

ORIGINAL ARTICLE

Compassion fatigue and anxiety in critical care emergency nurses: In between efficiency and humanity



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KEYWORDS

Nurses;
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Abstract

Objectives: To determine the emotional impact of permanent proximity to trauma and death in the Emergency and ICU's nurses establishing prevalence of Compassionate Fatigue (burnout and Secondary Traumatic Stress) and anxiety. Analyze its relationship with sociodemographic, training, workplace and psychological variables.

Methods: Descriptive, cross-sectional and multicentre study. The validated ProQOL v. IV and STAI scales and an ad-hoc questionnaire with the variables of the second objective were used in 710 nurses from nine highly complex hospitals in Catalonia (Spain).

Results: In both units, the prevalence of professionals affected with high scores of burnout was higher than 20%, on Secondary Traumatic Stress was 30% and, 12% on anxiety. Each subscale was significantly associated with the intention to leave units and the career. 97% of participants stated that they needed to be trained in emotional management.

Conclusion: The prevalence of burnout and Secondary Traumatic Stress were higher in our study than those offered in the reference literature in emergency and ICU nurses. The prevalence of each construct was individually related to the desire to leave work units and career. This fact, together with the participants' desire to be better trained in emotional management exposes the need to establish educational plans, as well as institutional measures to prevent and support nurses for Compassion Fatigue.

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PALABRAS CLAVE

Enfermeras;
Fatiga por
compasión;
Ansiedad;
Cuidados intensivos;
Urgencias

Fatiga por compasión y ansiedad en enfermeras de cuidados críticos y emergencias. Entre eficiencia y humanidad

Resumen

Objetivos: Determinar el impacto emocional de la proximidad al trauma y la muerte en enfermeras de urgencias y UCI mediante las prevalencias de Fatiga de Compasión (*burnout* y Estrés Traumático Secundario) y ansiedad. Analizar su relación con variables de tipo sociodemográfico, formativas, laborales y psicológicas.

Método: Estudio descriptivo, transversal y multicéntrico. Se utilizaron las escalas validadas ProQOL v.IV y STAI y un cuestionario *ad-hoc* con las variables del segundo objetivo, en 710 enfermeras de nueve hospitales de alta complejidad de Cataluña (España).

Resultados: En ambas unidades, la proporción de profesionales afectados en alto grado de *burnout* fue superior al 20%, al 30% en Estrés traumático Secundario, y el 12% en ansiedad. Cada subescala se asoció con la intención de abandonar la unidad y la profesión. Un 97% de participantes manifestaron necesario recibir formación en gestión emocional.

Conclusiones: Las prevalencias de *burnout* y Estrés Traumático Secundario, fueron superiores en nuestro estudio respecto a la literatura de referencia en las enfermeras de urgencias y en las de UCI. La prevalencia de cada constructo se relacionó individualmente con el deseo de abandono de las enfermeras de sus unidades y de su profesión. Este hecho, junto al deseo de recibir formación de los participantes, expone la necesidad de establecer planes formativos, así como medidas institucionales de prevención y apoyo para la Fatiga por Compasión.

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What is known

- Compassion is a nursing quality that is closely related to the ability of nurses to establish a therapeutically relevant relationship with their patients.
- This emotional and compassionate bond is related in the literature to holistic and quality care; however, their permanent proximity to the patient's trauma makes nurses emotionally vulnerable.
- Compassion fatigue implies physical and psychological distress for nurses, with consequences for their personal and professional life, decreasing their commitment and increasing their desire to leave.

What it contributes

- No previous study in Spain has analysed compassion fatigue in nurses in highly demanding units, such as ED and ICU.
- Compassion fatigue is present and significantly impacts nurses in these units, regardless of their personal, educational, and professional characteristics.
- Almost all the participants perceived the need for specific training in emotional management.

Implications of the study

- The high prevalence of compassion fatigue and anxiety has an impact on nurses' health, quality of care, and increased costs and is related to nurses' desire to leave their unit and the profession. This exposes their risk and the need for institutional policies.

Introduction

The present and future shortage of nurses is a global concern of such magnitude that their welfare, recognition, and dignity have been established by the World Health Organisation (WHO) as a top priority and challenge.¹

Nursing is oriented towards the care of all dimensions of the human being,² overall social well-being and the promotion of individual health through establishing a nurse-patient bond.³ This empathic bond enables a competent response to the expectations of their competence and ethical practice and is related to positive therapeutic outcomes and to the satisfaction of both patients and professionals.⁴ Compassion, defined as the ability to put oneself in the place of another and the desire to help,⁵ is currently at the centre of global care policies,⁶ which exposes an increase in bureaucratisation to the detriment of ethics. The importance of

this construct is reflected in nursing codes of ethics.⁷ However, commitment to the processes of illness, death, and emotional support implies the permanent contagion of negative emotions for nurses. This proximity, therefore, inherent to their professional development, also exposes their own vulnerability.^{8,9}

Compassion fatigue (CF) is a type of stress resulting from ongoing emotional exposure to the trauma and death of patients. CF, according to Figley,⁹ is “the cost of caring”, and occurs in the absence of the mechanisms necessary to identify and manage the emotional residue of this contact. This concept, initially coined by Joinson¹⁰ to refer to a form of burnout impacting nurses, established this differential nuance consisting of discriminating the pressure that any work environment can exert in the form of excessive burdens, overexertion or lack of recognition, which define burnout, by contrasting it with the emotional impact from contact with trauma. This, referred to by some authors as secondary traumatic stress (STS), could be linked to burnout.¹¹ Both constructs would make up CF,¹² and could occur in association with anxiety in nurses.¹³

Although CF and anxiety can occur in any setting where nurses provide compassionate care, and negatively impact their physical and mental health, their commitment to patients and institutions and the quality of their care,¹⁴ there are highly demanding units whose characteristics can be considered to entail greater risk.

Exposure to trauma, violence and unexpected deaths in the ED,¹⁵ as well as the high complexity, technification, and care of patients with incapacitating and life-threatening diseases in intensive care units (ICU),¹⁶ are undervalued aspects that increase the pressure on professionals and have been related to CF.¹⁷

In these units, the system requires the nurse to take on an increasing number of patients in need of urgent care, high technical complexity, an increase in delegated functions, number of records and administrative tasks, as well as the challenge of balancing competitive and polarised interests: meeting the ratio and technical management, and quality human care. In these settings, the nurse’s focus oscillates between patient wellbeing, the correct operation of machines, and the expectations of managers, teams and families, which undermines their reflection and critical thinking.³

CF is currently a major focus of study worldwide in emergency nurses in America,¹⁸ Asia,¹⁹ and Europe.¹⁸ In turn, the ICU is one of the most studied areas, with systematic reviews,²⁰ and data from American,²¹ Asian,²² and Australian²³ nurses. The scarcity of studies relating to CF in Spanish nurses, and its absence to date in emergency and critical care nurses, is remarkable.

CF and anxiety in nurses are strongly related to their intention to leave their profession.²⁴ According to the 2019 National Health Care Retention & RN Staffing Report,²⁵ registered nurses with this profile have the highest dropout rate in the United States. No evidence has been found in our setting regarding the degree of CF and anxiety presented by nurses in highly demanding units, with respect to the importance reported by these professionals of receiving coping training, or its potential relationship with their intention to stay in or leave their jobs.

Therefore, the aim of this study was to quantify the prevalence of CF (burnout/STS) and anxiety in emergency and ICU nurses, and to study their relationship with sociodemographic, educational, occupational, and psychological variables.

Methods

Type of study

A descriptive, cross-sectional, multicentre study conducted in nine hospitals in Catalonia between 2015 and 2017.

Sample calculation

According to previous studies,²⁶ 25% of nursing professionals reported a high risk of CF, with an alpha risk of 5% and a desired precision in the results of $\pm 5\%$. To obtain this level of precision, the minimum sample size required was set at 289 nurses in each unit.

Participants and data collection

We included nurses from the EDs and ICU units of nine hospitals in Catalonia with links to the units studied in their four work shifts. Nurses in training and those not present were excluded.

The centres were selected by convenience, according to uniformity criteria. The nurses’ participation was voluntary and anonymous. All permissions from the clinical research ethics committees and the informed consent of each participant were obtained.

Subsequent to the pilot study in the ED ($n = 47$ nurses), a reference person was assigned in each centre, who participated in the informative meetings in each unit and shift with respect to the objectives of the study. Reminders were given until a minimum of 85% of the nurses included were informed.

The number of participants was $n = 710$ (ICU $n = 396$; ED $n = 314$), exceeding the minimum number, established at 289 participants/unit.

Instruments

Each participant received a paper copy of the Professional Quality of Life v.IV (ProQOL)¹² and State-Trait Anxiety Inventory (STAI)²⁷ scales together with a personal data questionnaire, prepared ad hoc, and an informed consent form, with a reminder of anonymity, voluntary participation, and compliance with the law of confidentiality.

The Spanish version of the ProQOL scale determines the positive and negative aspects of the quality of life of professionals in relation to their work. Its rating system is in Likert format, where 1 means “never” and 5 means “very frequently”. It has 30 items in total, with 10 items for each of its three dimensions: 1) compassion satisfaction ($= .87$); 2) burnout ($= .72$), and 3) secondary traumatic stress (STS) ($= .80$). The questionnaire categorises scores into high, medium, and low levels, and also provides mean scores for comparison.

Table 1 Socio-demographic, educational, occupational, and personal characteristics of the nurses according to work area.

Variable	ED				ICU			
	n	%	$\bar{x}$	SD	n	%	$\bar{x}$	SD
Age	306		37.0	10.0	392		38.3	9.7
Sex	314				395			
Male	51	16.2			60	15.2		
Female	263	83.8			335	84.8		
Staff overseen	310				294			
Yes	148	47.7			203	51.5		
No	162	52.3			191	48.5		
Work shift	313				395			
Morning	47	15.0			80	20.3		
Afternoon	73	23.3			84	21.3		
Night	119	38.0			165	41.8		
Rotating	74	23.6			66	16.7		
Specialist training	313				389			
Yes	67	21.4			88	22.6		
No	246	78.6			301	77.4		
Years in the profession	309		13.5	9.6	393		15.2	9.6
Years in the unit	307		9.2	7.8	389		11.0	8.4
Hours worked	309				393			
<20 h/week	33	10.7			23	5.9		
20–40 h/week	240	77.7			327	83.2		
>40 h/week	36	11.6			43	10.9		
Previous EM training	313				394			
Yes	115	36.7			124	31.5		
No	198	63.3			270	68.5		
Perceived need for EM training	313				395			
Yes	304	97.1			385	97.5		
No	9	2.9			10	2.5		
Department change	311				393			
Yes	163	52.4			211	53.7		
No	148	47.6			182	46.3		
Change of profession	300				381			
Yes	83	27.7			110	28.9		
No	217	72.3			271	71.1		
Re-choice of profession	306				387			
Yes	233	76.1			288	74.4		
No	73	23.9			99	25.6		

EM: Emotional management; SD: Standard Deviation.

The STAI anxiety scale has two dimensions: 1) trait anxiety: inherent to the character, more stable condition ($\alpha = .85$), and 2) state anxiety: situational, momentary, transient ($\alpha = .92$). It consists of 40 items divided into two subscales: state and trait, with responses in Likert format from 0 to 3. The overall score is obtained with the sum of each subscale, and ranges from 0 (minimum degree) to 60 (maximum degree of anxiety).

For the two scales, low, moderate, and high degrees of impact were calculated, according to the cut-off points determined by the authors for each scale. For the STAI scale, the means for the anxiety scale were also calculated to quantify the difference between them and to determine the degree of anxiety triggered by the job.

The ad hoc questionnaire collected sociodemographic, educational, occupational, and psychological variables used in the logistic regression, as shown in Table 1.

Qualitative variables were presented as percentages and quantitative variables as means ($\pm$ standard deviation [SD]). We used prevalence and 95% confidence intervals (CI) as a measure of frequency. We analysed associations between variables through binary logistic regression and expressed estimates as adjusted odds ratio and 95% CI, significance as $P < .05$. Statistical analyses were performed with SPSSTM v.20.

Results

The final participants were $n = 306$ for emergency care and $n = 392$ for intensive care, exceeding in both cases the 289 of the sample calculation as the minimum desirable number.

The profile of the participants in both units was very uniform in all variable types (Table 1), mostly women, with a similar mean age and years in the profession. More of the

Table 2 Prevalences by area: ProQOL and STAI scales. Degree of impact on the nurses by subscale.

Variable	ED			ICU		
	n	Prevalence (%)	95% CI	n	Prevalence (%)	95% CI
ProQOL scale						
<i>Satisfaction subscale</i>	314			396		
Low	66	21	18.79–23.21	72	18.2	16.10–20.30
Medium	174	55.4	52.70–58.10	223	56.3	53.61–59.88
High	74	23.6	21.29–25.91	101	25.5	23.13–27.87
<i>Burnout subscale</i>	314			396		
Low	51	16.2	14.20–18.20	53	13.4	11.55–12.25
Medium	198	63.1	60.48–65.72	254	64.1	61.49–66.71
High	65	20.7	18.50–22.90	89	22.5	20.23–24.77
<i>STS subscale</i>	314			396		
Low	42	13.4	11.55–15.25	46	11.6	9.86–13.34
Medium	167	53.2	50.49–55.91	192	48.5	45.79–51.21
High	105	33.4	30.84–35.96	158	39.9	37.24–42.56
	n	Prevalence (%)	95% CI	n	Prevalence (%)	95% CI
STAI scale						
<i>Trait anxiety subscale</i>	311			392		
Low	159	51.1	48.38–53.82	194	49.5	46.78–52.22
Medium	115	37.0	34.38–39.62	174	44.4	41.70–47.10
High	37	11.9	10.14–13.66	24	6.1	4.80–7.40
<i>State anxiety subscale</i>	310			395		
Low	121	39	36.35–41.65	161	40.8	38.13–43.47
Medium	133	42.9	40.21–45.59	183	46.3	43.59–49.01
High	56	18.1	16.01–20.19	51	12.9	11.08–14.72

CI: confidence interval.

ED nurses (36.7%) reported having received training in emotional management than the ICU nurses (31.5%), and in both cases more than 97% reported the need for training in this respect. More than 50% had considered changing department and more than 25% had considered leaving the profession, in both units.

The different dimensions of the ProQOL scale (Table 2) showed similar prevalence in its three domains and distributions by degree of impairment. Professional satisfaction grouped more than half of the professionals in the middle range in both units, and more of the ICU critical care nurses showed high impact in terms of burnout and STS. In contrast, both state anxiety and trait anxiety were higher in the ED nurses.

Following univariate logistic regression, to define the significance of covariates significantly associated with the subscales, multiple logistic regression was performed on the resulting associations. The multivariate analysis was defined at a 95% confidence level with the adjusted odds ratio as the measure of association, with the variables under study being satisfaction, no satisfaction, burnout, STS, and anxiety.

Neither of the two units showed an overall association when adjusting the odds ratio between burnout, STS, and anxiety, and the socio-demographic, educational, and occupational variables listed in Table 1.

The variables associated with the ProQOL scale are presented in Table 3, and those associated with the STAI scale are presented in Table 4.

Discussion

Both components of CF (burnout and STS) are highly prevalent in our sample, coinciding with the view of Mooney et al.²⁸ on CF in nurses in highly demanding units. These prevalences appear jointly and in equivalent proportions in the ED and ICU in both dimensions of our results, which reinforces the interrelationship proposed in the literature between both constructs²⁹ and anxiety³⁰ when nurses are permanently exposed to emotionally demanding situations. Milligan and Almomani³¹ wonder whether in these areas the evolution of nursing is not towards a model focused on cost control and efficiency, and moving away from compassionate care, as a result of CF and anxiety in professionals.

In a very similar way, the ED and ICU nurses were grouped, in more than 80% of the participants, into medium and high impact bands, both for burnout and STS. In both units, the proportion of professionals impacted by high burnout was over 20%, and 30% in STS. The results, considered globally, are slightly worse in the ICU, and the STS subscale shows a higher degree of impact in these critical care professionals.

In the ED setting, the results are comparatively worse than those of a multicentre study in American³² and Chinese¹⁹ nurses, even considering the pandemic situation of the latter, and very similar to Portuguese nurses.¹⁸ In ICU, our results would be comparable to those of Australian intensive care nurses²³ and worse than those of Jordanian nurses,²² which places nurses in our setting at serious risk.

Table 3 Variables associated with the ProQOL v.IV scale, logistic regression.

Variable	ProQOL v.IV scale					
	Satisfaction AOR (95% CI)		Burnout AOR (95% CI)		ETS	AOR (95% CI)
	ED	ICU	ED	ICU	ED	ICU
<i>Work shift</i>						
Morning	1	1				
Afternoon	.9 (.3–2.3)	.64 (.26–1.55)				
Night	1.0 (.4–2.4)	.96 (.46–2.05)				
Rotating	0.5 (.5–.6)	.53 (.49–.61)				
<i>Working hours</i>						
<20 h/week					1	
20–40 h/week					6.5 (1.8–23.8)	
>40 h/week					3.8 (1.2–11.5)	
<i>Previous EM training (No)</i>		.30 (.14–.65)				
<i>Perceived need (Yes)</i>		.15 (.03 .78)				
<i>Have considered a change of unit (Yes)</i>				1.94 (1.15–3.28)		
<i>Have considered a change of profession (Yes)</i>			2.8 (1.4–5.3)		2.8 (1.6–4.8)	
<i>Have considered a re-choice of profession (Yes)</i>	.1 (.0–.2)		.3 (.2–.7)	.56 (.32–.95)		.54 (.34–.86)

STS: secondary traumatic stress; EM: emotional management; AOR: adjusted odds ratio.

Table 4 Variables associated with STAI scale, logistic regression.

Variable	Trait anxiety ED	STAI scale AOR (95% CI)		State anxiety ED	AOR (95% CI) ICU
		ED	ICU		
<i>Hours worked</i>					
<20 h/week	1				
20–40 h/week	6.9 (1.4–33.4)				
>40 h/week	.6 (.1–2.6)				
<i>Have considered a change of profession (Yes)</i>	3.1 (1.3–7.5)	4.79 (1.95–11.78)			
<i>Have considered a re-choice of profession (Yes)</i>	.3 (.1–.8)			.1 (.0–.3)	.39 (.18–.83)

AOR: adjusted odds ratio.

The prevalence of state anxiety, reflecting anxiety at the time of assessment and thus during the work shift, grouped approximately 60% in the middle and high ranges in both units. More than 12% of the participants were distributed in the high band. Although the CF results were worse than the anxiety results, and no baseline studies were found, this stratification cannot be considered favourable.

Although no relationship could be established between the degrees of impact of the different disorders and socio-demographic, personal, training, or work variables and CF and anxiety, as variables such as sex²¹ or age^{33,34} did in other studies, the uniformity of the impact of CF on nurses could correspond to the particularly demanding characteristics of some special units, in agreement with Andriani et al.,³⁵ and our hypothesis.

The most relevant finding of the study was the close relationship between the prevalences of burnout, STS, and anxiety and the intention to leave either the work unit or the profession, in line with other authors.^{24,36} Although approx-

imately one third of the participants had received training in emotional management, and more than 97%, both in the ED and ICU, said it was important to receive it, this specialist care training for emotionally complex situations did not appear as a protective factor, unlike in other studies.^{29,37}

Although we find no interventions specifically designed for CF and anxiety in our setting, there are effective measures that provide resources and skills to promote resilience.^{24,38} The high risk, together with the desire of professionals to receive training in emotional management, exposes the need to implement training plans, and institutional measures of prevention and support for CF. This point is clinically and socially relevant, because, regardless of the differences between cultures, settings or other factors, the desire to leave appears a constant internationally.

In terms of limitations, cross-sectional studies do not allow for the assessment of temporality and, therefore, the establishment of cause-effect. External validity could be limited to nurses from centres with a similar profile, which

we tried to reduce with a large sample size. Controlling for confounding factors that could influence the results was minimised by logistic regression analysis of the data.

Considering that there are no major differences between the two units studied, and looking at them as a whole, we can conclude that the prevalences of the scales that negatively expose nurses emotionally are remarkable in all dimensions. The lack of a relationship between these prevalences and the majority of variables implies the absence of a specific profile, with the work unit being the most relevant factor. Given the lack of data in our setting, it is essential to implement educational, preventive, and support actions to mitigate the negative effects on nurses and on the quality of their care. Their leaving is a major challenge for the future.

Conclusions

ED and critical care nurses show a high risk of CF and anxiety, which exposes them physically and psychologically in relation to their work.

High burnout, STS and anxiety are directly related to nurses' desire to leave in highly demanding units, although the absence of a relationship with socio-demographic, educational, or occupational characteristics makes it difficult to establish a profile of higher risk. This places the profession and the characteristics of the units as the factor that most exposes them to CF.

Our findings linked to the demand for professionals to be trained in emotional management, highlights the need to delve deeper into the individual and environmental factors associated with CF. Identifying these factors should guide institutions in the design and implementation of appropriate prevention, training, and support policies.

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Conflict of interests

The authors have no conflict of interests to declare.

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References

- World Health Organization. Urgent health challenges for the next decade [Internet]. 2020 [accessed 26 Jan 2020]. Available from: <https://www.who.int/news-room/photo-story/photo-story-detail/urgent-health-challenges-for-the-next-decade>.
- World Health Organization. State of the world's nursing 2020: investing in education, jobs and leadership. Ginebra: International Council of Nurses; 2020.
- Gibbons SW, Jeschke EA. Nursing ethics: a lifelong commitment. *Annu Rev Nurs Res*. 2016;34:1–14.
- Elliott R, Bohart AC, Watson JC, Murphy D. Therapist empathy and client outcome: an updated meta-analysis. *Psychotherapy*. 2018;28:399–410.
- Kanov J, Maitlis S, Worline M, Dutton J, Frost P, Lilius J. Compassion in organizational life. *Am Behav Sci*. 2004;47:808–27.
- Cislaghi B, Bukuluki P, Chowdhury M, Miranda AE, Kenny L, Kohli A, et al. Global health is political; can it also be compassionate? *J Glob Health*. 2019;9:8–11.
- Consell de Col·legis d'Infermeres i Infermers de Catalunya. Codi d'Ètica de les Infermeres i Infermers de Catalunya. *Bioètica & Debat: tribuna oberta de l'Institut Borja de Bioètica*. 2013;19:60.
- Mottaghi S, Poursheikhali H, Shameli L. Empathy, compassion fatigue, guilt and secondary traumatic stress in nurses. *Nurs Ethics*. 2020;27:494–504.
- Figley CR. *Compassion Fatigue. Coping with Secondary Traumatic Stress Disorder in Those Who Treat the Traumatized*. New York: Brunner/Mazel; 1995. p. 268.
- Joinson C. Coping with compassion fatigue. *Nursing (Lond)*. 1992;22:116–21.
- Turgoose D, Maddox L. Predictors of compassion fatigue in mental health professionals: a narrative review. *Traumatology (Tallahass Fla)*. 2017;23:172–85.
- Stamm BH. *The Concise ProQOL Manual. The concise manual for the Professional Quality of Life Scale*. 2nd edition Baltimore: Pocatello; 2010. p. 78.
- Sydenham M, Beardwood J, Rimes KA. Beliefs about emotions, depression, anxiety and fatigue: a mediational analysis. *Behav Cogn Psychother*. 2017;45:73–8.
- Copanitsanou P, Fotos N, Brokalaki H. Effects of work environment on patient and nurse outcomes. *Br J Nurs*. 2017;26:172–6.
- Morrison LE, Joy JP. Secondary traumatic stress in the emergency department. *J Adv Nurs*. 2016;72:2894–906.
- Sacco T, Czurzynski S, Harvey ME, Ingersoll GL. Compassion satisfaction and compassion fatigue among critical care nurses. *Crit Care Nurse*. 2015;35:32–44.
- Kelly LA, Lefton C. Effect of meaningful recognition on critical care nurses' compassion fatigue. *Am J Crit Care*. 2017;15:130–48.
- Borges EMN, Fonseca CINS, Baptista PCP, Queirós CML, Baldonado-Mosteiro M, Mosteiro-Diaz MP. Compassion fatigue among nurses working on an adult emergency and urgent care unit. *Rev Lat Am Enfermagem*. 2019;27:e3175.
- Yu H, Qiao A, Gui L. Predictors of compassion fatigue, burnout, and compassion satisfaction among emergency nurses: a cross-sectional survey. *Int Emerg Nurs*. 2021;55:100961.
- Van Mol M, Kompanje E, Benoit D, Bakker J, Nijkamp M. The prevalence of compassion fatigue and burnout among health-care professionals in intensive care units: a systematic review. *PLoS One*. 2015;10:e0136955.
- Mooney C, Fetter K, Gross BW, Rinehart C, Lynch C, Rogers FB. A preliminary analysis of compassion satisfaction and compassion fatigue with considerations for nursing unit specialization and demographic factors. *J Trauma Nurs*. 2017;24:158–63.
- Al Barmawi MA, Subih M, Salameh O, Sayyah Yousef Sayyah N, Shoaqir N, Abdel-Azeez Eid Abu Jebbeh R. Coping strategies as moderating factors to compassion fatigue among critical care nurses. *Brain Behav*. 2019;9:1–8.
- Alharbi J, Jackson D, Usher K. Personal characteristics, coping strategies, and resilience impact on compassion fatigue in critical care nurses: a cross-sectional study. *Nurs Heal Sci*. 2020;22:20–7.
- Lee Y-W, Dai Y-T, Chang MY, Chang Y-C, Yao KG, Liu M-C. Quality of work life, nurses' intention to leave the profession, and nurses leaving the profession: a one-year prospective survey. *J Nurs Scholarsh*. 2017;49:438–44.

25. NSI National Health Care Retention & RN Staffing Report. NSI Nursing Solutions, Inc.; 2019.
26. Beck CT. Secondary traumatic stress in nurses: a systematic review. *Arch Psychiatr Nurs*. 2011;25:1–10.
27. Spielberger C, Gorsuch R, Lushene R, Seisdodos N. STAI: cuestionario de Ansiedad Estado-Rasgo. Madrid: TEA; 2011. p. 40.
28. Mooney C, Fetter K, Gross BW, Rinehart C, Lynch C, Rogers FB. A preliminary analysis of compassion satisfaction and compassion fatigue with considerations for nursing unit specialization and demographic factors. *J Trauma Nurs*. 2017;24:158–63.
29. Shoji K, Lesniewska M, Smoktunowicz E, Bock J, Luszczyńska A, Benight CC, et al. What comes first, job burnout or secondary traumatic stress? Findings from two longitudinal studies from the U.S. and Poland. *PLoS One*. 2015;10:1–15.
30. Sydenham M, Beardwood J, Rimes KA. Beliefs about emotions, depression, anxiety and fatigue: a mediational analysis. *Behav Cogn Psychother*. 2017;45:73–8.
31. Milligan F, Almomani E. Death anxiety and compassion fatigue in critical care nurses. *Br J Nurs*. 2020;29:874–9.
32. Hunsaker S, Chen H-C, Maughan D, Heaston S. Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses. *J Nurs Scholarsh*. 2015;47:186–94.
33. Huang CLC, Wu MP, Ho CH, Wang JJ. Risks of treated anxiety, depression, and insomnia among nurses: a nationwide longitudinal cohort study. *PLoS One*. 2018;13:10–4.
34. Hunsaker S, Chen HC, Maughan D, Heaston S. Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses. *J Nurs Scholarsh*. 2015;47:186–94.
35. Andriani DA, Rustiyaningsih A, Haryanti F. Factors related to nurse's compassion satisfaction, burnout, and secondary traumatic stress in pediatric care unit RSUP Dr. Sardjito Yogyakarta. *Belitung Nurs J*. 2017;3:577–84.
36. Sawatzky J-AV, Enns CL, Legare C. Identifying the key predictors for retention in critical care nurses. *J Adv Nurs*. 2015;71:2315–25.
37. Todaro-Franceschi V. Critical care nurses' perceptions of preparedness and ability to care for the dying and their professional quality of life. *Dimens Crit Care Nurs*. 2013;32:184–90.
38. Winblad NE, Changaris M, Stein PK. Effect of somatic experiencing resiliency-based trauma treatment training on quality of life and psychological health as potential markers of resilience in treating professionals. *Front Neurosci*. 2018;12:70.