Stress of nursing professionals working in pre-hospital care

Estresse dos profissionais de enfermagem atuantes no atendimento pré-hospitalar
Estrés de los profesionales de enfermería actuantes en la atención prehospitalaria

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ABSTRACT

Objectives: To analyze the factors related to the occupational stress of a Mobile Emergency Care Service (Samu) nursing team. **Methods**: This is a descriptive study, with a quantitative approach, performed with nursing professionals from Samu service of a city of Pernambuco. A sociodemographic questionnaire and the Lipp's Stress Symptom Inventory were used. **Results**: The participants presenting stress (24.6%) were classified in the phases: resistance (19.7%), exhaustion (4.4%) and near exhaustion (0.5%). It was also observed an association of stress level with the following factors: gender, sleep quality, professional autonomy restriction, emotional exhaustion with work performed and work in inadequate or unhealthy physical facilities. **Conclusions**: Although showing low occurrence of stress, this study pointed out the profile that presents the highest risk of developing occupational stress, through the factors significantly associated with stress in the studied population.
Descriptors: Burnout, Professional; Nurse Practitioners: Emergency Medical Services; Emergencies; Occupational Stress.

RESUMO

Objetivos: Analisar os fatores relacionados ao estresse ocupacional da equipe de enfermagem de um Serviço de Atendimento Móvel de Urgência (Samu). **Métodos**: Estudo descritivo, com abordagem quantitativa, realizado com profissionais de enfermagem do Samu de um município de Pernambuco. Foram utilizados um questionário sociodemográfico e o Inventário de Sintomas de Stress de Lipp. **Resultados**: Os participantes que apresentaram estresse (24,6%) foram classificados nas fases: de resistência (19,7%), de exaustão (4,4%) e de quase exaustão (0,5%). Observou-se, ainda, associação do nível de estresse relacionado com os seguintes fatores: sexo, qualidade de sono, restrição da autonomia profissional, desgaste emocional com o trabalho que realiza e trabalho em instalações físicas inadequadas ou insalubres. **Conclusões**: Apesar de evidenciar baixa ocorrência de estresse, este estudo apontou qual o perfil que apresenta maior chance de risco de desenvolver estresse ocupacional, por meio dos fatores que estiveram associados, significativamente, com o estresse na população estudada.
Descritores: Esgotamento Profissional; Profissionais de Enfermagem; Serviços Médicos de Emergência; Emergências; Estresse Ocupacional.

RESUMEN

Objetivos: Evaluar los factores asociados al estrés laboral del personal de enfermería de un Servicio de Atención Móvil de Urgencia (Samu). **Métodos**: Estudio descriptivo, con abordaje cuantitativo, en el cual participaron profesionales de enfermería del Samu de un municipio de Pernambuco (Brasil). Se utilizaron un cuestionario sociodemográfico y el Inventario de Síntomas de Estrés de Lipp. **Resultados**: Los participantes que presentaron estrés (24,6%) fueron clasificados en las fases: de resistencia (19,7%), de agotamiento (4,4%) y de cuasiagotamiento (0,5%). Además, se observó una asociación entre el nivel de estrés y los siguientes factores: sexo, calidad de sueño, restricción de la autonomía profesional, desgaste emocional con el trabajo que realiza y trabajo en instalaciones físicas inadecuadas o insalubres. **Conclusiones**: A pesar de apuntar una baja ocurrencia de estrés, el presente estudio muestra el perfil que presenta una mayor probabilidad de riesgo de desarrollar estrés laboral, mediante los factores que estuvieron asociados significativamente con el estrés en la población estudiada.
Descriptores: Agotamiento Profesional; Enfermeras Practicantes; Servicios Médicos de Urgencia; Urgencias Médicas; Estrés Laboral.

INTRODUCTION

Work has great importance in the life of individuals. It can offer income, self-esteem, a chance for personal growth and social identity. However, labor can negatively affect health, appearing as a source of stress and exposing the worker to occupational stress[1]. This condition offers physical or mental symptoms as a result of workplace events and/or activities. Besides being able to be related to the environment and work overloads, this type of stress can be associated with the situations that destructured the worker[2].

In this context, nursing professionals who, in their working day, can be submitted to a level of stress that causes physical and psychic damages[3] stand out. Among the different nursing areas, the emergency, where the Pre-Hospital Care (APH) service fits, is considered to be the one with the greatest stress, mainly due to the work process, which requires physical, mental, psychological and emotional efforts. Routine and work stress may result in occupational stress and interfere with personal and professional behavior, outcomes, efficacy and quality of life[4]. The wear presented by the worker can increase the stress and directly interfere in their quality of life and health[3].

Occupational stress is a result of the way a person deals with the needs of the job and how they cope with it. There are several sources of stress that can interfere with the level of individual stress presented by the individual[2]. In this sense, to deal with stressful situations, several coping strategies can be used, allowing one to live those situations better, avoiding a pathological condition[5]. It is important that nursing professionals recognize, therefore, the stressing agents of the work environment[6].

When considering the work routine of PHC nursing professionals and their risk to stress, it is relevant to identify the occupational stress and stressors that are part of the daily routine. In this sense, it is expected to favor the development of actions of stress prevention and, mainly, the health promotion of these workers.

OBJECTIVES

To analyze the factors related to occupational stress of the nursing team of a Mobile Emergency Care Service (Samu).

METHODS

Ethical aspects

This study was approved by the Research Ethics Committee involving human beings of the Hospital Complex HUOC/Procape, University of Pernambuco and approved in compliance with Resolution 466/2012, the National Health Council/MS, which regulates research and testing involving humans.

Study design, location and period

This is descriptive study, with a quantitative approach, carried out with nursing professionals from Samu, in a municipality of Pernambuco. This is a part of the dissertation entitled *Stress of the Nursing Professionals Who Work in the Mobile Emergency Care Service (Samu)*, presented to the Associate Nursing Graduation Program of the University of Pernambuco and State University of Paraíba.

Population and sample

The studied population consisted of 59 nurses, 151 nursing technicians and 8 nursing assistants, part of the nursing professionals staff from Samu of a city of Pernambuco, from a total of 218 professionals. The sample obtained a total of 56 nurses, 139 nursing technicians and 8 auxiliaries, totaling 203 participants.

The criterion of inclusion was: to be a nursing professional, working in the nursing care within the vehicles or medical regulation with at least one year of service time. Workers on premium leave, maternity leave or medical leave were excluded from the study during the data collection period.

Study protocol

The data collection was performed through interviews, and the Lipp's Stress Symptoms Inventory (LSSI) and sociodemographic questionnaire were applied. The LSSI was standardized by Lipp and Guevara[7], based on the three-phase stress model proposed by Selye. During this standardization, a fourth phase, called near exhaustion, was recognized, which is inserted between the resistance and exhaustion phases[7]. The LSSI allows to verify the stress in adults, the stage of stress to which the person is subjected (alert, resistance, near exhaustion and exhaustion) and the predominance of physical and/or psychological symptoms at each stage[8].

The positive diagnosis of stress is obtained by the sum of the symptoms seen in each frame of the instrument. In this sense, when the threshold value is exceeded in a given phase, the presence of the stress and its phase is verified, which is seen as: alert phase (Q1 > 6 symptoms); resistance phase (Q2 > 3); near exhaustion phase (Q2 > 9); and exhaustion (Q3 > 8 symptoms)[9].

Day and night shift workers at the Central Base and the Decentralized Bases of Samu signed the Informed Consent Form (TCLE) and completed the research instruments in a reserved place, using about 15 minutes for their answers.

Analysis of results and statistics

The data were described in absolute and percentage distribution, uni and bivariate, for the categorical variables. They were inferentially analyzed by the Pearson chi-square test. OddsRatio (OR) or Chances Ratio (CR) were obtained to evaluate the strength of the association, and confidence intervals for this measure were obtained in the study of the association between the variables in the bivariate study.

The margin of error used in the statistical test decisions was 5% and the intervals were obtained with 95% confidence. The Statistical Package for the Social Sciences (SPSS), in version 23, was used to enter the data and to obtain the statistical calculations.

RESULTS

The sample consisted of 203 participants. Fifteen professionals who did not meet the inclusion criteria were excluded, ten were

exclusively administrative or had less than one year of service, and five were separated by medical leave. Of these, three (two nurses and one nursing technician) with medical leave for depression. Of the sample studied, 94.6% worked in the assistance of the Advanced Support Unit, Basic Support Unit and by Motorcycle, 3.4% worked in medical assistance and regulation and 2.0% worked only in regulation.

The socio-demographic data showed three most frequent age groups: 40-44 years old (26.1%), 35-39 years old (23.2%) and 45-49 years old (20.7%), with female (76.8%) and brown colored people (46.8%) predominance. The predominant professional category was nursing technicians (68.5%), followed by nurses (27.6%) and nursing assistants (3.9%).

Regarding the evaluation of the stress classification, it was observed that approximately 75.4% of the participants were classified without stress. Those who presented stress (24.6%) were classified in the resistance phase (19.7%), exhaustion (4.4%), near exhaustion (0.5%) and none in the alert phase. There was no association between stress levels and professional categories.

Table 1 shows that, when assessing the occurrence of stress according to age, gender, physical activity and time of service,

it was verified that gender was the only variable that presented a significant association with stress ($p < 0.05$, OR 2.69 and range excluding 1.00), being higher among female professionals (28.2%) than in male (12.8%).

Of the variables contained in Table 2, sleep quality was the only variable that showed a significant association with stress, and it was observed that most of the participants with stress had their sleep quality affected, evidenced by the values found for great (3.7%), good (16.0%), regular (32.9%) and bad/terrible (24.6%) sleep quality.

Table 3 shows a significant association of stress with each of the questions: working in inadequate physical facilities, yes (34.3%) and no (15.4%); working in an unhealthy environment (27.8% and 13.3%, respectively); feeling a restriction on professional autonomy (38.2% and 17.8%, respectively); emotional weariness with the work done (31.2% and 13.3%, respectively).

Table 4 shows that approximately 3/4 (75.4%) was classified without stress. Among those classified as stress, resistance was the most frequent phase with 19.7%, followed by exhaustion with 4.4%. Only one professional was near exhaustion and none were on alert.

Table 1 - Evaluation of the occurrence of stress according to age, gender and time of service in Samu, Recife, Pernambuco, Brazil, 2016

Variable	With n	With %	Without n	Without %	Total n	Total %	p value	OR (95% CI)
Age group							$p^1 = 0.159$	
25 to 34	10	27.0	27	73.0	37	100.0		4.07 (0.81 a 20.57)
35 to 39	16	34.0	31	66.0	47	100.0		5.67 (1.18 a 27.24)
40 to 44	14	26.6	39	73.6	53	100.0		3.95 (0.82 a 19.00)
45 to 49	8	19.0	34	81.0	42	100.0		2.59 (0.50 a 13.34)
More than 50	2	8.3	22	91.7	24	100.0		1.00
Gender							$p^1 = 0.031^*$	
Male	6	12.8	41	87.2	47	100.0		1.00
Female	44	28.2	112	71.8	156	100.0		2.69 (1.07 a 6.77)
Service time in Samu							$p^1 = 0.152$	
1 to 5 years	20	19.0	85	81.0	105	100.0		1.00
6 to 10 years	19	35.2	35	64.8	54	100.0		2.31 (1.10 a 4.84)
11 to 15 years	7	28.0	18	72.0	25	100.0		1.65 (0.61 a 4.49)
More than 15 years	4	21.1	15	78.9	19	100.0		1.13 (0.34 a 3.78)
Total Group	50	24.6	153	75.4	203	100.0		

Note: (*): significant association at 5%; (1): by Pearson's Chi-square test.

Table 2 - Evaluation of the occurrence of stress according to the data related to the rest period, number of occurrences per shift and sleep quality, Recife, Pernambuco, Brazil, 2016

Variable	With n	With %	Without n	Without %	Total n	Total %	p value	OR (95% CI)
Rest during work hours?							$p^1 = 0.131$	
Yes	25	30.1	58	69.9	83	100.0		1.64 (0.86 a 3.12)
No	25	20.8	95	79.2	120	100.0		1.00
On average, how many occurrences are done per shift?							$p^1 = 0.161$	
Up to 3	23	31.1	51	68.9	74	100.0		1.22 (0.51 a 2.93)
4 to 5	17	18.5	75	81.5	92	100.0		0.61 (0.25 a 1.50)
6 or more	10	27.0	27	73.0	37	100.0		1.00
What is the quality of your sleep?							$p^1 < 0.001^*$	
Excellent	1	3.7	26	96.3	27	100.0		**
Good	13	16.0	68	84.0	81	100.0		**
Regular	26	32.9	53	67.1	79	100.0		**
Bad/Terrible	10	62.5	6	37.5	16	100.0		**
Total Group	50	24.6	153	75.4	203	100.0		

Note: (*): significant association at 5%; (**): not determined due to the occurrence of very low frequencies; (1): by Pearson's Chi-square test.

Table 3 - Evaluation of stress according to work-related factors, Recife, Pernambuco, Brazil, 2016

Variable	Stress						p value	OR (95% CI)
	With		Without		Total			
	n	%	n	%	n	%		
Do you work in inadequate physical facilities?							p¹ = 0.002*	
Yes	34	34.3	65	65.7	99	100.0		2.88 (1.47 a 5.65)
No	16	15.4	88	84.6	104	100.0		1.00
Do you work in an unhealthy environment?							p¹ = 0.046*	
Yes	44	27.8	114	72.2	158	100.0		2.51 (0.99 a 6.34)
No	6	13.3	39	86.7	45	100.0		1.00
Do you feel that you have a restriction on professional autonomy?							p¹ = 0.001*	
Yes	26	38.2	42	61.8	68	100.0		2.86 (1.48 a 5.53)
No	24	17.8	111	82.2	135	100.0		1.00
Do you feel emotional wear with the work you do?							p¹ = 0.004*	
Yes	40	31.2	88	68.8	128	100.0		2.96 (1.38 a 6.34)
No	10	13.3	65	86.7	75	100.0		1.00
Total Group	50	24.6	153	75.4	203	100.0		

Note: (*): significant association at 5%; (1): by Pearson's Chi-square test.

Table 4 - Evaluation of the stress classification, Recife, Pernambuco, Brazil, 2016

Variable	n (%)
Stress rating	
No stress	153 (75.4)
Alert	-
Resistance	40 (19.7)
Near exhaustion	1 (0.5)
Exhaustion	9 (4.4)
Total	203 (100.0)

Table 5 - Dominant symptoms according to the classification of stress, Recife, Pernambuco, Brazil, 2016

Stress rating	Dominant symptoms							
	Physic		Psychological		Tie		Total	
	n	%	n	%	n	%	n	%
Resistance	37	92.5	2	2.5	1	5.0	40	100.0
Near exhaustion	1	100.0	-	-	-	-	1	100.0
Exhaustion	5	55.6	4	44.4	-	-	9	100.0
Total Group	43	86.0	5	10.0	2	4.0	50	100.0

Table 5 shows that, from most of the 50 professionals classified with stress (86.0%), a total of 10.0% had psychological symptoms and in 4.0% there was a tie in the number of symptoms. It was also verified that most of them had physical symptoms, and the highest frequency with psychological symptoms was registered among the subjects classified with exhaustion (44.4%).

DISCUSSION

In this study, the factors related to the occupational stress of the Samu nursing team were related to women, sleep quality, working in inadequate physical facilities, in an unhealthy environment, having a restriction of professional autonomy and a feeling of emotional exhaustion with the work performed. Professionals classified with stress, mostly, reported psychological and physical symptoms.

In a study carried out in Paraná, women were also related to a higher level of stress[10]. This reality may be associated to the historical context of nursing, with a predominance of female members[11]. A study carried out at national level to chart the nursing profile in Brazil identified that 85.1% of nurses are women, with higher percentage of technicians and/or nursing assistants (77%) in the team[12]. This fact can also be justified by the double or triple working day of these professionals[13].

The predominance of physical symptoms among those who were classified with stress and the psychological symptoms observed among participants with exhaustion can be justified by the stress itself, capable of affecting the individual, causing organic and psychic changes, especially the cognitive system[5].

Regarding individuals who presented stress, a larger quantitative in the resistance phase was evidenced, which is seen as the transition phase between positive and negative stress. Therefore, the importance of knowing stressors agents to prevent the progression of stress to levels that compromise workers' health[13] is highlighted. The result of the application of the Lipp's Stress Symptom Inventory for Adults was similar to the study carried out with professionals from a Samu team from Fortaleza, who found that most participants did not present stress. Those who presented were included in the resistance/near exhaustion phase and only one in the exhaustion phase[14].

Working conditions are seen as a factor capable of generating stress in health professionals. This reality was present in this study, since the work in inadequate physical facilities was associated with the stress of the participants. The physical space is fundamental to guarantee a good performance in the work of the professionals who act in emergency care[15].

The unhealthy work environment was also pointed as an intrinsic factor and directly related to occupational stress. When working in unhealthy conditions, professionals are more vulnerable to illness[16]. People working in PHC, because they are frequently exposed to several occupational hazards, are more prone to suffering from accidents and acquiring pathologies and injuries[17].

The presence of emotional exhaustion related to the work performed by the professional showed a significant association with the occurrence of stress. The emergency work routine itself is a factor capable of affecting the worker's emotional condition, and long-term exposure to occupational stress can trigger the development of emotional exhaustion syndrome, which gives the wearer emotional exhaustion[6,18].

Lack of professional autonomy can cause worker stress[19]. As observed in this study, most of the participants, who did not have stress, did not show professional autonomy restriction. Among those who presented stress, most of them had autonomy restriction.

To consider the factors that generate stress is one of the most important components for the health and safety of a workplace. These factors should be seen as part of a multidimensional system that encompasses work, workers and the environment. It also includes the analysis of how the work process is structured, the organizational culture, values and beliefs that are practiced by the institution[20].

It is important to consider that nurses feel like emergency calls, in general, are stressful. Studies that evaluated stressors related to the work of the nursing team in emergency care evidenced work-related fatigue and musculoskeletal disorders. As well as the presence of higher emotional exhaustion scores associated with depression, anxiety, traumatic experience and perceived stress[21-23].

To minimize the problem, there is a need for a service management and policy-makers' action so that they can make decisions based on information about the stress-generating aspects[21]. It is also important to develop educational interventions in the work environment. These actions can help health professionals develop personal skills in dealing with the critical conditions characteristic of their work and enable them to recognize potential risk factors that favor occupational stress[22].

Management focused on aspects identified as stressors can reduce the problem and contribute to workers' quality of life. The lack of control of stressors can have crucial implications in maintaining the patient-professional relationship of health and in reducing clinical errors[22]. As a way to minimize stressors, discussions with colleagues, especially when they are organized immediately after a stressful event, characterized as short-term support. It is also important to organize scheduled sessions where stressful cases can be regularly discussed[23]. Considering the importance of work in people's lives, maintaining a healthy working environment can contribute to the quality of life and services provided, especially in situations where there is a need to make quick and precise decisions to save lives.

Study limitations

Data collection was performed in the workplace by the participants' choice. However, in some moments, the professional was called and interrupted the interview. Because of its quantitative focus, the study did not allow us to analyze the perceptions of the professionals involved about occupational stress and its forms of coping it.

Study contributions

This study allows a better understanding of the work process of nursing professionals working in Samu. Considering their work context, they are exposed to several occupational hazards. In this perspective, this research project reinforces the need of investment in actions and public policies of health promotion and the prevention of aggravations directed at these professionals.

CONCLUSIONS

The analysis of the factors related to the occupational stress of the nursing team of a Samu revealed that being a woman, sleep quality, work environment, restrictions on professional autonomy and emotional exhaustion with the work performed were factors, undoubtedly, associated with stress at work.

The participants with stress had predominance of physical symptoms, attributed to the physical overload and labor characteristics inherent to the service. The findings from this study show the need to follow the work and health conditions of nursing professionals, as well as the development of strategies that can minimize the damages to health, resulting from their work activities.

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