

RESEARCH PAPER (ORIGINAL)
ARTIGO DE INVESTIGAÇÃO (ORIGINAL)Available: <https://doi.org/10.12707/RV191018>

Psychosocial risks of nurses who provide care to critically ill patients

Riscos psicossociais dos enfermeiros que prestam assistência ao doente crítico

Riesgos psicossociales de los enfermeros que prestan asistencia al paciente crítico

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Abstract

Background: Psychosocial risks are a growing public health problem which, within the context of the care delivery to critically-ill patients, can affect the quality of care provided by health professionals.

Objective: To identify the psychosocial risks of Portuguese nurses who provide care to critically ill patients.

Methodology: Quantitative and cross-sectional study, with a non-probabilistic sample of nurses ($n = 61$) who work in pre-hospital emergency care ($n = 6$), emergency rooms ($n = 20$), and intensive care units ($n = 35$), in northern Portugal. The COPSOQ II questionnaire was applied between July and December 2018. A descriptive and exploratory analysis of the data was carried out, using the SPSS® software.

Results: There was a moderate to high risk in 20 of the 29 dimensions evaluated by the questionnaire, and significant differences among the nurses of the emergency rooms and intensive care stand out, particularly in leadership quality, job satisfaction, and offensive behavior.

Conclusion: The dimensions related to the area of management emerged as the main focus of psychosocial risks.

Keywords: occupational risks; nurses; critical care

Resumo

Enquadramento: Os riscos psicossociais são um problema crescente de saúde pública que, nos contextos de prestação de cuidados ao doente crítico, podem afetar a qualidade dos cuidados prestados pelos profissionais.


Objetivo: Identificar os riscos psicossociais a que estão sujeitos os enfermeiros portugueses que prestam assistência ao doente crítico.


Metodologia: Estudo quantitativo e transversal, com uma amostragem não probabilística de enfermeiros ($n = 61$) que executam funções na emergência pré-hospitalar ($n = 6$), serviços de urgência ($n = 20$) e unidades de cuidados intensivos ($n = 35$), a norte de Portugal. Foi aplicado o questionário COPSOQ II entre julho e dezembro de 2018. Realizou-se uma análise descritiva e exploratória dos dados, com recurso ao SPSS®.

Resultados: Verificou-se um risco moderado a elevado em 20 das 29 dimensões avaliadas pelo questionário, realçando-se diferenças significativas entre os enfermeiros da urgência e dos cuidados intensivos, nomeadamente na qualidade da liderança, satisfação no trabalho e comportamentos ofensivos.

Conclusão: As dimensões relacionadas com os domínios da gestão, emergiram como principal foco de risco psicossocial.

Palavras-chave: riscos ocupacionais; enfermeiras e enfermeiros; cuidados críticos

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Resumen

Marco contextual: Los riesgos psicossociales son un problema de salud pública cada vez mayor que, en entornos de prestación de cuidados al paciente crítico, pueden afectar a la calidad de la atención prestada por profesionales.

Objetivo: Identificar los riesgos psicossociales a los que están sujetos los enfermeros portugueses que prestan asistencia al paciente crítico.

Metodología: Estudio cuantitativo y transversal, con una muestra no probabilística de enfermeros ($n = 61$) que ejercen sus funciones en la sala de urgencias prehospitalaria ($n = 6$), servicios de urgencias ($n = 20$) y unidades de cuidados intensivos ($n = 35$), en el norte de Portugal. El cuestionario COPSOQ II se aplicó entre julio y diciembre de 2018. Se realizó un análisis de datos descriptivo y exploratorio mediante el SPSS®.

Resultados: Se encontró un riesgo de moderado a alto en 20 de las 29 dimensiones evaluadas por el cuestionario, lo que resalta las diferencias significativas entre los enfermeros de urgencias y de cuidados intensivos, principalmente en la calidad del liderazgo, la satisfacción en el trabajo y las conductas ofensivas.

Conclusión: Las dimensiones relacionadas con los dominios de gestión aparecieron como el foco principal del riesgo psicossocial.

Palabras clave: riesgos laborales; enfermeros; cuidados críticos

Received for publication: 10.04.19

Accepted for publication: 11.06.19

Introduction

Psychosocial risks are defined by the International Labor Organization, such as the interactions between the content, organization, and management of work with other organizational and environmental conditions (World Health Organization [WHO], 1984). When the requirements tend to exceed the capacities of individual workers, these risks are a dimension that not only has the potential to affect them in terms of physical or psychological health but can also influence the results of organizations (European Agency for Safety and Health at Work [EU-OSHA], 2013b). Within the contexts of urgency and emergency, nurses are exposed to extreme situations, in quantitative, cognitive, and emotional terms, which need to be recognized and controlled so as not to compromise the quality of care (Dempsey & Assi, 2018; Ilić, Arandjelović, Jovanović, & Nešić, 2017; Abdul Rahman, Abdul-Mumin, & Naing, 2017). Because of the relevance of the topic and the sparse scientific literature found in Portugal, this study aims to identify the psychosocial risks of the Portuguese nurses who provide care to critically ill patients, particularly at the level of prehospital emergency, emergency rooms, and intensive care units.

Background

In recent years, psychosocial risks have been regarded as an important focus of attention in all areas, but they are especially relevant in health because of its relation to the quality of care provided to patients.

The Registered Nurse Forecasting (RN4CAST), being the largest international study on resources and nursing care, has contributed to this area, based on the association of indicators of quality and safety with the nurses' work environments. This study not only has demonstrated an association between levels of professional exhaustion and the pressure of management models (Jesus, Pinto, Fronteira, & Mendes, 2014), but it has also highlighted the characteristics of the environments of unfavorable practice (Jesus, Roque, & Amaral, 2015), the influence of organizational conditions in professional engagement (Pinto, Jesus, Mendes, & Fron-

teira, 2015) and even the correlation between the workload and the risk of death of patients (Aiken et al., 2014).

Over the years, the work environment evolved because of the need for more dynamic organizations, capable of adapting to a changing environment. Changing the value and meaning of work for individuals and social groups, new forms of organization, socio-economic changes, and even modification of spaces, content, or nature of the work not only justify the extension of the visibility of the topic but have also led to the workers' increased efforts (EU-OSHA, 2013a). This combination of factors has contributed to the maximization of psychosocial risks in the work environment, which have increased along with stress levels (EU-OSHA, 2013b).

Occupational stress is recognized as the potential response of people when exposed to work demands and pressures not compatible with their capabilities. Despite being the most important psychosocial risk and whose experience during long periods can lead to serious problems in the physical and psychological health of workers, it is not the only recognized risk. Burnout, violence, harassment, and bullying/mobbing are also included in the main challenges for occupational health (EU-OSHA, 2011). The European Agency for Safety and Health at Work recognizes different organizational conditions as triggers for these problems but admits that they should not be confused with methodologies to enhance healthy, stimulant environments that promote the development of skills (EU-OSHA, 2013b). Thus, an excessively demanding job, the insufficient time for the completion of tasks, the lack of clarity about the roles to be developed, or the mismatch between demands and individual competencies are some examples of psychosocial risk factors (EU-OSHA, 2013b). These risks, in addition to causing physical and psychological compromises of workers, still affect their productivity and lead to estimated billion-dollar costs for companies and society (EU-OSHA, 2013b, 2018). Within contexts of emergency, the quantitative, cognitive, and emotional demands resulting from increased responsibility, continuous and uninterrupted care, satisfaction of immediate needs, frequent exposure to human suffering, grief, and death have been important factors

in the development of psychosocial risks of professionals (Ilić et al., 2017; Abdul Rahman et al., 2017).

Therefore, this study is necessary because of its potential to affect the quality of care, as well as the lack of studies that compare and correlate psychosocial risks in different environments of care delivery to critically-ill patients in Portugal, to identify the psychosocial risks of Portuguese nurses who provide care to critically ill patients.

Research Questions

Which psychosocial risks Portuguese nurses are exposed to within the context of care delivery to critically-ill patients?

Methodology

A quantitative and cross-sectional study was developed to understand and correlate the psychosocial risks that affect nurses who provide care to critically ill patients in different environments of practice, particularly regarding prehospital emergency care (PHEC), emergency rooms (ER), and intensive care units (ICU). Using a non-probabilistic sampling, the consent by the ethics committee of a central hospital in northern Portugal was obtained to apply the instrument to nurses who work in these contexts. The study was also replicated in the services of two other institutions in the same geographical area (ER, ICU, and, PHEC) because their management was interested and authorized its application. Data collection took place between 1 July and 31 December 2018 and obtained a participation rate of 40%. The final sample was composed of 61 nurses: ER ($n = 20$), ICU ($n = 35$), PHEC ($n = 6$). The representativeness of the population was not calculated because a 100% adherence was the objective. However, it did not happen, even though an extended period for the collection of data was established, as holidays and medical leaves were one of the reasons mentioned by the managers of the services. The data collection instrument selected was the Copenhagen Psychosocial Questionnaire (COPSOQ II – medium version), not only because it is an instrument whose validity, credibility, and evaluation of the most important psychosocial work-related

dimensions have international consensus (Pejtersen, Kristensen, Borg, & Bjorner, 2010), but also because it is translated and validated for the Portuguese population (Silva et al., 2014). The questionnaire has three versions, short, medium, and long. The medium version was selected because it is preferably used in international studies, enabling the comparison of data (Silva et al., 2014). The medium version is composed of 29 dimensions and 76 questions and can be used for the phases of assessment, planning, and inspection of the risk management process (Silva et al., 2014). All items are evaluated taking into account a 5-point Likert scale (1 - *never/almost never*, 2 - *rarely*, 3 - *sometimes*, 4 - *often*, and 5 - *always*, or 1 - *nothing/almost nothing*, 2 - *a little*, 3 - *moderately*, 4 - *very*, and 5 - *extremely*). The instrument was accompanied by a group of sociodemographic questions, in order to characterize the participants regarding gender, age, academic qualifications (specialist or generalist), type of contract (contract of public function employment or individual employment contract), service where they work, length of service, working hours per week, type of schedule (fixed, rotating with nights, and rotating without nights), and accumulation of functions in other institutions. A descriptive and exploratory analysis of the data was carried out, using the IBM SPSS Statistics software, version 25.0.

Regarding the ethical responsibilities, the consent via email to the author that validated the Portuguese version of the COPSOQ II was obtained, as well as from the hospital unit and the managers of the services. The informed consent of each one of the participants was also obtained before the delivery of the questionnaire. The instrument was delivered in paper format, inside a sealed envelope and with a numeric code assigned randomly by the principal investigator, to each participant who agreed to participate in the study, totaling 150 questionnaires. A time limit was established for the delivery/return of the instrument, and on the set date, 61 questionnaires were counted. It should be noted that the participants were asked to complete the questionnaires outside of working hours, to not entail costs for organizations, as well as assured of the anonymity regarding the identification of the participants and institutions where they work. The confidentiality of the

information was also guaranteed, so as not to relate the results to any particular institution, as it was one of the criteria defined by the ethics committee which accepted the implementation of the study.

Results

The sociodemographic and professional characterization of the participants was based on a descriptive analysis of the variables, as shown in Table 1. The sample was, thus, constituted mainly by female participants (77.0%),

belonging to the 31-40-year-old age group (44.3%). As for the variable academic qualifications, 59% are generalist nurses, and regarding the type of contract, it was observed that 75.4% have an individual employment contract. Concerning the service where they work, 57.4% work in the ICU, it is followed by 32.8% who work in the ER. It was also observed that 57.4% of the professionals accumulate functions with other services, 91.8% work in a rotating schedule, including nights, 50.8% are in reference service for ten years, and 91.8% are integrated into the schedule of 35 work hours per week.

Tabela 1

Sociodemographic and professional characterization of the participants

| | <i>N</i> | (%) |
|---------------------------|----------|------|
| Gender | | |
| Male | 14 | 23.0 |
| Female | 47 | 77.0 |
| Age (groups) | | |
| 21-30 | 20 | 32.8 |
| 31-40 | 27 | 44.3 |
| 41-50 | 9 | 14.8 |
| 51-60 | 5 | 8.2 |
| Academic qualifications | | |
| Generalist | 36 | 59.0 |
| Specialist | 25 | 41.0 |
| Type of contract | | |
| Public Service | 15 | 24.6 |
| Individual Work Contract | 46 | 75.4 |
| Service where they work | | |
| Prehospital | 6 | 9.8 |
| Emergency room (ER) | 20 | 32.8 |
| Intensive Care Unit (ICU) | 35 | 57.4 |
| Accumulation of functions | | |
| Yes | 26 | 42.6 |
| No | 35 | 57.4 |
| Type of schedule | | |
| Fixed | 3 | 4.9 |
| Rotating without nights | 2 | 3.3 |
| Rotating with nights | 56 | 91.8 |

| | | | |
|-------------------|--|----|------|
| Length of service | | | |
| Up to 10 years | | 31 | 50.8 |
| 11-20 | | 20 | 32.8 |
| 21-30 | | 8 | 13.1 |
| > 31 | | 2 | 3.3 |
| Weekly schedule | | | |
| 35 hours | | 56 | 91.8 |
| 40 hours | | 5 | 8.2 |

Regarding the psychometric characteristics of the COPSOQ II, Table 2 presents the indicators of internal consistency (Cronbach α) for the 29 dimensions that make up the medium version of the COPSOQ II, as well as the mean and standard deviation values obtained in each dimension. According to the table analysis, it

is evident that, in the majority, the dimensions of the COPSOQ II are good indicators of internal consistency (α), except the *Quantitative demands*, *Cognitive demands*, and *Vertical trust*. The small number of participants may be evidence of those results.

Table 2

Internal consistency, means, and standard deviations of the dimensions of the COPSOQ medium version

| Dimensions | Items | α | Mean | SD |
|-------------------------------|-------|----------|------|------|
| Quantitative demands | 3 | 0.53 | 2.96 | 0.69 |
| Work rhythm | 1 | * | 4.02 | 0.76 |
| Cognitive demands | 3 | 0.57 | 4.33 | 0.49 |
| Emotional demands | 1 | * | 4.38 | 0.73 |
| Influence in work | 4 | 0.71 | 2.54 | 0.87 |
| Development possibilities | 3 | 0.69 | 4.13 | 0.56 |
| Predictability | 2 | 0.78 | 2.74 | 0.74 |
| Transparency in working roles | 3 | 0.60 | 3.95 | 0.57 |
| Rewards | 3 | 0.86 | 2.77 | 0.83 |
| Working conflicts | 3 | 0.65 | 3.21 | 0.51 |
| Social support from coworkers | 3 | 0.72 | 3.40 | 0.60 |
| Social support from superiors | 3 | 0.92 | 2.11 | 0.96 |
| Social community in work | 3 | 0.85 | 3.69 | 0.62 |
| Leadership quality | 4 | 0.92 | 2.73 | 0.93 |
| Horizontal trust | 3 | 0.65 | 2.73 | 0.66 |
| Vertical trust | 3 | 0.38 | 3.29 | 0.59 |
| Justice and respect | 3 | 0.74 | 2.71 | 0.59 |
| Self-efficacy | 2 | 0.88 | 3.67 | 0.55 |
| Meaning of work | 3 | 0.73 | 4.13 | 0.47 |
| Workplace commitment | 2 | 0.75 | 3.31 | 0.90 |
| Job satisfaction | 4 | 0.85 | 2.92 | 0.84 |
| Work insecurity | 1 | * | 2.51 | 1.29 |
| General health | 1 | * | 3.02 | 0.85 |
| Work-family conflict | 3 | 0.80 | 3.64 | 0.83 |

| | | | | |
|---------------------|---|------|------|------|
| Sleeping problems | 2 | 0.92 | 2.89 | 1.21 |
| Burnout | 2 | 0.82 | 3.51 | 0.81 |
| Stress | 2 | 0.84 | 3.24 | 0.95 |
| Depressive symptoms | 2 | 0.88 | 2.60 | 1.04 |
| Offensive behaviors | 4 | 0.80 | 1.66 | 0.80 |

Note. α = Cronbach's alpha; SD = Standard Deviation.

*It is not possible to calculate Cronbach's alpha because the dimension only has one item.

A descriptive analysis of all dimensions assessed in the Portuguese version of the COPSOQ II medium version was carried out, to confirm the levels of exposure to psychosocial risks, health, stress, and job satisfaction in a sample of Portuguese nurses who work in the PHEC, ER, and ICU. Figure 1 presents the general results of the dimensions of the COPSOQ II, through the division of scores into tertiles, such as is used by the authors (Silva et al., 2014). These tertiles are interpreted through the health impact that exposure to a certain dimension represents, in a tricolor model, in which

red represents a health risk, yellow an intermediate risk, and green a favorable situation. The analysis of Figure 1 allows confirming that various dimensions comprise a risk established in more than 50% of the studied population, emphasizing the *cognitive demands* (97%), *emotional demands* (88%), *social support from superiors* (69%), and *work-family conflict* (61%). The development possibilities, the transparency of working roles, the social community at work, the meaning of work, and the offensive behaviors were the dimensions that scored a lower exposure to psychosocial risks.

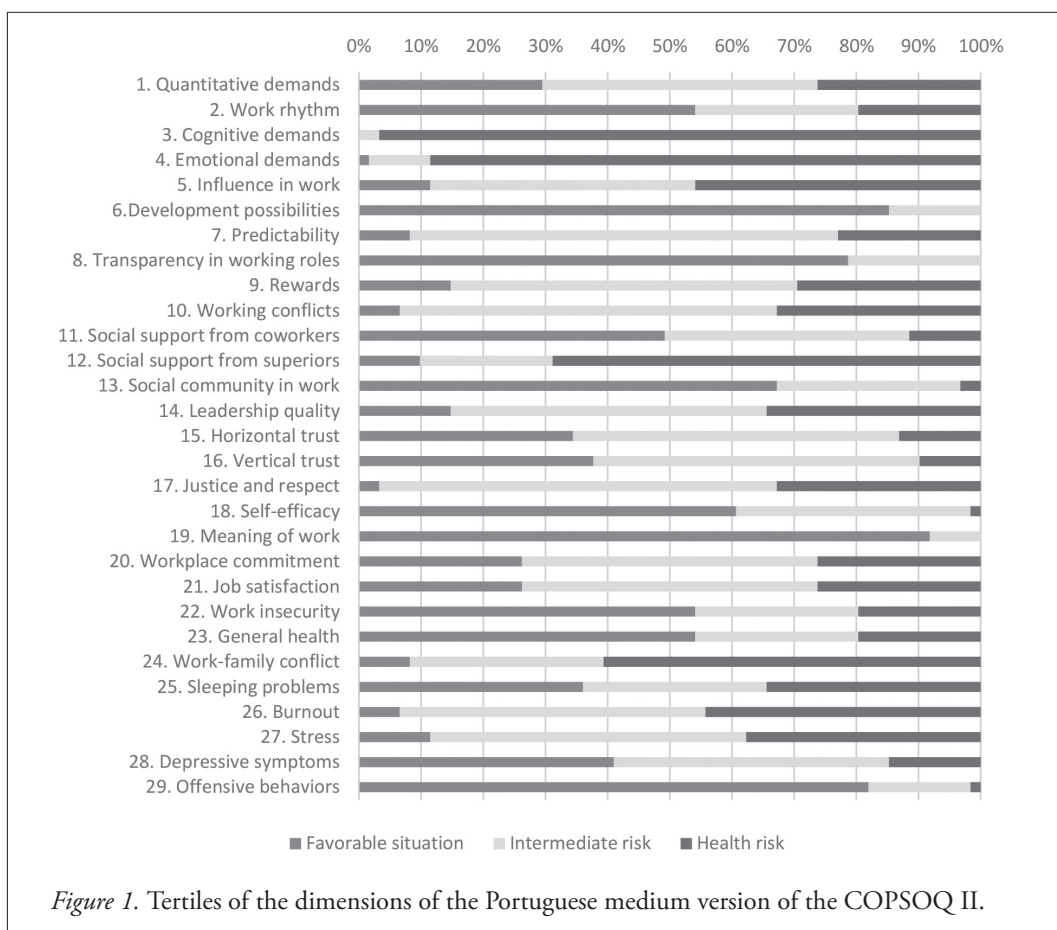


Figure 1. Tertiles of the dimensions of the Portuguese medium version of the COPSOQ II.

To compare the dimensions of the COPSOQ II, the Mann-Whitney non-parametric test was used for two independent samples, after not checking the assumptions regarding the normality of the distribution of results. Table 3 shows the differences of the dimensions of the COPSOQ II regarding academic qualifications, and that there are no statistically significant differences in the dimensions of Social support from superiors (Generalist nurse *Med* = 2.33; Specialist *Med* = 1.67;

U = 299.00, *p* = 0.024), Leadership quality (Generalist *Med* = 3.00; Specialist *Med* = 2.25, *U* = 264.00; *p* = 0.006), Justice and respect (Generalist *Med* = 3.00; Specialist *Med* = 2.67; *U* = 291.00, *p* = 0.017), and Job satisfaction (Generalist *Med* = 3.25; Specialist *Med* = 2.50; *U* = 312.50, *p* = 0.043), the median values being lower in the group of nurse specialists. For the remaining dimensions of the COPSOQ II, no statistically significant differences were found.

Table 3

Differences in the dimensions of the COPSOQ II regarding academic qualifications (Generalist v. Specialist)

| | Generalist (<i>n</i> = 36) Median | Specialist (<i>n</i> = 25) Median | <i>U</i> | <i>p</i> |
|-----------------------------------|--|--|----------|----------|
| 12. Social support from superiors | 2.33 | 1.67 | 299.00 | 0.024 |
| 14. Leadership quality | 3.00 | 2.25 | 264.00 | 0.006 |
| 17. Justice and respect | 3.00 | 2.67 | 291.00 | 0.017 |
| 21. Job satisfaction | 3.25 | 2.50 | 312.50 | 0.043 |

Note. *U* = Mann-Whitney test; *p* = Probability value.

Table 4 presents the results of the differences in the COPSOQ II regarding the service where they work. To obtain an equivalent number in groups for comparison, prehospital nurses were not included given their limited number (*n* = 6). The analysis of the table shows there are no statistically significant differences in the dimensions of leadership quality (ER *Med* = 2.13; ICU *Med* = 3.00; *U* = 224.00, *p* = .027) and job satisfaction (ER *Med* = 2.50; ICU *Med* = 3.25; *U* = 164.00, *p* = 0.001),

the median values being lower in the group of nurses who work in emergency rooms. In the *offensive behaviors* dimension, there are statistically significant differences among nurses who work in emergency rooms (*Med* = 2.00) and nurses who work in intensive care units (*Med* = 1.00, *U* = 134.00, *p* = 0.001), but in this case the median values are higher among nurses who work in emergency rooms. For the remaining dimensions of the COPSOQ II, no statistically significant differences were found.

Table 4

Differences in the dimensions of the COPSOQ II regarding the service where they work

| | ER (<i>n</i> = 20) Median | ICU (<i>n</i> = 35) Median | <i>U</i> | <i>p</i> |
|-------------------------|----------------------------------|-----------------------------------|----------|----------|
| 14. Leadership quality | 2.13 | 3.00 | 224.50 | 0.027 |
| 21. Job satisfaction | 2.50 | 3.25 | 164.00 | 0.001 |
| 29. Offensive behaviors | 2.00 | 1.00 | 134.00 | 0.001 |

Note. ER = Emergency room; ICU = Intensive care unit; *U* = Mann-Whitney test; *p* = Probability value.

Table 5 shows the results of the differences in the COPSOQ II regarding the accumulation of functions in other institutions. The analysis of the table concludes that there are statistically significant differences in the Vertical trust dimension (*Yes Med* = 3.00; *No Med* = 3.67; *U*

= 272.00, *p* = 0.006), the median values being lower in the group of nurses who accumulate functions. For the remaining dimensions of the COPSOQ II, no statistically significant differences were found.

Table 5

Differences in the dimensions of the COPSOQ II regarding the accumulation of functions

| | Yes (<i>n</i> = 26) Median | No (<i>n</i> = 35) Median | <i>U</i> | <i>p</i> |
|--------------------|-----------------------------------|----------------------------------|----------|----------|
| 16. Vertical trust | 3.00 | 3.67 | 272.00 | 0.006 |

Note. *U* = Mann-Whitney test; *p* = Probability value.

Table 6 presents the results of the differences in the COPSOQ II regarding the length of service. To obtain an equivalent number in groups for comparison, the length of service up to 10 years and more than 10 years were merged. The analysis of the table allows concluding that there are statistically significant differences in the

work-family conflict dimension (up to 10 years *Med* = 4.00; more than ten years *Med* = 3.33; *U* = 307.50, *p* = 0.022), the median values being higher in the group of nurses who work for less time. For the remaining dimensions of the COPSOQ II, no statistically significant differences were found.

Table 6

Differences in the dimensions of the COPSOQ II regarding the length of service

| | Up to 10 years (<i>n</i> = 31) Median | More than 10 years (<i>n</i> = 30) Median | <i>U</i> | <i>p</i> |
|--------------------------|--|--|----------|----------|
| 24. Work-family conflict | 4.00 | 3.33 | 307.50 | 0.022 |

Note. *U* = Mann-Whitney test; *p* = Probability value.

Discussion

The analysis of the results allowed inferring that, in this population, there are high levels of exposure to risk situations in the workplace, particularly regarding the dimensions of Cognitive demands (97%), Emotional demands (88%), Social support from superiors (69%), and Work-family conflict (61%). Taking into account the reference values for the Portuguese population, resulting from the process of validation of the scale (Silva et al., 2014), it is possible to confirm that these dimensions have a higher score when compared to the results of a study by Silva et al. (2014). In the latter, they are taken as reference values for the Cognitive demands (approximately 70%), Emotional

demands (approximately 50%), Social support from superiors (approximately 27%), and Work-family conflict (approximately 22%), the first two dimensions being the two biggest risk scores of the abovementioned study (Silva et al., 2014). In this case, the discrepancies between the results and the reference values for the Portuguese population can be explained by the increase in professional demands within the context of the care delivery to critically-ill patients. As Ilić et al. (2017) and Abdul Rahman et al. (2017) suggest, the constraints related to increased responsibility, continuous and uninterrupted care, satisfaction of immediate needs, frequent exposure to human suffering, grief, and death are important factors to be taken into account in the assessment of psychosocial risks. They also assume special prominence in

the work environments in which this study was developed, justifying the results (Ilić et al., 2017; Abdul Rahman et al., 2017).

Still, although the dimensions related to Cognitive demands, Emotional demands, Social support from superiors, and Work-family conflict have the highest scores of psychosocial risks, considering the total score between the effective and intermediate risk, other potentially harmful dimensions also emerge on this population. Thus, in addition to the already identified Cognitive demands (100%), Emotional demands (98%), Work-family conflict (92%), and Social support from superiors (90%), the dimensions of Justice and respect (96%), Burn-out (93%), Working conflicts (93%), Predictability (91%), Stress (88%), Leadership quality (85%), Rewards (85%), Job satisfaction (73%), Workplace commitment (73%), Quantitative demands (70%), Sleeping problems (64%), and Vertical trust (62%) assume a special highlight because they obtained in more than half of the answers a score compatible with some level of risk in the workplace, which remain higher when compared to the reference values for the Portuguese population, using the results of the Copenhagen Psychosocial Questionnaire COPSOQ: *Portugal e Países Africanos de Língua Oficial Portuguesa* (Silva et al., 2014).

Even in the attempt to answer the research question of this study, the data obtained were further exploited, giving rise to dimensions related to the management area, namely Social support from superiors ($p = 0.024$), Leadership quality ($p = 0.006$ and $p = 0.027$), Vertical trust ($p = 0.006$), Justice and respect ($p = 0.017$), and Job satisfaction ($p = 0.043$ and $p = 0.001$). In 2010, Malloy and Penprase, in a study with the participation of 122 nurses, aimed at correlating the style of leadership and the psychosocial risks, showed the existence of a statistically significant relationship between the psychosocial risks and the leadership style adopted. In this study, the risks were lower if using a leadership not only based on the building of trust, integrity, motivation, encouragement, and accompaniment (characteristics of transformational leadership), which also rewarded the achievement of objectives (characteristic of transactional leadership; Malloy & Penprase, 2010). In turn, Manning (2016) carried out a study on a sample of 446 nurses from three hos-

pitals in the United States of America to evaluate the influence of leadership style adopted by nurse managers in the nurses' involvement with work. He concluded that managers that support and communicate through a style of transformational and transactional leadership achieve better results in the nursing team and may even contribute to the organizational results (Manning, 2016).

Thus, taking into account the results and their relation to the studies of Malloy and Penprase (2010) and Manning (2016), a relationship between psychosocial risks and the dimensions related to the areas of management was observed. In this study, the construction of trust was relevant because of the need for improvements in transparency and reciprocity in relations with the management (Vertical trust); the integrity, in turn, was reflected on the need for a more congruent performance with the ethics and morality, either in the resolution of conflicts or the distribution of work by the leaders (Justice and respect); the motivation was emphasized by the need of nurses to see their skills recognized by their superiors (Job satisfaction); encouragement and monitoring have been enhanced by the need of nurses to receive more support and feedback about their work (Social support from superiors); and, finally, the reward for accomplishing objectives has been highlighted, for example, by the need of nurses to have access to more development opportunities by the management (Leadership quality). The relevance of management methodologies that support a transformational leadership, which values communication and support, and transactional leadership, which values rewards for accomplishing objectives, are not only consistent with the results of this study, but also alienate laxer management methodologies which only intervene when problems are installed. Nurses have support, trust, and recognition needs, through management methodologies that support their practice in pillars of integrity and justice (Malloy & Penprase, 2010; Manning, 2016; Dempsey & Assi, 2018).

The *Work-family conflict* assumed in this study a statistically significant dimension in a group of nurses with less length of service (up to 10 years $Med = 4.00$; $p = 0.022$), a fact that is also supported by the results of the study of Dempsey, Reilly, and Buhlman (2014), as it

is shown that these professionals are more involved in work in the first 6 months, decreasing their levels of involvement from this period on, up to 10 years of service ($p = 0.000$; Dempsey et al., 2014). Even so, considering the results, is it that nurses with less length of service in a critically-ill patient care unit are more involved in the work or do they deal with higher pressure and labor insecurity levels, which make them accept longer working hours and therefore greater family damage?

However, regarding the offensive behavior dimension, the literature found supports these results, as the study by Abdul Rahman et al., (2017) concluded that these professionals have not only high prevalence of threats of violence and bullying, but also the most affected work at the ER instead of the ICU. In this study, the risk of violence was statistically significant for the nurses who work in the ER ($p = 0.001$), when compared to the ICU. Maguire, O'Meara, O'Neill, and Brightwell (2018) carried out a systematic review of the literature including the analysis of articles from 2000 to 2016, and reinforced the issue of violence against professionals who work in emergency rooms, highlighting it as common risk (Maguire et al., 2018).

Over the years, psychosocial risks have been a focus of attention by the scientific community, and several studies have been developed to identify the factors that influence them. Studies in the literature that are similar in terms of population and methodology are scarce, and those available attempt to establish causal relationships to psychosocial risks. This study, despite the constraints related to the sample, sought to explore and know a context in its actual model, without assuming a previous causal relationship. Thus, its contribution includes valuable knowledge, which not only allows knowing the context of care to critically ill patients in Portugal but also alerts to the influence of management in nurses' psychosocial risks.

Conclusion

The results allow concluding that psychosocial risks are present within the context of the care delivery to critically-ill patients, in dimensions associated with cognitive demands, emotional

demands, social support from superiors, and work-family conflict. The nurses from the ER, in comparison to ICU nurses, presented greater psychosocial risk in the dimensions related to leadership quality, job satisfaction, and offensive behavior. The constraints associated with the adopted management methodologies, in matters relating to the support of superiors, distribution of work, recognition, and appreciation of the individual competencies, emerged as causal factors of these results.

The limitations of this study are the scarcity of literature that allows comparing the results more effectively, as well as the reduced sample, which does not allow generalization. Thus, it is important that further studies be carried out to enable the integration of larger and more representative samples, and that take into consideration specific and more extended contexts, to provide more knowledge about the realities and intervene appropriately in each context or service according to their specificities, level of management, and staff.

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