

# CUIDADO É FUNDAMENTAL

Escola de Enfermagem Alfredo Pinto – UNIRIO

RESEARCH

DOI: 10.9789/2175-5361.rpcfo.v14.11929

## RISK FACTORS FOR RECURRENCE OF SUICIDE ATTEMPT

*Fatores de risco para reincidência da tentativa de suicídio**Factores de riesgo para la recurrencia del intento de suicidio*Daniel Augusto da Silva<sup>1</sup> João Fernando Marcolan<sup>1</sup> 

### ABSTRACT

Objective: to analyze risk factors for recurrence of suicide attempt in people treated at the Emergency Care Unit in Assis, SP, Brazil. Method: quantitative study, participants who attempted suicide and attended at the reference unit. Individual interviews took place between December 2017 and November 2019. Divided into first-time suicide attempters and repeat offenders. Fisher's exact test, t-Student test for two samples and Multiple Logistic Regression Analysis were used. Results: 113 participants, being 80 (70.8%) repeat offenders, as they stated a previous history of suicide attempt and 33 (20.2%) being the first time. Conclusion: The age group from 20 to 47 years old, the self-perception of experiencing negative family relationships, the existence of mental disorder, the existence of chronic non-communicable diseases and people without a history of suicide attempt in the family were the risk factors associated with statistics for the occurrence of recidivism in suicide attempts.

**DESCRIPTORS:** Risk factors; Recidivism; Suicide; Attempted; Suicide.

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Received: 06/01/2022; Accepted: 06/06/2022; Published online: 11/28/2022

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**How cited:** Silva DA, Marcolan JF. Risk factors for recurrence of suicide attempt. *R Pesq Cuid Fundam* [Internet]. 2022 [cited year month day];14:e11929. Available from: <https://doi.org/10.9789/2175-5361.rpcfo.v14.11929>



## RESUMO

**Objetivo:** analisar fatores de risco para reincidência da tentativa de suicídio em pessoas atendidas na Unidade de Pronto Atendimento em Assis, SP, Brasil. **Método:** estudo quantitativo, participantes que tentaram o suicídio e atendidos na unidade referência. Entrevistas entre dezembro de 2017 e novembro de 2019. Divididos entre os que tentaram suicídio pela primeira vez e reincidentes. Utilizou-se teste Exato de Fisher, teste t-Student para duas amostras e Análise de Regressão Logística Múltipla. **Resultados:** 113 participantes, sendo 80 (70,8%) reincidentes, pois afirmaram histórico prévio de tentativa de suicídio e 33 (20,2%) ser a primeira vez. **Conclusão:** a faixa etária de 20 a 47 anos, a auto percepção de viver relações familiares negativas, a existência de transtorno mental, a existência de doenças crônicas não transmissíveis e pessoas sem histórico de tentativa de suicídio na família foram os fatores de risco com associação estatística para a ocorrência da reincidência da tentativa de suicídio.

**DESCRITORES:** Fatores de risco; Reincidência; Tentativa de suicídio; Suicídio.

## RESUMEN

**Objetivo:** analizar los factores de riesgo para la recurrencia de la tentativa de suicidio en personas atendidas en la Unidad de Atención de Emergencia de Assis, SP, Brasil. **Método:** estudio cuantitativo, participantes que intentaron suicidarse y asistieron a la unidad de referencia. Las entrevistas individuales se realizaron entre diciembre de 2017 y noviembre de 2019. Se dividieron en personas que intentaron suicidarse por primera vez y reincidentes. Se utilizó la prueba exacta de Fisher, la prueba t-Student para dos muestras y el Análisis de Regresión Logística Múltiple. **Resultados:** 113 participantes, siendo 80 (70,8%) reincidentes, ya que refirieron antecedentes de intento de suicidio y 33 (20,2%) siendo la primera vez. **Conclusión:** El grupo de edad de 20 a 47 años, la autopercepción de experimentar relaciones familiares negativas, la existencia de trastorno mental, la existencia de enfermedades crónicas no transmisibles y las personas sin antecedentes de intento de suicidio en la familia fueron de riesgo. factores asociados a las estadísticas de ocurrencia de reincidencia en intentos de suicidio.

**DESCRIPTORES:** Factores de riesgo; Reincidencia; Intento de Suicidio; Suicidio.

## INTRODUCTION

In the current context, the World Health Organization estimates more than 700,000 deaths by suicide annually worldwide.<sup>1</sup> In 2019, the global suicide mortality rate was 9.0 per 100,000 population, but one must consider significant differences in mortality rates between countries ranging from 2 to 80 per 100,000 population.<sup>2</sup> In Brazil, 13,523 deaths by suicide were recorded in 2019, a number 43.0% higher when compared to the 9,454 deaths recorded in 2010. The suicide death rate in 2019 in Brazil was 6.6 per 100,000 inhabitants.<sup>3</sup> It is estimated that in the world between 20 and 30 suicide attempts occur for every suicide.<sup>4</sup>

Brazil officially registered 89,272 suicide attempts in 2018, a number that reflects the severity of this phenomenon.<sup>4</sup> It is worth noting that this is a situation in which underreporting prevails, a product of the deficit of knowledge about the importance of notifying, lack of adherence, ignorance about the diseases and diseases that must be notified, difficulty in identifying the intentionality of the act, attempts of low complexity that do not reach the health services, and sociocultural and economic reasons.<sup>5</sup>

Factors such as the presence of mental disorders, especially depression, bipolar disorder, anxiety disorders, schizophrenia, and substance abuse, and psychosocial factors such as bullying, family problems, and violence are the greatest risks for the development of suicidal behavior, which involves suicide ideation, suicide planning, suicide attempts, and death by suicide.<sup>4,6,7</sup>

It is possible to prevent death by suicide by early identification, approach, and treatment/intervention of risk factors. People with

a history of previous attempts stand out as a major risk factor for repeated attempts and death by suicide.<sup>1,8,9</sup>

The literature presents the following as risk factors for repeat suicide attempts: female gender, autointoxication due to exposure to sedatives, living with family, age range 35 to 65 years, history of personality disorders, drug use, unemployment,<sup>10</sup> mood disorder, previous sexual abuse, severity of hopelessness,<sup>11</sup> needing emergency care as a result of a suicide attempt,<sup>12</sup> anxiety disorders, more frequent disability insurance, and previous psychiatric care.<sup>13</sup>

However, even when considering death by suicide as preventable, deaths continue to occur; and even when considering the history of attempted suicide as a prominent indicator for suicide risk, the occurrence of recidivism of this action was noted in 69.5% of respondents who had attempted suicide in a survey conducted in the interior of São Paulo, Brazil.<sup>11</sup>

A systematic review with meta-analysis of longitudinal studies about recidivism of suicide attempts, classifying them as fatal or nonfatal, indicates that in follow-up periods of 6 months, 1 year, 2 years, and 3 years, the nonfatal repetition rates were 15.01%, 17.03%, 20.82%, and 24.20%, respectively. In the same periods, the fatal repeat rates were 0.77%, 1.34%, 1.49%, and 2.46%, respectively.<sup>14</sup>

From the understanding that the recurrence of suicide attempt is a global reality and that it assumes greater importance as a risk factor for death by suicide, this research aims to analyze the risk factors for recurrence of suicide attempt in people who were assisted at the Emergency Care Unit in Assis/SP.

## METHOD

This is an exploratory, descriptive research with a quantitative approach, guided by the STROBE<sup>15</sup> tool of the Equator network. People assisted in the emergency service due to a suicide attempt.

The research was carried out in a 24-hour Emergency Care Unit (UPA) in the city of Assis/SP, which provides urgency and psychiatric emergency care, including suicide attempts.

The inclusion criteria were for people seen in the emergency service during the period of data collection (December 2017 to November 2019), as a result of a suicide attempt and aged 14 years or older. Patients with cognitive impairment that made it impossible to participate in the interview and the situation in which the patient was discharged before it was possible to make the invitation to participate were not included in the study. As an exclusion criterion, we adopted the issue of the participant having been interviewed and, later, having requested the exclusion of his data.

During the study period, 309 suicide attempts with emergency care carried out in the Emergency Care Unit were identified. From these 309 occurrences, it was possible to interview 113 people who attempted suicide.

After approaching the hospitalized individuals and identifying the possible participant, they were given explanations about the research, objectives, form, and consent to participate, and then the Informed Consent Form was handed in, signed by the researcher and participant in two original copies, with one copy for each.

Data collection was carried out by a researcher, a nurse, by means of an interview based on a form containing socio-demographic variables (gender, age, skin color, education, sexual orientation, marital status, number of children, religion, housing conditions, source of income, and participation in social groups), clinical variables (presence of physical illnesses, mental disorder, and use of psychoactive substances), and history related to suicidal behavior (suicide attempt by friends and family members, suicide death by friends and family members, planning, issuing of warnings, method, and place).

The interviews lasted, on average, 40 minutes and occurred in a private environment, in the health unit, so that the participants could answer the questions without interference and the privacy of information was guaranteed. All interviews were audiorecorded and fully transcribed.

For data processing and analysis the interviews were typed into Microsoft Excel spreadsheets and analyzed with descriptive and inferential statistics. We considered as dependent variable the recidivism of the suicide attempt and as predictors the socio-demographic, clinical and history variables for suicidal behavior. Participants were divided into two groups: those who had attempted suicide for the first time and those who had attempted suicide two or more times (recidivists).

To test whether or not the differences between the percentages of the groups were significant, the Fisher's Exact test was used, and to assess the difference between the means, the two-sample t-Student test was used. For the joint evaluation of the characteristics we used the Multiple Logistic Regression Analysis. The significance level adopted for the analyses in this study was  $p < 0.05$ , which conveys 95% confidence for the statements.

The norms that regulate ethics in research with human beings, set forth in Resolution No. 466/2012 of the National Health Council, were followed to conduct this study. The research was approved by the Research Ethics Committee of the Federal University of São Paulo with Opinion no. 2,314,347, in the year 2017. All participants were informed about the purpose and nature of the research, as well as provided written consent. For participants under 18 years of age, their consent and the written authorization of the person legally responsible were obtained.

## RESULTS

We interviewed 113 people who were being assisted due to the occurrence of a suicide attempt. From this total, 80 (70.8%) were recidivists, as they stated previous history of suicide attempt, and 33 (29.2%) stated it was the first time of suicide attempt. Table 1 presents the socio demographic and clinical characteristics between the two groups of participants, those of single suicide attempt and those of recidivism.

Table 2 presents information about the history of suicidal behavior distributed according to recidivism or one-time suicide attempt.

In assessing characteristics jointly and the impact on recidivism of suicide attempt, Table 3 presents the characteristics that proved significant according to Multiple Logistic Regression Analysis, and Table 4 presents Odds Ratios and Confidence Interval.

**Table 1** – Data of sociodemographic and clinical characteristics of participants according to recidivism or one-time suicide attempt (n=113). Assis, SP, Brazil, 2021

Characteristic	Group	Suicide attempt		p-value
		Recidivism– n (%)	Single– n (%)	
Gender	Female	64 (74,4)	22 (25,6)	0,1498
	Male	16 (59,3%)	11 (40,7)	
Age group	12 to 17 years old	2 (40,0%)	3 (60,0%)	0,1045
	18 to 30 years old	38 (66,7%)	19 (33,3%)	
	31 to 65 years old	40 (78,4%)	11 (21,6%)	

**Table 1 – Cont.**

Age	Mean ± SD	34,1 ± 13,6	28,3 ± 10,3	<b>0,0160</b>
Sexual orientation	Heterosexual	73 (70,9%)	30 (29,1%)	1,0000
	Bi / Homosexual	7 (70,0%)	3 (30,0%)	
Race	White	43 (69,4%)	19 (30,6%)	0,8358
	Not White	37 (72,5%)	14 (27,5%)	
Marital Status	Single	34 (69,4%)	15 (30,6%)	0,8550
	Married / Stable Union	32 (69,6%)	14 (30,4%)	
Children	Separated / Divorced	14 (77,8%)	4 (22,2%)	0,3943
	Yes	52 (74,3%)	18 (25,7%)	
Religion	No	28 (65,1%)	15 (34,9%)	1,0000
	Yes	60 (70,6%)	25 (29,4%)	
Schooling	No	20 (71,4%)	8 (28,6%)	0,5039
	Elementary School and less	18 (72,0%)	7 (28,0%)	
	Medium	52 (73,2%)	19 (26,8%)	
Income type*	Higher	10 (58,8%)	7 (41,2%)	0,1390
	Dependent	28 (62,2%)	17 (37,8%)	
Self-perception about family relationships	Independent	52 (76,5%)	16 (23,5%)	<b>0,0100</b>
	Negative	56 (80,0%)	14 (20,0%)	
Chronic non-communicable diseases	Positive	24 (55,8%)	19 (44,2%)	<b>0,0057</b>
	Yes	37 (86,0%)	6 (14,0%)	
Mental disorder **	No	43 (61,4%)	27 (38,6%)	<b>0,0005</b>
	Yes	58 (82,9%)	12 (17,1%)	
Drugs	No	22 (51,2%)	21 (48,8%)	0,6647
	Yes	29 (74,4%)	10 (25,6%)	
	No	51 (68,9%)	23 (31,1%)	

\* Independent income: government benefits, retired, self-employed and employed. Dependent income: unemployed who depend on parents, spouse or other relatives.

\*\* Bipolar affective disorder, Recurrent depressive disorder, Panic disorder, Generalized anxiety, Schizophrenia, Personality disorder with emotional instability.

**Table 2 – Data related to history of suicidal behavior according to recurrence or one-time suicide attempt (n=113). Assis, SP, Brazil, 2021**

Characteristic	Group	Suicide attempt		p-value
		Recidivism- n (%)	Single - n (%)	
Traumatic situation	Yes	70 (70,0%)	30 (30,0%)	0,7528
	No	10 (76,9%)	3 (23,1%)	
Suicide attempt in the family	Yes	13 (59,1%)	9 (40,9%)	0,1979
	No	67 (73,6%)	24 (26,4%)	
Suicide attempt by friends	Yes	9 (60,0%)	6 (40,0%)	0,3656
	No	71 (72,4%)	27 (27,6%)	
Suicide in the family	Yes	15 (68,2%)	7 (31,8%)	0,7966
	No	65 (71,4%)	26 (28,6%)	
Suicide by friends	Yes	14 (60,9%)	9 (39,1%)	0,3045
	No	66 (73,3%)	24 (26,7%)	
Suicide by family and friends	Yes	23 (62,2%)	14 (37,8%)	0,1885
	No	57 (75,0%)	19 (25,0%)	
Planning	Yes	18 (75,0%)	6 (25,0%)	0,8010
	No	62 (69,7%)	27 (30,3%)	

**Table 2 – Cont.**

Issuance of Notices	Yes	25 (83,3%)	5 (16,7%)	0,1019
	No	55 (66,3%)	28 (33,7%)	
Method	Exogenous Intoxication	54 (66,7%)	27 (33,3%)	0,5330
	Hanging	10 (90,9%)	1 (9,1%)	
	Cutting	6 (66,7%)	3 (33,3%)	
	Impact with vehicle	5 (83,3%)	1 (16,7%)	
	Cut + Exogenous Intoxication	2 (100,0%)	0 (0,0%)	
	Fire	1 (100,0%)	0 (0,0%)	
	Ideation	1 (100,0%)	0 (0,0%)	
	Precipitation in high places	1 (100,0%)	0 (0,0%)	
	Hanging + Exogenous Intoxication	0 (0,0%)	1 (100,0%)	
	Work place	2 (50,0%)	2 (50,0%)	
Place of attempt	Family residence	10 (76,9%)	3 (23,1%)	0,8258
	Personal residence	61 (70,1%)	26 (29,9%)	
	Public road	7 (77,8%)	2 (22,2%)	
Prior diagnosis of depression	Yes	37 (82,2%)	8 (17,8%)	<b>0,0355</b>
	No	43 (63,2%)	25 (36,8%)	

**Table 3 – Multiple Logistic Regression Analysis (n=113). Assis, SP, Brazil, 2021**

Characteristic	Parameters	Chi-square	p-value
Family relations	1	4,149	0,0417
Mental disorder	1	12,439	0,0004
Chronic Non-Communicable Diseases	1	4,520	0,0335
Family suicide attempt	1	6,053	0,0139

**Table 4 – Odds Ratios and Confidence Intervals (n=113). Assis, SP, Brazil, 2021**

Characteristic	Level1	/ Level2	Odds Ratio	p-value	IC 95%
Family relations	Negative	Positive	2,788	0,0438	1,029 ; 7,554
Mental disorder	Yes	No	6,851	0,0012	2,146 ; 21,868
Chronic noncommunicable disease	Yes	No	3,253	0,0432	1,036 ; 10,210
Suicide attempt in the family	No	Yes	5,075	0,0183	1,316 ; 19,571

## DISCUSSION

This research sought to analyze the risk factors for recidivism of suicide attempt. The findings of this investigation pointed to a higher risk in people aged 20 to 47 years, who experience negative family relationships, have mental disorders, have non-transmissible chronic diseases and have no history of attempted suicide in the family.

The results of this research point to a significant difference ( $p = 0.0160$ ) in relation to age, with greater recurrence of suicide attempt in people with higher mean age (34.1 years), when compared to the mean age of non-recidivists (28.3 years).

Older age has been a risk factor for the recidivism of suicide attempt in other studies, such as in Spain, where the mean age of recidivism was 42.7 years;<sup>10</sup> and in Santa Catarina, where recidivism was higher in adults aged between 20 and 59 years.<sup>16</sup>

The analyses presented allow us to affirm that experiencing negative family relationships increases in 2.8 times the chance of recidivism of suicide attempt when compared to people with positive family relationships.

The family, including family formation, family dynamics, interpersonal relationships, and the quality of bonds among its members, is a determining condition for the protection or risk of developing suicidal behavior. Family environments characterized by support and sentimental attachment generate a positive impact, on the other hand, maladjusted family relationships, with exposure to physical and verbal violence, hurt, resentment, isolation, and betrayal can influence the development of suicidal behavior, assuming, therefore, a position of risk.<sup>7</sup>

Besides the negative experiences and their consequences, typical of the maladjusted family relationship, it is important to emphasize the absence of healthy bonds, social support, and the feeling of protection that the family provides. In this sense,



the maladjusted family can be the causative element of adversity and the absence of social support. One can perceive the double negative psychological impact.<sup>7,17</sup>

Adverse childhood experiences, which include family violence, substance abuse in the home, parental divorce, and child neglect can generate negative consequences in adulthood. Research on unhealthy family relationships, with a focus on childhood neglect (physical and emotional), obtained as an effect a higher risk of attempted suicide in adulthood when compared to people who did not report this life experience. This childhood neglect resulted in people with less social interaction, inability to cope, a tendency to passivity and helplessness, and internalizing symptoms (hopelessness, depression, and anxiety).<sup>18</sup>

Regarding the existence of a mental disorder, the data from this research shows that the recurrence of suicide attempt is 6.9 times more likely to happen when compared to people who deny this condition. The mental disorders cited by the participants were those generally found in the literature.

The relationship between suicide and mental disorders is widely discussed. Estimates indicate that more than 90% of people who die by suicide had at least one mental disorder, with emphasis on the lack of access to treatment that highlights the omission of mental health care, an action with potential for preventing deaths by suicide.<sup>19</sup>

The World Health Organization emphasizes depression and alcohol use disorders as the most incident disorders related to suicide.<sup>1</sup> However, it is worth noting that suicidal behavior is multifactorial, and is not the exclusive product of the prior existence of mental disorders. Mental disorders should be understood as part of the multifactoriality of this phenomenon.<sup>4,5</sup>

Studies indicate that people with depression live 7 to 17 years less than people without depression; in this condition, the risk of death by suicide is about 20 times higher than in the general population. Suicidal behavior is estimated to be present in 75% of people diagnosed with depression.<sup>20</sup>

In an analysis of another variable, people with chronic non-communicable diseases are 3.3 times more likely to repeat a suicide attempt when compared to people without pathologies.

The literature has discussed the association between suicidal behavior and chronic non-communicable diseases, but it has presented different results in different study contexts and with samples that make it impossible to generalize the results. At this juncture, we cite the association with suicidal behavior for traumatic brain injury, stroke, cancer, heart failure, chronic obstructive pulmonary disease, HIV/AIDS, renal failure, epilepsy, diabetes, arthritis, atopic dermatitis, and sleep disorders.<sup>21,22</sup>

In fact, chronic non-communicable diseases generate a significant impact on people's lives because they require changes in the context of life; they are associated with decreased quality of life and exert functional, social, and psychological losses. The demands that limit the activities of daily living result in three to four times higher risk of developing suicidal behavior when compared to the general population.<sup>17,21</sup>

A study in Ireland found no association with multimorbidity, but emphasizes the threshold for limiting activities.<sup>23</sup> However, in the United States it was found that having two or more chronic illnesses increased the risk for suicide by 4.12 times.<sup>24</sup> In South Korea, people with multimorbidity-five or more chronic illnesses-had a 2.78 times greater risk of suicidal ideation.<sup>22</sup>

Young people may suffer greater psychological impact when reflecting on the imposition of restrictions throughout their lives, a fact that translates into risk of developing suicidal behavior.<sup>25</sup> Research conducted with Chilean university students reported that the recurrence of suicide attempt in young people with chronic noncommunicable diseases was three times higher when compared to young people who denied this condition.<sup>17</sup>

About the experience of suicide attempt in family members, the data of this study expose that people who did not experience this experience have 5.1 times more chance of recidivism of suicide attempt when compared to people with family history of suicide attempt, a result contrary to what is exposed in the world literature.

World literature shows that there is a greater risk of developing suicidal behavior in people who have a history of death by suicide or suicide attempt in first-degree relatives.<sup>26</sup> This association has been studied, as it takes into account complex genetic and psychological interactions involving genetic anticipation and cyclothymic and anxious temperament.<sup>27</sup> Moreover, contact with reports about or people in suicidal behavior may influence the adoption of violent conduct against oneself or suicidal behavior, the phenomenon of suicide by imitation or contagion.<sup>28</sup>

It is also known that family members of people who have attempted suicide or who have died by suicide are widely affected in their physical and psychological health. Scared by the occurrence in their family member, feelings of guilt, fear of what might happen, uncertainty about how to act, shame, embarrassment, concerns about parenting skills, searching for answers, insomnia, fatigue, weight loss, and chest pains are situations experienced by people who have a family member who has attempted suicide.<sup>9,29</sup>

The disclosure of suicidal behavior to family members can trigger positive and negative reactions. The positive reactions involve social support and family involvement in the health recovery process, so that they can ease the situation by developing and strengthening feelings of belonging. The negative reactions are related to the perpetuation of the suffering picture, as they involve stigma, isolation, the need to identify guilty parties, shame, and anger. Positive reactions occur in families with healthy relationships, while negative reactions due to maladjusted family relationships, in a pre-morbid family dynamic.<sup>30</sup>

There is a clear need for further research on this subject, in order to clarify the associations involving family relationships and a history of attempted suicide in the family, since the data presented here differ from the literature, and reflect a reality of higher risk for the recurrence of suicide attempt in families without this history. It is important to understand the reason for the suicide attempt and its recurrence in homes in which this phenomenon is not common to other members.

It is emphasized that it is possible to prevent suicide, and most of the time it is an avoidable death, by identifying and intervening in the risk factors and implementing appropriate strategies based on scientific evidence. There is a need for investment in a surveillance system for suicidal behavior, with the goal of integral care, which includes health education, early detection and assistance to people with suicidal behavior, dignified and humanized care in cases of attempted suicide and in the follow-up after the suicide attempt as well as in the postvention, in order to prevent recidivism and recover mental health.

Research focused on suicide prevention has concentrated efforts on identifying risk factors in order to produce evidence that supports intervention and the development of public health policies. This research will help local and regional authorities to develop public policies for the prevention of suicidal behavior.

This research is limited by its geographical scope, which describes the reality of people who attempted suicide and were assisted in an Emergency Care Unit of a city in the interior of the state of São Paulo, and because of this, there is no possibility of generalizing the results found; however, it is innovative in describing information about the recurrence of suicide attempts in this city.

## CONCLUSION

The age range of 20 to 47 years, the self-perception of living negative family relationships, the existence of mental disorder, the existence of non-transmissible chronic diseases and people with no history of suicide attempt in the family make up the risk factors with statistical association for the occurrence of recidivism of suicide attempt in the sample studied.

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