

The level of stress of nurses in the intensive care unit¹

O nível de estresse dos enfermeiros na unidade de terapia intensiva

El nivel de estrés de los enfermeros en la unidad de terapia intensiva

Andrea Zavalis;² Vanessa Galdino de Paula;³ Daniel Aragão Machado;⁴ Cristiano Bertolossi Marta;⁵ Eugenio Fuentes Perez Junior;⁶ Luiz Carlos Santiago⁷

How to quote this article:

ZavalisA, De Paula VG, MachadoDA, Marta CB, Perez Junior EF, Santiago LC. O nível de estresse dos enfermeiros na unidade de terapia intensiva. RevFunCare Online. 2019 jan/mar; 11(1):205-210. DOI: <http://dx.doi.org/10.9789/2175-5361.2019.v11i1.205-210>

ABSTRACT

Objectives: The study's purpose has been to verify the stress level of nurses who work in an intensive care unit, and also to identify working activities that are more stressful. **Methods:** It is a descriptive-exploratory study with a quantitative approach, which was performed at a University Hospital from the *Rio de Janeiro* city. The study participants were 25 nurses who provide direct care to critically ill patients in the intensive care unit. The instrument used in the measurement was the Bianchi Stress Scale. **Results:** The analysis of 51 items related to work activities resulted in a low level of stress among nursing professionals. The analysis of the domains showed middle stress levels related to the nurse's working conditions and the nursing care provided to patients. **Conclusion:** Therefore, working conditions contribute to a higher level of stress. It is necessary to carry out new research on working conditions and their relations with stress.

Descriptors: Occupational stress, working conditions, intensive care unit.

RESUMO

Objetivos: Verificar o nível de estresse nos enfermeiros que atuam em unidade de terapia intensiva e identificar as atividades do trabalho que são mais estressantes. **Método:** Estudo quantitativo, exploratório e descritivo, realizado em um Hospital Universitário da Cidade do Rio de Janeiro. Os participantes foram 25 enfermeiros que prestam assistência direta aos pacientes críticos na unidade de terapia

- 1 Monografia: O nível de estresse dos enfermeiros na unidade de terapia intensiva, 2017, Universidade do Estado do Rio de Janeiro.
- 2 Enfermeira. Pós-graduada em Terapia Intensiva pela Universidade do Estado do Rio de Janeiro (UERJ). Residente de Enfermagem em Terapia Intensiva do Hospital Universitário Pedro Ernesto/Universidade do Estado do Rio de Janeiro (HUPE/UERJ).
- 3 Enfermeira. Mestre em Enfermagem pela Universidade Federal do Estado do Rio de Janeiro (UNIRIO). Professora Assistente do Departamento de Enfermagem Médico Cirúrgica da Universidade do Estado do Rio de Janeiro (UERJ), atuando na Área Crítica.
- 4 Enfermeiro. Doutor em Biociências pela Universidade Federal do Estado do Rio de Janeiro (UNIRIO). Professor do Departamento de Enfermagem Fundamental na Escola de Enfermagem Alfredo Pinto (EEAP/UNIRIO).
- 5 Enfermeiro. Pós-doutor pela Escola de Enfermagem Aurora Afonso Costa da Universidade Federal Fluminense (EAAAC/UFF). Professor Adjunto do Departamento de Fundamentos de Enfermagem da Faculdade de Enfermagem da Universidade do Estado do Rio de Janeiro (DFEN/FENF/UERJ).
- 6 Enfermeiro. Mestre em Enfermagem pela Universidade do Estado do Rio de Janeiro (UERJ). Professor Assistente da Faculdade de Enfermagem da Universidade do Estado do Rio de Janeiro (UERJ).
- 7 Enfermeiro. Pós-doutor em Enfermagem pela Escola de Enfermagem de São Paulo (USP). Professor Associado Nível 3 da Universidade Federal do Estado do Rio de Janeiro (UNIRIO).

intensiva. O instrumento utilizado na mensuração foi a Escala Bianchi de Stress. **Resultados:** A análise dos 51 itens relacionados às atividades de trabalho resultou em um nível baixo de estresse entre os profissionais de enfermagem. A análise dos domínios demonstrou nível médio de estresse referente as condições de trabalho para o desempenho do enfermeiro e assistência de enfermagem prestada ao paciente. **Conclusão:** Conclui-se que as condições de trabalho contribuem para um maior nível de estresse. Faz-se necessária realização de novas pesquisas acerca das condições de trabalho e suas relações com o estresse.

Descritores: Estresse profissional, Condições de trabalho, Unidade de terapia intensiva.

RESUMEN

Objetivos: Verificar el nivel de estrés en los enfermeros que actúan en unidad de terapia intensiva, e identificar las actividades del trabajo que son más estresantes. **Métodos:** Estudio cuantitativo, exploratorio y descriptivo, realizado en un Hospital Universitario de la ciudad de *Río de Janeiro*. Los participantes fueron 25 enfermeros que prestan asistencia directa a los pacientes críticos en la unidad de terapia intensiva. El instrumento utilizado en la medición fue la Escala Bianchi de Stress. **Resultados:** El análisis de los 51 ítems relacionados con las actividades de trabajo resultó en un nivel bajo de estrés, entre los profesionales de enfermería. El análisis de los dominios demostró nivel medio de estrés referente a las condiciones de trabajo para el desempeño del enfermero y asistencia de enfermería prestada al paciente. **Conclusión:** Se concluye que las condiciones de trabajo contribuyen a un mayor nivel de estrés. Se hace necesaria la realización de nuevas investigaciones acerca de las condiciones de trabajo y sus relaciones con el estrés.

Descriptor: Estrés profesional, condiciones de trabajo, unidad de terapia intensiva.

INTRODUCTION

This study aims at stress in nurses working in an Intensive Care Unit (ICU). At present, stress is considered as one of the main health problems arising from the globalized and capitalist world. It is a global epidemic that affects approximately 90% of the population.¹

The transformations that occurred in the world of health work in recent centuries, along with great technological advances and benefits for the population, have resulted in a practice environment with high levels of emotional stress, being Nursing considered one of the most stressful professions 50 years.²

Particularly, studies carried out in intensive care units show that some nursing professionals who work in these environments face high levels of stress. There is a very close relationship between the daily exposure to stressors related to the exhausting and tiring environment and stress. Nevertheless, it should be noted that besides environmental factors, there are also those related to patient severity, speed of decision making, permanent and specialized assistance, high technological complexity and demanding routines.²⁻⁶

Considering that the effects of stress under the individual is directly related to the time of exposure and intensity of the stressors, it is verified that the chronicity of the stress state can diminish the individual's cognitive functions and, together with constant daily events, cause irritation in addition to negatively influencing care processes, memory and attention.^{7,8}

The professionals who develop their activities in the ICU coexist daily with conditions related to the work process that can present themselves as stressors factors. A stressor is understood as the stimulus that initiates a stressful reaction, which can bring benefits or damages that cause emotions to the individual.⁹

For Hans Selye, stress was a term used in physics to describe tension or force placed on a given object to bend or break it, but physiologically, stress is defined as the reflexes expressed by the human body in reaction to external stimuli, whether positive or negative.¹⁰

In the context of work, stress is called occupational stress, defined as a state in which abnormal wear of the human body occurs and/or decreased ability to work, basically due to the individual's prolonged inability to tolerate, overcome or adapt to the demands of psychic nature in their work or life environment.¹¹

It is known that stress has three perspectives: the environmental, the psychological and the biological. Environmental treats stress as a stimulus characteristic, as a burden. The psychological emphasizes the dynamic interaction between the individual and the environment and in the subjective evaluation of the stress that is made by the individual. The biological approach addresses a non-specific physiological response, in other words, as a syndrome consisting of all the physiological changes that occur in the biological system when it is affected by a stimulus, or by an excessive or harmful load.¹²

All these perspectives are integral to the daily routine of nursing work and, in some way, interfere with the health of the professional and the quality of care provided.

When considering that during the execution of the work in intensive care units, the nursing professional is exposed to stressors related to the environment and the very nature of the service that demands from the professional high physical and mental demands, there is a probability of development of occupational stress, leading to a decrease in cognitive functions, loss of memory and irritation, interfering with the health of the worker and the quality of the service provided, placing not only one's own life at risk, but also those who care.

OBJETIVES

1. Verifying the stress level of nurses who work in the ICU;
2. Identifying the work activities that are most stressful to nurses who work in the ICU.

METHODS

It is a descriptive-exploratory study with a quantitative approach, where the researchers sought to identify the levels of stress in the ICU nurses and the activities most affected by the stress of the professionals in a University Hospital from the *Río de Janeiro* city.

The study participants were 12 registered nurses from an ICU and 13 intensive care residents from the same unit, from the 1st and 2nd year, who participated in the direct assistance to

critical patients, from 02/10/17 to 04/25/17. The Resolution No. 466/12 from the National Council of Research Ethics was respected with the approval of *CEP-HUPE* under the protocol named *Certificado de Apresentação para Apreciação Ética (CAAE)* [Certificate of Presentation for Ethical Appreciation] No. 64133916.1.0000.5259.

There were included the nurses from the intensive care unit and intensive care residents of the 1st and 2nd year who work in the direct care of critical patients. Nurses working only in administrative services were excluded because they did not provide direct care to patients, those on vacation or medical leave, those who refused to participate in the study, and nursing technicians and assistants.

In the collection of data, the Bianchi Stress Scale (BSS) was used, which was constructed to evaluate the level of stress of the hospital nurse in the basic performance of her activities. The instrument is self-applicable, consisting of two parts, the first one referring to sociodemographic data and the second containing 51 items, related to stress measurement, divided into six domains - (1) relationship with other units and supervisors (items 40, 41, 42, 43, 44, 45, 46, 50, 51); (2) activities related to the proper functioning of the unit (items: 1, 2, 3, 4, 5, 6); (3) activities related to personnel administration (items: 7, 8, 9, 12, 13, 14); (4) nursing care provided to the patient (items: 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30); (5) coordination of the activities of the unit (items: 10, 11, 15, 31, 32, 38, 39, 47); (6) working conditions for the performance of the nurse's activities (items: 33, 34, 35, 36, 37, 48, 49) - who receive a score varying from 1 to 7. With the application of the instrument, the most stressful domain for the group of nurses and for each individual is verified, as well as to evaluate the most stressful activities in that sector.¹³

The data were allocated to a database, a spreadsheet in the Microsoft Office Excel' program (Office 2007) and analyzed with the Software Statistical Package for the Social Sciences' - free (PSPP) - version 0.10.2.

RESULTS

Characterization of the study population

The study population is made up of the total number of nurses assigned to the unit, corresponding to 27 nurses. After applying the inclusion and exclusion criteria, 02 participants were excluded because they were not in service. So, 25 nurses participated in the study.

The population was mostly composed of women (92%), with ages ranging from 20 to 30 years old (56%). With regards to the time of professional practise, there is a percentage of 40% of the population with less than 1 year, followed by 28% of the population in the range of 6 to 10 years of training. Regarding the time of service in the ICU, it is verified that 36% is with less than 1 year of work referred in this unit.

It is estimated that 44% of the population have a postgraduate degree (specialization), and only 2 subjects do not have it in the intensive care area, and only 1 subject has MSc and PhD degrees. Because the Hospital studied is

a University Hospital, it is noticed that the majority of the population, 56%, still do not have a postgraduate degree, since they are still in qualification.

Among the nurses interviewed, 48% are nurses on the job and 52% are resident nurses, since the Hospital approached has a nursing program in intensive care in the molds of the residence.

Nurses' stress score

Concerning the age, when analyzing the nurses within the age group from 20 to 30 years old, it was noticed that they present a mean of a stress score (2.78) inferior to most other age groups.

Regarding the training time, those with less than 1 year of training have a mean of a stress score (2.55) lower than those with the most training time. On the other hand, the graduate variable found that those who have at least one postgraduate degree present a higher average of stress scores (3.2) than those who do not have a postgraduate degree (2.64).

The variable time of service in the sector showed a higher average of the stress score for those professionals who have more than one year of service (3.44).

Table 1 shows the total score and for each domain of each nurse, which shows the intensity of the stressors for a particular group of nurses.

Table 1 - Total score and the stress score of each nurse by domain. *Rio de Janeiro city/Rio de Janeiro State, 2017.*

SUBJECT	POINTS	SCORE	SCORE FOR EACH DOMAIN					
			A	B	C	D	E	F
01	178	3.49	4.7	3.33	2.16	2.86	4.25	3.57
02	159	3.11	3.44	1.66	4.33	2.6	3.5	3.57
03	70	1.37	2	4	2.33	2.2	0.87	2.14
04	112	2.19	2.66	1.83	1	2.8	1.62	2.28
05	122	2.39	2.6	3.83	2	1.73	1.62	3.28
06	119	2.33	3.66	0	0.5	2.66	2.75	3
07	244	4.78	4.44	3.66	6	4.13	5.87	5.28
08	111	2.17	1.1	0.5	2.3	2.53	2.5	3.71
09	202	3.96	2.66	5.33	3.33	4.73	2.37	3.85
10	195	3.82	4.5	1.16	4.16	4.93	3.25	3.14
11	182	3.56	3.22	5	3.5	4.5	1.37	3.2
12	160	3.13	2.77	2.16	2.83	4	2.5	2.7
13	222	4.35	5.44	5	3.5	4.46	5.4	4
14	230	4.5	4.2	6.5	3.66	3.8	5	5.1
15	155	3	2.44	2.33	4.6	1.4	3.12	5.71
16	143	2.8	2.4	1.8	4.66	2.4	3.12	3
17	87	1.7	0.44	1	2.33	1.93	2.25	2.28
18	87	1.7	0.66	3.5	0	2.13	1.25	2.57
19	143	2.8	2	3	0	3.86	2.37	4.28
20	170	3.33	0.2	2.5	4.33	4.26	3	3.28
21	76	1.49	1.88	0	0	2.46	0.25	3.42
22	117	2.29	1.66	2.33	0.66	3.46	2.25	2.42
23	208	4.07	3.66	4.33	4.33	2.4	4.12	4.28
24	126	2.47	3.66	2	1.66	1.9	2.37	3.71
25	205	4.01	3.66	4.83	4	4	3.12	4.42
TOTAL SCORE	-	2.99	2.8	2.86	2.7	3.1	2.82	3.66
AVERAGE								

Source: Zavalis, 2017

In the Bianchi Stress Scale, total stress can vary from 51 to 357 points, the total of marked points shows the level of stress of the nurse. The average score of each item can be useful to describe the intensity of the stressors. In order to obtain the mean score for a given group, the real total of the stressor is divided by the number of respondents who indicated values different from 0 in that item. The resulting value will be the actual average for each stressor (item) (varies from 0 to 7). With the sum of the scores of the component items of each domain and the result divided by the number of items, the average score of each domain is obtained, and the variation of domain scores is also 1.0 to 7.0.¹³

Herein, a total score of 2.99 was found. The levels obtained are classified as low (up to 3.0), medium (from 3.1 to 4.0), alert (from 4.1 to 5.9) and high (above 6.0). Therefore, the nurses participating in this research have a low level of stress, but close to the medium level of stress (Table 2).

Table 2 - Stress levels of nurses from intensive care units according to the total score of the Bianchi Stress Scale (n=25). Rio de Janeiro city/Rio de Janeiro State, 2017.

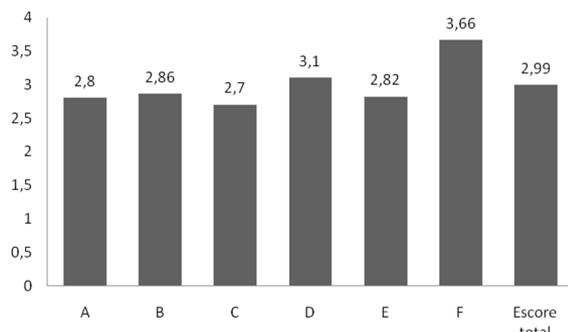
STRESS LEVEL	n (%)
Low	13 (52%)
Medium	8 (32%)
Alert	4 (16%)
High	0

Source: Zavalis, 2017

Among the scores for each domain, the highest level of stress was the domain F (Work conditions for the performance of the nurse) with a score of 3.66 followed by domain D (Nursing care provided to the patient) with score of 3.13; Field B (Activities related to the proper functioning of the unit) with a score of 2.86; Domain E (Coordination of unit activities) with scores of 2.82; Domain A (Relationship with other units and supervisors) with score of 2.8; and, Domain C (Activities related to personnel administration) with a score of 2.73.

The analysis of the scores attributed by the study participants demonstrated the level of stress for each domain, which, in descending order, presents the domain F>D>B>E>A>C. This finding indicates that in the evaluation of ICU nurses, working conditions contribute to a higher level of stress, since the highest value was attributed, on average, as shown in Figure 1.

Figure 1 - Score for each domain and the total. Rio de Janeiro city/Rio de Janeiro State, 2017.



Source: Zavalis, 2017

When analyzing the level of stress related to each activity, regardless of the area to which it belonged, the ones considered as the most stressful, taking into account values greater than 4 points, were: “Controlling the nursing team” (4.38) - Domain C; “Controlling the quality of care” (5.16) and “Coordinating the activities of the unit” (4.31) - Domain E; “Admitting the patient to the unit” (4.31), “Meeting the emergencies in unit” (4.6) and “Facing the patient’s death” (5) - Domain D; “Relationship with pharmacy” (4.9) - Domain A; “Level of noise in the unit” (5.24), “Performing bureaucratic activities” (4.92) and “Perform tasks with minimum available time” (6.12) - Domain F.

Through these results, the discussion will be focused on the three domains that obtained the highest stress scores. As follows: Domain F, working conditions for the performance of the nurse’s activities; Domain D, nursing care provided to the patient; and, Domain B, activities related to the unit proper functioning.

DISCUSSION

The analysis of the sociodemographic data of the study sample revealed a predominance of females with 92%. The relationship of the female majority in the nursing workforce is historical, and data from the *Conselho Federal de Enfermagem (COFEN)* [Federal Nursing Council] in 2013 corroborate the findings of the study and describe that in the *Rio de Janeiro* State, 82.3% of nursing professionals are women, and in Brazil, this proportion is 85.1%.^{12,14} Given the aforesaid context, the issue of the role ambiguity played by women professionals in nursing, who carry out multiple activities, is related to the double-time management of family life and professional, which can favor wear and consequently stress.¹⁵

Considering the age of the research participants, the age range in which the majority is found is 20 to 30 years (56%), which is equivalent to the data presented by *COFEN* in 2013, in which more than 16.8% of the nursing professionals from the *Rio de Janeiro* State are in this age group and, from Brazil, more than 17.7%.¹⁴

Regarding the age and the training time, it is observed that the younger professionals present more resistance to the stressful working environment, such as intensive care units, different from the older professionals, which is associated with the higher risk problems such as stress.¹³

Here, the younger age group (20 to 30 years old) and, with shorter training time (less than one year) had a low level of stress, compared to those of older age and training time. This is in contrast to that described in some studies that point out that a long period of time leads to greater adaptation to the environment, more safety in relation to activities and less stress.¹⁵⁻⁷

It was noticed that 56% of the sample did not have postgraduate degree, which is in agreement with the *COFEN* data of 2013, which shows that only 16.4% of the nurses in the *Rio de Janeiro* State do not have postgraduate degree, and 80.6% have it.¹⁴

Studies show that the postgraduate professional presented higher levels of stress.¹⁶⁻⁷ This finding is in line with this

research, which shows that nurses who had a postgraduate degree had a higher level of stress compared to professionals who only graduated.

The stress level of the group of nurses surveyed presented low, with a mean score of 2.99, second classification adopted by Bianchi. However, it is worth mentioning that, although the measured mean has a low level of stress, 48% of the population present medium levels of stress alertness as shown in **Table 2**.

When analyzing the activities that produce the highest level of stress in nurses, we highlight those related to the F domain of the Bianchi Scale, which deals with working conditions, since it was the domain in which the mean of the stress score had its highest score (3.66). In this domain, the activities that had the highest scores measured by the participants, and therefore those related to the highest level of stress, were performing tasks with minimum time available (6.12), the noise level in the unit (5.24) and performing bureaucratic activities (4.92).

The activities of the F domain that act as stressors to the ICU nursing professionals are related to the working conditions and in this aspect, the results reaffirm that the precarious structure of the public hospitals and the inadequate working conditions end up generating more suffering than pleasure in the work, favoring the development of stress among the nurses.¹

In regards to the working conditions, studies show that the physical environment and the minimum time for performing nursing care are determinant in the workload of nurses.¹⁸⁻⁹

It is known that the ICU has a great incorporation of monitoring technologies at the bedside, which implies a high number of sound stimuli of alarms triggered by medical assistance equipment, which are indispensable in alerting the clinical changes of the patient, but have become a problem widely discussed and researched internationally for more than a decade.²⁰

Due to the constant noise generated by the alarms in the ICU, authors show that health professionals become cranky, stressed, tired, with reduced attention levels, fatigue, headaches, muscle contractions, elevated blood pressure and heart rate, and worsening of the sleep quality.²¹⁻³

In relation to the activity "to carry out bureaucratic activities" a study indicates that to develop assistencial and managerial activities at the same time is a sine qua non situation of the nurse, because managerial activities require decision making and resolution of problems that arise in the emergency, which leads to psycho-emotional suffering and suffering, since the care work is already perceived as exhausting.²⁴

In the area of nursing care provided to the patient - domain D - the nurses obtained an average score of 3.1 points, which indicates a medium level of stress. Within this area, the activities with the highest score were as follows: "facing the patient's death" (5.0), "attending to emergencies in the unit" (4.6) and "admitting patient in the unit" (4.31).

It is understood that this domain has an average level of stress, since the critical patient is often chronic and with multiple comorbidities, in addition the nursing performance

with critical patients is considered exhausting and being part of this routine makes the nurse susceptible to stress.²⁵

Studies show that the ICU environment is characterized by work that involves a strong emotional load, in which life and death are mixed, especially when there are proximity and involvement during the period of hospitalization with the patient and his or her family, the death of the patient exacerbates the feelings of impotence, frustration and even projection of suffering in the nurse.²⁶⁻⁷

In relation to attending emergency situations in the unit and also admitting the patient, stress comes from the fight against time, since the fast and precise decision making associated with the availability of resources and agility of the team presupposes the difference between life and the death of people.²⁷

Considering stress levels and stressful activities, related to the proper functioning of the unit - domain B -, suggests the accumulation of managerial assignments to nursing assistants, and this is due to the crisis in the health services, especially if it is a public institution, with number of professionals, materials, and equipment, especially in the context of nursing professionals.²⁵

The activity with the highest level of stress in this domain was the equipment control (3.95), which is expected, since the scarcity of material resources for the development of the work causes the improvisation and the search for materials in other sectors, which can cause physical and mental fatigue by the time spent.²⁴

CONCLUSIONS

Bearing in mind the studied ICU, nurses' stress level was considered low, with a score of 2.99 points.

It was also verified that the most stressful domain was working conditions (F), with an average stress level (3.66 points) and the activities with higher level of stress to perform tasks with minimum time, level of noise in the unit, and to perform bureaucratic activities with high levels and alert of stress (6.12 points, 5.24 points, 4.92 respectively); followed by the domain D - nursing care given to the patient - with an average stress level (3.1 points), with activities with a higher level of stress than admitting a patient in the unit (4.31 points), attending emergencies in the unit (4.62 points) and to face the death of the patient (5.0 points); and domain B - activities related to the proper functioning of the unit, with a low level of stress (2.86 points), with the most stressful activity being equipment control (3.95 points).

As a limitation, this study presents a low power of generalization because it is a local study with a very specific number and characteristic of the participants.

Hence, it is recommended to carry out new research with broader coverage on working conditions and their relations with stress, then contributing towards the worker welfare, and also to enhancing the care quality.

REFERENCES

1. Versa GLGS, Murassaki ACY, Inoue KC, Melo WA, Faller JW, Matsuda LM. *Estrresse ocupacional: avaliação de enfermeiros intensivistas*

- que atuam no período noturno. Rev. Gaúcha Enferm. [internet]; 2012, vol.33, n.2, pp.78-85 [acesso em: 02 Ago 2016]. ISSN 1983-1447. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1983-14472012000200012&lng=en&nrm=iso&tlng=pt.
2. Andolhe R, Barbosa RL, Oliveira EM, Costa ALS, Padilha KG. Estresse, coping e burnout da Equipe de Enfermagem de Unidades de Terapia Intensiva: fatores associados. Rev. esc. enferm. USP [internet]; 2015, vol.49, n.spe, pp.58-64, [acesso em: 15 Jul 2016]. ISSN 0080-6234. Available at: <http://dx.doi.org/10.1590/S0080-623420150000700009>.
 3. Rodrigues VMCP, Ferreira ASS. Stressors in nurses working in Intensive Care Units. Rev. Latino-Am. Enfermagem [internet]; 2011, vol.19, n.4, pp.1025-1032 [acesso em: 31 Jul 2016]. ISSN 1518-8345. Available at: <http://dx.doi.org/10.1590/S0104-11692011000400023>.
 4. Preto VA, Pedrao LJ. O estresse entre enfermeiros que atuam em Unidade de Terapia Intensiva. Rev. esc. enferm. USP [internet]; 2009, vol.43, n.4, pp.841-848 [acesso em: 17 Jul 2016]. ISSN 0080-6234. Available at: <http://dx.doi.org/10.1590/S0080-62342009000400015>.
 5. Rosa BÂ, Rodrigues RCM, Gallani MCBJ, Spana TM, Pereira CGS. Estressores em Unidade de Terapia Intensiva: versão brasileira do The Environmental Stressor Questionnaire. Rev. esc. enferm. USP; São Paulo, v. 44, n. 3, p. 627-635 [acesso em: 31 Jul 2016], Sept 2010. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0080-62342010000300011&lng=en&nrm=iso.
 6. Rodrigues DP, Athanázio AR, Cortez EA, Teixeira ER, Alves VH. Estresse na unidade de terapia intensiva: revisão integrativa. Ver. Enferm. UFPE online. Recife, 7(esp):4217-26, maio, 2013.
 7. Baptista MN, Rueda FJM, Sisto FF. Relação entre estresse laboral e atenção concentrada. Revista de Psicologia [internet]; 2007; vol. XI, n.º. 16 [acesso em: 15 Jul 2016]. Available at: <http://pgsskroton.com.br/seer/index.php/renc/article/viewFile/2560/2444>.
 8. Paschoalini B, Oliveira MM, Frigério MC, Dias ALRP, Santos FH. Efeitos cognitivos e emocionais do estresse ocupacional em profissionais de enfermagem. Acta Paul Enferm [internet]; 2008; 21(3):487-92 [acesso em: 24 Jul 2016]. Available at: http://www.scielo.br/pdf/ape/v21n3/pt_17.pdf.
 9. Cunha NC, Palmieri TMR, Cunha TNB, Cunha NB. Estresse dentro das organizações de trabalho. Getec [internet]; v.5, n.9, p.1-17/2016, [acesso em: 05 Set 2016]. Available at: <http://www.fucamp.edu.br/editora/index.php/getec/article/view/771/552>.
 10. Junior TCC, Souza LAS. Relação entre o estresse e o condicionamento físico em policiais militares da Paraíba. Revista Campo do Saber [internet]; Vol. 2, n. 1 - Jan/Jun de 2016; [acesso em 04 Ago 2017]; ISSN 2447-5017. Available at: <http://periodicos.iesp.edu.br/index.php/campodosaber/article/view/29/29>.
 11. Ferrareze MVG, Ferreira V, Carvalho AMP. Percepção do estresse entre enfermeiros que atuam em Terapia Intensiva. Acta paul. enferm. [internet]; 2006, vol.19, n.3, pp.310-315 [acesso em: 20 Jul 2016]. ISSN 1982-0194. Available at: <http://dx.doi.org/10.1590/S0103-21002006000300009>.
 12. Zavalis A, Vianna LAM, Velasque LS, Schutz V, Machado DA. A influência dos fatores estressores sobre os níveis de atenção de profissionais de enfermagem. Rev. pesqui. cuid. fundam. (Online) [internet]; 7(4): 3375-3387, [acesso em: 10 Mai 2016], Out-Dez 2015. Available at: http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/4523/pdf_1724.
 13. Bianchi ERF. Escala Bianchi de Stress. Rev. esc. enferm. USP [internet]; 2009, vol.43, n.spe pp.1055-1062, [acesso em: 02 Ago 2015]. ISSN 0080-6234. Available at: <http://dx.doi.org/10.1590/S0080-62342009000500009>.
 14. COFEN. Perfil da enfermagem no Brasil. FIOCRUZ, COFEN; 2013. Rio de Janeiro (Brasil), 2013 [acesso em: 06 Jun 2017]. Available at: http://www.cofen.gov.br/perfilenfermagem/pdfs/ap_rj.pdf.
 15. Linch GFC, Guido LA. Estresse de enfermeiros em unidade de hemodinâmica no Rio Grande do Sul, Brasil. Rev. Gaúcha Enferm. (Online) [Internet]; 2011 Mar [acesso em: 06 Jun 2017]; 32(1):63-71. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1983-14472011000100008&lng=en. <http://dx.doi.org/10.1590/S1983-14472011000100008>.
 16. Guido LA, Linch GFC, Pitthan LO, Umann J. Estresse, coping e estado de saúde entre enfermeiros hospitalares. Rev. esc. enferm. USP [Internet]; 2011 Dec [acesso em: 06 Jun 2017]; 45(6):1434-1439. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0080-62342011000600022&lng=en. <http://dx.doi.org/10.1590/S0080-62342011000600022>.
 17. Kirrhof RS, Oshôa LM, Bublitz S, Lopes LFD, Squiavenato MCA. Nível de estresse entre enfermeiros de um hospital filantrópico de médio porte. Rev Enferm UFSM [internet]; 2016 Jan/Mar; 6(1): 29-39 [acesso 06 Jun 2017]. Available at: [file:///C:/Users/Andrea/Downloads/17829-102773-1-PB%20\(1\).pdf](file:///C:/Users/Andrea/Downloads/17829-102773-1-PB%20(1).pdf).
 18. Menzani G, Bianchi ERF. Stress dos enfermeiros de pronto socorro dos hospitais brasileiros. Rev. Eletr. Enf. [Internet]; 2009;11(2):327-33 [acesso em: 06 Jun 2017]. Available at: <http://www.fen.ufg.br/revista/v11/n2/v11n2a13.htm>.
 19. Batista KM, Bianchi ERF. Estresse do enfermeiro em unidade de emergência. Rev. Latino-Am. Enfermagem [Internet]; 2006 Aug [acesso em: 06 Jun 2017]; 14(4): 534-539. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692006000400010&lng=en. <http://dx.doi.org/10.1590/S0104-11692006000400010>.
 20. Bridi AC, Silva RCL, Farias CCP, Franco AS, Santos VLQ. Tempo estímulo-resposta da equipe de saúde aos alarmes de monitorização na terapia intensiva: implicações para a segurança do paciente grave. Rev. bras. ter. intensiva [Internet]; 2014 Mar [acesso em: 23 Mai 2016]; 26(1):28-35. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-507X2010000400010.
 21. Neto RAS, Mesquita FOS, Junior MDSP, Ramos FF, Andrade FMD, Junior MAVC. Ruídos na unidade de terapia intensiva: quantificação e percepção dos profissionais de saúde. Rev. bras. ter. intensiva [internet]; vol.22 no.4 [acesso em: 10 Mai 2016], São Paulo Oct/Dec 2010. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-507X2010000400010.
 22. Oliveira EB, Lisboa MTL. Exposição ao ruído tecnológico em cti: estratégias coletivas de defesa dos trabalhadores de enfermagem. Esc Anna Nery Rev Enferm [internet]; 13 (1): 24-30, [acesso em: 28 Abr 2016], 2009 Jan-Mar. Available at: <http://www.scielo.br/pdf/ean/v13n1/v13n1a04.pdf>.
 23. Pereira CA, Miranda LCS, Passos JP. O Estresse ocupacional da equipe de enfermagem em setor fechado. Rev. de Pesq.: cuidado é fundamental Online 2009 [internet]; Set/Dez. 1(2):196-202 [acesso em: 28 Abr 2016]. Available at: <http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/346/331>.
 24. Fonseca JRF, Neto DL. Níveis de estresse ocupacional e atividades estressoras em enfermeiros de unidades de emergência. Rev Rene. [internet]; 2014 Set-Out; 15(5):732-42, [acesso em: 06 Jun 2017]. Available at: http://repositorio.ufc.br/bitstream/riufc/11275/1/2014_art_jrffonseca.pdf.
 25. Cavalheiro AM, Junior DFM, Lopes AC. Estresse de enfermeiros com atuação em unidade de terapia intensiva. Rev Latino-am Enfermagem [internet]; 2008 Jan-Fev; 16(1) [acesso em: 28 Ago 2016]. Available at: http://www.scielo.br/pdf/rlae/v16n1/pt_04.pdf.
 26. Santos FD, Cunha MHF, Robazzi MLCC, Pedrao LJ, Silva LA, Terra FS. O estresse do enfermeiro nas unidades de terapia intensiva adulto: uma revisão da literatura. SMAD, Rev. Eletrônica Saúde Mental Álcool Drog. (Ed. port.) [internet]; Ribeirão Preto, v. 6, n. 1, p. 1-16, 2010 [acesso em: 06 Jun 2017]. Disponível em http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1806-69762010000100014&lng=pt&nrm=iso.
 27. Inoue KC, Versa GLGS, Murassaki ACY, Melo WA, Matsuda LM. Estresse ocupacional em enfermeiros intensivistas que prestam cuidados diretos ao paciente crítico. Rev Bras Enferm.; 2013 Set-Out; 66(5): 722-9 [acesso em: 06 Jun 2017]. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-71672013000500013.

Recebido em: 11/11/2017

Revisões requeridas: Não houve

Aprovado em: 19/01/2018

Publicado em: 01/01/2019

Autora responsável pela correspondência:

Andrea Zavalis

Av. Prefeito Dulcídio Cardoso, 2500

Barra, bl. 5ap. 1102

CEP: 22.631-051

E-mail: deazavalis@gmail.com