

Perceived stress in nursing undergraduate students

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This study aimed to assess the perceived stress levels in undergraduate students from an university of the State of São Paulo, Brazil. Instruments were used for socio-demographic assessment and identification of stressors in the academic space and *Perceived Stress Scale*, for the measurement of perceived stress. After the data analysis, the overload described by the participants, as well as stressors related to the course and difficulties in managing stress were found as the main results. Thus, it is concluded that the routine of the student, plus the lack of spare time and support networks, may have influence on the mental health and the stress perception of the subjects.


Descriptors: Students; Stress; Psychiatric Nursing; Nursing; Mental Health.

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Estresse percebido em graduandos de enfermagem

O presente estudo teve como objetivo avaliar os níveis de estresse percebido em alunos de graduação de uma universidade do Estado de São Paulo. Foram utilizados instrumentos para a avaliação sociodemográfica e de identificação de estressores no espaço acadêmico e a *Perceived Stress Scale*, para a mensuração do estresse percebido. Após análise dos dados, foram encontrados como principais resultados a sobrecarga descrita pelas participantes, bem como estressores relacionados ao curso e dificuldades no manejo do estresse. Dessa forma, conclui-se que a rotina do estudante, somada à falta de tempo livre e de redes de apoio, pode ter influência na saúde mental e na percepção do estresse dos sujeitos.

Descritores: Estresse; Estudantes; Enfermagem Psiquiátrica; Enfermagem; Saúde Mental.

Estrés percibido en estudiantes de enfermería

Este estudio tuvo como objetivo evaluar los niveles de estrés percibido en estudiantes de enfermería de una universidad en el estado de São Paulo, Brasil. Se utilizaron cuestionarios para recolectar datos sociodemográficos y factores de estrés en el contexto académico, y la Escala de Estrés Percibido. Después de analizar los datos, se encontró la sobrecarga descrita por los participantes, así como factores de estrés relacionados con el curso y dificultades con el manejo del estrés. Por lo tanto, se concluyó que la rutina del estudiante, añadida a la falta de tiempo y de redes de apoyo, pueden influir en la salud mental y en el estrés percibido.

Descriptores: Estudiantes; Estrés; Enfermería Psiquiátrica; Enfermería; Salud Mental.

Introduction

Stress is a term widely used in the contemporary world. Its use varies according to the conceptual chain adopted. The first investigator to use the term stress treated this term from a biological perspective, considering stress as the individual's physiological response, which can be chronic, depending on the nature and duration of the stressor stimulus. Initially, the concept of stress did not consider emotions as relational and relevant factor⁽¹⁾.

Currently, it is known that stress is characterized by "any situation of acute or chronic tension that produces a change in the individual's physical behavior and emotional state." This phenomenon demands an adaptive process in the physical and psychological sphere, and it is worth emphasizing that the nature of the stressor agent becomes larger or smaller depending on the individual's perception⁽²⁾.

Thus, stress plays a fundamental role in the disequilibrium of the health/illness process and is

related to multifactorial causes. Among the several factors, the nature of the stress situation, the level of psychological development of the subject, the quality of the psychosocial support network, the individual's perception of the stressor and the coping mechanisms developed throughout life can be cited⁽³⁻⁴⁾.

Nursing brings with it a peculiarity since the learning of this profession, which copes with care, permeates the limits of the human being, such as illness and death. In this context, the student of nursing experiences the fragilities of being between the rational and emotional dimensions. The student usually lives with feelings of doubt, fear, disappointment, anxiety, anger, sadness and anguish⁽⁵⁾.

Working with human frailties promotes the development of emotions, such as the feeling of incapacity in academics, before the tasks that are charged to them in their formation and, in this way, in the evolution of their preparation for the accomplishment of the activities in this work, with aptitude in the various domains required, academics are faced with scenarios of suffering that may foster the development of stress in individuals⁽⁶⁾.

In the nursing profession, the vast majority of professionals are female. The prevalence of depressive disorders may be higher in women, in early adulthood, and in stressful circumstances. Since the health area is potentially stressful and nursing undergraduate students, most of them female, are in their early adult life, the concern with the occurrence of such disorders in this population is of great importance⁽⁷⁾.

The nursing student begins to experience the ambivalences and demands of the profession during the course, and her/his mental health, as well as that of the nurses, is vulnerable to paradoxical emotions; thus, it has become the subject of research, sustained by the value of the fullness of its biopsychological aspects and the stress that the nursing professional suffers⁽⁷⁾.

In this sense, this study aimed to analyze the level of perceived stress in nursing students, related to the academic scope. From this perspective, the objective is also to identify the sociodemographic characteristics and health conditions reported by the participants, as well as coping strategies used by the participants.

Method

It is an exploratory descriptive study, using a quantitative approach, seeking complementarity to better understand the phenomenon studied. Among the advantages of an integrated delineation is the possibility of avoiding limitations on the single approach, as well as possibly promoting alternative interpretations of the data and considering how the context affects the results⁽⁸⁾.

This study was approved by the Ethics and Research Committee of the School of Nursing of Ribeirão Preto, University of São Paulo, under CAAE protocol 26673314.9.0000.5393, February 2014, and all ethical procedures were followed according to Resolution 466/12⁽⁹⁾.

The population consisted of 570 nursing undergraduate students from two courses, offered by the same public institution. The sample was composed intentionally by 23 students who enrolled in a stress reduction program, composed of classical ballet introduction activities, and who accepted to participate in the study. Data collection instruments were delivered to students on the first day of activity, between March 2014 and May 2015, with a one-week return being agreed upon.

The collection was composed of the following variables: gender, age, marital status, religion, number of people residing with the student, profession, recent medical appointments, use of medication, smoking,

alcohol consumption and weighted average of the grade in the course. Qualitative data for the identification of stressors in academic context were collected from the following questions: "How would you describe your academic performance at the time?", "Could you describe situations related to the Nursing course that are stressful?", "How do you usually cope with these situations?" and "Do you have difficulty managing stress? If so, which ones?". Following, the student responded to the *Perceived Stress Scale* (PSS).

A *Perceived Stress Scale* measures the level at which subjects perceive situations as stressors. This scale was proposed by Cohen & Williamson in 1988. According to the authors, the scale fills gaps in other instruments that measure stress, since the scales previously constructed were limited to quantifying physical and psychological symptoms or were directed to the presence/absence of specific stressors⁽¹⁰⁻¹¹⁾.

The PSS consists of items that have as its components three fundamental points: unpredictability, lack of control and the overload of activities in the respondent's view⁽¹²⁻¹³⁾. These three points correspond to the pillars of "stress experience", according to the transactional perspective of stress proposed by Lazarus and Folkman⁽¹⁴⁾. The high level of perceived stress, a result obtained through the application of PSS, is directly related to physiological imbalances, such as changes in cortisol levels, triglycerides, interleukin-6, among other physiological changes compatible with the physiological stress process⁽¹⁵⁾.

The PSS is a scale that suits different age groups due to its lack of context. This lack of context-specific questions is a relevant factor in the scale and may be associated with the reason why it has been validated in several languages^(12,16-17). In Brazil, the full version (PSS 14) has been translated and validated with psychometric qualities within the standards, in the elderly population, but its use can be realized in different age groups, including adolescents and young adults⁽¹²⁾.

PSS 14 is composed of 14 questions with response options ranging from zero to four: zero=never; one=almost never; two=sometimes; three=almost always; four=always. Positive questions (4, 5, 6, 7, 9, 10, 13) have the score added in an inverted way. All other questions should be added directly. The total PSS score is the sum of the individual scores of each question, ranging from zero to fifty-six⁽¹²⁾, whose interpretation is made considering: the higher the score, the greater the perceived stress.

Software Statistical Package for the Social Sciences (SPSS®), version 20.0, and categorical analysis for the open questions were used to analyze the data. With the qualitative data obtained, the proposed phases

for thematic analysis were operationally followed, organizing them around the three chronological poles: pre-analysis, exploration of the material with decodings and categorization, and, finally, the treatment of the results with inferences and analysis itself⁽¹⁸⁾.

Results

Of the 23 participants in the study, all were females, between 18 and 30 years old, with a mean age of 20.6 years old. Regarding marital status, 21 (91%) of the participants are single. Only one participant performs remunerated activity concomitantly with the course. With regard to housing, 10 (43.5%) of the participants lived with relatives, while 11 (47.8%) lived in student's house and 2 (8.7%) lived alone, the average number of people with whom they shared their residences was 3.9.

Table 1 – Distribution of participants, according to age and religion. Ribeirão Preto, SP, Brazil, 2015

Variables	N*	%
Age group		
18-20 years old	13	56.5
21-23 years old	9	39.1
>23 years old	1	4.3
Religion		
Catholic	15	65.2
Protestant	4	17.4
Spiritist	3	13.0
Agnostic	1	4.3
They practice their religion		
Yes	17	73.9
No	6	26.1

*N total=23

In the analysis of the variables related to the health of the participants, it was found that 82.6% of the sample had medical consultations in the last year, with a higher incidence for routine exams (35.7%). When questioned about the use of drugs, 11 (47.8%) of the participants reported using some drug, with contraceptive medication being the most used (20.8%). Regarding the use of licit substances, none of the participants reported using tobacco; however, 15 (65.2%) reported using alcohol; according to data from Table 2.

In the application of the Perceived Stress Scale, scores ranged from 14 to 45 were found. The average score was 29.3. A minimum and maximum averages of

1.3 and 3.6, respectively, were found among the fourteen questions, according to data from Table 3.

Table 2 – Distribution of participants, according to medical consultations and drugs used. Ribeirão Preto, SP, Brazil, 2015

Variables	N*	%
Specialty of the consultation by system [†]		
None	4	14.2
Urinary	1	3.6
Routine	10	35.7
Reproductive	4	14.2
Nervous	3	10.7
Endocrine	1	3.6
Sensory	2	7.1
Digestive	3	10.7
Type of drugs used [‡]		
None	12	49.9
Contraceptive	5	20.8
Thyroid hormone	1	4.1
Analgesic	1	4.1
Psychotropic	2	8.3
Homeopathic	2	8.3
Muscle Relaxant	1	4.1

*N total=23; †: one subject indicated more than one specialty; ‡: the same subject indicated more than one drug type.

Regarding the academic performance of the 23 subjects, 23 units of analysis, classified in the categories "positive responses on course performance" (13 units of analysis - 56.5%), "good performance, but with reports of difficulties" (6 units of analysis - 26.1%) and "negative responses related to mental health in performance" (3 units of analysis - 13.0%) were identified, and one student did not know how to assess it because she/he had not yet done tests.

In the category "positive responses on course performance", subjects in general classified it as "good". *I'm satisfied with good grades* (Subject 11). *Well, I study every day, I participate in all the work and tasks and I strive to absorb the necessary content of the subjects* (Subject 22). The category "good performance, but with reports of difficulties" presented responses that denote overcoming difficulties to maintain performance. *At the moment, I feel more tired to study and dedicate myself to my studies. However, I have been doing well in the disciplines, with above-average grades* (Subject 25). *At the moment my academic performance is better, but more tiring* (Subject 18). In the category of "negative responses related to mental health in performance", there were reports of physical and emotional exhaustion, as limitations to academic performance. [...] *I'm very tired! And look, it's just the beginning of the year* (Subject 19). *At the moment, not very*

Table 3 – PSS* data, in descending order of score. Ribeirão Preto, SP, Brazil, 2015

Item No.	In the last month how often have you...	Min/Max	Average	Median	Standard deviation
12	found yourself thinking about things you have to do?	3/4	3.6	4	0.4
3	felt nervous and “stressed”	1/4	2.5	3	0.7
8	found that you could not cope with all the things you had to do?	1/4	2.3	2	1.0
14	felt difficulties were piling up so high that you could not overcome them?	0/4	2.2	2	1.2
2	felt unable to control the important things in your life?	0/4	2.1	2	1.1
1	been upset because of something that happened unexpectedly?	0/4	2.0	2	1.1
11	been angry because of things that happened that were outside of your control?	1/4	2.0	2	0.9
13	been able to control how you spend your time?	0/4	2.0	2	1.1
10	felt that things are under your control?	0/4	1.9	2	0.9
7	felt that things were going your way?	1/4	1.9	2	0.8
9	been able to control irritations in your life?	0/3	1.8	2	0.8
6	felt confident about your ability to handle your personal problems?	0/4	1.8	2	0.9
4	successfully treated the difficult problems of life?	0/3	1.4	2	0.8
5	felt that you are coping well with the important changes that are taking place in your life?	0/3	1.3	1	0.9
Total PSS*: Sum of points		14/45	29.3	28.0	8.9

*PSS: Perceived Stress Scale

well. The new environment of the college is a bit disturbing, I have to know everything, look for and the matters, along with group work, are tiring (Subject 34).

In relation to the stress-related nursing course, of the 23 subjects, 41 units of analysis were classified in the categories “course methodology” (22 units of analysis - 53.7%), “little time for studies” (6 units of analysis - 14.6%), “emotional exhaustion” (5 units of analysis - 12.2%), “stress relation between students and professors” (4 units of analysis - 9.8%) and “little spare time” for leisure “(4 units of analysis - 9.8%).

Within the “course methodology” category, 7 units of analysis corresponded to “dense workload”, with the other units of analysis (15) related to the stages, extensive classes, tests (including practices), techniques and work. There was a relation between dense workload and little spare time for studies and leisure. *The intense work and tests followed, the lack of understanding of the professors that the hourly grading is very tight and the requirement regarding the conditions of study* (short time and physical exhaustion) (Subject 25). [...] *run for immersions and classes after these immersions* (Subject 21). In the category “emotional exhaustion”, students reported how the course affects them emotionally. [...] *it leads me to an overload, leading me to stress* (Subject 11). In the category “stress relation between students and professors”, there were reports about professors’ demands in relation to the extensive workload. [...] *exaggerated demands of some professors, “how to cope” with the students* (Subject 36).

On the coping strategies for stressful situations, 34 units of analysis were located, classified as “performing pleasurable activities” (8 units of analysis - 23.5%), of which dance, music, rest, sleep, movies and psychotherapy. *I try to stay calm and relax and rest when I can* (Subject 21). *I try to relax by dancing, listening to music and going to the psychologist* (Subject 41). In the category “difficulties in coping with stress” (8 units of analysis - 23.5%), the students brought aspects such as demotivation, self-demand and external demand, despair, crying and stress. *I cannot cope with it very well. Either I let stress take over me or disregard all my obligations [...]* (Subject 19). *I feel little motivated to practice extracurricular activities (sports), although I like it a lot due to the personal demand to the graduation* (Subject 13). We also identified the category “self-control attempts” (7 units of analysis - 20.6%). *I usually try to make these situations do not shake me emotionally* (Subject 3). [...] *during the test I try to keep calm breathing deeply so as not my mind goes “blank”* (Subject 22).

The categories “organization of daily activities” (4 units of analysis - 11.8%), “study” (3 units of analysis - 8.8%), “talk with friends and family” (2 units of analysis - 5.9%) and “medication” (1 unit analysis - 2.9%). One subject, who accounted for 1 unit of analysis - 2.9% - could not pinpoint their confrontation.

Regarding the possible difficulties in managing stress, of the 23 subjects, 11 (47.8%) stated finding difficulties, 5 subjects (21.7%) denied difficulties, 6

subjects (26.1%) reported that “sometimes” or “rarely” encounter difficulties and 1 subject (4.3%) did not respond to the question. Among the students who reported difficulties, nervousness, anxiety, restlessness, intolerance to close people, reduced abstraction capacity and loss of emotional control were noted. *Usually I do not usually talk about what I'm going through at graduation and this is accumulating to the point of not being able to take it anymore and have very strong bouts of nervousness, crying, besides headache* (subject 3). *Sometimes it's hard to distract myself* (Subject 17). [...] *depending on the stress I find it difficult to get into balance and I end up getting very anxious and restless. I try not to dump on people close to me, but sometimes I dump on them unintentionally* (Subject 22).

Discussion

The students' feeling of demand, as well as stressful situations related to the course methodology, such as the internships, are corroborated in a study performed with nursing students in which the students describe the uncertainties regarding the expectations of the professors in relation to the academic performance of students, with more frequent mention of stressors related to professors, curriculum and practical activities with patients or in the laboratory⁽¹⁹⁾. Another study with nursing students corroborates in the questions structure offered for the accomplishment of the activities, method of teaching, personal difficulties, number of disciplines to attend, tests and class work that, among other factors, constitute wear situations for nursing undergraduate students⁽²⁰⁾.

Higher levels of perceived stress were also found in lower age groups as compared to older people, as well as differences in coping strategies used by the older age group, and this group used strategies of cognitive and problem-focused restructuring. The lower age group has often used hopeful and self-critical thinking strategies. In the same study, it was also found that high levels of perceived stress and the use of passive coping are related to negative mood⁽²¹⁾.

Similar results were found in a study performed with masters in the health area, which described a high incidence of subjects under stress, as well as a high perceived stress. A large amount of stress-related physical symptoms were also described, with women being more vulnerable⁽²²⁾.

In this study, there were reports of nervousness, anxiety, intolerance to close people and difficulty in

abstraction, which were identified as difficulties in managing stress. Another study, performed with students, reports that students often feel nervous or tired, but in the same study, the participants considered themselves to be reasonably good at coping with their problems, although most of the subjects reported daily somatic symptoms⁽²³⁾. It is also worth emphasizing that nervousness and anxiety are student perceptions that can interfere in the performance of physical and mental activities for the execution of the work.

In this study it was not possible to analyze the impact of the different stages of the course, because the sample was not homogeneous. However, in a study with medical students there was a higher incidence of depression and anxiety in first year students, when compared to the fourth year of the same course, since the authors of the article relate to the fact that the students of the last years are already more well adapted to the stressful circumstances⁽²⁴⁾.

Among the difficulties described, attention should be paid to the student's perception of her/his intolerance towards people close to her/him, since it can harm their support networks that sustain the coping adversities in the academic context and in the future of the world of work, especially as it is the formation of a health professional whose responsibility is to care of others human beings.

Final considerations

The context found in this study, that is, an undergraduate course with an extensive workload and limitation of leisure activities, in addition to perceived stress, is worrying, since students tend to internalize these characteristics of the course as something that must be overcome, leaving aside the idea that the health professional needs to take care of herself/himself to take care of the other. In this sense, this *modus operandi*, culturally transmitted, can be reproduced in personal and professional life, causing health problems to the professional and loss of support networks.

Such factors can be perceived in undergraduate students, as the findings of this study, since many already report feeling overwhelmed and timeless to engage in leisure activities or take care of their mental well-being in other ways. These characteristics of the course and also of the nursing profession, in some moments, are reinforced throughout the course, since to

achieve a good income, it is necessary that the student leaves aside recreational activities.

The stress caused by the constant memory of tasks to be performed, feelings of nervousness and incompetence to cope with perceived stress were the highest scoring factors in the PSS, corroborating the reports of exhaustion, often attributed to the methodology of the undergraduate course. As coping strategies some students seek leisure activities, but also, they indicate difficulties of confrontation, having as a reflex nervousness, irritability and intolerance with people close to them.

The study about the health and stress characteristics perceived among the students who undergo a stress reduction program contributes to the planning and organization of intervention proposals to serve these clients, considering that the effectiveness of the interventions is directly related to the identification of the subjects with the problem to be worked.

However, although there is planning and organization of interventions aimed at nursing undergraduate students, there will continue to be limitations in their implementation, since pedagogical and curricular characteristics related to the course make it difficult for the students to participate in extracurricular activities, as could be seen with the responses from the subjects of this research.

The study has as limitations the sampling by convenience. However, the authors take this limitation and recognize it as a propitious condition to reveal scientific evidences that favor thinking about the support mechanisms available in the training of nurses and, at the secondarily, can contribute to the prevention of the negative effects of stress on the professional of nursing.

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