Caspian Journal of Pediatrics
Babol University of Medical Sciences
e-ISSN: 2383-3106

Quality of Professional Life and Related Job Characteristics among Pediatric Nurses: A Cross-Sectional Study

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Article Info.

Article type:
Research Article

Received: 24 June 2025
Revised: 3 Sep. 2025
Accepted: 20 Sep. 2025
Published: 26 Nov. 2025

Keywords:
Burnout,
Compassion Fatigue,
Nurses,
Pediatrics,
Professional Quality of Life

ABSTRACT

Background and Objective: Nurses in pediatric hospitals face unique professional challenges due to frequent exposure to the pain of sick children, the demands of caregiving, and emotional bonds with patients and their families. These factors influence their professional quality of life. The aim of this study was to investigate the quality of professional life and related job characteristics among pediatric nurses.

Methods: In this cross-sectional study, 250 nurses from four pediatric hospitals in northern Iran were recruited via convenience sampling between February and September 2023. Data were collected using the Professional Quality of Life Scale-Version 5, which assesses compassion satisfaction, secondary traumatic stress, and burnout. Subscale scores are interpreted as follows: ≤22 (low), 23–41 (moderate), and ≥42 (high). Additionally, participants completed a socio-demographic and work-related questionnaire.

Findings: Participants had a mean age of 35.73±7.47 years, and 95.8% were female. Based on the mean and standard deviation of the three subscales-compassion satisfaction (36.2±7.6), secondary traumatic stress (23.9±7.09), and burnout (25±5.7)-nurses reported moderate levels of professional quality of life. Regression analysis showed that secondary traumatic stress was significantly associated with both prior non-pediatric hospital work experience and educational level (p=0.04). Compassion satisfaction was significantly associated with interest in working in the current department (p<0.0001) and nurse position (p=0.04).

Conclusion: Pediatric nurses in this study reported moderate levels of professional quality of life. Nursing managers should adopt targeted strategies to improve these outcomes. Further research is needed to explore individual, organizational, and professional factors that affect the well-being of pediatric nurses.

Cite this Article: Jafarian amiri SR, Zabihi A, Mohammadi S, et al. Quality of Professional Life and Related Job Characteristics among Pediatric Nurses: A Cross-Sectional Study. Caspian J Pediatrs June 2025; 11: e8.

Introduction

The quality of professional life among pediatric nurses is influenced by daily exposure to the pain and suffering of children caused by illness, medical interventions, and treatments [1]. While caring for sick children is highly valuable, it can also be emotionally exhausting or even traumatic. In addition to supporting the youngest and most vulnerable patients, pediatric nurses must also provide emotional support to parents [2].

Professional quality of life refers to a person's perceived satisfaction and fulfillment in their profession and is commonly assessed across three subscales: compassion satisfaction, secondary traumatic stress (STS), and burnout. Compassion satisfaction reflects the fulfillment derived from being able to effectively help others [3]. STS arises when the emotional demands of caregiving exceed an individual's capacity to cope with or recover from such experiences [4]. Burnout is a psychological syndrome characterized by emotional exhaustion, depersonalization, indifference toward clients, and a reduced sense of personal accomplishment. A systematic review in Iran reported a job burnout prevalence of 36% among nurses, indicating that more than one-third of the nursing workforce experiences this condition [5].

Burnout and STS together constitute compassion fatigue, whose severity varies across nursing specialties. Several factors influence compassion fatigue, including personal attributes (e.g., age, education), work-related factors (e.g., caring for trauma patients, working hours), psychological stressors, and supportive resources (e.g., organizational support, coping mechanisms) [6].

Qualitative findings by Buckley et al. (2022) revealed that pediatric nurses identified the following as contributors to professional quality of life: adequate rest during shifts, shorter rather than extended shifts, access to relief staff, fair compensation for overtime, opportunities for job rotation, professional development programs, recreational activities, and peer support groups [7]. Similarly, Sekol et al. (2014) found that surgical ward nurses—particularly those with 5 to 9 years of experience—had the highest burnout and lowest compassion fatigue, whereas hematology–oncology nurses exhibited the opposite trend [8]. Lowe et al. reported that neonatal nurses had lower resilience and greater emotional exhaustion compared to other medical staff, and that personality and emotional characteristics may predispose certain individuals to higher compassion fatigue despite workplace accommodations [9]. Zander, Hutton, and King (2010) further noted that even the rewarding aspects of pediatric oncology nursing—such as building close relationships with patients and families—can become sources of stress due to the intensity of these bonds and the complexity of treatment plans [10].

It is therefore essential for healthcare leaders to identify the factors that sustain pediatric nurses' compassion, commitment, and resilience in the face of helplessness, pain, and loss. Understanding why some nurses can provide care to critically ill children for many years without burnout, while others experience chronic stress or leave the profession, is critical [11, 12].

Neglecting to address professional quality of life and compassion fatigue can have serious consequences for nurses' health, including emotional exhaustion, anxiety, post-traumatic stress disorder, hypertension, coronary artery disease, diabetes, obesity, gastrointestinal issues, and increased inflammatory responses. At the organizational level, it may lead to reduced productivity, diminished teamwork, higher turnover, and compromised patient care [1, 13]. Burnout in pediatric nurses may differ from that in adult care nurses due to the greater vulnerability of pediatric patients, the higher potential for empathetic engagement, and the complex dynamics with families [14].

Although professional quality of life has been examined among healthcare workers in various contexts, few studies have focused specifically on pediatric nurses. Thus, the aim of the current study was to assess the quality of professional life and related job characteristics among pediatric nurses. The findings may help inform strategies to enhance the quality of pediatric care.

Methods

Study Design and Procedure

This descriptive-analytical cross-sectional study was conducted in 2023 among nurses working in pediatric hospitals in northern Iran. Following coordination with nursing office managers, eligible nurses were invited to participate. The study objectives were explained, and written informed consent was obtained prior to enrollment.

Setting

The study was carried out in four specialized pediatric hospitals in northern Iran: Amirkola Children's Hospital Shafizadeh (180 nurses), 17 Shahrivar Medical Training Center in Rasht (190 nurses), Ayatollah Taleghani Medical Training Center in Gorgan (160 nurses), and Ayatollah Taleghani Educational and Therapeutic Center in Gonbad-e Kavus (140 nurses). The total nursing population across these centers was 670. Stratified sampling was used to ensure proportional representation from each hospital.

Participants and Sampling

The sample size was calculated using Cochran's formula, based on the prevalence of compassion fatigue (p = 0.58) reported by Bazmandegan et al. [15], with a 5% margin of error and 95% confidence level, yielding 240 participants. To account for potential non-responses, 260 questionnaires were distributed, and 250 were returned with complete data. The proportional sample size for each hospital was calculated based on its total nursing staff.

Participants were eligible for inclusion if they had at least one year of work experience in a pediatric hospital, reported no history of mental health disorders or use of related medications, had not experienced any major adverse events during the previous three months, and expressed willingness to participate in the study. The exclusion criterion was incomplete questionnaire data.

Instruments

1. **Socio-demographic and work-related questionnaire**: Included variables such as age, sex, employment type, marital status, education level, work experience, shift type (fixed, rotating, head nurse, top-level manager, or supervisor), overtime, interest in working in the current department, and satisfaction with work schedules or shifts.
2. **Professional Quality of Life Scale – Version 5 (ProQOL-V)**:

This 30-item instrument assesses three subscales: compassion satisfaction (CS), burnout (BO), and secondary traumatic stress (STS). Items are rated on a 5-point Likert scale (1 = never to 5 = very often).

- CS: Items 3, 6, 12, 16, 18, 20, 22, 24, 27, 30
- BO: Items 1, 4, 8, 10, 15, 17, 19, 21, 26, 29
- STS: Items 2, 5, 7, 9, 11, 13, 14, 23, 25, 28

Reverse scoring applies to items 1, 4, 15, 17, and 29.

Scores are interpreted as: ≤ 22 (low), 23–41 (moderate), ≥ 42 (high) for each subscale [3].

The Persian version of ProQOL-V has demonstrated acceptable validity and reliability in previous studies [15–17]. In the current study, Cronbach's α values were 0.815 (CS), 0.801 (BO), and 0.77 (STS).

Data Analysis

Data were analyzed using SPSS version 26.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were reported as mean ± standard deviation for continuous variables and frequency (percentage) for categorical variables. The Kolmogorov–Smirnov test was applied to assess normality. Depending on the data distribution, independent t-tests, one-way ANOVA, and Pearson's correlation coefficient were used to examine associations between ProQOL subscales and socio-demographic/work-related variables. Variables significant in univariate analysis were entered into multivariate linear regression models using a stepwise method to control for confounding. Statistical significance was set at $p < 0.05$.

Results

Sample Characteristics

A total of 250 nurses participated in the study, with a mean age of 35.73 ± 7.47 years. Most participants were female (95.8%, n = 228), held a bachelor's degree (91.5%, n = 227), and were married (66.3%, n=165). The majority worked rotating shifts (86.2%, n=188), reported overtime work (93%, n = 226), and

expressed satisfaction with their monthly work schedule (65.8%, n = 158). Furthermore, 87.1% (n = 216) indicated interest in working in their current department (Table 1).

Professional Quality of Life Scores

The mean scores for compassion satisfaction, secondary traumatic stress (STS), and burnout indicated moderate levels across all three subscales of the Professional Quality of Life Scale (Table 2). Similarly, the total professional quality of life score was in the moderate range.

Bivariate Analysis

Table 3 presents the associations between socio-demographic/work-related variables and the ProQOL subscales.

- **Secondary Traumatic Stress (STS):** Significantly associated with education level, total work experience, non-pediatric hospital work experience, and marital status. Higher STS scores were observed among nurses with >10 years of total experience, married nurses, and those with >10 years of non-pediatric hospital experience.
- **Burnout:** Significantly associated with education level, with higher scores in nurses holding a bachelor's degree ($p = 0.02$).
- **Compassion Satisfaction:** Significantly higher among nurses interested in working in their current department ($p=0.001$) and among non-administrator nurses compared to administrator nurses.
- **Professional Quality of Life (Total Score):** Significantly associated with work experience, non-pediatric hospital work experience, marital status, and shift type. Nurses working fixed shifts reported higher scores than those with rotating shifts ($p = 0.04$).

No significant differences were found between gender, employment type, or satisfaction with work schedules and any of the ProQOL subscale scores ($p > 0.05$).

Correlation Analysis

As shown in Table 4, Pearson's correlation revealed a positive association between age and all three ProQOL subscales. However, the relationship was statistically significant only for compassion satisfaction ($p < 0.05$).

Multivariate Regression Analysis

The multiple regression model (Table 5) identified the following significant predictors:

- **Compassion Satisfaction:** Positively associated with interest in working in the current department ($B = +6.5$, $p = 0.0001$) and with nurse position. Non-administrator nurses scored approximately 3.7 points higher than administrator nurses ($p = 0.04$).
- **Secondary Traumatic Stress:** Positively associated with non-pediatric hospital work experience ($B = +0.3$ per year, $p = 0.04$) and inversely associated with educational level, with bachelor's degree holders scoring about 4.3 points lower than nurses with higher qualifications.

Only variables that were significant in the univariate analysis were entered into the multivariate models for STS and compassion satisfaction; thus, some cells in Table 5 remain empty.

Table 1. Frequency and percentage of some characteristics of participating nurses

Variable		N (%)
Sex	Female	228(95.8)
	Male	10(4.2)
Level of education	Bachelor	227(91.5)
	Masters	21(8.5)
Type of employment	Official	185(74.3)
	Unofficial	64(25.7)
Marital status	Single	85(33.7)
	Married	165(66.3)
Nurse position	Irresponsible	225(92.3)
	Responsible	19(7.7)
Shift type	Fixed shift	30(13.8)
	Rotating shift	188(86.2)
Work experience	< 10 years	114(49.8)
	> 10 years	115(50.2)
Satisfaction with work schedule	Yes	158(65.8)
	No	82 (34.2)
Interested in working in the current department	Yes	216(87.1)
	No	32(12.9)
Do overtime work	Yes	226(93)
	No	17(7)

Table 2: Mean and standard deviation of professional quality of life subscale scores

Domain	Median (IQR)	Maximum	Minimum	Mean ± SD
Compassion satisfaction	37(31.43-00.00)	50	13	36.2±7.6
secondary trauma	23(19.30-00.00)	40	5	23.9±7.09
Burnout	25(22.29-00.00)	41	8	25±5.7

IQR: Interquartile Range, SD: Standard Deviation

Table 3: Relationship between nurses' socio-demographic characteristics and professional quality of life subscale scores

Variable		Test-result*	Burnout Mean±SD	Test-result*	secondary trauma Mean ± SD	Test-result*	Compassion satisfaction Mean±SD
Sex	Female	t= -1.21	24.89±5.52	t=-1.79	23.8±7.03	t=-1.79	36.22±7.03
	Male	p= 0.2	27.1±7.58	p= 0.07	27.9±7.66	p= 0.8	35.80±9.4
Level of Education	Bachelor	t=2.25	25.3±5.5	t=2.58	24.3±7.07	t= -1.41	36.05±7.7
	Masters	p= 0.02	22.4±6.1	p= 0.01	20.1±6.3	p= 0.1	38.5±7.1
Shift type	rotating shifts	t=-1.25	24.6±5.4	t= -0.90	23.8±7.36	t=-1.22	36.2±7.4
	fixed shift	p= 0.2	26.03±7.04	p= 0.3	25.1±6.5	p= 0.2	38.06±9.02
work experience	< 10 years	t=-1.10	24.5±5.06	t= -2.39	22.7±6.7	t=-1.68	35.5±7.5
	>10 years	p= 0.2	25.4±6.3	p= 0.01	25.02±7.4	p= 0.09	37.2±7.6
Kind of employment	Formal	t=-0.20	24.94±5.79	t=1.27	24.27±7.11	t=1.20	36.67±7.73
	Informal	p=0.839	25.10±5.50	p=0.205	22.96±7.5	p=0.231	35.3±7.38
work experience in a non-pediatric hospital	No	t=2.53 p=0.08**	24.8±5.6	t= 5.96 p=0.003**	22.7±6.6	t=0.49 p= 0.6**	37.1±7.2
	< 10 years		25.4±5.5		25.6±7.3		36.3±7.3
	> 10 years		28.2±5.1		28.2±6.6		35.4±7.1
Marital status	single	t=-0.87	24.5±6.03	t= -2.34	22.5±6.8	t=-0.55	35.9±8.1
	married	p= 0.3	25.2±5.5	p= 0.02	24.7±7.08	p= 0.5	36.4±7.4
Overtime work	Yes	t=0.68	25.1±5.59	t= 0.08	24.03±7.18	t=0.93	36.2±7.58
	No	p= 0.4	24.1±7.55	p= 0.9	23.8±6.7	p= 0.3	38±8.7
Interested in working in the current ward	Yes	t=-2.65 p= 0.009	24.6±5.51	t= -0.86 p= 0.3	23.7±7.05	t=4.88 p=0.0001	37.1±6.9
	No		27.4±6.5		24.9±7.27		30.3±9.7
nurse position	Non administrator	t=1.72 p=0.087	25.2±5.5	t=0.25 p=0.803	24.04±7.08	t=-2.86 p=0.004	35.8±7.6
	administrator		22.8±6.4		23.6±7.25		41.2±6.37

* T-test
** ANOVA test

Table 4: Correlation between nurses' age and professional quality of life subscale scores

Sub-Scales	r	P-Value
compassion satisfaction	0.168	0.010
secondary trauma	0.112	0.083
burnout	0.044	0.499

* r: Pearson correlation coefficient

Table 5: Relationship between professional quality of life subscale scores based on a multivariate regression model

Variable	** Secondary Trauma		* Compassion Satisfaction	
	Beta(Se)	P-value	Beta(Se)	P-value
Age (year)	-	-	0.11(0.06)	0.092
Marital status (single, married)	1.27(1.25)	0.3	-	-
Work experience(year)	0.1(0.08)	0.1	-	-
Work experience in a non-pediatric hospital (yes/no)	0.3(0.1)	0.01	-	-
Level of Education (Bachelor's/ Masters)	4.3(2.07)	0.04	-	-
Shift type (rotating shifts/ fixed shift)	-	-	-	-
Interested in working in the current department ward (yes/no)	-	-	-6.5(1.3)	0.0001
Nurse position (administrator/non-administrator)	-	-	3.7(1.8)	0.04

* Multivariate regression model for compassion satisfaction adjusted based on the variables of age, interest in working in the current department, and position of the nurse.

**Multivariate regression model for the domain of secondary trauma adjusted based on the variables of work experience, marital status, work experience in a non-pediatric hospital, and educational level

Discussion

This study found that pediatric nurses in northern Iran experience moderate levels of professional quality of life across all three subscales- compassion satisfaction, secondary traumatic stress (STS), and burnout. These findings align with Xie et al.'s (2021) meta-analysis of 28,509 nurses worldwide, which reported moderate levels of both compassion satisfaction and compassion fatigue [18]. While Xie's sample included nurses from a range of general and specialized hospitals, our study focused specifically on pediatric nurses, a population often exposed to unique emotional demands.

In our sample, burnout was at a moderate level, consistent with Buckley et al.'s (2020) review, which noted burnout as a common issue among pediatric nurses, influenced by workplace environment, job attitudes, and work outcomes [14]. Burnout can negatively affect nurse retention, well-being, patient safety, and family satisfaction. However, few evidence-based interventions have been developed to address burnout and improve professional quality of life in pediatric nursing. Similarly, Hunsaker et al. (2015) found low-to-moderate compassion fatigue and burnout but moderate-to-high compassion satisfaction among U.S. nurses, with managerial support emerging as a key protective factor [19].

Our participants also reported moderate levels of STS, consistent with Zhang et al.'s (2018) meta-analysis, which documented moderate compassion satisfaction (47.55%) alongside higher prevalence rates of compassion fatigue (52.55%) and burnout (51.98%) [20]. As in our findings, Zhang et al. reported an inverse relationship between education level and STS, suggesting that nurses with higher education may possess stronger coping skills or resilience. This is consistent with other studies showing that STS can be shaped by both individual and organizational factors.

Evidence also indicates that STS affects job performance and organizational citizenship behavior [21] and is influenced by empathy levels, coping capacity, and psychological well-being [22]. In our study, nurses with more than 10 years of work experience in non-pediatric hospitals reported higher STS, while Crabtree-Nelson et al. (2023) found that nurses with less than 10 years' experience had lower compassion satisfaction and higher burnout [23]. Such differences highlight the complex relationship between work experience and professional quality of life, which may be shaped by specialty area, workload, and support systems.

The moderate compassion satisfaction observed in our sample suggests that while many nurses find meaning in their work, job burnout may diminish these positive feelings. Psychological capital—comprising hope, self-efficacy, resilience, and optimism—has been linked to higher compassion

satisfaction and lower burnout [24]. Strengthening these personal resources, alongside improving workplace conditions, could help sustain pediatric nurses' well-being.

Given the high prevalence and wide-ranging effects of burnout, interventions should target both environmental and attitudinal factors. Organizational leaders can improve professional quality of life by optimizing staffing, promoting supportive leadership, offering regular counseling and peer support, and fostering professional development opportunities [25].

This study contributes to the limited body of research on professional quality of life among pediatric nurses in Iran and underscores the emotional and professional challenges faced in this setting. Limitations include reliance on self-reported data, potential response bias, and a cross-sectional design that precludes causal inferences. The study was also conducted in four public hospitals in one region, which may limit generalizability. Longitudinal studies are recommended to explore how changes in hospital management, staffing, and work conditions influence professional quality of life over time.

Conclusion

Pediatric nurses in northern Iran experience moderate levels of compassion satisfaction, burnout, and secondary traumatic stress, with scores influenced by factors such as age, work experience, non-pediatric hospital experience, and shift type.

To enhance the professional quality of life among healthcare professionals, recommended interventions encompass emotional support via counseling services and peer support groups, optimization of working conditions and workplace safety protocols, provision of modern tools to alleviate physical and cognitive burdens, continuous professional education and skill enhancement for superior pediatric care delivery, and implementation of financial incentives including salary increments and comprehensive benefits.

Such strategies can enhance pediatric nurses' well-being, improve retention, and ultimately benefit the quality of care for children. Further research should focus on identifying the most effective interventions tailored to the unique demands of pediatric nursing.

Acknowledgments

The authors would like to thank the Vice-Chancellor for Research and Technology of Babol University of Medical Sciences, as well as all the nurses who helped us to conduct this study.

Ethical Considerations

The study was granted ethical approval by the Ethics Committee of Babol University of Medical Sciences (IR.MUBABOL.REC.1401.091) and conducted in accordance with the Declaration of Helsinki. All participants provided written informed consent, and confidentiality of personal data was assured.

Funding

Deputy of Research and Technology of Babol University of Medical Sciences.

(Grant number 9910812). The funding agency did not influence the study's design, data analysis and interpretation, or the writing of the manuscript.

Conflict of interest

There is no conflict of interest.

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