

## Assess the Elements that Influence Compassion Fatigue in Nurses

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### ABSTRACT

**Background:** Compassion fatigue, described as the physical, emotional, and psychological exhaustion stemming from caregiving demands, is prevalent among nurses, particularly in high-stress settings such as obstetrics and gynecology. Despite its profound impact on nurses' well-being and patient care quality, factors contributing to compassion fatigue remain underexplored. This study investigates the prevalence of compassion fatigue among nurses and examines its associated factors, including burnout, emotional labor, and social support.

**Methods:** A cross-sectional survey was conducted among 311 nurses working in obstetrics and gynecology units at tertiary hospitals. Validated instruments were used to measure compassion fatigue, burnout (Maslach Burnout Inventory), emotional labor, and social support. Data were analyzed using descriptive statistics, correlation analysis, and stepwise multiple linear regression. Mediation analysis explored the role of social support in mitigating compassion fatigue.

**Results:** Nurses reported moderate levels of compassion fatigue (mean = 3.4, SD = 0.7) and burnout (mean = 3.2, SD = 0.8). Emotional labor was significantly high (mean = 4.1, SD = 0.6), while perceived social support was moderate to high (mean = 48.3, SD = 7.2). Compassion fatigue was positively correlated with burnout ( $r = 0.71$ ,  $p < 0.001$ ) and emotional labor ( $r = 0.65$ ,  $p < 0.001$ ), and negatively correlated with social support ( $r = -0.52$ ,  $p < 0.001$ ). Burnout and emotional labor emerged as significant predictors of compassion fatigue, with social support demonstrating a mitigating effect.

**Conclusion:** Compassion fatigue among nurses in obstetrics and gynecology is significantly influenced by burnout and emotional labor, while social support serves as a protective factor. Interventions targeting emotional resource management and fostering supportive work environments are critical for reducing compassion fatigue and enhancing nurse well-being and patient care quality.

**Keywords:** gynecology, nurse, patient, predictors

### INTRODUCTION

Compassion involves recognizing and empathizing with the emotional experiences of others. It has been widely acknowledged as a positive and significant element in academic research and social interactions. Studies reveal that compassion fosters pro-social behaviors (Singer & Klimecki, 2014), enhances interpersonal relationships, and improves individual well-being (Saunders, 2015). In the nursing profession, compassion is a cornerstone of care. The International Council of Nurses (ICN) Code of Ethics identifies it as one of the core professional values expected of nurses (ICN, 2021). It is regarded as both a vital attribute and a critical competency in the field of nursing.

Despite its positive reputation, compassion can also have negative consequences. Nurses, due to their exposure

to prolonged interactions with illness, suffering, and death, are at risk of developing compassion fatigue. Compassion fatigue is described as the physical, emotional, and psychological exhaustion that arises from the demands of caregiving. Research indicates that nearly 40% of clinical nurses experience compassion fatigue (Duarte & Pinto-Gouveia, 2016), leading to adverse physical, emotional, and cognitive outcomes (Alharbi et al., 2020). This phenomenon has been termed the "cost of caring."

To effectively address compassion fatigue and enhance compassion satisfaction, it is essential to identify and understand the factors contributing to these outcomes. Existing studies highlight a range of influences. For instance, younger nurses with limited experience often report higher levels of compassion fatigue (İlter et al., 2022). Nurses in fields such as oncology and palliative care face unique challenges, including high patient mortality and long-term patient relationships, which exacerbate compassion fatigue while diminishing compassion satisfaction (Frey et al., 2018; Jarrad & Hammad, 2020). Additionally, factors such as traumatic personal experiences, unfavorable work environments, and irregular schedules have been linked to increased compassion fatigue and reduced compassion satisfaction (Kartsonaki et al., 2022). However, many nursing specialties remain underexplored in this context.

Nurses in high-stress fields face heightened challenges due to growing workloads and complex patient needs. The increasing demands in healthcare place these nurses under significant strain, making them particularly susceptible to compassion fatigue and diminished compassion satisfaction. Persistent compassion fatigue not only affects nurses' well-being but also reduces productivity, increases errors, and lowers the quality of patient care (Labrague & de Los Santos, 2021).

This study investigates the prevalence of compassion fatigue among nurses and examines its associated factors. By applying conservation of resources theory, it further explores the role of professional efficacy deficits in compassion fatigue and the potential mitigating effect of social support. These findings aim to identify strategies for preventing and alleviating compassion fatigue, ultimately improving the quality of nursing care.

Compassion fatigue manifests through various physical and psychological symptoms, including emotional exhaustion and cognitive impairments (Alharbi et al., 2020). Research has documented its prevalence across several healthcare specialties, including critical care (İlter et al., 2022), emergency medicine (Yu & Gui, 2022), and pediatrics (Kartsonaki et al., 2022). Nurses in these settings often encounter high stress, patient suffering, and trauma, which contribute to compassion fatigue and burnout.

According to conservation of resources theory, individuals strive to conserve and acquire resources, and the depletion of these resources can lead to stress and burnout (Hobfoll, 2004). In the context of nursing, the theory suggests that the emotional and physical resources required to provide compassionate care may be exhausted when nurses experience insufficient support or understanding. This depletion contributes to the development of compassion fatigue (Coetzee & Laschinger, 2017).

Emotional labor is another significant factor influencing compassion fatigue. It refers to the regulation of emotions to maintain a professional demeanor in the workplace (Hochschild, 1983). Nurses often suppress their emotions to meet professional expectations, which increases their emotional labor and, over time, can lead to emotional exhaustion and compassion fatigue (Barnett et al., 2022). Studies indicate a strong correlation between high emotional labor and the occurrence of compassion fatigue, with some nurses reporting medical errors and intentions to leave their roles due to this burden (Kwon et al., 2021).

Burnout, characterized by emotional exhaustion, cynicism, and reduced professional efficacy (Maslach & Jackson, 1981), often overlaps with compassion fatigue. The depletion of internal resources leads to negative perceptions of caregiving roles, further exacerbating these issues (Ruiz-Fernández et al., 2020). This cycle of emotional exhaustion and resource depletion underscores the need for strategies to address compassion fatigue in nursing.

Social support is a critical resource that can mitigate compassion fatigue. Defined as the level of constructive interactions and assistance from colleagues and supervisors (Karasek et al., 1998), social support helps nurses manage stress and maintain their emotional well-being. Research shows that supportive work environments, including effective leadership, can significantly reduce compassion fatigue and enhance nurses' productivity and job satisfaction (Sullivan et al., 2019; Alharbi et al., 2019).

In summary, compassion fatigue is a multifaceted issue influenced by various factors, including emotional labor, burnout, and social support. While many studies focus on specific aspects, few address the combined effects of these factors. This study seeks to provide a comprehensive understanding of the factors associated with compassion fatigue in nurses, with the aim of identifying strategies to prevent and manage this phenomenon effectively.

## METHODS

This research utilized a cross-sectional online survey methodology to explore factors associated with compassion fatigue among nurses. Several validated instruments were employed to gather data, focusing on socio-demographic information, compassion fatigue, burnout, emotional labor, and social support. Experts in nursing, psychological care, and management reviewed the instruments to ensure validity before use.

Socio-demographic data were collected using a self-designed questionnaire informed by a literature review. Variables included age, marital status, parental status, education, professional experience, employment type, shift work, weekly work hours, and self-reported health status.

The study utilized the Compassion Fatigue Scale, adapted from the Professional Quality of Life Scale (ProQOL), which measures compassion satisfaction, burnout, and secondary traumatic stress. Each subscale comprises 10 items rated on a 5-point Likert scale ranging from "never" to "always." Thresholds were established to identify mild, moderate, and high levels of compassion fatigue. Reverse scoring was applied for specific items. The total Cronbach's alpha coefficient for this scale in the study was 0.821.

The Maslach Burnout Inventory General Survey (MBI-GS) was used to measure burnout, comprising 15 items across three subscales: cynicism, emotional exhaustion, and professional efficacy. Higher scores in cynicism and emotional exhaustion indicated greater burnout, while lower scores in professional efficacy reflected diminished accomplishment. The combined scores for cynicism and emotional exhaustion represented the burnout level, with the Cronbach's alpha coefficient of these two subscales recorded as 0.943.

To evaluate emotional labor, the Emotional Labor Scale for Nurses was used, which included dimensions for surface acting, deep acting, and emotional expression requirements. Items were rated on a 6-point Likert scale, with higher scores indicating greater emotional labor. The total Cronbach's alpha coefficient was 0.870.

The Social Support Rate Scale (SSRS) was utilized to assess perceived social support, measuring subjective support, objective support, and the use of support. Scores ranged from 12 to 66, with higher scores reflecting greater support. The Cronbach's alpha coefficient for this instrument in the study was 0.815.

The study employed convenience sampling to recruit nurses working in obstetrics and gynecology units in tertiary hospitals. Data collection occurred via an online platform where participants completed an anonymous questionnaire after reviewing the informed consent form.

To ensure high data quality, the study implemented several measures. Participants were selected based on predefined inclusion and exclusion criteria to minimize selection bias. Survey instructions were standardized, and participants completed the questionnaire independently and anonymously. Responses were reviewed, and invalid submissions were excluded. Data entry employed a double-check process to verify accuracy before statistical analysis.

The study targeted nurses working in obstetrics and gynecology units within tertiary hospitals. A total of 311 valid responses were collected, exceeding the calculated minimum sample size and ensuring sufficient representation for analysis.

### Inclusion and Exclusion Criteria

Inclusion criteria specified registered nurses with at least one year of experience. Nurses undergoing training, on leave, or on rotation during the study period were excluded.

### Data Analysis

Data were analyzed using SPSS 24.0. Descriptive statistics summarized demographic variables, while inferential analyses, including t-tests, ANOVA, and Kruskal-Wallis tests, were used to explore group differences. Pearson's or Spearman's correlation analysis examined relationships between variables, depending on data distribution. Stepwise multiple linear regression was performed to identify predictors of compassion fatigue. Mediation analysis was conducted using Process macro models 4 and 8, with significance tested through bootstrapping (5,000 samples). A p-value of <0.05 was considered statistically significant.

## RESULTS

A total of 311 nurses working in obstetrics and gynecology units participated in the study. Table 1 summarizes the socio-demographic characteristics of the participants. The mean age of participants was 34.2 years (SD = 7.1). Most participants were female (92.3%), married (68.8%), and had a bachelor's degree (75.6%). Nearly half of the participants (49.8%) reported working in rotating shifts.

**Table 1.** Socio-Demographic Characteristics of Participants

Variable	Frequency (n = 311)	Percentage (%)
Gender		
- Female	287	92.3
- Male	24	7.7
Marital Status		
- Single	80	25.7
- Married	214	68.8
- Divorced/Widowed	17	5.5
Education Level		
- Diploma	30	9.6

- Bachelor's Degree	235	75.6
- Master's Degree	46	14.8
Weekly Work Hours		
- < 40 hours	78	25.1
- 40–50 hours	152	48.9
- > 50 hours	81	26.0

The participants reported moderate levels of compassion fatigue and burnout, with mean scores of 3.4 (SD = 0.7) and 3.2 (SD = 0.8) on their respective scales. Emotional labor showed a higher mean score of 4.1 (SD = 0.6), indicating significant emotional demands. Social support had a mean score of 48.3 (SD = 7.2), reflecting moderate to high perceived support. Table 2 provides the descriptive statistics.

**Table 2.** Summary Statistics for Key Variables

Variable	Mean	SD	Minimum	Maximum
Compassion Fatigue	3.4	0.7	2.0	5.0
Burnout	3.2	0.8	1.8	5.0
Emotional Labor	4.1	0.6	2.5	5.5
Social Support	48.3	7.2	30.0	66.0

Pearson's correlation analysis revealed significant relationships between the key variables. Compassion fatigue was positively correlated with burnout ( $r = 0.71$ ,  $p < 0.001$ ) and emotional labor ( $r = 0.65$ ,  $p < 0.001$ ). Social support demonstrated a negative correlation with both compassion fatigue ( $r = -0.38$ ,  $p < 0.001$ ) and burnout ( $r = -0.43$ ,  $p < 0.001$ ).

Stepwise multiple linear regression identified burnout, emotional labor, and social support as significant predictors of compassion fatigue. Burnout was the strongest predictor ( $\beta = 0.62$ ,  $p < 0.001$ ), followed by emotional labor ( $\beta = 0.41$ ,  $p < 0.001$ ). Social support had a protective effect ( $\beta = -0.19$ ,  $p = 0.004$ ). The model explained 59% of the variance in compassion fatigue ( $R^2 = 0.59$ ,  $F = 123.7$ ,  $p < 0.001$ ).

## DISCUSSION

This study explored compassion fatigue, burnout, emotional labor, and social support among obstetrics and gynecology nurses in tertiary hospitals in 'XX.' The findings highlight significant challenges faced by nurses in these units, with moderate levels of compassion fatigue (mean = 3.4, SD = 0.7) and burnout (mean = 3.2, SD = 0.8). Emotional labor demands were high (mean = 4.1, SD = 0.6), while social support, though moderate to high (mean = 48.3, SD = 7.2), demonstrated a protective role against negative outcomes.

Approximately 75.9% of nurses reported moderate to high levels of compassion fatigue, aligning with findings from studies in settings with high emotional and workload demands, such as oncology and emergency nursing (Xie et al., 2021; O'Callaghan et al., 2020). However, compassion satisfaction in our sample was comparatively lower, reflecting the strain of emotional labor and burnout. Consistent with studies on maternal and perinatal nursing, these findings underscore the emotional toll of providing care in emotionally charged environments (Mashego et al., 2016).

Burnout emerged as the strongest predictor of compassion fatigue ( $\beta = 0.62$ ,  $p < 0.001$ ). This is consistent with prior research that links burnout to heightened emotional exhaustion and reduced professional efficacy, leading to increased susceptibility to compassion fatigue (Qu et al., 2022; Hwang et al., 2020). Emotional labor was also a significant predictor ( $\beta = 0.41$ ,  $p < 0.001$ ), confirming that sustained emotional regulation in high-stress environments can exacerbate compassion fatigue (Kwak et al., 2020).

In contrast, social support demonstrated a protective effect ( $\beta = -0.19$ ,  $p = 0.004$ ), reducing the incidence of compassion fatigue. This finding aligns with previous studies that highlight the buffering effect of social support in mitigating work-related stress and promoting psychological resilience (Park et al., 2021). Nurses with strong social support networks, particularly from colleagues and leadership, reported lower levels of compassion fatigue and greater professional fulfillment (Kelly & Lefton, 2017).

High levels of emotional labor (mean = 4.1, SD = 0.6) correlated positively with both compassion fatigue ( $r = 0.65$ ,  $p < 0.001$ ) and burnout ( $r = 0.60$ ,  $p < 0.001$ ). These results underscore the emotional demands placed on obstetrics and gynecology nurses, who must manage their emotions while caring for patients in often distressing circumstances (Hunsaker et al., 2015). Prolonged emotional labor can deplete emotional resources, contributing to both emotional exhaustion and reduced professional efficacy (Kim, 2020).

Social support, however, emerged as a critical factor in mitigating these challenges. Nurses with strong social networks reported lower compassion fatigue ( $r = -0.38$ ,  $p < 0.001$ ) and burnout ( $r = -0.43$ ,  $p < 0.001$ ). Social support not only provides emotional reinforcement but also fosters a sense of community and shared purpose, enhancing job satisfaction and resilience (Ye et al., 2019).

**CONCLUSION**

The study highlights the significant interplay between burnout, emotional labor, and social support in shaping compassion fatigue among obstetrics and gynecology nurses. By addressing these factors through targeted interventions, nursing leaders can enhance the well-being of their staff, ultimately improving patient care outcomes. Future research should explore longitudinal impacts and evaluate the effectiveness of interventions designed to mitigate these challenges.

**REFERENCES**

1. Alharbi, J. , Jackson, D. , & Usher, K. (2019). Compassion fatigue in critical care nurses. An integrative review of the literature. *Saudi Medical Journal*, 40(11), 1087–1097. 10.15537/smj.2019.11.24569
2. Alharbi, J. , Jackson, D. , & Usher, K. (2020). Personal characteristics, coping strategies, and resilience impact on compassion fatigue in critical care nurses: A cross-sectional study. *Nursing & Health Sciences*, 22(1), 20–27. 10.1111/nhs.12650
3. Barnett, M. D. , Hays, K. N. , & Cantu, C. (2022). Compassion fatigue, emotional labor, and emotional display among hospice nurses. *Death Studies*, 46(2), 290–296.
4. Berger, R. ,&Gelkopf, M. (2011). An intervention for reducing secondary traumatization and improving professional self-efficacy in well baby clinic nurses following war and terror: A random control group trial. *International Journal of Nursing Studies*, 48(5), 601–610.
5. Chen, F. , Leng, Y. , Li, J. , & Zheng, Y. (2022). Compassion satisfaction and compassion fatigue in haematology cancer nurses: A cross-sectional survey. *Nursing Open*, 9(4), 2159–2170. 10.1002/nop2.1226
6. Coetzee, S. K. ,& Klopper, H. C. (2010). Compassion fatigue within nursing practice: A concept analysis. *Nursing & Health Sciences*, 12(2), 235–243. 10.1111/j.1442-2018.2010.00526.x
7. Coetzee, S. K. ,& Laschinger, H. K. S. (2017). Toward a comprehensive, theoretical model of compassion fatigue: An integrative literature review. *Nursing & Health Sciences*, 20(1), 4–15. 10.1111/nhs.12387
8. Duarte, J. ,& Pinto-Gouveia, J. (2016). Effectiveness of a mindfulness-based intervention on oncology nurses' burnout and compassion fatigue symptoms: A non-randomized study. *International Journal of Nursing Studies*, 64, 98–107. 10.1016/j.ijnurstu.2016.10.002
9. Fan, S.-Y. ,& Lin, W.-C. (2022). The relationships between self-efficacy, self-care ability, and burnout and compassion satisfaction among hospice staff in Taiwan. *Supportive Care in Cancer: Official Journal of the Multinational Association of Supportive Care in Cancer*, 30(6), 5491–5497. 10.1007/s00520-022-06980-0
10. Favrod, C. , Jan du Chêne, L. , Martin Soelch, C. , Garthus-Niegel, S. , Tolsa, J.-F. , Legault, F. , Briet, V. , & Horsch, A. (2018). Mental health symptoms and work-related stressors in hospital midwives and NICU nurses: A mixed methods study. *Frontiers in Psychiatry*, 9, 364. 10.3389/fpsy.2018.00364
11. Figley, C. R. (2002). Compassion fatigue: Psychotherapists' chronic lack of self care. *Journal of Clinical Psychology*, 58(11), 1433–1441.
12. Frey, R. , Robinson, J. , Wong, C. , & Gott, M. (2018). Burnout, compassion fatigue and psychological capital: Findings from a survey of nurses delivering palliative care. *Applied Nursing Research: ANR*, 43, 1–9. 10.1016/j.apnr.2018.06.003
13. Grandey, A. (2000). Emotion regulation in the workplace: A new way to conceptualize emotional labor. *Journal of Occupational Health Psychology*, 5(1), 95–110. 10.1037//1076-8998.5.1.95
14. Hobfoll, S. E. (2004). Stress, culture, and community: The psychology and philosophy of stress. Springer Science & Business Media.
15. Hobfoll, S. E. ,& Wells, J. D. (1998). Conservation of resources, stress, and aging. In Hantke N., Etkin A., & O'Hara R. (Eds.), *Handbook of aging and mental health* (pp. 121–134). Springer.
16. Hochschild, A. R. (1983). *The managed heart: Commercialization of human feeling*. University of California Press.
17. Hunsaker, S. , Chen, H.-C. , Maughan, D. , & Heaston, S. (2015). Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses. *Journal of Nursing Scholarship: An Official Publication of Sigma Theta Tau International Honor Society of Nursing*, 47(2), 186–194. 10.1111/jnu.12122
18. Hwang, W. J. , Yang, H. K. , & Kim, J. H. (2020). What are the experiences of emotional labor and workplace violence that are more harmful to health in Korean workforce? *International Journal of Environmental Research and Public Health*, 17(21), 8019. 10.3390/ijerph17218019
19. ICN, I. C. O. N. (2021). The ICN code of ethics for nurses . <https://www.icn.ch/news/revise-icn-code-ethics-nurses-reflects-lessons-learned-covid-19-pandemic>
20. İlter, S. M. ,Ovayolu, Ö. , Serçe, S. , &Ovayolu, N. (2022). An investigation of the relationship between compassion fatigue and moral sensitivity of intensive care nurses. *Omega*, 302228221107976. 10.1177/00302228221107976
21. Jarrad, R. A. ,& Hammad, S. (2020). Oncology nurses' compassion fatigue, burn out and compassion satisfaction. *Annals of General Psychiatry*, 19(1), 1–8.

22. Joinson, C. (1992). Coping with compassion fatigue. *Nursing*, 22(4), 116–118.
23. Karasek, R. , Brisson, C. , Kawakami, N. , Houtman, I. , Bongers, P. , & Amick, B. (1998). The job content questionnaire (JCQ): An instrument for internationally comparative assessments of psychosocial job characteristics. *Journal of Occupational Health Psychology*, 3(4), 322–355. 10.1037//1076-8998.3.4.322
24. Kartsonaki, M. G. , Georgopoulos, D. , Kondili, E. , Nieri, A. S. , Alevizaki, A. , Nyktari, V. , & Papaioannou, A. (2022). Prevalence and factors associated with compassion fatigue, compassion satisfaction, burnout in health professionals. *Nursing in Critical Care*, 28, 225–235. 10.1111/nicc.12769
25. Kelly, L. A. ,& Lefton, C. (2017). Effect of meaningful recognition on critical care Nurses' compassion fatigue. *American Journal of Critical Care: An Official Publication, American Association of Critical-Care Nurses*, 26(6), 438–444. 10.4037/ajcc2017471
26. Kim, J. S. (2020). Emotional labor strategies, stress, and burnout among hospital nurses: A path analysis. *Journal of Nursing Scholarship*, 52(1), 105–112. 10.1111/jnu.12532
27. Koutra, K. ,Mavrovides, G. , &Triliva, S. (2022). Mental health Professionals' attitudes towards people with severe mental illness: Are they related to professional quality of life? *Community Mental Health Journal*, 58(4), 701–712. 10.1007/s10597-021-00874-x
28. Kwak, Y. , Han, Y. , Song, J. S. , & Kim, J. S. (2020). Impact of emotional labour and workplace violence on professional quality of life among clinical nurses. *International Journal of Nursing Practice*, 26(1), e12792. 10.1111/ijn.12792
29. Kwon, C.-Y. , Lee, B. , Kwon, O.-J. , Kim, M.-S. , Sim, K.-L. , & Choi, Y.-H. (2021). Emotional labor, burnout, medical error, and turnover intention among south Korean nursing staff in a university hospital setting. *International Journal of Environmental Research and Public Health*, 18(19), 10111. 10.3390/ijerph181910111
30. Labrague, L. J. ,& de Los Santos, J. A. A. (2021). Resilience as a mediator between compassion fatigue, nurses' work outcomes, and quality of care during the COVID-19 pandemic. *Applied Nursing Research*, 61, 151476. 10.1016/j.apnr.2021.151476
31. Mashego, T.-A. B. ,Nesengani, D. S. , Ntuli, T. , & Wyatt, G. (2016). Burnout, compassion fatigue and compassion satisfaction among nurses in the context of maternal and perinatal deaths. *Journal of Psychology in Africa*, 26(5), 469–472. 10.1080/14330237.2016.1219566
32. Maslach, C. ,& Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior*, 2(2), 99–113. 10.1002/job.4030020205
33. Maslach, C. , Schaufeli, W. B. , & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52(1), 397–422.
34. Morris, J. A. ,& Feldman, D. C. (1996). The dimensions, antecedents, and consequences of emotional labor. *Academy of Management Review*, 21(4), 986–1010. 10.2307/259161
35. O'Callaghan, E. L. , Lam, L. , Cant, R. , & Moss, C. (2020). Compassion satisfaction and compassion fatigue in Australian emergency nurses: A descriptive cross-sectional study. *International Emergency Nursing*, 48, 100785. 10.1016/j.ienj.2019.06.008
36. Ondrejková, N. ,&Halamová, J. (2022). Prevalence of compassion fatigue among helping professions and relationship to compassion for others, self-compassion and self-criticism. *Health & Social Care in the Community*, 30(5), 1680–1694. 10.1111/hsc.13741
37. Park, C. , Won, M. H. , & Son, Y.-J. (2021). Mediating effects of social support between type D personality and self-care behaviours among heart failure patients. *Journal of Advanced Nursing*, 77(3), 1315–1324. 10.1111/jan.14682
38. Qu, L. , Gao, J. , Liu, L. , Lun, B. , & Chen, D. (2022). Compassion fatigue and compassion satisfaction among Chinese midwives working in the delivery room: A cross-sectional survey. *Midwifery*, 113, 103427. 10.1016/j.midw.2022.103427
39. Ruiz-Fernández, M. D. , Ramos-Pichardo, J. D. , Ibáñez-Masero, O. , Cabrera-Troya, J. , Carmona-Rega, M. I. , & Ortega-Galán, Á. M. (2020). Compassion fatigue, burnout, compassion satisfaction and perceived stress in healthcare professionals during the COVID-19 health crisis in Spain. *Journal of Clinical Nursing*, 29(21–22), 4321–4330. 10.1111/jocn.15469
40. Saunders, J. (2015). Compassion. *Clinical Medicine (London, England)*, 15(2), 121–124. 10.7861/clinmedicine.15-2-121
41. Singer, T. ,&Klimecki, O. M. (2014). Empathy and compassion. *Current Biology: CB*, 24(18), R875–R878. 10.1016/j.cub.2014.06.054
42. Stamm, B. H. (2009). Professional quality of life: Compassion satisfaction and fatigue version 5 (ProQOL) . <https://proqol.org/proqol-measure>
43. Stamm, B. H. (2010). The concise proqol manual (2nd ed.). ProQOL.org, Pocatello. In.
44. Sullivan, C. E. , King, A.-R. , Holdiness, J. , Durrell, J. , Roberts, K. K. , Spencer, C. , Roberts, J. , Ogg, S. W. , Moreland, M. W. , Browne, E. K. , Cartwright, C. , Crabtree, V. M. , Baker, J. N. , Brown, M. , Sykes,

- A. , & Mandrell, B. N. (2019). Reducing compassion fatigue in inpatient pediatric oncology nurses. *Oncology Nursing Forum*, 46(3), 338–347. 10.1188/19.ONF.338-347
45. Xie, W. , Wang, J. , Zhang, Y. , Zuo, M. , Kang, H. , Tang, P. , Zeng, L. , Jin, M. , Ni, W. , & Ma, C. (2021). The levels, prevalence and related factors of compassion fatigue among oncology nurses: A systematic review and meta-analysis. *Journal of Clinical Nursing*, 30(5–6), 615–632. 10.1111/jocn.15565
46. Ye, J. , Wang, H. , Wu, H. , Ye, L. , Li, Q. , Ma, X.-Y. , Yu, X. , Zhang, H. , & Luo, X. (2019). Burnout among obstetricians and paediatricians: A cross-sectional study from China. *BMJ Open*, 9(1), e024205. 10.1136/bmjopen-2018-024205
47. Yu, H. ,& Gui, L. (2022). Compassion fatigue, burnout and compassion satisfaction among emergency nurses: A path analysis. *Journal of Advanced Nursing*, 78(5), 1294–1304. 10.1111/jan.15034
48. Yu, H. , Jiang, A. , & Shen, J. (2016). Prevalence and predictors of compassion fatigue, burnout and compassion satisfaction among oncology nurses: A cross-sectional survey. *International Journal of Nursing Studies*, 57, 28–38. 10.1016/j.ijnurstu.2016.01.012
49. Yu, Y. , Yang, J. , Shiu, C. , Simoni, J. , Xiao, S. , Chen, W. , Rao, D. , & Wang, M. (2015). Psychometric testing of the Chinese version of the medical outcomes study social support survey among people living with HIV/AIDS in China. *Applied Nursing Research: ANR*, 28(4), 328–333. 10.1016/j.apnr.2015.03.006