Analysis and countermeasures on the correlation between self-efficacy and occupational burnout in nurses of emergency departments in tertiary hospitals

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Abstract. Objective: To understand the current status of self-efficacy in nurses working in the emergency department of tertiary hospitals in a prefecture-level city and to explore the correlation between self-efficacy and occupational burnout. **Methods:** A questionnaire survey was conducted with 140 registered nurses working in the emergency departments of seven tertiary hospitals in a certain city using a general information survey, the General Self-Efficacy Scale, and the Maslach Burnout Inventory. Descriptive analysis, univariate analysis, and correlation analysis were performed to analyze the data. **Results:** A total of 136 valid questionnaires were collected (97.14%). The average score for general self-efficacy was (2.62 ± 0.53), indicating a moderate level. The scores for the various dimensions of occupational burnout in emergency department nurses were as follows: Emotional Exhaustion (26.61 ± 10.87), Depersonalization (12.06 ± 6.67), indicating severe burnout; Personal Accomplishment (40.64 ± 9.95), indicating mild burnout. The self-efficacy score of emergency department nurses was negatively correlated with emotional exhaustion and depersonalization ($P < 0.01$) and positively correlated with personal accomplishment ($P < 0.02$). **Conclusion:** Occupational burnout in emergency department nurses should be addressed, and improving their self-efficacy can help reduce burnout.

Keywords: emergency department nurses, self-efficacy, occupational burnout, correlation analysis

1. Introduction

The emergency department is the first line of defense in hospitals, serving as a clinical department with the most complex and critical cases. Nurses in this department face enormous psychological pressure, presenting higher challenges for them [9]. Self-efficacy refers to an individual's perception or belief in their ability to take adaptive actions in the face of environmental challenges [1]. Freudenberger, an American clinical psychologist, believes that occupational burnout occurs when the demands of the job on a worker's personal abilities, resources, and energy exceed their capacity to tolerate, leading to physical and psychological fatigue, a loss of enthusiasm for work, growing indifference toward others, a decline in work ability, and a decrease in job satisfaction, among other negative symptoms [2-3]. This study aims to explore the relationship between self-efficacy and occupational burnout among emergency department nurses in municipal tertiary hospitals, and the findings are reported here.

2. Objects and methods

2.1. Objects

Nurses from the emergency departments of seven tertiary hospitals in a certain city were selected as the research subjects. Inclusion criteria: (1) Registered nurses in the emergency department; (2) Working in the emergency department for more than one year; (3) Informed consent and voluntary participation. Exclusion criteria: (1) Trainees; (2) Those on further education, sick leave, or maternity leave.

2.2. Methods

2.2.1. Research tools

(1) General Information Survey: Designed by the researchers, this survey includes general information such as gender, age, ethnicity, years of work experience, education level, professional title, marital status, children, and employment type.

(2) General Self-Efficacy Scale (GSES): The Chinese version, translated by Wang Kangcai in 2001, was used. It demonstrates good reliability and validity, with a Cronbach's α coefficient of 0.87, test-retest reliability of 0.83, and split-half reliability of 0.82 [1]. The scale uses a 4-point Likert scale, with scores ranging from 1 to 4. For each item, "completely incorrect" is scored as 1, "slightly correct" as 2, "mostly correct" as 3, and "completely correct" as 4. The higher the score, the higher the general self-efficacy. The internal consistency coefficient in this measurement was 0.906, and the split-half coefficient was 0.891.

(3) Maslach Burnout Inventory: This tool, developed by American psychologist Maslach et al. in 1986, was translated into Chinese by Li Xiaomei, with a large sample norm established by Ye Zhihong [4]. It is the most widely used tool for measuring occupational burnout. The scale consists of 22 items, which assess three dimensions: emotional exhaustion, depersonalization, and personal accomplishment. All items use a 7-point Likert scale. The emotional exhaustion dimension includes 9 items, depersonalization includes 5 items, and personal accomplishment includes 8 items. Scores for each dimension are calculated separately and should not be summed. The Chinese version of the scale has good reliability and validity and meets psychometric requirements. The diagnostic thresholds for occupational burnout [4] are: emotional exhaustion ≥ 27, depersonalization ≥ 8, and personal accomplishment ≤ 24. For the three sub-dimensions, the diagnostic criteria are: emotional exhaustion <19 is low burnout, 19-26 is moderate burnout, ≥ 27 is high burnout; depersonalization <6 is low burnout, 6-9 is moderate burnout, ≥ 10 is high burnout; personal accomplishment ≥ 35 is low burnout, 34-39 is moderate burnout, <34 is high burnout.

2.2.2. Research method

The QR code generated by the "Wenjuanxing" (Questionnaire Star) platform was sent to the work WeChat group of the nursing staff. Unified guidance was provided, explaining the purpose, significance, and precautions of the study. The survey was anonymous, and each participant was limited to one submission. A total of 140 emergency department nurses from seven tertiary hospitals in the city participated in the study. Four invalid questionnaires were excluded, resulting in 136 valid questionnaires, with an effective recovery rate of 97.14%.

2.3. Statistical analysis

SPSS 26.0 software was used for data analysis. For normally distributed data, descriptive statistics were applied, with continuous data presented as mean ± standard deviation ($\bar{x} \pm s$), and categorical data presented as frequency and percentage (%). For statistical inference, t-tests, analysis of variance, and Pearson correlation analysis were used. The significance level was set at α = 0.05.

3. Results

3.1. General information

The general information of the 136 emergency department nurses is detailed in Table 1.

3.2. General self-efficacy scale

The mean score on the General Self-Efficacy Scale was (2.62 ± 0.53), indicating a moderate level of self-efficacy. Among the participants, males scored the highest (31.82 ± 4.64), while those with no family or friends' support scored the lowest (19.5 ± 0.71). The general data were analyzed using t-tests, and univariate analysis showed that age, marital status, years of nursing work, years in the emergency department, children, and number of night shifts all had P > 0.05. Title and education level had P < 0.05. A detailed analysis of the general information and the General Self-Efficacy Scale is shown in Table 1.

Table 1. General Information and General Self-Efficacy Scale

Characteristics		N	Percentage (%)	$\bar{x}$	s	t/F	p
Gender	Female	125	91.9	25.7	5.12	-3.74	<0.01
	Male	11	8.1	31.82	4.64		
Age	20-29 years	87	64.0	25.82	5.45	0.77	>0.05

Table 1. (continued).

	30-39 years	38	27.9	26.76	4.92		
	40-50 years	9	6.6	26.17	4.99		
	51+ years	2	1.5	31	7.07		
Ethnicity	Han	134	98.5	26.24	5.36	0.833	>0.05
	Others	2	1.5	23	2.83		
	Single	59	43.4	25.49	5.47	1.54	>0.05
Marital Status	Married	70	51.5	26.53	5.21		
	Divorced	7	5.1	28.71	5.09		
	Nurse	49	36	26.65	5.82	4.15	<0.05
	Nurse Specialist	60	44.1	25.47	5.26		
Title	Head Nurse	21	15.4	27.38	3.56		
	Deputy Chief Nurse or above	6	4.4	25.5	7.18		
	Secondary Vocational	6	4.4	30.17	4.26	4.05	<0.05
Highest Education	College/High Vocational	58	42.6	24.93	5.07		
	Bachelor's Degree	72	52.9	26.88	5.39		
	1-5 years	60	44.1	25.77	5.53	0.63	>0.05
Years of Nursing Experience	6-10 years	34	25	25.68	4.97		
	10-20 years	32	23.5	27.22	5.08		
	21+ years	10	7.4	27.2	6.30		
	1-5 years	84	61.8	26.04	5.41	0.25	>0.05
Years in Emergency Department	6-10 years	27	19.9	25.78	5.01		
	10-20 years	20	14.7	27.2	4.93		
	21+ years	5	3.7	27	8.19		
	None	82	60.3	25.52	5.42	1.51	>0.05
Children	One	43	31.6	27.05	5.35		
	Two or more	11	8.1	27.82	4.05		
Hospital Employment Type	Contractual	107	78.7	25.93	5.27	-0.97	>0.05
	Permanent	29	21.3	27.14	5.58		
Family and Friend Support	No	2	1.5	19.5	0.71	-1.75	>0.05
	Yes	134	98.5	26.29	5.31		
Job Satisfaction	No	24	17.6	22.83	4.49	-3.53	<0.05
	Yes	112	82.4	26.91	5.24		
Number of Night Shifts per Month	0-4 shifts	36	26.5	26.24	5.79	0.53	>0.05
	5-9 shifts	42	30.9	26.33	4.76		
	10 or more	58	42.6	27.91	5.19		

3.3. Emotional exhaustion dimension of the occupational burnout scale

The mean score on the emotional exhaustion dimension was (29.02 ± 11.56), on the depersonalization dimension was (12.06 ± 6.67), and on the personal accomplishment dimension was (40.64 ± 9.95). The proportion of individuals in each dimension is shown in Table 2.

Table 2. Occupational Burnout Dimension Personnel Analysis

	Emotional Exhaustion Dimension		Depersonalization Dimension		Personal Accomplishment Dimension		Overall		
			Number	Percentage (%)	Number	Percentage (%)	Positive Cases	Number	
Severe	29	21.32%	16	11.76%	81	59.56%	Three Positive	41	30.15%
Moderate	28	20.59%	29	21.32%	22	16.18%	Double Positive	60	44.12%
Mild	79	58.09%	91	66.91%	33	24.26%	Single Positive	26	19.12%
							No Positive	9	6.62%
Total	136	100%	136	100%	136	100%		136	100%

3.4. Correlation analysis between general self-efficacy and occupational burnout

The analysis shows that self-efficacy is negatively correlated with emotional exhaustion and depersonalization ($P < 0.01$) and positively correlated with personal accomplishment ($P < 0.02$).

Table 3. Correlation Table Between General Self-Efficacy and Occupational Burnout

		Emotional Exhaustion	Depersonalization	Personal Accomplishment
Self-efficacy Total Score	r	-0.352	-0.211	0.204
	p	0.00	0.01	0.02

4. Discussion

4.1. Self-efficacy of emergency department nurses

This study shows that the average general self-efficacy score was (2.62 ± 0.53), which is at a moderate level, consistent with the study by Yu Jufen [5]. It is higher than the theoretical mean of 2.5, indicating a moderate level. Compared with Wang Cai's [6] 2015 study, the score is slightly higher but still within the moderate range. This may be related to the level of urban development and regional differences. The measures to improve the self-efficacy of emergency department nurses are as follows: (1) Leadership should focus on improving nurses' self-efficacy and strengthen training on self-efficacy. (2) Increase departmental group activities to promote communication among staff, enabling mutual learning and self-improvement. (3) Increase opportunities for external study and further education to learn new knowledge and concepts, broadening perspectives.

4.2. Occupational burnout of emergency department nurses

In the analysis of occupational burnout in emergency department nurses in our city, nearly half of the nurses showed severe burnout across all dimensions. The emotional exhaustion dimension scored (26.61 ± 10.87), and the depersonalization dimension scored (12.06 ± 6.67), both indicating severe burnout. The personal accomplishment dimension scored (40.64 ± 9.95), indicating mild burnout. The percentage of nurses with three positive dimensions was 30.15%, while those with two positive dimensions was 44.12%. The reasons are as follows:

The fast pace and high intensity of work in the emergency department, where patients often have critical conditions, place great pressure on nurses. Family members are highly anxious and demand more from nurses regarding technical skills and procedures. When nurses lack sufficient technical proficiency and emergency response ability, dissatisfaction from patients and their families may arise, increasing the likelihood of burnout in such an environment.

The insufficient staffing and increasing number of night shifts contribute to the problem. This study shows that about half of the nurses work more than 10 night shifts a month, leading to severe disruptions in their sleep patterns. When the number of patients suddenly increases, the lack of manpower may lead to dissatisfaction from patients and their families, resulting in complaints.

As a tertiary hospital, the emergency department reflects the hospital's emergency medical capabilities, and therefore, the hospital has higher requirements. In recent years, the government has been advocating respect for nurses, but in some areas and hospitals, nurses' authority is limited, and patients may not trust nurses, which sometimes leads to situations where "one word from a doctor is worth ten words from a nurse."

4.3. Correlation between self-efficacy and occupational burnout

The analysis shows that self-efficacy is negatively correlated with the emotional exhaustion and depersonalization dimensions ($P < 0.01$), which is consistent with Wang Cai's study [5]. This study shows that the higher the self-efficacy, the lower the emotional exhaustion and depersonalization. Furthermore, self-efficacy is positively correlated with personal accomplishment, meaning that higher self-efficacy is associated with greater personal accomplishment. Similar findings were reported by Han Lanping and others, who showed that higher self-efficacy is associated with lower levels of occupational burnout [8].

5. Conclusion

The self-efficacy of emergency department nurses is at a moderate level, and the burnout level, especially in the depersonalization dimension, is at a severe level. Nursing managers should develop personalized training programs targeting the factors that influence occupational burnout, with the goal of enhancing self-efficacy to alleviate burnout among emergency department nurses. However, this study is a cross-sectional study, and the nurse participants were sourced from a relatively concentrated region. Future research could involve multi-center, large-sample longitudinal studies and path analysis to more clearly identify areas of weakness.

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