

Stress among professional nurses working in intensive care units

Estresse dos profissionais enfermeiros que atuam na unidade de terapia intensiva

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Abstract

Objective: Evaluate stress in the work environment of professional nurses inside Intensive Care Units and identify the stressing agents associated to the triggering of stress, according to the Bianchi Stress Scale.

Methods: Cross-sectional study developed with 22 nurses at the intensive therapy unit of a public pediatric hospital.

Results: Despite the complete and effective performance of ICU nurses in face of the patient's instability, the conditions external to this situation are more stressing.

Conclusion: The nurses have presented higher stress levels in the activities related to work conditions to perform activities and those related to personnel administration.

Resumo

Objetivo: Avaliar o estresse no ambiente de trabalho dos profissionais enfermeiros dentro das Unidades de Terapia Intensiva e identificar os agentes estressores associados ao desencadeamento do estresse segundo a Escala Bianchi de Estresse.

Métodos: Estudo transversal, desenvolvido com 22 enfermeiros da unidade de terapia intensiva de um hospital público pediátrico.

Resultados: Enfermeiro da UTI, apesar de sua completa e efetiva atuação frente à instabilidade do estado do paciente, as condições externas a essa situação são mais estressantes.

Conclusão: Os enfermeiros apresentaram maiores índices de estresse nas atividades relacionadas às condições de trabalho para o desempenho das atividades e relacionadas à administração de pessoal.

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Introduction

Work environment stress is a current problem that poses risks to mental health. The first researcher to perform experiences to prove the connection between emotion and the triggering of this neuroendocrine reaction was Selye, who then became considered the *Father of the Stress Theory*.⁽¹⁾ After the phase of studies on biological stress, new studies were developed regarding the association between emotion and the release of hormones responsible for the appearance of physical and behavioral symptoms.⁽²⁾

According to data from the World Health Organization, approximately 90% of the world population is affected by stress, which makes it a global epidemic.⁽³⁾ Similarly, occupational stress in the health area is linked to specific situations, such as relationship problems, ambiguity and function conflict, double work load and house work, pressures exerted by superiors according to the individual's perception and alterations in the context of their activity. These situations may be important sources of stress.⁽⁴⁾

The intensive care unit is perceived by the team working in it, as well as by patients and family members, as one of the most aggressive, tense and traumatizing environments in the hospital. The factors present in the intensive care environment that generate stress in the team include poor preparation to deal with the constant occurrence of deaths, frequent emergency situations, lack of personnel and material, constant machine noise, lack of preparation to deal with frequent changes in technological apparel, family member suffering, degree of responsibility in making decisions, conflict in the relationship between professionals, among others.⁽⁵⁾

Quality of life, according to the World Health Organization, is the perception of the individual regarding his or her position in life, in the context of culture and system of values in which he or she lives in relation to their objectives, expectations, standards and worries.⁽⁶⁾

The individual's quality of life has been compromised – professionally, socially and biologically – due to factors that cause stress. Stress is, in most cases, seen as a negative factor, which harms the performance of human beings. Nevertheless, it is

important to point out that stress, at a certain level, is necessary for the body, since it contributes to the good performance of organic and mental functions, such as growth and creativity.⁽⁷⁾

Bianchi has developed the Bianchi Stress Scale to evaluate the stress level of hospital nurses in performing basic activities. This self-administered scale is divided in domains, comprising the activities involving health care management and delivery. The use of this scale allows to verify the most stressing domain for the group of nurses or for each individual and also to evaluate the most stressing activities at a given institution.⁽²⁾

The objective of this study is to evaluate stress at the work environment of the nurses in the intensive care unit and to point out the stressing agents linked to the triggering of stress.

Methods

Cross-sectional study developed at the intensive care unit of a tertiary public hospital assisting children and adolescents up to 18 years of age, located in Fortaleza, northeast Brazil.

The sample consisted of 22 nurses from the intensive therapy unit who had been developing their professional activities at that site for over six months. Data were collected between April and May of 2011, using the Bianchi Stress Scale (BSS), which is a self-administered instrument made of two parts:

1) Population characterization data: items to characterize the respondent, i.e. gender, age, position, unit to which he or she belongs (which in this study was necessarily the Intensive Care Unit), time since graduation, post-graduation study and time working at the unit.

2) Stressing factors in the performance of the nursing work, with 51 items using the Likert scale, varying from one to seven, with the value one being determined as “a little stressed out”; the value four as the “medium” and seven as “highly stressing”. Zero was reserved for cases in which the nurse did not perform the activity in question.

The scale contained 51 items, including the work of the hospital nurse and its analysis groups

the following items into six domains: relationship with other units and supervisors (A); adequate operation of the unit (B); personnel management (C); nursing care provided to the patient (D); coordination of activities (E) and work conditions (F).

This questionnaire was validated in a previous work by Bianchi.⁽⁸⁾ Cronbach's alpha was calculated, resulting in a total of 0.8595 for all items of each domain, the coefficients vary from 0.7305 to 0.9419, confirming the reliability of the instrument.

The stressing factors were divided into six areas, namely: relationship with other units and superiors (nine situations); activity related to the adequate operation of the unit (six situations); activities related to personnel management (six situations); nursing care provided to the patient (fifteen situations); coordination of activities (eight situations); work conditions for the performance of the activities by the nurse (seven situations).

The scores were standardized for data analysis, since the total sum of the values attributed by the nurse, in each area, cannot be directly applied, due to the different number in each situation in each area and due to the possibility of each nurse to mark a certain number of responses with zero, which means the non-performance of that activity by the nurse.

For each area, the sum of points of each stressing factor is divided by the total sum of respondents, subtracting the number of respondents who marked zero (not applicable), thus obtaining the score for each stressing factor.

To calculate the score of each area, the score of each stressing factor was added for the determined area, dividing by the total number of situations, then reaching the standardized score for the area.

The total and partial scores by area, after being calculated, were classified as per stress levels, according to the categories: low stress level (≤ 3.0); medium stress level (3.1 to 4.0); alert for high stress level (4.1 to 5.9); high stress level (≥ 6.0).

Data were computed using the software Microsoft Office Excel for databank management, and Statistical Package for the Social Science (SPSS) for Windows version 16.0, to perform statistical calculations, and to elaborate and edit graphics and tables.

The sample was characterized in pictures and tables with relative (percentages) and absolute frequencies (n) of the classes for each qualitative level. For quantitative variables, means and medians were used to summarize information and standard deviations, and minimum and maximum to indicate data variability.

The development of the study complied with national and international ethical guidelines for studies involving human beings.

Results

Regarding sociodemographic characteristics, women represent 90.9% of the people interviewed, the predominant age range was between 20 and 30 years, of which 91% were below 50. Most participants had an average of two to five years of work in the UCI sector (Table 1).

Table 1. Sociodemographic characteristics

Sociodemographic characteristics	n(%)
Gender	
Male	20(90.9)
Female	2(9.1)
Age range	
20 to 30	10(45)
31 to 40	4(18)
41 to 50	6(27)
more than 50	2(9)
Time since graduation	
less than 1 year	2(9)
2 to 5 years	10(45)
6 to 10 years	3(14)
> 10 years	7(32)
Time of work in the unit	
≤ 1 year	3(14)
2 to 5 years	12(55)
> 5 years	7(32)
Post-graduation course	
Yes	18(82)
No	4(18)

Evaluation of stress in ICU nurses (Chart 1).

Chart 1. Characterization of nurses as to stress

	Not applicable	Low stress	Medium stress	High stress
A – Relationship with other units and superiors				
40. Relationship with other units	1	9	6	6
41. Relationship with surgical center	2	7	10	3
42. Relationship with material center	2	4	7	9
43. Relationship with stockroom	4	5	8	5
44. Relationship with pharmacy	2	8	10	2
45. Relationship with maintenance	2	6	9	5
46. Relationship with patient admission/discharge	0	12	6	4
50. Communication with nursing superiors	0	11	6	5
51. Communication with superior administration	3	3	9	7
B- Activities related to the adequate operation of the unit				
1. Calculation of the material to be used	3	10	7	2
2. Replacement of material	2	10	6	4
3. Control of the material to be used	1	3	12	6
4. Equipment control	1	4	11	4
5. Request for equipment review and repair	2	3	12	4
6. Survey of quality of materials located at the unit	1	5	11	5
C – Activities related to personnel administration				
7. Control the nursing team	0	4	4	14
8. Distribution of employees	0	8	6	8
9. Supervise team activities	0	2	10	10
12. Perform training	2	1	15	4
13. Evaluate worker's performance	0	4	9	9
14. Elaborate workers' monthly schedule	10	4	2	6
D – Nursing care provided to patient				
16. Admit patients to unit	0	7	7	8
17. Perform physical exam on patients	0	10	7	5
18. Prescribe nursing care	0	13	6	3
19. Evaluate patients' conditions	0	17	5	0
20. Meet patients' needs	0	7	9	6
21. Meet family members' needs	0	0	2	20
22. Instruct patients on self-care	3	5	9	6
23. Instruct family members to provide care to the patient	0	2	10	10
24. Supervise the nursing care delivered	0	2	7	13
25. Instruct patients' discharge	0	12	7	3
26. Provide nursing care	0	8	10	4
27. Respond unit emergencies	0	1	10	11
28. Assist family members of critical patients	0	3	12	7
29. Face patient death	0	2	4	16
30. Provide guidance to critical patients	0	2	05	15

Continue...

Continuation

	Not applicable	Low stress	Medium stress	High stress
E – Coordination of the unit activities				
10. Control care quality	0	2	7	13
11. Coordinate activities	0	2	8	12
15. Elaborate unit's monthly report	9	5	5	3
31. Perform case discussion with employees	10	1	5	5
32. Perform case discussion with multiprofessional team	7	4	6	5
38. Elaborate routines, guidelines and procedures	4	5	9	5
39. Update routines, guidelines and procedures	4	4	7	6
47. Definition of the nurse's functions	0	11	8	3
F – Work conditions for the performance of nursing activities				
33. Participate in the nursing department meetings	3	11	3	5
34. Participate in committees at the institution	9	5	2	6
35. Participate in scientific events	4	11	4	3
36. Unit's physical environment	0	4	9	9
37. Unit's noise level	0	0	8	14
48. Perform bureaucratic activities	0	5	8	9
49. Perform activities with minimum available time	0	1	5	16

In the domain *Relationship with other units and superiors*, medium or very high stress was detected with the following percentages: surgical center (59%), material center (72.7%), stockroom (59%), patient admission/discharge (45.4%), communication with nursing superiors (50%) and with superior administration (72.7%).

As for the domain *Activities related to the adequate operation of the unit*, the stress level detected was also medium or high in the following aspects: control of material to be used (81.8%), equipment control (68.2%), request for equipment review and repair (72.7%), and increasing the quality of material located in the unit (72.7%).

In the domain *Activities related to personnel administration*, the following data have been obtained: control the nursing team (81.8%), perform distribution of employees (63.6%), supervise team activities (90.9%), perform training (86.3%), evaluate employee performance (81.8%) and elaborate monthly schedule of employees (36.4%).

In the domain *Nursing care provided to the patient* a medium or high level of stress was detected, as pointed out by the nurses interviewed in meeting the needs of family members (100%), instruct-

ing patients for self-care (68%), instructing family members on patient care (90.9%), supervising the nursing care provided (90.9%), dealing with the emergencies at the unit (95%), facing patients' death (90.9%), providing guidance to critical patients (90.9%).

In the domain *Coordination of the unit's activities*, medium or very high stress was detected with the following percentages: control care quality (90.9%), coordinate activities (90.9%).

For the domain *Work conditions for the performance of nursing activities*, the stress level verified was medium or very high in the following items: unit's physical environment (81.8%), unit's noise level (100%), perform bureaucratic activities (77%), perform activities with minimum available time (95%).

Discussion

The findings in this study have shown that most nurses consider the activities performed at the intensive care unit as stressing, which confirms a study stating that the characteristics of the intensive

care unit qualify the nurses at that sector if not as the most stressed, then as equally stressed as emergency nurses.⁽⁹⁾

The intensive care unit is a sector that continuously assists critical patients, where the professional experiences anxiety towards the unit's emergencies and the patient's death, favoring stress. The nurse assumes an attitude of constant alert due to the typical characteristics of the sector's routine services.

The attempts to improve work at the intensive care unit are important, factors such as an increase in the number of employees and physical structure allow faster access to materials and equipment in emergency cases, and, at last, ways to lower noise levels at the unit.

One study corroborates this finding stating that certain aspects are considered strong stressing factors, such as: performing tasks with minimum time available, assisting family members of critical patients, meeting the needs of family members and facing death.⁽¹⁰⁾ The most stressing point observed in this study was the domain regarding work conditions for the performance of the nursing work, followed by the domain activities related to personnel administration and coordination of the unit's activities, in decreasing order, which agrees with the present study, since the prevalence of stressing points were found in the domain work conditions for the performance of the nursing activities, activities related to personnel management and nursing care provided to the patient.

Based on this study, nurses may be able to recognize stressing factors by applying the Bianchi scale, and additionally they can provide their own perspectives to the hospital regarding the stressing factors it generates for its employees.

The nurse is a professional under stressing work conditions, who provides care to stressing sectors, such as the intensive care unit, both due to work load and by the specificity of tasks. They have to constantly deal with deaths, emergency situations, control of materials used and equipment, meet the needs of family members, perform activities within a limited amount of time available, deal with the lack of personnel and material, constant noise from the machines, suffering and anguish of family members.

The nursing professional has to know and understand the various situations that appear during a hospitalization in the intensive care unit, and must not be limited only to the cure or the palliative care of patients without being aware that behind that person there are many more who are involved and suffering with the situation.

In the intensive care unit, the nurse must have the minimum conditions of material and personnel to dedicate him or herself to an effective care for the intermediate events, which are very common in that sector.

This study is expected to contribute to sensitize administrators and professionals in the health areas who work in ICUs to develop strategies to minimize stressing factors and improve nursing care, thus providing a humanized and embracing work environment for professionals, patients and family members.

Conclusion

The nurses have presented higher stress levels in the activities related to work conditions to perform nursing activities and those related to personnel administration.

Collaborations

Monte PF and Lima FET contributed to the conception of this project, analysis and interpretation of data; Neves FMO and Studart RMB contributed to the relevant critical review of the study intellectual content. Dantas RT participated in the final version of the study to be published.

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