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Original Article

Comparative analysis of the quality of professional life and job burnout among nurses in COVID-19 emergency and intensive care units versus other wards

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Abstract

Introduction: Nurses working in COVID-19 emergency and intensive care units may experience increased stress due to the special working environments. This stress can lead to burnout and negatively impact their quality of life. This study aimed to compare the quality of professional life (QPL) and job burnout among nurses working in COVID-19 and non-COVID-19 wards in Birjand teaching hospitals.

Methods: This descriptive-analytical study involved 182 nurses working in COVID-19 and non-COVID-19 wards at teaching hospitals in Birjand. The number of nurses from the two categories of wards was proportional, with 91 nurses from the COVID-19 wards and 91 nurses from non-COVID-19 wards. A demographics form, the Maslach Burnout Inventory, and the Walton Quality of Work Life Questionnaire were used to collect data. The data were analyzed in SPSS 26 software using independent t-test, chi-square test, Mann-Whitney U test, and analysis of variance. The significance level was set to $P < 0.05$.

Results: Of the 182 nurses studied, 91 (50%) worked in COVID-19 wards. There was a statistically significant difference in the mean QPL score between nurses in the COVID-19 (81.46 ± 17.21) and non-COVID-19 wards (87.89 ± 17) (P=0.02). There was also a statistically significant difference in the mean job burnout score between nurses in the COVID-19 (78.32 ± 17.21) and non-COVID-19 wards (87.46 ± 17.21) (P=0.02). Among the components of job burnout, there was a statistically significant difference between the mean scores for lack of achievement ($P \leq 0.001$) and depersonalization ($P \leq 0.001$) among nurses working in the COVID-19 and non-COVID-19 wards.

Conclusion: A significant disparity exists between nurses in COVID-19 and non-COVID-19 wards concerning the QPL and job burnout. It is recommended that administrators implement strategies to mitigate nurses' job burnout and enhance their QPL, such as conducting psychotherapy sessions and periodically transferring nurses from high-stress units to other wards.

Key words: Job Burnout, Quality of Professional Life, Nurse, COVID-19, Emergency, Special Care

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Introduction

The COVID-19 pandemic was a huge shock to healthcare systems worldwide. Importantly, it highlighted the critical role of intensive care and specialized care units (1). Healthcare providers have been one of the most vulnerable groups due to their constant exposure to the risk of COVID-19 infection (2). Throughout the pandemic, nurses demonstrated their commitment to their profession and patients by working tirelessly in emergency departments, infection control units, intensive care units (ICUs), and COVID-19 wards, often at the expense of their own health and life (3). Nurses employed in ICUs may encounter heightened levels of stress as a result of the unique work setting and patient populations. This stress can stem from factors such as interactions with other nurses and healthcare team members, communication with patients and their families, the need for a high level of knowledge and skills, high workload, the need for rapid and immediate responses to emergencies, and the heavy responsibility of patient care (4). The widespread public health challenge has caused fear and psychological stress among nurses, with the effects being particularly severe due to anxiety about the uncertain future of the disease (5). Some healthcare workers have experienced burnout while dealing with the COVID-19 pandemic (6). Job burnout, a psychological response characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, is a prevalent issue among healthcare workers (7, 8). A 2014 study in Singapore reported an average burnout rate of 33.3% among nurses, with rates varying between 30% and 80% across different hospital departments (9). Burnout poses a significant threat to the patient recovery process, as nursing encompasses diverse service sectors with unique working conditions and burnout risk factors (10). In Iran, nurse burnout rates are considered moderately high, exceeding global standards and negatively impacting nurses' psychological well-being (11). Characterized as high-stress work environments, ICUs are particularly contributory to burnout, leading to compromised care quality and potentially devastating consequences (12).

Excessive workload, time pressure, patient-nurse ratios, role conflicts/ambiguities, undefined job responsibilities, physical work environment, resource shortage, and reduced support from individuals and colleagues all contribute to burnout risk (13).Given the unique ICU environment, a positive approach to teamwork can serve as a protective factor against burnout (14). A study by Wu et al. found that healthcare workers fighting COVID-19 had lower burnout levels than those in non-COVID units in Wuhan (15). Burnout remains a significant risk factor affecting the quality of life and health of primary healthcare professionals during the pandemic (16). In order to provide high-quality nursing care for patients, it is crucial to retain competent nurses and create a supportive work environment. Such an environment should both prevent burnout and turnover intention caused by violence and enhance nurses' quality of professional life (QPL). This may lead to increased service years and reduced human resource management costs (17). QPL is a broad construct defined as the quality of an individual's feelings in relation to their work as a helper (18). Since nurses are the largest group of healthcare providers, it is crucial to focus on their QPL, ensuring they have a satisfactory work-life balance to provide effective patient care (19). Additionally, they hold responsibility for their patients' lives, necessitating effective QPL (20). Organizational attention to nurses' QPL is a key indicator for recruitment, retention, and optimal performance (21). Employees with high QPL exhibit strong organizational identity, job satisfaction, and lower turnover intentions (22). Prolonged exposure to stressors negatively impacts QPL, leading to cognitive and emotional exhaustion, anxiety, mood disorders, and burnout (23). The unprecedented responsibilities associated with the COVID-19 surge, such as personal protective equipment shortages at times of high demand, infection risk, physical and psychological strain, and shifting guidelines, place frontline clinical nurses at risk for QPL impairment, potentially affecting their care behaviors (6). As this study was conducted under the challenging circumstances of the COVID-19 pandemic, which has significantly impacted the QPL

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of nurses, the findings of this research can be utilized to raise awareness among healthcare administrators regarding the arduous conditions faced by nurses caring for COVID-19 patients.This enhanced awareness can subsequently improve the quality of nursing services. Undoubtedly, occupational burnout among nurses reduces their efficacy, which can demotivate them and decline the quality of nursing care they provide. In order to safeguard the well-being of nurses and the quality of patient care, it is crucial to evaluate and compare the prevalence of job burnout in emergency and specialized care units. This is because job burnout can negatively affect nurses' quality of life and ability to perform their duties effectively.Therefore, this study aimed to compare the QPL and job burnout in COVID-19 emergency and specialized wards with other wards.

Materials and Methods

descriptive-analytical study was conducted with 182 nurses employed in COVID-19 (COVID-19 emergency and ICU) and non-COVID-19 wards (neurosurgery, ICU, ENT, general surgery, emergency, urology, gynecology, and operating room). The sampling was proportional to the number of nurses in each ward, and the samples were recruited from teaching hospitals in Birjand between May and September 2022. According to Fakhri and Asalpoor's study, 150 nurses were considered in each group. Due to the lower number of nurses in COVID-19 wards, the sample size was corrected according to the formula, and 91 nurses were considered for each group (24).

n=Current sample size

N=Population size

$$n=\frac{\left(z_{1-\alpha/2}+z_{1-\beta}\right)^2\left(\sigma_1^2+\sigma_1^2\right)}{d^2}=\frac{(1.96+0.84)^2(15.89^2+11.58^2)}{4.5^2}\approx 150$$

Once the required approval was received from the Research Deputy and the Ethics Committee, an online data collection method was employed due to the COVID-19 pandemic and the inability to administer questionnaires in person. The researcher designed questionnaires using Google Forms and provided head nurses of COVID-19 units and all wards in teaching hospitals with the inclusion criteria, the electronic link to the questionnaires, and the introductory letter issued by the Research Deputy for sampling. Head nurses were requested to distribute the questionnaire link to nurses who met the inclusion criteria. After necessary explanations were given and informed consent was obtained from participants, the questionnaires were completed by each volunteer within one week. Subjects were eligible to participate in the study if they met the following inclusion criteria: Willingness and informed consent to participate in the study, a bachelor's degree in nursing or higher, a rotating work schedule, and at least three months of employment in the COVID-19 ICU. The exclusion criterion was the failure to respond to all study questions.

The research tools were as follows:

Demographic characteristics Questionnaire: This questionnaire comprised questions pertaining to age, gender, education level, work experience, marital status, employment type, type of employment, work shift, and job title.

Maslach Burnout Inventory: The Maslach Burnout Inventory is a 22-item questionnaire designed to assess three dimensions of job burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment within the professional context. The emotional exhaustion subscale consists of 9 items (questions 1, 2, 3, 6, 8, 13, 14, 16, 20); the depersonalization subscale includes 5 items (questions 5, 10, 11, 15, 22); and the reduced personal accomplishment subscale comprises 8 items (questions 4, 7, 9, 12, 17, 18, 19, 21).

The questionnaire is scored as follows: 0 points for "never," 1 point for "very rarely," 2 points for "rarely," 3 points for "sometimes," 4 points for "often," 5 points for "very often," and 6 points for "always." Questions 1, 2, 3, 5, 6, 8, 10, 11, 13, 14, 15, 16, 20, and 22 are scored in reverse, while questions 4, 7, 9, 12, 17, 18, 19, and 21 are scored directly.

The reliability coefficients for the emotional exhaustion, depersonalization, and reduced personal

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accomplishment subscales were 0.90, 0.79, and 0.71, respectively. The overall reliability coefficient was 0.78, as estimated using Cronbach's alpha (25).

The Walton Quality of Work Life (QWL) Questionnaire (1973) is a 34-item instrument that measures individuals' perceptions of their work-life quality. It comprises eight subscales: Fair and Adequate Payment (questions 1-4), Safe and Healthy Working Conditions (questions 5-8), Opportunity for Continuous Growth and Security (questions 9-12), Lawfulness in the Organization (questions 13-18), Social Integration of Work Life (questions 19-22), Overall Quality of Life (questions 23-26), Social Integration and Cohesion (questions 27-31), and Development of Human Capabilities (questions 32-34). Respondents rate their satisfaction on a 5-point Likert scale ranging from very high (score 5) to very low (Score 1). Total scores range from 34 to 170, with higher scores indicating higher levels of QWL. A score of 102 or more is considered to represent a high level of QWL, while a score of 34 or less denotes a low QWL level.Ethical approval for this study was granted by the Ethics Committee of Birjand University of Medical Sciences and Services with the code IR.BUMS.RES.1400.347. The data was analyzed using the statistical software SPSS 26. Descriptive statistics, including frequency percentage, mean, and standard deviation, were used to describe the demographic characteristics of the participants. An independent-sample t-test was used to compare the mean scores of men and women. The normality of the data was first assessed using the Kolmogorov-Smirnov test. If the data were normally distributed, one-way ANOVA and Tukey's post hoc tests were employed. If the data were not normally distributed, the Kruskal-Wallis test was applied. Pearson's correlation coefficient (equivalent to Spearman's nonparametric correlation) was used to assess the relationship between variables. The significance level was set to $P < 0.05$.

Results

A total of 182 nurses were included in the study, of whom 91 (50%) were working in the COVID-19 ward. Among the nurses in the COVID-19 ward, 74 (81.3%) were female and 17 (18.7%) were male. The mean age of the nurses in this ward was 31.78 ± 49.3 years. In the non-COVID-19 wards, 80 (87.9%) nurses were female and 11 (12.1%) were male. The mean age of the nurses in these wards was 35.27 ± 7.24 years. Table 1 summarizes the demographic characteristics of the participants.As Table 2 indicates, there was a significant association between gender and quality of life (P=0.03) in the COVID-19 ward. QPL was linked significantly with job title (P=0.005) and work shift (P=0.001) in the non-COVID-19 ward. However, there was no significant association between marital status, work shift, and education with QPL ($P \geq 0.05$). Table 3 examined the association between job burnout and demographic variables.

The results indicated a significant correlation between job burnout and job title (P=0.01) in non-COVID-19 wards. However, no significant relationships were found between job burnout and marital status, gender, work shift, or education ($P \geq 0.05$). As presented in Table 4, there was a significant difference between the QPL scores of nurses working in COVID-19 (81.46±17.21) and non-COVID-19 wards (87.89±17) (P=0.02). This indicates that nurses working in COVID-19 wards have a lower QPL compared to those in other wards. Among the QPL components, a statistically significant difference was observed between nurses in COVID-19 and non-COVID-19 wards in relation to providing opportunities (P=0.01), social dependence (P=0.002), and integration (P=0.01). However, no significant differences were found between the components of fair pay, safe environment, legislation, overall atmosphere, and development of capabilities between COVID-19 and non-COVID-19 wards ($P \geq 0.05$). Table 5 results indicate a statistically significant difference (P=0.02) between the level of burnout among nurses in COVID-19 (78.32±17.21) and non-COVID-19 wards (87.46±17.21). Among the burnout components, there were statistically significant differences in lack of accomplishment and depersonalization levels between COVID-19 and non-COVID-19 wards ($P \leq 0.001$ for both). However, no statistically significant difference was found for the other burnout component, i.e.,

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results indicate a statistically significant difference (P=0.02) between the level of burnout among nurses in COVID-19 (78.32±17.21) and non-COVID-19 wards (87.46±17.21). Among the burnout components, there were statistically significant differences in lack of accomplishment and depersonalization levels between COVID-19 and non-COVID-19 wards (P ≤0.001 for both). However, no statistically significant difference was found for the other burnout component, i.e., emotional exhaustion, between the two types of wards (P≥ 0.05).

Table 1.Comparison of the mean and frequency of demographic variables in nurses working in the COVID-19 and non-COVID-19 wards

Variables	COVID-19		Non-COVID-19		P- Value
	Frequency	Percent	Frequency	Percent	
Gender					0.218
Male	17	18.7	11	12.1	
Female	74	81.3	80	87.9	
Marital status					0.84
Single	16	17.6	17	18.7	
Married	75	82.4	74	81.3	
Education					0.32
Bachlor's	84	92.3	80	87.9	
Master's	7	7.7	11	12.1	
Employment Status					**0.001**
Official	37	40.7	61	67	
Contractual	17	18.7	11	12.1	
Project-based	28	30.8	9	9.9	
Firm-based	9	9.8	10	11	
Work Title					**0.001**
Matron	2	2.2	15	16.5	
Nurse	89	97.8	76	83.5	
	Mean	**Standard deviation**	**Mean**	**Standard deviation**	
Age	31.49	6.78	35.27	7.24	**< 0.001**
Work Experience	7.50	6.12	11.08	6.52	**< 0.001**

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Table 2. Comparison of the average quality of professional life by demographic variables among nurses working in COVID-19 and non-COVID-19 wards

Variables		COVID-19			Non-COVID-19		
		Mean	Standard deviation	P-Value	Mean	Standard deviation	P-Value
Working shift	Morning	80.75	9.55	0.75	98	15.38	**0.005**
	Rotating shift	81.79	17.76		85.89	16.68	
Gender	Male	88.70	19.51	**0.03**	87.90	15.39	0.9
	Female	79.79	16.33		87.88	17.30	
Work Title	Matron	77.50	6.36	0.66	101.06	15.04	**0.001**
	Nurse	81.55	17.38		85.28	16.22	
Marital status	Single	93.84	19.73	0.29	87.88	14.14	0.64
	Married	80.72	16.68		87.89	17.68	
Education	Bachelor's	81.84	17.83	0.29	76.85	4.33	0.94
	Master's	76.85	4.33		86.81	15.75	
Employment Status	Official	78.78	12.99	0.53	78.78	12.99	0.2
	Contractual	80.64	16.86		80.64	16.86	
	Project-based	83.96	21.99		83.96	21.99	
	Firm-based	86.22	17.06		86.22	17.06	

Table 3. Comparison of the mean job burnout by demographic variables in nurses working in COVID-19 and non-COVID-19 wards

Variables		COVID-19			Non-COVID-19		
		Mean	Standard deviation	P-Value	Mean	Standard deviation	P-Value
Working shift	Morning	73.25	12.89	0.42	90.40	21.20	0.58
	Rotating shift	78.59	18.48		87.27	19.67	
Gender	Male	80.41	17.71	0.6	80.36	23.62	0.18
	Female	77.85	18.24		88.81	19.22	
Work title	Matron	78.50	6.36	0.98	99	16.88	**0.01**
	Nurse	78.32	18.27		85.57	19.73	
Marital status	Single	72.50	15.94	0.15	87.47	15.82	0.94
	Married	79.57	18.35		87.86	20.75	
Education	Bachlor's	79.15	18.44	0.51	68.42	8.56	0.12
	Master's	68.42	8.56		77.27	21.19	
Employment Status	Official	75.27	18.74	0.12	87.13	19.36	0.08
	Contractual	80.64	17.93		80.36	20.29	
	Project-based	77	14.92		85.88	15.16	
	Firm-based	90.66	101.70		21.65	22.11	

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Table 4. Comparison of the quality of professional life in nurses working in the COVID-19 and non-COVID-19 wards

Components of the quality of professional life	Group	Mean	Standard deviation	Significance level
Fair payment	COVID-19	7.43	2.52	0.19
	Non-COVID-19	7.86	2.50	
Safe conditions	COVID-19	10.60	3.09	0.40
	Non- COVID-19	11.23	3.30	
Opportunity for Continuous Growth	COVID-19	10.41	3.01	**0.01**
	Non- COVID-19	11.67	3.19	
Lawfulness	COVID-19	12.48	4.42	0.7
	Non- COVID-19	12.91	4.59	
Social integration	COVID-19	8.91	3.18	0.002
	Non- COVID-19	10.53	3.26	
Overall atmosphere	COVID-19	91.11	2.61	0.75
	Non- COVID-19	11.73	2.91	
Cohesion	COVID-19	12.09	3.53	**0.01**
	Non- COVID-19	13.53	3.60	
Capability Development	COVID-19	7.59	2.12	0.06
	Non- COVID-19	8.39	2.16	
Quality of work-life	COVID-19	81.46	17.21	**0.02**
	non- COVID-19	87.89	17	

Table 5. Comparison of job burnout in nurses working in COVID-19 and non-COVID-19 wards

Job burnout components	Group	Mean	Standard deviation	Significance level
Emotional exhaustion	COVID-19	31.92	11.58	0.56*
	Non-COVID-19	35.15	12.06	
Lack of accomplishment	COVID-19	24.75	5.08	**< 0.001****
	Non-COVID-19	28.08	6.52	
Depersonalization	COVID-19	21.64	5.39	**< 0.001****
	Non- COVID-19	24.54	4.58	
Job burnout	COVID-19	78.32	18.07	0.36
	Non-COVID-19	87.79	19.84	

*Independent t-test
** Mann-Whitney test

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Discussion

The present study findings indicate a statistically significant difference in job burnout between nurses working in COVID-19 and non-COVID-19 wards. A study by Bahmani (2020) aimed to determine the effect of work shifts under COVID-19 conditions on job burnout of employees with the mediating role of COVID-19 infection stress, indicating that the COVID-19 epidemic exacerbates job burnout among nurses (30). Karimi Johani et al. (2020) sought to determine the relationship between job burnout and job performance during the COVID-19 epidemic from the perspective of nurses. The study showed that the majority of nurses experienced job burnout and that with the increase in COVID-19 disease, nurses ; job performance decreased and their job burnout increased (28,31). These study findings are consistent with the present study. The increase in the number of COVID-19 patient visits and related care and the pressure of work shifts affect shift-related disorders such as sleep deprivation, gastrointestinal diseases, high blood pressure, and job burnout. Ghavidel et al. study compared nurses stress and job burnout in COVID-19 and non-COVID-19 wards in AJA-affiliated hospitals. The study reported a significant difference in job burnout between nurses in non-COVID-19 and COVID-19 wards, which complies with the present study. Job burnout is higher in COVID-19 wards due to the stress and fatigue caused by the service provision, a large share of which is performed by nurses(32-34). The rising demand for nursing care in this context can exacerbate feelings of pressure and work-related fatigue, leading to high workloads and increased job burnout among nurses. Several studies have demonstrated that nurses working in ICUs and psychiatric wards are more prone to burnout compared to nurses in other departments (35, 36, 4, 37). This is attributed to the nature of their work, which involves frequent interactions with other nurses and healthcare teams, communication with patients and their families, the need for prompt responses to urgent situations, and the heavy responsibility of patient care. The findings of the present study align with these observations, as nurses in emergency and ICU departments, faced significant changes in the infection variants and disease severity among patients during the COVID-19 pandemic, leading to higher levels of burnout. In contrast, studies by Allen and Mellor and Shang et al. did not find significant differences in burnout among nurses in different departments. This discrepancy could be attributed to the fact that our study was conducted under the unique circumstances of the COVID-19 pandemic, which created an exceptionally stressful and demanding environment for nurses in emergency and ICU departments. Additionally, the increased workload and responsibility associated with caring for COVID-19 patients likely contributed to the higher burnout rates observed in these settings (38,39).

The findings of this study indicate a statistically significant difference in the QPL between nurses working in COVID-19 and those in non-COVID-19 wards. Specifically, nurses in COVID-19 wards reported a lower QPL compared to their counterparts in other wards. The study by Salto et al. (2021) examined the quality of life and fear of COVID-19 among nursing interns during their pre-professional internship. The findings revealed that nursing interns at the University of Cuenca reported moderate quality of life and high levels of fear of COVID-19. These findings align with our study and support the body of evidence suggesting that the COVID-19 pandemic has had a detrimental impact on the mental health of the general public, particularly the highly vulnerable groups such as frontline healthcare workers (40).

Nurses working in ICUs, emergency departments, and COVID-19 wards are particularly vulnerable to stress due to the nature of their work. They face prolonged exposure to critically ill and dying patients, immense responsibility, and excessive job demands from both patients and their families. The unpredictable nature of COVID-19, the emergence of new variants, the constant confrontation with death, and the lack of psychological support further exacerbate the stress experienced by these nurses, negatively impacting their overall well- being. The study by Mohammadizadeh Tabrizi et al. (2022) further corroborates this notion. Their cross-sectional study aimed to determine the impact of COVID-19 anxiety on the quality of life of Iranian nurses. The results demonstrated a significant negative correlation between COVID-19 anxiety and quality of life, with COVID-19 anxiety emerging as the strongest predictor of quality of life scores. For each unit increase in the mean anxiety score, the quality of life scores decreased by 0.81 units. These findings align with our study, suggesting that the unpredictable and often fatal nature of COVID-19 may contribute to elevated anxiety levels among

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nurses (26,27). Similarly, the study by Sobhani et al. (2021) investigated the association between anxiety and quality of life among nurses working in COVID-19 wards. Their findings revealed a significant decrease in quality of life among nurses working in COVID-19 wards compared to those working in general wards during the COVID-19 pandemic (28, 29). Overall, one may note that unfavorable treatment conditions and crises, such as the COVID-19 pandemic, can contribute to a decline in nurses QPL.

Limitations of the study include the non-response of some nurses to the questionnaire, the small sample size, and the restricted coverage of nurses in a single city. Therefore, it is recommended that future studies be conducted with larger sample sizes and include nurses from all hospitals in the province.

Conclusion

The study found a significant difference in the quality of professional life and job burnout between nurses in COVID-19 and non-COVID-19 wards. The QPL of nurses in COVID-19 wards is lower than that of nurses in non-COVID-19 wards, and the job burnout of nurses in COVID-19 units is higher than that of nurses in non-COVID-19 wards. Given the inevitability of future pandemics and the stressful nature of these diseases, it is necessary to take measures that help improve working conditions and balance the nursing workforce, including routine rotation of experienced nurses between emergency, special, and general wards. It is also necessary to consider improving management methods in the nursing system, supporting nurses, communicating effectively with nurses, and rotating staff in special wards.

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Conflict of interest

The authors declare no conflict of interest concerning this article.

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