accompli, because men tend to use more lethal medhods[11].

Table 1. General and clinical characterization of patients with a suicide attempt in the municipality of Francisco Beltrão, Paraná, from 2017 to 2020.

Variable	N	%
Sex		
Female	274	71.7
Male	108	28.3
Age group		
Between 8 and 17 years	104	27.2
Between 18 and 35 years	185	48.4
Above 36 years	93	24.4
Race		
White	295	77.2
Brown	56	14.7
Others	31	8.1
Marital status		
Single	182	47.6
Married	100	26.2
Others	100	26.2
Diagnosis of mental disorder		
Yes	254	66.5
No	128	33.5
Psychiatric follow-up		
Yes	208	54.5
No	174	45.5
Psychological follow-up		
Yes	135	35.3
No	247	64.7
Use of psychotropic medications		
Yes	256	67.0
No	126	33.0
More than one suicide attempt		
Yes	190	49.7
No	149	39.0
Ignored	43	11.3

Source: The author, 2021.

A lot of factors must be evaluated, which may be associated with sex, as the fact that women may be more vulnerable to moral and/or sexual violence and even physical aggression. Other factors are linked to unemployment and the women social culture in the family and society[12]. Suicidal ideation and suicide attempts in females are also related to sexual and domestic violence, unwanted or unplanned pregnancy, and mental disorders[13]. These suicidal behaviors presented in the age group between 20 and 35 years could be due to several reasons, including emotional, family and social problems, rejection, neglect, physical and sexual abuse in childhood, depressive mood, and family history of psychiatric disorders[14].

Data on race/color as a self-declared variable showed that 77.2% of the population declared themselves white, in line with the profile of the state of Paraná, which, according to the IBGE, more than 60% of the population declared themselves white[15].

Single individuals who still live alone have a high suicide rate. With the decrease in the average number of people in the family and especially the lack socialization, they have a significant relation with the increase in the suicide rate[16].

It is noteworthy that some disorders can lead to suicidal behavior and act as a mood disorder with 36%. In suicide victims, depression has the high prevalence, and it is more prevalent in women (25%) than that in men (12–13%). Data show that 6–8% of the Brazilian population will experience at least one episode in their lifetime[4,17].

Psychiatric disorders account for a large proportion of suicides and suicide attempts, and these numbers are at least 10 times higher than in the general population. The reported percentage of suicides committed in this context varies between 60% and 98% of all suicides. Mental disorders, and more specifically depressive disorder, are more prevalent in women and have a strong association with suicide[4,6].

In Brazil, in 2014, of the notified cases, 28% had already made a previous attempt[11]. One of the most important factors

Table 2. Comparison of general variables in relation to patients with a diagnosis or patients with mental disorders

Variable	Patients with diagnosis of mental disorder		
	Yes (n=254)	No (n=128)	p-value
Female	187 (73.6%)	87 (67.9%)	0.247
Age from 18 to 35 years	110 (45.8%)	75 (58.6%)	0.001
Single	123 (48.4%)	59 (46.1%)	0.141
Attempt for exogenous intoxication	163 (64.2%)	95 (74.2%)	0.138
More than one try	143 (56.3%)	47 (36.7%)	0.001
Drug treatment	241 (94.9%)	15 (11.7%)	0.000
Psychiatric follow-up	207 (81.5%)	01 (0.8%)	0.000
Psychological follow-up	132 (51.9%)	03 (16.6%)	0.000

Source: The author, 2021.

in future suicidal behavior is that the first suicide attempt has taken place[4,18]. There are still some doctors who think that patients who talk about suicidal ideation will never do it, that talking about the subject can encourage the act, are taboos that intervene in the assessment and adequate conduct[19].

Suicide attempts using drug intoxications occur mainly in young adults and females, corroborating the data from the present study, which suggests the need to implement assistance programs aimed at young adults that allow for the identification of risk situations for the suicidal act, due to the prevalence of suicide attempts in relation to the age group of 20–39 years with the abusive use of medications with a focus on causing their own death [20,21].

Thus, the multidisciplinary treatment for patients who attempted suicide is essential for the prevention of completed suicide.

Regarding the data in Table 2, demonstrating the association of patients diagnosed with mental disorder with the other variables in the sample, it is remarkable that patients diagnosed with mental disorder, undergoing multidisciplinary and drug treatment, still attempted suicide and the chance is 56.3%. These data show a warning, since patients undergoing treatment are still trying to commit suicide, which can expose weakness in treatment protocols, lack of trained professionals in care, difficult access, especially when the patient presents clinical instability. With a focus on reducing suicide rates, it is necessary to minimize ignorance and stigma related to mental illness. Suicide risk assessment should be performed whenever the physician deems it necessary[19].

Suicide prevention requires prevention and protection strategies at all levels of society. Learn the warning signs, promote prevention, and commit to social change[22].

CONCLUSIONS

The results of the present study reveal that there is an urgent need for training and capacitate of health professionals, demystification around the topic, implementation of preventive measures, with a focus on health promotion and facilitated access to health care points in all areas, with multidisciplinary care, with an emphasis on mental health, especially for populations with a history of suicide attempt or multiple attempts, with mental disorders, especially depressive disorder, the young adults and females, as they know the risk groups and disorders that more associated, will know how to plan and implement more efficient intervention protocols.

AUTHORS' CONTRIBUTIONS

AJB: Conceptualization, Data curation, Formal Analysis, Research, Methodology, Project management, Programs, Visualization, Writing – original draft, and Writing – review & editing. **LS**: Conceptualization, Formal Analysis, and Writing – original draft. **GWW**: Conceptualization, Data curation, Formal Analysis, Methodology, Validation, Visualization, Writing – original draft, and Writing – review & editing. **GV**: Formal Analysis, Acquisition of funding, Methodology, Validation, Visualization, Writing – original draft, and Writing – review & editing. **FMB**: Data curation, Formal Analysis, Programs, Validation, and Visualization. **RY**: Formal Analysis, Validation, Visualization, and Writing – review & editing. **FACF**: Conceptualization, Data curation, Formal Analysis, Methodology, Project management, Resources, Programs, Supervision, Validation, Visualization, Writing – original draft, and Writing – review & editing.

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