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## Prevalence and severity of anxiety symptoms and social anxiety disorder in medical students

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### ABSTRACT

#### OBJECTIVE

To estimate the prevalence and severity of anxiety symptoms and manifestations of Social Anxiety Disorder (SAD) among medical students at a private college.

#### METHODS

This was a non-experimental, descriptive, cross-sectional study with a quantitative approach. The BECK and SPIN questionnaires were used, with a convenience sample. Medical students from the first to eighth semesters who were present at the time of the questionnaire and agreed to participate were included. Students from other courses or semesters outside this range were excluded. Data were analyzed using Excel spreadsheets.

#### RESULTS

The sample consisted of 71 medical students, varying in gender, age, cycle (basic or clinical), and other variables. The average age of participants was 22.3 years, ranging from 18 to 52. Individual and combined analyses of the BECK and SPIN questionnaires revealed symptoms of social anxiety in 47.89% and moderate to severe anxiety in 30.99%. When comparing the results of both questionnaires, it was found that 21.12% of students had symptoms of both pathologies. On the BECK Anxiety Questionnaire, the most frequently reported symptom was nervousness (83.3%). On the SPIN inventory, the most common symptom was fear of criticism (76.5%).

#### CONCLUSION

Anxiety is a condition that has a wide range of impacts on the lives of those who suffer from it. Therefore, studies are needed to track the profile and identify predisposing factors. The results of this study may contribute to increased awareness.

#### KEYWORDS

Phobia; Social; Anxiety Disorders; Students; Medical; Social Anxiety Disorder.

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## INTRODUCTION

Fear is an evolutionary emotion, aimed at leading the individual to avoid dangerous or threatening situations, while anxiety is an intense and excessive worry about the future without apparent reason. Anxiety disorders are classified as those that include characteristics of excessive fear and anxiety and behavioral disturbances, and differ from fear or anxiety in that they are persistent or excessive.<sup>[1]</sup>

Within anxiety disorders, there is Social Anxiety or Social Phobia. Individuals with this disorder have detrimental concerns in professional, academic, and romantic contexts where regular public presentations are necessary, such as maintaining a conversation in social interactions, performing activities in front of others, such as giving speeches or eating.<sup>1</sup>

In Social Anxiety Disorder (SAD), the individual expresses fear, anxiety, and/or avoidance behavior in situations that involve the possibility of being judged, fearing being negatively evaluated, humiliated, or belittled; when not exhibiting such behavior, activities are endured with excessive fear and anxiety. In response to the emotional symptoms, the body reacts by presenting physical symptoms, of which tachycardia, intense sweating, and tremors are among the most frequent.<sup>1,2</sup>

In 2020, the World Health Organization (WHO) declared the COVID-19 pandemic, and since then the population has had to adapt its lifestyle. Fear of the disease and social isolation have increased levels of stress-related disorders in the population, such as SAD (Social Anxiety Disorder).<sup>3,4</sup>

Other studies have shown the prevalence of the disorder, largely among university students, and a particularly vulnerable subgroup is that of medical students.<sup>5,6</sup>

Several studies have been conducted on this subject. However, to date, those carried out in Brazil are quite scarce, and after searching the scientific literature, little data has been described regarding medical students related to SAD. Due to their long training period and various academic challenges, this group becomes one of the most exposed.<sup>2</sup>

Research shows that SAD (Social Anxiety Disorder) is associated with low self-esteem and body dissatisfaction, consequently impacting academic performance; furthermore, it is a significant risk factor for the development of depressive disorders and substance abuse, such as alcohol.<sup>6</sup>

There also appears to be little research addressing the impact of the COVID-19 pandemic on the mental health of medical students. Therefore, studies are needed to observe the influence of this period on students and to create a profile of students with similar symptoms.

In this sense, the objective of this research was to estimate the prevalence and severity of anxiety symptoms and manifestations of SAD (separately and combined) among medical students at a private Brazilian university.

## METHODS

### Study design

This is a non-experimental, descriptive, cross-sectional study with a quantitative approach, based on another article entitled "Social anxiety symptoms and body image dissatisfaction in medical students: prevalence and correlates".<sup>4</sup>

### Sample

The sample consisted of 71 medical students from the 1st to the 8th semester of a private medical school who were present when the research protocol was applied (August - December 2024) and freely agreed to participate. The response rate was 71%. All participants signed the Informed Consent Form online and were instructed to keep it for future reference. The project was approved by the Research Ethics Committee of the higher education institution, under opinion number 6.866.007.

### Assessment instruments

For data collection, the main assessment instruments used were:

1. Questionnaire to obtain demographic data, social and academic background, and psychiatric and/or psychological treatments before and after entering university, including the use of psychotropic drugs;

2. Beck Anxiety Inventory: used as an aid in the diagnosis, monitoring, and treatment of anxiety disorders, consisting of 21 items, each with 4 possible answers, with a maximum score of 63;

3. Social Phobia Inventory (SPIN) translated: consists of a questionnaire with 3 important criteria that define social phobia (fear, avoidance of situations, and symptoms of physical discomfort), consisting of 17 items, each with 5 possible answers, with a maximum score of 68; the cutoff point to define relevant symptoms of social anxiety is  $\geq 19$ .

As inclusion criteria, students enrolled in the medical program who were present during the administration of the questionnaires and who freely agreed to participate were selected. As an exclusion criterion, students from other courses or other semesters (9th to 12th) were not selected.

### Data analysis

After collection, the information obtained was separated and stored in Excel spreadsheets according to the variables.

Initially, a quantitative analysis of the data obtained was performed. Then, tables were constructed bringing together the information collected on sociodemographic variables, the use of psychotropic drugs, consultation with a psychologist/psychiatrist, and the results of the Beck and SPIN inventories. The results were expressed in measures of absolute and relative frequency.

## RESULTS AND DISCUSSION

The average age of the participants was 22.3 years, ranging from 18 to 52 years, with 85.92% (61) being between 18 and 25 years old, 9.86% (7) between 26 and 30, and 4.23% (3) being over 31 years old.

Of the research participants, 31% reported having some type of scholarship through the University for All Program (ProUni) or financing through the Student Financing Fund (FIES), while 69% stated that they did not receive this type of benefit.

Regarding the course, a predominantly positive perception was observed among the participants. The majority declared themselves totally satisfied (64.7%), while 33.8% reported being partially satisfied. Only 1.4% stated that they were not satisfied with the training.

As for marital status, it was observed that the vast majority of participants are single (91.5%), while only 8.5% declared themselves to be married. Sociodemographic data are described in Table 1.

Table 1 - Sociodemographic data of the participants

<b>Gender</b>		
Feminine	58	81,7%
Male	12	16,9%
Prefers not to disclose	1	1,4%
<b>Marital status</b>		
Married	6	8,5%
Single	65	91,5%
<b>Housing</b>		
With friends	6	8,4%
With a partner	6	8,4%
With relatives	34	47,9%
Shared accommodation	4	5,6%
Alone	21	29,6%
<b>Occupation</b>		
Student	66	93%
Occasional informal work	3	4,2%
Formal work	2	2,8%
<b>ProUni or FIES scholarship</b>		
Yes	22	31%
No	49	69%
<b>Religion</b>		
Important	34	47,9%
Moderately important	23	32,4%
Not important	9	12,7%
None	5	7%

<b>Adapting to a change of residence</b>		
Fully adapted	16	22,5%
Partially adapted	18	25,3%
I did not move	34	47,9%
<b>Academic performance</b>		
Very good	13	18,3%
Good	45	63,3%
Average	13	18,3%
Bad	0	0%
<b>Feeling about the course</b>		
Completely satisfied	46	64,7%
Partially satisfied	24	33,8%
Not satisfied	1	1,4%
<b>Use of psychotropic drugs</b>		
Yes	16	22,5%
No	55	77,5%
<b>Attended professional</b>		
Yes	42	59%
No	29	41%

Source: Author's own work

A prevalence of 47.89% of social anxiety symptoms was found, and certain symptoms of moderate and severe anxiety, when combined, were reported by 30.99% of the students. When cross-referencing the data on moderate and severe anxiety and social phobia, it was found that 21.12% of the participants had symptoms of both pathologies.

Table 2 also shows the response frequencies of the previously mentioned inventories (BECK anxiety and SPIN), analyzed individually and in combination. The results of the BECK and SPIN questionnaires, when analyzed separately, show that the most prevalent BECK anxiety category was minimal (36.62%), but when viewed in combination with SPIN, the moderate category is more prevalent. Therefore, of the students who answered the questionnaire, 14.08% showed symptoms of moderate anxiety and social anxiety.

**Table 2** - Distribution of students according to the assessment of anxiety symptoms

Questionnaire	n	%
BECK	Minimum	26
	Mild	23
	Moderate	15
	Severe	7
SPIN		34
Combined	Minimum + SAD	6
	Mild + SAD	8
	Moderate + SAD	10
	Severe+ SAD	5

Source: Author's own work

In the BECK questionnaire, the average score was 15.3, with a median of 13 and a mode of 4. The most commonly reported symptom was nervousness (83.3%), followed by fear that the worst will happen (77.8%) and inability to relax (75%). In the SPIN questionnaire, the average score was 18.5, with a median of 18 and a mode of 33 (SPIN+ > 19).

By analyzing Table 3, we conclude that females have higher rates of both moderate and/or severe anxiety, as well as social anxiety, and are also the ones who most frequently visit professionals (psychologist/psychiatrist) and use psychotropic drugs. Among the most commonly used psychotropic drugs, the anxiolytic class was the most frequently mentioned.

**Table 3** - Distribution of students according to self-assessment of symptoms of anxiety, social phobia, and those undergoing treatment

	Female gender		Male gender		Total	
	n	%	n	%	n	%
Moderate anxiety	13	18,31%	2	2,82%	15	21,13%
Severe anxiety	6	8,45%	1	1,41%	7	9,86%
SPIN	29	40,85%	4	5,63%	33	46,48%
Uses psychotropic drugs	13	18,31%	3	4,23%	16	22,54%
Attended professional	34	47,89%	8	11,27%	42	59,15%

Source: Author's own work

We can observe on Table 4 that both social anxiety and anxiety at moderate and severe levels are more prevalent in elementary school students, being present in approximately 39.44% of the students who participated in the research. Previous articles,<sup>4-8</sup> have already presented data similar to those found from the applied questionnaire, which reinforces the conclusions obtained.

**Table 4** - Distribution of students who responded positively to symptoms of social anxiety associated with the study cycle (basic or clinical)

	Basic cycle (1st to 4th semester)		Clinical cycle (5th to 8th semester)	
	n	%	n	%
SAD	20	28,17%	7	9,86%
Moderate anxiety	6	8,45%	2	2,82%
Severe anxiety	2	2,82%	1	1,41%
Total	28	39,44%	10	14,08%

Source: Author's own work

## FINAL CONSIDERATIONS

Based on the results obtained from the BECK and SPIN questionnaires, it was observed that, when analyzed separately, the category of minimal anxiety was the most prevalent. However, when the inventories were combined, the results indicated that the category of moderate anxiety occurred more frequently. In percentage terms, 14.08% of the students who participated in the research presented symptoms of moderate anxiety and social phobia. These findings highlight the importance of considering the interaction between different assessment instruments for a more accurate diagnosis and a more comprehensive understanding of anxiety levels among participants, since anxiety, regardless of its category or intensity, is a condition that causes a series of negative impacts on the lives of those who experience it.

Considering its increasing prevalence in modern society, it is becoming increasingly urgent to conduct in-depth studies aimed at tracing the profile of anxious individuals, identifying predisposing factors, and thus enabling early interventions. In addition, the results presented here may strengthen awareness of mental health, highlighting the need to identify psychopathology early, especially in the academic context.

In this scenario, students, in their training, are considered future health professionals, and therefore it is essential that they are prepared to deal with their own emotional issues, as

well as being able to identify and offer support to others who may have similar difficulties. Investing in studies that address the mental health of future professionals can, therefore, have a significant impact, not only on the individual, but also on the people they will serve throughout their careers.

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