

STRESS FACTORS IN CLINICAL TEACHING IN NURSING: THE STUDENTS' PERSPECTIVE

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Abstract

In nursing courses, clinical teaching is a crucial experience which gives students the opportunity to explore, interiorise and implement what they have learned before becoming professional nurses. At the same time, they constitute a stage in which their learning, skills and performance are evaluated, which can lead to stress. This paper aims to identify the situations encountered in Clinical Teaching in Nursing (CTN) which are perceived as stressors. A total of 1,283 students from the four years' bachelor degree course in nursing participated in this research. The results enabled the identification of five stressors: CTN guidance, specific nursing situations, evaluation, personal aspects and time and work management. The results revealed the existence of statistically significant differences in the perception levels of stress-inducing situations depending on the course year attended by the students and on their sex, demonstrating that females' perception level of stressors is significantly higher than that of males.

Introduction

The way in which stress is experienced by students in higher education has been a topic which has raised increasing interest, leading to the need of identifying stressors and their consequences on students' health and well-being (Ponciano & Pereira, 2005).

In the specific case of the bachelor's degree in nursing, there are several stages of the course during which students may experience periods of crisis or vulnerability. In this context, the CTNs stand out (Beck & Srivastava, 1991; Cavanagh & Snape, 1997; Jones & Jonhson, 1997; Lindop, 1999; Lo, 2002). They are alternately integrated into the training process, involving increasing complexity and responsibility. The CTNs

have different lengths and objectives and are distributed across the four years of the degree.

The CTNs, performed in a professional context, are one of the axes around which training in nursing is organised. This demonstrates the importance given to practical training, i.e. learning by experience, which enables the integrated development of competencies (Almeida, 2006).

The CTNs also permit the building of a professional identity by means of the interrelationships with nursing professionals and others (Franco, 2000).

On the other hand, CTNs simultaneously represent a stage during which the learning, ability and performance of students are evaluated, and can therefore be the cause of insecurity, anxiety and fear. In this sense, the experience of clinical teaching is not always a positive one. Thus, although it is attractive and challenging, this context can also induce stress and constitute a potential source of “destruction”, depending on the significance and relevance students give it.

In clinical teaching, students refer to stress-inducing situations as: the care of the terminally ill, time pressure for certain activities, clinical trial evaluations, performance and frequent changes of services/health institutes (Sheu, Lin & Hwang, 2002; Timmins & Kaliszer, 2002; Tully, 2004). Oliveira (1998) identified the organisation of work, evaluation and interaction with the tutor as the factors which are responsible for the most stress during internships.

Sheu et al. (2002) identified six stressors during the CTN: stress due to patient care, stress due to tutors and nursing professionals, stress resulting from tasks and workload, stress due to partners and daily life, stress due to lack of knowledge and professional competencies and stress from the clinical context.

As far as the year of attendance on the course is concerned, studies have revealed that perceived stress levels increase according to the year of attendance. In a study performed with nursing students, Tully (2004) concluded that second-year students presented higher levels of stress than their first-year colleagues. Research on perceived stress performed with students from the three years' nursing course also led Lo (2002) to conclude that second-year students presented higher levels of stress than first-year students.

In a Portuguese context, Oliveira (1998) stated that third-year nursing students presented higher stress frequency and intensity in CTN than second-year students.

Studies carried out in the field of further education have concluded that stress varies according to the sex of the students, female students experiencing higher levels

of stress than males (Faria, Carvalho, & Chamorro, 2004; Misra, McKean, West, & Russo, 2000; Oliveira, 1998; Santos, Fonseca, Vasconcelos, & Tap, 2004; Tully, 2004).

The (in)capacity of the student to deal with stress-inducing situations adequately will affect his/her physical and mental well-being, crucial elements in the learning process and for academic and professional success (RESAPES, 2002). In this respect, the need to develop strategies and competencies with the aim of leading participants in clinical teaching to understand and deal with situations of stress so as to make them more resilient is recognised (Pereira & Francisco, 2004).

The relevance of the study on stressors experienced by students during the initial period of nursing training, i.e. the CTNs, in which continued care is given to patients, can also be affected by the fact that stress can affect the quality of care and the relationships established between the various participants (Rodrigues & Veiga, 2006). Consequently, the development of studies which will increase knowledge about the experiences and attitudes of nursing students is important (Tully, 2004). Seeing learning in a real context as an essential aspect of the construction of knowledge in nursing, the need to know how students experience the CTN is obvious (Almeida, 2006).

Based on this theoretical framework, the main aim of the present paper is to identify stress-inducing situations perceived by CTN students and verify the existence of differences between the students' sex and according to the year of attendance on the course.

Method

Participants

1,283 students in nursing bachelor degree courses who had terminated Clinical Teaching, in the academic year 2006/2007, in five institutes of higher education in health care in the Central Region of Portugal participated in this study.

The sample mainly consisted of female elements (81.4%), single (97.8%), aged between 18 and 38 years ($M=20.94$ years; $SD=2.05$) and who chose nursing as their first study choice (85.5%) upon their entrance into further education.

As far as the year of attendance on the nursing course was concerned, 191 (14.9%) students were in the first year, 369 (28.8%) in the second year, 438 (34.1%) in

the third year and 285 (22.2%) in the fourth year. Table 1 presents the distribution of the sample according to sex and the year of attendance on the course, as well as the averages and standard deviations of the ages.

Table 1. Distribution of the sample by sex and year of attendance on course, averages and standard deviation of the ages

Year	Male				Female				Total sample			
	n	%	Average	SD	n	%	Average	SD	n	%	Average	SD
1 st year	43	3.35	20.63	3.90	148	11.54	19.22	2.12	191	14.89	19.54	2.68
2 nd year	59	4.60	20.29	1.20	310	24.16	20.49	2.04	369	28.76	20.46	1.93
3 rd year	88	6.86	21.12	1.30	350	27.28	21.08	1.38	438	34.14	21.09	1.37
4 th year	49	3.82	22.50	2.22	236	18.39	22.25	1.59	285	22.21	22.29	1.71
Subtotal	239	18.63	21.10	2.31	1044	81.37	20.91	1.99	1283	100.00	20.94	2.05

As far as student status was concerned, 1,196 students (93.2%) were full-time students and 87 (6.8%) were working students.

As far as the perception of academic results was concerned, 6 students (0.5%) considered their academic results to be bad, 17 (1.3%) weak, 506 (39.4%) average, 700 (54.6%) good, 53 (4.1%) excellent and 1 subject (0.1%) did not answer.

697 students of our sample (54.3%) perceived the CTN as stressful.

Materials

Socio-demographic questionnaire made of a series of closed questions which aimed to collect data which would permit the characterisation of the sample.

Scale of Stress-Inducing Situations in Clinical Teaching in Nursing (hereinafter *Scale*, in order to make reading easier).

The said scale is composed of 49 items, each of which represents stressful situations which are likely to occur during the course of the CTN and which represent stressors for students. The items are presented on a five-point Likert scale, in which 1 represents “I totally disagree” and 5 “I totally agree”. Higher points represent a higher perception level of stressors in CTN.

Procedure

After having received authorisation from the Directive Councils of the 5 institutes of higher education in health care of the Central Region of Portugal, we

requested the collaboration of students for our research. The students were informed of the scope, nature and objectives of the study. The confidentiality of results, the anonymity of collected data and voluntary participation in the study were guaranteed.

The questionnaires were given collectively by the persons in charge of the clinical teaching during the respective evaluation meeting, i.e. after the conclusion of the CTN, in June and July 2007.

Results

For the analysis of the data, we used the SPSS package (*Statistical Package of Social Science*), version 16.0.

The study of the dimensionality of the scale was performed using a Principal Components Analysis, with varimax rotation. The five retained factors explain 54.28% of the total variance. Table 2 presents the descriptive statistics of the scale and the values of Cronbach's alfa obtained for each factor and the total scale.

Table 2. Summary of the psychometric properties of the Scale (49 items)

Factor	Factor description	No. of items	Theoretical amplitude	Observed amplitude	Average	SD	Cronbach's alfa
1	CTN guidance	14	14-70	14-67	38.85	11.82	.93
2	Specific nursing situations	12	12-60	12-59	33.77	9.01	.89
3	Evaluation	9	9-45	9-45	29.24	7.92	.89
4	Personal aspects	7	7-35	7-35	22.28	5.89	.87
5	Time and work management	7	7-35	7-35	22.07	5.85	.85
Total		49	49-245	49-218	146.21	34.27	.96

The *Scale* assesses 5 types of stress-inducing situations, such as situations related to: *CTN guidance*, *specific nursing situations*, *evaluation*, *personal factors*, and, finally, situations which involve *time and work management*.

Due to the fact that the factors have a different number of items, when comparing the results, we proceeded to the calculation of the average as follows: the division of the points obtained by the subject for the factor by the number of items of that same factor. This way, all factors have an amplitude of 1 to 5, the theoretical amplitude being equal to the amplitude of the answer scale (Table 3).

Table 3. Averages, SD, minimum and maximum of the total *Scale* and factors

Factor	Factor description	n	Average	SD	Minimum	Maximum
1	CTN guidance	1283	2.78	0.84	1.00	4.79
2	Specific nursing situations	1283	2.81	0.75	1.00	4.92
3	Evaluation	1283	3.25	0.88	1.00	5.00
4	Personal aspects	1283	3.18	0.84	1.00	5.00
5	Time and work management	1283	3.15	0.84	1.00	5.00
Total		1283	2.98	0.70	1.00	4.45

As far as the situations which students perceive as stressful in CTN are concerned, we can see, based on Table 3, that situations related to evaluation ($A=3.25$; $SD=0.88$) are perceived as the ones that induce the most stress, followed by those related to personal aspects ($A=3.18$; $SD=0.84$) and issues related to time and work management ($A=3.15$; $SD=0.84$). Aspects which are specific to nursing ($A=2.81$; $SD=0.75$) and factors related to CTN guidance ($A=2.78$; $SD=0.84$) are perceived as less stressful than the previous factors.

In order to verify if there are differences between the sexes and the year of attendance of the course, we proceeded to an analysis of variance (ANOVA) which enables to test the existence of statistically significant differences between the averages of a continuous variable on the levels of a nominal variable. The distributions of the total *Scale* and of the respective factors were considered as normal, using the central limit theorem (Reis, Melo, Andrade & Calapez, 1996). The homoscedasticity was also tested using Levene's test for the dependent variables (total *Scale* and factors). In the case of the variable year of attendance on the course, the homoscedasticity in the *Scale* was not confirmed. Under these circumstances, the ANOVA results can have a variable degree of bias, which is why the result of the Brown-Forsythe test was included (Vallejo & Escudero, 2000). The Games-Howell test was chosen for the *post hoc* comparisons because it is adequate for unplanned comparisons in the case of heteroscedasticity.

Regarding the difference of perception of stressful situations according to the sex of the participants in the analysis of Table 4, we verified that, there was a statistically significant difference at the $p=.000$ level in all factors and in the total scale for male and female students. Female students showed average stress perception levels which were significantly superior than those of male students.

Table 4. Averages, standard deviations, minimum and maximum, ANOVA and Levene's test of the Scale according to sex

Scale	Gender	n	Average	SD	Minimum	Maximum	ANOVA		Homoscedasticity	
							F	p	Levene	p
CTN guidance	Male	239	2.55	0.82	1.00	4.71	21.041	.000	.348	.556
	Female	1044	2.83	0.84	1.00	4.79				
	Total	1283	2.78	0.84	1.00	4.79				
Specific nursing situations	Male	239	2.53	0.76	1.00	4.67	42.171	.000	.779	.378
	Female	1044	2.88	0.73	1.00	4.92				
	Total	1283	2.81	0.75	1.00	4.92				
Evaluation	Male	239	2.96	0.91	1.00	4.78	32.317	.000	1.535	.216
	Female	1044	3.31	0.86	1.00	5.00				
	Total	1283	3.25	0.88	1.00	5.00				
Personal aspects	Male	239	2.85	0.85	1.00	5.00	47.952	.000	.380	.538
	Female	1044	3.26	0.82	1.00	5.00				
	Total	1283	3.18	0.84	1.00	5.00				
Time and work management	Male	239	2.88	0.86	1.00	5.00	33.017	.000	.883	.347
	Female	1044	3.22	0.82	1.00	5.00				
	Total	1283	3.15	0.84	1.00	5.00				
Total	Male	239	2.71	0.72	1.00	4.35	46.275	.000	1.822	.177
	Female	1044	3.05	0.68	1.04	4.45				
	Total	1283	2.98	0.70	1.00	4.45				

Regarding the existence of differences between perceived levels of stressful situations and the year of attendance on the course, statistically significant differences between the years of the course were found for all factors (Table 5).

Concerning situations related to *CTN guidance*, statistically significant differences were found between the years of the course ($F(3,1282)=19.46$, $p=.000$). The first-year students' ($A=2.37$; $SD=0.84$) perceived level of stressful situations was lower than that of the second-year students ($A=2.92$; $SD=0.77$), third-year students ($A=2.84$; $SD=0.85$) and fourth-year students ($A=2.76$; $SD=0.86$). The second-year students' perceived level of stressful situations was the highest.

For *specific nursing situations* statistically significant differences were found between the years of the course ($F(3,1282)=7.39$, $p=.000$). The second-year students, once more, showed the highest perception level of stressful situations ($A=2.97$; $SD=0.67$) in comparison with third-year students ($A=2.72$; $SD=0.74$) and fourth-year students ($A=2.77$; $SD=0.79$).

As regards *evaluation* statistically significant differences were found between the years of the course ($F(3,1282)=21.09$, $p=.000$). The first-year students ($A=2.84$; $SD=.93$) had lower perception levels of stressful situations than the second-year students ($A=3.50$; $SD=.75$), third-year students ($A=3.26$; $SD=.87$) and fourth-year

students ($A=3.18$; $SD=0.92$). On the other hand, fourth-year students ($A=3.18$; $SD=.92$), had a lower perception level of stress related to evaluation than second-year students. The third-year students had lower stress perception levels than their second-year colleagues.

Concerning stress-inducing situations related to *personal aspects*, statistically significant differences were also seen when comparing the students' year of attendance on the course ($F(3,1282)=22.53$, $p=.000$). First-year students ($A=3.08$; $SD=.84$), third-year students ($A=3.10$; $SD=.86$) and fourth-year students ($A=3.00$; $SD=.87$) revealed lower stress perception levels than their second-year colleagues ($A=3.48$; $SD=.70$).

For the factor *time and work management* statistically significant differences were found between the four years of the course ($F(3,1282)=32.86$, $p=.000$). The first-year students ($A=2.64$; $SD=.89$) showed a lower perception level of stressful situations than their second-year colleagues ($A=3.35$; $SD=.73$), third-year colleagues ($A=3.15$; $SD=.81$) and fourth-year colleagues ($A=3.24$; $SD=.82$). On the other hand, the third-year students had a lower perception level of stressful situations than the second-year students, and the first-year students had a lower perception level of stressful situations than the third-year students.

Regarding the total scale statistically significant differences were seen in perceived stress factors when comparing the students' year of attendance on the course ($F(3,1282)=20.44$, $p=.000$). The first-year students revealed a lower perception level of stress-inducing situations ($A=2.70$; $SD=.75$) than second-year students ($A=3.18$; $SD=.57$), third-year students ($A=2.97$; $SD=.70$) and fourth-year students ($A=2.94$; $SD=.74$). The third-year and fourth-year students had a lower perception level of stressful situations than their second-year colleagues.

Table 5. Averages, standard deviations, minimum and maximum, ANOVA, Brown-Forsythe test, post hoc tests and Levene test of the Scale according to the year of attendance on the course

							ANOVA		Brown-Forsythe		Homoscedasticity		
		n	Average	SD	Minimum	Maximum	F	p	F*	p	Post hoc**	Levene	p
F1r CTN guidance	1 st year	191	2.37	0.84	1.00	4.79	19.626	.000	19.459	.000	1 ^o A<2 ^o A, 3 ^o A, 4 ^o A; p=.000	3.155	.024
	2 nd year	369	2.92	0.77	1.00	4.64							
	3 rd year	438	2.84	0.85	1.00	4.71							
	4 th year	285	2.76	0.86	1.00	4.57							
	Total	1283	2.78	0.84	1.00	4.79							
F2r Specific nursing situations	1 st year	191	2.80	0.82	1.00	4.67	7.717	.000	7.389	.000	3 ^o A<2 ^o A; p=.000	5.162	.002
	2 nd year	369	2.97	0.67	1.00	4.92					4 ^o A<2 ^o A; p=.000		
	3 rd year	438	2.72	0.74	1.00	4.67							
	4 th year	285	2.77	0.79	1.00	4.75							
	Total	1283	2.81	0.75	1.00	4.92							
F3r Evaluation	1 st year	191	2.84	0.93	1.00	4.89	26.037	.000	21.085	.000	1 ^o A<2 ^o A, 3 ^o A,; p=.000	7.404	.000
	2 nd year	369	3.50	0.75	1.11	5.00					4 ^o A<2 ^o A; p=.000		
	3 rd year	438	3.26	0.87	1.00	5.00					3 ^o A<2 ^o A; p=.000		
	4 th year	285	3.18	0.92	1.00	4.89					1 ^o A<4 ^o A; p=.001		
	Total	1283	3.25	0.88	1.00	5.00							
F4r Personal aspects	1 st year	191	3.08	0.84	1.14	5.00	22.804	.000	22.525	.000	1 ^o A, 3 ^o A, 4 ^o A <2 ^o A; p=.000	7.923	.000
	2 nd year	369	3.48	0.70	1.14	5.00							
	3 rd year	438	3.10	0.86	1.00	4.86							

	4 th year	285	3.00	0.87	1.00	4.71				
	Total	1283	3.18	0.84	1.00	5.00				
							32.864 .000	1°		
F5r Time and work management	1 st year	191	2.64	0.89	1.00	4.71	34.220 .000	A<2°A, 3°A, 4°A; p=.000	5.928	.001
	2 nd year	369	3.35	0.73	1.00	5.00		3°		
	3 rd year	438	3.15	0.81	1.00	4.86		A<2°A; p=.002		
	4 th year	285	3.24	0.82	1.00	5.00		1°		
	Total	1283	3.15	0.84	1.00	5.00		A<3°A; p=.008		
							20.435 .000	1°		
Scale Total_r	1 st year	191	2.70	0.75	1.10	4.35	21.323 .000	A<2°A, 3°A; p=.000	12.792	.000
	2 nd year	369	3.18	0.57	1.14	4.43		1°		
	3 rd year	438	2.97	0.70	1.00	4.41		A<4°A; p=.003		
	4 th year	285	2.94	0.74	1.08	4.45		3°A, 4°A <2°A; p=.000		
	Total	1283	2.98	0.70	1.00	4.45				

* Corrected F: ** Games-Howell test

Final considerations

The CTN, a component of nursing degrees, can be distinguished for its extensive training and the complexity and diversity of the dimensions involved in it, including permanent challenges for its (many and various) participants (Longarito, 2002).

In general, it is in the CTN context that a student first comes into contact with the professional environment, which can be perceived both as attractive and scary, and thus represents a potential stressor.

In order for it to be possible to suggest prevention and intervention strategies which would minimise the negative effects of stress and improve the quality of students' CTN performance, as well as of their health, it is fundamental to know about situations perceived by their actors as stressors.

In this respect, in the present study, we have aimed to find out about some of the stress-inducing situations which are specific to Clinical Teaching in Nursing (CTN).

We identified the following stressors as the main sources of stress perceived by CTN students: issues related to evaluation, personal aspects, time and work management, specific nursing aspects and factors related to CTN guidance. These data coincide with the results of other studies (Sheu et al., 2002; Timmins & Kaliszer, 2002).

The female students in our sample reveal a higher perception level of stress-inducing situations in CTN in comparison with male students. This conclusion is corroborated by other studies carried out with higher education students (Faria et al., 2004; Misra et al., 2000; Oliveira, 1998; Santos et al., 2004; Tully, 2004).

Concerning the year of attendance on the course, the existence of statistically significant data between this variable and the perception of stress-inducing situations were seen in all factors and the total scale. Generally, the first-year students are the ones with the lowest perception level of stress-inducing situations in CTN, in comparison with colleagues from the other years. This could be related with the duration of the CTN or with the type of institution/service where the CTN is done. On the other hand, in general, the third and fourth-year students reveal a lower perception level of stress-inducing situations than their second-year colleagues. This could be due to the fact that, as they progress through the course, the students develop more efficient strategies to deal with stress-inducing situations, adjusting their personal, academic and professional expectations to be more in tune with reality. One can suppose that the student gradually feels more secure when exercising his/her (future) profession as he/she gains practice, and is therefore less vulnerable to stress.

To conclude, we hope that the present paper can contribute towards a greater understanding for stressors to which students are subjected during clinical teaching. The results of this study could contribute towards the development of programmes which focus on the promotion of competencies and strategies to deal with stress efficiently, enabling the development and involvement of the various intervening factors, and thus ensuring health and well-being.

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