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Original Article

ESTRESSE NO COTIDIANO DE GRADUANDOS DE ENFERMAGEM DE UM INSTITUTO FEDERAL DE ENSINO

STRESS IN THE DAILY LIFE OF NURSING GRADUATION STUDENTS FROM A FEDERAL INSTITUTE OF EDUCATION

ESTRÉS EN EL COTIDIANO DE GRADUANDOS DE ENFERMERÍA DE UN INSTITUTO FEDERAL DE ENSEÑANZA

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RESUMO

Objetivos: identificar os níveis de estresse e caracterizar a sintomatologia entre discentes de graduação em enfermagem de um Instituto Federal de Ensino. **Método**: Estudo descritivo transversal cuja coleta de dados ocorreu por meio da aplicação do Inventário de Sintomas de Estresse de Lipp e de um questionário sociodemográfico elaborado pelos pesquisadores. Os resultados foram analisados por meio de estatística descritiva. **Resultados**: A análise evidenciou que 73,7% dos alunos apresentavam algum nível de estresse, com destaque para sintomas na fase de resistência. Os sintomas predominaram entre acadêmicos autodeclarados pardos (80,0%), provenientes de escolas públicas (74,3%), não cotistas (74,1%), repetentes (83,3%) e entre acadêmicos que não trabalham formalmente (73,8%). O desfecho foi associado às variáveis independentes: tipo de cota (p = 0,019), período letivo (p = 0,003) e uso de medicamentos (p = 0,04). Quanto à sintomatologia apresentada, predominaram os sintomas de caráter psicológico, apresentados por 50% da amostra. **Conclusão**: todos os períodos do curso avaliado apresentaram estresse em nível variado o que merece a atenção por parte da instituição e do corpo docente no sentido de rever as metodologias adotadas, bem como propor ações que visem o bem-estar e o desempenho acadêmico.
Descritores: Enfermagem; Estudantes de Enfermagem; Estresse Psicológico; Saúde Mental.

ABSTRACT

Objective: to identify stress levels and to characterize the symptomatology among nursing undergraduate students of a Federal Institute of Education. **Method**: A cross-sectional descriptive study whose data collection was carried out through the application of the Lipp Stress Symptom Inventory and a sociodemographic questionnaire prepared by the researchers. The results were analyzed using descriptive statistics. **Results**: The analysis showed that 73.7% of the students presented some level of stress, with emphasis on symptoms in the resistance phase. The symptoms predominated among self-reported brown students (80.0%), from public schools (74.3%), non-quota students (74.1%), repeaters (83.3%) and non-formal academics (73.8%). The outcome was associated with the independent variables: type of quota (p = 0.019), period (p = 0.003) and medication use (p = 0.04). As for the symptomatology presented, the symptoms of a psychological nature, presented by 50% of the sample, predominated. **Conclusion:** all the periods of the evaluated course presented stress at a varied level, which deserves the attention of the institution and the faculty in order to review the adopted methodologies, as well as to propose actions that aim at the well-being and the academic performance.
Keywords: Nursing; Nursing students; Psychological stress; Mental health.

RESUMEN

Objetivo: identificar los niveles de estrés y caracterizar las sintomatologías entre discentes de Graduación en Enfermería de un Instituto Federal de Enseñanza. **Método**: Estudio descriptivo transversal cuyos datos fueron recolectados por medio del Inventario de Síntomas de Estrés de Lipp y de un cuestionario sociodemográfico elaborado por los investigadores. Los resultados fueron analizados por medio de estadística descriptiva. **Resultados**: El análisis evidenció que el 73,7% de los alumnos presentan algún nivel de estrés, con atención para los síntomas en la fase de resistencia. Los síntomas predominaron entre académicos pardos (80,0%), provenientes de escuela pública (74,3%), no cotizantes (74,1%), alumnos repitientes (83,3%) y entre académicos que no trabajan formalmente (73, 8%). El resultado fue asociado a las variables independientes: tipo de cuota (p = 0,019), período lectivo (p = 0,003) y uso de medicamentos (p = 0,04). En cuanto a la sintomatología presentada, predominaron los síntomas de carácter psicológico, presentados por el 50% de la muestra. **Conclusión**: todos los períodos del curso evaluado presentaron estrés a nivel variado lo que merece la atención por parte de la institución y del cuerpo docente en el sentido de revisar las metodologías adoptadas, así como proponer acciones que visen el bienestar y el desempeño académico.
Descriptores: Enfermería; Estudiantes de Enfermería; Estrés Psicológico; Salud mental.

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INTRODUCTION

The competitiveness of the labor market has demanded more and more skill, competence and productivity. Allied to this, the personal demands for family, social and professional fulfillment require more and more the capacity of overcoming the individual. However, when daily life demands exceed the body's ability to react and to adapt, a process of physical and psychological exhaustion begins, characterized by, among other factors, stress symptoms[1].

By involving the body's reactions to difficult or exciting situations, stress can occur in anyone, regardless of age, gender and socioeconomic status[1].

In the academic universe, high levels of stress have been evidenced among students of several training areas[2]. The accumulation of tasks, collections, institutional problems, the demands of personal and social life, expectations and concerns about the world of work, and interpersonal relationships among students [3] are some factors associated with their occurrence.

In nursing, factors such as the requirements for a generalist, humanistic, critical and reflexive education require the academic to have a holistic view and important decision-making in patient care [4]. In addition to these factors, the fact that nursing is responsible for the care given to a subject weakened by pathology, or by preventive care, which requires great responsibility, can contribute to the occurrence of stress in this population.

Conceptually, stress is the nonspecific result of any demand on the body, be it of somatic or mental effect. Its triggering depends on an agent and its manifestation can occur in different phases: alert, resistance, almost exhaustion and exhaustion[1,5].

The alert phase corresponds to the activation of the sympathetic nervous system in the face of an external threat as a way of preparing the body for coping with the danger. The resistance phase corresponds to the effort to adapt to a long-term stressor or an exacerbated intensity, which makes the individual more vulnerable to diseases[5].

When the body experiences a feeling of exhaustion, increasing the chance of loss of emotional control, there is the phase of almost exhaustion [1] and when, finally, the person's resistance is not enough to deal with the source of stress, or when other stressors occur simultaneously, the state progresses to the stage of exhaustion, the manifestation of which may occur through physical or psychological symptoms and culminate in the onset of illness[5].

Physical symptoms may manifest themselves through signs and gastrointestinal disorders; cardiovascular problems, such as tachycardia, hypertension, tingling in the upper and lower limbs; dermatological problems, general malaise; among others. Psychological manifestations are mainly characterized by mood, depression, anguish, anxiety, irritability, apathy, tics, relationship problems, sleep disturbances and concentration difficulties[6].

In academic circles, stress levels can adversely affect the students[1]. quality of life, interfere with the study scheme, and become an obstacle to both student and professional performance[7].

Thus, considering that the identification of stress in the academic environment contributes to the prevention of diseases and health promotion, especially mental health, this study aims: to identify stress levels and to characterize their symptoms among undergraduate students in nursing of a Federal Institute of Education.

METHOD

A quantitative, cross-sectional and descriptive study carried out in a Campus of the Federal Institute of Paraná (IFPR), an institution focused on higher education, basic and professional, specialized in offering free professional and technological education in different modalities and levels of education. The study scenario currently serves about two thousand students in thirteen higher education courses and two technical courses.

The nursing course is annual and structured in 10 semesters. At the time of data collection, October 2016, there were 95 students enrolled, 25 in the second period, 20 in the fourth, 15 in the sixth, 19 in the eighth and 16 in the tenth period. Students who were absent from academic activities at the time of data collection, regardless of motives, and the student involved in the study were excluded from the study, so that the sample consisted of 80 students.

For the characterization of the subjects, a questionnaire was elaborated by the researchers containing variables of personal, residential, academic and labor identification. To assess the level of stress, the Lipp Stress Symptom Inventory

(LSSI), validated for subjects over 15 years-old[5], was used.

The LSSI instrument consists of a list of physical and psychological symptoms, which allows the diagnosis of the person under stress, the phase of the process (alertness, resistance, near exhaustion and exhaustion) and if their symptoms are more typical of the area somatic or cognitive. Methodologically, the symptoms are grouped into four tables; the first one consists of 15 items that correspond to the alert phase.

The second table, also composed of 15 items, is divided into two parts: the scores between 4 and 9 correspond to the resistance phase and the scores between 10 and 15, to the phase of near exhaustion. The third table presents 23 items that correspond to the exhaustion phase, thus there are 53 evaluated items[6].

The establishment of the stress diagnosis is done if any of the gross scores reach the specified limits. The stress phase is determined by pre-established percentages, according to gross symptom values. The highest percentage obtained indicates the stage of stress in which the person is. If there is a tie between the percentages, the diagnosis is made by the most advanced phase[6].

For characterization of predominant symptomatology, only the stress phase in which the individual was found was compared and the percentages obtained in the physical symptoms were compared with the percentages of the psychological symptoms, as determined by the instrument. The symptomatology that obtained the highest percentage revealed whether the manifestation of stress was physiological or psychological[6].

The instruments were applied in the classroom with consent of the students and the teachers and after authorization of the coordination of the course. The application took place individually, in a collective classroom space, and the instruments collected at the end of the inventory, which lasted approximately 15 minutes.

The variables analyzed were socio-demographic (gender, age, race/ethnicity, civil status, personal relationship, children, place of residence, travel time to the course); specific students (quotas, type of quotas, academic period, repetition, type of cost for secondary education); work (yes/no); and medication use (yes/no).

The descriptive analysis of the data was composed of absolute and relative frequencies for the categorical variables. For the variable age, central tendency and dispersion measures (mean, median, standard deviation and minimum and maximum values) and tertile categorization were used to obtain the age range (≤ 20 years-old, 21-22 years-old, ≥ 23 years-old).

For the analysis of statistical inference, Fisher's exact test was used to verify the differences in proportions between the categories under analysis of each independent variable and the dependent variable (stress phases), being considered significant $p < 0.05$.

This study is part of the project "Stress in academic space everyday: with the student voice and teacher of a Federal Institute of Education" approved by the CAAE: 60009916.0.0000.5573 - under nº.1,850,689, obeying the ethical precepts. All participants received clarifications and agreed to participate voluntarily in the study by signing the Informed Consent Form.

RESULTS AND DISCUSSION

Eighty students of the nursing course, predominantly female (90%) participated in the study. The mean age of study participants was 22.9 years-old, median age of 21 years-old, standard deviation of 6.3 years, minimum age of 17 and maximum of 46 years-old, with emphasis on the age group up to 20 years-old (42.5 %), single/divorced (75.0%), without children (77.5%), living with relatives (62.5%), live in the city where the course is situated (92.5%), travel time of home/institution from 15 to 30 minutes (58.7%), and did not work at the time of the research (81.2%).

These results are similar to those ones that were obtained in a study developed at the Federal University of Piauí, where it was found that 77.7% of the students were female, 51.9% with an average of 22 years-old, 85.9% only studied; 88.8% were single and 89.3% did not have children[8].

Similar results were evidenced in a study developed at a public University of João Pessoa, which aimed to estimate the level of stress in nursing students. The authors showed that 90% of the students interviewed were female, mean age was 22.74 years-old, and only 8.6% of them were students and professionals[9].

The fact that 37.5% of the students declared that they do not reside with relatives may be related to the geographical location of

the institution, far from urban centers, which contributes to the fact that academics from different municipalities of the State and of neighboring States reside in rental houses or with friends. Being away from the family makes these academics take on new responsibilities for which they may not be prepared.

It is inferred that the prevalence of the female sex is due to the fact that the profession is historically and culturally linked to the practices related to women. Nursing is about care, which has always been seen as a feminine quality[8]. She has been prepared since childhood to be a mother, to take care of the house, the family, the sick, among other household tasks. Nowadays, society demands from women, in general, an overload of tasks, since they have to reconcile domestic activities with professional careers and with social demands[10].

The predominance of academics who do not reconcile work and study may be related to two factors. Firstly, because the Nursing course at the institution studied has a full-time workload, which reduces the possibility of the student to perform some paid work and also due to the great demand for the course by young people who have just left elementary school, motivated by the facilities in entering public higher education institutions, as well as in search of a profession that they think with greater occupational insertion.

The greater occurrence of singles reflects the reality of the course, composed, for the most part, of young women, which is in line with the Brazilian reality. In the last decades women have chosen to marry later[11], giving priority to their professional training and insertion in the labor market[8].

As for other variables, the categories that prevailed were white self-declared (73.7%), did not enter by quotas system (72.5%), coming from public education (92.5%), did not repeat the school grade (85%) and did not use medications (76.2%).

The ethnic-racial characteristics are in agreement with the population of the South of the country, whose white population represents 76.0% of the total[12]. Although the number of students who did not attend the course through quotas is representative, it is noteworthy that the Institution where the study was developed has an affirmative action policy and complies with what is established by the legislation regarding the number of places allocated for quota holders[13].

Regarding the occurrence of stress in the studied population, it was observed that 59 (73.7%) students were classified with stress at some stage. Concerning sociodemographic variables, stress was observed in 100% of the male population, with a higher frequency of symptoms among students aged between 21 and 22 years old, who declared themselves to be *pardos* (80.0%), single or divorced (75.0%), with children (77.8%), who live alone or with others who are not family or friends (85.7%) and resident in the municipality where they study (74.3%), the resistance phase, according to Table 1.

Table 1 - Levels of stress in nursing students of a Federal Institute of Education, according to LSSI. Brazil, Oct. 2016.

	Stress stages					
Variable	**No stress**	**Resistence**	**Near exhaustion**	**Exhaustion**		
	N (%)	**N (%)**	**N (%)**	**N (%)**	**Total N (%)**	**Value of p***
Sex						= 0,166
Female	21 (29,17)	37 (51,39)	11 (15,28)	3 (4,17)	72 (100,0)	
Male	0 (0,0)	6 (75,0)	1 (12,5)	1 (12,5)	8 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	
Age group						= 0,941
≤ 20 years-old	11 (32,35)	16 (47,06)	5 (14,71)	2 (5,88)	34 (100,0)	
21 – 22 years-old	4 (18,18)	13 (59,09)	4 (18,18)	1 (4,55)	22 (100,0)	
≥ 23 years-old	6 (25,0)	14 (58,33)	3 (12,5)	1 (4,17)	24 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	
Race/Ethnicity						= 0,340
Black	0 (0,0)	1 (50,0)	1 (50,0)	0 (0,0)	2 (100,0)	
White	15 (25,42)	34 (57,63)	7 (11,86)	3 (5,08)	59 (100,0)	
Parda	3 (20,0)	7 (46,67)	4 (26,67)	1 (6,67)	15 (100,0)	
Indigenous	3 (75,0)	1 (25,0)	0 (0,0)	0 (0,0)	4 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	

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Variable	Stress stages					
	No stress	Resistence	Near exhaustion	Exhaustion		
	N (%)	N (%)	N (%)	N (%)	Total N (%)	Value of p*
Marital status						= 0,713
Single/divorced	15 (25,0)	31 (51,67)	10 (16,67)	4 (6,67)	60 (100,0)	
Married/Stable union	6 (30,0)	12 (60,0)	2 (10,0)	0 (0,0)	20 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	
Children						= 0,703
No	17 (27,42)	31 (50,0)	10 (16,13)	4 (6,45)	62 (100,0)	
Yes	4 (22,22)	12 (66,67)	2 (11,11)	0 (0,0)	18 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	
Social life						= 0,450
Family	16 (32,0)	25 (50,0)	8 (16,0)	1 (2,0)	50 (100,0)	
Friends	3 (18,75)	10 (62,5)	2 (12,50	2 (6,25)	16 (100,0)	
Alone/ Others	2 (14,29)	8 (57,14)	2 (14,29)	2 (14,29)	14 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	
City of residence						= 0,290
The same city where study	19 (25,68)	41 (55,41)	11 (14,86)	3 (4,05)	74 (100,0)	
Others	2 (33,33)	2 (33,33)	1 (16,67)	1 (16,67)	6 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	

* Fisher's exact test: p<0,05.

Regarding this aspect, the results evidenced in this study resemble those ones obtained in a research that carried out at a federal public university in João Pessoa-PB, which aimed to estimate the level of stress in nursing students. The authors showed that 49.7% of the students presented stress and about these ones, 42.4% were in the resistance phase, being this one the second most prevalent, followed by the phases of almost exhaustion (3.3%), alert (2.7%) and exhaustion (1.3%)[9]. In another study, developed in Minas Gerais, 78% of all the students evaluated had presented stress[14] and in undergraduate students of a public school in Rio de Janeiro, 1.6% of the total group presented stress in the alert phase, 41.2% in resistance, 5.2% in the quasi-exhaustion phase and 2.1% in the exhaustion phase[3].

These results are worrisome both for the physical and psychological effects on the health of academics and for the risks to which the patients under their care are subjected. In a state of stress, nursing academics may engage in unsafe practices and lead to histories of severe and irreversible damage to both their health and the health of those in their care since, under such conditions, memory failure and reduced ability to concentrate[15].

It was also observed the prevalence of stress in the resistance phase in 53.7% (n = 43). This may indicate that academics can protect themselves to some degree from stressors, since 15.0% (n = 12) are in the near-exhaustion phase and 5.0% (n = 4) in the exhaustion phase, a factor that deserves attention due to the consequences that can bring to the physical and psychological health of them. It is emphasized that this phase is a transient stage of pre-pathological character in which the organism can show signs of weakening, being more susceptible to the diseases in general[6].

In this regard, the importance of adapting pedagogical practices, rethinking the teaching performance, and the adequacy of working conditions to teachers who coexist with the dilemma of meeting curricular requirements, the demands of the fields of practice and the desires, fears, dilemmas and academic insecurities. It should be emphasized that, in situations of inadequate work, lack of institutional support and when the number of students exceeds the supervisory teaching capacity, the time of attention to the academic has been reduced and, consequently, the degree of insecurity and stress in the students, which can translate into a risk for patients who are under their care[15-16].

On the level of stress according to the sex of the participants, a higher proportion of males was observed in the level of exhaustion, results that are similar to those evidenced in a study carried out with 480 academics in the state of Paraná to investigate the vulnerability to stress in young adults. In the mentioned study, it was found that 47.9% of men and 36.1% of women presented high vulnerability to stress [17]. It should be noted that this divergence in results may be a consequence of the size of the male sample in

this study, thus not serving as comparison parameters.

However, it may be an indication that male students, when confronted with stress-triggering situations, have less adaptive resources, especially when they are part of a heterogeneous group marked by cultural divergences and lifestyles. In general, female students tend to use strategies based on social support, emotion and religious practices that, although they can be considered as an avoidance and negation of academic adaptation[18], can help in coping with stress factors.

Academics who live in pensions or on their own presented themselves in some stage of stress, surpassing the results evidenced among those who live with friends or with relatives. These results reveal the importance of a balance to reconcile academic activities with family and social life. It is assumed that students face difficulties to reconcile the activities established in the curriculum with personal, emotional and social demands, which deserves attention of the institution[2-3,7,14], since social support acts as a facilitator in academic adaptation and contributes to coping with unsafe, anxious, passive and dependent behaviors due to individual incapacity to deal with stressors [18]. Encouraging family visits may be an alternative way of alleviating mental distress[14].

Regarding the academic factors, the independent variables "type of quota" (p = 0.019) and "period" (p = 0.003) were associated with the outcome. The highest frequency of stress was evidenced in the students who attended high school in public schools (74.3%), non-attendants (74.1%), enrolled in the sixth and fourth period (99.9% and 93.3%, respectively), who declared repetition (83.3%) and among academics who did not work formally (73.8%). In these variables, there was also a predominance of stress in the resistance phase (Table 2).

Table 2 - Levels of stress in nursing students of a Federal Institute of Education, according to academic variables, according to LSSI. Brazil, Oct. 2016.

	Stress stages					
Variable	**No stress N (%)**	**Resistence N (%)**	**Near exhaustion N (%)**	**Exhaustion N (%)**	**Total N (%)**	**Value of p***
High school education						= 949
Public school	19 (25,68)	39 (52,7)	12 (16,22)	4 (5,41)	74 (100,0)	
Private school	2 (33,33)	4 (66,67)	0 (0,0)	0 (0,0)	6 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	
Quota system						= 0,949
Yes	6 (27,27)	11 (50,0)	4 (18,18)	1 (4,55)	22 (100,0)	
No	15 (25,86)	32 (55,17)	8 (13,79)	3 (5,17)	58 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	
Type of quota						= 0,019
Public school	3 (42,86)	3 (42,86)	0 (0,0)	1 (14,29)	7 (100,0)	
Race/ethnicity	0 (0,0)	3 (100,0)	0 (0,0)	0 (0,0)	3 (100,0)	
Indigenous	3 (75,0)	1 (25,0)	0 (0,0)	0 (0,0)	4 (100,0)	
Other	0 (0,0)	3 (42,86)	4 (57,14)	0 (0,0)	7 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	
Academic semester						**= 0,003**
2nd semester	15 (60,0)	8 (32,0)	1 (4,0)	1 (4,0)	25 (100,0)	
4th semester	1 (6,67)	10 (66,67)	3 (20,0)	1 (6,67)	15 (100,0)	
6th semester	0 (0,0)	10 (76,92)	2 (15,38)	1 (7,69)	13 (100,0)	
8th semester	2 (20,0)	5 (50,0)	3 (30,0)	0 (0,0)	10 (100,0)	
10th semester	3 (17,65)	10 (58,82)	3 (17,65)	1 (5,88)	17 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	
Repetition						= 0,193
Yes	2 (16,67)	9 (75,0)	0 (0,0)	1 (8,33)	12 (100,0)	
No	19 (27,94)	34 (50,0)	12 (17,65)	3 (4,41)	68 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	
Travel time home/IES						= 0,184
≤ 14 min	7 (30,43)	12 (52,17)	2 (8,7)	2 (8,7)	23 (100,0)	
15 – 30 min	9 (19,15)	28 (59,57)	9 (19,15)	1 (2,13)	47 (100,0)	
≥ 31 min	5 (50,0)	3 (30,0)	1 (10,0)	1 (10,0)	10 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	

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Variable	Stress stages				Total N (%)	Value of p*
	No stress N (%)	Resistence N (%)	Near exhaustion N (%)	Exhaustion N (%)		
Reconcile study and work						= 0,873
No	17 (26,15)	35 (53,85)	9 (13,85)	4 (6,15)	65 (100,0)	
Yes	4 (26,67)	8 (53,33)	3 (20,0)	0 (0,0)	15 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	

* Fisher's exact test: p<0,05.

The association of the outcome with the variable "type of quota" may be related to the academic income, lower among students than among non-quota students in health courses. The poor quality of public education, the socioeconomic precariousness of the majority of these students, which translates into the need to work for helping the family, and the insufficient supply of scholarships make it challenging to meet the academic demands and the responsibility to maintain in the university [19], what can be configured as additional stressors to these students.

When analyzing the level of stress by academic period studied, we can observe more significant results in the sixth and fourth periods. These results can be related to two specific characteristics to the curriculum of the course. One of them concerns the concrete differences of activities in relation to the curriculum of the previous semesters, since the course began in 2013 a movement of change in its formation process, starting to adopt an integrated curriculum structure, developed in nuclei. For its operationalization, the organization of knowledge is given by knowledge and curricular components distributed over five years, but that only from the fourth period, the integration of them actually takes place.

In this model, in addition to the expositive and practical classes, the educational activities are developed from two pedagogical scenarios: the Problem Situation, which is based on Problem-Based Learning (PBL), in which students work with the objective of solving a problem simulated from a context[20] and oral synthesis resulting from the discussions of previously selected texts. The systematization and synthesis of the knowledge produced in the curricular components occurs from the elaboration of portfolios that compose the evaluative dimensions. In this context, the fourth period abruptly marks this curricular transition, which, together with the beginning of practical activities in health settings, may be stress-inducing factors.

Stress is present in all training periods; however, they tend to intensify with the beginning of practical activities[21]. It is at that moment that the closest contact with patients occurs and the academic is expected to demonstrate practical skills associated with theoretical knowledge. With the academic insertion in the practical field, situations such as the fear of acquiring infection, the overload of academic work, the difficulty of communication and the contact with patients in a serious state and/or in death have been constituted sources of additional stress to the academic factors[22].

According to the literature, the more advanced the period the student is, the greater is his level of stress, this means that the concern with the knowledge acquired and its impact on his future professional life generates increasing stress as the academic advances in the course. In addition, the natural concern with the development of the career and the personal life is an additional factor to its occurrence[9,23].

In the early years, the academic still cannot elaborate what it means to be in higher education, which is generally seen as a period of idealization. As the course progresses, the academic develops criticality in relation to various institutional aspects, structure, services, commitments, among others. In addition, proximity to the transition between academic and professional life can be reflected in physical and psychological malaise[18].

In the evaluation of stress level among academics that need to reconcile studies with work, it was evidenced that those ones who do not work had higher levels of stress than those students who work, which is in contrast to what the literature says. Regarding these data, in a study carried out at a private college in the interior of São Paulo, it was evident that duplication of roles is a factor that can trigger stress. The difficulty of reconciling work and studies can lead to physical and psychological exhaustion, since it requires a lot of effort and energy expenditure[3]. It is considered that this variable needs to be explored more closely, in

subsequent studies, for the proper understanding of the phenomenon.

The independent variable "drug use" was associated with the outcome (p = 0.04) and from the total number of students surveyed, 23.7% reported using antidepressant or anxiolytic drugs. About these, 89.5% were in some level of stress. Among the academics who declared that they did not use medication, the stress level was identified in 68.8%. Among these results, we highlight the proportion of students at the level of exhaustion who reported using medication, according to Table 3.

Table 3 - Stress levels according to the use of drugs by nursing students of a Federal Institute of Education, according to LSSI. Brazil, oct. 2016.

	Stress stages					
	No stress	Resistence	Near exhaustion	Exhaustion		
Variable	**N (%)**	**N (%)**	**N (%)**	**N (%)**	**Total N (%)**	**Value of p**
Use of medicine						**= 0,04**
No	19 (31,15)	31 (50,82)	10 (16,39)	1 (1,64)	61 (100,0)	
Yes	2 (10,53)	12 (63,16)	2 (10,53)	3 (15,79)	19 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	

* Fisher's exact test: p<0,05.

Academics who use continuous medication showed a greater tendency (p=0.04) to present symptoms of stress and, among them, the symptoms corresponding to the stages of resistance and near exhaustion predominated, which is a worrying factor, for nursing students present better performance in a low level of anxiety[24].

Corroborating with these results, a study developed at a public university in the State of São Paulo, which aimed to evaluate the presence of anxiety in nursing students, found that students who were using anxiolytics during the period in which the research was performed or had already used at some time in their lives, they had a high level of anxiety[25].

In view of these results, it is important to investigate the indication of the treatment, as well as the knowledge of these students about the use and effects of the medication to better clarify the maintenance of the symptoms.

Thus, the importance of psychological follow-up of these students with the purpose of identifying alternative forms of stress reduction is emphasized, since the regular use of these medications offers several risks to users, such as mental confusion, difficulty in concentrating and memorizing, anxiety and sleep problems, as well as symptoms of depression, which can further compromise academic performance. In addition, when there is no adequate professional follow-up, there is a risk of abandoning treatment, increasing the dose without medical guidance, and concomitant use of medication and alcoholic beverage[25].

As for the symptomatology presented, the symptoms of psychological character predominated, being presented by 50% of the academics who present some level of stress, with emphasis on the resistance phase. It is important to note, in this association, that the psychological symptoms had greater occurrence in the levels of near exhaustion and exhaustion (Table 4).

Table 4 - Symptomatology according to the stress stage of the nursing academics of a Federal Institute of Education, according to LSSI. Brazil, Oct. 2016.

	Stress stages					
	No stress	Resistence	Near exhaustion	Exhaustion		
Variable	**N (%)**	**N (%)**	**N (%)**	**N (%)**	**Total N (%)**	**Value of p***
Symptom						< 0,001
Absent	20 (100,0)	0 (0,0)	0 (0,0)	0 (0,0)	20 (100,0)	
Physical	0 (0,0)	17 (89,47)	2 (10,53)	0 (0,0)	19 (100,0)	
Psychological	0 (0,0)	18 (60,0)	8 (26,67)	4 (13,33)	30 (100,0)	
Physical and Psychological	1 (9,09)	8 (72,73)	2 (18,18)	0 (0,0)	11 (100,0)	
Total	21 (26,25)	43 (53,75)	12 (15,0)	4 (5,0)	80 (100,0)	

* Fisher's exact test: p <0.05.

These results are similar to those reported in other studies in which psychological symptoms were also the most present among young adults and nursing students with stress symptoms[9-10].

In relation to the above findings, the authors list as possible factors that cause stress in nursing students: programmatic content of theoretical and practical academic activities [2-3,7,9,14], elaboration of the course completion work[3,9], concerns related to labor market insertion[3,9,14,22], work/study/family life[3,9,14,22], difficulty in interpersonal relationships[3,7,9,22], assessments[7,9,14], extra-curricular activities[9], lack of time for leisure, family, friends and personal needs[2,14].

Considering the effects of stress on physical, mental, and academic health, it is recommended that psychological support is given to students who experience this moment, in order to provide security, to develop strategies to cope with stressors, and to contribute to the development of mechanisms that cooperate for a better use of the course[3]. Another aspect to be considered in the scenario studied concerns the need for gradual insertion of academics in the new methodology, in order to minimize the impacts on academic life.

CONCLUSION

The study revealed that the academic activity can be a source of stress, characterizing 73.7% of the students in some phase of this state, and the resistance stage has greater predominance. As for the symptomatology that is most presented by the study population, the psychological one was the predominant symptom.

All periods of undergraduate nursing courses presented worrying levels of stress; however, these levels have varied according to the period of the course in which they are enrolled. The variables associated with the outcome were "type of quota", "academic semester" and "use of medications". As for the higher frequencies of stress, the occurrences were observed in male individuals, students living in pensions or alone and individuals who use continuous medications, including antidepressants and anxiolytics.

It should be emphasized that it was not the objective of the present study to evaluate the factors related to the maintenance of the dysfunctional condition of the students who, for different reasons, use antidepressant and anxiolytic medication, for example; at which stage of treatment the individual is; if the follow-up is being performed by a medical specialist; suitability of medication and dosage, among others. It is also important to emphasize the importance of psychotherapeutic follow-up combined with drug therapy, as psychotherapy is a means of providing the subject with a more effective way of dealing with their weaknesses, conflicts and emotions.

Due to the multi-causality of stress, it cannot be said that the results obtained here are related to academic questions; however, this study can be considered as an initial step for the investigation of stress among the academic environment of other higher education courses, investigating its occurrence, symptomology, causes, among other associated factors. It is understood that new research in relation to stress in the academic environment can contribute to the coordination of higher education institutions to review their teaching methodologies and to propose actions that aim at academic well-being, in view of the stress decrease.

In the continuity of this study, we intend to investigate the causes of stressors in this population, as a way of subsidizing the Education Institution in the development of intervention strategies, prevention and health promotion, improving the quality of life of the students and, consequently, improving academic achievement and reducing university dropout.

As a limitation, it is mentioned the impossibility of generalizing the results of the research, due to the reduced number of subjects of the study by a specific population of students of a federal institution of education. However, we emphasize that the categorization of the variables "outcome for analysis" enabled the evaluation of the response gradient for each category of the independent variables analyzed.

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