

LEVEL OF STRESS IN NURSING PROFESSIONALS OF A SURGICAL CENTER

Nível de estresse entre profissionais de enfermagem em um centro cirúrgico

Nivel de estrés en los profesionales de enfermería en un centro quirúrgico

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ABSTRACT: Objective: To assess the level of stress of nursing professionals in a surgical center. **Method:** This is a descriptive, exploratory study with a quantitative approach, based on the Bianchi Stress Scale to assess a sample of 50 participants. **Results:** Females were predominant among nurses (100%) and nursing technicians (90.7%), aged between 31 and 50 years (76%), with more than 16 years of training (64%) and working time in the operating room above 16 years (34%). Nurses had a medium stress score in all domains, with emphasis on activities related to personnel administration (score 4.47), while among nursing technicians, a low level of stress was more common, except for the medium level in activities related to the functioning of the unit (score 3.1). **Conclusion:** Nurses had a medium level of stress, while technicians had a low level of stress. It is important to seek strategies for coping with administrative management problems in the case of nurses, and the operation of the surgical center for nursing technicians.

Keywords: Nursing, team. Stress, psychological. Surgicenters.

RESUMO: Objetivo: Avaliar o nível de estresse entre profissionais de enfermagem em centro cirúrgico. **Método:** Trata-se de estudo descritivo, exploratório, com abordagem quantitativa, que utilizou a Escala Bianchi de Stress para avaliar uma amostra de 50 participantes. **Resultados:** Houve predomínio do sexo feminino entre enfermeiros (100%) e técnicos de enfermagem (90,7%), da faixa etária entre 31 e 50 anos (76%), do tempo de formação superior a 16 anos (64%) e do tempo de atuação no centro cirúrgico acima de 16 anos (34%). Os enfermeiros apresentaram escore médio de estresse em todos os domínios, com destaque para atividades relacionadas à administração de pessoal (escore 4,47), enquanto entre os técnicos de enfermagem predominou o baixo nível de estresse, com exceção do médio nível nas atividades de funcionamento adequado da unidade (escore 3,1). **Conclusão:** Os enfermeiros destacaram-se pelo médio nível de estresse, enquanto os técnicos pelo baixo nível de estresse. Destaca-se a necessidade de buscar estratégias de enfrentamento dos problemas de gestão administrativa, no caso dos enfermeiros, e de funcionamento do centro cirúrgico, para os técnicos de enfermagem. **Palavras-chave:** Equipe de enfermagem. Estresse psicológico. Centros cirúrgicos.

RESUMEN: Objetivo: Evaluar el nivel del estrese entre los profesionales de enfermería en centro quirúrgico. **Método:** Es un estudio descriptivo, exploratorio, con enfoque cuantitativo, que utilizó la Escala Bianchi de Stress para evaluar una muestra de 50 participantes. **Resultados:** Predominó el sexo femenino entre enfermeras (100%) y técnicos de enfermería (90,7%) con edades comprendidas entre 31 y 50 años (76%), tiempo de formación mayor de 16 años (64%) y tiempo en el centro quirúrgico mayor de 16 años (34%). Las enfermeras habían presentado el puntaje medio del estrese en todos los dominios, con la prominencia para las actividades relacionadas con la administración de personal (puntaje 4.47), mientras que, entre los técnicos de enfermería, predominó el nivel bajo del estrese, con la excepción del nivel medio del estrese en las actividades del funcionamiento adecuado de la unidad (puntaje 3.1). **Conclusión:** Las enfermeras se destacaron por su nivel medio de estrés, mientras que los técnicos, por su bajo nivel de estrés. Se destaca la necesidad de buscar estrategias para la confrontación de los problemas de la gerencia administrativa, en el caso de las enfermeras, y del funcionamiento del centro quirúrgico, para los técnicos de enfermería. **Palabras clave:** Grupo de enfermería. Estrés psicológico. Centros quirúrgicos.

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INTRODUCTION

Currently, in the labor world, given the challenges of industrial progress, globalization, technological development and virtual communication, health professionals are exposed to situations that go beyond skills and capacities developed. As a result, stress can cause biopsychosocial changes in human beings, harming their health, productivity and relationships with relatives and the social circle¹.

Stress can be defined as a general wear of the body caused by pressure or accumulation of psychophysiological pressures, motivated by a stressor, which leads the individual to an imbalance in homeostasis and exposes them to situations that irritate, excite or frighten them²⁻⁵.

Nursing is the profession of caring, and professionals are directly close to patients and their relatives, so they deal with suffering, pain and death daily³. In addition to that, these professionals are exposed to chemical, physical and biological agents in their work environment, which causes tension, anxiety and fear. Occupational stress is also related to high work demands, which result in reduced productivity and quality of work, increased rates of absenteeism and work accidents, and higher turnover of professionals⁵⁻⁷.

Nursing professionals working in the surgical center are highly predisposed to the incidence of stress because they perform their activities in a closed environment, with many risks, different routines, high level of technical demand and productivity. In the perioperative period, these professionals must always be attentive while monitoring the patient's health status and prepared to deal with possible complications. In addition, they forecast and provide all resources to be used during the procedures and support the other professionals in the team³.

However, the relevance of this study stems from the need to recognize the domains of professional practice that generate a greater load of stress on the nursing staff of a surgical center, providing an opportunity to intervene with measures to cope with stressful situations⁸.

OBJECTIVES

- To assess the level of stress of nursing professionals who work in the surgical center of a public hospital in the Federal District (DF);
- To identify the most stressful activities among nursing professionals who work in the surgical center of a public hospital in the Federal District (DF).

METHOD

This is a descriptive, exploratory study with a quantitative approach, carried out with the nursing team of the surgical center of a public hospital in Brasília (FD), whose specialties are the following: ophthalmology, otolaryngology, urology, gynecology, mastology, plastic surgery, vascular, orthopedics and urgency.

The study sample consisted of 7 nurses and 43 nursing technicians from the surgical center of the respective hospital, workers of the morning, afternoon and evening shifts. Nursing residents and professionals who were on vacation or on other legal leaves were excluded from this study.

Data were collected in December 2019 and the Bianchi Stress Scale⁸ was used as instrument, as it aims to measure the level of stress that professionals attribute to each activity performed in their work environment. It is a self-applicable, validated scale composed of two parts:

- sample characterization: biological sex, age, position, work unit, time of work at the unit, work shift, time since graduation, postgraduate courses;
- stressors in the performance of nursing professionals, with 51 items on a Likert scale grouped into six domains. Domain A: relationship with other units and supervisors (nine situations); domain B: proper functioning of the unit (six situations); domain C: nursing staff administration (six situations); domain D: nursing care provided to the patient (fifteen situations); domain E: coordination of activities (eight situations); and domain F: working conditions (seven situations).

The instrument was tested for internal reliability by the Cronbach's Alpha test in the Statistical Package for Social Sciences (SPSS) and obtained, in the total scale, 0.96 (almost perfect reliability) and, in the domains, above 0.70 (substantial reliability), which shows its consistency. As in other studies^{9,10}, the scale was applied to nursing technicians and nurses because it lists activities performed by both categories and because there is the option "does not apply or I do not do it: 0".

For the analysis, data were input to a Microsoft Office Excel spreadsheet and, later on, presented in tables for descriptive analysis of absolute frequencies. The scoring was performed for each domain in the two professional categories (nurses and nursing technicians). By summing the scores of the component items of each domain and dividing the result by the number of items, the average score for each domain

studied was obtained. The range of scores for each domain is 1 to 7, with the standardized stress level scored as 3 or below being considered as low level of stress, between 3.1 and 5.9 as medium level of stress, and 6.0 or above as high level of stress. The zero value is reserved for cases in which the professional does not perform the activity or when it does not apply.

This study was assessed and approved by the Research Ethics Committee of the Health Sciences Education and Research Foundation (CEP/Fepecs), under Opinion No. 3.685.587 and Certificate of Presentation for Ethical Appreciation (CAAE) No. 21152619.9.0000.5553, in compliance with the terms of Resolution No. 466/2012 of the National Health Council¹¹.

RESULTS

Of the total number of participants (n=50) from the surgical center, females (female biological sex) were predominant among both nurse (100%) and nursing technicians (90.7%). The age group between 31 and 50 years old prevailed (76%), followed by those over 50 years old (20.0%), as shown in Table 1.

As for time since their graduation, most had more than 16 years (64%). Regarding the time of experience in a surgical center, most had more than 16 years (56%), followed by 6 to 10 years (24%). As for the time of work in the surgical center of the study institution, 34% had more than 16 years in the house, followed by one year (20%).

Table 1. Profile of nursing professionals from the surgical center who made up the sample.

Variable	Professional category		Total (n=50)
	Nurse (n=7)	Nursing Technician (n=43)	
Age (years)			
20-30	0	2 (4.65%)	2 (4%)
31-40	2 (28.6%)	13 (30.23%)	15 (30%)
41-50	3 (42.8%)	20 (46.51%)	23 (46%)
50+	2 (28.6%)	8 (18.6%)	10 (20%)
Biological sex			
Female	7 (100%)	39 (90.7%)	46 (92%)
Male	0	4 (9.3%)	4 (8%)
Time since graduation (years)			
2-5	0	3 (6.97%)	3 (6%)
6-10	2 (28.6%)	6 (13.95%)	8 (16%)
11-15	0	7 (16.28%)	7 (14%)
>16	5 (71.4%)	27 (62.8%)	32 (64%)
Time of experience in the field (years)			
2-5	0	2 (4.65%)	2 (4%)
6-10	2 (28.6%)	10 (23.25%)	12 (24%)
11-15	0	7 (16.28%)	7 (14%)
>16	5 (71.4%)	23 (53.5%)	28 (56%)
Did not reply	0	1 (2.32%)	1 (2%)
Time in the current job (years)			
<1	1 (14.3%)	9 (20.93%)	10 (20%)
2-5	2 (28.6%)	7 (16.28%)	9 (18%)
6-10	0	6 (13.95%)	6 (12%)
11-15	0	7 (16.28%)	7 (14%)
>16	4 (57.1%)	13 (30.23%)	17 (34%)
Did not reply	0	1 (2.32%)	1 (2%)

Table 2 shows data regarding the level of stress detected in the nursing staff of the surgical center, measured through the Bianchi Stress Scale. In the category of nurses, scores between 3.1 and 5.9 were obtained, characterizing a medium level of stress in all domains studied in the scale. The domain with the highest level of stress detected was “activities related to personnel administration” (C. 4.47), followed by the domains “activities related to the proper functioning of the unit” (B. 4.14), “coordination of activities in the unit” (E. 3.76), “working conditions” (F. 3.54), “relationship with other units and supervisors” (A. 3.39) and “nursing care provided to the patient” (D. 3.17).

The predominant level of stress detected in the professional category of nursing technicians was low in the following domains: “relationship with other units and supervisors” (A. 2.42), “nursing care provided to the patient” (D 2.31), “working conditions” (F. 2.27), “coordination of activities in the unit (E. 0.92) and “activities related to personnel administration” (C 0.48). A medium level of stress was detected among nursing technicians in the domain “activities related to the proper functioning of the unit” (B. 3.1).

Table 3 shows the activities with the highest stress load in each domain of the Bianchi scale. Nurses had a medium

level of stress in all domains, with emphasis on “activities related to personnel administration” (C), with the main activities chosen as the greatest cause of stress: “supervising the team’s activities” (5,28) and “preparing the monthly staff scale” (5.2). In the domain “control of material used” (B), the most stressful items were: “material control” (4.57), “equipment control” (4.42) and “material replacement” (4.33).

For the nursing technicians, the items generating the highest levels of stress in the domain “proper unit functioning” (B) were: “request for revision and repair of equipment” (5.44), “control of equipment” (4.66) and “survey of amount of material in the unit” (4.31).

DISCUSSION

Data in this study show the predominance of female participation (female biological sex) in the nursing category, just like in other studies^{2,3,6,7,9,12-16}. This is consistent with data from the Federal Council of Nursing (Cofen), which states that, in 2015¹⁷, nursing professionals are predominantly female (84.6%), and highlights the growth of the male population in recent years.

Table 2. Level of stress among nursing professionals from the surgical center, according to professional category.

Domains	Bianchi Stress Scale*	
	Nurse	Nursing Technician
Relationship with other units and supervisors (A)	3.39	2.42
Activities related to the proper functioning of the unit (B)	4.14	3.1
Activities related to personnel management (C)	4.47	0.48
Nursing care provided to the patient (D)	3.17	2.31
Coordination of activities in the unit (E)	3.76	0.92
Work conditions (F)	3.54	2.27

*Bianchi Stress Scale: equal to or below 3.0 (low stress level); between 3.1 and 5.9 (medium level of stress) and equal to or above 6.0 (high level of stress).

Tabela 3. Atividades mais estressoras nos domínios da Escala Bianchi de Stress, segundo categoria profissional.

Category	Domain	Situation	Mean*
Nurse	C - Personnel management	Supervising team activities	5.28
		Developing monthly staff schedule	5.20
	B - Proper functioning of the unit	Controlling material used	4.57
		Controlling equipment used	4.42
		Material replacement	4.33
Nurse technician	B - Proper functioning of the unit	Request for equipment maintenance and repair	5.44
		Equipment control	4.66
		Survey of material in the unit	4.31

*Bianchi Stress Scale: equal to or below 3.0 (low stress level); between 3.1 and 5.9 (medium level of stress) and equal to or above 6.0 (high level of stress).

Nursing professionals perform their functions at work in addition to their role as a mother and a wife at home, becoming overloaded with the accumulation of tasks and attributions that contribute to the emergence of stress¹⁶. In parallel, professional ethics signals for a nurse performing an affective work in constant polishing of moral values, promoting empathy with the experiences of the patient¹⁸.

The age group 41-50 years old prevailed among the nursing categories. Studies^{7,15} state that older professionals have greater self-confidence and security to perform their functions and face the stressors of daily work. However, a research³ indicated the opposite: aging, physiological wear and the emergence of non-communicable chronic diseases would be associated with the inadequacy of these professionals to the sector's routines, making them more vulnerable to stress.

Regarding the time since graduation and the length of experience in the area, most reported having more than 16 years of background and more than six years acting in a surgical center. Therefore, it is a very experienced team of surgical nursing. It is noteworthy that the length of experience in the area influences coping with stress, contributing to the improvement of professionals and preparing them to face situations that require specialized scientific knowledge, skill and safety in the work environment^{9,12}.

Among nurses, the domains with the highest levels of stress were domain C, "activities related to personnel management", and domain B, "activities related to the proper functioning of the unit", which is in line with the results of similar studies^{9,12}. Regarding domain C, among the most stressful activities and items, "supervising the team's activities" and "preparing the monthly staff scale" stood out. This domain is related to administrative nursing activities that require responsibility, empathy, and dedication on a daily work schedule, monthly work schedule, vacation schedule, surgery map, and management of material resources and equipment in the sector.

Interpersonal relationships are considered a complex aspect that contributes to the emergence of stress among professionals^{3,9}. A study¹⁹ carried out with professional nurses who worked in a surgical center reported a low professional satisfaction index; "professional interaction" was the most relevant component and "professional status" the least relevant. It is noteworthy that, to minimize the problems inherent to interpersonal relationships, one must encourage teamwork and move away from individualization and competitiveness for a pleasant interaction, which contributes to the prevention of stress and to an increase in the quality of life at work⁹.

Nursing technicians had a medium level of stress only in domain B, related to the "adequate functioning of the unit", and a low level of stress in the others. However, another similar study³ did not show stress in most nursing professionals, despite the surgical center being a sector that contributes to its emergence.

As for activities related to "proper functioning of the unit" (domain B), there was a medium level of stress for both categories, the most stressful situations being: "control of material used", "control of equipment", "replacement of material", "request for equipment maintenance and repairs" and "survey of existing material". The scarcity of materials and the inadequate functioning of equipment cause physical and psychological wear to the nursing team and, consequently, cause stress because they are concerned with the quality of care provided to surgical patients¹⁵.

The exposure of professionals to potentially stressful situations can trigger states of stress, interfering with the performance of activities and the quality of care provided^{2,15}. Nursing professionals must work aligned and as a team in order to ensure the proper functioning of the unit, patient safety, and less exposure to stressors⁹.

The lack of comparison between stress levels in different care profiles in the surgical center is a limitation of this study. However, even in the presence of stressful factors, the nursing team, in its management and care role, contributes decisively to safe care practices in the surgical center.

CONCLUSIONS

The analysis of the results allowed us to conclude that the nurses participating in the study had a medium level of stress in all the studied domains, while among the nursing technicians, a low level of stress predominated, with the exception of the medium level of stress related to the domain "adequate functioning of the unit". The most stressful domain among nurses is related to personnel management and the proper functioning of the unit, such as team management activities and bureaucratic activities related to the surgical environment. Regarding the operation of the unit, forecasting, providing and monitoring materials and equipment are the most exhausting and stressful tasks, probably because professionals routinely deal with the scarcity of resources and low-quality equipment.

The results presented in this study are expected to make professionals and the management team aware of the factors that cause stress and pave the way for strategies to cope with situations that generate stress among nursing professionals in surgical centers.

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