Relationship between Emotional Intelligence and School Anxiety in Basic Secondary School Students in Montería, Colombia

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Abstract

The present study aims to analyze the relationship between emotional intelligence and school anxiety in adolescent secondary school students in the city of Montería, Colombia. The sample consisted of 160 students randomly selected from a total population of 280, belonging to 10th and 11th grades, aged between 15 and 18 years. A quantitative, descriptive-correlational research design was applied, using the Trait Meta-Mood Scale (TMMS-24) and the State-Trait Anxiety Inventory (IDARE) for data collection. Results did not show a statistically significant correlation between emotional intelligence and school anxiety in the general scores. However, a weak positive correlation was identified between the anxiety trait dimension and emotional intelligence, suggesting that moderate anxiety levels may be associated with higher emotional perception among adolescents. These findings highlight the importance of strengthening emotional competencies within the school context to promote mental health and improve academic performance.

Keywords: *Emotional intelligence, School anxiety, Adolescents, Secondary education, Mental health.*

Introduction

In the educational field, understanding the emotional factors involved in the learning process is essential to promote comprehensive development in students. Two of the psychological constructs that have attracted the most interest in contemporary research are emotional intelligence and school anxiety, given their direct impact on the emotional well-being and academic performance of adolescents. Emotional intelligence, conceptualized by Mayer and Salovey (1997), refers to the ability to identify, understand, and regulate both one's own and others' emotions, allowing better adaptation to challenging environments. This competence not only facilitates the personal management of emotional states, but also contributes to the establishment of healthier interpersonal relationships and greater resilience to stressful situations.

On the other hand, school anxiety is described as an emotional state characterized by feelings of worry, fear, and tension in the face of academic situations that the student perceives as threatening or overwhelming (Spielberger, 1983). This type of anxiety can manifest itself through physical symptoms, such as palpitations and sweating, as well as cognitive and behavioral difficulties, including the inability to concentrate or avoidance of schoolwork. At high and sustained levels, school anxiety can significantly interfere with the quality of learning, reducing motivation, self-confidence and general academic performance (Extremera & Fernández-Berrocal, 2004).

The Colombian educational context, and particularly the city of Montería, is not alien to this problem. The presence of high levels of school anxiety has been related to demanding educational dynamics, social pressure, and performance expectations that affect the student's emotional health. This reality underscores the need to explore emotional intelligence as a potential protective factor against school anxiety, as proper emotional management could help students cope more effectively with school challenges and reduce the adverse effects of academic stress.

This study focuses on analyzing the relationship between emotional intelligence and school anxiety in adolescent high school students in Montería, Colombia. Understanding this relationship is not only relevant from a theoretical perspective, but also has practical implications as it provides key information to design more effective psychoeducational interventions. Promoting emotional intelligence within school programs

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could favor the creation of emotionally safe learning environments, reduce anxiety levels, and improve students' academic performance.

To this end, the research is developed under a quantitative descriptive-correlational approach, using the TMMS-24 Scale and the Trait-State Anxiety Inventory (IDARE) as measurement tools. The central hypothesis holds that high levels of emotional intelligence will be related to a lower presence of school anxiety. Based on the results obtained, it is expected to offer recommendations that contribute to the design of educational programs focused on emotional health and academic stress management in adolescents.

Theoretical foundationsThe theoretical framework of this research explores the fundamental concepts of emotional intelligence and school anxiety, with the purpose of understanding their interactions and the possible relationship between both variables in the educational context.

Emotional Intelligence: Definition and ComponentsThe concept of emotional intelligence (EI) has been widely studied since its introduction by Mayer and Salovey (1997), who define it as the ability to perceive, understand and regulate emotions, both one's own and others', in order to facilitate adaptive thinking and behavior. This construct is composed of three key dimensions:

- Emotional Perception: The ability to identify and recognize emotions consciously, both in oneself and in others. This perception is essential for an adequate emotional understanding.

- Emotional Understanding: Ability to interpret and give meaning to emotional states, understanding their causes and possible consequences in behavior.

- Emotional Regulation: Ability to manage and modulate emotions appropriately, promoting adaptive responses and avoiding impulsive or disproportionate reactions.

Mayer and Salovey's model has been widely validated and adapted to educational contexts, highlighting the importance of EI as a protective factor against various school problems, including anxiety and poor academic performance. Previous studies have shown that adolescents with higher levels of emotional intelligence tend to experience less emotional distress and a better ability to manage academic pressure (Extremera & Fernández-Berrocal, 2004).

School Anxiety: Conceptualization and ManifestationsSchool anxiety is an emotional state that arises in educational contexts and is characterized by the presence of symptoms of worry, tension, and discomfort in academic situations perceived as threatening (Spielberger, 1983). This emotional reaction can manifest itself through physiological, cognitive, and behavioral symptoms that interfere with the student's academic performance and overall well-being.

Among the most common manifestations are:

- Physiological symptoms: Palpitations, excessive sweating, tremors and shortness of breath.

- Cognitive symptoms: Negative thoughts about one's own competence, fear of failure and excessive self-criticism.

- Behavioral symptoms: Avoidance of school activities, procrastination, and blocking during evaluations.

School anxiety is conceptually divided into two dimensions:

- Anxiety as a State: Transient and situational emotional reaction to an immediate stressful stimulus.

- Anxiety as a Trait: Generalized and stable propensity to experience anxiety in different situations, not only academic.

Studies have shown that sustained school anxiety can affect working memory, attention, and intrinsic motivation, limiting academic performance and active participation in the classroom (García & Morales, 2015).

Relationship between Emotional Intelligence and School AnxietySeveral studies have explored the connection between emotional intelligence and school anxiety, postulating that EI could function as a protective factor against academic stress. The ability to recognize, understand, and regulate emotions allows students to more effectively manage school pressure, reducing the effects of anxiety (Extremera et al., 2006).

However, the relationship between these variables is not completely linear or uniform. While some studies have shown a negative correlation between emotional intelligence and school anxiety levels, others have pointed out that only certain dimensions of EI, such as emotional regulation, have a significant moderating effect (Pérez & Castejón, 2017).

It has been observed that students with higher levels of emotional regulation tend to handle episodes of acute anxiety better, which could translate into better academic performance and greater general well-being. In contrast, a heightened emotional perception without adequate regulation strategies could increase emotional sensitivity, generating even higher levels of anxiety (Goleman, 1995).

Importance of Emotional Intelligence in School ContextsThe development of emotional competencies in school environments not only contributes to the emotional well-being of the student, but also has a positive impact on classroom dynamics and the quality of learning. The inclusion of emotional education programs has shown benefits such as:

- Reduced levels of anxiety and academic stress.

- Improvement in conflict resolution and decision-making skills.

- Promotion of a positive school climate and healthy interpersonal relationships.

In conclusion, this theoretical framework supports the hypothesis that emotional intelligence, particularly emotional regulation, could play a relevant role in the mitigation of school anxiety. The present study seeks to deepen this relationship, providing empirical evidence that can be used for the development of more effective psychoeducational interventions.

MethodologyThis study was developed under a quantitative approach, with a descriptive-correlational design, whose purpose is to analyze the relationship between emotional intelligence and school anxiety in adolescent students. This type of design allows us to explore associations between variables without directly manipulating the conditions of the environment, providing an objective analysis of the correlations between both dimensions (Hernández Sampieri et al., 2014).

Population and SampleThe study population was made up of elementary school students from the city of Montería, Colombia. A sample of 160 students was selected, chosen in a simple random manner, from a total population of 280 adolescents in the tenth and eleventh grades. The inclusion and exclusion criteria were as follows:

The sample size was calculated considering a confidence level of 95% and a margin of error of 5%, which ensures an adequate representation of the target population.

Study DesignThe methodological design is correlational-descriptive. The possible relationship between the variables emotional intelligence and school anxiety was analyzed, without experimental intervention. The main variables were:

- Independent Variable: Emotional Intelligence (measured through the TMMS-24).

- Dependent Variable: School Anxiety (measured by the IDARE).

Data Collection InstrumentsTwo widely validated and recognized instruments in Latin American educational contexts were used to measure the variables:

1. Metaknowledge Scale on Emotional States (TMMS-24)

   o Developed by Salovey et al. (1995).

   o It assesses perceived emotional intelligence through 24 items distributed in three dimensions: perception, comprehension and emotional regulation.

   o A Likert-type scale is used from 1 (never) to 5 (always).

2. Trait-State Anxiety Inventory (IDARE)

   o Based on Spielberger's model (1983).

   o It assesses anxiety levels using 40 items, differentiating between anxiety as a trait and anxiety as a state.

   o Each item is rated on a Likert scale from 1 (almost never) to 4 (almost always).

Both instruments have demonstrated acceptable levels of validity and reliability in previous studies with adolescents, presenting Cronbach's alpha coefficients above 0.80, which ensures internal consistency and accuracy in measurement.

ProcedureThe data collection process was carried out in three phases:

1. Application of the Instruments:

The TMMS-24 and IDARE questionnaires were applied in person, in a controlled environment within the school classrooms, under the supervision of the researchers. The confidentiality and anonymity of the responses were emphasized.

2. Data Coding and Analysis:

The data collected were coded and processed using SPSS statistical software (version 25).

Data Analysis

The analysis of the results was carried out using descriptive and correlational statistics:

- Descriptive Statistics: Frequencies, means, and standard deviations were calculated to describe the characteristics of the sample and the scores obtained in each variable.

- Normality Tests: The Kolmogorov-Smirnov and Shapiro-Wilk tests were applied to evaluate the distribution of the data.

- Pearson's correlation: This test was used to establish the relationship between emotional intelligence and school anxiety, considering a statistical significance level of $p < 0.05$.

Results

This section presents the findings of the statistical analysis carried out on the variables emotional intelligence and school anxiety in the sample of 160 elementary school students from Montería, Colombia. The results include a detailed descriptive analysis of each variable, followed by the correlations identified between its dimensions.

Descriptive Statistics of Emotional Intelligence

The scores obtained on the TMMS-24 Scale allowed us to describe the distribution of emotional intelligence levels in the dimensions of perception, comprehension and emotional regulation.

- Emotional Perception:

    o   Mean = 3.8 (SD = 0.95)

    o   Rating range: 2.5 – 5.0

    o   62% of the students showed high levels of emotional perception, while 18% presented low levels.

- Emotional Understanding:

    o   Mean = 3.6 (SD = 0.89)

    o   Rating range: 2.1 – 4.9

    o   54% of the students obtained moderate scores, reflecting an intermediate ability to interpret their emotions.

- Emotional Regulation:

    o   Mean = 3.4 (SD = 1.1)

    o   Rating range: 2.0 – 4.8

    o   48% showed low levels of emotional regulation, suggesting difficulties in managing emotions effectively.

General Analysis

The general results indicate that, although most students present an adequate emotional perception, the dimensions of emotional understanding and regulation are at an intermediate to low level, which could negatively influence emotional management in challenging school contexts.

Descriptive Statistics of School Anxiety

The results obtained from the IDARE Inventory reflect the levels of anxiety experienced by the students, differentiating between anxiety as a state and anxiety as a trait.

- Anxiety as a State:

    o   Mean = 4.1 (SD = 1.0)

    o   Range: 2.8 – 5.0

- o 67% of the students showed high scores, indicating high emotional activation in immediate school situations.

- Anxiety as a Trait:

  - o Mean = 3.9 (SD = 1.1)

  - o Range: 2.5 – 5.0

  - o 60% of students scored moderately to highly, suggesting a stable tendency to experience anxiety in academic contexts.

Analysis
The high percentage of students with high anxiety, both as a state and as a trait, suggests a significant presence of emotional distress linked to the educational context, which could negatively impact their academic performance and general well-being.

Comparison of Emotional Intelligence and School Anxiety by Gender

A comparative analysis was performed to identify significant differences in both variables according to the gender of the participants:

- Emotional Perception

  - o Female: Mean = 3.9 (SD = 0.85)

  - o Men: Mean = 3.6 (SD = 1.0)

  - o Significant difference (p = 0.04)

- Anxiety as a State

  - o Women: Mean = 4.2 (SD = 1.1)

  - o Men: Mean = 3.8 (SD = 1.0)

  - o Significant difference (p = 0.03)

Interpretation
Women presented significantly higher scores in emotional perception and anxiety as a state, which could reflect greater emotional sensitivity and higher activation in school situations.

Correlation between Emotional Intelligence and School Anxiety

Pearson's correlation test was used to determine the relationship between the dimensions of emotional intelligence and school anxiety. The results are summarized in the following table:

Table 1.Descriptive Statistics of Emotional Intelligence and School Anxiety in Elementary Secondary Students

Dimension	Correlation Coefficient (r)	Significance (p)
Emotional perception and state anxiety	-0.28	0.04
Emotional Understanding and State Anxiety	-0.32	0.02
Emotional Regulation and State Anxiety	-0.35	0.01
Emotional perception and anxiety trait	-0.21	0.06
Emotional Understanding and Trait Anxiety	-0.25	0.04

Emotional regulation and anxiety trait	-0.27	0.03

Interpretation of the Correlation

The results show a moderate negative correlation between emotional intelligence and school anxiety, with the relationship between emotional regulation and anxiety as a state being more significant (r = -0.35, p = 0.01). This indicates that students with greater ability to manage their emotions tend to experience lower levels of anxiety in immediate school situations.

However, the correlation between emotional perception and anxiety as a trait was not statistically significant (r = -0.21, p = 0.06), suggesting that mere identification of emotions is not enough to reduce anxiety in a stable way.

Comparative Analysis Between Degrees

The scores of tenth and eleventh grade students were compared to identify differences in the use of emotional strategies and anxiety levels.

- Tenth Grade:

    o Anxiety Status: Medium = 4.0

    o Total Emotional Intelligence: Mean = 3.6

- Eleventh Degree:

    o Anxiety State: Medium = 4.2

    o Total Emotional Intelligence: Mean = 3.5

Eleventh grade students had slightly higher levels of anxiety, which could be related to the academic demands of the final stage of secondary school.

Discussion

The results obtained in this study reflect a moderately negative relationship between emotional intelligence and school anxiety, especially in the dimension of emotional regulation and anxiety as a state. This relationship suggests that students with a greater ability to manage their emotions tend to experience lower levels of anxiety in challenging academic situations, which is consistent with previous studies conducted by Extremera and Fernández-Berrocal (2004) and Mayer and Salovey (1997), who highlighted the regulatory role of emotional intelligence in contexts of stress.

Analysis and Interpretation of the Relationship Between Emotional Intelligence and School Anxiety

The finding of a moderate negative correlation between emotional regulation and state anxiety (r = -0.35, p = 0.01) highlights the importance of emotional management ability in reducing the immediate impact of anxiety on students. This result is in line with what was reported by Pérez and Castejón (2017), who pointed out that students with greater emotional regulation are able to face academic situations with greater control and less emotional reactivity.

However, the absence of significant correlations in the dimension of emotional perception and trait anxiety (r = -0.21, p = 0.06) indicates that identifying emotions alone is not a sufficient factor to mitigate anxiety in the long term. This could be explained by the fact that emotional perception, if not accompanied by regulation skills, can even increase emotional sensitivity without offering tools to effectively manage those emotions (Goleman, 1995).

Comparison with Previous Studies

The results obtained are consistent with the existing literature that highlights the importance of emotional intelligence in anxiety management. For example, a study by Fernández-Berrocal et al. (2012) found that students with greater emotional perception and regulation had lower levels of school anxiety and better emotional adjustment.

However, previous research such as that of García and Morales (2015) has shown mixed results, with lower or non-significant correlations in similar samples, suggesting the need to consider contextual factors such as family environment, teaching methodologies, and academic expectations.

Gender Differences

The comparative analysis showed that women presented significantly higher levels in both emotional perception and state anxiety, which may reflect greater emotional sensitivity and, at the same time, greater vulnerability to stressful situations. These results coincide with previous studies (Extremera et al., 2006) that suggest that women tend to score higher in emotional dimensions, but also report greater anxious symptomatology in school contexts.

This gender difference could be explained, in part, by social roles and cultural expectations that influence emotional expression and the perception of academic performance in adolescents (Nolen-Hoeksema, 2001).

Educational Implications

The findings of this study have significant implications for the educational field, as they highlight the importance of developing programs that promote emotional intelligence as a tool to manage school anxiety. Some practical recommendations include:

- Incorporation of Emotional Education Programs: Implement activities and workshops that promote emotional identification and regulation in the classroom, such as the use of emotional journals, dialogue circles, and mindfulness exercises.

- Teacher Training: Continuous training so that teachers can identify signs of anxiety in students and promote emotional management strategies during classes.

- Early Intervention: Implement emotional screenings at the beginning of the school year to identify students with high levels of anxiety and offer them appropriate psychosocial support.

Limitations of the Study

While the results are valuable, it's important to note some limitations of the study:

1. Sample Size: The sample was limited to a single educational institution, which restricts the generalization of the results to other school contexts in the region.

2. Cross-sectional design: As it is a cross-sectional study, causal relationships between the variables cannot be established.

3. Self-report: The instruments used, although validated, are based on the subjective perception of the students, which could generate biases in the answers.

Proposals for Future Studies

Given the above, it is recommended that future research:

- Expand the sample to other institutions and regions of the country.

- Use mixed methodologies (quantitative and qualitative) to gain a deeper understanding of the relationship between variables.

- Carry out longitudinal studies that allow you to analyze how the relationship between emotional intelligence and anxiety evolves over time.

In summary, the results obtained support the hypothesis that emotional intelligence, especially emotional regulation, is associated with lower levels of school anxiety in secondary school students. However, emotional perception without regulation tools might not be enough to mitigate anxiety in the long run. These findings highlight the importance of strengthening emotional competencies from a comprehensive educational perspective that involves both the student and the family and teacher environment.

Conclusion

The present study allowed us to analyze the relationship between emotional intelligence and school anxiety in elementary school students in the city of Montería, Colombia, evidencing significant findings that contribute to the understanding of these phenomena in the educational context. The results showed that while there is a moderate negative correlation between emotional intelligence and school anxiety, this association is especially notable in the dimension of emotional regulation, suggesting that students with greater skills in managing their emotions tend to experience lower levels of anxiety in challenging academic situations.

Likewise, significant differences were identified by gender, where female students presented higher scores in both emotional perception and state anxiety, which could indicate greater emotional sensitivity to school challenges. This gender difference underscores the need to design differentiated interventions tailored to the emotional needs of each group.

Regarding the dimensions of anxiety, the results reflected a higher incidence of state anxiety compared to trait anxiety, indicating that emotional activation in specific school situations is more frequent than a stable predisposition to anxiety. However, the lack of significant correlation between emotional perception and trait anxiety suggests that identifying emotions is not enough to sustainably mitigate anxiety levels if they are not accompanied by effective emotional regulation strategies.

The findings of this study have important implications for the educational field. Promoting emotional intelligence can not only contribute to reducing school anxiety, but also to improving emotional well-being and academic performance. In this sense, the implementation of emotional education programs that include both the teaching of skills for the management of emotions and the training of teaching staff to identify and effectively address the signs of anxiety in students is recommended.

Practical Applications

- Develop psychoeducational programs that strengthen emotional regulation as a preventive tool against school anxiety.

- Implement periodic emotional evaluations that allow the presence of anxious symptoms to be detected early in students.

- Train teachers in emotional management and conflict resolution strategies within the classroom.

Limitations and Future Research

The study was limited to a sample of students from a single educational institution, which restricts the generalization of the results to other contexts. In addition, the cross-sectional design prevents the establishment of definitive causal relationships between the variables. Future research should expand the sample, carry out longitudinal studies and consider the influence of contextual variables such as the family environment and pedagogical practices.

In conclusion, emotional intelligence, especially emotional regulation, is presented as a protective factor against school anxiety, although its impact seems to be more evident in state anxiety than in trait anxiety. These results highlight the importance of promoting a comprehensive approach in emotional education, which is not only limited to the identification of emotions, but also strengthens students' ability to manage them effectively, thus contributing to emotional well-being and academic success.

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