

# Determinants of compassion satisfaction, compassion fatigue and burn out in nursing

## A correlative meta-analysis

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### Abstract

**Background:** Compassionate care is essential for better clinical and patient outcomes, but during healthcare provision it can be compromised by several factors. This study evaluates factors affecting compassion satisfaction, compassion fatigue and burnout in nursing.

**Methods:** Literature search in electronic databases was followed by data extraction, conversion, and meta-analyses under random effect model. Correlation coefficients ( $r$ ) reported by individual studies were first converted to z-scores for meta-analyses and the overall effect sizes were then back-transformed into  $r$ .

**Results:** Eleven studies (4054 respondents; 64.34 [95% confidence interval: 38.82, 89.86] % response rate; age 39.81 [31.36, 48.27] years; 87.11 [79.48, 94.73] % females) were used for meta-analysis. There was a strong positive correlation between compassion fatigue and burnout ( $r=0.59$ ), whereas compassion satisfaction had weak negative correlation with compassion fatigue ( $r=-0.226$ ) but moderate with burnout ( $r=-0.446$ ). Stress and negative affect were moderately positively associated with compassion fatigue ( $r=0.405$ ) but weakly correlated with burnout ( $r=0.119$ ). Positive affect and personal/social factors had weak inverse relationship with burnout ( $r=-0.197$ ). Positive affect also had a moderately positive relationship with compassion satisfaction ( $r=0.396$ ). Demographic or professional factors were not significantly related to compassion satisfaction, compassion fatigue, or burnout.

**Conclusion:** In nursing, a variety of stressful factors and negative affect promote compassion fatigue and burnout whereas positive affect is helpful in achieving compassion satisfaction.

**Abbreviations:** CPSP = care provider support program, PRISMA = Preferred Reporting Items for Systematic Reviews and Meta-Analysis, ProQoL = Professional Quality of Life Scale, PTSD = post-traumatic stress disorder.

**Keywords:** burnout, compassion fatigue, compassion satisfaction, nursing

## 1. Introduction

Compassion fatigue is the progressive and cumulative outcome of prolonged, continuous, and intense contact with patients, self-utilization, and exposure to multidimensional stress leading to a compassion discomfort that exceeds nurse's endurance levels.

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Compassion fatigue is a state where the compassionate energy of expends beyond restoration causing marked physical, social, emotional, spiritual, and intellectual changes in a progressive manner.<sup>[1]</sup>

By profession, nurses are caring and compassionate individuals who provide support, healing, and encouragement when other individuals of society are facing physical, emotional, and spiritual anguish. However, a continuum of self-giving spells poses risk for developing compassion fatigue.<sup>[2]</sup> Constant exposure to stress and traumatic experiences inherent in nursing profession significantly contribute to the development of a reduced job satisfaction, compassion fatigue, and burnout leading to a considerably high turnover rate in nursing.<sup>[3]</sup>

Burnout is a term used to describe workers' negative behaviors and attitudes toward work in response to job strain with feelings of frustration, powerlessness, and inability to meet work goals.<sup>[4,5]</sup> Compassion fatigue and burnout not only have negative impact on nurses' wellbeing,<sup>[6]</sup> job satisfaction,<sup>[7-10]</sup> and willingness to remain in the profession<sup>[11]</sup> but can also affect patient outcomes<sup>[12]</sup> and their satisfaction from healthcare.<sup>[4]</sup>

Compassion is one's empathetic attitude toward another's suffering with a desire to alleviate it. A good part of nursing literature addresses compassion satisfaction and compassion fatigue. Whereas, many authors have reported the outcomes of cross sectional surveys by using validated tools,<sup>[13-28]</sup> others have also tried to seek quantitative relationships between compassion fatigue or burnout and demographic factors, promoting factors

such as health problems, negative affect, stress, and workload, or alleviating factors such as healthy habits, positive affect, professionalism, and social support.<sup>[29–38]</sup>

The aim of the present study was to systematically review the literature for the identification of published articles reporting correlative associations between compassion satisfaction, compassion fatigue or burnout and factors that can affect these conditions to carry out a meta-analysis of correlation coefficients.

## 2. Methods

This study was performed in accordance with the Cochrane Collaboration's guidelines provided in Cochrane Handbook for Systematic Reviews and is reported in line with the PRISMA statement.

### 2.1. Inclusion and exclusion criteria

The inclusion criteria were: The study—involved an appraisal of working nurses to gather information about the factors affecting compassion satisfaction, compassion fatigue and burnout along with related demographic and sociocultural data; the study used Professional Quality of Life (ProQoL) scale as instrument of data collection; and reported correlation coefficient between one or more work/life domain/s and compassion satisfaction, compassion fatigue or burnout. Studies were excluded if reported only qualitative information; or targeted non-nursing healthcare professionals or nurse students in appraisal; or investigated measures other than compassion fatigue or burnout such as post-traumatic stress disorder; or studies reporting other forms of associational data but not the correlation coefficients.

### 2.2. Literature search

Electronic databases (CINAHL, Embase, Google Scholar, Ovid SP, and PubMed) were searched for the acquisition of research articles reporting the outcomes of relevant surveys. Literature search was based on important keywords which were used in logical combinations. For literature search, nurse-compassion fatigue/nurse-compassion satisfaction/nurse-burnout combinations were used with each of following terms: trauma, stress, occupational stress, psychological stress, emotional trauma, affect, negative emotions, resilience, nursing, hospital, clinic, patients, healthcare providers, correlation, and association. Literature search strategy is presented as Appendix S1, <http://links.lww.com/MD/C297>. Corroborations and cross-references of important research papers (all included studies, relevant review articles, and related survey-based research articles) were also searched. Literature search encompassed relevant research articles published before November 2017 in English language.

### 2.3. Data and analyses

Data regarding the demographic, professional and health characteristics of the participants, outcome measures, and outcomes were obtained from published research articles of respective studies. Extracted data were organized in specialized datasheets. Correlation coefficients reported in each of the included studies were first converted into Fisher's *z*-scores. For this purpose, only raw values of the correlation coefficients provided in the articles were used for the meta-analyses without any imputation from related continuous data.

Meta-analyses were performed under random effects model with Stata software (version 12; Stata Corporation, College

Station, TX). For each of the pooled analysis, the overall effect size was a weighted average of the inverse variance adjusted individual effect sizes (*z* scores). The effect sizes achieved in the meta-analyses were then back-transformed to correlation coefficients. Based on Cohen's recommendation for determining relationships in behavioral sciences, criteria for relationships used were: weak correlation (correlation coefficient;  $r=0.1-0.3$ ); moderate correlation ( $r=0.3-0.5$ ); and strong correlation ( $r=0.5-1.0$ ).<sup>[39]</sup>

Between-study inconsistency was tested by  $I^2$  index. For the assessment of publication bias, funnel plot symmetry test was performed, and trim and fill method was used for the estimation of missing studies. All data are presented as weighted effect sizes with 95% confidence interval.

## 3. Results

Eleven studies fulfilled the eligibility criteria.<sup>[29–38]</sup> A flowchart of study screening and selection process is given in Figure 1. There was no significant publication bias when assessed with Begg's test and trim and fill method (Fig. 2). All of the included studies used ProQoL scale as a tool of data collection.

Overall, there were 4054 respondents in the included studies and overall response rate was 64.34% (38.82, 89.86). Age of the participants was 39.81 years (31.36, 48.27). Percentage of female nurses among respondents was 87.11% (79.48, 94.73) and 65.18% (57.37, 73.00) of the respondents were married. These respondents were serving as nurses since the last 13.39 years (10.23, 16.56).

Overall, there was a strong positive association between compassion fatigue and burnout (*z*-score 0.68 [0.59, 0.77];  $P<.00001$ ; Figure 3; corresponding  $r: 0.591 [0.529, 0.647]$ ), whereas compassion satisfaction had weak negative correlation with compassion fatigue (*z*-score:  $-0.23 [-0.19, -0.26]$ ;  $P<.00001$ ;  $r: -0.226 [-0.187, -0.253]$ ), but had moderate association with burnout (*z*-score:  $-0.48 [-0.21, -0.78]$ ;  $P<.00001$ ;  $r: -0.446 [-0.207, -0.653]$ ).

Several factors related to stress and negative affect were found to have moderately positive correlation with compassion fatigue (*z*-score: 0.43 [0.35, 0.50];  $P<.00001$ ; Figure 4;  $r: 0.405 [0.336, 0.462]$ ). A pooled analysis of positive affect and personal/social factors yielded no meaningful relationship with compassion

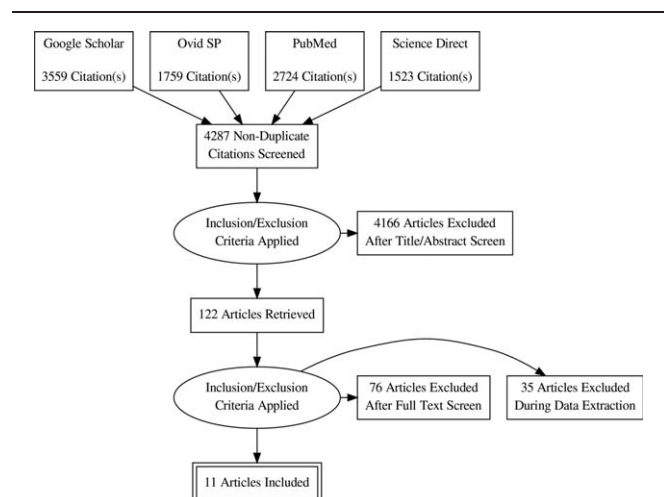


Figure 1. A flowchart of study screening and selection process.

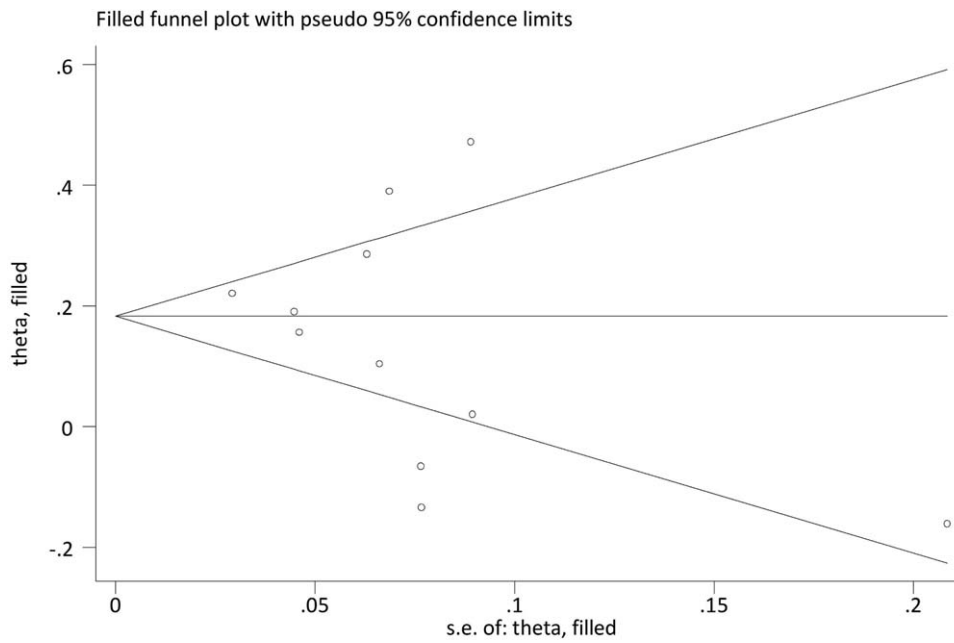


Figure 2. A funnel plot (effect size on the Y-axis and standard error of effect size on the X-axis) showing no significant publication bias.

fatigue ( $z$ -score:  $-0.01$  [ $-0.10, 0.09$ ];  $P = .869$ ; Figure 5;  $r = -0.01$  [ $-0.099, 0.089$ ]). Demographic or professional factors also had no meaningful relationship with compassion fatigue ( $z$ -score:  $0.03$  [ $-0.02, 0.07$ ];  $P = .304$ ; Figure 6;  $r = 0.029$  [ $-0.02, 0.069$ ]).

Stress and negative affect also had weak positive relationship with burnout ( $z$ -score:  $0.12$  [ $0.06, 0.19$ ];  $P < .00001$ ; Figure S1,

<http://links.lww.com/MD/C297>;  $r = 0.119$  [ $0.059, 0.187$ ]). A pooled analysis of positive affect and personal/social factors yielded a weak inverse relationship with burnout ( $z$ -score:  $-0.20$  [ $-0.12, -0.29$ ];  $P < .00001$ ; Figure S2, <http://links.lww.com/MD/C297>;  $r = -0.197$  [ $-0.119, -0.282$ ]). Demographic or professional factors had no meaningful relationship with burnout

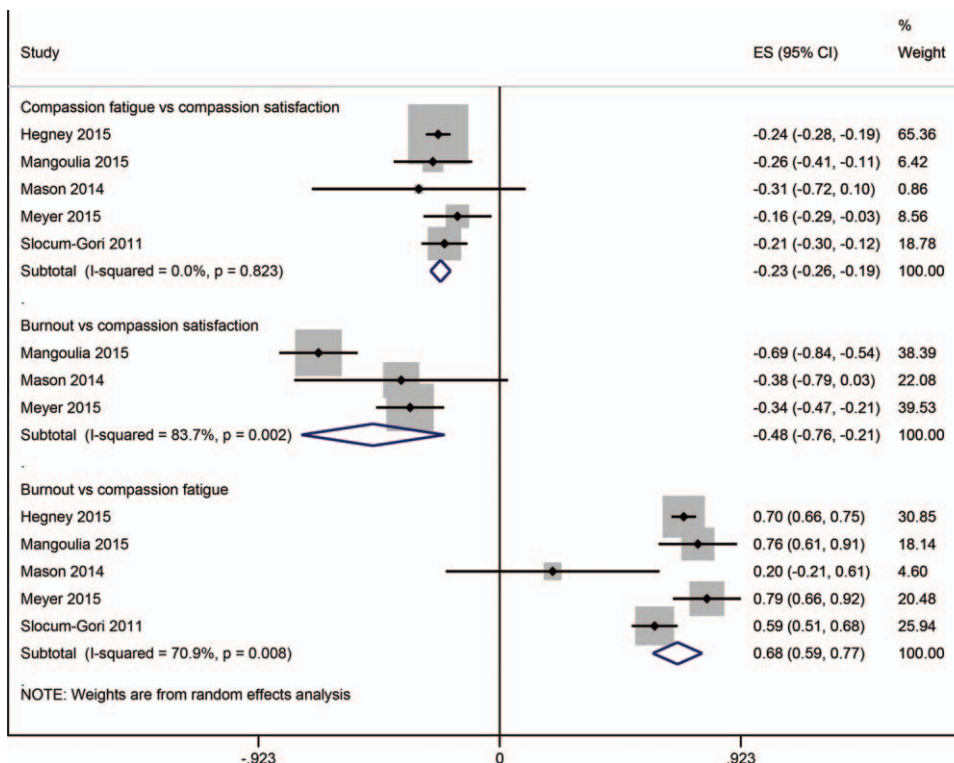


Figure 3. A forest graph showing the pooled analysis of  $z$ -scores derived from the correlation coefficients between compassion satisfaction and compassion fatigue, between compassion satisfaction and burnout, and between compassion fatigue and burnout reported in individual studies.

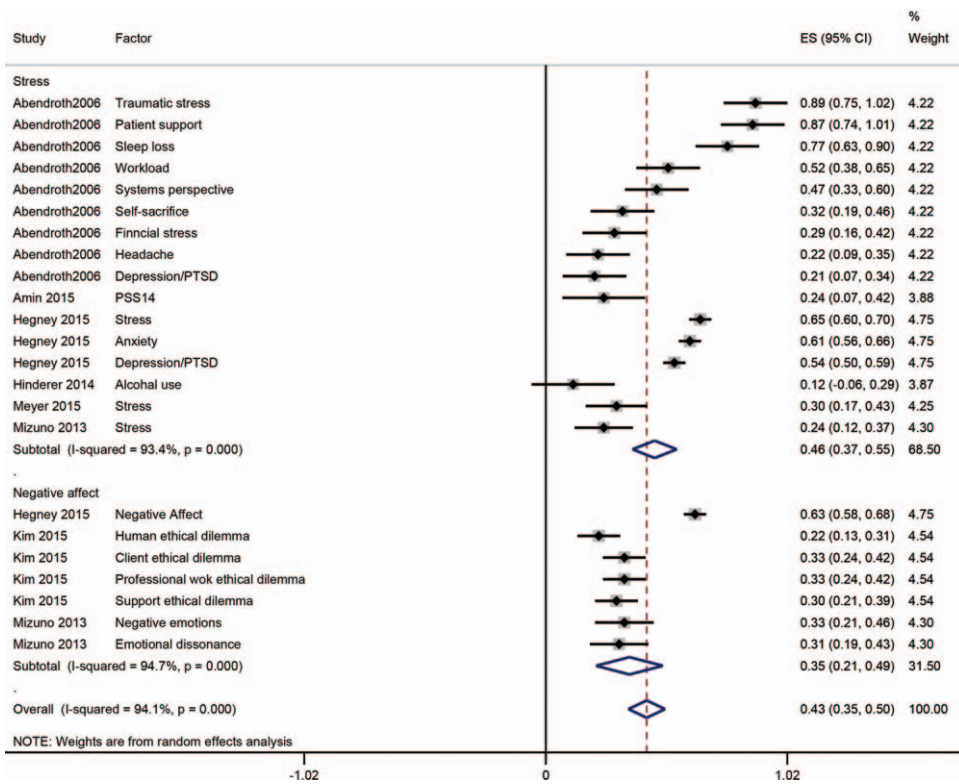


Figure 4. A forest graph showing the pooled analysis of z-scores derived from the correlation coefficients between compassion fatigue and several factors related to stress and negative affect.

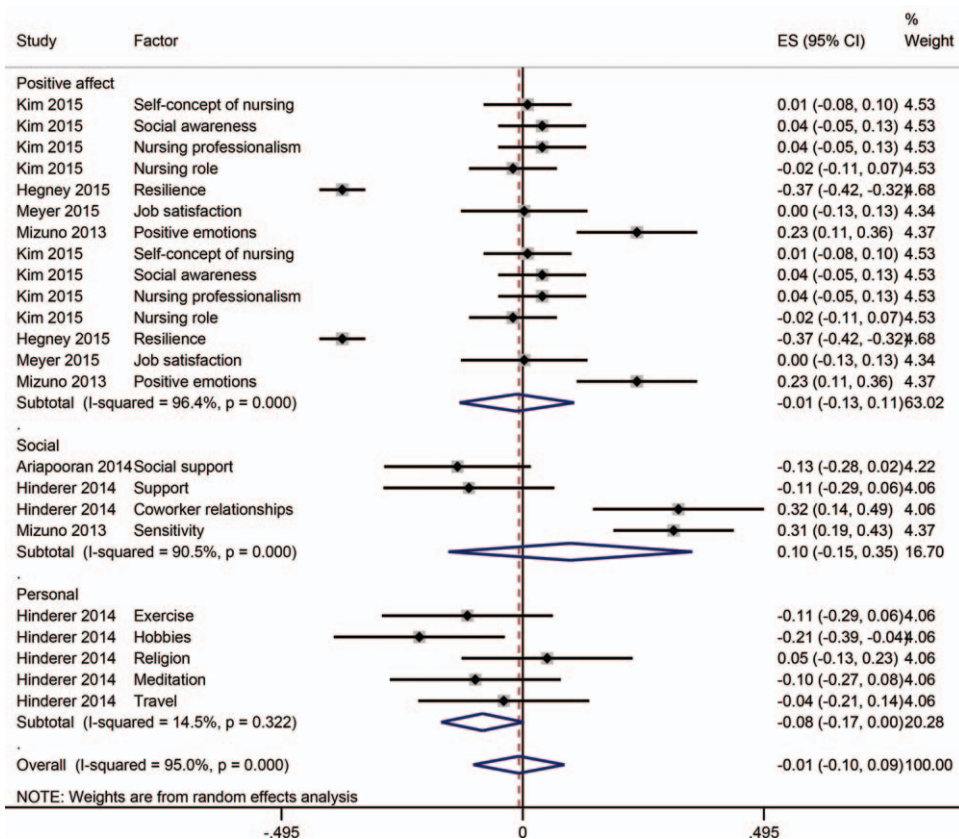
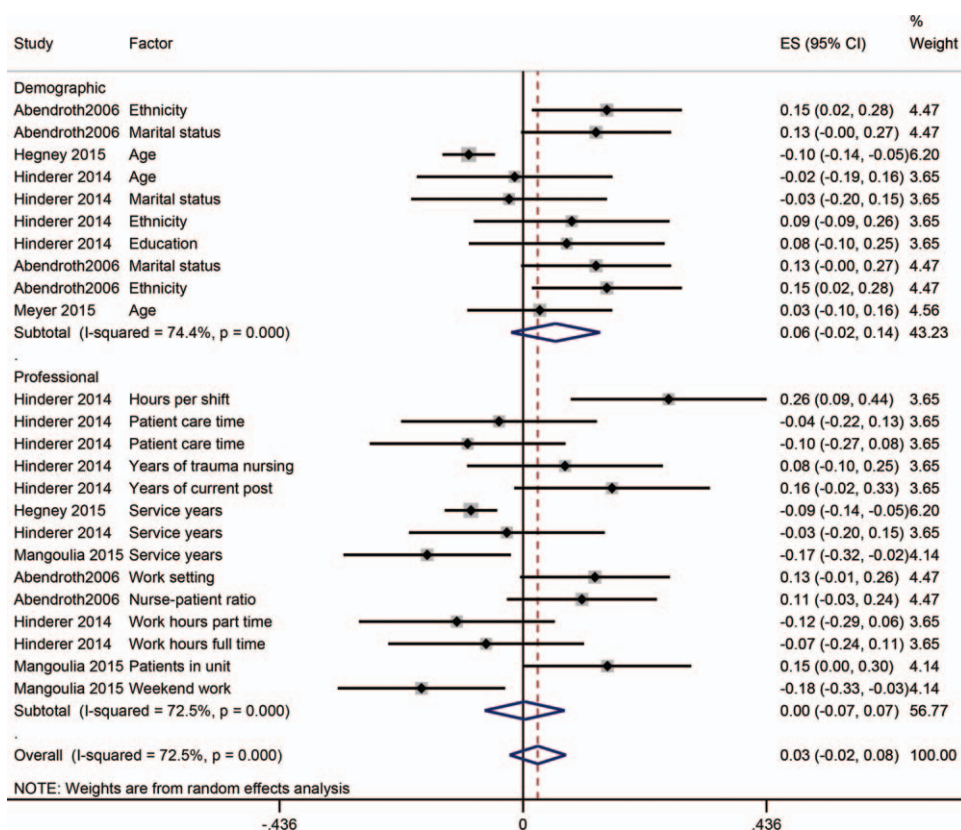


Figure 5. A forest graph showing the pooled analysis of z-scores derived from the correlation coefficients between compassion fatigue and several factors related to positive affect and social life.



**Figure 6.** A forest graph showing the pooled analysis of z-scores derived from the correlation coefficients between compassion fatigue and several factors related to demographic and professional attributes.

(z-score: 0.05 [-0.03, 0.13];  $P = .255$ ; Figure S3 <http://links.lww.com/MD/C297>;  $r: 0.0499 [-0.0299, 0.1292]$ ).

Stress and negative affect had no relationship with compassion satisfaction (z-score: 0.07 [0.01, 0.13];  $P = .347$ ; Figure S4 <http://links.lww.com/MD/C297>;  $r: 0.0698 [0.01, 0.129]$ ). A pooled analysis of positive affect and personal/social factors yielded a moderately positive relationship with compassion satisfaction (z-score: 0.42 [0.32, 0.52];  $P < .00001$ ; Figure S5 <http://links.lww.com/MD/C297>;  $r: 0.396 [0.309, 0.477]$ ) but compassion satisfaction had no relationship with personal or social factors (z-score: -0.11 [-0.26, 0.03];  $P = .134$ ;  $r: -0.109 [0.254, 0.0299]$ ). Demographic or professional factors also had no meaningful relationship with compassion fatigue (z-score: 0.02 [-0.06, 0.10];  $P = .644$ ; Figure S6 <http://links.lww.com/MD/C297>;  $r: 0.0199 [-0.0599, 0.0996]$ ).

#### 4. Discussion

This meta-analytical review of correlational data retrieved from cross-sectional studies evaluating aspects of nurse well-being and its compromise indicates that stress and negative affect may promote compassion fatigue whereas the positive affect and sociality may promote compassion satisfaction. Overall, compassion fatigue was strongly positively associated with burnout, whereas compassion satisfaction had moderate inverse correlation with burnout.

Compassion fatigue is a temporal condition characterized by the inability to nurture others symptomized by intrusive thoughts, sleeping problems, and depression.<sup>[40,41]</sup> In medical psychology, type D personality is characterized by the tendency

toward negative affect (worry, irritability, depression, etc.) and social inhibition (reticence, lack of self-assurance, etc.) and is reported to be significantly associated with compassion fatigue and burnout.<sup>[42]</sup> In the present study too, negative affect and stress are found to be associated with compassion fatigue and burnout. Indeed, both are inter-related phenomenon as stress and neuroticism increases negative affect.<sup>[43]</sup>

Although, in literature, the terms compassion fatigue and secondary traumatic stress are used interchangeably, but both should be studied as conditions with differential etiology, prevalence, symptoms, and treatment efficacy.<sup>[44]</sup> Delineation of these concepts may also help in identifying other types of similar distress conditions. For example, a correlational study of 172 psychiatry healthcare providers comparing the rates of traumatic events, resilience, confidence, and compassion fatigue with post-traumatic stress disorder (PTSD) found that trauma-informed care and burnout symptoms predicted PTSD.<sup>[45]</sup>

On the basis of data from an online survey of 100 registered nurses, Steege et al<sup>[46]</sup> reported that along with physical and mental patient care tasks, frequent managerial/logistics tasks and multi-tasking were also associated with compassion fatigue. A meta-ethnographic study aimed at distilling a common understanding of compassion fatigue identified 4 themes that could be transcribed into physical (“just plain worn out”), emotional (“walking on a tightrope”), trigger (“an unbearable weight on shoulders” and “alone in a crowded room”), and control/prevention (“who has my back?”) categories.<sup>[40]</sup> These observations suggest that the concept of compassion fatigue should be considered beyond traumatic and other forms of occupational stress.

Synthesis of relevant studies for the veracity of the concepts related to compassion fatigue and burnout should be used for nurse welfare and further research related to nursing care. Self-hypnosis as a self-care strategy can increase personal strength and resilience which is helpful in improving compassion satisfaction and job engagement.<sup>[47]</sup> A qualitative study with Australian nurses revealed that a nurse's capacity for personal resilience could be enhanced through strong social and collegial support, quality nursing care and positive affirmation.<sup>[48]</sup> One such program, The Care Provider Support Program (CPSP), was created in an effort to improve the resiliency of military health care providers and resulted in significant reduction in compassion fatigue and burnout when assessed with the ProQOL tool.<sup>[49]</sup> The ProQOL is the most commonly used measure of the negative affect and positive affect of helping others who experience suffering and trauma. This tool has subscales for compassion satisfaction, compassion fatigue, and burnout.<sup>[50]</sup>

Compassion and its satisfaction or fatigue has implications for nursing and the quality of care. A relationship between self-care strategies and reduced compassion fatigue and burnout with higher levels of compassion satisfaction exists.<sup>[51]</sup> Investments in programs capable of reducing compassion fatigue and burnout can potentially reduce the higher nurse turnover rates and thence can improve quality care. Interventions targeting the reduction of negative affect and social inhibition among nurses and other ways to decrease compassion fatigue and burnout are thus required for understanding and managing these conditions. For the time being, focus on strategies such as patient reassignments, formal mentoring programs, training, and flourishing a compassionate organizational culture are among the possible suggestions.<sup>[41]</sup>

This is the first study to collate correlative data pertaining to several factors related to either compassion satisfaction, compassion fatigue, or burnout. Moreover, data were obtained from a single instrument that yielded a considerable response rate. However, some limitations may have impacted the outcomes. Firstly, although all studies reported multiple correlations, the number of included studies was less from the perspective of a correlative meta-analysis. Moreover, study population represents a heterogenous sample as nurses from several departments were the respondents which were invoked at variable environments such as residence, common rooms and work places.

## 5. Conclusion

Compassion fatigue is found to be strongly positively associated with burnout, whereas, compassion satisfaction has inverse relationship with burnout. Stress and negative affect can promote compassion fatigue whereas the positive affect and sociality may promote compassion satisfaction. These results are needed to be appraised in future studies with better designs capable of delineating the roles of negative affect and traumatic or occupational stress with relatively homogeneous sample populations. Whether there can be synergistic effects of more than one factor to manifest compassion fatigue also needs to be studied in future research with larger datasets.

## Author contributions

YYZ and YLW were involved in the conceptualization and design of this study; CZ and XRH extracted and analyzed data; YYZ, CZ, and WL performed literature search and contributed in drafting and revision of manuscript; YLW interpreted the

results and approved final version of manuscript; and all authors agree to be accountable for all aspects of the work.

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**Writing – review & editing:** Ying-lei Wang.

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