



From Individual to Society: A Study on the Factors Influencing Job Burnout among Hand Surgery Nurses Based on the Grounded Theory —— A Case Study of Hospital J in C City

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Abstract. Objective This study was conducted to explore the influences of burn-out among hand surgery nurses in Hospital J of City C through qualitative research. **Methods** A quota sampling method was used to select 11 hand surgery nurses for structured interviews in Hospital J, C city. Two nurses were tested for saturation. A second researcher reviewed the coding. **Results** A total of 162 open codes, 12 axial codes, and 4 selective codes were extracted. **Conclusion** Burnout influences included organizational, occupational, social, and individual dimensions with a total of 12 factors. Individual dimension includes physical exhaustion, emotional recall, and individual aspirations-reality conflict. The occupational dimension includes career development stress, stress related to occupational clients (patients and their families) work stress, and invisible job-related stressors. Organizational dimensions include colleague relationships, reward systems, work environments, and extra-conventional requirements. The social dimension includes nurse-patient conflict.

Keywords: job burnout; nurse; hand surgery; qualitative research; influence factors.

1 Introduction

Existing research on nurse job burnout lacks attention to specific regions and special departments, and mostly uses quantitative methods, making it difficult to reveal the unique causes of job burnout among special categories of nurses.

City C is located in northeastern China, covered in a vast area, a large number of patients, predominantly agricultural, cold weather, relatively backward development of medical and health care, and uneven distribution of medical resources. Hospital J is one of the eight general tertiary hospitals in city C. Patients are mainly from rural areas, and their injuries are related to agricultural production and the unique climate of the area, such as lacerations in spring planting and autumn harvest, as well as fracture and frostbite in winter, which have distinctive seasonal characteristics. The hand surgery department of this hospital is the main department responsible for the mentioned conditions.

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Accordingly, the job requirements of hand surgery nurses and the causes of burnout in this hospital are unique. Therefore, this study used grounded research to explore the causes of job burnout among hand surgery nurses in Hospital J of C city.

2 Literature Review

Burnout was categorized by Maslach and Jackson into three dimensions, including emotional exhaustion, depersonalization, and low personal-accomplishment ^[1]. Du et al. (2024) studied the current status of emotional exhaustion among nurses in a tertiary public hospital, and they suggested that the form of employment was related to emotional exhaustion and that younger nurses with five or fewer years of practice were more likely to experience negative emotions because they were responsible for more physical labor and suffered from criticism of their superiors and mistrust of patients. Meanwhile, the phenomenon of nurses being ostracized from the workplace was significantly associated with emotional exhaustion. They also mentioned in their study that higher workloads and lower salaries also aggravate nurses' emotional exhaustion ^[2]. Also, Wang et al. (2023), in their study of burnout in 12 tertiary general hospitals in Sichuan Province, suggested that nurses who had worked for 5-10 years had a higher level of job burnout, and nurses' involvement in hospital affairs and healthcare partnership both had an impact on job burnout. In addition, the stress of multiple roles causes nurses to burnout ^[3].

Liu et al. (2022) found in a study of a tertiary hospital in Shanghai that the worse the nurses' self-rated health status was, the more serious the burnout situation was, and non-permanent staff were more likely to have a low personal accomplishment ^[4]. Meanwhile, in the study of the factors influencing job burnout among medical staff, the same conclusion as the influence of health status was also obtained: the lower level of self-rated health among medical staff, the higher level the burnout scored. Among them, work stress is an important factor contributing to job burnout, while sleep quality has a significant effect on each dimension of job burnout. Moreover, negative public opinions and evaluations can cause medical staffs to experience a decrease in personal accomplishment and cause burnout ^[5]. In addition, there are some studies that show that tasks such as research and teaching also tend to cause emotional exhaustion, and receiving support from family member will reduce burnout ^[6].

Studies published generally agreed that influence factors of burnout should be classified as individual, occupational, organizational, and social, and the effects of the ostracized from the workplace, work pressure, and public opinions on burnout have been widely recognized, but there are some limitations: Firstly, the methodology is mostly quantitative, limited to examining the role of a small number of specific factors in a single study, making it difficult to reveal the full picture of the causes of nurse burnout. Secondly, there are fewer studies of emotional causes for repeatedly testing elements such as years of service, establishment Status, and physical health status.

3 Research Objective

The subjects of the study were all working nurses of hand surgery department of J hospital of C city. Quota sampling was done according to age, establishment status, gender, years of service, and distribution of positions of hand surgery nurses, and a total of 11 were selected. One-on-one interviews were conducted with each nurse, and the duration of the interviews averaged 18 minutes. The information of the interviewees is shown in Table 1.

Table 1. General information of interviewees on the causes of burnout among hand surgery nurses

Interviewee	Gender	Service Years	Establishment Status	Age	Position Distribution
1	Female	13	Permanent	36	Head Nurse
2	Female	14	Permanent	37	Primary Nurse
3	Male	3	Non-permanent	24	Primary Nurse
4	Female	2	Non-permanent	25	Primary Nurse
5	Female	10	Non-permanent	35	Primary Nurse
6	Female	20	Permanent	41	Primary Nurse
7	Female	3	Non-permanent	26	Primary Nurse
8	Female	26	Non-permanent	45	Primary Nurse
9	Female	4	Non-permanent	25	Primary Nurse
10	Female	4	Non-permanent	26	Primary Nurse
11	Female	13	Non-permanent	37	Primary Nurse

4 Research Methodology

4.1 Outline of Interview

This study used structured interviews with specific questions in addition to basic personal information such as: what factors are thought to contribute to physical and mental fatigue, feeling physically exhausted, and other symptoms of emotional exhaustion?

4.2 Data Collection

Data collection interviews were held individually in offices or empty hospital rooms. An outline was provided to the interviewees and informed permission was obtained prior to the interviews, which were recorded throughout. Open-form questions were used to encourage interviewees to discuss burnout in relation to their real-life experiences, and follow-up questions on newly mentioned factors were asked promptly to ensure that 11 nurses fully expressed their views.

4.3 Data Analysis

The study used Microsoft Excel to sort out the codes in four main stages: generating open codes, merging open codes, locating axial codes and do selective coding of axial codes. Two interviewees were selected as the saturation test, where the information provided by the interviewees was saturated and no new valid information appeared. Also, to ensure the reliability of the study, after the researcher had performed two rounds of coding, a second experienced qualitative researcher was asked to reconfirm it to minimize bias. For the codes with disagreement, both parts took the negotiation to identify them. After the modification, both parts agreed on the codes by eighty percent, and the final codes were based on the researchers' codes.

5 Results

5.1 Coding Composition

A total of 162 open codes were identified in the open coding phase. As the open codes were combined, the relationships between the axial and selective codes were repeatedly analyzed and integrated, resulting in the identification of 12 axial codes and 4 selective codes on job burnout factors.

Table 2. Number of reference points for open codes and axial codes of hand surgery nurses interview transcript

Selective Codes	Axial Codes	Reference Points
Individual Factors	Physical Exhaustion	17
	Emotional Recall	2
	Individual Aspirations-reality Conflict	15
Occupational Factors	Career Development Stress	11
	Stress related to Occupational Clients	56
	Work Stress	71
	Invisible Job-Related Stressors	9
Organizational Factors	Colleague Relationship	16
	Reward System	10
	Work Environment	3
Social Factors	Extra-conventional Requirement	20
	Nurse-patient Conflict	2

The selective and axial codes and their corresponding reference points are shown in Table 2, with more reference points indicating that the code appeared more frequently in the interview text. A summary of the codes and examples of original records are shown in Table 3.

Table 3. Examples of coding summaries and original records

Selective Codes	Axial Codes	Open Codes	Original Transcript (from the interviewee's words)
Individual Factors	Emotional Recall	Recalling Work Events	Go home and wonder if I've done anything wrong about this serious patient today.
Occupational Factors	Career Development Stress	Restricted Promotion	Still don't think there's much chance for advancement in this job, and I feel like that's as far as that promotion goes.
Organizational Factors	Extra-conventional Requirement	Administrative Inspections	It's two states to hear that the administrator is coming or not.
Social Factors	Nurse-patient Conflict	Insufficient Protection	That's why the law is not that strong for nurses.

5.2 Coding Explanation

According to Table 2, after performing the coding of the interview transcripts of the interviewees, it can be summarized that there are four factors influencing burnout among hand surgery nurses. They are, individual, occupational, organizational and social factors.

Individual factors originate from the nurses' own reasons and consist of three main aspects: physical exhaustion, emotional recall, and individual aspirations-reality conflict. Long term high workload leads to continuous decline of body functions, resulting in occupational strain and physical exhaustion. The emotional recall caused by recalling work events affect the quality of nurses' rest and cause chronic stress. Some nurses also face the individual aspirations-reality conflict (especially the special challenges of menstrual period), the dual pressure of family roles and work identities, and the limitations of clinical outcomes all affect nurses' professional identity.

Occupational factors come from burnout related to the occupation itself, which can be categorized as career development stress, stress related to occupational clients, work stress, and invisible job-related stressors. In terms of career development stress, restricted promotion pathways, ongoing academic requirements, and frequent assessment can make it more difficult for nurses to advance. Nurses also face severe stress related to occupational clients, such as high-frequency communication barriers, emotional confrontation and poor cooperation from patients and their families, overloaded patient intake and critical care pressures, which can exacerbate burnout. At the same time, occupational factors also include high-intensity work pressure, which refers to frequent night shifts and shift work resulting in rest disorders, excessive workload and repetitive trivial tasks, coupled with high standards of nursing work itself will cause nurses continuously physical and mental exhaustion. Occupational factors also include invisible job-related stressors that are easily overlooked, including coordination stress among nursing administrators, emergency stress of unexpected situations, added stress of non-diagnostic services, and special requirements of teaching and night shifts, which continue to drain nurses' energy.

Organizational factors refer to burnout in hospitals related to organizational culture, specifically in four areas, colleague relationships, reward systems, work environments, and extra-conventional requirements. There are significant colleague relationships problems in the current healthcare environment, as evidenced by supervisor-subordinate tension, insufficient administrative support, and personal conflict. In terms of reward system, shortcomings of the compensation system are seriously disconnected from the value of nurses' work. Unfamiliar work environment will cause nurses to be continuously disturbed by the environment, resulting in extra energy expenditure. Nurse also faces extra-conventional pressures, including frequent administrative inspections and unexpected job transfers, and work overload due to inadequate nurse-to-bed ratio. These organizational factor issues contribute to the career dilemma of multiple stressors for nurses.

Social factors are mainly reflected in the pressure on nurses caused by negative public opinions, which is mainly about nurse-patient conflict. In the current social environment, there are serious deficiencies in occupational safety for nurses, as well as insufficient protection under relevant regulations, which exacerbate psychological distress on nurses at work.

6 Conclusion and Discussion

6.1 Conclusion

This paper performs grounded research on job burnout among hand surgery nurses in J Hospital of C City through the interview method. Based on the coding analysis of the interviews and the existing domestic and international theories related to job burnout, the influencing factors were finally identified as four dimensions: personal, occupational, organizational and social. Among them, the personal dimension includes three factors: physical exhaustion, emotional recall, and individual aspirations-reality conflict. The occupational dimension included 4 factors: career development stress, stress related to occupational clients, work stress, and invisible job-related stressors. Organizational dimensions included 4 factors of colleague relationships, reward systems, work environments, and extra-conventional requirements. The social dimension included nurse-patient conflict.

This study found that the categorization of burnout factors was highly consistent with the established literature, but with innovations and expansions in the dimensional details. Firstly, individual factors, poor self-rated health status^[4] and identity conflict^[3] mentioned in the literature were highly consistent with the coding. Secondly, the occupational factors, such as limited promotion of junior nurses^[3], nurse-patient conflicts^[6], and irregular work schedules^[6], were similar to the coding results. Organizational factors, such as ostracized from the workplace^[2], unsatisfied with salary^[2] and excessive workload^[7], as mentioned in the literature, were all reflected in the coding results. Lastly, social factors, such as lack of legal protection for nurses^[5] as mentioned in the literature, were all mentioned in the coding. The four dimensions in the coding confirmed most of the findings in the study that individual, occupational, organizational and social factors all contribute to nurse burnout.

This study also identified characteristic factors that have not been adequately discovered by existing studies, such as inadequate nurse-to-bed ratio, administrative inspections, menstrual period, unexpected job transfers, emotional recall, and physical exhaustion. In addition, interviewee 1 mentioned, ‘Elderly people are prone to frostbite and fracture after the first snowfall in winter,’ and ‘the number of patients with firecracker injuries increases after the New Year,’ which are highly concentrated in the winter season, resulted in a high level of stress for nurses for almost half the year. In addition, the “increase in the number of farmers’ patients during the spring planting and fall harvesting” also caused nurses to have an overloaded of patients during the planting season, resulting in a high level of work pressure. These dimensions exemplify nurse-specific dilemmas that have not been emphasized by previous researchers. Compared with previous studies, this study is innovative in that it is the first to suggest that “emotional recall” are a key trigger for burnout among hand surgery nurses, while at the same time revealing the direct influence of organizational factors such as administrative inspections and inadequate nurse-to-bed ratio. These findings provide a basis for the development of targeted intervention strategies.

6.2 Research Limitations

The interviews in this study only included the hand surgery department of Hospital J in City C. However, there are a large number of nurses in other levels of hospitals and other departments in the local healthcare system, which means that there may still be specificity in the feelings and causes of burnout among these nurses. Future research could further expand the sample, such as expanding the subjects to the tertiary hospitals in City C or the entire region of the province in which City C is located, so that more unique causes of burnout might be found and could be corroborated with the findings of this study. In addition, this study used qualitative research methods, and the factors found in the study, such as administrative inspections, menstrual period, unexpected job transfers, emotional recall and other factors could be further verified in future studies through questionnaires or experiments.

6.3 Managerial Implications

To address the job burnout problem of hand surgery nurses in a tertiary hospital in City C, interventions can be performed in four dimensions: individual, professional, organizational, and social. At the individual level, nurses can be organized to perform free medical checkups on a regular basis to reduce the health damage caused by the nature of their work. On the occupational level, a flexible shift system can be implemented to ensure that nurses work and rest regularly, at the same time, new regulations can be established to reduce the difficulty of nurses’ career advancement. From the organizational dimension, hospital management can optimize human resource allocation, reasonably adjust nurse-to-bed ratio, reduce workload, improve the reward system, and reduce non-essential examinations. Governments and countries should improve the regulations for the protection of medical personnel and enhance the identity of the nursing

profession in the whole society. Through the above measures, the work pressure of nurses can be mitigated and the job burnout of nurses can be reduced.

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