

ANXIETY SCORES IN UNIVERSITY ENTERING AND GRADUATING STUDENTS FROM A HIGHER EDUCATION INSTITUTION

Eliane Alicrim de Carvalho*

Sonia Maria Marques Gomes Bertolini**

Rute Grossi Milani***

Mayra Costa Martins****

ABSTRACT

The aim of this study was evaluating the anxiety levels in entering and graduating students from a higher education institution of Northwest Paraná. A cross-sectional research with 1,112 students, with an average age of 21.8 ± 3.3 years, of both sexes, from courses of the Center for Biological and Health Sciences, Centre for Applied Social Sciences and Humanities, Center for Exact, Agricultural and Technological Sciences. Standardized instruments as the State-Trait Anxiety Inventory and the Beck Anxiety Inventory were applied. For statistical analysis we used Student's t-test, analysis of variance and Z test. The level of statistical significance was 5%. Higher anxiety scores were found in graduating students of female sexes and from the Center for Biological and Health Sciences ($p < 0.05$). University graduating students present higher anxiety scores when compared to university entering students.

Keywords: Anxiety. Education Higher. Students.

INTRODUCTION

Anxiety is a common situation that is part of the daily lives of University students. A study carried out in the United States with this population have described anxiety as a state of varying levels of unease or discomfort. In anxiety disorder, there will be an excessive state of arousal, with feelings of fear, uncertainty or apprehension⁽¹⁾. Present in 12% of the University population, anxiety disorder is the most common mental health problem⁽²⁾. In consonance with the results, another study have also shown that this type of disorder can be debilitating if untreated, leading to negative results on university students and in addition, the high level of anxiety makes one's life in the more difficult, interfering in daily activities and social life⁽³⁾.

Students with anxiety disorders present a passive attitude in their studies, such as lack of interest in learning, poor performance in exams, and academic works. The psychological symptoms of anxiety among students include feelings of nervousness

before classes, panic, lack of memory during exams, inability to do academic works, or lack of interest in difficult disciplines. The physiological symptoms comprise cold hands, sweaty hands, nervousness, rapid heartbeat and breathing, or stomach pain⁽⁴⁾.

Yet when it comes to academic performance, literature reveals that high levels of anxiety decrease working memory, reasoning and promotes distraction in students and students with higher levels of anxiety tend to get lower grades in school assessments⁽²⁾.

A study carried out with other students from health courses revealed that students suffer from stress and anxiety and throughout university life these levels tend to rise not only in students, but also in professionals, mainly in the health care field^(5,6).

Freire and Martins⁽⁷⁾ consider that students' entrance and permanence in higher education are accompanied by high expectations, being a decisive period in one's life, since this choice will influence their future lives. Also they add that the conditions to which they go through in the

* Psychologist. MD, Faculdade Ingá. E-mail: lilialicrim@hotmail.com

** Physiotherapist. PhD, Centro Universitário de Maringá. Universidade Estadual de Maringá. E-mail: sonia.bertolini@unicesumar.edu.br

*** Psychologist. PhD, Centro Universitário de Maringá. E-mail: rute.milani@unicesumar.edu.br

**** Psychologist. PhD, Centro Universitário de Maringá. E-mail: mayra.martins@unicesumar.edu.br

pursuit to meet the principles involved in the university environment end up interfering in their results along their university study life.

Anxiety is one of the challenges that makes students feel difficulties in establishing new emotional bonds and therefore appears as the biggest problems in the process of social adaptation. The stress factors are accumulated causing significant stress that can be associated with psychiatric disorders⁽⁸⁾.

The impact of academic life in the physical health of students at the beginning and at end of their course has been investigated in analytical studies by other authors^(9,10), however, its relation to mental health investigations are still scarce.

Given the above, this study aimed at investigating the levels of anxiety in university entrant students and graduates from a higher education institution of the northwest of Paraná.

It is hoped that this research may contribute for the adoption of intervention measures to improve the quality of life of academic students.

METHODOLOGY

It is a transversal study of analytical and descriptive characters based on a quantitative approach. Data were collected from August to November 2012, through the application of anonymous self-administered questionnaires in the classroom.

The investigated population consisted of students in higher education and the plan for extracting the sample followed proportional stratified sampling, defined by the percentage of 21% with 5% of error. 1,112 from the total 23,352 university entrant students and graduates from a higher education institution were studied. It was used a proportional sample, divided by courses, and constituted by students who met the following inclusion criteria: being present on the day of the intervention and being in age range between 18 and 29 years old. Incomplete questionnaires were excluded from the study. After setting the number of students for each course, we adopted a systematic sampling

technique, considering the academic frequency control. The subjects selected were graduates of both sexes enrolled in day or night courses in the areas of Human and Social Sciences - CHSA (Law, Fashion, Theology, Social Services, Education, Visual Arts, Advertising and Accounting), Life and Health sciences - CBS (Nursing, Physiotherapy, Pharmacy, Biology, Physical Education, Speech Therapy, Aesthetics and Cosmetology, Veterinary Medicine, Psychology and Biomedicine) and Exact, Technology and Agrarian sciences - CETA (Architecture, Computer Systems Analysis, Mechatronics, Agribusiness, Civil Engineering, Interior Design). After previous authorization given by the institution's principal, and the professors who were in the classroom, researchers addressed the students, who had been informed about the purpose of the research, and signed the informed consent form. Following that step, the application of the instruments for data collection was carried out.

This study was conducted in accordance with the guidelines regulated by Resolutions 196/96 and complementary from the National Health Council, and the project was approved by the Ethics Committee on Human Research of the University Center of Maringa, as opinion No 77689/2012.

The State-Trait Anxiety Inventory (STAI) was used, translated and adapted to Brazil⁽¹¹⁾. The instrument is a self-report scale that depends on the awareness of the subject in the evaluation process of their state of anxiety as well as characteristics of their personality.

The scores on state anxiety (STAI - S) may vary in intensity over time, it is limited to a moment or particular situation, and individuals with state anxiety tend to get anxious only in particular situations. It is characterized by unpleasant feelings of apprehension and tension that are consciously perceived, and they may vary in intensity according to the perceived danger by the person and the changes in time.

Trait anxiety (STAI - T) refers to the individual differences relatively stable in the tendency to react to situations perceived as

threatening with increase in the intensity of the state of anxiety. It has long lasting characteristic in the individuals because the personality trait is less sensitive to environmental changes and remains relatively constant over time⁽¹²⁾.

It was also used the Beck Anxiety Inventory - BAI, a self application instrument consisting of anxiety symptoms, both physical and cognitive⁽¹³⁾. The use of the three instruments is justified because anxiety is a variable subjective and the three of them evaluate different components of anxiety manifestation.

In the case of STAI each scale consists of 20 statements to which the volunteers indicate the momentary intensity (IDATE- E) or the frequency with which this occurs (STAI -T) via a 4-point scale (1 to 4). The total score of each scale ranges from 20 to 80, where higher values indicate higher levels of anxiety⁽¹¹⁾.

The BAI consists of 21 items describing common symptoms of anxiety frames. The respondent was asked how much he or she has been bothered by each symptom during the past week, within a 4-point scale, ranging from 0 (no to all) to 3 (severe). The items added result in a total score that can range from 0 to 63. The sum of answers are attributed to the levels: Minimum Anxiety (0-10 points), mild anxiety (11-19 points), moderate anxiety (20 a30 points) and severe anxiety (31-63)⁽¹³⁾.

The data were organized in Microsoft Excel 2010 spreadsheets and later analyzed in the Statistica 7.0 program.

Frequency and contingency tables were used for better visualization of the results. For categorical variables we used the Z test to compare proportions. For quantitative variables we used the Student t test unpaired and the use of means and standard deviations to evaluate the variation of quantitative variables. I was also used the ANOVA test when the variable had three or more groups for the comparison. The level of statistical significance was set at $p < 0.05$.

RESULTS AND DISCUSSION

1,500 questionnaires were distributed, two students refused to participate and 386 did not meet the inclusion criteria. As shown in Table 1 the sample consisted of 1,112 students, aged between 18 and 29 years old (mean 21.8 ± 3.3 years), 817 female and 295 male. The study included 541 students of CBS (291 entrants and 250 graduates), 341 students CHSA (202 entrants and 143 graduates) and 226 students from CETA (126 entrants and 100 graduates).

Epidemiological studies have demonstrated higher anxiety scores in samples of younger individuals. Higher levels of anxiety were found in single women⁽¹⁴⁻¹⁶⁾ and with a mean age of 30 years old⁽²⁾. The results of this study corroborate these findings in the literature. The age of the graduates ranged between 25 and 29 years old and can therefore be considered a sample of young university students.

Anxiety favors the performance and adaptation in different situations in the life of an individual. From an excessive point of anxiety, instead of contributing to the adaptation, it will cause the opposite, leading to the failure of the adaptive capacity⁽⁸⁾.

Entering a university is a challenge, and there are several aspects that may be perceived as stress factors, regardless of the series in which they can be found and one of the challenges is being seen by parents as an investment. The beginning of the adult life is the period when mental disorders are more likely to arise and 10% of non-psychotic disorders are associated with anxiety and depression⁽¹⁷⁾.

From the students diagnosed with some kind of psychiatric disorder only 25% seek care. Studies have shown that psychic suffering is justified by the exposure and fear of some kind of error that may lead to academic failure⁽⁸⁾.

Table 1. Distribution of evaluated students according to the area of coverage, course and academic situation from a higher education institution in the northwest of Paraná, in 2012.

Center	Course	Entrants		Graduates	
		n	%	n	%
CBS	Nursing	24	2.2	10	0.9
	Physiotherapy	39	3.5	36	3.2
	Pharmacy	31	2.8	8	0.7
	Biology	15	1.3	11	1.0
	Physical Education	21	1.9	25	2.2
	Speech Therapy	17	1.5	12	1.1
	Aesthetic and cosmetology	28	2.5	104	9.4
	Veterinary	17	1.5	8	0.7
	Psychology	22	2.0	16	1.4
	Biomedicine	77	6.9	20	1.8
CHSA	Law	31	2.8	31	2.8
	Fashion	39	3.5	24	2.2
	Theology	17	1.5	13	1.2
	Social Service	26	2.3	20	1.8
	Pedagogy	33	3.0	14	1.3
	Visual arts	14	1.3	16	1.4
	Advertising and marketing	22	2.0	12	1.1
	Accounting	20	1.8	13	1.2
CETA	Architecture	30	2.7	33	3.0
	Computer Systems Analysis	16	1.4	14	1.3
	Mechatronics	18	1.6	13	1.2
	Agribusiness	19	1.7	13	1.2
	Civil Engineering	24	2.2	14	1.3
	Interior design	19	1.7	13	1.2

Legend: CBS- Center for Biological and Health Sciences; CHSA - Centre for Applied Human and Social Sciences; CETA - Center for Exact, Agricultural and Technological Sciences.

Transitional moments in life are anxiety conductors⁽¹⁸⁾, with emphasis to the change in lifestyle of students who enroll in higher education⁽¹⁹⁾. The difficulties when faced with an unknown context contributes to the appearance of tension and anxiety. Besides experiencing an unknown world during the training process, students are subjected to the

emotional distress based on their past school experiences and concerns related to the integration into the labor market⁽²⁰⁾.

Table 2 shows that the graduate students from CETA and CBS are more anxious than the entrants. It is noteworthy to highlight that the choice for the BAI as a tool for the assessment can be justified because it is a

scale that measures anxiety symptoms, both physical and cognitive⁽¹³⁾. In CHSA, between the means of the scores obtained with BAI,

STAI trait and state, considering entrants and graduates there was no significant statistical difference in any of the instruments used.

Table 2. Distribution of undergraduate students considering the current coverage area and the assessment of anxiety, according to the status of entrant or graduates from a higher education institution in 2012.

Center	Scales	Entrants			Graduates			<i>p</i>
		n	Average	Standard Deviation	n	Average	Standard Deviation	
CETA **	BAI	126	13.5	13.0	100	18.8	14.4	0.003*
	STAI T	126	43.6	7.5	100	44.6	8.4	0.358
	STAI S	126	44.3	7.1	100	45.5	8.0	0.253
CHSA +	BAI	202	17.3	14.2	143	15.1	12.4	0.145
	STAI T	202	45.5	9.1	143	44.3	8.6	0.222
	STAI S	202	45.9	8.1	143	46.7	8.2	0.370
CBS ‡	BAI	291	21.3	15.4	250	24.9	16.9	0.011 *
	STAI I	291	45.3	8.7	250	46.6	9.5	0.077
	STAI S	291	46.4	7.7	250	48.2	8.6	0.009 *

*Statistically significant difference; ** Center of Biological and Health Sciences; + Centre of Human and Social Applied Sciences; ‡Center of Exact, Agricultural and Technological Sciences.

These findings can be attributed to the fact that graduate students of health and exact sciences are usually exposed to a greater number of stimuli that lead to stress, which originates anxiety and is a resulting from the impact of the academic life in university students. In addition, one should consider that this is a group of people who is about to enter the labor market and who will face greater difficulties, specially due to their lack of experience. So this is a group that is very vulnerable to unemployment, which is turn is the subject of specific policies in many countries. It is possible that, for a young person who will still enter the labor market these situations seem threatening. These results of this study are similar to those found in the international literature, which revealed that anxiety levels rise in the last year of graduation⁽²¹⁾.

As for the organization of courses in centers, it is important to highlight that at the CBS are enrolled students whose common goal is caring for human health. Most of the

Brazilian studies aiming at checking anxiety in university students were held with students from medical school⁽²⁰⁾; we may point that most of them have cross-sectional design and rarely use samples from other courses. A recent survey in the Dentistry course have found that the prevalence of anxiety was 76.2% and among the associated factors stood out economic difficulties, family problems and alcohol consumption⁽²²⁾.

In comparing the scales evaluated according to the standardization of each questionnaire (anxiety level), it was not evidenced significant differences between the anxiety of entrants and graduates when considering each center ($p > 0.05$).

When evaluating the total sample (entrants and graduates) the higher anxiety scores originated from the CBS. Table 3 shows that the CETA differs from CBS and from the CHSA in BAI and STAI S scales, and CETA differs from CBS in the STAI T scale.

Table 3. Comparison of anxiety scales according to the Education Centre, at an institution of higher education in 2012.

Variable	Center	n	Average	Minimum	Maximum	Standard Deviation	p
BAI	CBS**	541	23.8	0.0	79.0	16.9	<0.001*
	CHSA ⁺	345	17.8	0.0	76.0	14.4	
	CETA [‡]	237	13.5	0.0	49.0	11.6	
STAI S	CBS **	541	48.0	22.0	72.0	8.7	<0.001*
	CHSA ⁺	345	46.2	27.0	71.0	8.2	
	CETA [‡]	237	45.9	31.0	71.0	7.8	
STAI T	CBS **	541	45.7	22.0	75.0	9.9	0.019*
	CHSA ⁺	345	45.0	21.0	67.0	8.9	
	CETA [‡]	237	43.7	22.0	73.0	8.6	

*Statistically significant difference; Center of Biological and Health Sciences; + Center of Human and Social Applied Sciences; ‡Center of Exact, Agricultural and Technological Sciences.

Table 4, which considers the total sample, regardless of the center, expresses the comparison of psychological tests according to the first or last year of study.

Table 4. Distribution of students according to the evaluation of anxiety in the first and last year of course in an institution of higher education in 2012.

Variable	Year	n	Average	Minimum	Maximum	Standard Deviation	p
BAI	Entrants	619	19.4	0.0	76.0	15.0	0.306
	Graduates	504	20.3	0.0	79.0	16.5	
STAI STATE	Entrants	619	46.3	25.0	72.0	8.2	0.002 *
	Graduates	504	47.8	22.0	72.0	8.6	
STAI T TRACE	Entrants	619	44.8	23.0	73.0	9.2	0.231
	Graduates	504	45.4	21.0	75.0	9.5	

*Statistically significant difference.

In all tests the senior students had the highest average score, however, the difference between these means was statistically significant only with the use of the STAI-S ($p = 0.002$), specific to detect anxiety only in particular situations⁽¹¹⁾, which reinforces the existence of unpleasant feelings of tension and apprehension consciously perceived by students while at the completion phase of the course.

Regarding the level of anxiety and sex, from the graduates of CBS and CETA

predominated the average level and female students (Table 5).

The anxiety level was compared in each center between entrants and graduates taking into consideration the statistical significance of the STAI S used. And at analyzing the association between level of anxiety and sex through the STAI-T (Table 5) it was noted that there was a greater prevalence the average level of anxiety in the CBS and the CETA.

Table 5. Distribution of the Anxiety level trace of university students from different education centers, according to sex, at a higher education institution, in 2012.

Sex	Low level of anxiety		Average level of anxiety		High level of anxiety		p
	n	%	n	%	n	%	
CBS							
Female	115	21.3	308	56.9	36	6.7	0.048 *
Male	31	5.7	47	8.7	4	0.7	
CHSA +							
Female	75	21.7	169	49	14	4.1	0.071
Male	36	10.4	49	14.2	2	0.6	
CETA ‡							
Female	22	9.7	74	32.7	4	1.8	0.002 *
Male	53	23.5	72	31.9	1	0.4	

*Statistically significant difference; **Center of Biological and Health Sciences; + Center of Human and Social Applied Sciences; ‡Center of Exact, Agricultural and Technological Sciences.

Students of the Center of Agricultural, Technological and Exact Sciences better control the anxiety, however, this control decreases as the level of anxiety increases⁽²³⁾.

Regarding gender, it is noteworthy that a study carried out with university students from Turkey have pointed out a systematic review that reveals higher prevalence of anxiety in women (which raises issues still poorly understood on the hormonal influence) and in Asian and African populations, with ethnic differences being suggestive of genetic variations⁽⁴⁾.

In Chile a study with 440 college students have found that students are significantly more anxious than depressed, especially women and those from the penultimate and final year⁽²⁴⁾. In another perspective a study with 232 medical students have shown that anxiety symptoms were reported by 30.8% from the first year and only 9.4% from sixth graders. It was also possible to note that female students were more affected by anxiety⁽¹⁸⁾. In medical school resident students the prevalence of moderate to extremely high levels were found in 54.5% of the sample⁽⁶⁾.

Considering the total sample, the average anxiety level was found in 64.65% of the

university students rivers and the high one in 5.48%. Prado et al.⁽²⁰⁾ studying the levels of anxiety in nursing students have concluded that from the individuals surveyed, 43.66% of the students showed a high level of anxiety and 36.62%, moderate level. Considering only the CBS, whose moderate level of anxiety was 31.9%, the results are similar to the percentage found in that search.

Another factor that may account for the prevalence of higher levels of anxiety in females (Table 5) is the fact that we live in a society where women still have to overcome major obstacles to joining a career that allows them greater social and economic independence. Such fact leads them to experiencing more conflict than men and therefore tends to cause them to react with higher levels of anxiety on psychological pressures.

Trait anxiety refers to individual differences relatively stable in the tendency to react to situations perceived as threatening with elevations in the intensity state of anxiety⁽¹²⁾. Thus, the results of this research have come to reinforce the vulnerability of university female students to react to different stress factor and the need for action by the part of their family and academic managers, aimed at these university students. By using the STAI-S and the BAI, there was no association of the variable sex and the level of anxiety ($p > 0.05$).

While studies of anxiety symptoms in university are still scarce, the results of this research have shown that these symptoms are

present during the academic background and can influence the way of acting professionally, and, in dealing with their own health, and as for health care students, they may influence the relationship with their future patients.

CONCLUSION

These results support the conclusion that the graduate students from the courses of Biological and Health sciences centers and as well as the ones from the Exact, Agriculture and Technology center have higher anxiety scores when compared to entrants. Therefore, the pursuit of psycho-emotional balance of college students must be not only an educational goal, but part of the training and education for good professionals.

The results of this study can be used to draw a profile of students at higher risk for anxiety,

for whom the efforts and early intervention strategies can be focused. In this sense, managers of higher education institutions, professionals involved with psycho-pedagogical issues and professors should reflect critically on this context, knowing the characteristics of students and the training processes, and trying to link strategies to help students cope with the difficulties of everyday life, aiming at reducing the psychological suffering and improving the quality of life of individuals in that group.

Among the limitations of this study we can point out the design of the research itself, for it is a cross-sectional study and therefore prevents ensuring causal relations between the variables studied. This shows the need for longitudinal studies and other ones that may create associations between contemporary sociodemographic variables, school schedules and lifestyle.

ÍNDICE DE ANSIEDADE EM UNIVERSITÁRIOS INGRESSANTES E CONCLUINTE DE UMA INSTITUIÇÃO DE ENSINO SUPERIOR

RESUMO

Este estudo teve como objetivo analisar os níveis de ansiedade em universitários ingressantes e concluintes de uma Instituição de Ensino Superior do Noroeste do Paraná. Trata-se de um estudo transversal com 1.112 graduandos, com média de idade de $21,8 \pm 3,3$ anos, de ambos os sexos, dos cursos do Centro de Ciências Biológicas e da Saúde, Centro de Ciências Humanas e Sociais Aplicadas e Centro de Ciências Exatas, Agrárias e Tecnológicas. Foram utilizados os instrumentos padronizados: IDATE (Inventário de Ansiedade Traço-Estado) e o BAI (Beck Anxiety Inventory). Os dados foram coletados no período de agosto a novembro de 2012. Para análise estatística foram utilizados os testes t de *Student*, análise de variância e teste Z. O nível de significância estatística utilizado foi de 5%. Maiores escores de ansiedade foram encontrados em alunos concluintes, alunos do sexo feminino e matriculados no Centro de Ciências Biológicas e da Saúde ($p < 0,05$). Os resultados indicam que os universitários concluintes apresentam níveis mais altos de ansiedade quando comparados aos ingressantes.

Palavras-chave: Ansiedade. Educação Superior. Estudantes.

NIVELES DE LA ANSIEDAD EN UNIVERSITARIOS INGRESANTES Y CONCLUYENTES DE UNA INSTITUCIÓN DE ENSEÑANZA SUPERIOR

RESUMEN

El presente estudio tuvo como objetivo evaluar los niveles de ansiedad en universitarios ingresantes y concluyentes de una Institución de Enseñanza Superior del Noroeste del Estado del Paraná. Se trata de un estudio transversal con 1112 estudiantes del final del curso, con edad media de $21,8 \pm 3,3$ años, de ambos sexos de los cursos del Centro de Ciencias Biológicas y de la salud; Centro de Ciencias Humanas y Sociales Aplicadas; Centro de Ciencias Exactas, Agrarias y Tecnológicas. Fueron utilizados los instrumentos padronizados: Inventario de Ansiedad(Razgo y Estado) y el Inventario de ansiedad de Beck. Para análisis estadística fueron utilizadas las pruebas t de *Student*, análisis de varianze y la prueba Z. El nivel de significado estadístico utilizado fue de 5%. Mayores niveles de ansiedad fueron encontrados en los alumnos concluyentes, del sexo femenino y del Centro de Ciencias Biológicas y de la Salud ($p < 0,05$). Los universitarios concluyentes presentan mayores niveles de ansiedad cuando comparados a los ingresantes.

Palabras clave: Ansiedad. Educación Superior. Estudiantes.

REFERENCES

1. Kaplan HF, Sadock BJ, Grebb JA, Harold I, Benjamin J. *Compêndio de Psiquiatria: ciências do comportamento e psiquiatria clínica*. 7ª ed. Porto Alegre: Artmed; 2003.
2. Szpak JL, Kameg KM. Simulation Decreases Nursing Student Anxiety Prior to Communication With Mentally Ill Patients. *Clin Simulation Nurs*. 2013; 9:13-19.
3. Vitasaria P, Wahabb MNA, Othman A, Herawand T, Sinnadurais S. K. The Relationship between Study Anxiety and Academic Performance among Engineering Students. *Procedia Soc Behav Sci*. 2010; 8:490-7.
4. Sanches SHB, Osório FL, Udina M, Santos RM, Crippa JAS. Associação entre ansiedade e hiper mobilidade articular: uma revisão sistemática. *Rev Bras Psiquiatr*. 2012; 34(11):53-68.
5. Schmidt DRC, Dantas RAS, Marziale MHP. Ansiedade e depressão entre profissionais de enfermagem que atuam em blocos cirúrgicos. *Rev Esc Enferm USP*. 2011; 45(2):487-93.
6. Yusoff MS, Rahim AAF, Baba AA, Ismail SB, Mat Pa MN, Esa AR. Prevalence and associated factor of stress, anxiety and depression among prospective medical students. *Asian J*. 2012; 6:128-33.
7. Freire HBG, Martins LNR. Qualidade de vida em estudantes universitários. In: Souza JC, organizadores. *Qualidade de vida e saúde*. São Paulo: Vetor; 2011.
8. Cerchiarri EAN, Caetano D, Faccenda O. Prevalência de transtornos mentais menores em estudantes universitários. *Estud Psicol*. 2005; 10(3):413-20.
9. Dessunti EM, Reis AOA. Vulnerabilidade às DST/AIDS entre estudantes da saúde: estudo comparativo entre primeira e última série. *Ciênc Cuid Saúde*. 2012; 11(suplem.):274-83.
10. Bertolini SMMG, Tamura TY, Gouvêa JAG. Análise da postura sentada de acadêmicos da área da saúde. *Rev Cesumar Ciênc Hum Soc Apl*. 2013; 18(2):505-20.
11. Biaggio A, Natalicio LF, Spielberger, CD. Desenvolvimento da Forma Experimental em Português do IDATE. *Arq Bras Psicol Apl*. 1979; 29:33-44.
12. Andrade L, Gorenstein C, Vieira Filho A; Tung T, Artes R. Psychometric properties of the Portuguese version of the State-Trait Anxiety Inventory applied to college students: Factor analysis and relation to the Beck Depression Inventory. *Braz J Med Biol Res*. 2001; 34:367-74.
13. Cunha JA. Depression and anxiety scales. Manual em português (Escala de Beck). São Paulo: Casa do psicólogo; 2001.
14. Jansen K, Mondin TC, Ores LC, Souza LDM, Konradt CE, Pinheiro RT, Silva RA. Transtornos mentais comuns e qualidade de vida em jovens: uma amostra populacional de Pelotas, Rio Grande do Sul, Brasil. *Cad Saúde Pública*. 2011; 27(3):440-8.
15. Ospina-Ospina FC, Hinestrosa-Upegui MF, Paredes MC, Guzmán Y, Granados C. Síntomas de ansiedad y depresión en adolescentes escolarizados de 10 a 17 años en Chía, Colombia. *Rev Salud Pública*. 2012; 13(6):908-20.
16. Vaysse B, Gignon M, Zerkly S, Ganry O. Alcohol, tobacco, cannabis, anxiety and depression among second-year medical students. *Sante Publique*. 2014; 26(5):613-20.
17. Brandtner M, Bardagi M. Sintomatologia de depressão e ansiedade em estudantes de uma Universidade Privada do Rio Grande do Sul. *Gerais: Rev Interinst Psicol*. 2010; 2(2):81-91.
18. Bassols AM, Okabayashi LS, Silva AB, Carneiro BB, Feijó F, Guimarães GC, Cortes GN, Rohde LA, Eizirik CL. First- and last-year medical students: is there a difference in the prevalence and intensity of anxiety and depressive symptoms? *Rev Bras Psiquiatr*. 2014; 36(3):233-40.
19. Lopes A, Rezende MM. Ansiedade e consumo de substâncias psicoativas em adolescentes. *Estudos de Psicologia*. 2013; 30(1):49-56.
20. Kurebayashi LFS, Prado JM. Eficácia da auriculoterapia na redução de ansiedade em estudantes de enfermagem. *Rev Esc Enferm USP*. 2012; 46(5):1200-6.
21. Regehr C, Glancy BD, Belpitts A. Interventions to reduce stress in university students: A review and meta-analysis. *J Affective Disord*. 2013; 148:1-11.
22. Cárdenas SD, Marínez FG. síntomas de depresión y ansiedad en jóvenes universitarios: prevalencia y factores relacionados. *Rev Clín Med Fam*. 2014; 7(1):14-22.
23. Van der Sand ICP, Girardon-Perlini NMO, Abreu SM. Ansiedade de familiares de parturientes durante o processo de parto. *Ciênc Cuid Saude*. 2011; 10(3):474-81.
24. Dávila A, Ruiz R, Moncada L, Gallardo I. Niveles de ansiedad, depresión y percepción de apoyo social en estudiantes de odontología de la Universidad de Chile. *Rev Psicol*. 2011; 20(2):147-72.

Corresponding author: Sonia Maria Marques Gomes Bertolini. AV. XV de Novembro, 300, CEP 87013-230, Maringá-Pr, Brasil. E-mail:sonia.bertolini@unicesumar.edu.br.

Submitted: 01/05/2014

Accepted: 10/06/2015