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ABSTRACT. An exploratory and descriptive study that analyzed the intensity of stress caused by different situations is provided. The sample consisted of 47 final-year nursing students at the State University of Londrina and was carried out between July and September 2009. Data, obtained by a seven-item visual analogue scale and by a single open question on the perception of other stress sources, were analyzed through rating scores and resulted in a data table. Most students were rated at intensity 3 (38.3%) and 4 (36.2%), or rather, maximum overload stress for academic studies. Lack of leisure time and fear of unemployment after graduation were regarded as stress-causing situations, coupled to a feeling of being unprepared to exercise one's profession. Financial difficulties led to lower intensity but medium-significance factors for stress development. Interpersonal relationships received the lowest intensity scores. Results indicated future changes in the curriculum of the nursing course to minimize the suffering and harm to the students' mental health and to provide the full development of their emotional maturity.

Keywords: nursing undergraduates, psychological stress, nursing education, mental health.

Análise dos fatores desencadeantes de estresse em estudantes do último ano de graduação em enfermagem

RESUMO. Estudo exploratório e descritivo que estudou a análise da intensidade de estresse causado por diversas situações. A amostra foi composta por 47 estudantes do último ano do curso de Enfermagem da Universidade Estadual de Londrina, entre julho e setembro de 2009. Os dados foram obtidos por meio de uma escala visual analógica de sete itens e uma única questão aberta sobre a percepção de outras fontes de estresse. Os dados foram analisados utilizando o escalonamento simples que resultou na construção de uma tabela. A maioria dos entrevistados julgou como intensidade 3 (38,3%) e 4 (36,2%) - estresse máximo como sobrecarga para realizar os trabalhos acadêmicos. A falta de tempo para diversão e medo de não conseguir emprego após o término do curso, foram situações consideradas como causadoras de estresse, assim como não sentir-se preparado para o exercício da profissão. Dificuldades financeiras foram motivos de intensidades menores, porém mediamente significativas para o desenvolvimento de estresse. Motivos associados a relacionamento interpessoal receberam as menores intensidades. Concluiu-se que os resultados do presente trabalho contribuem para alterações futuras na organização da grade curricular do curso de Enfermagem, de forma a minimizar os sofrimentos e danos à saúde mental dos estudantes, permitindo o desenvolvimento da sua maturidade emocional.

Palavras-chave: estudantes de enfermagem, estresse psicológico, educação em enfermagem, saúde mental.

Introduction

In the present world context people may either try to adequate themselves to constant requirements such as expertise in the competitive labor market and updating for technological changes or succumb to the consequences of social inequalities (unemployment, hunger and disease). People should therefore accept their responsibilities and comply with the requirements demanded of them. However, most people have great difficulties in adapting themselves to such requirements and a stress condition is consequently installed.

There are many concepts of stress, but according the transactional model of Lazarus and Folkman (1984), stress is connected to the relationship between the individual and his environment. This type of study requires people to be assessed within their life context, in their relationship with the surrounding environment, and considering their attribution of meaning to given events. According to Ferreira (2003), stress is a set of the body's reactions to aggressions from several sources which disturb internal equilibrium. Stress may be also understood as any condition featuring acute or chronic tensions which produce alterations in the subjects' physical

behavior and emotional state (MONTEIRO, et al., 2007). For instance, a 10-year study has shown that university students with serum-conversion on the first dose of hepatitis B vaccine were less stressed and anxiety-ridden than those who failed to have serum-conversion after the second dose (KIECOLT-GLASER et al., 2002).

Costa (2007) states that in all new situations to which the subject is exposed and which demands the development or acquisition of new abilities implies a stressing experience of great or small proportions. In the case of nurse formation, the triple factor student-teacher-patient produces intense emotional stimuli since it pushes the undergraduate into a direct contact with the pain and the suffering of another human being and, at the same time, challenges the students' capacities to deal with one's own difficulties and those of the external environment.

In a research with Nursing Course students, Monteiro et al. (2007) analyzed the students' daily stress and revealed that it affected negatively their mental health. Whereas Telles Filho et al. (1999) indicated the evident characteristics and symptoms of stress in students of the Nursing Course, Jorge (1996) researched the situations which indicated crises in Nursing Course students.

Cerchiari et al. (2005) state that an increase in psychic tension and stress, in psychosomatic disturbance and in the lack of reliance on performance and of self-efficiency occurs in proportion to the students' permanence at a higher course of education. The above reveals a decrease in the subjects' mental health. Santos et al. (2003) conducted a research with Nursing students and found that most fourth year students (56%) had some type of depression.

Stress has been noted more explicitly during the final year of the undergraduate course due to the fact that it comprises the transition from student to nurse. In this case, stress is associated with fear of the challenges presented by the labor market and by requirements for the production of excellent professional performance, coupled to good assistance and leadership. Stress sources include the constant thought that the theoretical bases have been insufficient and overloading by a great deal of activities (SOARES; BUENO, 2006).

Telles Filho et al. (1999) detected and enumerated several physical characteristics of stress in last-year students: 39.1% mentioned mental breakdown at the end of the day; 34.8% experienced anxiety and 30.4% felt an emotional collapse. However, Gibbons et al. (2008), identified sources of distress when exploring stress in nursing students and one must also consider sources of eustress and recognize that academic, clinical and personal sources of stress can variously lead to distress and eustress.

Musso et al. (2008) emphasized the stressing factors within the university curriculum system which comprised relationship with professors, evaluations, curriculum contents, academic requirements and practical and laboratory activities. In their study on stress in Nursing Course students in the UK, Pryjmachuk and Richards (2007) also stated that the highest stressing factors include evaluations (67.3%), fear of failing in exams (57.5%) and the financial costs (56.6%). The same authors report that stress sources may be divided into academic (fear of failing in exams, evaluations and others), clinical (fear of committing technical mistakes, fear of interpersonal relationship with the nursing team and patients, fear of dealing with terminal patients) and personal and social (lack of free time for leisure, courtship and others) sources. Due to the complexity stance inherent to the academic and professional formation of nurses, the integrated curriculum of the undergraduate Nursing Course of the State University of Londrina, Paraná State improved the formation of nurses through the integration of contents within modules and through a type of learning foregrounded on competence and other strategies (DELLAROZA; VANNUCHI, 2005).

The statements above and the relevance of the theme foregrounded current investigation aiming at answering the question: Which are the stress-causing factors in last-year students of the undergraduate Nursing Course within the context of the integrated curriculum?

Current assay aims at analyzing the relevance of different conditions which cause stress in last-year students of the undergraduate Nursing Course at the State University of Londrina, Paraná State, Brazil.

Material and methods

Analysis consists of a quantitative, descriptive and exploratory research which "tries to discover the frequency with which a phenomenon occurs, its essence, characteristics, causes, relationships and connections with other phenomena" (BARROS; LEHFELD, 2004).

Research site

Evaluation was carried out at the Center of Health Studies of the Universidade Estadual de Londrina, Paraná State (CCS-UEL) within the timetable of school activities. The research was presented; the ethical procedures announced; it objective and methods explained and all students were invited to participate orally and voluntarily in the study.

Data collection and population

Data were collected between 24th June 2009 and 11th September 2009. Subjects were last-year students of the Nursing undergraduate course. At first, all 59 students (researcher not included) were comprised in the sample. However, only 47 undergraduates could be interviewed due to several compulsory academic leaves caused by the H1N1 influenza during the data collecting period.

Inclusion criteria were: students should be in the final year of the Nursing Course at UEL and accept freely to participate in the survey. A Term of Free Consent was read and signed.

The application of the survey among academics was authorized by the Ethics Committee in Research of the University Hospital (Process 98/2009). The students were duly informed on the use of the research information and they signed the Term of Free Consent according to Resolution 196/1996 of the Brazilian Health Council

Visual analogue scale

Stress-causing situations in research with populations similar to that of current research were justified for the preparation of the scale. Investigation by Jones and Johnston (1999) showed some factors which comprised the stress-causing load. The above researchers grouped these factors into several categories such as those related to school curriculum, lesson load, personal problems and other concerns. Several factors have been employed to the populated-target in current study.

Brazilian surveys have been taken into consideration to list other stress motives in Nursing Course students. Research by Cerchiari et al. (2005) assessed fear with regard to professional performance and financial difficulties; Jorge (1996) analyzed fear in the labor market; Soares and Bueno (2006) discovered the precarious affective and social capacity and personal relationship conflicts as the second cause of fear to enter the labor market.

Listed stress situations were related to overload in activities, lack of free time, conflicting situation with professors and colleagues, relationships with other professionals, feeling of being unprepared for the exercise of the profession, fear of unemployment and financial difficulties.

A Visual Analogue Scale (VAS) with five scales was prepared. Scales varied between 0 (lack of stress) to 4 (maximum stress) by which the subjects measured stress intensity caused by the seven listed situations mentioned in the literature. An open question was used as a complementary tool so that the subjects could express themselves when other stress factors other than those mentioned above existed: "Which are, in your opinion, the other factors which generate stress in your daily life?" (STREINER; GEOFREY, 2003).

Data analysis

Data were grouped according to their inclusion in any academic, clinical and personal/social stress category. Questionnaires handed in and reply frequencies were counted, while percentage and arithmetical means were employed according to frequency of answers.

Results and discussion

As a consequence, 76.5% of interviewed students answered the open question which investigated other stress-causing factors. The answers were incorporated within the established categories since they did not constitute a distinct category with regard to stress source and could be included within the classification proposed by the researchers.

Forty-seven students, 43 females (91.5%) and 4 males (8.5%), were interviewed, or rather, 79.6% of the sample initially proposed. Females were prevalent in the sample as student proportion in the Nursing Course testifies. Age bracket ranged between 20 and 32 years, with 59.5% being between 21 and 24 years old. Stressing factors were divided into academic (situations 1, 5 and 6), clinical (situation 4) and personal/social (situations 2, 3 and 7) categories, as given by Pryjmachuk and Richards (2007). Table 1 shows the results of the applied interview.

Academic stressing factors

The execution of activities specifically referring to the academic field impairs the students from enjoying other important aspects of life within the context of this phase in their formation - the students distance themselves from family and social conviviality and immerge into isolation (COSTA, 2007). Assignment overload during the undergraduate course causes health damage and there is a change in the habits acquired prior to entrance to the university, with serious repercussions in the students' health.

Table 1. Frequency of answers, percentages, arithmetical means and intensity of stress according to subjects, Londrina, 2009.

Situation	Intensity 0		Intensity 1		Intensity 2		Intensity 3		Intensity 4		Arithme-tic mean
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%	
1. Overload of activities, difficulties in carrying out all academic assignments.	0	0.0	3	6.4	9	19.1	18	38.3	17	36.2	3.0
2. Lack of time for leisure and family	1	2.1	3	6.4	11	23.4	15	31.9	17	36.2	2.9
3. Affective difficulties and conflicting situation with colleagues and professors.	12	25.5	14	29.8	8	17.0	8	17.0	5	10.6	1.6
4. Relationship with other professionals during training practices.	14	29.8	14	29.8	12	25.5	6	12.8	1	2.1	1.3
5. Feeling unprepared to exercise profession	3	6.4	9	19.1	9	19.1	13	27.7	13	27.7	2.5
6. Fear of unemployment after the end of the course	3	6.4	4	8.5	5	10.6	11	23.4	24	51.1	3.0
7. Financial difficulties and lack of salaried activity.	5	10.6	5	10.6	19	40.4	9	19.1	9	19.1	2.3

Within the context of the item "Overload of activities and difficulties in carrying out all academic assignments", 17% of the students had difficulties in associating extra-curricular activities with normal school activities. They also mentioned lack of time for study and leisure activities not linked to the course. The item "Feeling unprepared to exercise one's profession" was mentioned by 6.4% of students who reported lack of self-confidence, knowledge deficiency in the field and fear of starting life as a professional.

Whereas the final course assignment was mentioned by 31.9% of the students as a stress-causing factor, 19.1 of answers were related to other categories, such as family problems, physical tiredness and sitting for public examinations. Since arithmetical mean is the rate with the highest data concentration within a given distribution and that scale 4 corresponds to the highest stress rate in the ranking given above, the mean which is closest to the maximum scale represent the highest stress level (STREINER; GEOFREY, 2003).

Motivations for scientific research from the course's initial year were considered stress-determining factors in the final year since the assignments were associated with the overload of the course's theoretical and practical activities. In fact, the final course assignment was another stress-causing factor mentioned by 31% of interviewed students.

Further, during the final course assignment, students become aware of bureaucratic procedures, such as permissions to carry out research, waiting period till its approval by the Ethics Committee, lack of time for data collection, situations that impair the assignment's timetable and the psychological pressure to comply with deadlines.

According to Costa (2007), the overload caused by the final course assignment may be decreased if the students understood the importance of associating theoretical knowledge in research and the application of results in clinical practice.

The overload of activities and difficulties to carry out all academic assignments was a significant item for stress development. Table 1 showed that 38.3% of students ranked this activity at intensity 3 and 36.2% at intensity 4, or rather, an arithmetical mean of 3, close to maximum stress. This item was corroborated by 8 subjects in their answer to the open question.

The explanation for the above result is due to the fact that the last year of the undergraduate course is full of activities such as the final course assignment, extensive timetable as an intern on the hospital premises and in collective health programs, and the acquisition of nursing administration (DELLAROZA; VANNUCHI, 2005).

Difficulties in carrying out all academic assignments or the production of inferior quality assignments had a negative impact on the students during this critical period since they had to show their abilities and competences under the constant evaluations made by professors and other professionals.

In their studies on Nursing undergraduates at the Federal University of Piauí, Terezina State, Brazil, and at the Nursing School of the São Paulo University, São Paulo State Monteiro et al. (2007), showed that weekly lesson loads distributed into two

turns, extensive lesson loads undertaken and the fear of not finishing all assignments were mentioned as stress-causing factors.

Feeling unprepared for the exercise of one's profession and the fear of being unemployed after graduation were highly relevant sentiments for stress development. In fact, their arithmetical mean was respectively 2.5 and 3.0. During the intern period the students evaluated themselves since they had to retrieve all theoretical knowledge received from the course's first year and apply them to assistance and administration activities (DELLAROZA; VANNUCHI, 2005).

Knowledge deficit may be one of the factors in which the students felt themselves unprepared for the exercise of their profession. In their research, Soares and Bueno (2006) stated that knowledge deficiency produced the greatest fear during insertion in the labor market. Consequently, a sense of fragility with regard to their professional future was greatly enhanced in this phase either through a feeling of inability or through a lack of assurance that labor competitiveness produced.

Clinical stressing factors

Current study showed that relationships with other professionals during training practices did not cause any significant stress. Most interviewed subjects (59.6%) ranked stress intensity 0 and 1, with arithmetical mean 1.3. Results by Soares and Bueno (2006) were different and revealed relationships and interpersonal conflicts to be the second and third cause of fear and anxiety caused by insertion in the labor market.

Interpersonal relationship is a capacity that students, as social beings, should improve during their academic formation. The nursing profession requires conviviality with colleagues and patients with different types of temperaments and good relationships are needed to solve conflicts, propose ideas, discuss the implementation of procedures, identify abilities in the nursing team, and others.

Contrastingly to the study by Soares and Bueno (2006) which indicated fear of relationships with the nursing team as a stress-causing factor to the student who was about to enter the labor market, current investigation revealed that only 10.6 and 2.1% of the interviewed subjects ranked highest as stress-causing factors respectively relationships with professors and colleagues and with the working team. In fact, students gave different relevance to stressing causes. These differences may be explained by an integrated curriculum as a type of curricular organization and

teaching-learning strategy with an improvement in academic formation of future nurses and a decrease in clinical stress (GODOY; SOUZA, 2001).

Personal/social stressing factors

Only one interviewed student ranked the item "Financial difficulties and lack of salaried activity" as a stress-causing factor, through an answer to the open question. Financial contributions for Graduation Day commemorations were a stress-causing factor for this student, or rather, a financial cause interfered in stress level.

Financial difficulties and the lack of salaried activities had an arithmetical average of 2.3, or rather, a medium score for stress development. Some students must have had certain financial difficulties to conclude the undergraduate course which is a day course and impairs other types of jobs with salary. Financial difficulties with stress intensity 2 was mentioned by 40.4% of the subjects and ranked exactly mid-scale.

Santos et al. (2003) have shown that there was a significant association between monthly family income and the increase in students' depression in the Nursing Course. This fact was corroborated by Cerchiari et al. (2005) who stated that financial difficulties interfered negatively in the students' general mental health.

Although there were several variables that should be investigated to explain the differences in stress-causing sources, the above data differed from those by Pryjmachuk and Richards (2007) who obtained 56.6% of subjects qualifying maximum level stress on this point. If one took into account that all universities abroad had high fees, this important detail may contribute towards an increase in students' stress. On the other hand, since current research was applied to students from Brazilian government universities, such a detail represented a lowering of students' stress with regard to financial difficulties. In fact, studies in public universities are only funded indirectly.

Lack of time for leisure and for the family obtained a high intensity ranking for stress development: 23.4 indicated intensity 2; 31.9% indicated intensity 3; 36.2% indicated intensity 4 (maximum stress), with an arithmetical mean of 2.9. Lack of time for leisure and for the family was associated with an overload of activities due to the fact that students had requirements with no spare time to do other activities except those strictly inherent to the course curriculum.

As Table 1 shows, the item for affective difficulties and conflicting situations with colleagues and professors had the following scores: 55.3% indicated

intensity 0 and 1; 34% indicated intensity 2 and 3; 10.6% indicated intensity 4, with arithmetical average of 1.6. The above situation may be stress-causing if one took into consideration only the mathematical average. However, 5 subjects indicated maximum stress and others reported some affective difficulties and conflicts. This fact is significant from the mental health's point of view since reports of suffering existed although statistically its relevance was nil.

One of the difficulties indicated by Nursing Course students within a university context, reported in a study in Fortaleza Ceará State Brazil, refers to their relationship with their professors (JORGE, 1996). The professor-student relationship is highly relevant for one's formation and the students' interpersonal relationships will be professionally affected by the relationship model partaken with their teachers (SOARES; BUENO, 2005).

Decreasing ratings of personal stress-causing factors linked to interpersonal relationships may indicate better capacities of relationship and interpersonal communication due to a successful curricular organization of the integrated curriculum. In their analysis of last-year Nursing students (studying within the context of a traditional serial curriculum), Soares and Bueno (2006) discovered that fear caused by relationship with the Nursing team ranked second and third, with higher concerns caused by the factor insertion in the labor market.

In this same year, Costa and Polak (2009) reported a quantitative methodological development research that aimed to construct and validate an instrument to assess the stress factors among nursing students. The instrument will be used to evaluate the intensity of the most frequent stress factors among these students in the next researches.

Conclusion

An analysis of the results showed that students in the last year of the Nursing Course were highly stressed due to intrinsic factors that interfered at different intensities in stress production by students. Academic stressing factors, high in the students' ranking, corroborated conclusions reached by other researchers who linked these factors with stress experienced in the personal and social field.

Results of current research are an important factor in the constant process of the Nursing Course's curriculum organization. A decrease in suffering and damage in students' mental health will occur with a concomitant development of emotional and intellectual maturity.

References

BARROS, A. J. S.; LEHFELD, N. A. S. **Fundamentos de metodologia científica**: um guia para iniciação científica. São Paulo: Pearson Makron Books, 2004.

CERCHIARI, E. A. N.; CAETANO, D.; FACCENDA, O. Prevalência de transtornos mentais menores em estudantes universitários. **Estudos de psicologia**, v. 10, n. 3, p. 413-420, 2005.

COSTA, A. L. S. Estresse em estudantes de enfermagem: Construção de fatores determinantes. **Revista Mineira de Enfermagem**, v. 11, n. 4, p. 414-419, 2007.

COSTA, A. L. S.; POLAK, C. Construção e validação de instrumento para avaliação de estresse em estudantes de enfermagem (AEEE). **Revista Escola de Enfermagem da USP**, v. 43, n. 1, p. 1017-1026, 2009.

DELLAROZA, M. S. G.; VANNUCHI, M. T. O. **O currículo integrado do curso de enfermagem da Universidade Estadual de Londrina**: do sonho à realidade. São Paulo: Hucitec, 2005.

FERREIRA, A. B. H. **Dicionário Aurélio da Língua Portuguesa**. Rio de Janeiro: Nova Fronteira, 2003.

GIBBONS, C.; DEMPSTER, M.; MOUTRAY, M. Stress and eustress in nursing students. **Journal of Advanced Nursing**, v. 61, n. 3, p. 282-290, 2008.

GODOY, C. B.; SOUZA, N. A. Construindo uma nova proposta pedagógica no curso de enfermagem da Universidade Estadual de Londrina. **Semina: Ciências Biológicas e Saúde**, v. 22, n. 1, p. 25-31, 2001.

JONES, M. C.; JOHNSTON, D. W. The derivation of a brief nurse stress index. **Work and Stress**, v. 13, n. 2, p. 162-181, 1999.

JORGE, M. S. B. Situações vivenciadas pelos alunos de enfermagem, durante do curso, no contexto universitário: apontadas como norteadoras de crises. **Revista da Escola de Enfermagem da USP**, v. 30, n. 1, p. 138-148, 1996.

KIECOLT-GLASER, J. K.; MCGUIRE, L.; ROBLES, T. F.; GLASER, R. Psychoneuroimmunology: psychological influences on immune function and health. **Journal of Consulting and Clinical Psychology**, v. 70, n. 3, p. 537-547, 2002.

LAZARUS R. S.; FOLKMAN, S. **Stress, appraisal and coping**. New York: Springer, 1984.

MONTEIRO, C. F. S.; FREITAS, J. F. M.; RIBEIRO, A. A. P. Estresse no cotidiano acadêmico: o olhar dos alunos de Enfermagem da Universidade Federal do Piauí. **Escola Anna Nery Revista de Enfermagem**, v. 11, n. 1, p. 66-72, 2007.

MUSSO, L. B.; VARGAS, B. A.; TORRES, M. B.; CANTO, M. J. C.; MELÉNDEZ, C. G.; BALLOQUI, M. F. K.; CORNEJO, A. S. Fatores derivados dos laboratórios intra-hospitalares que provocam estresse nos estudantes de enfermagem. **Revista Latino-Americana de Enfermagem**, v. 16, n. 5, p. 805-811, 2008.

PRYJMACHUK, S.; RICHARDS, D. A. Mental health nursing students differ from other nursing students; some observations from a study on stress and coping. **International Journal of Mental Health Nursing**, v. 16, n. 6, p. 390-402, 2007.

SANTOS, T. M.; ALMEIDA, A. O.; MARTINS, H. O.; MORENO, V. Aplicação de um instrumento de avaliação do grau de depressão em universitários do interior paulista durante a graduação em Enfermagem. **Acta Scientiarum. Health Sciences**, v. 25, n. 2, p. 171-176, 2003.

SOARES, M. H.; BUENO, S. M. V. O Papel educativo do enfermeiro psiquiátrico segundo referencial pedagógico de Paulo freire. **Acta Scientiarum. Health Sciences**, v. 27, n. 2, p. 109-118, 2005.

SOARES, M. H.; BUENO, S. M. V. A percepção do aluno do quarto ano de enfermagem em relação ao seu ingresso no mercado de trabalho. **Nursing**, v. 101, n. 9, p. 1064-1069, 2006.

STREINER, D. L.; GEOFREY, R. N. **Health measurement scales**: a practical guide to their development and use. 2nd ed. Oxford: Oxford Medical Publications, 2003.

TELLES FILHO, P. C. P.; PIRES, E.; ARAUJO, G. A. Características evidenciáveis de estresse em discentes de enfermagem. **Revista Latino-Americana de Enfermagem**, v. 7, n. 2, p. 91-93, 1999.