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RESEARCH ARTICLE (ORIGINAL)

The main stressors perceived by emergency nurses: A cross-sectional study

Principais fatores indutores de stresse percecionados em enfermeiros de urgência: Um estudo transversal

Principales factores inductores de estrés percibidos por el personal de enfermería de urgencias: Estudio transversal

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Abstract
Background: In the emergency department, several factors may increase the stress levels of nurses, with potential consequences for their professional and personal lives.
Objectives: To assess perceived stress in a sample of emergency nurses from a hospital center in northern Portugal; to identify the main stressors perceived in the sample; to examine the relationship between perceived stress and sociodemographic and professional characteristics.
Methodology: This was a cross-sectional study. The ESPE - Nurses' Occupational Stress Scale was used, consisting of 34 items divided between seven factors and three domains.
Results: A total of 54 nurses participated in the study. The mean total score of the ESPE - Nurses' Occupational Stress Scale was 80.94 ± 11.95, well above the minimum possible score (= 34). Workload and death were the main perceived stressors. The variable education also showed significant differences, as nurses with a master's degree had higher perceived stress scores in factors VI, III, V and in the total scale.
Conclusion: The results allow the development of individual and organizational strategies aimed at addressing the main stress-inducing factors in emergency nurses.

Keywords: occupational stress; nurses; emergency nursing; emergency service, hospital

Resumo
Enquadramento: No serviço de urgência (SU) o stresse em enfermeiros pode ser incrementado por distintos fatores, com repercussão na sua esfera profissional e pessoal.
Objetivos: Avaliar o stresse percecionado numa amostra de enfermeiros do SU de um centro hospitalar do norte de Portugal; identificar os principais fatores indutores de stresse percecionados na amostra; analisar a relação entre o stresse percecionado e as características sociodemográficas/profissionais.
Metodologia: Estudo transversal. Recorreu-se à Escala de Stresse Profissional dos Enfermeiros (ESPE), composta por 34 itens que abarcam sete fatores/três domínios.
Resultados: Participaram no estudo 54 enfermeiros. Obteve-se uma pontuação média de 80,94 ± 11,95 no global da ESPE, bem acima do mínimo possível (= 34). A carga de trabalho e a morte constituíram os principais fatores indutores de stresse percecionados. Constataram-se dissemelhanças significativas em maior número com as habilitações académicas. Os mestres apresentaram pontuações mais elevadas de stresse percecionado nos fatores VI, III, V e no global.
Conclusão: Os resultados permitem delinear estratégias ao nível individual e organizacional, a direcionar para as áreas geradoras de maior stresse.

Palavras-chave: stresse ocupacional; enfermeiros; enfermagem em emergência; serviço hospitalar de emergência

Resumen
Marco contextual: En los servicios de urgencias (SU), el estrés de los enfermeros puede verse incrementado por diversos factores, con repercusiones en su esfera profesional y personal.
Objetivos: Evaluar el estrés percibido en una muestra de enfermeros de urgencias de un centro hospitalario del norte de Portugal; identificar los principales factores inductores de estrés percibidos en la muestra; analizar la relación entre el estrés percibido y las características sociodemográficas/profesionales.
Metodología: Estudio transversal. Se utilizó la Escala de Estrés Profesional de los Enfermeros (ESPE), que consta de 34 ítems que abarcan siete factores/tres dominios.
Resultados: Participaron en el estudio 54 enfermeros. Se obtuvo una puntuación media de 80,94 ± 11,95 en el global de la ESPE, muy por encima del mínimo (= 34). La carga de trabajo y la muerte fueron los principales factores de estrés percibidos. Se encontraron diferencias significativas en mayor número con las titulaciones académicas. Los másteres presentaron puntuaciones de estrés más altas en los factores VI, III, V y en general.
Conclusión: Los resultados permiten esbozar estrategias a nivel individual y organizativo, dirigidas a las áreas que generan más estrés.

Palabras clave: estrés laboral; enfermeros; enfermería de urgencias; servicio de urgencias hospitalario

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Introduction

Stress is globally recognized as a risk factor that can affect the health and safety of workers (Bani-Issa et al., 2020). Hospitals are inherently stressful for a variety of reasons, including those related to patients and their families, the work environment, and unplanned changes in work routines and schedules, among others (Correia, 2020). Within hospitals, emergency departments are considered highly stressful environments because they provide immediate assistance to people in critical situations, with the aim of restoring their health and reducing its deterioration. They are highly technologically complex health services, and the specificity of the actions provided to patients at risk of imminent death can cause physical and psychological stress to health professionals (Silva et al., 2021). Therefore, and considering the reality that nurses experience every day when caring for critically ill patients, it is essential to perform the periodic identification and monitoring of the main stress-generating situations in emergency departments, using a data collection tool adapted and validated for the population under study and seeking to corroborate the results obtained by studies in the same field. The results achieved can be used to support the development of strategies to reduce stress levels. Thus, the main objectives of our study were to assess perceived stress in a sample of emergency nurses from a hospital in northern Portugal, to identify the main stressors perceived in the sample, and to examine the relationship between perceived stress and sociodemographic and professional characteristics.

Background

According to Lazarus and Folkman (1984), psychological stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her wellbeing. Two processes mediate this relationship: cognitive appraisals and coping. The World Health Organization (2022) recognizes occupational stress (burnout) as an occupational phenomenon included in the International Classification of Diseases and describes it as a syndrome resulting from chronic job stress that has not been managed successfully. In emergency departments, health professionals must "adapt to a dynamic, multitasking, and ever-changing environment with multiple demands and pressures" (Brazão et al., 2016, p. 14). Every day, emergency nurses face unique stressors, resulting from interactions with patients and their families, high workloads, and feelings of uncertainty about treatments. These stressors can have a negative impact on the physical and mental health of these health professionals (Alomari et al., 2021). For example, Deng et al. (2020) have shown how occupational stress negatively affects nurses' sleep quality. Stress also leads to excessive costs, which are a problem for people, hospitals, and the healthcare system in general. Thus, identifying possible stressors and assessing stress is crucial to properly manage the mental health of professionals who work in emergency departments (García-Tudela et al., 2022). Gray-Toft and Anderson (1981) developed the Nursing Stress Scale (NSS) in the United States to assess stress in nurses. This scientific assessment tool provides results that facilitate the development of strategies to prevent or minimize occupational stress in nurses. It has been adapted and validated in different countries, including Portugal, and has been used in several studies. Pereira (2018) used it to assess the perception of stress in emergency nurses, and to identify the factors and environments that induce stress in the emergency department. Using a sample of 85 nurses from a central hospital in central Portugal, Pereira concluded that workload, death, suffering, inadequate preparation, and uncertainty about treatments were the main stressors affecting his sample. It is worth noting that there are several general scales to assess stress, but having a specific tool for nurses is important in order to design, implement and evaluate interventions to prevent and control occupational stress-inducing factors in nurses (Porcel-Gálvez, 2020).

Research questions

(I) How do emergency nurses from a hospital center in northern Portugal perceive stress when dealing with critically ill patients? (II) What are the main stressors perceived in the sample? (III) What is the relationship between perceived stress and sociodemographic and professional characteristics?

Methodology

A quantitative, descriptive-correlational, cross-sectional study was conducted in a hospital center of northern Portugal during the second half of December 2021. The population included all nurses working in the emergency department of the hospital center. The inclusion criterion was to work in the direct provision of nursing care. The exclusion criteria were not completing at least 80% of the data collection tool and being on leave (parental leave, temporary disability) during the data collection period. Non-probability convenience sampling was used to obtain the data. The self-administered data collection tool was divided into two parts: the first part included questions for the sociodemographic and professional characterization of the sample; the second part included the ESPE - Nurses' Occupational Stress Scale, the Portuguese version of the NSS by Pamela Gray-Toft and James Anderson (1981), translated and adapted for the Portuguese population by Santos and Teixeira (2008). The scale, developed by Gray-Toft and Anderson (1981), consists of 34 items describing situations that have been identified as stressful for nurses in the performance of their duties and includes the following seven factors/ subscales: "Factor I: Death and dying;" "Factor II: Conflict with physicians;" "Factor III: Inadequate preparation to meet the emotional needs of patients and their families;" "Factor IV: Lack of support

from colleagues;" "Factor V: Conflict with other nurses and supervisors;" "Factor VI: Workload;" and "Factor VII: Uncertainty about treatments". It assesses three domains: physical (consisting of factor VI), psychological (consisting of factors I, III, IV, and VII), and social (consisting of factors II and V). Each item is answered on a 4-point Likert scale measuring the frequency of situations experienced (1 = *never*; 2 = *occasionally*; 3 = *frequently*; 4 = *very frequently*). The minimum possible score on the scale is 34 points and the maximum is 136 points (Santos and Teixeira, 2008). In addition to the total score, it is possible to determine the score for each factor/subscale, resulting from the sum of the respective items. The dependent variable corresponds to perceived stress, while the independent variables correspond to sociodemographic variables (sex, age, marital status and education) and professional variables (professional category, length of professional experience as a nurse, length of professional experience as a nurse in the emergency department, type of work contract with the institution and whether or not the nurse works in other institutions). The nurses' perceived stress in relation to the different professional situations was assessed based on the participants' individual and subjective responses to the self-administered questionnaire, as mentioned in studies such as Pereira (2018). In order to comply with ethical procedures, approval was previously requested from the institution where our study was conducted, which sent the data collection tool to its ethics committee. The committee's favorable opinion was provided in a meeting held on December 7, 2021. After receiving approval, the purpose of our study was presented to all nurses and supervisors in the emergency department. Nurses were then invited to participate in our study by completing the data collection tool, which was provided in a sealed envelope. Participation in our study was voluntary and involved signing an informed consent form, which ensured the anonymity and confidentiality of the data. Descriptive statistics were used to process the data, determining the absolute and relative frequencies for all variables, as well as the mean, standard deviation, and minimum and maximum values for the variables of the scale. Inferential statistics were based on the use of non-parametric tests, since the variables did not follow a normal distribution. Normality was calculated using the Kolmogorov-Smirnov test, the Mann-Whitney test for two independent groups, and the Kruskal-Wallis test for variables with three or more groups. The results of these variables were presented based on the average ranking of each group. Statistical analysis was performed at a significance level of $p < 0.05$. The internal consistency of the ESPE - Nurses' Occupational Stress Scale was assessed by calculating the Cronbach's alpha coefficient. The data were processed using the IBM SPSS Statistics software program, version 25.0.

Results

The population of our study consisted of 66 nurses, from which a sample of 54 nurses was obtained. Table 1 shows the sociodemographic and professional characteristics of the sample. The participants were mostly women (68.5%) in the age group 31-40 years (63.0%). Regarding marital status, 53.7% of the sample was married or in a *de facto* union. In terms of education, 40 of the 54 nurses had a bachelor's degree (74.1%) and 14 had a master's degree (25.9%). In terms of professional categories, 38.9% of the sample were nurse specialists (n = 21). With regard to length of work experience, 46.3% of the sample had worked between 11 and 20 years. Regarding the length of professional experience in the emergency department, most participants (n = 33, 61.1%) had worked there for ten years or less. As for the type of work contract, 40 nurses (74.1%) had an open-ended contract. Of the sample, 19 nurses (35.2%) also worked in other health institutions.

Table 1

Sociodemographic and professional characteristics of the nurses in the sample

Sociodemographic Variables	***n***	***%***
Sex		
Female	37	68.5
Male	17	31.5
Age		
21-30	5	9.3
31-40	34	63.0
41-50	8	14.8
51 or over	7	13.0
Marital status		
Single/ Divorced/ Widow(er)	25	46.3
Married/ *De facto* union	29	53.7
Education		
Bachelor's degree	40	74.1
Master's degree	14	25.9
Professional variables	***n***	***%***
Professional category		
Generalist nurse	33	61.1
Nurse specialist	21	38.9
Length of professional experience (years)		
≤ 10 years	16	29.6
11-20	25	46.3
21 or over	13	24.1
Length of professional experience in the emergency department (years)		
<2 years	10	18.5
2-10 years	23	42.6
11-20 years	13	24.1
21 or over	8	14.9
Type of work contract		
Open-ended contract	40	74.1
Fixed-term contract (certain + uncertain)	14 (4+10)	25.9
Works in other institutions		
Yes	19	35.2
No	35	64.8

Note. n = Absolute frequency; % = Relative frequency.

Based on the analysis of the results obtained with the ESPE - Nurses' Occupational Stress Scale (see Table 2), the total scale score had a mean of 80.94 ± 11.95, which is well above the minimum score (= 34). As for the results by factor, in the physical environment domain, "Factor VI: Workload" was considered a potential stressor for nurses (17.54 ± 3.28), as it was above the middle point (equal to 15). In the psychological environment domain, "Factor I: Death and dying" (17.15 ± 2.89) and "Factor VII: Uncertainty about treatments" (11.92 ± 2.39) had the highest scores, corresponding to higher levels of perceived stress, but without exceeding the middle point. The weighted mean showed that factor VI had the greatest weight in perceived stress (2.923 ± 0.547), followed by factor I

(2.449 ± 0.413). In the social environment domain, all factors were below the middle point. In our study, the total scale obtained a Cronbach's alpha of 0.908.

Table 2

Descriptive analysis of the ESPE - Nurses' Occupational Stress Scale (total scale and by factor)

Factors per domain (with the min. and max. value possible for each factor and for the total scale)	**Mean**	***SD***	**Min.**	**Max.**	**Weighted Mean ± *SD***	α
Physical environment						
VI: Workload (6-24)	17.54	3.28	10	24	2.923 ± 0.547	
Psychological environment						
I: Death and dying (7-28)	17.15	2.89	10	25	2.449 ± 0.413	
III: Inadequate preparation to meet the emotional needs of patients and families (3-12)	6.87	1.44	4	10	2.290 ± 0.480	
IV: Lack of support from colleagues (3-12)	6.55	1.42	3	11	2.179 ± 0.475	
VII: Uncertainty about the treatments (5-20)	11.92	2.39	7	17	2.385 ± 0.477	
Social environment						
II: Conflict with physicians (5-20)	11.19	2.22	7	18	2.237 ± 0.443	
V: Conflict with other nurses and supervisors (5-20)	9.74	2.90	5	17	1.95 ± 0.579	
Total ESPE (34-136)	80.94	11.95	54	110	2.38 ± 0.352	0.908

Note. Min = Minimum; Max = Maximum; *SD* = Standard Deviation; α = Cronbach's Alpha; ESPE = Nurses' Occupational Stress Scale.

Table 3 shows the results obtained on the ESPE - Nurses' Occupational Stress Scale according to the sociodemographic variables (total scale and by factor). Regarding "sex," male participants scored higher on the total scale and on five of the six factors. The differences were found to be statistically significant (p = 0.046) for the total scale. However, when looking at the individual factors, only "Factor VI: Workload" showed statistically significant differences (p = 0.001). Regarding the age of the nurses, no statistically significant differences were found either for the total scale (p = 0.625) or for each factor. In terms of marital status, classified into two classes (without partner and with partner), statistically significant differences were found for "Factor III: Inadequate preparation to meet the emotional needs of patients and their families" (p = 0.037) and "Factor VII: Uncertainty about treatments" (p = 0.041), with nurses who had partners (married/in a *de facto* union) showing higher scores. As for education, nurses with a higher academic degree scored overall higher on the scale, which was considered a statistically significant difference (p = 0.016). By factor, statistically significant differences were observed in factors VI, III and V, where the perceived stress score was also higher for nurses with a master's degree, making it the sociodemographic variable with the most significant differences.

Table 3

Relationship between the sociodemographic variables and the mean scores obtained on the ESPE - Nurses' Occupational Stress Scale (total scale and by factor)

Factor	VI	I	III	IV	VII	II	V	Total ESPE
Domain	**Physical**		**Psychological**			**Social**		
Variables	M	M	M	M	M	M	M	M
Sex								
Female	17.32	21.82	28.44	27.15	24.79	21.82	23.15	21.21
Male	32.18	30.11	27.07	27.66	28.74	30.11	29.50	30.39
P-value	p = 0.001	p = 0.070	p = 0.758	p = 0.907	p = 0.385	p = 0.069	p = 0.165	p = 0.046
Age Group								
21-30 years	21.60	24.70	32.20	32.60	25.80	25.20	25.00	24.40
31-40 years	30.12	26.96	25.97	26.00	28.00	30.15	29.54	28.72
41-50 years	28.00	30.50	28.25	32.50	28.94	29.19	25.88	29.88
51 or over	18.43	28.71	30.71	25.43	24.64	14.36	21.21	21.07
P-value	p = 0.259	p = 0.910	p = 0.764	p = 0.586	p = 0.940	p = 0.103	p = 0.587	p = 0.625
Marital Status								
Without partner	25.34	25.94	22.86	25.58	22.86	23.32	25.36	23.36
With partner	29.36	28.84	31.50	29.16	31.50	31.10	29.34	31.07
P-value	p = 0.346	p = 0.495	p = 0.037	p = 0.383	p = 0.041	p = 0.067	p = 0.350	p = 0.072
Education								
Bachelor's degree	25.24	25.24	24.68	27.80	25.29	25.16	24.45	24.46
Master's degree	33.96	33.96	35.57	26.64	33.82	34.18	36.21	36.18
P-value	p = 0.042	p = 0.072	p = 0.021	p = 0.804	p = 0.077	p = 0.062	p = 0.015	p = 0.016

Note. ESPE = Nurses' Occupational Stress Scale; Factor I = Death and dying; Factor II = Conflict with physicians; Factor III = Inadequate preparation to meet the emotional needs of patients and their families; Factor IV = Lack of support from colleagues; Factor V = Conflict with other nurses and supervisors; Factor VI = Workload; Factor VII = Uncertainty about treatments; M = Mean; p = Statistical significance.

Table 4 shows the results obtained on the ESPE - Nurses Occupational Stress Scale (total scale and by factor) corresponding to the professional variables. No statistical significance was found for the total scale. However, by factor, statistically significant differences were observed between the variable "length of professional experience in the emergency department" and "Factor II: Conflict with physicians" (p = 0.042), with a higher mean score for nurses working in the emergency department between 11 and 20 years (34.27). Similarly, a statistically significant difference (p = 0.014) was found for "Factor V: Conflict with other nurses and supervisors" with a higher mean score for nurses working in the emergency department between 11 and 20 years (36.62). Regarding the "type of work contract," a statistically significant difference (p = 0.043) was noted in "Factor II: Conflict with Physicians" with a higher mean score for nurses with a fixed-term contract (fixed-term contract = 34.75; open-ended contract = 24.96). When considering whether nurses worked in other health institutions or not, a statistically significant difference (p = 0.028) was detected in "Factor IV: Lack of support from colleagues", with nurses who answered yes having a higher score (30.80). In conclusion, in terms of professional characteristics, the variable "length of professional experience in the emergency department" showed the greatest number of significant differences (with factors II and V, both belonging to the social dimension).

Table 4

Relationship between the professional variables and the mean scores obtained on the Nurses' Occupational Stress Scale (total and by factor)

Factor	VI	I	III	IV	VII	II	V	Total ESPE
Domain	**Physical**		**Psychological**			**Social**		
Variables	M	M	M	M	M	M	M	M
Professional Category								
Generalist nurse	28.32	26.92	26.67	29.27	26.18	28.20	26.53	27.50
Nurse specialist	26.21	28.40	28.81	24.71	29.57	26.40	29.02	27.50
P-value	p = 0.630	p = 0.734	p = 0.613	p = 0.277	p = 0.434	p = 0.680	p = 0.567	p = 1.000
Length of Professional Experience								
≤ 10	22.94	25.03	24.69	27.13	21.03	24.72	24.66	22.88
11-20 years	31.94	28.20	27.92	26.76	30.82	32.64	31.64	31.00
21 or more years	24.58	29.19	30.15	29.38	29.08	21.04	23.04	26.46
P-value	p = 0.147	p = 0.739	p = 0.618	p = 0.871	p = 0.132	p = 0.064	p = 0.188	p = 0.261
Length of Professional Experience in the Emergency department								
< 2 years	23.70	22.60	29.75	24.70	34.30	31.95	33.85	29.70
2-10 years	28.59	29.11	26.00	28.76	23.65	25.87	22.11	25.57
11-20 years	30.92	31.42	28.96	25.12	30.35	34.27	36.62	32.92
21 or more years	23.56	22.63	26.63	31.25	25.44	15.63	20.25	21.50
P-value	p = 0.608	p = 0.418	p = 0.899	p = 0.721	p = 0.271	p = 0.042	p = 0.014	p = 0.353
Type of Work contract								
Open-ended	25.96	25.05	26.24	27.91	26.21	24.96	26.16	25.15
Fixed-term	31.89	34.50	31.11	26.32	31.18	34.75	31.32	34.21
P-value	p = 0.222	p = 0.051	p = 0.302	p = 0.733	p = 0.303	p = 0.043	p = 0.288	p = 0.063
Works in other institutions								
Yes	28.53	28.03	30.08	21.42	29.21	30.03	30.66	28.84
No	26.94	27.21	26.10	30.80	26.57	26.13	25.79	26.77
P-value	p = 0.722	p = 0.855	p = 0.358	p = 0.028	p = 0.551	p = 0.379	p = 0.274	p = 0.644

Note. ESPE = Nurses' Occupational Stress Scale; Factor I = Death and dying; Factor II = Conflict with physicians; Factor III = Inadequate preparation to meet the emotional needs of patients and their families; Factor IV = Lack of support from colleagues; Factor V = Conflict with other nurses and supervisors; Factor VI = Workload; Factor VII = Uncertainty about treatments; M = Meanr; p = Statistical significance.

Discussion

Based on Vilelas (2020), the psychometric analysis of our study showed that the internal consistency of the total scale (Cronbach's alpha = 0.908) was very good. This assessment is in line with Santos and Teixeira (2008), who obtained 0.93 in the study that adapted the NSS for the Portuguese population. Similarly, Pereira (2018) obtained a value of 0.930 for the total scale in his study. In our study, the sample consisted mostly of female participants, which corresponds to the pattern found in nursing and other studies conducted in Portugal in the same field, such as Pereira (2018) and Sauane and Magalhães (2023). The majority of participants (74.1%) had a bachelor's degree and fell into the professional category of generalist nurse (61.1%). Regarding the "length of professional experience in the emergency department," our study found that most professionals had worked for 10 years or less, with 18.5% working for less than 2 years. This fact may be partly related to the increased hiring of recently graduated professionals to meet the needs resulting from the COVID-19 pandemic.

The mean score obtained on the total scale (80.94 ± 11.95) was much higher than the minimum possible score (=

34), thus calling for improvement strategies. The weighted mean was 2.38 ± 0.352, which is consistent with Pereira (2018), who obtained a score of 2.35 ± 0.34. Considering each factor, our study found that "Factor VI: Workload" and "Factor I: Death and dying" had the highest scores. As such, these factors were considered to be the two main sources of stress perceived by the nurses in our sample. Pereira (2018) and Valente (2021) obtained similar results, but in the latter, the sample consisted of nurses working in emergency and resuscitation medical vehicles, who shared the common urgent/ emergency condition in most situations. Considering that the items in "Factor VI: Workload" refer to changes in working hours and work plan, excess tasks such as those related to administrative work, lack of time to provide emotional support and carry out all nursing activities, lack of human resources to adequately meet the needs of the service, and computer failures, the corresponding strategies to minimize stress levels in this factor are mostly of an organizational nature. "Factor I: Death and dying" includes seven items related to the patient's suffering and death.

Considering the total scale, according to the sociodemographic and professional variables, our study found, with statistical significance, that male nurses and those with a master's degree had the highest perceived stress scores. This result contradicts Valente (2021), who found, with statistical significance, that female participants had the highest perceived stress scores. Considering each factor, the analysis of perceived stress revealed more statistically significant differences in the variable "education", with master's degree holders having higher scores in factors VI, III and V. Pereira (2018) also found that nurses with more education (with a postgraduate degree/specialization in medical-surgical nursing) had higher perceived stress scores in the total ESPE - Nurses' Occupational Stress Scale and in most of the factors although statistical significance was only obtained in "Factor VI: Workload" (p = 0.045). The acquisition of new academic qualifications, involving the development of specific skills of greater responsibility, such as those related to management, can lead to professional advancement. However, it can also lead to a greater perception of stress associated with new/ additional workload.

Occupational stress can compromise the quality of patient care (Ramos, 1999) and put nurses' physical and mental health at risk (Babapour et al., 2022). Therefore, interventions should be promoted at the individual level (focusing on specific coping strategies to deal with stressors through education, training, or coaching programs) and at the organizational level, as noted by Abellanoza et al. (2018). Adopting strategies that promote nurses' job involvement and increase team resilience helps to reduce occupational stress, as shown by Yinghao et al. (2023), who also found a negative correlation between job involvement and team resilience and occupational stress in a sample of nurses working in an emergency department.

Our study had limitations. Even though the ESPE - Nurses' Occupational Stress Scale includes seven important factors representing three domains, there are aspects that, although identified as stressors, do not indicate their conditioning factors and reasons. In addition, the sampling technique used in our study and the small sample size (which reflects a specific context of time and space) hinder the representativeness of the results.

Conclusion

Our study found that the sample had a total scale score significantly above the minimum possible, and suggests the implementation of strategies to improve it. It also revealed that "Factor VI: Workload", included in the physical environment domain, and "Factor I: Death and dying" included in the psychological environment domain were, in descending order, the two most important factors causing perceived stress among nurses. As for the analysis of perceived stress according to sociodemographic and professional characteristics, the variable "education" showed the most significant differences, with more qualified participants (with a master's degree) scoring higher in factors VI, III, V and in the total scale, which underscored them as a higher risk group.

In light of the above, leaders and managers should plan, implement and evaluate strategies focusing primarily on the areas that generate higher stress scores, either at the institutional level, with collective and organizational actions, or at the individual level, through cognitive-behavioral therapies. Emphasis should be placed on improving human resources and working conditions, as well as providing psychological support services and ongoing training to deal with the most problematic situations. The cognitive skills of nurses are valuable, so empowering them to actively manage stress will contribute to their health and wellbeing and positively affect the quality of the care they provide.

The development of multicenter, national and international studies that include a triangulation of methodologies, with an initial qualitative approach through interviews, may address the limitations mentioned. In terms of quantitative methodology, it would be important to consider new variables, such as whether or not nurses have been trained in active stress management, the type of working hours, the number of hours per shift, the type of emergency department (basic, medical-surgical, or multipurpose), and to include larger samples so that the results can be generalized.

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