

# Predictors of anxiety in college students

## Abstract

**Objective:** To evaluate the relationship between the profile of anxiety and its predictors in college students.

**Method:** Cross-sectional descriptive study conducted with 812 college students who met the eligibility criteria, using an instrument containing several variables predictive of anxiety and State-Trait Anxiety Inventory (STAI). The relationship between these variables evaluated by backward method, with a significance level of 5%.

**Results:** The frequency of anxiety was high and its relationship with the presence of the predictors was significant; the greatest chance of not having high levels of state of anxiety occurred in subjects who did not present such variables. Constant headache manifestations, pain in general on the body, blurred vision, difficulty concentrating, fatigue and sleep disturbances were related to the presence of high level of anxiety.

**Conclusion:** Anxiety is a common phenomenon among college students, and the findings of this study support the hypothesis that the variables investigated are anxiogenic factors.

**Keywords:** anxiety, signs and symptoms, students

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## Introduction

College admission is an unique moment in the live, period that marks the transition of students to young adulthood, and that they are excited by this new phase they have conquered.<sup>1</sup> Although students are conducive to growth, the challenges that they face during college can facilitate the risk of developing mental disease and precipitate the appearance or reoccurrence of a psychological disorder.<sup>2-4</sup> This fact has been the objective of many investigations and has aroused growing concern of researchers.<sup>4-6</sup>

It is known that the psychological disorder presented by university students can be reflected in different ways that includes suffering psychological, as depressive symptoms and anxiety.<sup>6</sup> The anxiety can be described as a condition of state and trait, in which the first is understood as a transitional emotional state, characterized by feelings of tension that vary in intensity over time; and the second refers to personal disposition, moderately stable, to react to situations perceived as threatening.<sup>7</sup> Its factors predictors are diverse: difficulty concentrating,<sup>8-10</sup> fatigue,<sup>8,9,11</sup> sleep disturbance, unusual movements or tics,<sup>9</sup> tension or muscle contraction,<sup>8,9,11</sup> abdominal pain,<sup>9</sup> palpitation,<sup>9,10,12</sup> constants headache,<sup>12,13</sup> body aches<sup>8,11,12</sup> and blurry vision.<sup>9</sup> Therefore, these manifestations and your consequences may affect learning process of the students throughout yours life academic. Thus, understand this context will encourage the search for strategies that can provide the student a better response on the routine of academic life and on the tension of the situations experienced. Therefore, the objective of this study was to investigate the relationship between anxiety and the profile their predictive variables in college students.

## Methods

This is a cross-sectional and descriptive study conducted with a population of 1050 college students of nursing, physiotherapy, dentistry, and pharmacy of a federal university. Inclusion criteria were age (over 18 years) and confirmation of registration at the University. Were excluded individuals who did not attend class for

three consecutive days during the collection data period and those who refused to participate in this research. Then, participated in this study 812 students enrolled from first to eighth period, from September 2012 to March 2014, who composed the sample of this investigation. Were investigated gender, age and course participants, as well as the predictive variables anxiety: difficulty concentrating,<sup>8-10</sup> fatigue,<sup>8,9,11</sup> sleep disturbance, unusual movements or tics,<sup>9</sup> tension or muscle contraction<sup>8,9,11</sup> abdominal pain,<sup>9</sup> palpitation,<sup>9,10,12</sup> constants headache,<sup>12,13</sup> body aches<sup>8,11,12</sup> and blurry vision.<sup>9</sup> For the evaluation of anxiety level, we used the *State-Trait Anxiety Inventory* (STAI). This instrument was developed by Spielberger and colleagues in 1970, translated and adapted for Brazil,<sup>2</sup> with adequate psychometric characteristics.<sup>14</sup>

The STAI is divided into two ranges, one that evaluates the state of anxiety (STAI-E) and another who evaluates the trace of anxiety (STAI-T), with 20 statements each, and their responses are of type four-point likert scale (1-absolutely not/4-lot). The score of each part varies from 20 to 80 points, indicating a low level of anxiety (0-30), median level (31-49) and high level ( $\geq 50$ ).<sup>15</sup>

For statistical analysis, we used the program Statistical Package for the Social Sciences (SPSS) version 23.0. Nominal variables described by frequency analysis. The relationship between the variables predictive of anxiety and the profile of anxiety of college students was evaluated by logistic regression model for dichotomous (odds ratio). The selection of variables given by Backward, a significance level of 5%. The low and middle levels of state of anxiety was grouped and used on dichotomous regression. This study was approved by Ethics Committee (CAAE: 02823512.9.0000.5142) second 466/12 resolution of Ministry of Health in Brazil.

## Results

Students participating in the study, 812 82.4%(669) were women and 17.6%(143) men; 16.6%(135) attending nursing; 23.3%(189) physiotherapy, 26.1%(212) dentistry and 34.0%(276) pharmacy. The

average age of study participants was 20.95 years and the standard deviation (SD) 2.83 years.

The results showed that most participants had average level (47.66%) and high (15.66%) of anxiety. The average the state of anxiety was equal to 44.07 (DP: 10.19) and the trace of anxiety 43.99 (DP: 11.22). The variables predictive of anxiety observed in participants are difficulty concentrating (32.8%) and muscle tension

(31.4 percent), anxiety (25.6%), and sleep disorders (22.5 percent). Variables as general pains in the body (29.6%) constants headache (19.6%) and fatigue (15 percent) also referred. The ratio (p-value) between the predictive variables reported by participants of the study and the presence of anxiety, as well as the chance of having high levels of state of anxiety (OR) and the perception of these variables in pressure situations presented in Table 1.

**Table 1** Estimation parameters of the logistic regression model between the dichotomous clinical expressions and the level of anxiety in students. Brazil, 2017. (N:812)

Predictive variables	Anxiety		Parameters	Standard error	OR	CI 95%	P value
	Yes	No					
No physical discomfort	Yes	18	-0.75	0.29	0.47	0.27-0.84	0.01
	No	82					
Difficulty in concentrating	Yes	36	0.39	0.19	1.47	1.02-2.12	0.04
	No	64					
Restlessness	Yes	41	0.38	0.19	1.46	1.00-2.13	0.04
	No	59					
Sleep disorders	Yes	31	0.54	0.20	1.72	1.17-2.52	<0.001
	No	69					
Constant headache	Yes	29	0.52	0.20	1.68	1.12-2.50	0.01
	No	71					
Fatigue	Yes	14	0.54	0.22	1.72	1.11-2.65	0.02
	No	86					
General pains in the body	Yes	19	0.45	0.23	1.57	1.01-2.43	0.04
	No	81					
Blurry vision	Yes	16	0.59	0.29	1.80	1.02-3.16	0.04
	No	84					

Notes: OR, Odds Ratio; CI, 95% - 95% Confidence interval.

## Discussion

The high frequency of anxiety among college students is justified by academic challenges that predisposes this condition.<sup>16</sup> In this study, both the state and trace of anxiety, i.e. anxiety concerning the transitional moment or inherent to the student's personality, were classified in medium and high level for most of the participants; as was also noted by other researchers<sup>13</sup> which investigated the anxiety in healthcare students, which reaffirms the fact that perceived emotional pressure in academia for these students is significantly related to the high level of state of anxiety.

In this study, the most significant predictor variables for the presence of anxiety in students were difficulty concentrating, restlessness, and sleep disturbance, general pains in the body, fatigue, and blurred vision. The college student that did not show none of these manifestations, also had less chance to display significant levels of anxiety. Thus, the absence of these conditions acts as a protective factor for the development of this clinical condition. Therefore, there is evidence that exist a relationship between anxiety and such variables, which has confirmed in other investigations that also exploited the presence of these conditions in a situation of anxiety in

different populations.<sup>17,18</sup> Specifically for the sample of students, not found studies that did such research. However, the findings of this study support the hypothesis that the predictive variables of anxieties investigated are anxiogenic factors that may interfere negatively in the learning process and the quality of life of the college students.

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## Conflict of interest

The author declares no conflicts of interest.

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