

# Exploring Factors Contributing to Occupational Burnout Among Nurses in Pediatric Infection Wards Post-COVID-19

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**Objective:** To explore the factors that lead to occupational burnout among nurses in pediatric infectious disease wards after two consecutive years of frontline anti-epidemic work since the admission of COVID-19 patients in January 2020, in order to lay a scientific basis for reducing nurse occupational burnout.

**Methods:** A total of 12 nurses who working in pediatric infection units were included in the study. Utilizing qualitative research methodologies, we used semi-structured interviews as the primary data collection method. The interview data underwent meticulous organization and were subjected to descriptive analysis.

**Results:** 12 nurses assigned to pediatric infection wards frequently encounter occupational burnout, primarily attributed to increased work intensity, nurse-patient relationships, occupational frustration, psychological pressure, hospital infections, and various other contributing factors.

**Conclusion:** We found that the severity of occupational burnout among nurses specializing in pediatric infectious diseases is noteworthy. Our recommendations include heightened consideration of this issue by government authorities and hospital administrators.

**Keywords:** nurses, children, healthcare personnel, infectious infection area, occupational burnout, qualitative investigation

## Introduction

Occupational burnout typically refers to a state of chronic physical and emotional exhaustion resulting from prolonged exposure to work-related stressors. As a consequence of prolonged working hours, substantial workloads, and demanding occupational requirements, individuals undergo a spectrum of adverse symptoms, including persistent emotional exhaustion, diminished personal sense of accomplishment, and physical fatigue. Occupational burnout is notably prevalent in the service industry, with the medical field being particularly susceptible due to its demanding workloads, substantial social responsibility, and elevated occupational risks.<sup>1,2</sup> Huang et al<sup>3</sup> conducted an analysis of the occupational burnout status among pediatric nurses, revealing that only 14.06% experienced none or slight burnout, 28.13% reported mild to moderate burnout, and a significant majority of 57.81% suffered from severe burnout. Moreover, since the outbreak of the epidemic, many studies have reported that infectious disease nurses, due to the continuous heavy workload and high risk of infection, have been subjected to significant psychological pressure for a long time,<sup>4,5</sup> which makes them more prone to occupational burnout and affects clinical nursing outcomes. In the post pandemic era, the public not only faces

the threat of infection or re infection with the virus, but also the impact of the epidemic on various aspects of personal work, study, and life.<sup>6</sup>

The pediatric infection ward poses challenges characterized by swift patient turnover, intricate communication dynamics with young patients, the dynamic nature of emerging diseases, the inherent difficulty in managing uncooperative pediatric patients during medical procedures, and the execution of comparatively complex medical interventions. Importantly, the degree of satisfaction experienced by families significantly impacts these challenges. Moreover, subsequent to the hospitalization of children, their family members frequently undergo elevated levels of anxiety, resulting in the expression of emotional distress directed towards nursing staff.<sup>7</sup> Concurrently, nurses must conscientiously adhere to hospital infection control protocols for their personal safety, while simultaneously grappling with concerns about the potential transmission of infections to their own families. This dual responsibility induces both physical fatigue and psychological strain.

Persistent overwork and a limited understanding of the disease, coupled with unrealistic expectations from the family members of the patients, contribute to emotional exhaustion and a reduced personal sense of accomplishment among nurses. In the current study, we aim to examine and analyze the key factors of occupational burnout. We anticipate that our findings will play a pivotal role in enhancing the mental well-being of nurses and alleviating their occupational burnout.

## Research Material and Methods

### Research Material

This study was conducted in June 2023 among 19 front-line nurses in the pediatric infection ward of the Third People's Hospital of Shenzhen. The selection criteria were as follows: (1) nurse practitioner; (2) Have more than one year of pediatric infection ward work experience and currently engaged in pediatric front-line nursing work; (3) Participate in the study voluntarily and sign the informed consent. Exclusion criteria: (1) Participating in other researchers; (2) Unwilling to cooperate with the questionnaire, quit halfway or be fired. Finally, a total of 12 nurses met the requirements and were included in the study. This study was conducted in accordance with the declaration of Helsinki. This study was conducted with approval from the Ethics Committee of The Third People's Hospital of Shenzhen. A written informed consent was obtained from all participants.

### Methods

The phenomenological method of qualitative research is adopted in this study.

Based on a comprehensive literature review and the use of the Maslach Burnout Scale (MBI), which includes three dimensions of emotional exhaustion, depersonalization, and reduced personal accomplishment, with a total of 22 questions (Using Q1, Q2, Q3, Q22 to represent the 22 questions in MBI), The Cronbach's coefficients were: total scale 0.93, emotional exhaustion 0.91, reduced personal accomplishment 0.84, depersonalization 0.81. The scale adopts a five-point scale (Very rarely, often, frequently, very frequently, every day).<sup>8</sup>

1) Emotional exhaustion includes 9 items (Q1, Q2, Q3, Q6, Q8, Q13, Q14, Q16, Q20) to assess individual emotional responses caused by work stress. All items are positive scores, that is, the higher the score, the more serious the job burnout;

2) The dimensions of reduced personal accomplishment include 8 items (Q4, Q7, Q9, Q12, Q17, Q18, Q19, Q21) to evaluate the individual's views on work caused by work pressure. All items adopt the reverse scoring method, that is, the lower the score, the more serious the job burnout;

3) Depersonalization includes 5 items (Q5, Q10, Q11, Q15, Q22) to assess the changes in feelings and attitudes caused by work stress. The items are all positive scores, that is, the higher the score, the more serious the job burnout.

Based on domestic and foreign studies on influencing factors of job burnout, the research team independently designed the interview outline.<sup>9</sup> The survey included age, job title, years of work, monthly income, marital status, fertility status, willingness to engage in pediatric nursing, willingness of children to engage in medical work, career expectations, sense of accomplishment or frustration. Factors such as work intensity, work environment, work stress,

emotional impact of caring for patients with infectious diseases, work pattern, salary package, career development opportunities, hospital system, colleague relationship, doctor-patient relationship, personal health status, family support, suggestions for enhancing professional development, etc.

## Data Collection

The nurses were proactively contacted in advance, and a mutually agreed-upon time and location for the interviews were established. The interview took place in the pediatric demonstration classroom. Informed consent for both investigation and recording purposes was obtained. Researchers have received training related to occupational burnout. The survey was conducted using electronic spreadsheets and recording pens. The in-depth interviews were conducted using a semi-structured format, with each nurse being allocated approximately 0.5–1 hour for their interview session. An introduction to the research objectives and interview process was provided by the investigators to ensure clarity for the nurses through the interviews. A respectful tone and demeanor were maintained, avoiding leading questions or suggestive language to ensure the authenticity and reliability of the information and collected data, and using a recording pen to record.

## Data Analysis Methods

Within 24 hours of concluding the interviews, the recorded data were transcribed into written text. Unique codes were assigned to the nurses, and the textual content was recorded using Excel software. The qualitative data underwent classification and comprehensive organization through analytic induction, followed by descriptive and explanatory analysis.

## Results

### Basic Information of Nurses

A total of 12 nurses were interviewed, and no additional nurses were included after the interviews. Therefore, the sample size for this qualitative study was 12. The nurses were assigned codes R1–R12, and had ages ranging from 25 to 41 years, with an average age of  $(31.41 \pm 4.87)$  years. Their working experience spanned from 2 to 21 years, with an average duration of  $(9.42 \pm 5.92)$  years. Among them, 5 nurses were at N1 level, 5 at N2 level, 1 at N3 level, and 1 at N4 level (Table 1).

### Theme One: Occupational Burnout

High prevalence of occupational burnout was observed among pediatric nurses in the infection ward. In interviews, 91.6% of nurses reported feeling extremely fatigued after completing the work equivalent to one day, while 75% experienced burnout at work (Table 2). The exigent workload, accelerated work pace, and staffing shortages collectively contributed to a state of being overburdened among the nurses. Nurse R2 mentioned,

Upon receiving new patients in the ward, I found myself constantly running instead of walking. After returning home from work, I had no energy left for any conversation; all I wanted was to sleep.

Nurse R5 expressed, “Working alongside someone who is slow-paced means being on the go throughout the entire day”. Nurse R6, an older nurse, stated,

As an older nurse, working night shifts has become increasingly challenging for me, and it is difficult to relieve the fatigue induced by the night shift for several days.

### Theme Two: Nurse-Patient Relationship

Tension and conflicts between nurses and patients occasionally emerge. As revealed by the nurses, 66.67% of the family members of pediatric patients lack understanding of nursing work, 41.67% hold excessively high expectations of nurses, 25% present unreasonably troublesome behavior, and less than 10% resort to verbal abuse (Table 3). Nurse R4 expressed,

**Table 1** Basic Information of Nurses

Item		No. of Nurses	Constituent ratio (%)
Age (years old)	18–25	1	8.33
	26–30	4	33.33
	31–35	5	41.66
	35–40	1	8.33
	41–50	1	8.33
Length of Service (years)	1–3	1	8.33
	3–5	3	25
	6–10	4	33.33
	11–20	3	25
	≥21	1	8.33
Hierarchy	N1	5	41.67
	N2	5	41.67
	N3	1	8.33
	N4	1	8.33

**Table 2** Occupational Burnout Status

Item	No. of nurses	Constituent ratio (%)
Fatigued after one day of work	11	91.66
Burnout at work	9	75

**Table 3** Occupational Burnout Status (Nurse-Patient Relationship)

Item	No. of nurses	Constituent ratio (%)
Family members lacked comprehension of nursing duties and refused to cooperate with nurses.	8	66.67
Families expect too much from nurses	5	41.67
Expectations that are excessively high for nurses Family members cause unreasonable disruptions.	3	25
Members of the family were indifferent and spoke excessively.	1	8.33

I am most apprehensive about encountering patients who are difficult to communicate with and critical of our care without being able to explain ourselves adequately. Dealing with such patients leaves me exhausted after each shift.

Nurse R7 shared,

The immediate presence of our team is demanded by certain patients upon ringing the bell, and their satisfaction hinges on this prompt response. However, considering our responsibility for overseeing more than 10 beds individually, and the managed beds

have an average of 2-3 patients discharged and admitted every day, and it is necessary to simultaneously take care of the treatment and nursing of these more than 10 patients, there are instances when attending to other matters becomes challenging as we are overwhelmingly busy.

Nurse R10 reflected,

When the family of the patient expressed their appreciation by acknowledging our efforts, I was overcome with emotion. It was heartening to encounter families who truly understood and valued our work.

### Theme Three: Frustration

During the interview, 9 nurses (75%) conveyed feelings of frustration in their work, encompassing a lack of a sense of achievement and limited personal career prospects. Nurse R6 highlighted,

The status disparity between doctors and nurses is evident, as doctors often experience rapid career advancement and receive significantly higher compensation compared to us nurses.

Nurse R7 shared,

Recently, I have been experiencing frustration in my ability to perform minor tasks proficiently. It often leaves me feeling inadequate and useless. Specifically, I struggle with accurately locating the blood vessel of the patient, which can be quite apparent at times. Consequently, receiving criticism from the parents of the patient further exacerbates my dissatisfaction, affecting my mood for the entire day.

Nurse R11 expressed, “I consider scientific research to be my weakness. This perception hinders my professional growth as I fear being replaced soon”.

### Theme Four: Psychological Stress

In the interview, 91.6% of nurses expressed experiencing significant psychological stress due to work, leading to negative physical feedback. Nurse R2 stated,

The high demands by the leadership require me to manage department tasks during my spare time, handle various exams and assessments, as well as complete scientific research tasks, which significantly burdens me.

Nurse R4 shared, “I am young and experiencing hair loss; the pressure is overwhelming!” Nurse R9 expressed, “I feel fearful whenever assigned a task by my superior; it feels like a heavy burden that affects my appetite and sleep quality”. Nurse R12 revealed, “I often have nightmares about not being able to find my shift book or having unfinished work when I wake up from sleep”.

### Theme Five: Nosocomial Infection

In the interview, all nurses unanimously expressed discomfort and breathlessness when wearing personal protective equipment. Additionally, 33.33% of them voiced concerns regarding the potential transmission of the virus to their family members. Nurse R1 recalled,

Between 2020 and 2022, while nursing patients diagnosed with COVID-19, it was noted that upon the removal of protective clothing, undergarments were found to be saturated with sweat to the extent that they could be wrung out.

Nurse R6 said,

When I am taking care of a highly contagious child, during puncture or daily care, the patient usually breathes or coughs near us, and the risk of infection is very high. However, I am not afraid of being infected myself, but I am very worried that I will bring the virus home and infect my child.

Nurse R8 stated, “Because of the frequent use of hand disinfectant, my hands often developed eczema and became extremely itchy”.

## Discussion

Shen et al<sup>10</sup> explored occupational burnout among nurses in a Class III Grade A hospital that specialized in infectious diseases, finding that the prevalence of moderate occupational burnout was 73.81%, while severe occupational burnout stood at 22.38%. Zhao Zhihan et al showed in their study that in the post pandemic era, infectious disease nurses were at a high level of burnout, accounting for 20.80%, 16.81%, and 58.40%, respectively, while those at a moderate level of burnout were 53.28%, 14.25%, and 22.79%, respectively.<sup>6</sup>

## Enhance Human Resource Allocation and Streamline Workflow

The nursing workload in the pediatric infectious disease ward is notably more demanding compared to adult wards, given the substantial tasks, complex responsibilities, and limited cooperation from both family members and children. Therefore, it is imperative for the pediatric infectious disease ward to not only adhere to the standard bed-to-nurse ratio but also optimize workflow. Furthermore, there should be a priority on investing in convenient care measures while reinforcing social support systems. The mobilization of hospital social workers and community resources can provide essential psychological, financial, and emotional assistance to patients in need, thereby enabling nurses to concentrate on delivering professional nursing care. This approach aims to alleviate work fatigue among pediatric nurses.

## Building a Harmonious Nurse-Patient Relationship

Based on a report, 61.9% of healthcare professionals have encountered some form of medical violence from patients or their family members during medical services. Verbal abuse (57.6%) is the most prevalent, followed by threats and sexual harassment.<sup>11</sup> To address nurse-patient conflicts, it is crucial for medical institutions and government departments to handle them in a fair and equitable manner, adhering to legal regulations. Moreover, establishing a diverse and multi-channel solution mechanism can cultivate a harmonious nurse-patient relationship. On the societal front, there should be a focus on managing public opinion regarding healthcare professionals. Media outlets that engage in false reporting solely for attention-seeking purposes must be strongly condemned. Instead, objective and positive reports from nursing workers should receive more support at the social level.<sup>12</sup> This approach contributes to enhancing the social status of nursing staff, earning societal respect, and enhancing trust and understanding between nurses and patients. It holds immense significance in effectively safeguarding the legitimate rights and interests of both nurses and patients while reducing occupational burnout caused by strained nurse-patient relationships.

## Establish a Robust Career Support System

As hospital administrators, it is imperative to enhance the training and professional skills of the nurses, consolidate their professional competence, and instill confidence based on a high level of proficiency in both technical expertise and scientific research capabilities. This approach enables nurses to experience a greater sense of professional efficacy. Simultaneously, with respect to professional development programs, inspiration should be drawn from foreign nursing training systems to alleviate learning pressures. Establishing an effective mechanism for career advancement and professional title reviews that encourages self-driven learning initiatives among nurses is essential. Furthermore, medical institutions must strike a balance between differential treatment toward doctors and nurses by elevating the salary levels of nurses and fostering a stronger sense of professional identity among them. Strengthening their sense of professional mission, sacred duty, and personal identification as healthcare professionals can significantly enhance their overall confidence in their chosen profession.

## Prioritize the Physical and Mental Well-Being of Nurses

Hospitals should actively promote the cultural development of employees by organizing collective growth activities, prioritize personal health enhancement, foster effective communication among staff members, enrich their cultural lives, and enhance self-efficacy.<sup>13</sup> Regular annual health check-ups for employees should be conducted to promptly identify any health issues. Establishing psychological consultation rooms and stress-relief areas for staff members is crucial. In the event of medical disputes, providing timely psychological interventions is necessary to prevent the occurrence of

negative emotions that may disrupt normal work routines. Hospital administrators should regularly address the mental health concerns of nursing professionals, be attentive to the negative emotions of the staff, offer psychological counseling sessions and decompression seminars without encroaching on their rest time, enhance their ability for self-psychological adjustment, and proactively manage negative emotions.

## Enhance Protective and Disinfection Supplies

Due to the unique nature of treatment, staff in infectious disease wards typically require secondary or tertiary protection. Medical institutions should develop and procure high-performance and comfortable protective equipment. It is important to avoid using disinfectants with strong irritation to prevent skin discomfort. Society should expedite research and development of innovative protective equipment and patent transformation, enabling their prompt application in clinical practice to reduce the drawbacks and discomfort experienced by nursing staff due to protective gear. While scholars have extensively researched job burnout, with a primary focus on doctors within the medical industry, there is notably less research on job burnout among nursing staff.<sup>14–16</sup> Based on relevant statistics in China, job burnout among domestic nursing workers has exhibited a rising trend in recent years.<sup>17</sup> Gao pointed out based on an investigation that nearly all nursing workers experience job burnout,<sup>18</sup> which closely aligns with the 91.6% reported in this study. However, this study has certain limitations: (1) The survey only targeted nurses in the pediatric infectious ward at Shenzhen Third People's Hospital, resulting in potential thematic bias due to a small sample size; (2) The effectiveness of intervention was not analyzed in this study and requires further exploration in future research; (3) potential biases and limitations in qualitative methods should be addressed.

## Conclusion

We found that the severity of professional burnout among pediatric infectious disease nurses is worth noting. Overweight workload, tense nurse patient relationships, and frustration are the main factors leading to occupational burnout. Our suggestions include government authorities and hospital managers to highly consider this issue, and to improve it from aspects such as manpower allocation, improving nurse patient relationships, establishing occupational support systems, and improving prevention and disinfection supplies, in order to promote the development of the national healthcare industry.

## Data Sharing Statement

Data will be made available on request from the corresponding author (Lu-Lu Sun) on reasonable request.

## Ethics Approval and Consent to Participate

This study was conducted in accordance with the declaration of Helsinki. This study was conducted with approval from the Ethics Committee of The Third People's Hospital of Shenzhen. A written informed consent was obtained from all participants.

## Consent for Publication

Informed Consent for publication was obtained from every individual whose data are included in this manuscript, including publication of anonymized responses/direct quotes.

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## Disclosure

The authors report no conflicts of interest in this work.



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