

Analysis of nurses' job burnout and coping strategies in hemodialysis centers

Kuang Ling, RN^a, Wen Xianxiu, RN^{a,*}, Zhang Xiaowei, MD^b

Abstract

In recent years, nursing has come to be considered a high-risk and high-pressure profession, given the fast-paced working environment and constant need to handle emergencies, especially for nurses working in hemodialysis centers. Nearly every day, nurses are confronted with life and death situations and are required to provide skilled, high quality care for their patients, in fast-paced and demanding environments. Thus, nurses are susceptible to both psychological stress and other mental health problems, making them more vulnerable to burnout when compared against other healthcare professions.

An anonymous online questionnaire was completed by a group of participating nurses, using the web-based survey platform WeChat. Registered nurses working in hemodialysis centers were randomly selected from 5 comprehensive tertiary level hospitals in Sichuan Province, China. The data collection instrument comprised two parts: demographic data and a nurse burnout questionnaire—the Maslach Burnout Inventory. Overall, 70 nurses were invited to participate, with 65 returning completed questionnaires, giving a response rate of 92.9%. In this survey, the burnout level was set at 28.15 ± 12.39 for emotional exhaustion (EE), 10.23 ± 5.47 for depersonalization (DP), and 37.19 ± 8.31 for personal accomplishment (PA)—EE and DP levels are found to be high at the level of burnout.

Job burnout was found to exist widely among the nurses of hemodialysis centers, which may then result in adverse effects on their physical and mental health. Active interventions can significantly reduce job burnout and also help maintain the stability of nursing workforce levels.

Abbreviations: ANOVA = non-paired *t* test, an analysis of variance, DP = depersonalization, EE = emotional exhaustion, M.D. = Medical Doctor, MBI-GS = Maslach Burnout Inventory-General Survey, PA = personal accomplishment.

Keywords: burnout, hemodialysis center, nurses

1. Introduction

In recent years, nursing has come to be considered a high-risk and high-pressure profession, given the fast-paced working environments and constant need to handle emergencies, especially for those in hemodialysis centers. Nurses are often confronted with intense situations and are required to provide skilled, high quality

care for their patients in fast-paced and demanding environments.^[1] Thus, nurses are susceptible to both psychological stress and other mental health problems, making them more vulnerable to burnout when compared against other healthcare professionals.

Burnout is defined as a state of excessive physical, emotional, and mental fatigue and frustration, caused by chronic involvement in emotionally demanding situations.^[2] It can be measured by the Maslach Burnout Inventory, which uses 3 subscales: Emotional Exhaustion (EE), Depersonalization (DP), and Personal Achievement (PA). EE represents the basic individual stress dimension of burnout, referring to feelings of being overextended and the depletion of one's emotional and physical resources. DP represents the interpersonal context dimension, referring to a negative, callous, or excessively detached response to various aspects of one's job. Finally, burnout involves a lowered sense of PA, which represents the self-evaluation dimension, referring to feelings of incompetence and a lack of achievement and productivity at work.^[3] Job burnout commonly occurs among people who deal with constantly heavy workloads for prolonged periods and who no longer find any meaning in their work, subsequently leading to emotional exhaustion and job tiredness. Job burnout occurs widely among both nurses and doctors.^[4,5] One cross-sectional survey reported that 65% of nurses perceived their jobs as stressful, and would easily fall into job burnout.^[6] Burnout in nurses is likely to have negative influences on the quality of care that they are able to provide for patients.^[7,8] In recent years, job burnout among nurses has received increased research attention. For instance, a recent cross-sectional survey, conducted in Cyprus, reported that ~65% of nurses considered their job stressful.^[9] Substantial evidence indicates that burnout, in particular, is a widespread

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^aDepartment of Nephrology, Sichuan Academy of Medical Sciences and Sichuan Provincial People's Hospital, Chengdu, Sichuan, ^bUrology, Peking University People's Hospital, Beijing, People's Republic of China.

* Correspondence: Wen Xianxiu, Department of Nursing, Sichuan Academy of Medical Sciences and Sichuan Provincial People's Hospital, Chengdu, Sichuan Province, People's Republic of China (e-mail: wxxscsy@163.com).

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phenomenon among all types of healthcare professionals. Chinese researchers have noted that burnout is exceedingly common among nurses, indicating that it is a serious issue and worthy of our attention.

The aim of this study is to investigate factors leading to burnout, as well as appropriate intervention methods, for nurses in the hemodialysis centers of Renal Medicine departments, as very few studies have focused on this specific area of hospitals.

2. Method

1.1. Design and participants

This study uses a descriptive cross-sectional design with a structured questionnaire survey to investigate nursing burnout. Seventy registered nurses in hemodialysis centers of Renal Medicine departments were randomly selected from 5 comprehensive, high-level hospitals in Sichuan Province, China. The inclusion criteria were as follows:

1. volunteering for the study and having no mental or psychological disorders and
2. possessing a Practicing Nurse Certificate and working continuously in a Hemodialysis Center within a Renal Medicine department for ≥ 12 months.

The exclusion criteria were as follows: part-time nurses, nursing interns, training nurses visiting from other hospitals, and nurses who were off duty or on leave during the survey period.

1.2. Study instruments

The data collection instrument comprised 2 parts: demographic data and the Maslach Burnout Inventory (a nursing burnout questionnaire).

The demographic data includes each nurse's age, gender, marital status, educational level, years of nursing experience, and whether they work at a government-affiliated institution.

The Maslach Burnout Inventory includes 22 items and is used to measure the 3 domains of burnout: EE (9 items), DP (5 items), and reduced PA (8 items).^[10] Items are scored on a 7-point Likert scale (0 = never and 6 = every day). Scores of 27 or higher on EE, 10 or higher on DP, and 33 or lower on PA are considered as indicating "high burnout." Scores of 20 to 26 on EE, 7 to 9 on DP, and 34 to 39 on PA are considered as "moderate burnout." Finally, scores of 19 or lower on EE, 6 or lower on DP, and 40 or higher on PA are considered "low burnout".^[2]

1.3. Data collection

An anonymous online questionnaire was completed by nurses using the web-based survey platform, WeChat—one of the fastest growing mobile apps in China, with more than one billion monthly active users.^[11] For example, among young people in China, the WeChat platform is the most popular platform used daily. The WeChat platform has thus been used to conduct and spread surveys among targeted populations in multiple studies, yielding powerful results.^[12,13] The nurses were asked to complete the test within 10 min.

1.4. Data analysis

The statistical software package used for data analysis was SPSS V.17.0. The data follows a normal distribution pattern and was

Table 1

Demographic data of the participant nurses (n=65).

Variable	N	%
Gender		
Male	0	0
Female	65	100
Age (years)		
18–25	17	26.2
26–35	36	55.4
36–45	12	18.5
Working experience (years)		
1–5	22	33.8
6–10	28	43.1
≥ 11	15	23.1
Educational level		
Junior's degree	38	58.5
Bachelor's degree	24	36.9
Master's degree or above	3	4.6
Marital status		
Married	48	73.8
Single	17	26.2
Government affiliated institutions		
Yes	22	33.8
No	43	66.2

entered into a database that is password-protected and which is checked for both consistency and accuracy. The descriptive statistics (means, SD) were then computed. The relationship between different group variables and burnout is analyzed using a non-paired *t* test, an analysis of variance (ANOVA), and multiple logistic regressions. A *P*-value of .05 (two-sided) or lower is considered as statistically significant.

3. Results

The demographic characteristics of the respondents are shown in Table 1. Overall, 70 nurses were invited to participate, with 65 returning the completed questionnaires, giving a response rate of 92.9%.

A job burnout evaluation questionnaire (the revised Maslach Burnout Inventory-General Survey [MBI-GS] as created by Chaoping Li and which is widely used in China) is used in this investigation. The MBI-GS has been revised by Professor Chaoping Li, with the permission of Michael Leiter. The MBI-GS consists of 3 subscales, including EE, DP, and PA.^[14] In this survey, the burnout level is 28.15 ± 12.39 for EE, 10.23 ± 5.47 for DP, and 35.19 ± 8.31 for PA—with both EE and DP being found at high degree sat the level of burnout (Table 2). Meanwhile, the PA is relatively lower than the comparative group, indicating that our nurses have less sense of personal achievement under high pressure and burnout level.

For the comparative analysis among different groups, there are significant differences found in the burnout scores between government-affiliated institutional groups and those with working experiences of 6 to 10 years (Table 3). No significant differences could be found in other groups. Nurses in government-affiliated institutional groups are enjoying relatively lower EE and DP, while higher PA. Additionally, we assumed that nurses in teaching hospital may have more burnout and less personal achievement, as in most teaching hospitals, the nurse teachers may not be granted pension, however, the final result does not support our idea, as there are no difference between the

Table 2
Burnout dimension scores.

Variable	Score (M ± SD)	Reference Score ¹⁵ (M ± SD)	t	P
Emotional exhaustion	28.15 ± 12.39	21.91 ± 8.65	3.17	<.01
Depersonalization	10.23 ± 5.47	7.09 ± 4.14	3.10	<.01
Personal accomplishment	35.19 ± 8.31	39.54 ± 5.32	2.19	<.05

SD=standard deviation.

teaching hospital and non-teaching hospital. Traditionally, working experiences may be associated with age, however, we do not see the corresponding significant changes in age group as what we see in the working experience group. One of the important reasons is that some of the nurses went to nursing school for master and even doctoral degrees, therefore, the association between age and working experience are undermined.

4. Discussion

Physical, social, and psychological stress resulting from work demands and complex job environments have all been found to contribute to burnout among nurses.^[15,16] Symptoms of burnout include lack of energy and motivation, negative attitudes, work absenteeism, emotional distress, and poor job performance.^[5] For nurses in hemodialysis centers, as they face serious illnesses and terminal patients daily, the exposure to dying people and the constant threat of death adversely affects their physical and mental health through activating the sympathetic nervous system and causing physiological stress responses, such as irritability, sleep disorders, and a loss of passion for their work. Apart from these factors, the nurses in this department have to endure

pressure from both patients and their caretakers, including complaints, harassments, and other offenses. Working in such a complex and strenuous environment, all the nurses in this study have reportedly experienced job burnout at some point (Table 2). Burnt out nurses cannot complete their tasks and duties at work efficiently and correctly and, therefore, this is a serious matter of concern.^[17] Burnout in nurses may then lead to poor quality of nursing care, absenteeism from work, increased turnover rates, and decreased patient satisfaction.^[17–20] Reducing nurse burnout is an effective strategy for improving nurse-related quality of healthcare.^[21] Nursing administrators should therefore pay close attention to the burnout status of the nurses in hemodialysis centers of Renal Medicine departments, and try to prevent burnout through the application of active preventative methods. When an effective intervention has been established, the results may not only lead to the maintenance of a healthy mental state among targeted nurses, but also to a better quality of care for inpatients.^[22]

Nurses are the largest human resource of any healthcare organization and play an important role in promoting the health of patients. In order to maintain the stability of the nursing workforce and assure a consistently high quality of patient care in hemodialysis centers, it is crucial to explore the root causes of

Table 3
Nurse burnout by different demographic variables (mean ± SD).

Variables	Mean (SD)			Statistic value		
	EE	DP	PA	EE	DP	PA
Teaching hospital				t=0.64	t=0.72	t=0.77
Yes	27.03 ± 8.17	9.63 ± 5.18	35.95 ± 7.08			
No	29.45 ± 7.78	11.84 ± 9.04	34.21 ± 2.95			
Government affiliated institutions				t=2.14*	t=4.08**	t=3.49**
Yes	24.30 ± 10.17	7.06 ± 5.33	37.20 ± 4.27			
No	28.83 ± 10.25	12.03 ± 6.18	32.73 ± 6.89			
Gender				N/A	N/A	N/A
Male	–	–	–			
Female	28.15 ± 12.39	10.23 ± 5.47	35.19 ± 8.31			
Age (years)				F=0.74	F=2.53	F=0.98
18–25	27.36 ± 10.42	8.88 ± 6.94	38.20 ± 8.32			
26–35	29.08 ± 11.41	11.96 ± 6.41	35.08 ± 7.88			
36–45	25.32 ± 10.92	8.92 ± 5.63	37.04 ± 7.57			
Working experience				F=3.43*	F=5.17**	F=7.71**
1–5	25.28 ± 9.81	8.32 ± 4.83	40.08 ± 7.66			
6–10	30.52 ± 9.22	11.24 ± 5.76	35.16 ± 7.50			
≥11	24.20 ± 8.26	6.64 ± 4.68	32.20 ± 6.25			
Educational level				F=0.11	F=0.06	F=0.02
Junior's degree	28.03 ± 11.38	10.24 ± 6.91	35.06 ± 8.02			
Bachelor's degree	28.58 ± 11.23	10.16 ± 7.28	35.20 ± 8.45			
Master's degree or above	28.23 ± 11.36	10.04 ± 5.38	35.76 ± 6.70			

DP=depersonalization, EE=emotional exhaustion, PA=personal accomplishment.

*P<.05.

**P<.01.

nursing burnout. Our study found that not being a part of government-affiliated institutions and possessing a level of working experience of at least 6 to 10 years are key factors leading to higher nurse burnout. Traditionally, government affiliated institutions can provide a more solid guarantee for their staff's retirements, which then stimulates and promotes the enthusiasm of nurses. In terms of those with 6 to 10 years working experience, these nurses have begun to lose their sense of novelty in the routines of ongoing nursing work, as well as having to face terminal patients daily, the state of dying, and the constant threat of death, all adversely affecting their physical and mental health. Simultaneously, when compared with senior nurses, most of those in this experience level group are the backbone of their respective departments, with most of them having undertaken the challenging tasks of difficult case nursing, department management, education, and scientific research. However, their salary does not reflect their labor value, which leads to the decrease in their sense of personal achievement.

To improve these conditions, we need to first strengthen hospital communication channels, paying special attention to the level of assistance and communications between nurses and doctors in hemodialysis centers, as well as motivating them to encourage each other during difficult times in order to increase the overall quality of interpersonal working relationships. Regular organization of collective social activities, such as singing competitions, mountain climbing, yoga, sports, and so on, should also help to relax the workplace's overall mood and, by extension, strengthen the motion. Establishing departmental message books in an attempt to encourage people to express their opinions could also help to motivate people and provide practical changes in healthcare departments that would benefit all staff members. Additionally, we need to relax the restrictions and regulations on taking leave and shifting in order to provide more humane care, both to the nurses and, through them, to patients. Furthermore, qualified nursing professionals should be selected in order to provide opportunities for further study, education, and continued training. Finally, hospitals should provide certain preferences in terms of employment mechanisms, title promotions, employment modes, and salary aspects, so as to enhance the sense of belonging among their staff members.

However, there are some limitations for this study. First of all, this is a small sample survey for evaluating the burnout level in hemodialysis center nurses, and similar studies are many but focus on other specialty, while nurses in hemodialysis center are commonly neglected. Secondly, this cross-sectional study fails to provide the possible causal relationship between the heavy workload, poor working environment, lack of care from superiors, and other factors and the high burnout level. Hopefully in the future, our further study could give a more comprehensive picture.

Job burnout has been found to exist widely among nurses working in hemodialysis centers, potentially having adverse effects on both their physical and mental health. Active interventions can significantly reduce job burnout and can help to maintain the stability of nursing workforce levels. However, because of the limited number of participants included, and the short duration of this study (due to its cross-sectional nature), additional, longitudinal investigations should be performed around this topic.

The institutional review board of Sichuan Academy of Medical Sciences and Sichuan Provincial People's Hospital approved this study.

Author contributions

Conceptualization: Kuang Ling, Zhang Xiaowei.

Data curation: Kuang Ling, Zhang Xiaowei.

Formal analysis: Kuang Ling, Zhang Xiaowei.

Investigation: Wen Xianxiu.

Project administration: Kuang Ling, Wen Xianxiu.

Supervision: Kuang Ling, Zhang Xiaowei.

Writing – original draft: Kuang Ling, Zhang Xiaowei.

Writing – review & editing: Zhang Xiaowei.

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