



RESEARCH ARTICLE

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## SUICIDAL IDEA IN STUDENTS OF THE FINAL SERIES OF FUNDAMENTAL EDUCATION AND MIDDLE SCHOOL: PREVALENCE AND ASSOCIATED VARIABLES

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### ABSTRACT

Suicide is reported as one of the leading causes of death in young and middle-aged individuals and is therefore considered a public health problem. This study aimed to measure the prevalence of suicidal intention in students of the final grade of elementary and high school in a public school. The sample consisted of 337 students from the final grades of elementary and high school. The students answered a questionnaire containing the Suicidal Ideation Scale. Data collection was done in classrooms of the public school evaluated. The statistical procedures had descriptive analysis, through relative and absolute frequencies. The magnitude of the association of the variables was evaluated by the crude and adjusted prevalence ratio (RP), according to the Poisson model with robust variance. The results showed that 78% of the students are below average on the cognitive content of thoughts related to death in general, and yet 22% of this sample is above average. After the adjustment of the model, the significant associations were: male sex (RP= 0.48) and not religious (RP = 2.56). It was concluded that the factors associated with the suicidal ideation of adolescents were female and not religious.

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### INTRODUCTION

The first studies carried out to delineate adolescence began in the fifteenth century, and this moment is recognized as decisive for the development of humanity. However, it was only in the twentieth century that adolescence became a growing area of psychology. This century was characterized by numerous advances in the sciences, succeeded by systemic factors for the design of changes in development (SENNA; DESSEN, 2012). Historically it was understood that the adolescence occurred around the 13 years of age, but, following the orientation of Papalia, Olds e Feldman (2006), adolescence occurs around 11 and goes until 19 or 20 years. However, for Marcondes (2007), the period of adolescence comprises from 10 to 21 years where there are the pre-pubertal, pubertal and post-pubertal phases. Already for Maia e Vasconcelos Raposo (2009), this phase is characterized from 12 to 20 years of age.

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In adolescence, the relationship with parents, school, and community tends to expand positively (PAPALIA; FELDMAN, 2013). It is also possible for adolescents to face some risks in relation to their well-being, such as accidents, homicides and even suicide (SILVA *et al.*, 2014). Suicidal behaviors, following the line of thought of Palacios-Cruz (2015), lead the environment, in which the individual is inserted in the childhood, to cooperate for the beginning and prevalence of these, being possible that this one has a role of greater influence than the genetic factors. Piedrahíta, Garcia Mesa e Rosero (2011) found a triggering and suicidal event that is suicidal. For Fonseca e Pedrero *et al.* (2018), suicide has a worldwide effect, but what strikes is ideation and suicide attempts. The World Health Organization (WHO) (2014) states that about one person every 40 seconds commits suicide and/or suicidal thoughts and every year about one million people commit suicide. The WHO (2014) points out that suicide rates will rise by about 60% in 45 years and this is classified as a leading cause of death in individuals aged 15 and 44, becoming a public health problem (DOMÍNGUEZ-ARCILA,

2015). According to the National Institute of Forensic Medicine and Forensic Sciences (2015), there was great interest in increasing the range of studies on the risks of suicide in adolescence, looking for a possible factor of relation to this fact, such as: age, difficulties with impulses, frustrations, aggression, low self-esteem, and concerns about how adult life will be. However, it is difficult to point out the motivation of this fact in childhood, adolescence, and adulthood, because according to this Institute it is not known whether the individual is emotionally shaken or already has suicidal thinking already formed.

Second Moreno-Carmona *et al.* (2018), the percentage of thoughts and suicide has been growing in developing countries, and soon thereafter come the Latin American countries. Possible causes may be increased lack of religiosity or even cultural, as well as risk factors such as lethal drugs and mental disorders. Brazil is among the first with the highest incidence of this fatality (SILVA, 2017). For Henriques (2018), when leaving the infancy the child is not charged to decide his future, she is shocked by charges and initiates the relationships with other people and with these facts the suicide happens to gain prominence. In the literature, the study of Nock *et al.* (2013) the suicidal ideation, which is more frequent in the female sex, under the age of 18, since women tend to have larger manifestations of emotions that are often negative. However, Vera-Romero e Díaz-Vélez (2012) find high rates of ideation in Latin American countries and suicide between 10 and 24 years of age, with the male being suicide more than three times more likely than women. Another reason that can contribute to these thoughts, according to Moreira e Bastos (2015), is depression. Also, hopelessness, loneliness, and sadness are some of the risk factors of suicidal ideation that stand out the most, as well as being female. The available literature presents as a protective factor against suicide attempts and the suicidal ideation of religiosity. This has been recognized by several authors as protection against these facts (MILLER *et al.*, 2012). In studies carried out by Sibold *et al.* (2015), there is an imminent risk of suicidal ideation when there is no physical activity practice. Therefore, Taliaferro *et al.* (2008) advocate that by maintaining healthy lifestyle habits such as sports practice and daily life activities, adolescents have low rates of suicidal intentions as there is a health promotion that improves well-being and enhances the individual's socialization. Therefore, it is intended to measure the prevalence of suicidal intention in students of the final series of elementary and high school in a public school based on gender, physical activity practice, and religiosity.

## MATERIALS AND METHODS

This research is quantitative, transversal and analytical. The population of this study had 2,800 students in the final grades of elementary and high school. The sample consisted of 337 students from a state public school in the municipality of Montes Claros, MG. All procedures followed the guidelines set forth in Resolution 466/2012. The research was approved by an ethics committee through Opinion No. 1,866,775 in December 2016. Regarding risks and damages, Resolution 466/2012 informs: Research Risk - possibility of physical, psychological, moral, intellectual, social, cultural or spiritual damages of the human being, in any research and resulting therefrom. The risk will have minimal gradation due to the application of a questionnaire in which the student will be sitting in a chair the time of completion and in accordance with

Resolution No. 510 of April 7, 2016, this research presents discomfort regarding the time of filling in the questionnaires and the demand for the data collection procedures, which can result in approximately 50 minutes. As benefits, the research will serve as a basis to subsidize eventual educational policies regarding the valuation of the feeling of students of basic education on the thought about death in the school studied. Regarding compensation and indemnity, the questionnaire is filled in at the students' own study site, where the student will be sitting all the time. Therefore, in the case of the study is the researcher who goes to the site to fill out the research instrument. Inclusion criteria and or exclusion were: to be in the selected series, to be present on the day of collection and to sign the term of free and informed consent in Research. All were selected proportionally to the population. A tolerable error of 5%, a 95% confidence level and a prevalence for all outcomes of the order of 50% were adopted.

Thus, to calculate the sample, the formula  $n = (Z * Z) * p * q * N / e * \text{and} * (N-1) + p * q * Z * Z$ , where  $p$  = probability of being rejected 50%;  $q$  = probability of being chosen 50%;  $N$  = population;  $Z$  = confidence interval (1.96); and  $e$  = percentage of error = 0.05, following the data provided by the 22nd Superintendent of Education. After being aware of the conditions of participation in the research, they signed a Free and Informed Consent Term in Research (TALE), the students answered a questionnaire containing the Suicidal Ideation Scale (EIS), an instrument developed by Roberts (1980) and adapted by Medina-Mora (1994). The independent variables analyzed were gender, physical activity practice, and religiosity, as well as the dependent variable, was the Suicidal Ideation Scale (EIS). The data collection was carried out in the classrooms of the educandário, by the members of the Integrated Group of Research in Exercise, Health, Occupational Health and Media Psychology - GIPESOM. The statistical procedures had descriptive analysis and the analyzed elements were exposed by relative and absolute frequencies. The magnitude of the association of the variables was evaluated by the Gross Prevalence Ratio (RP) and adjusted according to the Poisson model with robust variance. The deviance protocol was applied to analyze the quality of the adjusted model. All data were analyzed through the SPSS program, version 20.0 for Windows.

## RESULTS AND DISCUSSION

Participated in the study 337 adolescents, the majority (52.8%) being female, as shown in Table 1. The Suicidal Ideation Scale (EIS) showed that 263 (78%) students were below average on the cognitive content of thoughts related to death in general and how much they felt during the week, however, it is observed that 22% of this sample is above average. The results of the bivariate analysis revealed that the male sex presented a lower prevalence for the EIS scale in relation to the female scale, whereas those who did not practice physical activity and those who did not declare to be religious showed higher prevalences for the EIS scale (Table 2). After adjusting for the model, only males and non-males were significantly associated with the suicide ideation scale (Table 3). One of the major problems affecting public health is suicide, which is one of the preponderant causes of death in the world (Silva, 2017). About one million people lose their lives, for this reason, accounting for one death every 40 seconds. Brazil is among the first with the highest incidence of this fatality (FERREIRA, 2018).

**Table 1. Characterization of the sample according to the variables under study**

VariABLES		N	%
Sex	Female	178	52,8
	Male	159	47,2
Practice activity physical	Yes	259	76,9
	Not	78	23,1
Religious	Yes	292	86,6
	Not	45	13,4
O EIS	Below Average	263	78,0
	Above Average	74	22,0

Source: Own (2019).

**Table 2. Prevalence and Gross Prevalence Ratio (RP) for Suicidal Ideation Scale (EIS)**

VariABLES		%	RP	IC95%
Sex	Female*	27,5	1	-
	Male	15,7	0,57	(0,37-0,88)
Practice activity physical	Yes*	18,9	1	-
	Not	32,1	1,69	(1,12-2,55)
Religious	Yes*	19,2	1	-
	Not	40,0	2,09	(1,36-3,20)

\*Reference category

Source: Own (2019).

**Table 3. Prevalence Ratio (RP) adjusted for Suicidal Ideation Scale (EIS)**

VariABLES		EIS RP (IC95%)
Sex	Female*	1
	Male	0,48
Religious	(IC95%)	(0,32-0,75)
	Yes*	1
Deviance	Not	2,56
	(IC95%)	(1,68-3,90)
P-value		209,304
		0,627

Source: Own (2019).

\*Reference category.

Cases with adolescents differ somewhat from the data obtained with the adult population, in which the findings, according to the Paykel Suicide Scale (PSS), in different European countries, suicidal ideation in adolescents presents 32.3% in relation to 4.2% of suicide attempts (BOUSONÓ, 2017). Applying this same test in Spain it was verified that the suicidal ideation was present in 7.4% of the adolescents. In this study with the Suicide Ideation Scale, it was evidenced that 22% of adolescents are above average for this factor. Rojas e Saavedra (2014) postulate in their study vulnerability in the sample of adolescents to suicidal ideation, which can be explained by the psychosocial changes that the individual suffers. Among the adolescents analyzed, 26.7% had a desire to die; 10.8% had suicidal thoughts, and 4.2% planned to commit suicide. In the bivariate analysis, the male sex presented a lower probability of suicidal ideation, in relation to the female sex, corroborating with the result of Li *et al.* (2012), showing that females presented a 2.35% higher risk of suicide than males. The direction pointed out by the present study supports what it says Ferreira *et al.* (2018), who in their study indicate that the prevalence of suicidal thoughts was 35.4% in the female sex, 20.1% in the male sex and that they did not practice physical activity and were not religious. The authors also concluded that men who did not engage in physical activity and those who declared they were not religious had a higher prevalence of suicidal thoughts. Suicidal ideation seems to vary according to some sociodemographic variables, such as

sex and age, since Carli (2014) indicates that the female has the highest means for suicidal ideation. However, WHO (2014) and Gabilondo *et al.* (2007) found that, especially in European countries, males showed a greater tendency towards suicidal thoughts and behavior towards women, with the ratio of 3: 1 in developed countries. Globally, 15 out of every 100,000 men have these thoughts, while women account for 8 per 100,000. In relation to suicide attempts, the data are reversed in 1: 3 in relation to women, with the result that female sex has a high rate of suicidal ideation, which does not corroborate this research. In the study conducted by Cheah (2018), with 10,141 respondents, 168 (1.66%) presented suicidal ideation, 53 (89%) of the population being women who showed a greater tendency towards suicidal ideation, being more likely than the male sex was of alarming origin.

According to Sinniah *et al.* (2014), there is a significant difference in ideation between the sexes, but the female sex, even though it has a more suicidal tendency than men, is a high suicide rate among males, since they are more likely to commit suicide. Suicide has been taking on greater proportions every year. According to the National Mental Health Survey of 2015, it is reported that the suicide rates committed by male sex are three times higher than the female sex. In research carried out by Zhang *et al.* (2011), China is recognized by high suicide rates, with the female population showing a higher suicide rate than the male population. However, there is a reversal in these data: the reports of suicide in the male sex at the national level were higher reaching 7 / 100,000 inhabitants, followed by female suicide (6.2 / 100,000 inhabitants). In rural areas there is also a suicide rate of 4.0 vs. 3.18 / 100,000 and in the urban area (8.62 vs. 7.87 / 100,000) (Zhang *et al.*, 2011). As to the practice of physical activity, those who did not practice showed higher prevalences of suicidal ideation. This result is supported by the study of Oliveira (2018), in which the accomplishment of physical activity brings benefits in the short and long term, being these psychological, psychosocial and aesthetic benefits. We emphasize that in the study of Silva Filho (2013), with a population of 353 adolescents, aged 14 to 17 years, aiming to analyze the level of physical activity of these youngsters during childhood and adolescence, it was evidenced that the more individuals were stimulated to perform the physical activity, the more they maintained a relationship positive relationship with your peers and in your life. According to a study by Leão (2018), the performance of physical activities is inversely proportional to the suicidal ideation of young victims, since activities will reduce suicide attempts by releasing substances that promote well-being, thus improving their relationships and mood, improving self-esteem, among other factors. For this author, physical activity increases the levels of serotonin, dopamine, and noradrenaline in the body, causing a state of pleasure. Thus, the teen is less likely to commit suicide. The practice of physical activity has effects that contribute to the inhibition of suicidal ideation. This positive contribution to lower levels of this fact is explained in Taliaferro *et al.* (2008), who report that the brain releases substances that provide absolute well-being. Second Rodelli *et al.* (2018), the chances of suicidal ideation occurring in physical activity practitioners are lower than those who are not or have low physical activity practice.

Although the protective effects of physical activity on suicidal ideation are scarce, Eime *et al.* (2013) conclude that there is protection against suicide. According to Unger (1997), moderate physical activity shows the level of protection higher

than high intensity, which can occur the inverse effect, by the unremitting pursuit of the perfect body. Hallal *et al.* (2010), based on the information described in the National Survey of School Health in the Brazilian capitals, found that 43.1% of adolescents were active, reaching 56.2% for active boys and 31.3% for girls. Thereby, Castro (2016), in a sample of 1,637 adolescents and young people, 49.1% practiced physical activity. From these analyses, it can be noticed that the male being more active and the chances of suicidal ideation are lower. Pigeon *et al.* (2013) present physical inactivity as one of the characteristics of suicidal ideation. Silva (2016) states that a lack of physical activity contributes significantly to suicidal thoughts because one does not enjoy living anymore. Those who practice physical activity have good social development, which ends up being a means of preventing suicidal ideation. Regarding religiosity, we find in the present study that those who are not religious had a higher prevalence of suicidal ideation than those who declared themselves religious. Second Taliaferro (2009), not being religious is associated with suicidal ideation, and religious practice influences the well-being of the adolescent, thus managing to inhibit suicidal thoughts.

According to Baetz (2011), the explanation of why religion is influential is that the practice of praying, meditating among other means helps to structure itself psychologically. With this, it becomes a protection against suicidal ideation. It seems that religion improves the life of the human being, preventing negative thoughts (SILVA, 2016). Koenig (2012) defines religion, being something systematically organized with beliefs and practices to approach with the sacred what transcends life. It is understood that religion is a factor that is culturally in the global context, with social influence in individuals and communities, with a moral that allows understanding human behavior, including the reason for its existence, the value of life (AGORASTOS; DEMIRALAY (HUBER, 2014). Oliveira (2018) it checks for some gaps in the literature on this subject because if it were possible only with the concept to understand the person's differences in relation to suicide, it would be easier to avoid extreme attitudes since at first suicidal ideation is understood as a means of communicate. There are limitations in that it is difficult to measure suicidal thinking because it is not a variable of objective observation. By answering the questions in a negative way, it is possible to have a relationship with moral values, religiosity, and empathy. Religiosity adds factors indispensable for a good relationship with people, among them respect and social support, understanding about their purpose and meaning in life, and these factors contribute to good relationships (SILVA; SANTOS, 2013). After adjustment of the model, only the sex and religious variables were associated with the Suicidal Ideation Scale. According to Eryilmaz (2015), it is proven that when adolescents have religious practice, they are participative and feel safer because they are in an environment where their friends are involved when they suffer stressful or suicidal situations these groups will be available to help them and give comfort and hope. Religious practice shows association with beneficial procedures, such as: performing physical activities and not making use of alcohol and drugs, because by maintaining habits that do not expose their life at risk, the individual will be associating the positive teachings of the religion (BEZERRA *et al.*, 2009). Between 2007 and 2014 research was carried out in relation to human involvement in religious practice, showing that individuals

who have this envnolvadex demonstrated healthy behaviors without exposing their life to risks (KOENING, 2012).

## Final Considerations

The study showed that women, not being religious and not practicing physical activity showed higher prevalences in relation to suicidal ideation, being this group prone to more cognitive problems observed as thoughts and even to a suicidal act. However, when adjusting the model, only the female sex and not being religious were shown to be associated with the suicidal ideation of young adolescent students. According to the results, it is recommended to adopt new habits, such as maintaining a religious practice and physical activity, in order to maintain beneficial forms in coping with the changes that the adolescent passes and in the behavior adopted in the face of difficulties that he may encounter. In the literature, due attention is not paid to the fact that religiosity and physical activity are a protective factor in relation to suicidal ideation. With this, we note the importance of this study, in which these factors of protection to the adolescent are exposed in a clear way, in order to have a better quality of life. These results were not only used to measure the prevalence of suicidal ideation, but rather to understand what adolescent suffers during the change of phase from adolescence to adulthood and how to prevent it from negative thoughts. It is necessary to continue further studies on this theme in other groups, including new variables, different contexts, new instruments, different cultures, and religious orientation, as well as economically disadvantaged people and that measure the proposed in this study. It is also seen that it is possible to prevent suicidal acts through the support of family, religion and health groups who are still laymen on the predisposing factors and signs that the person demonstrates before that fact.

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