

Article

Current status and influencing factors of compassion fatigue in oncology nurses

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Abstract: Compassion fatigue (CF) has emerged as a prominent concern within nursing occupational health research. Empathy, understood as the capacity to identify with and share the distress of patients and caregivers, constitutes a core professional expectation for nurses. However, when empathetic engagement becomes excessive, it may exceed an individual's psychological resources, culminating in emotional exhaustion, a marked reduction in professional interest, and the onset of various psychological, emotional, and physical symptoms, a condition defined as compassion fatigue. Hegney and colleagues further refined this concept, positing that CF primarily occurs among workers providing long-term care to individuals in distress, characterizing it as an involuntary but preventable and treatable outcome linked to specific workplace conditions. A study by Duarte et al. indicated that 40% of clinical nurses experience CF. Oncology nurses are at heightened risk due to the specific challenges of their specialty; they are consistently exposed to the suffering and traumatic experiences of cancer patients and their families. Furthermore, the high-risk, high-intensity, and high-pressure nature of oncology nursing makes CF particularly salient within this group. This study was conducted to understand the current prevalence of CF among oncology nurses and to investigate its influencing factors, with the aim of proposing relevant countermeasures.

Keywords: current status; influencing factors; compassion fatigue; oncology nurses

1. Materials and methods

1.1. General information

A cross-sectional study design was employed, utilizing a convenience sampling method to recruit participants. One hundred oncology nurses were enrolled between July 2022 and November 2025. The participants' ages ranged from 23 to 50 years, with a mean age of 36.63 years (SD = 2.14). The sample consisted of 10 male and 90 female nurses. In terms of educational attainment, 23 participants held a junior college diploma, while 77 possessed a bachelor's degree or higher.

Inclusion criteria were as follows: (1) a minimum of one year of work experience as a registered nurse; (2) current employment within an oncology nursing unit; and (3) voluntary agreement to participate in the study.

Exclusion criteria included: (1) being on leave or absent from work during the data collection period; (2) currently engaged in overseas studies, precluding participation; and (3) concurrent involvement in another research study.

1.2. Survey methods and tools

(1) Investigation methods: Data were collected using a self-administered questionnaire. This instrument was developed through a comprehensive review of relevant literature and consultations with experts in oncology nursing. It was specifically designed for nurses working directly with cancer patients in oncology departments. The questionnaire encompassed items pertaining to demographic characteristics (gender, age, education level, professional title, marital status) as well as variables of interest including social support, occupational cognition, and self-reported health status. Prior to the main study, a pilot test was conducted with a small group of oncology nurses to assess the clarity, relevance, and content validity of the questionnaire. To minimize potential social desirability bias, the survey was administered anonymously. Participants completed the questionnaires independently, and no personally identifiable information was collected.

(2) Survey tools:

1) Compassion Fatigue Scale: The level of compassion fatigue was assessed using the Compassion Fatigue Scale [1,2]. This instrument comprises 30 items distributed across three subscales: Job Burnout (10 items), Compassion Satisfaction (10 items), and Secondary Traumatic Stress (10 items). Total scores range from 30 to 150, with higher scores indicating more severe compassion fatigue. Established cut-off points for the subscales are as follows: Compassion Satisfaction (<37 points), Secondary Traumatic Stress (>17 points), and Job Burnout (>27 points). The overall severity of compassion fatigue is determined based on the number of subscales exceeding these thresholds: meeting all three criteria indicates severe CF, meeting two indicates moderate CF, and meeting one indicates mild CF. The Chinese version of this scale has demonstrated sound psychometric properties in nursing populations, with a reported total Cronbach's α coefficient of 0.91. The α coefficients for the Compassion Satisfaction, Secondary Traumatic Stress, and Job Burnout subscales are 0.87, 0.73, and 0.84, respectively [3–4].

2) Social Support Rating Scale (SSRS): Perceived social support was measured using the Social Support Rating Scale (SSRS) [5–6]. This 10-item scale evaluates three dimensions: subjective support, objective support, and the utilization of available support. The total score ranges from 12 to 66, with higher scores reflecting greater perceived social support. The SSRS has been extensively validated in Chinese populations, demonstrating good reliability and validity. Previous studies report Cronbach's α coefficients typically between 0.80 and 0.90 for the total scale, alongside test-retest reliability exceeding 0.90 [7].

3) Professional Cognition Scale: Occupational perceptions were evaluated using the Professional Cognition Scale [8]. This 13-item instrument assesses several domains: working pressure, job satisfaction, work enthusiasm, career motivation, career prospect expectations, and professional recognition. Prior research employing this scale among Chinese nurses has supported its acceptable internal consistency and construct validity [8]. Subscale scoring details are as follows: Career Prospect Expectations (items assessing willingness for one's children to enter nursing, perceived career development prospects, and post-work affinity for nursing; score range 3–12); Career Motivation (reason for choosing nursing; score range 1–4); Work

Enthusiasm (items 6–8 assessing proactive patient assistance, support with activities of daily living, and maintenance of good patient communication; score range 3–13); Job Satisfaction (items pertaining to work environment and income; score range 2–8); and Professional Recognition (items concerning job evaluation, perceived respect from others, and feeling of work being valued; score range 3–14).

1.3. Statistical analysis

Data analysis was performed using SPSS version 24.0 (IBM Corporation, USA). Continuous data are presented as mean $\pm$ standard deviation (mean $\pm$ SD). Comparisons of continuous variables between two groups were conducted using independent samples t-tests. Categorical data are expressed as frequencies and percentages (%), with comparisons made using the chi-square (χ^2) test. The internal consistency of each measurement scale within the present sample was evaluated by calculating Cronbach's α coefficients. To identify independent factors associated with compassion fatigue among oncology nurses, a multivariate logistic regression analysis was performed, with the presence or absence of compassion fatigue serving as the dependent variable. The goodness-of-fit of the final logistic regression model was assessed using pseudo R^2 statistics, specifically the Cox & Snell R^2 and the Nagelkerke R^2 . A two-tailed p -value of less than 0.05 was considered statistically significant for all analyses.

2. Results

Before further analyses, the internal consistency of the main study instruments in this sample was examined. Cronbach's α coefficients for the compassion fatigue scale, the Social Support Rating Scale and the professional cognition scale were 0.89, 0.85 and 0.81, respectively, indicating acceptable internal consistency in this sample.

2.1. Patient compassion fatigue rating

As detailed in **Table 1**, among the 100 oncology nurses surveyed, 41 were identified as having compassion fatigue and formed the compassion fatigue group, while the remaining 59 constituted the non-compassion fatigue group. The total compassion fatigue score in the compassion fatigue group was significantly higher compared to the non-compassion fatigue group ($P < 0.05$).

Table 1. Results of patients' compassion fatigue scores [$(\bar{x} \pm s)$, score].

Groups	Burnout	Secondary traumatic stress	Empathy satisfaction	Total score
Compassion fatigue group ($n = 41$)	25.26 $\pm$ 5.14	32.16 $\pm$ 4.81	28.77 $\pm$ 2.63	86.19 $\pm$ 12.58
No compassion fatigue group ($n = 59$)	13.26 $\pm$ 3.63	6.26 $\pm$ 2.41	42.16 $\pm$ 3.14	61.68 $\pm$ 9.18
t	7.291	27.271	22.381	11.267
P	0.001	0.001	0.001	0.001

2.2. Univariate analysis of compassion fatigue

Univariate analysis indicated no statistically significant differences between the two groups in terms of gender, age, years of working experience, or professional title level ($P > 0.05$). However, significant differences were observed in marital status,

occupational cognition, self-reported health status, educational attainment, and level of social support ($P < 0.05$). (Table 2)

Table 2. Univariate analysis of compassion fatigue (%).

Cause analysis		<i>n</i> = 100	Compassion fatigue group (<i>n</i> = 41)	No compassion fatigue group (<i>n</i> = 59)	χ^2/t	<i>P</i>
Gender	male	10	4	6	0.004	0.946
	female	90	37	53		
Age (years)	< 30	39	13	26	2.591	0.274
	30 ~ 40	26	10	16		
	> 40 to 50	35	18	17		
Length of service (years)	< 4	45	21	24	1.086	0.297
	≥5	55	20	35		
Marital status	Married	55	32	23	14.916	0.000
	unmarried	45	9	36		
Professional cognition (points)	< 30	50	11	39	14.924	0.000
	≥30	50	30	20		
Educational status	Junior college	29	26	3	39.973	0.000
	Bachelor's degree or above	71	15	56		
Health status	Good	49	12	37	10.827	0.001
	Poor	51	29	22		
Professional title level	Nurse and below	31	15	16	1.225	0.542
	Nurse in charge	29	10	19		
	Associate Chief Nurse and above	40	16	24		
Social support (points)	<45	47	28	19	12.647	0.000
	≥45	53	13	40		

2.3. Independent variable assignment

The independent variables found to be significant in the univariate analysis were subsequently coded for inclusion in the regression model. The assignment schemes are summarized in Table 3.

Table 3. Assignment results of independent variables.

Variables	Assignment instructions
Educational status	College = 1, bachelor's degree or above = 2
Professional cognition	<30 = 1, ≥30 = 2
Health status	Good = 1, poor = 2
Social Support	<45 = 1, ≥45 = 2
Marital status	Married = 1, unmarried = 2

2.4. Influencing factor analysis

Taking the occurrence of compassion fatigue as the dependent variable, the independent variables after assignment were introduced into the multivariate Logistic

analysis. The results showed that marital status, occupational cognition, health status, educational status and social support were significantly associated with compassion fatigue among oncology nurses. For details, please refer to Table 4. The final logistic regression model explained approximately 35.2% of the variance in compassion fatigue (Cox & Snell $R^2 = 0.28$, Nagelkerke $R^2 = 0.36$), indicating an acceptable model fit.

Table 4. Multivariate Logistic regression analysis of influencing factors of compassion fatigue in oncology nurses.

Influencing factors	B	S.E.	Df	P	OR	95% CI for Exp (B)
Educational status	1.0109	0.1596	1	< 0.001	2.7481	2.0099 ~ 3.7574
Professional cognition	1.0006	0.0946	1	< 0.001	2.7199	2.2596 ~ 3.2740
Health status	1.0926	0.0836	1	< 0.001	2.9820	2.5313 ~ 3.5129
Social support	1.0979	0.0933	1	< 0.001	2.9979	2.4969 ~ 3.5994
Marital status	0.9519	0.0868	1	< 0.001	2.5906	2.1853 ~ 3.0711

3. Discussion

Amidst evolving socioeconomic conditions and shifting lifestyles, the overall living environment has grown more demanding. Concurrently, there has been a notable rise in the incidence of tumor diseases, with malignant tumors posing a significant threat to public health. Oncology nurses invest substantial energy, physical effort, time, and emotional resources in patient care. Their prolonged exposure to environments characterized by grief and mortality contributes to the development of CF [9]. In the present study, 41% of oncology nurses were found to experience CF—a prevalence closely aligned with the approximate 40% reported by Duarte et al. among oncology nurses, and consistent with prior domestic studies indicating moderate to high levels of CF among clinical nurse [1,4,7,10].

Fatigue represents a common non-specific symptom that may arise not only as a natural physiological response but also as a clinical manifestation of certain illnesses or as a suboptimal health state situated between wellness and disease. Beyond discomfort, it is associated with impaired memory, diminished job satisfaction, prolonged reaction times, and compromised decision-making abilities [10]. Relevant research suggests that up to 83% of nursing errors may be attributable to fatigue [11]. Oncology nursing entails high-risk responsibilities and a demanding workload. Due to the specific nature of their profession, nurses are routinely exposed to occupational hazards. For instance, chemotherapy—a common treatment for cancer patients—involves handling drugs that can enter the body through the digestive tract, respiratory system, or skin, thereby posing risks to nurses' health and safety. Furthermore, frequent encounters with patient mortality and inevitable exposure to the distress of patients' families lead to emotional depletion, ultimately contributing to CF and impacting nursing performance [12].

Occupational cognition refers to nurses' perceptions and understanding of their own profession, which can directly influence both work behavior and psychological well-being. Positive occupational cognition and appropriate professional values may mitigate CF. Strengthening such cognition and enhancing coping capacities can serve as preventive and therapeutic measures against CF among nurses. Accordingly,

training in professional cognition and empathetic communication could be beneficial in preventing or reducing CF levels among oncology nursing staff. However, due to the cross-sectional design of this study, causal inferences cannot be drawn.

Marital status emerged as one of the influencing factors of CF among oncology nurses, with married nurses demonstrating more pronounced CF. This may be attributed to higher work pressures, compromised physical and mental health, and the challenge of balancing professional and familial responsibilities. Additionally, the present study indicated that higher educational attainment correlated with lower rates of CF. Nurses with advanced education typically possess greater professional knowledge, enabling proficient application of cancer pain assessment tools, PICC management, and various psychological scales, as well as a clearer understanding of treatment protocols and medications. Such competencies facilitate more effective management of stressors and enhance empathy satisfaction. These observations align with prior studies suggesting that stronger professional identity, better health status, and greater social support are associated with reduced CF among nurses [1,7,10].

Insufficient social support tends to amplify stress responses, as social support plays a moderating role in mitigating job stress and burnout. Enhanced social support can alleviate psychological stress, improve functional adaptability, and bolster nurses' work engagement. Nevertheless, given the cross-sectional nature of this study, the identified relationships reflect associations rather than causation. Longitudinal or intervention-based research is warranted to clarify the directional nature of these effects.

Several limitations should be acknowledged. First, the cross-sectional design precludes the establishment of causal relationships or the clarification of temporal sequences between exposure factors and CF. Second, the use of convenience sampling from a limited number of hospitals within a single region, along with a relatively modest sample size, may constrain the generalizability of the findings. Third, all data were collected via self-report questionnaires, which, despite anonymous administration, remain susceptible to recall bias and social desirability bias. Future studies should adopt multicenter, longitudinal, or interventional designs with larger samples, incorporate objective outcome measures, and, where applicable, employ qualitative methods to further elucidate the mechanisms underlying CF and to rigorously assess the efficacy of targeted nursing management interventions.

4. Conclusion

CF is present among oncology nurses, with 41% of participants in this study meeting criteria for the condition. Nursing managers should prioritize the assessment and ongoing monitoring of CF, promptly identify at-risk nurses, allocate human resources appropriately, reduce excessive workloads, and optimize both physical and psychosocial work environments. Concurrently, targeted training in professional cognition and empathy, along with the establishment of psychological support services and peer-support programs, should be implemented. Strengthening organizational and social support systems is also recommended to help mitigate CF and sustain the quality and safety of oncology care. It must be noted, however, that the cross-sectional design of this study precludes causal conclusions regarding the identified factors and CF.

Further longitudinal and intervention-based research is necessary to validate these findings and evaluate the effectiveness of specific managerial strategies.

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Informed consent statement: Informed consent was obtained from all subjects involved in the study.

Conflict of interest: The authors declare no conflict of interest.

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