Family functioning and self-harm behaviors in adolescents and young people in the municipality of Valledupar-Colombia

Funcionamiento familiar y conductas de autolesión en adolescentes y jóvenes del municipio de Valledupar-Colombia

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SUMMARY

Introduction: There are risk factors associated with the life cycle of adolescence and early adulthood, such as depression and hopelessness, disappointment and guilt at the impossibility of meeting parental expectations, family problems, a history of suicide in relatives, friends, and/or colleagues, difficulties in communication, a tendency to isolation, few interpersonal relationships, abuse of psychoactive substances, cuts or blows to the body, ideas, fantasies or previous attempts, considering suicide as a heroic act. Suicidal ideation and behavior in adolescence and youth is a public health problem with emotional, family, economic, and social consequences.

Aim: Relate family functioning with self-harm behaviors in adolescents and young people in the municipality of Valledupar.

Materials and methods: Quantitative, correlational, cross-sectional study, the sample included 150 people, 64.67 % (n=97) of whom identified themselves as women and 35.33 % (n=53) perceived themselves as men. The age ranged from 12 to 29 years, with a mean and standard deviation of 20.55 and 5.52 (CV=26.86 %), respectively, the participants...
reside in the city of Valledupar, to whom a questionnaire that measures characteristics was applied sociodemographic, family APGAR, Hamilton anxiety, and depression scales. For the statistical analysis, an exploratory analysis was carried out to verify that there were no transcription errors in the database. In addition, the parametric assumptions of the Pearson correlation coefficient were verified, on the other hand, the association between family functioning and self-injurious behaviors was examined employing the Chi-Square test of independence, constructing contingency tables for it.

Results: The findings suggest that the participants exhibit severe dysfunction; the average anxiety score of young people or adolescents would imply a mild level, while the mean values of depression would be associated with a severe manifestation. No statistically significant association was found between family functioning, the anxiety and depression symptoms of the participants, nor was there a statistically significant relationship between family functioning and self-harm behaviors.

Keywords: Family functioning, family cohesion, suicidal ideation, suicidal behavior.

INTRODUCTION

According to the World Health Organization (WHO), each year approximately 703,000 people take their own lives and others attempt to do so. These cases negatively impact families, friends, communities, and countries. Suicide is a phenomenon that can occur at any age, and in 2019 it was the fourth leading cause of death in the 15-29 age group worldwide. Suicides occur...
in all regions of the world; this is how more than 77% of suicides that occurred in 2019 took place in low- and middle-income countries (1).

It has been found that in Europe more than 50% of the people who die by consummated suicide were depressed, within these groups, the adolescent population and the elderly can be distinguished since the moment of increasing depressive symptoms or becoming chronic frequently can lead to suicide (2). This is how they confirm that suicide and self-harm are common in people suffering from depression, since when being in a depressed state, coping with conflicts decreases, which before seemed normal, can now disturb them, cognitive processes deteriorate, among others, and consequently, many choose to take their own life or attack their own body.

In addition, analyzing this perspective throughout the world, it is considered that approximately 90% of people who commit suicide generally have a mental health problem, depression in the first instance, and the risk of a person suffering from it involves many factors, which are associated with increasing the probability that it is superior to other mental disorders such as anxiety and the consumption of psychoactive substances (3,4). This explains that self-elimination or self-injury occurs from a multi-causality in which risk factors such as depression, anxiety, and substance use, among others, participate, that in the vast majority of people, the manifestation of these mental problems can help prevent. These behaviors that, as already mentioned, have been increasing.

However, the Pan American Health Organization (PAHO) affirms that the COVID-19 pandemic increased the risk factors for suicide, the most prominent being anxiety and depression, in which violence, alcohol consumption disorders, abuse of substances, and sensations of loss (5). In addition to individual problems, risk factors must be taken into account that, although they were not foreseen, add up and exacerbate this difficulty, as is the case with COVID-19, which increased or accelerated the onset of mental disorders in people, thus also increasing the risk of suicide, since this leads to the activation of public health protective agents to face novel stimuli and seek both efficient and effective solutions to new problems that maintain comorbidity with self-elimination and self-injurious behaviors (6).

Entering the National context, in Colombia people who decide to self-eliminate have a complex interaction with risk factors that vary according to the evolutionary cycle, standing out in the child population, adolescents, and emerging adults.

In Colombia, researchers developed a study in which they explained in detail the risk of death by suicide from the year 2000 to 2013 in the Colombian country. It is relevant to mention that since the year 2000, worldwide, self-elimination was among the first 15 causes of death, however, in Colombia has been a minor event, since these authors mention that out of every 4 out of 100,000 inhabitants attempt suicide (7). They mention that the age group with the highest incidence are adolescents and young people, they are in periods between 15 and 34 years of age which allows them to be recognized with mental disorders such as depression, anxiety, bipolarity, schizophrenia, a mental disorder due to drug use, family moral values. Among the regions with the highest risk of presenting such self-elimination behaviors are the Central, and Eastern, and those with the lowest risk are the Caribbean-Insular (7). In this investigation about the beginning of the 21st century, it is observed that in comparison with other countries Colombia maintains a low prevalence in terms of suicide, it is alarming that the most vulnerable groups are adolescents and young people since they are people who are beginning their life cycle, they have many experiences left to live and contribute to society, but due to difficulties that arise such as mental anxiety disorders, depression, drug abuse and deficiencies in family functioning, many of them choose to harm themselves or in worst case take your own life.

Likewise, in an investigation carried out on adolescents from the Department of Atlántico (8), they found a positive correlation between people with suicidal ideation and family dysfunction, where they reveal a greater family dysfunction, the degree of suicidal ideation increases. On the other hand, suicidal ideation was higher in the female gender, since they involve risk factors such as sexual abuse, school, and social bullying, lack
of parental support, a deficit in sexual orientation, and sexual violence between partners, although men have more likely to attempt suicide because they adopt more lethal and violent means than women (8). The results of the study mention several relevant aspects, the first is the relationship that family dysfunction maintains with suicidal ideation, this allows us to take into account the essential role that a family has aimed at supporting and positively linking all its members, in what it can prevent self-injurious behaviors if those family functions that show more support, integration, adaptation in their members are reinforced; on the other hand, the female gender, although it presents higher statistics in suicidal ideation, it is the male gender who consumes the act in a greater proportion for the known reasons, these data at the national level agree with those explained above at the global level.

Therefore, it is necessary to understand self-elimination that includes various contexts, such as health, emotional and social in the individual, in which to commit such acts there are components of absence of psychological (behavioral) resources, intense suffering (emotional) and perception of death as the only solution (cognitive), suicidal ideation becomes a problem that transcends the individual and is suffered by the entire family system (9). Therefore, this problem begins to be understood to be intervened not only in the individual but also in its subsystems that affect to prevent or exacerbate them.

Likewise, it is important to understand self-injurious behaviors such as self-inflicted harm without suicidal intention, to displace emotional pain to a physical one, however, this can be an indicator of self-elimination for the future, also when the adolescent perceives deficient family cohesion, poor adaptability, low assertive communication along with shortcomings in socio-cultural characteristics such as values, rules, control, and discipline act as a risk factor in the face of inadequate behavioral and emotional manifestations in said population, in addition where non-compliance with rules is observed at home, less time shared, misunderstanding between members, and loss of privacy due to social networks are causes that exacerbate family conflicts and therefore self-injurious behaviors (10-12). These risk factors described further clarify the problem that is being presented, since adolescence and emerging adults are in transition stages, that is, a young person is not a new individual, it is the same being that has been accumulating experiences that can form excellent or deficient mental health, according to their family structure and functioning, hence the importance of understanding this problem not only from mental disorders, but also from the closest contexts in the individual that may or may not influence making choices that threaten against his life.

Therefore, self-elimination is understood as an expression contrary to life, since the people who try it could have deteriorated their dignity, for which it is not enough to explain this from a biological or psychological approach, but it is necessary to consider the person as an integral being and influenced by systems and subsystems that make it up (13).

Thus, entering the local sector, in the city of Valledupar, it is necessary to mention that the municipality is in a demographic transition, to the extent that there is population growth that includes the presence of psychosocial problems, such as increased unemployment, poverty, presence of invasions in the periphery of the city, migration of the Venezuelan population, and presence of common crime, explaining the deterioration in the quality of life in different population groups (14).

Therefore, it is found that, in the last 4 years, Valledupar has been presenting an atypical situation in terms of suicide, the child, youth, and elderly victim population has increased; the trend of male victims is higher in proportion to the female 8 to 1, compared to the global trend that is 4 to 1 and the national trend that is 6 to 1 for 2018 (15). Therefore, if the behavior of the event were regular, it would be easier to intervene, implementing prevention strategies that contribute to reducing the incidence of events in different age groups, but the phenomenon of multi-causality makes it unpredictable how it will behave the incidence of the event.

In this same order of ideas, the Valledupar Local Health Secretary indicates that, in the period from January to December of the same year, 67% of women attempt suicide, leaving men with 33% of attempted suicide. Similarly, 69% are adults.
The substances they use to eliminate themselves are intoxication (69 %), sharp weapons (17 %), hanging (8 %), burns, firearms, vacuum throwing, and vehicle throwing (1 %). Of these, 36 % had previous events, 69 % are single, 23 % live in free union, 6 % are married, the predominant schooling is high school with 48 % (16). Finally, chronologically, they present that in 2018 there were 297 suicide attempts, in 2019, 330 attempts, in 2020, 244 suicide attempts, and in 2021, 231 reported events, from which the year most predominant was 2019, considering that it was a period where the COVID-19 pandemic was experienced.

One aspect of concern in the case of the city of Valledupar is that, during 2021, the primary data-generating units reported 231 cases of suicide attempts, of which 184 were people between the ages of 15 and 44 years that 80 % of the people who self-injured are in the life cycle of adolescence and intermediate adulthood (17).

The above motivated the need to study in depth the relationship between family functioning as a fundamental social support network and self-harm behaviors in adolescents and young people residing in the city of Valledupar.

METHODS

The study used a non-experimental design, with a quantitative approach, correlational scope, and moment of cross-sectional study. The population was made up of 297 people who attempted to harm themselves in 2018 and who were reported by the primary data-generating units, information received at the Local Health Secretariat in 2018. A non-probabilistic sampling was carried out, in which 150 people participated voluntarily, 64.67 % of whom identified themselves as women and 35.33 % perceived themselves as men. The age varied from 12 to 29 years, with average and standard deviations that were located at 20.55 and 5.52.

Inclusion criteria: people included in the database of self-harm events for the year 2018, reported by the primary data-generating units to the Local Health Secretariat at ages other than those between 12 and 29 years of age.

Exclusion criteria: people included in the database of self-injury events for the year 2018, reported by the primary data-generating units to the Local Health Secretariat at ages other than those between 12 and 29 years of age.

Collection instruments

The instruments used in the study were:

- The questionnaire measures sociodemographic characteristics such as age, sex, marital status, level of education, and type of family.

- Hamilton scales: depression (19) and anxiety (20), is a scale, hetero applied, designed to be used in patients previously diagnosed with depression, to quantitatively evaluate the severity of symptoms and assess changes in the depressed patient. It consists of 17 items, each question has between three and five possible answers, with a score of 0-2 or 0-4, respectively. The total score ranges from 0 to 52. Cut-off points: not depressed: 0-7; light/minor depression: 8-13; moderate depression: 14-18; severe depression: 19-22; very severe depression: >23.

Procedure

The proposal was presented to the official of the dimension of social coexistence and mental health of the Local Health Secretariat of Valledupar, once endorsed, the database of people who self-harmed in 2018 was requested, and the data was protected by the researchers, only they had access, telephone calls were made
to establish contact and assess the interest of the people in wanting to participate in the study; Once the list of people who wished to participate was available, home visits were made to sign the informed consent of the adults and the parents and/or caregivers of the minors and the consent of them. Subsequently, the instruments were applied, with the particularity that the family APGAR was applied to the members of the families that live under the same roof as the people who self-harmed, obtaining a general score on the scale for each participant, the other instruments that measure sociodemographic characteristics, anxiety and depression only applied to people who self-harmed.

Subsequently, the information was organized in Excel in a coded manner to protect the data of the participants and their families, to process the data, analyze it and issue the final report.

Data Analysis

First, an exploratory analysis was carried out to verify that there were no transcription errors in the database. In addition, the parametric assumptions of the Pearson correlation coefficient were checked. In this sense, the presence of outliers was inspected at the univariate level through box plots, but also at the multivariate level through robust Mahalanobis distances. The bivariate normality was contrasted using the Mardia test, while the linearity was examined with scatterplots. In this sense, no significant deviations from the assumptions of this technique were found, so it was decided to perform the correlation analysis using the previously mentioned coefficient.

Consequently, quantitative variables were expressed as means and standard deviations, while qualitative sociodemographic characteristics were presented as counts and percentages. Thus, the direct scores obtained from the administration of the scales were described with the mean and the standard deviation, but the corrected scores were illustrated with absolute frequencies and percentages, presenting them in tabular and graphical form. In this regard, it should be clarified that the transformation process from direct to corrected scores was implemented considering the indications contained in the scales of each scale. Likewise, the t-Student test was used to compare age according to sex, while the Chi-Square test was used to investigate the possible relationship between sex and other sociodemographic characteristics.

On the other hand, the association between family functioning and self-harm behaviors was examined utilizing the Chi-Square test of independence, constructing contingency tables for this purpose. In this regard, Cramér’s V index was calculated to determine the magnitude of such association, in addition to running the z-test of proportions to contrast the conditional proportions between columns. To adjust the significance level due to multiple comparisons, the method suggested by Bonferroni was adopted. Finally, the processing and analysis of the data were executed with the statistical package IBM SPSS 26, considering the significance of the results for values less than 0.05.

RESULTS

Sociodemographic characteristics of the participants

The sample included 150 people, 64.67 % (n=97) of whom identified themselves as women and 35.33 % (n=53) perceived themselves as men. Age ranged from 12 to 29 years, with a mean and standard deviation of 20.55 and 5.52 (CV=26.86 %), respectively. Table 1 presents the rest of the sociodemographic characteristics in a general way and ungrouped by sex.

The mean is shown and the standard deviation for age is shown in parentheses. The count is shown and in parentheses the global percentage for the qualitative variables. The t statistic was used to compare the means of age, while the χ2 statistic was used to contrast the relationship between sex, socioeconomic status, education, and type of self-injury.

Family functioning of the participants

The family functioning scores are illustrated in Table 2, as can be seen, the general values of the scale suggest that the participants exhibit a severe dysfunction in this construct. The average registered in the total instrument, a value that was
located at 9.05 (4.05), barely exceeded the upper limit (9.00) established by the scale to classify family functioning in this way. In addition, the analysis of the corrected scores indicates that most people experience this type of situation with their families. Note that 74.67 % (n=112) fell into this category, while 6.00 (n=9) were associated with moderate dysfunction. Only 10.67 % (n=16) and 8.67 % (n=13) of the sample generated scores that reflected normal functioning or mild dysfunction, respectively.

Table 1. Sociodemographic characteristics of the participants in general and by sex

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Total 150 (100.00)</th>
<th>Men 53 (35.33)</th>
<th>Female 97 (64.67)</th>
<th>t o $\chi^2$ (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>20.55 (5.52)</td>
<td>22.25 (5.22)</td>
<td>19.62 (5.48)</td>
<td>2.85 (.005)</td>
</tr>
<tr>
<td>Socioeconomic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stratum 1</td>
<td>100 (66.67)</td>
<td>39 (26.00)</td>
<td>61 (40.67)</td>
<td>1.77 (.432)</td>
</tr>
<tr>
<td>Stratum 2</td>
<td>22 (14.67)</td>
<td>6 (4.00)</td>
<td>16 (10.67)</td>
<td></td>
</tr>
<tr>
<td>Stratum 3 or higher</td>
<td>28 (18.67)</td>
<td>8 (5.33)</td>
<td>20 (13.33)</td>
<td></td>
</tr>
<tr>
<td>Academic level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>14 (9.33)</td>
<td>7 (4.67)</td>
<td>7 (4.67)</td>
<td>1.52 (0.488)</td>
</tr>
<tr>
<td>Secondary</td>
<td>111 (74.00)</td>
<td>37 (24.67)</td>
<td>74 (49.33)</td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>25 (16.67)</td>
<td>9 (6.00)</td>
<td>16 (10.67)</td>
<td></td>
</tr>
<tr>
<td>Self-harm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poisoning</td>
<td>119 (79.33)</td>
<td>40 (26.67)</td>
<td>79 (52.67)</td>
<td>3.08 (0.623)</td>
</tr>
<tr>
<td>Sharp weapon injury</td>
<td>16 (10.67)</td>
<td>7 (4.67)</td>
<td>9 (6.00)</td>
<td></td>
</tr>
<tr>
<td>An attempt by hanging or suffocation</td>
<td>13 (8.67)</td>
<td>5 (3.33)</td>
<td>8 (5.33)</td>
<td></td>
</tr>
<tr>
<td>Void launch</td>
<td>1 (0.67)</td>
<td>0 (0.00)</td>
<td>1 (0.67)</td>
<td></td>
</tr>
<tr>
<td>Attempt by firearm</td>
<td>1 (0.67)</td>
<td>1 (0.67)</td>
<td>0 (0.00)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Direct and corrected scores of family functioning are presented in a general way

<table>
<thead>
<tr>
<th>Variable</th>
<th>Direct scoring</th>
<th>Score corrected according to the scalea</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normal</td>
<td>Mild</td>
</tr>
<tr>
<td>Total Apgar Score</td>
<td>9.05 (4.05)</td>
<td>16 (10.67)</td>
</tr>
</tbody>
</table>

The mean and standard deviation are shown in parentheses for direct scores, while corrected scores are presented as counts and percentages, which are shown in parentheses.

aThe Apgar scale establishes the following cut-off points: normal functioning, from 17 to 20 points; level dysfunction, from 13 to 16 points; moderate dysfunction, from 10 to 12 points; and severe dysfunction, from 0 to 9 points.

Anxious and depressive symptomatology of the participants

Note that the average anxiety score of young people or adolescents would imply a mild level, while the mean values of depression would be associated with a severe manifestation. This interpretation is derived directly from the scales proposed in each scale. Delving into the results, it was found that 26.00 % (n=39) of the sample did not show anxiety, while 31.33 % (n=47) showed mild symptoms. In addition, 42.67 % (n=64) indicated that they experienced moderate anxiety, but none of the individuals stated that they felt severe symptoms regarding this variable. Regarding depression, the average obtained after
the administration of the questionnaire would imply a severe level, which can be verified by viewing the bar chart in Table 3. Note that 74.00% (n=111) of the people reported assessments of severe or very severe depression.

Table 3. Direct and corrected scores of the anxious and depressive symptomatology of the participants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Direct scoring</th>
<th>Score corrected according to the scalea</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absence</td>
<td>Mild</td>
</tr>
<tr>
<td>Hamilton: Anxiety</td>
<td>16.43 (4.34)</td>
<td>39 (26.00)</td>
</tr>
<tr>
<td>Hamilton: depression</td>
<td>20.85 (3.88)</td>
<td>0 (0.00)</td>
</tr>
</tbody>
</table>

The mean and standard deviation are shown in parentheses for direct scores, while corrected scores are presented as counts and percentages, which are shown in parentheses. The Hamilton anxiety test only has four levels of interpretation, which is why NA (not applicable) is shown for the “very severe” level.

*The Hamilton test scale establishes the following cut-off points for anxiety: absence, from 0 to 13 points; mild, from 14 to 17 points; moderate, from 18 to 24 points; and severe, from 25 to 30 points. Regarding the Hamilton depression test: absence, from 0 to 7 points; mild, from 8 to 13 points; moderate, from 14 to 18 points; severe, from 19 to 22 points; and very severe, from 23 points onwards.

Family functioning, anxiety, and depression of the participants

The relationship between family functioning and the anxiety and depression symptoms of the participants is shown in Table 4. As can be seen, no statistically significant association was observed between these constructs. Note that the size of the coefficients is small in both cases and does not imply statistical significance. However, the signs suggest that as family functioning decreases, scores that reflect a worsening of anxious and depressive symptomatology increase.

Table 4. Relationship between family functioning, anxiety, and depression of the participants

<table>
<thead>
<tr>
<th>Variables</th>
<th>Apgar</th>
<th>Hamilton Anxiety</th>
<th>Hamilton Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apgar – Family Functioning</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hamilton – Anxiety</td>
<td>−0.12 (.882)</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Hamilton–Depression</td>
<td>−0.02 (.811)</td>
<td>0.35 (&lt;0.001)</td>
<td>NA</td>
</tr>
</tbody>
</table>

The Pearson correlation coefficient is shown, and the respective significance is shown in parentheses. Only correlations below the diagonal are shown. NA: not applicable.
Family functioning and self-harm behaviors of the participants

The association between family functioning and self-harm behaviors is indicated in Table 5. On this occasion, a statistically significant relationship was not identified either (χ²=6.28, p=0.240, V=0.17). Note that the percentages within the columns of participants who attempted to intoxicate themselves were equivalent, being 81.25 % (n=13) for those who exhibited normal functioning, 76.92 % (n=10) for those who manifested a mild level of dysfunction, 66.67 % (n=6) for those who reported moderate dysfunction, and 80.36 % (n=90) for individuals who exhibited severe family dysfunction. It is important to remember that these percentages are independent conditional proportions, so it is incorrect to assume that the sum of these amounts must equal 100 %. To broaden this explanation, note that each proportion is obtained by dividing the registered frequency by the subtotal of that category. For example, 13 people tried to intoxicate themselves out of the total of 16 people whose functioning was normal, which represents the 81.25 % previously reported. The rest of the categories can be analyzed in the same way based on Table 5.

The count, the total percentage, and the conditional percentage are displayed according to column (col.). This last percentage is calculated by dividing the count by the subtotal for the corresponding category.

DISCUSSION

The research found that most participants who self-harmed in 2018 had severe dysfunction at the family level, which coincides with studies carried out in the Department of Atlántico, wherein a sample of adolescents with suicidal ideation, found high scores of family dysfunction (8), this allows taking into account the essential role that a family has aimed at supporting and positively linking all its members, in which it can prevent self-injurious behaviors if those family functions that show more support, integration, adaptation in its members; Otherwise, when families do not fulfil their basic functions of promoting care, protection, and psychological
well-being, they can affect the mental health of their members (10-11).

The results of anxious symptomatology indicate that the majority of the participants present moderate and mild anxiety, when evaluating the depressive symptomatology the participants had high scores in the severe, very severe, and moderate levels, which represents a high-risk factor for the behaviors of self-harm; This is related to other studies in which it has been found that self-elimination or self-injury occurs from a multi-causality in which risk factors such as depression, anxiety, substance use, among others, participate, this is how empirical studies show that 90 % of people who commit suicide generally have a mental health problem (3,4).

As a novel aspect of the study, no correlations were found between family functioning, anxiety, and depression of the participants, nor between family functioning and self-harm behaviors of the participants, which could lead to limiting the possibilities of intervention to the biological field, susceptible of pharmacological treatment, of main management from Psychiatry; having a broad consensus that the phenomenon of suicide is multicausal, a comprehensive approach to the problem is necessary from the different scientific disciplines, especially the medical and social sciences. The research findings generate the need to carry out more extensive studies and consider other variables that have not been assessed in depth and could influence self-harm and suicidal behaviors.

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