

Psychosocial stress and resilience: a study in nursing professionals

Estresse psicossocial e resiliência: um estudo em profissionais da enfermagem

Estrés psicosocial y resiliencia: un estudio en profesionales de enfermería

Andréia Barcellos Teixeira Macedo^I, Liliana Antonioli^{II}, Thayane Martins Dornelles^{III},
Leandro Augusto Hansel^{IV}, Juliana Petri Tavares^V, Sônia Beatriz Cocaro de Souza^{VI}

Abstract: Objective: To verify the presence of psychosocial stress and resilience scores in nursing professionals who care for adults with multidrug-resistant germs. **Method:** A cross-sectional study, carried out in an inpatient unit for adults of a university hospital. The sample was intentional, composed of 39 nursing professionals, with data collected from January to May 2014 through the Effort-Reward Imbalance and Resilience Score questionnaire. **Results:** The mean age was 39.2 ± 9.0 years old. It was observed that 69.23% (27) of the professionals had high psychosocial stress and 56.41% (22), low resilience. The correlation between psychosocial stress and resilience was $r=0.3$ ($p=0.001$). **Conclusion:** A high percentage of professionals with psychosocial stress and low resilience was identified, indicating a risk of psychoemotional and physical illness. This result reinforces the importance of reviewing the organization of work, encouraging the implementation of programs to increase resilience scores. **Descriptors:** Occupational Health; Stress, psychological; Psychological Resilience; Nursing Team

Resumo: Objetivo: verificar presença de estresse psicossocial e escores de resiliência nos profissionais da enfermagem que cuidam de adultos com germes multirresistentes. **Método:** estudo transversal, realizado em uma unidade de internação para adultos, em um hospital universitário. A amostra foi intencional, composta por 39 profissionais da enfermagem, com dados coletados de janeiro a maio de 2014 por meio dos questionários Desequilíbrio Esforço-Recompensa e Escore de Resiliência. **Resultados:** a média de idade foi de $39,2 \pm 9,0$ anos.

^I Nurse, PhD in Nursing, Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil; abtmacedo@gmail.com; <http://orcid.org/0000-0003-4219-4731>

^{II} Nurse, PhD in Nursing, Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil; lantonioli@hotmail.com; <https://orcid.org/0000-0003-0806-9910>

^{III} Nurse, Master's degree in Nursing, Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil; thaydornelles@gmail.com; <https://orcid.org/0000-0001-7377-7054>

^{IV} Nurse, Specialist, Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil; lhansel@hcpa.edu.br; [lhansel@hcpa.edu.br; https://orcid.org/0000-0002-9580-9085](https://orcid.org/0000-0002-9580-9085)

^V Nurse, PhD in Nursing, Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil; jupetritavares@gmail.com; <https://orcid.org/0000-0003-4121-645X>

^{VI} Nurse, PhD in Medical Sciences-Psychiatry. Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil; sbcs2001@gmail.com; <https://orcid.org/0000-0001-9394-5465>



Observou-se que 69,23% (27) dos profissionais apresentaram elevado estresse psicossocial e 56,41% (22) baixa resiliência. A correlação entre o estresse psicossocial e a resiliência foi de $r = 0,3$ ($p = 0,001$). **Conclusão:** identificou-se elevado percentual de profissionais com estresse psicossocial e com baixa resiliência, indicando risco de adoecimento psicoemocional e físico. Este resultado reforça a importância de revisar a organização do trabalho, estimulando a implementação de programas para aumento dos escores de resiliência.

Descritores: Saúde do trabalhador; Estresse psicológico; Resiliência psicológica; Equipe de enfermagem

Resumen: Objetivo: verificar la presencia de estrés psicosocial y resiliencia en profesionales de enfermería que atienden a adultos con gérmenes resistentes a múltiples fármacos. **Método:** estudio transversal, realizado en una unidad de internación para adultos de un hospital universitario. La muestra fue intencional, compuesta por 39 profesionales, con datos recopilados de enero a mayo de 2014 a través del cuestionario *Effort-Reward Imbalance and Resilience Score*. **Resultados:** la edad promedio fue de $39,2 \pm 9,0$ años. Se observó que el 69.23% (27) de los profesionales tenían alto estrés psicosocial y el 56.41% (22), baja resiliencia. La correlación entre estrés psicosocial y resiliencia fue $r = 0,3$ ($p = 0.001$). **Conclusión:** se identificó un alto porcentaje de profesionales con estrés psicosocial y baja resiliencia, lo que indica riesgo de enfermedad psicoemocional y física. Este resultado refuerza la importancia de revisar la organización del trabajo, alentando la implementación de programas para aumentar los puntajes de resiliencia.

Descriptores: Salud laboral; Estrés psicológico; Resiliencia psicológica; Equipo de enfermería

Introduction

Stress ranks among the biggest health problems and as an adjunct in various pathologies, such as heart disease, cancer, stroke, as well as many psychiatric problems, such as anxiety and depression. Occupational stress is associated with hypertension, cardiovascular diseases and mental disorders, which can contribute to the occurrence of 120,000 deaths per year in America and are related to the high rate of morbidity and high cost of treatment.¹

Psychosocial stress refers to the emotional state resulting from a discrepancy between the degree of job demand and the resources available to manage it, constituting a subjective phenomenon and resulting from the individual understanding of the inability to manage work demands. It can be influenced by aspects of the profession, work process, company culture, as well as by the way the individual is able to deal with adverse situations.²

Among the theoretical models that assess psychosocial stress, the Effort-Reward Imbalance (ERI) model stands out, which postulates that the worker is in balance when he realizes that the effort spent to carry out his activities is compensated by the rewards

received by the employer. It also assesses the individual's degree of commitment to work. When there is a perception of low reward arising from the institution, or excess commitment, when there is effort beyond the levels considered appropriate, this potentiates the risk for psychosocial stress.³ Thus, chronically stressful experiences are the result of an imbalance between high efforts and low rewards, coupled with a high level of commitment.

Stress encourages individuals to seek conscious or unconscious strategies to overcome adverse situations. The individual's unconscious ability to adapt or rebuild from adversity is called resilience. Thus, resilience is a dynamic characteristic between the individual's ability to face a conflict, in a given context and must be considered when one wants to know the relationship between work overload and psychosocial stress.⁴

Currently, similar to the concept of stress, resilience can be seen in an individual, occupational or organizational way. Resilience at work is the ability to manage daily work stress in order to stay healthy and to learn and recover from unexpected setbacks, proactively preparing for future challenges.⁵ On the other hand, many health professionals, although exposed to adverse situations, are healthy and perform their functions properly, providing quality services to the population.⁶

The nursing work is characterized by stressors resulting from physical and mental loads associated with negative outcomes such as abandonment of the profession, injuries, illness, absenteeism, job dissatisfaction, impaired quality of life and impaired ability to work.⁷ An evaluation carried out in publications on the topic concluded that the emergence of stress in nursing should be seen more broadly, being generally of multi-factorial origin, suffering interference from social, personal, work, organization, among others.⁸

To protect nursing workers from the risk of becoming ill due to occupational stress, experts in the field suggest the implementation of stress reduction programs and strategies to promote resilience, strengthening internal resources in these professionals and healthy work

environments. Thus, mapping resilience can help to identify protective characteristics in the nursing team, in the face of adverse work conditions.⁹

Investment in technologies for the recovery of patients and in quality care programs have been changing the work process in nursing. The care of patients with multi-resistant germs (MRGs), for example, has transformed the way of providing care. As it is a relatively new problem in the national scenario, health institutions are still looking for ways to organize work to serve this clientele, in order to maintain all the recommended epidemiological barrier measures, preserving the safety of all patients and few institutions have a specific sector for hospitalization and treatment of patients with MRGs.¹⁰⁻¹¹

A public institution in the south of Brazil made a bet on the implementation of a specific hospitalization unit for the care of clinical and surgical patients with MRGs. The results showed an important decrease in the incidence of resistant bacteria, mainly in infections caused by *Enterococcus spp* resistant to vancomycin and *Pseudomonas aeruginosa* resistant to carbapenems.¹⁰ However, it is observed that the care of patients with MRGs causes an overload on the work of the nursing professionals, as the treatment requires the execution of a high number of activities in their work shift.

They are usually patients with a high level of care complexity, needing nursing to supply all their bodily needs.¹² The use of protective barriers to reduce the risk of cross-transmission within the hospital implies time to put on and remove gloves and apron for each contact with patients and strict care with hand hygiene, in addition to constant audits. After the implantation of the unit, an increase in the absenteeism of the nursing team in the sector was identified, a fact that generated interest in this study.

In light of the above, this investigation starts from the following research question: Is there psychosocial stress in the nursing professionals who care for patients with MRGs and how are the resilience scores presented? The objective was to verify the presence of psychosocial

stress and to measure the resilience scores in nursing professionals who care for adults with MRGs in a university hospital.

Método

This article was extracted from the research entitled “Evaluation of workload, psychosocial stress and resilience in nursing professionals in an inpatient unit for patients with multidrug-resistant germs” and it was a dissertation.¹³

A cross-sectional, quantitative and observational study carried out in an inpatient unit for adults with MRGs at a university hospital in the southern region of Brazil. It is a sector with 34 beds, available to receive clinical, surgical and medical specialty patients, with MRGs. The screening of the patients to be admitted to this sector, as well as the release of precautionary measures, are activities carried out by the Hospital Infection Control Commission (*Comissão de Controle de Infecção Hospitalar*, CCIH) of the institution. They are patients from the Intensive Care Unit (ICU), the Emergency Room and other inpatient clinical or surgical units of the institution.

The population of interest was the exclusive nursing team in the sector, composed of 10 nurses, 15 assistants and 21 nursing technicians. All the nursing professionals from the unit were included, and the individuals who had returned for less than two weeks of prolonged leave and those who were on probation for 90 days were excluded. An extended leave is understood as the period referring to the granting of sickness benefits from the National Institute of Social Security (*Instituto Nacional de Seguridade Social*, INSS) and Maternity Leave (ML).

Three professionals who had returned from INSS, one from ML and three who were on probation were excluded, constituting a sample with 39 professionals, with 10 nurses, 13 assistants and 16 technicians, featuring an intentional sample. It was decided to account for nursing technicians and assistants as a single category because they carry out equivalent activities.

Data collection took place from January to May 2014, using the Effort-Reward Imbalance (ERI) questionnaire and the Resilience Score. Personal and professional

activity information was collected from an instrument for characterizing the subjects built for the research, including gender, age, schooling, marital status, number of children, time in nursing, time in the sector, work shift, and employment relationship.

The presence of psychosocial stress was assessed using the short version of the ERI questionnaire, consisting of 16 questions, which define measures in three dimensions: Effort (time pressure, interruptions, responsibilities, pressure to work overtime, physically demanding work and increased demand); Reward (financial bonus, salary and effort; expectation of esteem and recognition; respect, adequate support, inadequate treatment; security and career opportunities - expectation of promotion and advancement, undesirable changes, job insecurity and inconsistent occupational status); and excessive commitment to work (group of attitudes, behaviors and emotions that reflect an effort beyond the levels considered appropriate to be approved and valued by others).

For each question, a Likert scale is presented, and each dimension results in a score. The imbalance between effort-reward is demonstrated when the equation $(e/r \times c)$ is applied, where “e” is the sum of the effort items, “r” is the sum of the reward items and “c” is the correction factor. Values greater than 1 indicate an imbalance between effort and reward. Excessive commitment to work is considered a factor that can interact with the effort-reward imbalance, increasing its harmful effects on health and well-being.³ The results of the effort and reward dimensions were dichotomized in high or low from the median and the excess of commitment in tertiles.

The Resilience Score is used to measure levels of positive psychosocial adaptation in the face of important life events. It has 25 items described positively with a Likert type response ranging from 1 (totally disagree) to 7 (totally agree). The sum of the items results in scores that range from 25 to 175 points. The author suggests that the score found is divided into very low resilience (25 to 100), low (101 to 115), moderately low (116 to 130), moderately high (131 to 145), high (145 to 160) and very high (161 to 175).¹⁴ Under the guidance of a statistician, this study will consider low resilience values ≤ 130 points and high resilience ones ≥ 131 points.

The data were grouped in spreadsheets with the aid of the *Statistical Package for the Social Sciences* (SPSS), version 20.0. The variables were analyzed individually using descriptive statistics, with measures of central tendency and dispersion, absolute and relative frequency. For the evaluation of the relationship of the continuous variables, the independent T test was used and the relationship between the results found on the scales was assessed using the Pearson's Coefficient. "p"-values below 0.05 were considered statistically significant.

As it is a research with human beings, the study was developed according to the criteria of Resolution No. 466/2012 of the National Health Council. The project was approved by the Research Ethics Committee on December 26th, 2012, under protocol number 120165.

Results

Of the 39 participants, 10 (25.6%) were nurses and 29 (74.4%) were nursing assistants and technicians. The sociodemographic characteristics of the workers are shown in Table 1:

Table 1 – Sociodemographic and health characteristics of the nursing workers. Porto Alegre, RS, Brazil, 2014.

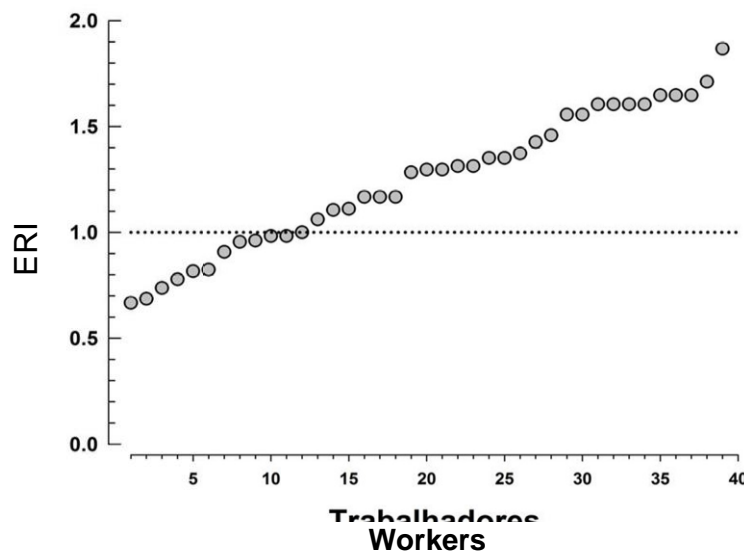
Variables	N=39
Age* (years old)	39.2±9.0
Female Gender**	32 (82.1)
Schooling**	
Higher Education	13 (33.3)
Incomplete Higher Education	04 (10.3)
High School	22 (56.4)
Marital status**	
Married/Living with a partner	26 (66.7)
Single	13 (33.3)
Number of children**	
No children	11(28.2)
1 child	12 (30.8)
2 children	11(28.2)
3 or more children	05 (12.8)
Time in the nursing practice* (years)	12.0 ± 8.1
Time in the sector* (years)	8.32 ± 7.44
Employment contract**	
Only 1	37 (94.9%)
Work shift**	22 (56.3%)
Day	

Source: Research data. Porto Alegre, 2014

Note: *Mean ± Standard Deviation. **Figures expressed in n(%).

It was observed that 29 (74.36%) of the professionals perceived high effort in carrying out the work and 23 (59%) low reward. Psychosocial stress was identified in 27 (69.23%) professionals, of whom 9 (90%) were nurses and 18 (62.07%) were nursing assistants/technicians, as shown in Figure 1:

Figure 1 - Psychosocial stress in the nursing professionals who care for patients with multidrug-resistant germs in a university hospital. Porto Alegre, RS, Brazil, 2014.

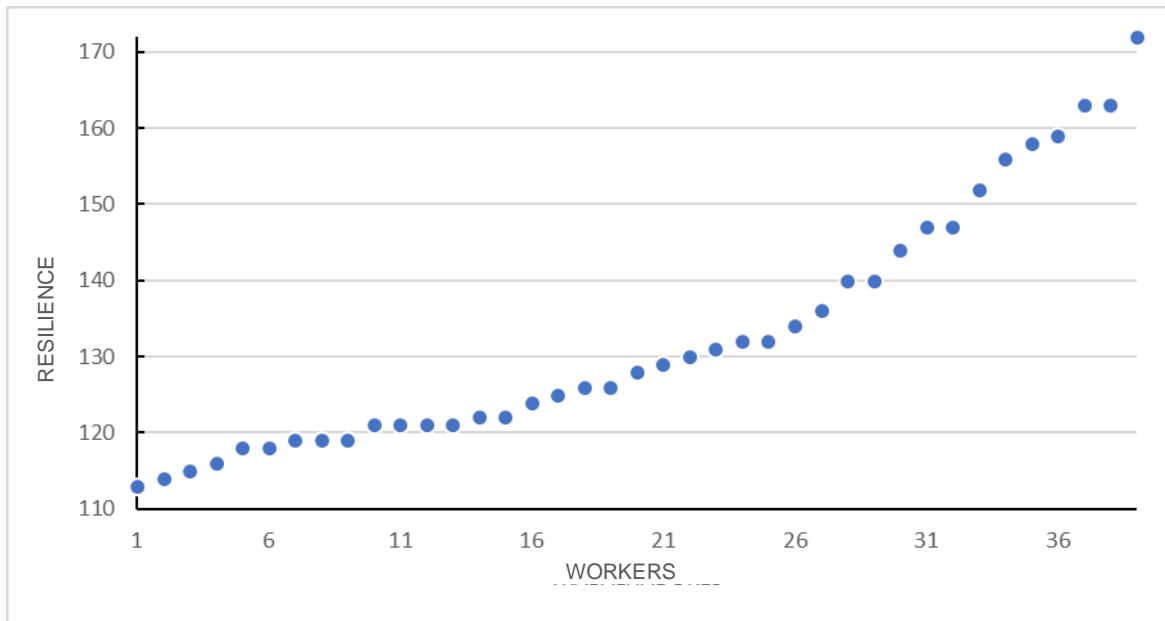


Regarding the excess commitment domain, the mean value was 12.28 ± 2.05 points. Low involvement was observed in 13 (33.3%) professionals, medium in 19 (48.7%), and high in 7 (17.9%) with $p=0.063$. The relationship between the excess commitment domain and psychosocial stress was 0.54 ($p<0.001$). The relation of excess commitment to the effort domain was $r=0.59$ ($p<0.001$) and with the reward domain, $r=-0.17$ ($p=0.584$).

The assessment of psychosocial stress between the professional categories demonstrated that there was no statistically significant difference between nurses and assistants/technicians ($p=0.650$). In relation to the work shift, greater psychosocial stress was observed in night shift workers (1.39 ± 0.25) compared to workers of the day shift (1.12 ± 0.35) ($p=0.012$).

The mean value found in the Resilience score was 132 ± 15.9 points, with values between 113 and 172 points. It was found that 22 (56.41%) professionals had low resilience, as shown in Figure 2:

Figure 2 - Resilience score in the nursing professionals who care for patients with multidrug-resistant germs in a university hospital. Porto Alegre, RS, Brazil, 2014.



The comparison between professional categories demonstrated that there was no statistically significant difference between nurses and assistants/technicians regarding the resilience score ($p=0.578$), the same occurring per work shift, in which there was no statistically significant difference in daytime professionals and night-shift workers ($p=0.127$). The correlation between psychosocial stress and the resilience score in the professionals studied was 0.3 ($p=0.001$).

Discussion

It was found that most of the professionals have psychosocial stress, high effort and low reward at work. There is no consensus in the literature regarding the presence or absence of stress in the nursing team, a fact that demonstrates that other variables (and not only work)

may be interfering and that stress really is multi-factorial. In a specialized inpatient unit, it was found that only 22% of the nursing professionals had occupational stress.¹⁵

An investigation carried out with 2,421 primary care health professionals in Bahia showed that only 32.2% had psychosocial stress. These workers reported low effort and low commitment to work. The author related this result to the short time in the sector, suggesting that psychosocial stress is related to the time of exposure to the stressor agent.¹⁶

Similar findings to this research were found in emergency room and intensive care workers, places where stress is seen as a common problem in the hospital environment. In these investigations, the appearance of stress is related to difficulties in interpersonal relationships and teamwork, suffering and death of patients and dissatisfaction with work.¹⁷⁻¹⁸

It is believed that in the studied population, the appearance of stress is related to changes in the complexity of hospital care, to the increase in severity of patients seeking care at the tertiary level and to the accomplishment of multiple tasks, factors that end up generating work overload. The assessment of the degree of patient dependence for nursing care at the study institution showed an increase in the number of patients with semi-intensive and intensive care. In 2003, 68% of the hospitalized patients needed minimal care. In 2014, 66.7% of the patients needed semi-intensive care and 27% intensive care, showing high dependence on the nursing team for basic human needs.¹² The risk for hemodynamic instability is another factor that may be related to the team's stress, triggered by the modification of the profile and severity of the clientele, which makes the organization and routine in the work shift difficult.⁷

The highest levels of stress were found in workers working at night. The effect of shift work is a widely studied topic, as it is known that it is closely linked to the illness of the worker. The personnel is reduced at night due to the belief that patients sleep during the entire shift and, therefore, request less from the nursing staff. However, this does not seem to be the reality of this sector, due to the severity of the patients. These require the same type of

nursing care during the same 24 hours, with exams, procedures, hygiene and comfort care, among others. The reduced number of professionals, coupled with the high demand for work, the need for greater attention to tasks and even the fact of working in a period different from their biological chronotype, may be triggering higher levels of psychosocial stress in nighttime professionals.¹⁹

In the model used, excessive commitment to work is considered a factor that can interact with the effort-reward imbalance, potentially damaging health and well-being. In this sense, a positive and moderate correlation was identified between over-commitment and psychosocial stress, a moderate positive correlation between effort and over-commitment and a low negative correlation between stress and reward. These data mean that, as commitment increases, stress and perceived effort at work will increase.

A study carried out with health professionals in São Paulo showed that individuals with greater intensification of excess commitment to work have more implications for their ability to work than other workers. The author understands that excess commitment is an individual factor of excessive search for achievement and performance at work, which can be intensified by the pressures existing in the work environment.²⁰ In professionals who care for patients with MRGs, the excess of commitment involves the feeling of meeting all the demands of patients without leaving pending issues, in a short period. This feeling can often be linked to the historical issues of the profession, due to the expected vocation of nursing professionals.²¹

Low resilience scores were observed in most of the nursing professionals in the sample, with a positive, but weak, correlation with psychosocial stress. Resilience is still a poorly investigated construct in the nursing professionals in Brazil. It is known that individuals with low resilience have a greater predisposition to the development of stress symptoms and burnout, and may also enhance the appearance of symptoms of other pathologies. This factor can explain the high absenteeism presented by this group of workers.¹⁸

An investigation carried out with nursing professionals from Maranhão showed that 80% had high levels of resilience, with higher scores in older workers.²² With the evolution in the investigation of resilience at work, it is now possible to identify points in need of improvements and protection factors. Improving motivation for work, interpersonal relationships and teamwork can be protective factors for the worker.⁶

The present study did not detect a significant difference in stress and in the resilience score between the professional categories. Different results were found in other studies that demonstrated that nurses in inpatient units did not present significant physiological responses to stress^{17,23} and the technicians were more resilient than nurses.¹⁸ These findings demonstrate that the stressors that reach the mid-level category may also be affecting higher-level professionals.

The promotion of resilience makes it possible to reduce the impacts of occupational stress on nursing workers, even in situations of physical and emotional overload. Literature points out that self-knowledge, a focus on faith and hope, and the daily exercise of circumventing negative and extremely critical thoughts are an alternative for building individual resilience. For the improvement of resilience at work, the strengthening of interpersonal relationships and teamwork.²⁴

Conclusion

This study identified that most of the professionals in the sector had psychosocial stress, predominantly in the night team. There was also a perception of high effort expended to perform the work tasks, low reward on the part of the institution, excess commitment to work and low resilience scores. There was a relationship between psychosocial stress and excess commitment and a low correlation with resilience.

These data are of extreme relevance, since this combination may be causing illness among these workers. Thus, there is a need to research and develop strategies to strengthen the

nursing team's resilience, improving their capacities to cope with stressful situations inherent to the high percentages of risk for psychosocial stress identified in the sample.

It is understood that a limitation of this research was that this is the only sector of the institution that exclusively serves this type of patient, constituting a small number of workers. However, due to the growing number of patients with multidrug-resistant germs, this study may contribute to the implementation of new exclusive sectors, already thinking about measures in the organization of work that will help to reduce the risk for psychosocial stress and develop resilience. It can also serve as a basis and awareness for new research in the area, given the lack of studies related to the theme.

References

1. Goh J, Pfeffer J, Zenios S. Exposure to harmful workplace practices could account for inequality in life spans across different demographic groups. *Health Aff [Internet]*. 2015 [acesso em 2018 jul 10];34(10):1761–8. Disponível em: <http://www.ncbi.nlm.nih.gov/pubmed/26438754>
2. Moreira IJB, Horta JA, Duro LN, Chaves J, Jacques CS, Martinazzo K, et al. Aspectos psicossociais do trabalho e sofrimento psíquico na estratégia de saúde da família. *Rev Epidemiol Controle Infecção [Internet]*. 2017 [acesso em 2018 jul 10];7(1):2238–3360. Disponível em: <https://online.unisc.br/seer/index.php/epidemiologia/article/viewFile/6927/5486>
3. Siegrist J, Wege N, Pühlhofer F, Wahrendorf M. A short generic measure of work stress in the era of globalization: effort–reward imbalance. *Int Arch Occup Environ Health [Internet]*. 2009 [acesso em 2019 abr 03];82(8):1005–13. Disponível em: <http://link.springer.com/10.1007/s00420-008-0384-3>
4. Lee TY, Cheung CK, Kwong WM. Resilience as a positive youth development construct: a conceptual review. *ScientificWorldJournal [Internet]*. 2012 [acesso em 2019 ago 28];12:1–9. Disponível em: <http://www.hindawi.com/journals/tswj/2012/390450/>
5. McEwen K. Building personal resilience as a geoscientist. *Applied Earth Science (Trans Inst Min Metall B) [Internet]*. 2012 [acesso em 2019 set 07];121:155–62. Disponível em: <http://workingwithresilience.com.au/wp-content/uploads/2016/04/GeoscienceResilienceArticle.pdf>
6. Sousa VFS, Araújo TCCF. Estresse ocupacional e resiliência entre profissionais de saúde. *Psicol Ciênc Prof [Internet]*. 2015 [acesso em 2019 jun 09];35(3):900–15. Disponível em: <https://dialnet.unirioja.es/servlet/articulo?codigo=6122628>

7. Martinez MC, Latorre MRDO, Fischer FM. Estressores afetando a capacidade para o trabalho em diferentes grupos etários na enfermagem: seguimento de 2 anos. *Ciênc Saúde Colet* [Internet]. 2017 [acesso em 2018 nov 04];22(5):1589–600. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232017002501589&lng=pt&tlng=pt
8. Graça CC, Zagonel IPS. Estratégias de coping e estresse ocupacional em profissionais de enfermagem: revisão integrativa. *Espaç Saúde* [Internet]. 2019 [acesso em 2020 jan 14];20(2):67–77. Disponível em: <http://espacoparasaude.fpp.edu.br/index.php/espacosaude/article/view/622/pdf>
9. Silva SM, Borges E, Abreu M, Queirós C, Baptista PCP, Felli VEA. Relação entre resiliência e burnout: promoção da saúde mental e ocupacional dos enfermeiros. *Rev Port Enferm Saúde Mental* [Internet]. 2016 [acesso em 2020 jan 14];(16):41-8. Disponível em: http://www.scielo.mec.pt/scielo.php?script=sci_arttext&pid=S1647-21602016000300006
10. Stumpfs DJ, Souza SBC, Konkewicz LR, Lovatto CG, Silva CF, Farias CF, et al. The impact of a single ward for cohorting patients with infection due to multidrug-resistant organisms. *Infect Control Hosp Epidemiol* [Internet]. 2013 [acesso em 2018 maio 16];34(08):864–5. Disponível em: https://www.cambridge.org/core/product/identifier/S0195941700033592/type/journal_article
11. Macedo ABT, Junges M, Mello DB, Lovatto CG, Souza SBC. Unidade para Portadores de Germes Multirresistentes: elaboração de um protocolo de atendimento de pacientes. *Rev Enferm Atual In Derme* [Internet]. 2017 [acesso em 2018 maio 16];83:61. Disponível em: <https://revistaenfermagematual.com.br/index.php/revista/issue/view/12>
12. Macedo ABT, Souza SBC, Funcke LB, Magalhães AMM, Riboldi CO. Sistematização de um instrumento de classificação de pacientes em um hospital universitário. *REME Rev Min Enferm* [Internet]. 2018 [acesso em 2019 maio 16];22:e-1152. Disponível em: <http://www.reme.org.br/artigo/detalhes/1285>
13. Macedo ABT. Avaliação da carga de trabalho, estresse psicossocial e resiliência nos profissionais de enfermagem em uma unidade de internação para adultos portadores de germes multirresistentes [dissertação]. Porto Alegre: Universidade Federal do Rio Grande do Sul; 2013 [acesso em 2019 maio 13]. Disponível em: <https://www.lume.ufrgs.br/handle/10183/90196>
14. Pesce RP, Assis SG, Avanci JQ, Santos NC, Malaquias JV, Carvalhaes R. Adaptação transcultural, confiabilidade e validade da escala de resiliência. *Cad Saude Publica* [Internet]. 2005 [acesso em 2018 jul 11];21(2):436–48. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-311X2005000200010&lng=pt&tlng=pt
15. Trettene AS, Andrade CS, Kostrich LM, Tabaquim MLM, Razera APR. Estresse em profissionais de enfermagem atuantes em um hospital especializado. *Rev Enferm UFPE On Line* [Internet]. 2016 [acesso em 2019 nov 22];10(12):4450-8. Disponível em: <https://periodicos.ufpe.br/revistas/revistaenfermagem/article/view/11509/13387>

16. Araújo TM, Mattos AIS, Almeida MMG, Santos KOB. Aspectos psicossociais do trabalho e transtornos mentais comuns entre trabalhadores da saúde: contribuições da análise de modelos combinados. *Rev Bras Epidemiol* [Internet]. 2016 [acesso em 2019 nov 22];19(3):645–57. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1415-790X2016000300645&lng=pt&tlng=pt
17. Dalri RCMB, Silva LA, Mendes AMOC, Robazzi MLCC. Carga horária de trabalho dos enfermeiros e sua relação com as reações fisiológicas do estresse. *Rev Latinoam Enferm* [Internet]. 2014 [acesso em 2018 out 28];22(6):959–65. Disponível em: http://www.scielo.br/pdf/rlae/v22n6/pt_0104-1169-rlae-22-06-00959.pdf
18. Medeiros PB, Assunção GA, Kniess JM, Dutra K, Preis LC, Lessa G . Resiliência e enfermagem: atributos adquiridos durante a profissão [Internet]. In: 3º Forum de Direitos Humanos e Saúde Mental; 2017 jun 29-30; Florianópolis. Florianópolis: ABRASME; 2017 [acesso em 2018 jul 12]. Disponível em: [http://www.direitoshumanos2017.abrasme.org.br/resources/anais/8/1491012697_ARQUIVO_resumo_resiliencia_forum\(1\).pdf](http://www.direitoshumanos2017.abrasme.org.br/resources/anais/8/1491012697_ARQUIVO_resumo_resiliencia_forum(1).pdf)
19. Oliveira B, De Martino MMF. Análise das funções cognitivas e sono na equipe de enfermagem nos turnos diurno e noturno. *Rev Gaúch Enferm* [Internet]. 2013 [acesso em 2018 out 28];34(1):30–6. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1983-14472013000100004&lng=pt&tlng=pt
20. Martinez MC, Latorre MRDO, Fischer FM. Testando o modelo da casa da capacidade para o trabalho entre profissionais do setor hospitalar. *Rev Bras Epidemiol* [Internet]. 2016 [acesso em 2018 jul 12];19(2):403–18. Disponível em: http://www.scielo.br/scielo.php?script=sci_abstract&pid=S1415-790X2016000200403&lng=en&nrm=iso&tlng=pt
21. Rodrigues AL, Barrichello A, Morin EM. Os sentidos do trabalho para profissionais de enfermagem: um estudo multimétodos. *RAE Rev Adm Empresas* [Internet]. 2016 [acesso em 2019 nov 23];56(2):192–208. Disponível em: <http://bibliotecadigital.fgv.br/ojs/index.php/rae/article/view/60322>
22. Galvão APFC, Pinto JR. Resiliência em profissionais de enfermagem que atuam no setor de urgência e emergência psiquiátrica. *J Manag Prim Health Care* [Internet]. 2017 [acesso em 2019 nov 23];8(1):39–48. Disponível em: <http://www.jmphc.com.br/jmphc/article/view/297/426>
23. Guo YF, Luo YH, Lam L, Cross W, Plummer V, Zhang JP. Burnout and its association with resilience in nurses: a cross-sectional study. *J Clin Nurs* [Internet]. 2018 [acesso em 2018 jul 14];27(1–2):441–9. Disponível em: <http://www.ncbi.nlm.nih.gov/pubmed/28677270>
24. Ramalisa RJ, Du Plessis E, Koen MP. Increasing coping and strengthening resilience in nurses providing mental health care: empirical qualitative research. *Health SA* [Internet]. 2018 jul [acesso em 2018 jul 14];12;23:1094. Disponível em: <https://www.ncbi.nlm.nih.gov/pubmed/31934384>

Corresponding author

Andréia Barcellos Teixeira Macedo

E-mail: abtmacedo@gmail.com

Address: Rua Ramiro Barcelos, 2350, Bairro Bom Fim, Porto Alegre, RS, Brazil

CEP: 90035-007

Authorship Contributions

1 – Andréia Barcellos Teixeira Macedo

Conception and planning of the research project, acquisition, analysis and interpretation of data, writing and critical review.

2 – Liliana Antonioli

Writing and critical review.

3 – Thayane Martins Dornelles

Writing and critical review.

4 – Leandro Augusto Hansel

Writing and critical review.

5 – Juliana Petri Tavares

Writing and critical review.

6 – Sonia Beatriz Cocaro de Souza

Conception and planning of the research project, acquisition, analysis and interpretation of data, writing and critical review.

How to cite this article

Macedo ABT, Antonioli L, Dornelles TM, Hansel LA, Tavares JP, Souza SBC. Psychosocial stress and resilience: a study in nursing professionals. Rev. Enferm. UFSM. 2020 [Accessed on: Year Month Day]; vol.10 e25: 1-16. DOI:<https://doi.org/10.5902/2179769235174>