

Occupational stress among emergency and urgent care nurses at a public hospital in Teresina, Piauí, Brazil

Estresse ocupacional dos enfermeiros de urgência e emergência de um hospital público de Teresina (PI)

Rosane da Silva Santana¹, Francisco Lucas de Lima Fontes², Maurício Jose de Almeida Moraes², Gildene da Silva Costa², Ronnara Kauênia da Silva², Cynthia Soares de Araújo², Abigail Laísia Belisário da Silva², Rosa Irlania do Nascimento Pereira²

ABSTRACT | **Background:** The number of emergency and urgent care providers with occupational stress is quite large and is a source of concern for hospital managers. Nurses are the professional category most affected among workers exposed to occupational stress. **Objective:** To investigate the level of occupational stress among emergency and urgent care nurses at a public hospital in Teresina, Piauí, Brazil, by means of the Bianchi Stress Questionnaire. **Methods:** Cross-sectional descriptive study conducted from November 2016 through January 2017 at a public emergency and urgency care hospital in Teresina. The sample comprised 20 nurses allocated to the department red, yellow, green and stabilization zones. Data were collected by means of the Bianchi Stress Questionnaire (BSQ), fed to a database and processed using software Statistical Package for the Social Sciences version 23.0. Analysis consisted of descriptive statistics. **Results:** Participants were predominantly female (75%) within age range 31 to 40 years old (65%); most had graduated 6 to 10 years earlier (60%), 90% had attended graduate education and 70% had worked at the department for more than 6 years. The global stress score ranged from 2.4 to 5.25, mean 3.46; the highest stress level corresponded to BSQ domain A. **Conclusion:** Interpersonal relationships in emergency and urgent care departments might be a cause of occupational stress among workers.

Keywords | emergencies; nurses, male; occupational stress; hospitals.

RESUMO | **Introdução:** Nos serviços de urgência e emergência, o número de profissionais acometidos pelo estresse ocupacional é bastante elevado e tem gerado grande preocupação para a gestão hospitalar. Entre os profissionais de saúde com maior exposição ao estresse ocupacional, os enfermeiros encontram-se como os mais afetados. **Objetivo:** Verificar o nível de estresse ocupacional dos enfermeiros pela Escala Bianchi na unidade de urgência e emergência de um hospital público de Teresina, Piauí. **Métodos:** Estudo transversal descritivo realizado nos meses de novembro de 2016 a janeiro de 2017 em um hospital público de urgências e emergência de Teresina, Piauí. A amostra foi composta de 20 enfermeiros que exercem suas funções nas salas vermelha, amarela, verde e estabilização. Os dados foram coletados utilizando a Escala Bianchi de Stress. Os dados foram inseridos em bancos de dados e processados no software Statistical Package for the Social Sciences, versão 23.0, e foram calculadas estatísticas descritivas. **Resultados:** A amostra foi eminentemente feminina (75%), com faixa etária entre 31 e 40 anos (65%), sendo que a maioria apresentava entre 6 e 10 anos (60%) de graduado em enfermagem, 90% com pós-graduação e 70% desenvolvem as atividades na unidade de emergência há mais de 6 anos. Os enfermeiros obtiveram escore individual de estresse entre 2,4 e 5,25. O nível médio de estresse com escore global foi 3,46 com destaque ao domínio A. **Conclusão:** Foi possível constatar que as relações interpessoais nos serviços de urgência e emergência podem ser uma das causas do estresse ocupacional entre os profissionais.

Palavras-chave | emergência; enfermeiros; estresse ocupacional; hospital.

¹Graduate Program in Collective Health, Universidade Federal do Ceará – Fortaleza (CE), Brazil.

²Undergraduate nursing course, Faculdade Maurício de Nassau – Teresina (PI), Brazil.

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INTRODUCTION

The activities at emergency and urgent care departments demand specialized competencies from health-care providers, particularly as a function of the need to deliver fast and efficient care¹. Occupational stress might be triggered by unfavorable working conditions in healthcare facilities. High turnover rates, the demands associated with the care of severely ill patients, excessive workloads, fast pace of work, the complexity of activities and staff shortage might cause significant psychological and physical disorders among health-care providers².

A study found that among the categories of health-care professionals with highest exposure, nurses are the most affected by occupational stress. Nurses are charged of direct patient care 24 hours a day, their activities ranging from proper nursing care to accompanying patients during medical procedures³. Nurses are charged of the coordination and supervision of services, their tasks including planning, supply provision, organizing and leading staffs, coordinating care delivery and performing proper nursing procedures. Thus they have an outstanding role in healthcare teams, which also includes developing strategies to ensure high-quality care⁴.

The number of emergency and urgent care professionals affected by occupational stress is quite large, this being a cause of concern for hospital managers. The most common manifestations of occupational stress among nurses are poor performance at work, despondency, frequent irritation and absenteeism. Most severe conditions include depression, metabolic syndrome, chronic fatigue, sleep disorders, diabetes and panic syndrome, among others⁵.

Occupational stress might be defined as a feeling of tiredness and of physical or emotional exhaustion triggered by work overload, daily tension or interpersonal relationships at work, as well as by changes in the workplace⁶.

All stress symptoms are reversible and the affected nurses might be fully healed when adequate measures are implemented to cope with stressful situations⁷. Accurate knowledge of the stages of occupational stress is needed to implement preventive measures. The first

is the stage of alarm, characterized by tiredness in the performance of any activity, the affected individuals feel they must spend much effort and energy to carry out their tasks. They are in a challenging situation and manifest signs and symptoms such as restlessness, tachycardia, sweating and anxiety⁸.

The second is the stage of resistance, precisely characterized by an increased ability to resist; the body attempts to return to a normal balance, which demands large amounts of energy. This is attended by considerable fatigue without apparent cause and lack of concentration in any task. Exhaustion proper develops in the third stage, which follows when the amount and intensity of stressors persist. This is the most complex stage of occupational stress, because the affected individuals manifest more serious disorders, such as depression and burnout. Their quality of life is impaired, impacts extending also to their personal and professional lives⁴.

Physical and emotional exhaustion might occur under many circumstances. As a function of the large number of emergency and urgent care nurses who are affected by occupational stress, the aim of the present study was to investigate the levels of occupational stress among emergency and urgent care nurses at a public hospital in Teresina, Piauí, Brazil by means of the Bianchi Stress Questionnaire.

METHODS

The present cross-sectional descriptive study was conducted from November 2016 through January 2017 at a public emergency and urgent care hospital in Teresina. This is the single referral hospital for high-complexity trauma and orthopedic care in the state of Piauí. It provides medium- and high-complexity care to about 6,000 patients per month and comprises 368 inpatient and 52 observation beds.

There are 23 nurses allocated to the emergency and urgent care department, distributed across the red (10 beds), yellow (nine beds), green (24 beds) and stabilization (four beds) zones. The work schedule includes three shifts, to wit, morning, afternoon and night. The process for care delivery complies with the

risk classification standards established in the Ministry of Health National Humanization Policy⁹.

The study population consisted of 20 nurses allocated to all four zones of the emergency and urgency care department. Participants were nurses with at least six months in the job, this being the minimum time needed to adjust to the work routine. Nurses on sick leave or vacation at the time of data collection were excluded.

The participants were interviewed at a secluded room in the hospital according to their availability. The instrument used for data collection was the Bianchi Stress Questionnaire (BSQ) developed and validated by Bianchi. This is a self-report questionnaire designed to measure the level of stress of nurses during their daily tasks in a given hospital department. It comprises two parts, one for sociodemographic characterization of respondents, including information on sex, age, department, length of work in the current department, time since graduation and graduate education. The second part investigates stressful events in the daily routine of nurses¹⁰.

This second part comprises 51 items distributed across six domains (A, B, C, D, E and F) which scores range from 1.0 to 7.0. The item scores are used to calculate mean domain scores and thus identify that which exhibits the highest level of stress¹⁰. Table 1 describes the distribution of items across domains. For each domain, scores are categorized as follows: ≤ 3.0 — low stress level, 3.1 to 5.9 — medium and ≥ 6.0 — high.

Statistical treatment included descriptive and inferential analysis. The data were entered twice on a

Microsoft Excel spreadsheet; two datasets were thus generated to control for typing errors. Analysis was performed with software *Statistical Package for the Social Sciences* version 23.0. The results were expressed as absolute (n) and relative (%) frequencies. The internal consistency of BSQ was tested by means of Cronbach's alpha, with values over 0.7 defined as satisfactory.

To make the results clearer, the data are presented in tables and graphics. The mean BSQ domain scores are depicted in a graph. For the domain with the highest score, we analyzed the items which contributed to this outcome.

The study was approved by the research ethics committee of Getulio Vargas Hospital, ruling no. 1,775,582, CAAE 60410116.5.0000.5613. It rigorously complied with the ethical principles for research involving human beings established in the National Health Council Resolution no. 466, from 12 December 2012. To ensure the participants' anonymity, the questionnaire forms were encoded by means of sequential numbers. Three eligible subjects refused participation; the ones who agreed to participate signed an informed consent form.

RESULTS

Most participants were female (75%) with age 31 to 40 years old (65%). About 60% of the sample had graduated six to 10 years earlier and 90% had attended graduate education. About 40% of the participants were

Chart 1. Distribution of items across Bianchi Stress Questionnaire domains. Teresina, Piauí, Brazil, 2017 (n=20).

Domains		Items
A	Relationship with other departments and supervisors	40, 41, 42, 43, 44, 45, 46, 50, 51
B	Activities related to satisfactory department operation	1, 2, 3, 4, 5, 6
C	Activities related to personnel management	7, 8, 9, 12, 13, 14
D	Nursing patient care	16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30
E	Coordination of department activities	10, 11, 15, 31, 32, 38, 39, 47
F	Working conditions	33, 34, 35, 36, 37, 48, 49.

Source: adapted from Bianchi¹⁰.

allocated to the green zone and 70% had worked at the emergency and urgent care department for more than six years (Table 2).

Cronbach's alpha for BSQ was 0.892, which is satisfactory as the cutoff point is 0.7. The mean stress score ranged from 1.0 to 5.25 (maximum possible score: 7.0). About 70% of the participants exhibited a medium level of stress (Chart 1).

The highest mean score — representing the highest level of stress — corresponded to domain A (relationship with other departments and supervisors), 3.85. The mean scores on domains D (patient care) and F (working conditions) were 3.01 and 3.80, respectively, as shown in Graphic 1.

In regard to the item contribution to the domain with the highest mean score (domain A, relationship with other departments and supervisors) the highest score corresponded to “communication with the higher management,” 5.25, followed by “relationship with the warehouse staff,” 4.45, and “communication with nursing supervisors,” 4.35 (Chart 2).

DISCUSSION

According to Bianchi¹⁰, any analysis of work based on global stress scores provides an overall view of the level of stress of workers in the workplace and according to the tasks they perform. Differently, analysis based on BSQ domains enables the comparison of different stressors at work. The participants in the present study exhibited a medium level of stress, the global score being 3.46 and thus similar to that found in other studies^{11,12}.

Some authors observe that the high levels of stress to which healthcare providers are subjected is due to aspects continuously present and experienced in their daily work routine, such as suffering, death, long working hours, institutional demands and interpersonal relationships with coworkers, patients and families, among others¹³.

The work of nurses is different from that of other healthcare professionals. They do not only provide direct integral patient care, but are also responsible for managing care delivery, which includes coordinating

Table 1. Sociodemographic, occupational and educational characteristics of the study participants (n=20). Teresina, Piauí Brazil, 2017.

Variables	n (%)
Sex	
Female	15 (75)
Male	5 (25)
Age range (years old)	
20 to 30	6 (30)
31 to 40	13 (65)
41 to 50	1 (5)
Department zone	
Stabilization	4 (20)
Green	8 (40)
Yellow	5 (25)
Red	3 (15)
Time since graduation (years)	
Less than 1	1 (5)
2 to 5	5 (25)
6 to 10	12 (60)
11 to 15	2 (10)
Graduate education	
Yes	18 (90)
No	2 (10)
Length of work at the department (years)	
6 months to 1 year	1 (5)
2 to 3	2 (10)
4 to 5	3 (15)
More than six	14 (70)

Table 2. Stress level of emergency and urgent care nurses according to the global score on the Bianchi Stress Questionnaire (n=20). Teresina, Piauí, Brazil, 2017.

Stress level	n	%	Mean
Low	5	30	0.25
Medium	15	70	0.75
High	0	0	0
Total	20	100	0.10

care and managerial tasks, planning and provision of supplies, organizing and leading teams and coordinating the full care delivery process. As a function of the characteristics of their job, nurses have an outstanding role in healthcare teams, which enables them to develop strategies to potentiate teamwork and organize the work environment to improve the quality of care. As a result, the nursing profession is considered to be highly vulnerable to stress¹⁴.

Age range 31 to 40 years old exhibited a slight predominance among the participants in the present study. Also other studies reported similar findings^{15,16}. It is worth noticing that younger professionals exhibit lower levels of stress compared to those above 40 years of age in association with natural aging, which reduces the tolerance to high workloads¹⁷.

Most participants were female, which predominance was also reported by other authors and thus corroborates the known profile of Brazilian nurses¹⁸⁻²¹. According to a study conducted in 2013 and made available by the Federal Nursing Council, 86.2% of the Brazilian nurses are female²². In addition to having to deal with the organization of work, female nurses also manage their personal lives. This condition of multiple tasks and double burden — paid job and household chores and child care — might be a cause of stress⁵.

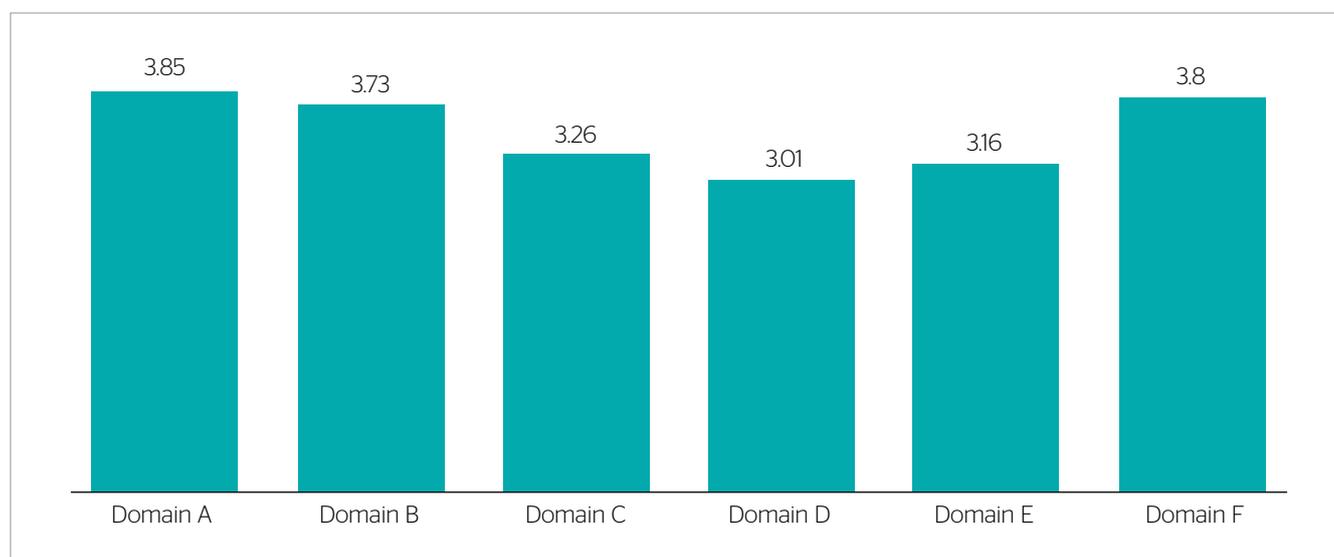
Most of the analyzed population of nurses had graduated six to 10 years earlier and 70% had worked

in the current department for more than six years. Some studies indicate that workers who remain long periods of time in a same department might exhibit high levels of stress, mainly as a function of the trivialization of the work dynamics²³.

Based on analysis of work variables, a study performed in 2013 confirmed that exhaustion is more frequent among workers with shorter length in the current organization. In addition, it also found that disappointment

Chart 2. Domain A items associated with higher or lower stress scores. Teresina, Piauí, Brazil, 2017 (n=20).

DOMAIN A - Relationship with other departments and supervisors	Mean
51-Communication with the higher management	5.25
43-Relationship with the warehouse staff	4.45
50-Communication with nursing supervisors	4.35
45-Relationship with the maintenance staff	4.25
42-Relationship with the supply department staff	3.95
44-Relationship with the pharmacy staff	3.75
40-Relationship with other departments	3.25
41-Relationship with the surgical department staff	2.75
46 -Relationship with the admission/discharge department	2.40



Graphic 1. Mean scores on Bianchi Stress Questionnaire domains. Teresina, Piauí, Brazil, 2017 (n=20).

at work and low social support are related to exhaustion at work²⁴.

About 90% of the participants had attended specialization courses, which facilitates interactions in the workplace and points to the relevance of continuous updating by means of continuing and permanent education.

Continuing education consists of learning after graduation, has definite duration and is based on traditional teaching methods. The so-called permanent education, in turn, is necessary for the work process²⁵. Emergency and urgent care nurses must have the technical-scientific and practical knowledge required to make fast and concrete decisions and thus convey security to their team and reduce the risks to the patient's life²⁶.

Relative to domain A, items #51 (communication with the higher management), #43 (relationship with the warehouse staff) and #50 (communication with nursing supervisors) were the main causes of occupational stress. Interpersonal relationships — with supervisors, in particular — were described as stressors in several studies, in association or not with the feeling of lack of professional recognition⁶.

Domain A also stood out in a study conducted in 2015²⁷, however, the items with the highest levels of stress were #45 (relationship with the maintenance staff) and #44 (relationship with the pharmacy staff). In another study, from 2011²⁸, relationship with the maintenance staff was the factor associated with the highest level of stress. It is thus evident that relationships with other departments should be improved to reduce the level of stress at work.

Interpersonal relationships might be a major cause of stress. Interpersonal relationships in the workplace should involve empathy, self-esteem, cordiality, ethical behavior and mainly communication with employees in other departments. Nurses and other categories of professionals should promote actions to improve the process of communication and minimize individual differences²³. The organization of services and good interpersonal relationships in the workplace are crucial to reduce the levels of occupational stress and its consequences, since

how employees are treated reflects on their attitude within the work process²⁹.

Aspects such as pleasure at work, good professional relationships, effectiveness, high-quality care and healthy working conditions are factors which contribute to increase motivation among nurses²⁴.

While occupational stress has been investigated for various nursing fields, this profession is considered stressful as a whole. Reducing stressors does not only depend on nurses and their teams, but also on the higher management³⁰.

Discussing the working conditions to which emergency and urgent care nurses are exposed is necessary to prevent or minimize problems. Some relevant means include individual changes of behavior, flexibilization of organizational and collective regulations and achieving higher job satisfaction, all of which are needed for the purpose of stress control¹¹.

CONCLUSION

The participants in the present study exhibited a medium level of stress. The conditions most likely to cause occupational stress involved the relationships with other departments and supervisors. As concerns interpersonal relationships, those involving the higher management and warehouse staff stood out.

The results show that interpersonal relationships in emergency and urgent care departments might be a cause of occupational stress. Given that work in this setting demands effective care actions, strategies should be implemented to solve or minimize conflict arising from interpersonal relationships. Effective communication and individual skills are relevant tools to manage conflict and necessary to improve interpersonal relationships.

We hope the present study will contribute for healthcare professionals and managers, especially at emergency and urgent care departments, to develop mechanisms to improve relationships among professionals and thus reduce the harm caused by occupational stress and mainly raise the awareness of and the ability to cope with stressors.

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Correspondence address: Rosane da Silva Santana - Universidade Federal do Ceará, Programa de Pós-Graduação em Saúde Coletiva, Faculdade de Medicina - Rua Prof. Costa Mendes, 1.608, bloco didático, 5º andar - CEP: 60430-160 - Fortaleza (CE), Brazil - E-mail: rosane_santana5@hotmail.com