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## A review of studies focused on anxiety in high school students

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### **Abstract**

*A documentary review was carried out on the production and publication of research papers concerning studying the variable Anxiety in High School Students in Latin America. The bibliometric analysis proposed in this document aims to know the main characteristics of the volume of publications registered in the Scopus database between 2017 and 2021, achieving the identification of 118 publications in total. The information provided by the mentioned platform was organized through tables and figures, categorizing the information by Year of Publication, Country of Origin, Area of Knowledge and Type of Publication. Once these characteristics were described, a qualitative analysis was used to refer to the position of different authors on the proposed topic. Among the main findings of this research, it is found that Brazil, with 55 publications, was the country with the highest production at the Latin American level. The area of knowledge that made the most significant contribution to the construction of bibliographic material referring to the study of anxiety in high school students was medicine, with 58 published documents, and the type of publication that was most used during the period mentioned above was the journal article, which represented 88% of the total scientific production.*

**Keywords:** *Anxiety; High school students; Latin America.*

### **Introduction**

For Sierra, Ortega and Zubeidat (2003), anxiety results from the struggle between an unacceptable impulse and a counterforce administered by the ego. It is important to emphasize that this condition can be caused by different factors derived from situations at the family level, social and economic environment, and even by schoolmates through different forms of abuse. For Freud (1971), there are three types of anxiety:

- 1) Real anxiety manifests itself in the interaction of the self with the external world. It is a warning signal of a real threat in the surrounding environment.
- 2) Neurotic anxiety has its origin in the ego, which wants to please the instincts of the ego; however, these demands make it feel threatened, so the person thinks that the ego cannot control the ego, this being the basis of all neuroses, due to the repressed impulses that originate them.
- 3) Moral anxiety is governed by the superego that intimidates the individual, that the ego loses

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dominion over the impulses, which causes anxiety in the form of shame to appear.

On the other hand, students face situations that generate stress inherent to the academic activity, such as homework assignments, commitments, jobs, exams, and expositions, among others that can trigger high levels of anxiety, directly affecting the emotional stability of adolescents causing in many cases, deep depression that affects among other aspects, their interpersonal relationships, the development of their role as children, siblings, friends, etc. In the worst cases, anxiety is reflected through the various behaviors of the student, so much so that the maximum level of stress can generate it and, as a result, problems appear in the learning process, psychosomatic symptoms, and cognitive processes, among others (Montealegre, 2017). Most of the anxious states of this stage of adolescence are related to low academic performance and school failure, but there are other personal, relational, emotional and convivial spheres that are also affected by anxiety (Hernández et al., 2018). This is why handling relevant and updated information regarding the emotional stability of students allows early detection of behaviors that threaten their physical, cognitive and emotional integrity, triggering serious problems in their development as fundamental actors in society; among these, low levels of self-esteem, so important in the school stage because the interaction with classmates forges the character of children and adolescents, It forges the character of children and adolescents and allows predicting how they will develop in the adult stage in their social performance since self-concept is one of the most relevant aspects in the construction of the personality of each individual. Factors such as anxiety can even lead students to states where self-esteem levels are not optimal, affecting their safety and performance within the different spheres as an important part of society. Therefore, it is of great importance to know the current status of the findings on research associated with anxiety in high school students, so it has been proposed the development of this review article in order to answer the question How has been the production and publication of research papers concerning the study of Anxiety in High School Students in Latin America during the period 2017-2021 according to Scopus platform?

### **General Objective**

To analyze, from a bibliometric and bibliographic perspective, the production of research papers on the variable Anxiety in High School Students in Latin America indexed in Scopus database during 2017-2021.

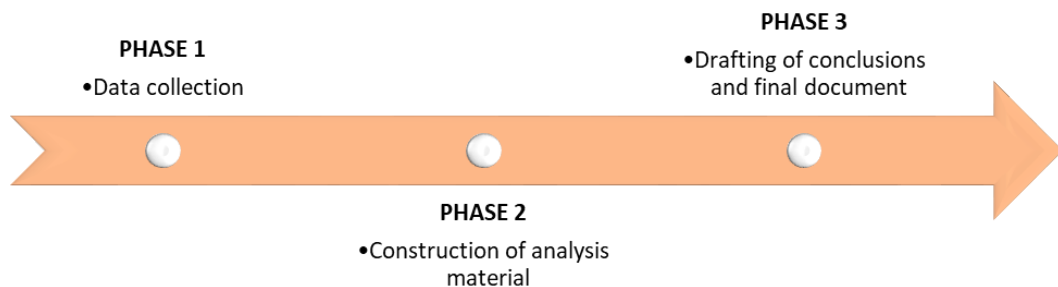
### **Methodology**

Quantitative analysis of the information provided by Scopus is performed under a bibliometric approach to the scientific production regarding the study of Anxiety in High School Students in Latin America. Likewise, it is analyzed from a qualitative perspective, with examples of some research works published in the area of the study mentioned above, from a bibliographic approach

to describe the position of different authors on the proposed topic.

The search is performed through the tool provided by Scopus and the parameters referenced in Figure 1 are established.

### ***Methodological design***



**Figure 1.** Methodological design

**Source:** Own elaboration

#### ***Phase 1: Data Collection***

The data collection was carried out through the Scopus web page search tool, which identified a total of 118 publications. For this purpose, search filters were established consisting of:

- ✓ Published papers whose study variables are related to the study of Anxiety in High School Students.
- ✓ Limited to Latin American countries.
- ✓ Without distinction of area of knowledge.
- ✓ Without distinction of type of publication.

#### ***Phase 2: Construction of analysis material***

The information identified in the previous phase is organized. The classification will be made employing graphs, figures and tables based on data provided by Scopus.

- ✓ Word Co-occurrence.
- ✓ Year of publication
- ✓ Country of origin of the publication.

- ✓ Knowledge area.
- ✓ Type of Publication

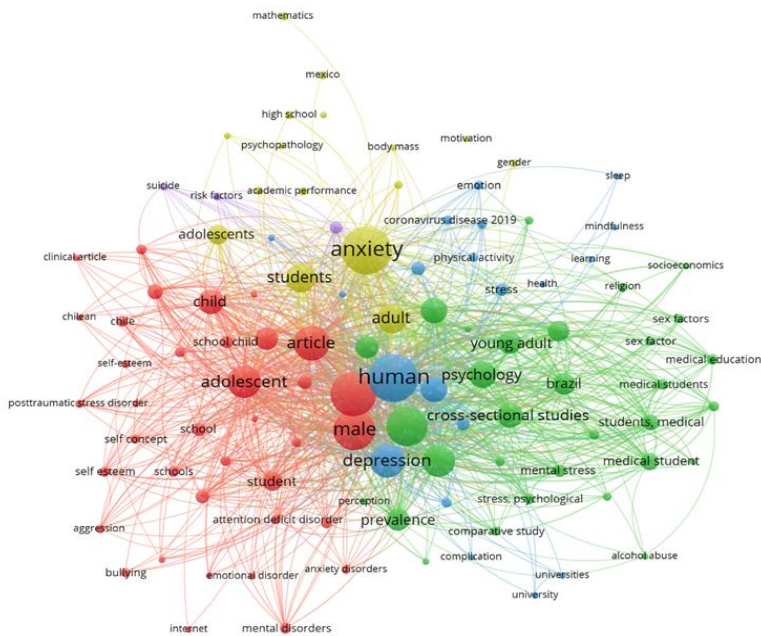
***Phase 3: Drafting conclusions and final document***

After the analysis carried out in the previous phase, the study drafts the conclusions and prepares the final document.

**Results**

***Co-occurrence of words***

Figure 2 shows the co-occurrence of keywords within the publications identified in the Scopus database.



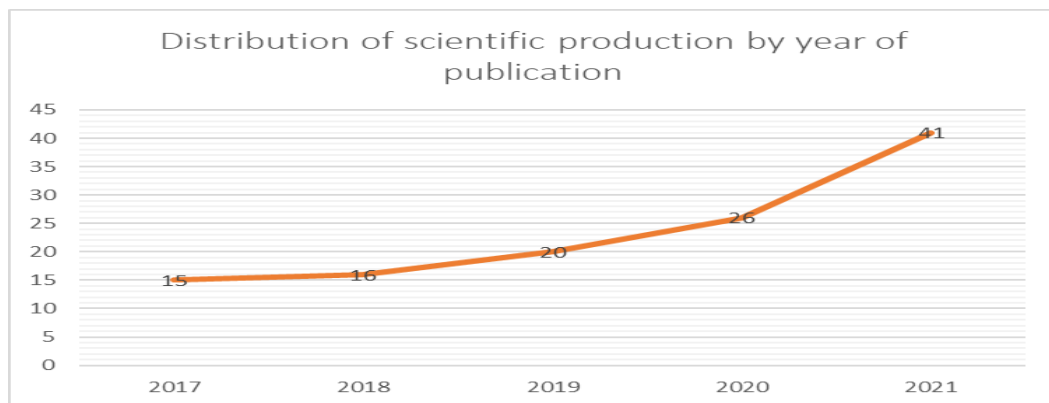
**Figure 2.** Word co-occurrence

**Source:** Own elaboration (2022); based on data provided by Scopus.

The central variable within the study on Anxiety in High School Students is the word Human; from the psychological and behavioral approach, the components associated with the psychosocial impact of high levels of anxiety related to school performance are studied. The above, supported by research whose keywords have been Psychology, Depression, Anxiety, Students, Adolescents, Emotional Health, Physical Integrity, Socioeconomic Factors, Religion, Stress, among others, which allow inferring how the performance of young people in the school environment can be permeated by external situations derived from the usual dynamics in the development of their roles as children, siblings, friends, etc. The influence of studies in the area of health is highlighted as evidenced through frequently used variables such as Medical Education, Comparative Studies, Psychological Stress, Prevalence, Mental Stress, and Health Complications, among others, which could indicate that managing high levels of anxiety within the development of school life can cause great risks to the physical and emotional health of adolescents, causing in many cases, resistance to behavioral interventions to reduce these levels in order to allow optimal development in their school life.

### *Distribution of scientific production by year of publication*

Figure 3 shows the scientific production distributed according to the year of publication, considering the period from 2017 to 2021.



**Figure 3.** Distribution of scientific production by year of publication.

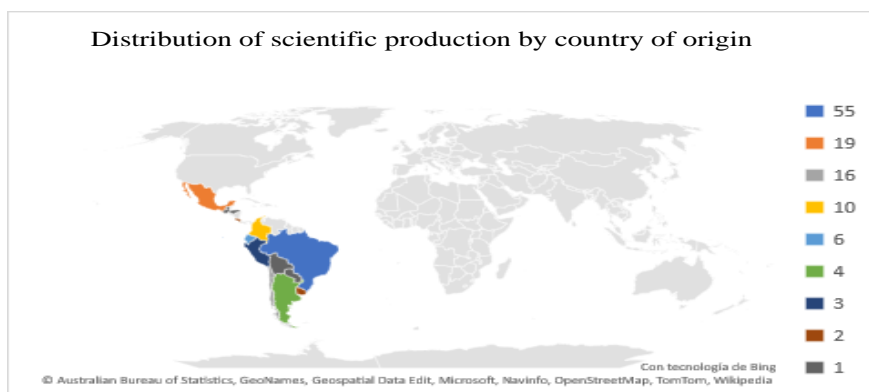
**Source:** Own elaboration (2022); based on data provided by Scopus.

The main characteristic evidenced in Figure 3 is the constant growth in the volume of publications referring to the study of Anxiety in High School Students, since in 2017, a total of 15 published documents were presented by Scopus, going to 16 in 2018, 20 in 2019, 26 in 2020 and finally 41 in the year 2021, the latter being the year in which the greatest scientific production was registered in said platform. This can be explained by analyzing the recent global health crisis caused by the pandemic decreed by the World Health Organization (WHO) due to the so-called Covid-19. This disease originated in China and quickly spread around the world, causing hundreds of thousands

of infections and deaths, forcing the cessation of all activities involving the presence of a group of people, including education. As a result, teaching strategies migrated to virtuality, thus adding the burden of fulfilling school obligations through technological means, which, in most cases, turned out to be new for most students. This increases anxiety levels in adolescents, as shown in the article entitled “Psychological distress due to the COVID-19 pandemic and associated psychosocial factors in Mexican students: an exploratory study”, whose objective was to evaluate the level of anxiety in adolescents (Martínez *et al.*, 2021), whose objective was to assess the level of psychological distress and psychosocial factors among students in Mexico at the onset of the pandemic. The researchers reached different conclusions derived from the analysis of the application of an exploratory tool applied to 848 Mexican students conducting a logistic regression analysis to find variables associated with stress: 36% (n = 309) had elevated stress, 31.4% (n = 266) anxiety and 18.2% (n = 154) sadness often or all the time. Days of isolation, frustration, and sadness, among other variables, were associated with high rates of anxiety among students; however, fear of possible Covid-19 infection was the factor with the greatest impact in the analysis of the determinants that triggered anxiety in this community, so that academic activity was considerably affected due to the resistance that some young people showed when faced with the development of virtual activities.

***Distribution of scientific production by country of origin.***

Figure 4 shows how scientific production is distributed according to the nationality of the institutions with which the authors are affiliated.



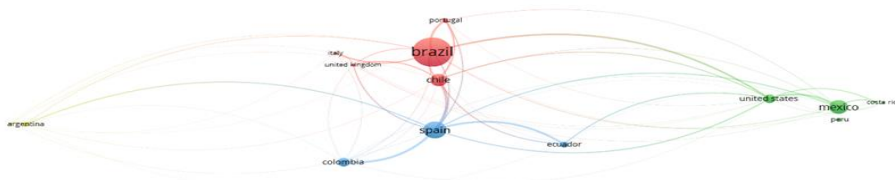
**Figure 4.** Distribution of scientific production by country of origin.

**Source:** Own elaboration (2022); based on data provided by Scopus.

Brazil was the Latin American country with the highest scientific production registered in Scopus concerning the study of anxiety in High School Students during the period 2017-2021; a total of 55 publications derived from research carried out by researchers affiliated with institutions in that country were registered in the Scopus database. Mexico with 19 documents in second place,

followed by Chile and Colombia with 16 and 10 records, respectively. Among the research papers registered by Colombian authors is the one entitled “Depresión, ansiedad y actividad física en escolares: estudio comparativo” (Depression, anxiety and physical activity in schoolchildren: a comparative study) (Vallejo & Polanco, 2019), whose objective was to determine the prevalence of depressive symptoms and anxiety states by sex and educational level; and to analyze the relationship between physical activity and depression and anxiety by sex and educational level. A sample of 998 students from the city of Jaén, belonging to the sixth year of Primary Education and second year of Compulsory High Education, who completed questionnaires on depression, anxiety and physical activity, was used. Among the most relevant results, it was found that high school students presented more symptoms of depression and anxiety, with a higher prevalence among girls. It is also highlighted that disorders such as anxiety and depression are manageable under environments related to physical activity, so it is expected that, from this type of study, Educational Management will be able to identify the individual needs of students who have shown signs of anxiety related to their school performance and thus find preventive treatments to ensure the good mental and physical health of students.

At this point, it should be noted that the production of scientific publications, when classified by country of origin, presents a special characteristic: collaboration between authors with different affiliations to both public and private institutions. These institutions can be from the same country or of different nationalities, so the production of an article co-authored by different authors from different countries of origin allows each country to add up as a unit in the overall publications. This is best explained in Figure 5, which shows the flow of collaborative works from different countries.



**Figure 5.** Co-citations between countries.

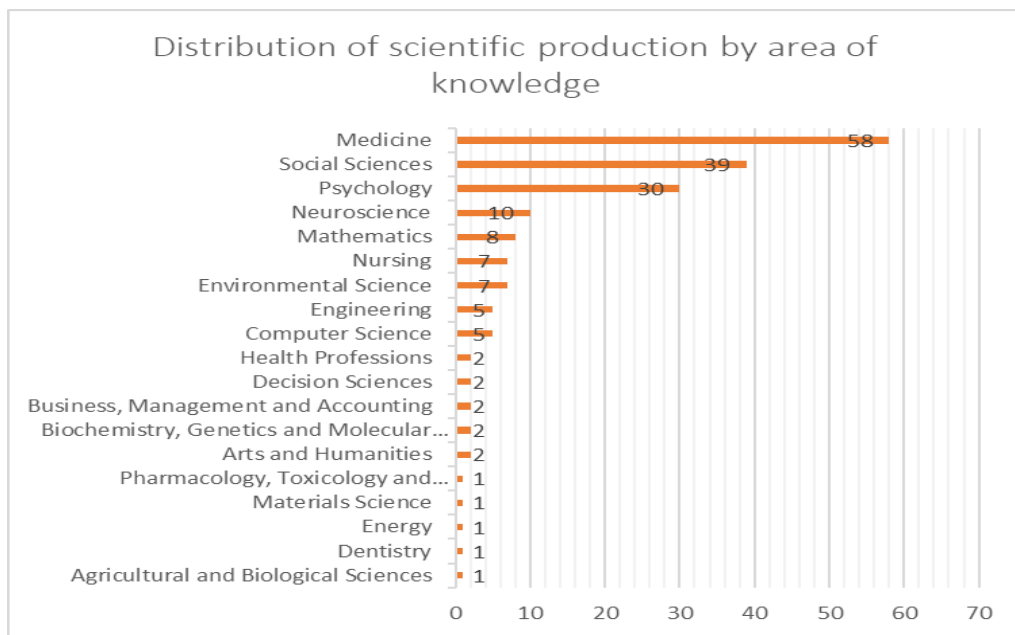
**Source:** Own elaboration (2022); based on data provided by Scopus.

Brazil, the country with the highest number of scientific publications related to the topic proposed in the present research, shows high participation in papers published in co-authorship with

researchers affiliated with institutions in Chile, Portugal, the United Kingdom and Italy. Mexico has participated in joint research with researchers from the United States, Costa Rica and Peru. An example of the above is the article “Between math homework, math courses and math exams: How is students’ anxiety level towards mathematics in a private high school in Mexico? (González *et al.*, 2018), whose objective was to find out the relationship between the level of assertiveness, academic performance and various components of anxiety in a sample of Mexican middle or high school students and explore possible sex-related differences. The study showed that assertiveness has a strong relationship with academic performance and how managing stressful situations can determine the level of appropriation to the teaching-learning process. Hence, the study determines that it is necessary to work on variables such as assertiveness in the search for prevention strategies and mental health promotion in the student community.

***Distribution of scientific production by area of knowledge***

Figure 6 shows how the production of scientific publications is distributed according to the area of knowledge through which the different research methodologies are executed.



**Figure 6.** Distribution of scientific production by area of knowledge.

**Source:** Own elaboration (2022); based on data provided by Scopus.

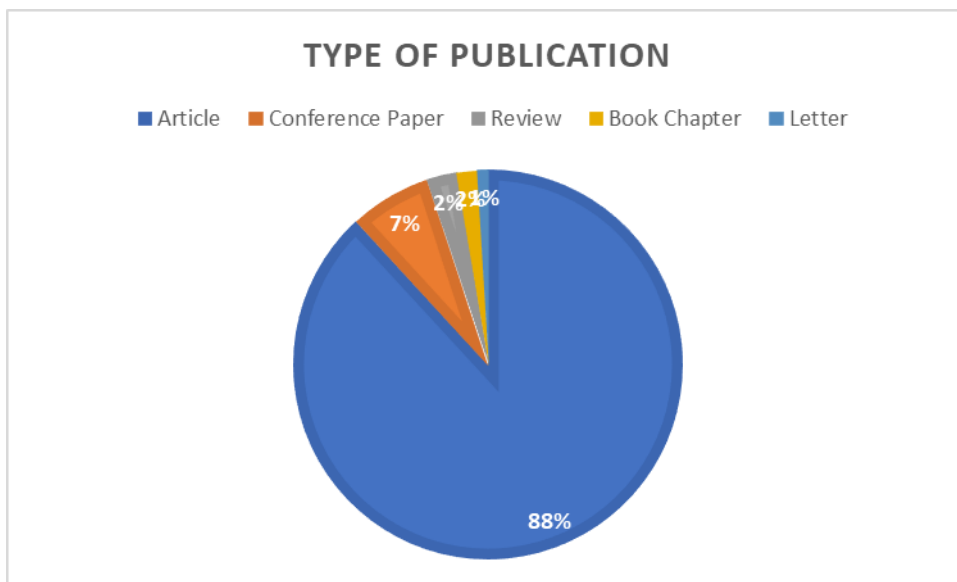
Medicine was the area of knowledge with the greatest influence in the management of scientific publications referring to the study of Anxiety in High School Students in Latin America during the period from 2017 to 2021 with a total of 58 researches, followed by Social Sciences and Psychology with 39 and 30 publications respectively. From Social Sciences, the article entitled “Anxiety towards



mathematics: empirical evidence in high school student” stands out (Escalera-Chávez *et al.*, 2019), whose objective was to verify if the variables of the scale proposed by Fennema and Sherman (1976), measure the level of anxiety towards mathematics in high school students in the Mexican context, which indicates low levels of academic performance in mathematics as evidenced in the results of tests applied by national and international organizations. One of the main findings of this research indicates that anxiety towards the resolution of mathematical problems causes the student to be nervous and irritated, which triggers high levels of stress and the generalization of a bad image of the subject. Therefore, it is expected that the application of evaluation methods will ensure the student a different experience where they find greater comfort and familiarity with mathematical exercises in order to reduce anxiety levels and, at the same time, improve academic performance in this subject.

***Type of publication***

Figure 7 shows how the bibliographic production is distributed according to the author’s chosen publication type.



**Figure 7.** Type of publication

**Source:** Own elaboration (2022); based on data provided by Scopus.

Eighty-eight percent of the publications identified through the execution of Phase 1 of the Methodological Design proposed for this document correspond to Journal Articles, followed by Conference Articles with 7% and Reviews with 2%. Among the conference articles that have generated the greatest impact is the one entitled “High School and Pre-University Student: Diagnostic Study of the Anxiety Test in Peruvian Adolescents” (Nunez *et al.*, 2020), whose

objective was to diagnose anxiety levels in Peruvian adolescents from high school and pre-university centers in Lima-Peru. The study was applied to the following sample: 72 pre-university students (40 males (55.6%) and 32 females (44.4%) between 14 and 16 years of age ( $M_{age} = 15.91$ ,  $SD = 0.35$ ). Among the main findings, it was found that, for males, the level of cognitive incapacity before exams was classified as 'extremely high anxiety' (Mean= 4.04), while for females, it was classified as 'high test anxiety' (Mean= 3.86). When faced with applying knowledge exams, the level of concern for men was (Mean= 4.41) and women (Mean= 4.52) were classified as 'extremely high anxiety. High levels of anxiety and worry represent a factor that affects school performance and cognitive processes affecting learning.

## Conclusions

Thanks to the bibliometric analysis carried out in this article, it is possible to determine that among the main characteristics in the volume of scientific production related to the study of Anxiety in High School Students in Latin America, Brazil was the country with the highest number of scientific publications with a total of 55 publications in high impact journals indexed in the Scopus database, this indicates that researchers are interested in analyzing this variable and offering evidence for educational policies to consider what they found.

The volume of publications has been increasing during the analyzed period that corresponds to the one between the years 2017 and 2021, the latter being the year in which Scopus registered the largest number of publications, a total of 41 documents were indexed in that database. One of the most frequent variables used in the 2021 publications was Covid-19 and its relationship with the stress, anxiety and depression levels among high school students. The above allows inferring that the scientific community has analyzed the impact that the restrictive measures designed by the health authorities in order to reduce the number of infections and death due to the same disease have had on the mental and emotional health of students not only in Latin America but worldwide, so it has been concluded that this new factor (confinement) has added great burden on the mood of students which has represented serious problems in their teaching-learning processes directly affecting their academic performance.

Finally, this article concludes by highlighting the importance of knowing the current and real situation regarding the mental health of students, especially in adolescence, since the main personality traits that define their performance in society depend on this so that through highly important data obtained from scientific studies in the search for strategies for mental health prevention and promotion programs, such as some mentioned in this document, as the institutionalization of sports activities which manage to reduce the high levels of anxiety associated not only to school life but also derived from their performance in society as children, siblings, friends, among others. Therefore, it is important to know the current state of the literature published about the studies on Anxiety in High School Students in order to represent an important

theoretical basis for the construction and generation of new knowledge about new and better strategies to be implemented by the educational management, in support for students who have presented anxiety, depression, low self-esteem that can trigger conditions not only to mental health but also to their physical integrity.

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