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Emotional Intelligence, Sense of Gratitude, and Compassion Fatigue of Medical-surgical Nurses in Government Hospitals in China

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Abstract

In China's healthcare system, compassion fatigue has emerged as a significant concern among medical surgical nurses, where they are facing the challenges of caring for an increasing number of patients with complex needs, which can significantly affect their emotional well-being and ability to provide high-quality care to patients. The study investigates the Relationship between emotional intelligence, sense of gratitude, and compassion fatigue among medical-surgical nurses in China. Medical surgical nurses with high emotional intelligence and a strong sense of gratitude may be more resilient and better equipped to cope with the emotional demands of their profession. This design will examine the degree of relationships between gratitude and compassion fatigue among medical surgical nurses in Hebei Province. Regression analysis was conducted to explore the Relationship between gratitude and compassion fatigue while considering potential confounding variables. Age, gender, and years of experience were controlled for as covariates in the analysis.The study's findings demonstrate the significant correlations between emotional intelligence, sense gratitude, and compassion fatigue among medical-surgical nurses. Additionally, the sociodemographic profile of the respondents did not show any significant difference in terms of emotional intelligence, gratitude, and compassion fatigue. The study also found that both emotional intelligence and sense of gratitude can predict compassion fatigue. The study highlights the importance of emotional intelligence and cultivating a sense of gratitude among medical-surgical nurses. By enhancing emotional intelligence and fostering gratitude, nurses may be better equipped to manage and prevent compassion fatigue. This can contribute to improved overall well-being and job satisfaction among nurses.

Keywords: Medical-Surgical Nurse, Emotional Intelligence, Gratitude, Compassion fatigue, Relationship

Background of the Study

In China's healthcare system, compassion fatigue has emerged as a significant concern among medical surgical nurses, where the healthcare system is facing the challenges of caring for an increasing number of patients with complex needs, which can significantly affect their emotional well-being and ability to provide high-quality care to patients (Wang et al., 2020). The nursing field in China faces an acute shortage of medical surgical nurses, leading to additional pressure on existing staff struggling to meet rising patient care demands (Jin et al., 2021; Li et al., 2022; Xie et al., 2020). Providing holistic, patient-centered care requires nurses to be highly adapted to emotional needs, but these demands often go unmet due to insufficient support systems and resources (Jin et al., 2021; Li et al., 2022; Xie et al., 2020). Specific

factors contributing to compassion fatigue among Chinese medical surgical nurses include job stress, age-related stressors, and poor personal habits, which can lead to emotional exhaustion, reduced empathy, and decreased motivation, ultimately affecting quality of care (Jin et al., 2021; Li et al., 2022; Xie et al., 2020). Addressing compassion fatigue through targeted interventions and support strategies is essential to ensure China's nursing workforce remains resilient (Aparicio et al., 2019; Li et al., 2021). Emotional intelligence and gratitude can be factors in addressing compassion fatigue among medical-surgical nurses. Emotional intelligence is a protective factor, reducing the risk of compassion fatigue, while gratitude interventions can enhance overall well-being (Aparicio et al., 2019; Li et al., 2021). Integrating emotional intelligence and gratitude practices into healthcare organizations can equip medical-surgical nurses with valuable coping mechanisms to manage the emotional demands of their roles (Fernández et al., 2021; Adair et al., 2020). This proactive approach can mitigate compassion fatigue, promote job satisfaction, improve patient outcomes, and contribute to a more resilient and compassionate nursing workforce (Fernández et al., 2021; Adair et al., 2020).

Understanding the Relationship between emotional intelligence and gratitude and their influence on compassion in the context of nursing can provide insights into improving well-being of the medical-surgical nurses and potentially enhancing patient outcomes. Emotional intelligence and gratitude are psychological constructs that may influence interpersonal relationships, job satisfaction, and overall well-being reducing the incidence of compassion fatigue (Masih et al., 2023). Medical-surgical nurses with high EI may be better equipped to recognize and empathize with the emotional experiences of patients, fostering compassion. Simultaneously, cultivating a grateful mindset can enhance emotional well-being, increasing the capacity for empathy and compassion towards patients (Mao et al., 2021). In a study examining brief workplace interventions, including gratitude, it was found that such interventions could be feasible and acceptable for addressing burnout and compassion fatigue among medical-surgical nurses (Sarabia et al., 2021). The interventions showed promise in improving nurses' perceptions of teamwork, which is inversely related to burnout which is one of the component of compassion fatigue (Sarabia et al., 2021). In another study on medical-surgical nurses indicated that while compassion satisfaction was high, compassion fatigue was moderate. Although the study did not directly address gratitude, the high levels of compassion satisfaction suggest that positive emotional states, potentially including Emotional intelligence and gratitude, may play a role in mitigating compassion fatigue (Babaei & Haratian, 2020). Hence, fostering emotional intelligence and gratitude in nursing practice could be beneficial for both nurses and patients

Compassion fatigue is a significant concern in the nursing profession, characterized by emotional exhaustion and reduced ability to empathize with patients due to prolonged exposure to stress worldwide (Bleazard, 2020; Kabunga et al., 2021; Crabtree-Nelson et al., 2022; Marshman et al., 2021). The prevalence of compassion fatigue has been increasing over time, with the highest levels reported in recent years, particularly among nurses in high-stress environments like the ICU and medical-surgical unit (Bleazard, 2020;Marshman et al., 2021; Xie et al., 2021). Factors such as geographical location, with Asian nurses reporting higher levels of compassion fatigue, and work environment, including ICU and oncology settings, significantly influence the prevalence of compassion fatigue among nurses (Zhan et al., 2022). In China, nurses have a 'moderate' level of compassion satisfaction, burnout, and secondary traumatic stress, with 22% suffering from 'high' risk of compassion fatigue (Xie et al., 2021). Another evidenced showed incidence of CF among medical-surgical nurses was extremely high at 94.2%, with educational level, marital status, hospital rank, and sleep time being influential factors (Zhang et al., 2023).

Perceived social support and emotional regulation efficacy were found to mediate the Relationship between role stress and CF (Zhang et al., 2023).

Emotional intelligence (EI) has been identified as a significant factor in mitigating compassion fatigue among Chinese medical-surgical nurse (Li et al., 2021). The study further elucidated that higher levels of EI were associated with lower levels of fatigue suggesting that how individuals manage their emotions at work can influence their fatigue levels. Fernández et al. (2021) highlighted the Relationship between emotional intelligence and perceived health in the context of compassion fatigue among medical-surgical nurses. The study found that emotional intelligence and perceived health together explained a significant portion of the variance in compassion fatigue, emphasizing the importance of intervention programs aimed at improving the quality of professional life. Emotional intelligence is vital for effective work performance among medical surgical nurses and acts as a useful coping strategy against occupational stress. Similarly, medical surgical nurses with higher levels of emotional intelligence exhibit better clinical judgment, communication, and decision-making abilities (Huang et al., 2019). Their enhanced emotional awareness and regulation allow them to manage the intense emotional demands of their work more effectively, leading to improved work performance and patient outcomes.

Gratitude is an influential emotion that has the potential to benefit significantly the emotional state of healthcare providers, particularly medical surgical nurses working in clinical settings. Gratitude is a critical practice that involves acknowledging and valuing the positive elements, experiences, and accomplishments in one's life (Komase et al., 2021). By consciously cultivating gratitude, individuals can potentially alleviate the negative impacts of burnout or compassion fatigue, which can arise from prolonged exposure to challenging situations or emotional labor (Jin et al., 2021; Wang et al., 2020). Research has demonstrated that practicing gratitude can lead to various beneficial outcomes, such as improved mental well-being, increased resilience, and enhanced overall quality of life. Gratitude helps shift their focus from the challenges and stressors of their work to the positive aspects of their job and their impact on patient's lives (Hao et al., 2021). By acknowledging and expressing gratitude for the small successes, moments of connection, and positive outcomes they witness, medical surgical nurses can counterbalance the emotional toll of caring for patients with severe illness or injury (Sutie, 2021; Wang et al., 2020).

Compassion fatigue is a significant concern among medical surgical nurses, particularly those working in high-stress environments. It can lead to emotional and physical exhaustion, reducing the quality of care provided to patients and affecting the well-being of the medical surgical nurses themselves (Wang et al., 2023). Compassion fatigue is characterized by a profound physical, emotional, and spiritual exhaustion that results from the continuous provision of care to those who are suffering (Cao & Chen, 2021). Medical surgical nurses experiencing compassion fatigue may exhibit a diminished capacity for empathy, decreased job satisfaction, and a higher risk of burnout (Cao & Chen, 2021; Wang et al., 2023). This can further exacerbate the already significant challenges faced by medical surgical nurses, creating a vicious cycle that undermines their well-being and professional performance. This, in turn, can lead to suboptimal patient care, with medical surgical nurses becoming less attentive, more prone to errors, and less able to provide the level of compassionate care that is the hallmark of the nursing profession.

Moreover, gratitude can enhance interpersonal relationships and foster a sense of connection among medical surgical nurses. Expressing gratitude towards colleagues, patients, and oneself can initiate a supportive and cohesive work environment (Aparicio et al., 2019). When medical surgical nurses feel appreciated and valued, it can strengthen their sense of purpose and motivation, reducing the risk of

burnout and compassion fatigue (Aparicio et al., 2019). Despite a growing body of research on gratitude and its impact on various professionals, there exists a notable absence of investigation into the specific Relationship between gratitude and compassion fatigue among medical-surgical nurses in China. This study seeks to bridge the literature gap by examining the correlations between gratitude and compassion fatigue experienced by these healthcare professionals in China.

Nurses usually play a crucial role in patient care and have been particularly impacted by the stresses and demands of their work, leading to concerns about their emotional well-being and its implications for the healthcare system (Huang et al., 2019). The demanding nature of their work, coupled with limited resources and support, can lead to high levels of compassion fatigue, negatively impacting patient care and the healthcare system (Li et al., 2022). Medical surgical nurses with higher levels of EI and a stronger sense of gratitude are better equipped to manage compassion fatigue, leading to improved patient outcomes, job satisfaction, and overall system performance (Mao et al., 2021; Shi et al., 2023). Patients cared for by medical surgical nurses with higher EI and a stronger sense of gratitude are likelier to experience better communication, empathy, and overall satisfaction with their care (Shi & Du., 2020). This can lead to progressed adherence to treatment plans, better health outcomes, and a more positive perception of the healthcare system (Mao et al., 2021). Healthcare organizations in China that prioritize the well-being of their nursing staff through initiatives that promote EI, gratitude, and compassion resilience may see benefits in reduced staff turnover, improved patient satisfaction, and a more sustainable healthcare system (Shi and Du, 2020).

Understanding the factors that contribute to compassion fatigue among medical-surgical nurses is crucial for developing effective interventions and support systems. Emotional intelligence (EI) and a sense of gratitude have been identified as potential protective factors against compassion fatigue in various professional contexts (Liu et al., 2019; Wang et al., 2020). Lee and No (2023), found that gratitude disposition and emotional intelligence are positively correlated with better interpersonal relationship ability, which may influence the overall well-being of nursing students and professionals. Also, Self-compassion, empathy, and job satisfaction, which are associated with gratitude and emotional intelligence, are significant predictors of compassion satisfaction and can reduce the risk of compassion fatigue and burnout in emergency nurses. Decision-making styles, which can be influenced by gratitude, such as a satisficing approach, can mediate the Relationship between emotional intelligence and compassion fatigue, suggesting how nurses make decisions can impact their susceptibility to compassion fatigue (Filipponi et al., 2022). Despite a growing body of research on emotional intelligence, sense of gratitude, and its impact on various professionals, there exists a notable absence of investigation into the specific Relationship between emotional intelligence, sense of gratitude and compassion fatigue among medical-surgical nurses in China. This study seeks to bridge the literature gap by examining the Relationship between gratitude and compassion fatigue experienced by these healthcare professionals in China.

Methodology

Study Design and Locale

The study utilized a descriptive correlational design with regression analysis. This design allowed for examining the degree of relationships between gratitude and compassion fatigue among nurses in five tertiary-level hospitals in Hebei Province. In addition, regression analysis allowed the researchers to examine the predictive power of one or more independent variables (in this case, emotional intelligence and sense of gratitude) on a dependent variable (compassion fatigue). It helped determine the extent to

which changes in the independent variables could explain or predict changes in the dependent variable. The study was conducted in a five tertiary-level hospital located in Hebei Province. These tertiary-level hospital in Hebei Province, represented a major healthcare facility that provided advanced medical services, contributed to medical education and research, and served as a regional referral center for complex cases. Its state-of-the-art facilities, highly qualified staff, and comprehensive range of specialties made it a prominent healthcare institution in China.

Study participants

The nurses recruited to participate in the study were medical surgical nurses employed in five tertiary-level hospitals located in Hebei Province, China. Tertiary-level hospitals are typically large medical institutions that provide specialized and advanced medical care, often associated with medical schools and research facilities. To estimate the sample size needed in the study, the formula below will be used.

$$n = \frac{Z^2 x\ p(1-p)}{\varepsilon^2}$$

Where:

Z is the z-score associated with the confidence level (z for a 95% confidence level is 1.96)

p is the estimated variance (50%)

ε is the margin of error (5%)

Assuming the total number of nurses is undefined, therefore, a total sample size of 384 nurses was computed for this study. In this study, convenience sampling is chosen because it allows for the selection of participants who are readily accessible and willing to participate, making data collection more convenient and efficient. Given the time and logistical constraints associated with the research, convenience sampling provides a practical approach to gathering data within the available resources.

The inclusion criteria for this study may encompass the following characteristics: participants must be 22 years old or above, noting that individuals who are 22 years old are typically recent graduates; participants must be on duty in the medical or surgical unit during the data collection period; participants must have been deployed in the medical or surgical unit for a minimum of 3 months; and participants must have voluntarily agreed to take part in the study. The exclusion criteria are: participants who are at least 45 years old; those with administrative roles; those not able to consent; and participants who were on leave during the study period.

Research Instruments

Socio-demographic profile: A survey questionnaire developed by the author was made to collect data on the respondents' socio-demographic profiles. Items included questions regarding their age, gender, marital status, educational background, professional position (junior, intermediate, senior), and working department (medicine ward, surgical ward).

The Schutte Self Report Emotional Intelligence Test (SSEIT). To assess emotional intelligence, a 33-item scale developed by Schutte, Malouff, Hall, Haggerty, Cooper, Golden, and Dornheim (1998) was utilized in this study. The questionnaire was created by the authors of the study after conducting multiple investigations. Participants responded to the items using a 5-point scale (e.g., strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, strongly agree = 5), with higher scores indicating a higher level of emotional intelligence. The scores are then summed across all the items to obtain a total score. Higher total scores indicate higher levels of emotional intelligence, while lower scores suggest lower emotional intelligence. The scale consists of four subscales, namely: (a) perception of emotion with 10 items, (b)

managing own emotions with 9 items, (c) managing others' emotions with 8 items, and (d) utilization of emotions with 6 items. The total scale demonstrated good internal consistency, with a Cronbach's alpha coefficient of .87. A test-retest reliability assessment conducted after two weeks yielded a reliability coefficient of .78. Moreover, the scale exhibited evidence of validity as it showed significant associations with eight out of nine measures that were expected to be related to emotional intelligence. The overall Cronbach's α value for the scale was 0.81, indicating a high level of internal consistency.

Gratitude Assessment: Gratitude will be measured using standardized self-report scales such as the Gratitude Questionnaire (GQ-6). Developed by Michael E. McCullough, Robert A. Emmons, and Jo-Ann Tsang (McCullough et al. 2002), the Gratitude Questionnaire-Six Item Form (GQ-6) is a brief self-reported measure evaluating individuals' gratitude tendencies. Respondents rate six statements on a scale from 1 (strongly disagree) to 7 (strongly agree). Items 3 and 6 are reverse-scored. Add up the scores for all the items. Each item contributes to the overall Gratitude Scale score. The total score represents the participant's overall level of gratitude. Higher scores typically indicate a higher level of gratitude, while lower scores suggest a lower level of gratitude.The statements typically assess an individual's general disposition toward gratitude and their tendency to notice and appreciate positive experiences in their life. The GQ-6 is widely used in psychological research and has demonstrated good psychometric properties. The GQ-6 demonstrates good internal reliability, with Cronbach's alphas ranging from .82 to .87.

Compassion Fatigue: Compassion Fatigue will be measured using the Chinese version of the Compassion Fatigue-Short Scale (CF-Short Scale), which is tailored to gauge compassion fatigue levels among professionals in caregiving roles like healthcare, social work, or counseling (Sun et al., 2016). The CFSS, developed and validated by Adams et al. (2006), comprised a total of 13 items distributed across two domains: five items focusing on Secondary Traumatic Stress (STS) and eight items addressing Burnout (BO). The total scale scored a Cronbach's alpha of 0.90, while the STS and BO subscales showed coefficients of 0.80 and 0.90, respectively. Scoring for each item follows a 10-point Likert scale, extending from 1 (never) to 10 (always), resulting in a score range between 13 and 130.

Ethical considerations

Ethical considerations were thoroughly addressed in this study. Ethical approval was obtained from the Ethics Review Board prior to data collection, ensuring the protection of participants' rights, confidentiality, and voluntary participation. The informed consent process provided nurses with comprehensive information about the study's purpose, procedures, potential risks and benefits, and their rights as participants. Withdrawal criteria were also clearly explained, and participants were assured that their decision to withdraw would not affect their professional standing. Strict confidentiality measures were in place, including secure data storage, anonymization, and limited access to sensitive information.

Data Collection and Procedure

In the study, all questionnaires used were open-access, readily available, and free to use. There was no need to ask permission from the creator of the instrument. However, the creator of the instrument was properly cited in the study. A back translation procedure was used to ensure the accuracy and cross-cultural equivalence of the research instrument in both English and Chinese languages. This meticulous process enhanced the validity and reliability of the instrument, particularly in a bilingual context, ensuring that it captured the intended meaning and nuances of the constructs being measured accurately.

To obtain permission and consent from medical-surgical nurses, a formal letter was prepared and submitted to the hospital administrators, including the medical and nursing directors. Informed consent from individual participants was obtained through a paper-based questionnaire, and participants were provided with detailed information about the study. The questionnaire was administered using a conventional method of pen and paper and face-to-face distribution, which allowed researchers to directly engage with participants, establish a personalized connection, and provide immediate clarification or additional instructions. In cases of low participation or questions regarding the survey, the research team may conduct follow-up visits or hospital visits to ensure data quality and address any concerns.

Data Analysis

All statistical data was run in SPSS 29.0. Descriptive statistics were employed to provide a summary of the demographic profile, as well as the levels of emotional intelligence, sense of gratitude, and compassion fatigue among the medical-surgical nurses. This offered a comprehensive overview of the participant characteristics and the distribution of variables within the sample. To explore the Relationship between gratitude and compassion fatigue while considering potential confounding variables, regression analysis was conducted. Age, gender, and years of experience were controlled for as covariates in the analysis. This regression analysis enabled the examination of how emotional intelligence and the sense of gratitude predicted compassion fatigue among nurses, providing insights into the Relationship and the extent of their influence.

Results

Table 1 provides a detailed summary of the respondents' demographic profile. The average age of the participants is approximately 31.99, with a standard deviation of 4.75, indicating a relatively consistent age range among respondents. They have an average of 8.39 years of experience at their current hospital, with a standard deviation of 4.52 years, suggesting a varied range of experience levels. The typical number of working hours per week is 44.24 hours, with a standard deviation of 3.36 hours. Regarding sex distribution, 27.60% of the respondents are male, while the majority, 72.40%, are female. In terms of civil status, the largest group is married, comprising 79.95% of the respondents. Single individuals account for 14.84%, divorced individuals make up 4.95%, and widowed/widowers are a small fraction at 0.26%. Educationally, a significant majority of respondents hold a Bachelor of Science in Nursing (BSN), representing 91.93%. Master's degree holders constitute 38.28%, and those with a PhD degree represent 3.13%. In terms of professional position, the majority are nurses (53.91%), followed by nurse practitioners (38.28%). Deputy chief nurses and chief nurses represent smaller proportions, at 6.51% and 1.30%, respectively. Finally, respondents work predominantly in the medical ward (50.52%), with nearly an equal proportion working in the surgical ward (49.48%).

Table 1. Summary of Respondents' Demographic Profile

	M	*SD*
Age	31.99	4.747
Years of experience (current hospital)	8.39	4.523
Number of working hours per week	44.24	3.360
	n	*%*
Sex		

Male	106	27.60%
Female	278	72.40%
Civil Status		
Single	57	14.84%
Married	307	79.95%
Divorced	19	4.95%
Widowed/Widower	1	0.26%
Highest Educational Attainment		
BSN	353	91.93%
Master's Degree Holder	19	38.28%
PhD Degree Holder	82	3.13%
Professional Position		
Nurse	207	53.91%
Nurse Practitioner	147	38.28%
Deputy Chief Nurse	25	6.51%
Chief Nurse	5	1.30%
Working Department		
Medical ward	194	50.52%
Surgical ward	190	49.48%

Table 2 presents the descriptive summary of Emotional Intelligence, Gratitude and Compassion Fatigue scores. Concerning Emotional Intelligence, The average score across the test items is 121.46, with a standard deviation of 26.20, reflecting a wide range of emotional intelligence levels among respondents. While the mean suggests a moderate level of emotional intelligence, the high standard deviation implies that some individuals score much higher or lower than this average.

Regarding the sense of gratitude, The average gratitude score is 26.16, with a standard deviation of 3.87, indicating a general tendency towards higher gratitude levels among the participants. This suggests that participants demonstrate a relatively high level of gratitude overall. The low standard deviation indicates that most scores cluster closely around the mean, reflecting a consistent trend of positive feelings of gratitude within the group.

In Compassion Fatigue, The average compassion fatigue score is 54.53, with a standard deviation of 26.256, indicating a moderate level of compassion fatigue among respondents. This means that while some participants may report low fatigue levels, others could be experiencing significantly higher levels.

Table 2. Descriptive Summary of Emotional Intelligence, Gratitude and Compassion Fatigue scores.

	M	*SD*
Average Emotional Intelligence Test score	121.46	26.200
Average Gratitude score	26.16	3.871
Average Compassion Fatigue score	54.53	26.256

The analysis in **Table 3.1** reveals no significant differences in emotional intelligence, sense of gratitude, or compassion fatigue between male and female employees. Both genders have comparable scores on

these measures. Similarly, when comparing staff working in medical and surgical wards, the two departments have no significant differences in sense of gratitude or compassion fatigue. Although staff in the medical ward score slightly higher on emotional intelligence and those in the surgical ward report slightly higher levels of gratitude and compassion fatigue, these differences are not statistically significant.

Table 3.1 T-test of emotional intelligence, sense of gratitude, and compassion fatigue by Sex and Working Department

	Male		Female		*t*	*p*
	M	*SD*	*M*	*SD*		
SSEIT	120.28	28.161	121.91	25.452	0.521	0.603
GQ-6	25.75	4.234	26.31	3.719	1.213	0.227
Compassion Fatigue	52.9	25.367	55.15	26.605	0.769	0.443
	Medical ward		Surgical ward			
SSEIT	123.78	25.13	119.1	27.112	1.753	0.080
GQ-6	25.83	3.985	26.49	3.731	-1.675	0.095
Compassion Fatigue	53.05	26.74	26.74	25.734	-1.120	0.263

The ANOVA results in Table 3.2 indicate that civil status does not significantly affect emotional intelligence or sense of gratitude among the staff. Specifically, the average scores for emotional intelligence and gratitude are similar across single, married, divorced, and widowed/widower groups, with no significant differences detected. However, there is a notable difference in compassion fatigue levels among the groups. Although the differences are not statistically significant ($p = 0.111$), married staff report higher levels of compassion fatigue compared to their single and divorced counterparts.

Table 3.2 ANOVA of emotional intelligence, sense of gratitude, and compassion fatigue by Civil Status

	Single		Married		Divorced		Widowed/ Widower		F	p
	M	SD	M	SD	M	SD	M	SD		
SSEIT	122.75	25.831	120.7	26.354	130.95	24.366	103	NA	4.349	0.226
GQ-6	25.89	4.515	26.19	3.7	26.32	4.715	28	NA	0.217	0.975
Compassion Fatigue	52.16	25.597	55.82	26.452	41.05	22.27	51	NA	6.016	0.111

The ANOVA results presented in Table 3.3 reveal that the highest level of educational attainment has a significant impact on compassion fatigue but not on emotional intelligence or sense of gratitude. Specifically, those with a Master's Degree report significantly lower levels of compassion fatigue ($M = 45.42$) compared to those with a Bachelor of Science in Nursing (BSN) and Doctorate Degree, with mean scores of 55.54 and 39.33, respectively. The difference in compassion fatigue across educational levels is statistically significant ($p = 0.033$). In contrast, emotional intelligence and sense of gratitude show no significant differences based on educational attainment ($p > 0.05$).

Table 3.3 ANOVA of emotional intelligence, sense of gratitude, and compassion fatigue by Highest Educational Attainment

	BSN		Master's Degree		Doctorate Degree		F	p
	M	SD	M	SD	M	SD		
SSEIT	121.08	26.32	130	23.457	119.25	26.41	1.09	0.337
GQ-6	26.12	3.928	26.68	3.128	26.33	3.367	0.202	0.817
Compassion Fatigue	55.54	26.309	45.42	25.259	39.33	19.518	3.458	0.033*

The ANOVA results in **Table 3.4** indicate that professional position does not significantly affect emotional intelligence, sense of gratitude, or compassion fatigue. The average scores for emotional intelligence (SSEIT), sense of gratitude (GQ-6), and compassion fatigue are similar across Junior, Senior, Deputy Chief Nurse, and Chief Nurse positions, with no statistically significant differences detected ($p > 0.05$). For instance, the average emotional intelligence scores are fairly consistent among the different positions, with the Chief Nurse reporting the lowest score ($M = 110.2$) and the Deputy Chief Nurse reporting the highest ($M = 126.36$), though this difference is not significant ($p = 0.597$). Similarly, sense of gratitude does not vary significantly by position ($p = 0.681$), and while compassion fatigue shows a notable difference, particularly higher among Chief Nurses ($M = 65.6$), this difference is not statistically significant ($p = 0.098$).

Table 3.4 ANOVA of emotional intelligence, sense of gratitude, and compassion fatigue by Professional Position

	Junior		Senior		Deputy Chief Nurse		Chief Nurse		F	p
	M	SD	M	SD	M	SD	M	SD		
SSEIT	121.6	24.678	120.82	28.066	126.36	26.412	110.2	33.184	0.628	0.597
GQ-6	26.14	4.079	26.12	3.783	26.8	2.723	24.6	2.302	0.503	0.681
Compassion Fatigue	55.26	25.981	55.16	27.075	42.6	20.805	65.6	28.36	2.116	0.098

Table 4 reveals the relationships between emotional intelligence, sense of gratitude, and compassion fatigue. Emotional intelligence (SSEIT) is positively correlated with a sense of gratitude (GQ-6) at a moderate level ($r = 0.26$, $p < 0.001$), suggesting that individuals with higher emotional intelligence are more likely to experience gratitude. Furthermore, there is a strong negative correlation between emotional intelligence and compassion fatigue ($r = -0.51$, $p < 0.001$), indicating that those with higher emotional intelligence tend to experience lower levels of compassion fatigue. Additionally, a moderate negative correlation between a sense of gratitude and compassion fatigue ($r = -0.37$, $p < 0.001$) suggests that individuals with a greater sense of gratitude generally report lower levels of compassion fatigue.

Table 4. Correlation Matrix between emotional intelligence, sense of gratitude, and compassion fatigue of the respondents

	n	M	SD	1	2	3
1. SSEIT	384	121.46	26.200	-		
2. GQ-6	384	26.16	3.871	0.26***	-	
3. Compassion Fatigue	384	54.53	26.256	-0.51***	-0.37***	-
**p < .05. **p < .01. ***p <.001*						

Table 7 summarizes the results of a multiple regression analysis examining factors that predict compassion fatigue. The model includes emotional intelligence (SSEIT), sense of gratitude (GQ-6), age, sex, and years of experience as predictors.The analysis reveals that both emotional intelligence and sense of gratitude are significant negative predictors of compassion fatigue. Specifically, for each unit increase in emotional intelligence, compassion fatigue decreases by 0.44 ($p < 0.0001$), and for each unit increase in sense of gratitude, compassion fatigue decreases by 1.75 ($p < 0.0001$). Age also shows a significant negative relationship with compassion fatigue; older individuals report less compassion fatigue, with a decrease of 1.68 for each additional year of age ($p = 0.036$). Sex (male as the reference group) and years of experience do not significantly predict compassion fatigue, with p-values of 0.1615 and 0.056, respectively.

Table 2. Summary of Multiple Regression Analysis of Compassion Fatigue

	Estimate	*SE*	95% CI		*p*
			LL	UL	
Intercept	195.88	20.154	156.25	235.51	<.0001*
SSEIT	-0.44	0.043	-0.53	-0.36	<.0001*
GQ-6	-1.75	0.295	-2.33	-1.17	<.0001*
Age	-1.68	0.798	-3.25	-0.11	0.036*
Sex: Male (reference)	-3.48	2.477	-8.35	1.40	0.1615
Years of experience	1.61	0.839	-0.04	3.26	0.056
*Number of respondents = 384, CI = confidence interval; LL = lower limit; UL = upper limit, *p < .05*					

Discussion

This study aims to investigate the Relationship between emotional intelligence, sense of gratitude, and compassion fatigue among medical-surgical nurses employed in government hospitals in China. Emotional intelligence, which refers to recognizing, understanding, and managing one's emotions and those of others, has been branded as a decisive factor in promoting positive outcomes in healthcare settings (Mao et al., 2021). Similarly, a sense of gratitude, the appreciation of positive experiences and relationships, has been associated with improved well-being and job satisfaction among healthcare professionals (Lindauer et al., 2021). However, medical-surgical nurses often face high levels of stress and emotional demands due to the challenging nature of their work, which can ultimately lead to compassion fatigue. Understanding the factors that influence compassion fatigue in this population is

essential for the development of effective interventions to promote nurses' well-being and enhance patient care.

Emotional intelligence (EI) is gradually acknowledged as a critical factor in the well-being and performance of medical-surgical nurses, particularly in high-pressure environments such as government hospitals in China (Mao et al., 2021). The study's result reflects a moderate to high level of emotional intelligence among the medical-surgical nurses. A moderate to high level of emotional intelligence benefits nurses working in a medical-surgical setting. It allows nurses to effectively manage their emotions, which is crucial when dealing with stressful and emotionally charged situations (Li et al., 2021). It also enables nurses to develop and maintain positive relationships with patients, their families, and colleagues (Xie et al., 2020). Nurses who empathize with patients and understand their emotional needs can provide more patient-centered care, improving patient outcomes and satisfaction (Khraim, 2023). The study's findings benefit the nurses and can augment the quality of care provided to patients.

Likewise, the medical-surgical nurses in this study demonstrate a moderately high level of gratitude. This suggests that these nurses have a positive appreciation for their work environment's positive experiences and relationships. A moderately high level of gratitude can have several positive implications for nurses, including enhanced job satisfaction, improved well-being, and increased resilience in the face of daily challenges (Fernández et al., 2021). In another study, Nurse-led gratitude interventions are perceived as helpful and improve hospitalization experiences, with actionable items often identified based on patient feedback (Lindauer et al., 2021). Gratitude can also facilitate the development of stronger therapeutic relationships between nurses and patients, enhancing trust and promoting a more positive healthcare experience (Lee et al., 2021). Hence, this study suggests that recognizing and nurturing gratitude among medical-surgical nurses can contribute to their overall emotional well-being and potentially mitigate the risk of compassion fatigue

Compassion fatigue in this study suggests moderate compassion fatigue among medical-surgical nurses. Moderate levels of compassion fatigue indicate that these medical-surgical nurses experience some emotional exhaustion and may struggle to maintain their empathy and compassion toward patients. The study's result was similar to recent studies in various regions in China where medical-surgical nurses face moderate to high levels of compassion fatigue (Jin et al., 2021; Zhan et al., 2022; Zhang et al., 2021). It is vital to address compassion fatigue as it can lead to adverse outcomes of the quality of patient care and the well-being of healthcare professionals. For medical-surgical nurses, experiencing compassion fatigue can lead to symptoms such as emotional exhaustion, decreased job satisfaction, and reduced empathy towards patients (Ma et al., 2022). This can eventually affect their overall well-being and job performance. The study highlights the need for interventions and support systems to mitigate and prevent the negative consequences associated with compassion fatigue.

The results of the t-tests and ANOVA imply that there were no statistically significant differences in emotional intelligence, sense of gratitude, or compassion fatigue based on sex, working department (medical vs. surgical wards), civil status (single, married, divorced, widowed/widower), educational attainment (BSN, Master's Degree, Doctorate Degree), or professional positions (Nurse, Nurse Practitioner, Deputy Chief Nurse, Chief Nurse) among the medical-surgical nurses in the study.

Regarding the socio-demographic results, these findings suggest that these demographic and professional factors do not significantly influence emotional intelligence, sense of gratitude, or compassion fatigue in this sample. While no statistically significant differences were found, it is crucial to recognize that there may still be variations within these groups. It is possible that other factors not examined in this study, such

as work environment, job satisfaction, or personal coping strategies, may contribute to differences in emotional intelligence, sense of gratitude, and compassion fatigue among medical-surgical nurses (Lisle et al., 2020; Maillet & Read, 2021; Xie et al., 2021). Further research is needed to explore these variables in greater depth and consider additional factors that may influence emotional well-being and a sense of gratitude and compassion among medical-surgical nurses. Recognizing these factors can apprise the advance of targeted interventions and support systems to promote nurses' well-being and enhance patient care.

The highlights of this study revealed several significant correlations among the variables of emotional intelligence, gratitude, and compassion fatigue among medical-surgical nurses. Firstly, the study found a significant positive correlation between emotional and among medical-surgical nurses. This suggests that higher levels of emotional intelligence are associated with a greater sense of gratitude. This finding implies that nurses who possess higher emotional intelligence may be more aware of and appreciative of the positive aspects of their work, relationships, and experiences. Recent studies also revealed a relationship between this construct (Shi & Du, 2020; Szcześniak et al., 2020). The constancy of these outcomes across studies suggests that individuals with higher ranks of emotional intelligence are more apt to exhibit a greater sense of gratitude. This Relationship infers that emotional intelligence plays a role in fostering the ability to recognize and appreciate positive experiences and relationships, contributing to a greater sense of gratitude.

Furthermore, the study identified a significant negative correlation between emotional intelligence (SSEIT) and compassion fatigue among medical-surgical nurses. This indicates that higher emotional intelligence is associated with lower levels of compassion fatigue. This finding aligns with the study by Ruiz et al. (2021), suggesting a similar relationship between emotional intelligence and compassion fatigue. This will strengthen the evidence that emotional intelligence is crucial in mitigating compassion fatigue among medical-surgical nurses. The negative Relationship implies that medical-surgical nurses with higher EI are better equipped to manage and cope with the emotional demands of their work, which can aid to a lesser risk of experiencing compassion fatigue. Moreover, Nurses with higher emotional intelligence may possess better emotional regulation skills, self-awareness, and empathy, allowing them to manage the emotional demands of patient care effectively (Li et al., 2022; Zhan et al., 2022). By recognizing and addressing the signs of compassion fatigue, these nurses can take proactive measures to prevent burnout and maintain their well-being.

The study also found that medical-surgical nurses with a greater sense of gratitude tended to experience lower levels of compassion fatigue.This finding suggests that a greater sense of gratitude is associated with lower levels of compassion fatigue. Nurses who experience and express gratitude may be more resilient in the face of challenging situations, as gratitude can help shift focus toward positive aspects of their work and foster a sense of purpose and fulfillment (Kankaya et al., 2023). The significance of this association underscores the importance of gratitude in promoting well-being and mitigating the adverse effects of compassion fatigue among medical-surgical nurses. Expressing gratitude and cultivating a positive mindset can protect against emotional exhaustion and burnout (Caragol et al., 2021). The study's findings emphasize the potential value of integrating gratitude-based practices and interventions into both the initial education and ongoing professional development of nurses, as this may help address the issue of compassion fatigue. By encouraging nurses to reflect on and express gratitude, healthcare organizations can enhance their emotional well-being, job satisfaction, and overall resilience.

The study further unveiled that EI and sense of gratitude predicted compassion fatigue. The findings indicate that higher emotional intelligence and a greater sense of gratitude were associated with lower levels of compassion fatigue in this population. Similar studies have explored the link between these factors in various healthcare settings. A study in 2020 examined the Relationship between emotional intelligence and compassion fatigue in mental healthcare professionals. According to Amir et al. (2019), there was an inverse relationship between nurses' emotional intelligence and their reported compassion fatigue suggesting that developing emotional intelligence skills may be beneficial in mitigating compassion fatigue among oncology nurses. The finding that gratitude, as measured by the Gratitude Questionnaire-6 (GQ-6), significantly predicted compassion fatigue among medical-surgical nurses is a novel result that not widely documented in the current body of literature. This adds to the uniqueness and potential significance of the finding. The findings showed that a stronger sense of gratitude was associated with lower levels of compassion fatigue, further supporting the idea that cultivating gratitude may be a valuable strategy for healthcare professionals to manage the emotional demands of their work.

Conclusion

The study's findings demonstrate the significant correlations between emotional intelligence, sense gratitude, and compassion fatigue among medical-surgical nurses. Additionally, the sociodemographic profile of the respondents did not show any significant difference in terms of emotional intelligence, gratitude, and compassion fatigue. The study also found that both emotional intelligence and sense of gratitude can predict compassion fatigue. The study highlights the importance of emotional intelligence and cultivating a sense of gratitude among medical-surgical nurses. By recognizing and nurturing emotional intelligence and gratitude in nursing practice, healthcare organizations can support nurses in maintaining their well-being, preventing compassion fatigue, and ultimately improving the quality of patient care. Further research in this area would be beneficial to explore the underlying mechanisms and potential causal relationships between emotional intelligence and gratitude.

Recommendations

Based on the findings of the study, several recommendations can be made for both nursing practice and future research. Healthcare organizations should prioritize the integration of emotional intelligence and gratitude training into nursing education and continuing professional development programs, and encourage nurses to engage in self-care practices and seek emotional support when needed. Healthcare organizations should also foster a culture of gratitude by encouraging expressions of appreciation and recognition among healthcare professionals. Future research should focus on conducting longitudinal studies to explore the long-term impact of emotional intelligence and gratitude on compassion fatigue among nurses, investigating the effectiveness of specific interventions aimed at enhancing emotional intelligence and gratitude, and exploring the role of other potential factors in the Relationship between emotional intelligence, gratitude, and compassion fatigue. By implementing these recommendations in nursing practice and conducting future research, the nursing profession can continue to advance in understanding and addressing the impact of emotional intelligence, gratitude, and compassion fatigue, ultimately contributing to the well-being and job satisfaction of nurses and leading to improved patient care outcomes.

Reference

1. Adair, K., Rodriguez-Homs, L., Masoud, S., Mosca, P., & Sexton, J. (2020). Gratitude at Work: Prospective Cohort Study of a Web-Based, Single-Exposure Well-Being Intervention for Health Care Workers. Journal of Medical Internet Research, 22. https://doi.org/10.2196/15562.
2. Amir, K., Betty, A., & Kenneth, A.M. (2019). Emotional Intelligence as Predictor of Compassion Fatigue among Mental Health Practitioners. OALib.
3. Aparicio, M., Centeno, C., Robinson, C., & Arantzamendi, M. (2019). Gratitude between patients and their families and medical-surgical nurses: A scoping review. Journal of nursing management, 27(2), 286–300. https://doi.org/10.1111/jonm.12670
4. Babaei, S., & Haratian, M. (2020). Compassion Satisfaction and Fatigue in Cardiovascular Nurses: A Cross-sectional Descriptive Study. Iranian Journal of Nursing and Midwifery Research, 25, 212 - 216. https://doi.org/10.4103/ijnmr.ijnmr_112_19.
5. Bleazard, M. (2020). Compassion Fatigue in Nurses Caring for Medically Complex Children. Journal of Hospice & Palliative Nursing, 22, 473 - 478. https://doi.org/10.1097/NJH.0000000000000688.
6. Cao, X., & Chen, L. (2021). Relationships between resilience, empathy, compassion fatigue, work engagement, and turnover intention in hemodialysis nurses: a cross-sectional study.. Journal of nursing management. https://doi.org/10.1111/jonm.13243.
7. Caragol, J. A., Johnson, A. R., & Kwan, B. M. (2021). A gratitude intervention to improve clinician stress and professional satisfaction: A pilot and feasibility trial. The International Journal of Psychiatry in Medicine. https://doi.org/10.1177/0091217420982112
8. Crabtree-Nelson, S., DeYoung, P., Vincent, N., Myers, T., & Czerwinskyj, J. (2022). Compassion fatigue, compassion satisfaction, and burnout: A study of nurses in a large Texas health-care system.. Journal of nursing scholarship : an official publication of Sigma Theta Tau International Honor Society of Nursing. https://doi.org/10.1111/jnu.12780.
9. Fernández, M., Lirola, M., Ramos-Pichardo, J., Ortiz-Amo, R., Ibáñez-Masero, O., Gómez, S., & Ortega-Galán, Á. (2021). Emotional Intelligence and Perceived Health Related to Expressed Compassion Fatigue: A Study in Health Sector at Regional Level. Frontiers in Psychology, 12. https://doi.org/10.3389/fpsyg.2021.729624.
10. Filipponi, C., Pizzoli, S., Masiero, M., Cutica, I., & Pravettoni, G. (2022). The Partial Mediator Role of Satisficing Decision-Making Style Between Trait Emotional Intelligence and Compassion Fatigue in Healthcare Professionals.. Psychological reports, 332941221129127 . https://doi.org/10.1177/00332941221129127.
11. Hao, Y., Zhang, L., Bai, C., Li, W., Li, C., & Kong, F. (2022). Gratitude and depressive symptoms in Chinese nurses: A longitudinal cross-lagged study. Applied psychology. Health and well-being, 14(1), 329–343. https://doi.org/10.1111/aphw.12305
12. Huang, H., Liu, L., Yang, S., Cui, X., Zhang, J., & Wu, H. (2019). Effects of job conditions, occupational stress, and emotional intelligence on chronic fatigue among Chinese nurses: a cross-sectional study. Psychology Research and Behavior Management, 12, 351 - 360. https://doi.org/10.2147/PRBM.S207283.
13. Jin, M., Wang, J., Zeng, L., Xie, W., Tang, P., & Yuan, Z. (2021). Prevalence and factors of compassion fatigue among nurse in China: A protocol for systematic review and meta-analysis. Medicine, 100(3), e24289. https://doi.org/10.1097/MD.0000000000024289

14. Kabunga, A., Anyayo, L., Okalo, P., Apili, B., Nalwoga, V., & Udho, S. (2021). Prevalence and contextual factors associated with compassion fatigue among nurses in northern Uganda. PLoS ONE, 16. https://doi.org/10.1371/journal.pone.0257833.
15. Kankaya, E. A., Özer Özlü, N. G., & Vural, F. (2023). Investigating compassion fatigue and predictive factors in paediatric surgery nurses. Nursing ethics, 9697330231209283. Advance online publication. https://doi.org/10.1177/09697330231209283
16. Khraim, H. (2023). The impact of emotional intelligence on job performance at private hospitals: The moderating role of organizational culture. Problems and Perspectives in Management. https://doi.org/10.21511/ppm.21(1).2023.39.
17. Komase, Y., Watanabe, K., Hori, D., Nozawa, K., Hidaka, Y., Iida, M., Imamura, K., & Kawakami, N. (2021). Effects of gratitude intervention on mental health and well-being among workers: A systematic review. Journal of Occupational Health, 63(1). https://doi.org/10.1002/1348-9585.12290
18. Lee, J., Kim, M., Jhon, M., Kim, H., Kang, H., Ryu, S., Kim, J., & Kim, S. (2021). The association of gratitude with perceived stress among nurses in Korea during COVID-19 outbreak. Archives of Psychiatric Nursing, 35, 647 - 652. https://doi.org/10.1016/j.apnu.2021.10.002.
19. Lee, K., & No, J. (2023). The Effects of Gratitude Disposition and Emotional Intelligence on Interpersonal Relationship Ability of Nursing Students. Forum of Public Safety and Culture. https://doi.org/10.52902/kjsc.2023.24.17.
20. Li, J., Wang, Q., Guan, C., Luo, L., & Hu, X. (2022). Compassion fatigue and compassion satisfaction among Chinese palliative care nurses: A province-wide cross-sectional survey. Journal of nursing management. https://doi.org/10.1111/jonm.13708.
21. Li, X., Jiang, T., Sun, J., Shi, L., & Liu, J. (2021). The Relationship between occupational stress, job burnout and quality of life among surgical nurses in Xinjiang, China. BMC nursing, 20, 1-11. https://doi.org/10.1186/s12912-021-00703-2
22. Lindauer, C., Speroni, K., Godinez, K., Lurz, T., Oakley, R., & Zakes, A. (2021). Effect of a Nurse-Led, Patient-Centered, Gratitude Intervention on Patient Hospitalization Experience. JONA: The Journal of Nursing Administration, 51, 192 - 199. https://doi.org/10.1097/NNA.0000000000000997.
23. Lisle, L., Speroni, K., Aroom, W., Crouch, L., & Honigsberg, H. (2020). Differences in Compassion Satisfaction, Compassion Fatigue, and Work Environment Factors by Hospital Registered Nurse Type. OJIN: The Online Journal of Issues in Nursing. https://doi.org/10.3912/ojin.vol25no03ppt44.
24. Liu, Y., & Aungsuroch, Y. (2019). Work stress, perceived social support, self-efficacy and burnout among Chinese registered nurses. Journal of nursing management, 27(7), 1445–1453. https://doi.org/10.1111/jonm.12828
25. Ma, H., Huang, S., We, B., & Zhong, Y. (2022). Compassion fatigue, burnout, compassion satisfaction and depression among emergency department physicians and nurses: a cross-sectional study. BMJ Open, 12. https://doi.org/10.1136/bmjopen-2021-055941.
26. Maillet & Read, E. (2021). Work Environment Characteristics and Emotional Intelligence as Correlates of Nurses' Compassion Satisfaction and Compassion Fatigue: A Cross-Sectional Survey Study. Nursing Reports, 11, 847 - 858. https://doi.org/10.3390/nursrep11040079.
27. Mao, L., Huang, L., & Chen, Q. (2021). Promoting resilience and lower stress in nurses and improving inpatient experience through emotional intelligence training in China: A randomized controlled trial. Nurse education today, 107, 105130. https://doi.org/10.1016/j.nedt.2021.105130.

28. Marshman, C., Munro, I., & Hansen, A. (2021). Compassion fatigue in mental health nurses: A systematic review. Journal of psychiatric and mental health nursing. https://doi.org/10.1111/jpm.12812.
29. Masih, O., Mukhtar, M., & Masih, S. (2023). Relationship between Patient's Satisfaction and level of emotional Intelligence in Nurses Working in Tertiary Care Hospital. Pakistan Journal of Health Sciences. https://doi.org/10.54393/pjhs.v4i09.968.
30. Ruiz Fernández, M. D., Lirola, M. J., Ramos-Pichardo, J. D., Ortíz-Amo, R., Ibáñez-Masero, O., Rodríguez Gómez, S., & Ortega-Galán, Á. M. (2021). Emotional Intelligence and Perceived Health Related to Expressed Compassion Fatigue: A Study in Health Sector at Regional Level. Frontiers in psychology, 12, 729624. https://doi.org/10.3389/fpsyg.2021.729624
31. Sarabia-Cobo, C., Pérez, V., Lorena, P., Fernández-Rodríguez, Á., González-López, J., & González-Vaca, J. (2021). Burnout, Compassion Fatigue and Psychological Flexibility among Geriatric Nurses: A Multicenter Study in Spain. International Journal of Environmental Research and Public Health, 18. https://doi.org/10.3390/ijerph18147560.
32. Shi, H., Shan, B., Zheng, J., Zhang, Y., Zhang, J., & Hu, X. (2022). Grief as a mediator of the Relationship between empathy and compassion fatigue. Psycho-Oncology, 31, 840 - 847. https://doi.org/10.1002/pon.5875.
33. Shi, M., & Du, T. (2020). Associations of emotional intelligence and gratitude with empathy in medical students. BMC medical education, 20(1), 116. https://doi.org/10.1186/s12909-020-02041-4
34. Suttie, J. (2021). How practicing gratitude helps nurses avoid burnout. American Nurse Journal, 16(8), 48.https://link.gale.com/apps/doc/A691982416/AONE?u=anon~61df72d9&sid=googleScholar&xid=af935fb2
35. Szcześniak, M., Rodzeń, W., Malinowska, A., & Kroplewski, Z. (2020). Big Five Personality Traits and Gratitude: The Role of Emotional Intelligence. Psychology research and behavior management, 13, 977–988. https://doi.org/10.2147/PRBM.S268643
36. Wang, J., Okoli, C. T. C., He, H., Feng, F., Li, J., Zhuang, L., & Lin, M. (2020). Factors associated with compassion satisfaction, burnout, and secondary traumatic stress among Chinese nurses in tertiary hospitals: A cross-sectional study. International journal of nursing studies, 102, 103472. https://doi.org/10.1016/j.ijnurstu.2019.103472
37. Wang, J., Su, M., Chang, W., Hu, Y., Ma, Y., Tang, P., & Sun, J. (2023). Factors associated with compassion fatigue and compassion satisfaction in obstetrics and gynaecology nurses: A cross-sectional study. Nursing open, 10(8), 5509–5520. https://doi.org/10.1002/nop2.1790
38. Xie, C., Li, X., Zeng, Y., & Hu, X. (2020). Mindfulness, emotional intelligence, and occupational burnout in intensive care nurses: a mediating effect model. Journal of nursing management. https://doi.org/10.1111/JONM.13193.
39. Xie, W., Chen, L., Feng, F., Okoli, C., Tang, P., Zeng, L., Jin, M., Zhang, Y., & Wang, J. (2021). The prevalence of compassion satisfaction and compassion fatigue among nurses: A systematic review and meta-analysis.. International journal of nursing studies, 120, 103973 . https://doi.org/10.1016/j.ijnurstu.2021.103973.
40. Zhan, Y., Liu, Y., Chen, Y., Liu, H., Zhang, W., Yan, R., Yu, J., & Li, S. (2022). The prevalence and influencing factors for compassion fatigue among nurses in Fangcang shelter hospitals: A cross-sectional study.. International journal of nursing practice, e13054. https://doi.org/10.1111/ijn.13054.
41. Zhang, Y., He, H., Yang, C., Wang, X., Luo, J., Xiao, J., Fu, B., Chen, Y., & Ma, C. (2023). Chain

mediations of perceived social support and emotional regulation efficacy between role stress and compassion fatigue: insights from the COVID-19 pandemic. Frontiers in Public Health, 11. https://doi.org/10.3389/fpubh.2023.1269594.