

## Factors Associated with Suicidal Ideation in Male Adolescents in the Western Amazon

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**Abstract:** Males dominate suicide death rates across all age groups. The aim of this study was to investigate suicidal ideation and its associated factors in male adolescents. We assessed a total of 424 adolescents aged between 12 and 18 years, from primary and secondary schools. The instruments used were a sociodemographic questionnaire, the Conceptions of Masculinity Scale/CMS, the Depression, Anxiety and Stress Scale for Adolescents/EDAE-A, and the Beck Scale for Suicide Ideation Scale/BSSI. The prevalence of suicidal ideation was 26.4%, which is considered to be high. The factors associated with the adjusted model were single-parent family structure and shared custody, symptoms of mild and moderate, severe, and extremely severe depression and anxiety. It is recommended that parents and schools be made aware of the need to work on the subject in order to promote prevention in identifying signs of suicidal behavior among adolescents.

**Keywords:** adolescence, suicidal ideation, masculine, depression

## Fatores Associados à Ideação Suicida em Adolescentes Masculinos da Amazônia Ocidental

**Resumo:** Em todas as faixas etárias, o público masculino lidera os índices de óbitos por suicídio. Este estudo teve como objetivo investigar a ideação suicida e fatores associados em adolescentes do gênero masculino. Foram avaliados 424 adolescentes com idades de 12 a 18 anos do Ensino Fundamental e Médio. Os instrumentos utilizados foram um questionário sociodemográfico, a Escala de Concepções das Masculinidades/ECM, a Escala de Ansiedade, Depressão e Estresse para Adolescentes/EDAE-A e a Escala de Ideação Suicida/BSI. A prevalência de ideação suicida foi de 26,4%, considerada elevada. Os fatores associados ao modelo ajustado foram estrutura familiar uniparental e guarda compartilhada, sintomas de depressão e ansiedade leve e moderada, severa e extremamente severa. Recomenda-se conscientizar os pais e a escola sobre a necessidade de trabalhar a temática para promover a prevenção na identificação de sinais do comportamento suicida entre os adolescentes.

**Palavras-chave:** adolescente, ideação suicida, masculino, depressão

## Factores Asociados a la Ideación Suicida en Adolescentes Masculinos de la Amazonia Occidental

**Resumen:** En todos los grupos de edad, los varones encabezan las tasas de mortalidad por suicidio. El objetivo de este estudio fue investigar la ideación suicida y los factores asociados en adolescentes varones. Se evaluó a un total de 424 adolescentes de entre 12 y 18 años, de escuelas primarias y secundarias. Los instrumentos utilizados fueron un cuestionario sociodemográfico, la Escala de Concepciones de Masculinidad/ECM, la Escala de Ansiedad, Depresión y Estrés para Adolescentes/EDAE-A y la Escala de Ideación Suicida/BSI. La prevalencia de ideación suicida fue del 26,4%, considerada alta. Los factores asociados al modelo ajustado fueron estructura familiar monoparental y custodia compartida, síntomas de depresión y ansiedad leves y moderados, graves y extremadamente graves. Se recomienda concienciar a los padres y a las escuelas sobre la necesidad de trabajar el tema para promover la prevención e identificar signos de comportamiento suicida entre los adolescentes.

**Palabras clave:** adolescencia, ideación suicida, masculino, Depresión

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Adolescence is a stage of human development that is characterized by multiple transformations, including the physical, neurochemical, cognitive, emotional, behavioral, and social dimensions (World Health Organization [WHO], 2020). According to data from the Abrinq Foundation (2022) for the Rights of Children and Adolescents, in the first edition of the Scenario of Childhood and Adolescence in Brazil, it was estimated that the general population in the northern region, at 41.60%, has the highest proportional percentage of this age group.

Adolescence is marked by the pursuit of an identity and values, the desire to belong to groups, the development of skills and competencies, as well as the search for autonomy and the forging of relationships (Pessoa et al., 2020). This phase is recognized in many cultures as challenging, not only for adolescents but also for the adults with whom they interact (Siegel, 2021). One possible consequence of this view of adolescent behavior as unstable and exaggerated is the difficulty in diagnosing and treating emotional disorders, which become more evident during this phase of life.

Regardless of gender, anxiety disorders and depression are common among young people. Adolescents often face difficulties related to physical, psychological, social, and cultural changes, which can result in altered levels of anxiety, depression, and stress. A widely discussed hypothesis is that these difficulties stem from the suffering caused by excessive cultural demands, family conflicts, school expectations, career choices, and the way adolescents experience their interpersonal relationships (Ribeiro & Guerra, 2020). In the case of male adolescents, there is also social pressure for these experiences to occur in a way that sustains the idealized profile of resistance to suffering (Bola, 2020; Connell, 2016).

The theory of masculinities, proposed by Connell (2016), suggests that boys and men are socialized to internalize rigid norms that emphasize self-control, emotional independence, and resistance to suffering. Hegemonic masculinity, in particular, reflects a social construct that pressures individuals to hide vulnerabilities, repress emotions such as sadness and fear, and avoid showing affection, under penalty of being considered “a lesser man” or weak (Costa et al., 2023). These norms can cause significant psychological distress, as male adolescents who do not conform to these standards are more prone to feelings of inadequacy and loneliness, which can culminate in serious emotional difficulties, such as depression and suicide (Bola, 2020; Connell, 2016; Pessoa et al., 2020).

In addition, at this stage, adolescents are particularly vulnerable to challenges related to social expectations of appropriate behavior in the face of conflict and uncertainty. These stressors can lead to maladaptive ways of dealing with emotions and, combined with mental disorders and alcohol and drug use/abuse, increase the risk for suicide (Pessoa et al., 2020).

WHO (2021) highlights that suicide remains one of the leading causes of death worldwide, with one in every 100 deaths being attributed to this behavior. Among those aged 15 to 29, suicide is the fourth leading cause of death, being up

to 3.6 times more common among men than among women (Jaen-Varas et al., 2020; Sousa et al., 2020). The incidence is higher among adolescents over 15 years of age (Bahia et al., 2020; Fernandes et al., 2020; Silva et al., 2021; Sousa et al., 2020).

Brazil is among the ten countries with the highest suicide rates, recording 172,051 deaths between 1996 and 2015 (Fernandes et al., 2020). During this period, 10,039 cases were reported among male adolescents. The Northern Region showed a significant increase in cases, with 12,060 deaths, 78.7% of which were among men (D’Eça Júnior et al., 2019). This study is also justified by the lack of information on the subject in the northern region of Brazil, according to a survey conducted, on the LILACS, BVS, SciELO, and Google Scholar databases, on publications that address suicidal ideation in male adolescents.

Suicide is considered a public health issue due to its growing impact, with an alarming number of attempts that cause psychological damage to individuals, their families, and communities, in addition to social and economic consequences (Lima, Messias, et al., 2021; Santos et al., 2022; Sousa et al., 2020). In the case of adolescents, the main causes associated with this issue include poverty, violence, negative social repercussions, family conflicts, romantic disappointments, school violence, and a history of suicidal ideation and behavior (WHO, 2021; Silva et al., 2023; Sousa et al., 2020). These factors are intertwined with the demands characterizing this phase, such as the search for social belonging, the development of the perception of one’s own abilities and skills, the construction of one’s identity, the search for autonomy and decision-making, as well as the formation of life values (Lima, Messias, et al., 2021; Neufeld et al., 2017; Soares et al., 2020). When adolescents lack intrinsic, family, social, or institutional resources, they may experience emotional distress, which increases their risk for suicide.

Suicide, in turn, is one of the main concerns in adolescent health, especially due to the increase in cases observed globally (Ribeiro & Guerra, 2020; Sousa et al., 2020). This behavior comprises a spectrum of thoughts and actions related to death and self-harm that are deliberately planned with the intention of causing fatal harm. One of such behaviors is suicidal ideation, characterized by the desire not to live, even if the method used in an attempt is unlikely to be lethal (Brito et al., 2020). Suicide attempts, in turn, involve the execution of plans to end suffering, and suicide is the consummated act (Soares et al., 2020).

Different theories, mainly related to the “theory for action” perspective, have sought to understand the relationship between attempts, ideations, and risk and protective factors. One of these theories is called the 3-Step Model (Klonsky et al., 2021), which, through three steps, provides an explanation for suicide attempts. The first is the emergence of suicidal ideation, resulting from a combination of psychological pain and hopelessness. Psychological pain can be described as the result of various circumstances, such as the end of a relationship, unemployment, or mental illness. The second step occurs when psychological pain exceeds

the individual's connections, producing stronger ideation. Connections include an individual's all sorts of relationships, such as friends, community, and identity aspects. Finally, in the third step, strong ideation produces the attempt, when the capacity for suicide is present. The 3-Step Model explains the progression from suicidal ideation to attempting suicide and, in the case of adolescents, it can help to understand the role of factors associated with the onset and maintenance of death ideas.

The present study aims to investigate suicidal ideation and the factors associated with it in male adolescents, with the aim of contributing to the development of strategies that strengthen public policies for mental health promotion and prevention for this group. Such interventions can create a safe space, allowing adolescents to explore their emotions and identity issues without the stigma of fragility. Recognizing the influences of hegemonic masculinity on psychological distress is essential for improving public policies and therapeutic approaches that promote more balanced and sustainable mental health.

## Method

This is a correlational study. It was developed with a sample of male elementary and high school students between the ages of 12 and 18 years, from public and private schools in the city of Porto Velho (RO), northern Brazil, in 2022.

### Participants

For the study population, a survey was conducted in the school census at the State Department of Education (statistics sector/SEDUC/ <https://qedu.org.br/municipio/1100205-portovelho/censo-escolar>) in March 2022, where it was reported and estimated at approximately 29,405 in the 27 public schools and 11 private schools in the city of Porto Velho, RO. For the sample calculation, a prevalence of suicidal ideation of 50% (probability), a 95% confidence interval, and a 5% sampling error (Eo) were used, totaling 379 adolescents. For the purpose of design, 45 (12%) adolescents were added, resulting in a total of 424. The Epi info™ software, version 7.2.6.0, was used for the calculation. The sample power was equivalent to  $(1 - \beta)$  86% ( $\beta = 14\%$ ) and the confidence level was 95% ( $\alpha = 5\%$ ) to detect areas under the Receiver Operating Characteristic (ROC) curve equal to or greater than 0.50 as significant. To estimate the odds ratio association between suicide ideation scores, a prevalence ratio of exposed-unexposed of 1.3 was presented, with a critical area of  $z=1.07794$ . It was calculated using the G\*Power 3.1.9.7 program.

The sampling criterion was probabilistic, adopting the simple random and cluster method, where the following were randomly selected: two public and private schools, public schools ( $n=231$ ; 54.5%) and private ( $n=193$ ; 45.4%), as well as two classes from each grade - elementary school: 7th grade ( $n=52$ ; 12.3%), 8th grade ( $n=100$ ; 23.6%); and high school, 9th grade ( $n=86$ ; 20.3%), 10th grade ( $n=63$ ; 14.9%), 11th grade ( $n=73$ ; 17.2%), and 12th grade ( $n=50$ ;

11.8%), respectively. All students in the randomly selected classes were included in the study. In this process, there were five refusals from private schools and four refusals from public schools to participate in the study. Parents' resistance to accepting the topic was identified as a concern by the school administration and pedagogical coordination. Thus, in an attempt to resolve this problem, the project was included in the Entrepreneurship and Ethics course in private schools, and in the Portuguese, philosophy, and sociology courses in public schools. The criterion for non-inclusion was related to students who were unable to use their cognitive skills to understand and complete the questionnaire.

### Instruments

To achieve the objectives established for the study, the following were used: a sociodemographic questionnaire; the Beck Scale for Suicide Ideation (BSSI); the Conceptions of Masculinity Scale (CMS); and the Depression, Anxiety, and Stress Scale for Adolescents (EDAE-A).

*Sociodemographic Questionnaire.* The variables were level of schooling (elementary and high school) and school type (public and private), family structure (nuclear, extended, reconstructed, single-parent, and shared custody) (Dias, 2011), as well as the number of residents in the household ( $\leq 3$  and  $> 3$  residents) and the father's and mother's education (elementary, secondary, and higher education).

*Beck Scale for Suicide Ideation (BSSI).* In order to measure the extent of motivation and planning for suicidal behavior in the past week, the Beck Scale for Suicide Ideation (BSSI), developed by Beck and Steer (1991), was used. Its English version consists of 21 items, each with three answer choices. The Portuguese version, serving the same purpose, was validated by Cunha (2001), which also targets adolescents. The following cut-off points were adopted: if the answers to questions 4 and 5 were "zero", the participant was considered to have no suicidal ideation ( $SI=0$ ) and the assessment ended. If the answers to question 4 or 5 were "one" or "two", the participant was considered to have suicidal ideation ( $SI=1$ ) and was asked to complete the questionnaire, answering up to question 21.

*Conceptions of Masculinity Scale (CMS).* To assess compliance with and rejection of masculine norms, we used the scale originally developed by Oransky and Fisher (2009) in English and consisting of 26 items. Adaptation and validation in Brazil were carried out by Guerra et al. (2014). They reduced the instrument to a 16-item version to be answered using a Likert scale ranging from 1 (Disagree) to 4 (Agree). The instrument aims to measure participants' conceptions of masculinity. It presents items organized into three dimensions: emotional restraint (e.g., men should not talk about their concerns with each other), homoaffectivity (e.g., real men never act like girls), and social provocation (e.g., being teased helps men become tough). The Cronbach's alpha coefficient found in the analyses in this study was .79.

*Depression, Anxiety, and Stress Scale for Adolescents (EDAE-A).* To assess the emotional aspects of adolescents,

the instrument developed by Patias et al. (2016) was used. Its first version had 42 items, which were later reduced by the researchers themselves to 21 items, consisting of a set of three 4-point Likert-type subscales, renamed DASS-21. Similarly to the DASS-21, adapted and validated in Brazil by (Vignola & Tucci, 2014) for adults, the psychometric properties of the EDAAE-A were investigated by Patias et al. (2016) for adolescents. EDAAE-A has 21 items relating to three emotional aspects in the past week: questions 03, 05, 10, 13, 16, 17, and 21 assess symptoms of depression; questions 02, 04, 07, 09, 15, 19, and 20 assess symptoms of anxiety; and questions 01, 06, 08, 11, 12, 14, and 18 assess symptoms of stress. The scores generate the following categories for depression: 0 to 9 (0=normal), 10 to 20 (1=mild/moderate), and 21 to 42 (2=severe/extremely severe); for anxiety: 0 to 6 (0=normal), 7 to 14 (1=mild/moderate) and 15 to 42 (2=severe/extremely severe); for stress: 0 to 10 (0=normal), 11 to 26 (1=mild/moderate) and 27 to 42 (2=severe/extremely severe). For the final score, the values of each subscale are added together and multiplied by two to correspond to the scale score.

## Procedures

**Data collection.** After defining the schools and classes/grades, the research project was presented. Invitations to participate were sent out, along with the Informed Consent Form (ICF) for parents or guardians to sign. The adolescents were given the Informed Assent Form (IAF). After the forms were signed, the survey was administered by master's students and undergraduate psychology interns. The survey was administered in person, with the participation of the researcher in charge, together with the class teacher, using printed material, with an average duration of 20 minutes. It was conducted in the second semester of 2022. All individuals gave their consent to participate in the study that comprises this article.

**Data analysis.** In order to establish the normal distribution curve of the variables, the Shapiro-Wilk test was used ( $p > .05$ ). The categorized qualitative variables were described by absolute and relative frequency values. The dependent variable was suicidal ideation (0= absence and 1= presence) according to Pearson's Chi-Square test and Fisher's Exact test, with a 5% significance level. The Mann-Whitney U test was performed to compare the presence and absence of SI with emotional symptoms (depression, anxiety, and stress) represented by the median and interquartile range. Multiple binary logistic regression was also performed to investigate the association between the categories of suicidal ideation and the independent variables of family structure (nuclear, extended, reconstructed, single-parent, and shared custody) and emotional symptoms (depression, anxiety, and stress), adjusted for the following covariates: age, school, level of education, and years of schooling. Odds ratios and 95% confidence intervals were obtained using multiple binary logistic regressions.  $p$ -values less than .05 were considered statistically significant. Calibration

was calculated using the Hosmer-Lemeshow test, and a  $p$ -value greater than 0.05 indicated that the model fit the data. All statistical analyses were performed using the SPSS statistical software package, version 20.0 (SPSS Inc, Chicago, IL).

## Ethical Considerations

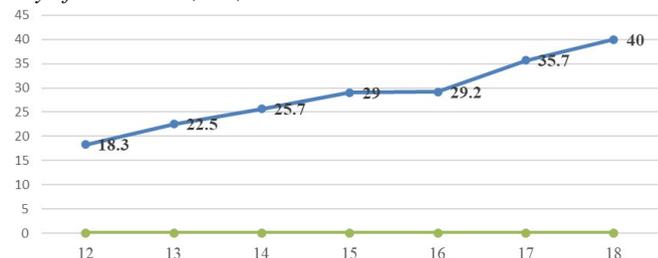
The study protocol was approved by the Research Ethics Committee of Universidade Federal de Rondônia under CAAE No. 53306221.2.0000.5300 and Approval No. 5.137.634, on November 30, 2021.

## Results

The study sample consisted of 424 male students with a mean age of  $14.35 \pm 1.62$  (12.0–18.0) years. The prevalence of suicidal ideation among adolescents was 26.4% ( $n = 112$ ), which is considered high. Figure 1 shows the prevalence (%) of suicidal ideation (SI) in adolescents by age. It was possible to observe that, as age increased, SI also increased: 12 years (18.3%), 13 years (22.5%), 14 years (25.7%), 15 years (29.0%), 16 years (29.2%), 17 years (35.7%), and 18 years (40.0%). The prevalence (%) of suicidal ideation was higher among high school students (28.5%,  $p = .043$ ), public school students (28.6%,  $p = .048$ ), those with 10 or more years of schooling (31%,  $p = .035$ ), single-parent families (43.4%,  $p = .002$ ), severe/extremely severe depression and anxiety (57.3%, 44.6%), and mild/moderate stress (90.9%) (Table 1). Table 2 shows that, when comparing groups with and without SI, there was no significant difference in age ( $p = .246$ ), but when comparing the presence and absence of SI with symptoms of depression and anxiety, there was a significantly greater difference in these events for the presence of SI in adolescents. The association of suicidal ideation with single-parent families ( $p = .002$ ) and shared custody ( $p = .031$ ) was statistically significant in the adjusted model (age, school, grade level, and years of schooling). Regarding emotional symptoms of mild/moderate and severe/extremely severe depression and anxiety ( $p < .001$ ), adolescents with mild/moderate and severe/extremely severe depression and anxiety were more likely to show SI (Table 3).

**Figure 1**

*Prevalence (%) of suicidal ideation (SI) in adolescents by age in the city of Porto Velho, RO, 2022. N = 424*



Note. Prepared by the authors (2022); Chi-Square Tests.

**Table 1**

Characterization of male adolescents with and without suicidal ideation (SI), according to sociodemographic characteristics, in the city of Porto Velho, RO, Brazil, 2022. (N = 424)

Variables	Suicidal ideation (SI)					p-value
	Absence of SI n= 312 (73.6%)		Presence of SI n = 112 (26.4%)			
	n (%)	n	%	n	%	
<b>Education</b>						.043
Elementary School	238 (56.1)	179	75.2	59	24.8	
High School	186 (43.9)	133	71.5	53	28.5	
<b>School</b>						.048
Public	231 (54.5)	165	71.4	66	28.6	
Private	193 (45.5)	147	76.2	46	23.8	
<b>Years of schooling</b>						.035
≤10 years	295 (69.6)	223	75.6	72	24.4	
>10 years	129 (30.4)	89	69.0	40	31.0	
<b>Family structure</b>						.002
Nuclear	201 (47.4)	156	77.6	45	22.4	
Extended	83 (19.6)	69	83.1	14	16.9	
Reconstructed	36 (8.5)	25	69.4	11	30.6	
Single-parent	53 (12.5)	30	56.5	23	43.4	
Shared custody	51 (12.0)	32	62.7	19	37.3	
<b>Residents in the household</b>						.088
≤3 residents	147 (34.7)	107	72.8	40	27.2	
>3 residents	277 (65.3)	205	74.0	72	26.0	
<b>Father's education</b>						.292
Elementary School	59 (13.9)	38	64.4	21	35.6	
High School	146 (34.4)	114	78.1	32	21.9	
Higher Education	219 (51.7)	160	73.1	59	26.9	
<b>Mother's education</b>						.406
Elementary School	17 (4.0)	11	64.7	6	35.3	
High School	129 (30.4)	96	74.4	33	25.6	
Higher Education	278 (65.6)	205	73.7	73	26.3	
<b>Masculinity dimensions</b>						.392
Homoaffectivity	82 (19.3)	63	76.8	19	23.2	
Social provocation	273 (64.4)	195	71.4	78	28.6	
Emotional restriction	69 (16.3)	54	78.3	15	21.7	
<b>Emotional symptoms</b>						
<b>Depression</b>						<.001
Normal	159 (37.5)	149	93.7	10	6.3	
Mild/Moderate	141 (33.3)	110	78.0	31	22.0	
Severe/Extremely severe	124 (29.2)	53	42.7	71	57.3	
<b>Anxiety</b>						<.001
Normal	182 (42.9)	158	86.8	24	13.2	
Mild/Moderate	121 (28.5)	87	71.9	34	28.1	
Severe/Extremely severe	121 (28.5)	67	55.4	54	44.6	
<b>Stress</b>						<.001
Normal	391 (92.2)	309	79.0	82	21.0	
Mild/Moderate	33 (7.8)	3	9.1	30	90.9	

Note. Prepared by the authors (2022); Chi-Square test and Fisher's Exact test.

**Table 2**

Description of depression, anxiety, and stress variables using the EDAE-A scale. (n=424)

Variables	Presence of SI	Absence of SI	p-value
Age**	14.00 (13.00 – 16.00)	14.00 (13.00 – 16.00)	.246 <sup>a</sup>
Depression**	24.00 (18.00 – 32.00)	10.00 (4.00 – 18.00)	<.001 <sup>a</sup>
Anxiety**	14.00 (8.00 – 22.00)	6.00 (2.00 – 14.00)	<.001 <sup>a</sup>

Note. Prepared by the authors (2022); \*Shapiro-Wilk test ( $p > .05$ )=normal distribution; \*\*no normal distribution ( $p < .05$ ); <sup>a</sup>Mann-Whitney U test: represented by the median and interquartile range.

**Table 3**

Association between the presence of suicidal ideation with family structure and emotional symptoms of depression and anxiety in male adolescents in Porto Velho, RO, 2022. N = 424

Variables	$\beta$	Gross Odds Ratio (IC95%)	p	$\beta$	Adjusted Odds Ratio (CI95%)*	p
<b>Family structure</b>						
Nuclear		1			1	
Extended	-0.352	0.70 (0.36-1.36)	.299	-0.317	0.73 (0.37-1.42)	.353
Reconstructed	0.422	1.52 (0.70-3.33)	.290	0.389	1.48 (0.67-3.26)	.336
Single-parent	0.977	2.66 (1.41-5.02)	.003	1.031	2.80 (1.47-5.36)	.002
Shared custody	0.722	2.06 (1.07-3.97)	.031	0.728	2.07 (1.07-4.01)	.031
Constant	-1.243	0.29	.000	-1.019	0.36	.000
<b>Emotional symptoms</b>						
<b>Depression</b>						
Normal		1			1	
Mild/Moderate	1.435	3.51(1.67-8.15)	<.001	1.501	4.49 (2.07-9.73)	<.001
Severe/Extremely severe	2.994	8.10(3.25-22.50)	<.001	3.066	10.48 (5.69-23.07)	<.001
Constant	-2.701	0.07	.000	-1.901	0.15	.000
<b>Anxiety</b>						
Normal		1			1	
Mild/Moderate	0.945	2.57(1.43-4.16)	.002	0.999	2.71(1.50-4.90)	.001
Severe/extremely severe	1.669	5.30(3.03-9.28)	<.001		5.43(3.09-9.55)	<.001
Constant	-1.885	0.15	.000	-1.860	0.16	.000

Note. Prepared by the authors (2022); 95% confidence interval: \*Adjusted Family Structure model for the following covariates: age, school, level of education, and years of schooling; goodness-of-fit test for the gross models: ( $X^2$ : 0.000  $p$  = 1.000) and adjusted ( $X^2$ : 4.287;  $p$  = .830); 95% Confidence Interval: \*Adjusted model of emotional symptoms of depression for the following covariates: age, school, level of education, and years of schooling; goodness-of-fit test for the gross models: ( $X^2$ : 0.000;  $p$  = 1.000) and adjusted ( $X^2$ : 2.436;  $p$  = .965); 95% Confidence Interval: \*Adjusted model of emotional symptoms of anxiety for the following covariates: age, school, level of education, and years of schooling; goodness-of-fit test for the gross models: ( $X^2$ :0.000;  $p$ =1.000) and adjusted ( $X^2$ :6.985;  $p$  = .538).

## Discussion

This study aimed to investigate suicidal ideation and its associated factors in male adolescents. The variables considered in the investigation were: age, school grade/year, type of school (public or private), years of schooling, family structure, number of residents in the household, father's and mother's education level, as well as masculinity dimensions (emotional restriction, homoaffectivity, and social provocation).

In order to discuss the data, some considerations are necessary. It should be noted that the study was conducted in 2022, after the COVID-19 pandemic, a factor that may have influenced the findings presented, given that children and adolescents are part of a group that is vulnerable to the effects of the pandemic period. In a study conducted by Gadagnoto et al. (2022) with adolescents in the state of São Paulo, among the consequences of the post-pandemic, participants reported exposure to stress, unexpected mourning, and increased use of the internet and social media. These factors had implications

for school performance, social distancing, emotion regulation, and the emergence of psychiatric conditions.

Another noteworthy aspect, as mentioned at the beginning of the article, is that, according to the Institute of Applied Economic Research (IPEA) – Atlas of Violence (<https://www.ipea.gov.br/atlasviolencia/arquivos/artigos/5999-atlasdaviolencia2025.pdf>), when presenting data on suicide rates for the year 2022, Rondônia ranked as the state with the second highest number in the country (12.66 per every 100,000 inhabitants), behind only the state of Roraima (13.67) and ahead of Santa Catarina (11.73). These data differ from the rates of recent decades, according to which Rio Grande do Sul appeared as the state with the highest number of suicides per number of inhabitants, followed by the other states in the southern region. This change, although isolated, highlights the need to pay close attention to the phenomenon in northern Brazil.

Studying suicide also means seeking to understand the related factors. In this study, suicidal ideation is understood as a risk predictor (Federal Council of Psychology [CFP], 2013), and its prevalence was 26.4% among the participating adolescents. Despite differences in relation to other studies conducted in different locations in the country, this percentage is considered high, particularly because it is a study involving only male adolescents.

In a study conducted with 117 adolescents in Rio Grande do Sul, a state known for its consistently high suicide rate in Brazil, Santos et al. (2022) found a prevalence of suicidal ideation of 48.71%. However, the authors pointed out that 71% of the sample were girls and that there is, in fact, a higher prevalence among females, a factor also related to the higher number of suicide attempts made by women. Despite presenting a lower percentage (17.3%) of suicidal ideation prevalence, Silva et al. (2023) found similar data that indicated the female gender as an independent associated factor.

Using a different methodological approach, Silva et al. (2021) described the epidemiological profile and analyzed the temporal trend of suicide mortality among adolescents (10-19 years) in northeastern Brazil from 2001 to 2015. During this period, 3,194 deaths due to suicide were recorded in the age group surveyed, with a predominance of males (62.1%) aged 15 to 19 years (84.8%). The trend showed an upward pattern among males and a downward pattern among females.

The prevalence of suicides committed more often by males regardless of age group, as found in Brazilian studies, is validated when considering that social support is a factor associated with suicidal ideation (Jaen-Varas et al., 2020; Soares et al., 2020). By reinforcing that, in order to reaffirm masculinity, it is necessary to adopt behavior that resists any type of pain, there are impacts on men's health as a consequence (Bola, 2020). The repercussions of beliefs such as this show that the approach to suicide is still taboo. In addition, the fact that this population rarely seeks health care influences the low frequency of actions carried out by primary health care (Pessoa et al., 2020).

Regarding the age of participants who reported suicidal ideation, it was found that the prevalence increased among

older adolescents. Different Brazilian studies present similar data when discussing suicidal ideation and suicide itself (Aragão & Mascarenhas, 2022; Luis et al., 2021; Silva et al., 2021). For example, the study conducted by Bahia et al. (2020), which aimed to describe the profile of notifications and hospitalizations for self-inflicted injuries involving adolescents in Brazil, found that the prevalent percentage was for adolescents aged between 15 and 19 years (76.4%). One hypothesis that may be related to this finding indicates that the increased need to seek and belong to groups and the need for social acceptance may increase the likelihood of developing risky behaviors, such as involvement in violent acts, the use of alcohol and other drugs (Brito et al., 2020; Lima, Messias, et al., 2021).

Among the variables associated with suicidal ideation in male adolescents are emotional aspects. A prevalence was found in relation to levels of moderate and severe depression, moderate and severe anxiety, and moderate stress. This result is similar to that found in studies by Luis et al. (2021) and Santos et al. (2022), for example, which show that one of the main risk factors for suicide is the presence of mental disorders, especially depressive disorders. Behaviors such as isolation, exacerbated irritability, distorted self-image, aggressive behaviors, academic failure, and conflicts in the family and school environment may be related to symptoms of mental disorders and also to suicidal ideation (Santos et al., 2022; Silva et al., 2023). Theoretically, it can be assumed that these variables act as enhancers of psychological pain, which can favor the onset of suicidal ideation, according to the 3- Step Model.

Based on the analyses, another variable that showed a statistically significant correlation with suicidal ideation was family structure, considering single-parent and shared-custody families. In single-parent families, children live with only one parent. In some cases, this factor can result in a greater burden on the caregiver who performs parental duties alone, primarily mothers, which can directly or indirectly interfere with relationships with children and daily life.

Lima, Suguyama, et al. (2021) conducted a study with 12 family members of adolescents who attempted suicide by chemical agents and were admitted to a hospital in Maringá (PR). Among the objectives, the authors sought to understand the organization of families, using genograms and interviews. The analysis of family relationships found, in most cases, friction between the adolescent and one of the parents, particularly when the latter was not the primary caregiver or in cases of marital separation.

Even though one of the characteristics of adolescence is to test the advice of their guardians, which can lead to disagreement and even family conflicts, the care and security provided by guardians are fundamental for the healthy development and quality of life of adolescents in different types of families (Santos et al., 2022; Silva et al., 2023). Given these data, it is worth discussing that the family is important for proper development throughout the life cycle, especially during childhood and adolescence, when care is still very necessary. However, it should be understood that it

is not the family configuration that determines whether this impact will be positive or not. The dynamics and quality of the bonds between members are the most relevant factors (Lima, Suguyama, et al., 2021).

As mentioned, single-parent and shared-custody family configurations, according to data in this study, may represent family contexts in which a caregiver is overburdened with responsibilities, the death of one parent, or, in cases of shared custody, the existence of conflicts between former spouses, which can impact relationships, the level of social support, and adolescents' perception of feeling cared for. Changes in family configurations have occurred and will continue to occur; however, the diversity of arrangements does not extinguish the presence of intergenerational patterns and does not reduce the role of this institution in the development process, whether as a protective or a risk factor (Lima, Suguyama, et al., 2021; Silva et al., 2023).

### Data Availability

The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

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