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Relationship Between Core Nursing Resources and Job Burnout Among Nurses in Teaching Hospitals of Zanjan, 2022: A Cross-Sectional Study

Leila Noralizadeh Meianaji[1], Mohammad Ali Yadgari[2*], Zahra Taran[3]

[1] MSc of Nursing, Department of Nursing, School of Nursing and Midwifery, Zanjan University of Medical Sciences, Zanjan, Iran.
[2] Assistant Professor, Department of Operating Room and Anesthesia, faculty of Nursing and Midwifery, Zanjan University of Medical Sciences, Zanjan, Iran.
[3] Instructor of Medical Surgical Nursing, Department of Nursing, School of Nursing and Midwifery, Zanjan University of Medical Sciences, Zanjan, Iran.

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Abstract

Background: *Job burnout is a psychological response to prolonged exposure to job-related and organizational stressors. In nursing, work environment factors significantly influence professional performance and well-being. This study aimed to investigate the relationship between core nursing resources and job burnout among nurses in teaching hospitals in Zanjan.*

Methods: *This descriptive-correlational study was conducted on 244 nurses from teaching hospitals in Zanjan, selected using stratified random sampling. Data collection instruments included a demographic information questionnaire, the Core Nursing Resources Scale, and the Maslach Burnout Inventory. Data analysis was performed using SPSS version 24, applying descriptive statistics, Pearson correlation, t-test, and ANOVA.*

Results: *The average age of participating nurses was 32.18 years, with an average of 8.65 years of work experience. The mean total score of core nursing resources was 51.71±10.12. The findings revealed a high frequency and moderate intensity ((F: 34.61±12.68), (I: 37.60±13.17)) of emotional exhaustion among nurses, with moderate levels in depersonalization ((F: 11.71±6.29), (I: 13.20±7.16)) and reduced personal accomplishment dimensions ((F: 35.64 ±9.34), (I: 37.69 ±7.28)). A significant inverse correlation was observed between core nursing resources and both burnout frequency (r=-0.149, P-value=0.020) and burnout intensity (r=-0.205, P-value=0.001).*

Conclusion: *Enhancing core nursing resources psychological, social, and physical may significantly contribute to reducing job burnout. Nursing administrators are advised to implement evidence-based interventions, including improving resource accessibility, fostering participation in decision-making, and promoting supportive work environments.*

Keywords: Core nursing resources, Job burnout, Nursing management.

[*]**Corresponding to:** MA Yadgari, **Email:** ma.yadegary@gmail.com

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Introduction

Nursing is one of the most important and complex healthcare professions, playing a vital role in ensuring the overall health of society[1]. This profession faces numerous challenges, including heavy workloads, resource shortages, long working hours, and continuous encounters with critically ill patients, which place nurses at high risk of job burnout[2, 3].

Job burnout, a psychological phenomenon caused by chronic workplace stress, adversely affects mental and physical well-being, as well as professional performance. It is characterized by three dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment. Emotional exhaustion refers to the depletion of energy and motivation in response to job demands; depersonalization involves developing negative, impersonal attitudes toward patients and colleagues; and reduced personal accomplishment reflects decreased self-confidence and perceived incompetence in fulfilling job responsibilities[4]. This condition affects not only nurses but also directly impacts patient care quality, leading to decreased patient satisfaction and increased medical errors[5].

International studies indicate that nurses worldwide experience burnout due to factors such as high workloads, limited resources, and insufficient social support[6, 7]. Despite these common challenges, variations exist across countries; for instance, developed nations often benefit from better staffing ratios and work standards that mitigate burnout, whereas Iranian nurses face additional stressors such as persistent staff shortages, noncompliance with nurse-to-bed ratios, and inadequate financial support, which exacerbate burnout and increase the tendency toward migration[8-10]. Evidence from Iran suggests that nurses frequently experience moderate levels of emotional exhaustion and depersonalization, alongside high levels of reduced personal accomplishment, highlighting the need for targeted interventions to strengthen social support and enhance coping strategies[11-13].

Core nursing resources—including psychological, social, and physical resources—play a key role in reducing occupational stress. Psychological resources relate to mental and emotional capacities, social resources include support from colleagues and managers, and physical resources encompass tools and equipment necessary for daily tasks[14, 15]. Garcia et al. (2020) highlighted that enhancing psychological and social support can reduce nurses' job burnout[16], while other studies confirmed that sufficient physical resources and a safe work environment improve emotional exhaustion and personal accomplishment[17, 18].

Considering the importance of nurse retention and the high prevalence of burnout, further research is essential. Localized studies can inform managerial strategies to improve working conditions and reduce burnout, particularly given the differences between Iranian nurses and those in other countries.

Accordingly, this study aimed to investigate the relationship between core nursing resources and job burnout among nurses in teaching hospitals in Zanjan, providing practical recommendations for hospital managers and policymakers.

Materials and Methods

Design and setting(s): This cross-sectional study investigated the relationship between core nursing resources and job burnout among nurses in teaching hospitals of Zanjan University of Medical Sciences in Zanjan, Iran, from March 21 to October 23, 2022.

Participants and sampling: The target population was nurses in their three hospitals (N=3). The sample size was estimated at 244 participants. Using the Sample size formula for estimating a population mean for finite populations (Z=1.96, d=1. 5, and S=11.95), with an additional 10% allowance for potential dropout[19]. A stratified random sampling method was employed. The sample size for each hospital was determined by dividing the number of nurses in each hospital by the total number of nurses (2176), multiplied by the total sample size (244). Then, the number of nurses to be selected from each ward was calculated similarly based on the proportion of nurses in that ward to the total nurses in the hospital. Simple random sampling was applied within each ward using the available list of nurses.

Inclusion criteria included willingness to participate and having at least six months of clinical work experience in a nursing unit (having sufficient exposure to the workplace to accurately perceive core nursing resources or experience job burnout). Exclusion criteria also included incomplete questionnaire responses (less than 80% completion). Incomplete questionnaires were considered grounds for exclusion from the study (less than 80% completion).

Tools/Instruments: In this study, Data were collected over three months. We used three questionnaires as data collection tools:

(a) Demographic Questionnaire: This included age, gender, marital status, number of children, education level, nursing work experience, employment status, work shift schedule, hospital and ward of employment, overtime, recent job transfer, number of days off per month (excluding night shifts), job position, income satisfaction, job satisfaction, employment elsewhere, ongoing higher education, chronic diseases, and self-assessed health status. Its content validity was confirmed by a panel of ten experts.

(b) The Burnout Inventory developed by Maslach (1985) consists of 22 Likert-type items measuring two dimensions: frequency (ranging from "never" to "every day") and intensity (ranging from "very low" to "very high"). It assessed three components: emotional exhaustion, depersonalization, and personal accomplishment. Frequency scores ranged from 0 (never) to 6 (every day), and intensity scores ranged from 0 (never) to 7 (very severe). A combination of high scores (≥27 for emotional exhaustion, ≥10 for depersonalization, and ≤33 for personal accomplishment) was considered to correspond to a high level of burnout. Burnout levels were classified based on the standard cut-off points of the Maslach Burnout Inventory[4]. This questionnaire was psychometrically tested in Iran, and its validity was confirmed using construct validity methods, and it reported a reliability coefficient of 0.78 for the Persian Version[20].In the present study, Cronbach's alpha was 0.86 for frequency and 0.76 for intensity dimensions.

(c) Core Nursing Resources Scale, developed by Simpson MR (2010), includes 18 items across three domains: psychological resources (7 items), social resources (5 items), and physical resources (6 items), with responses on a 5-point Likert scale from 0 (never) to 4 (always). Total scores range from 0 to 72, with 0-36 indicating weak, 37-54 moderate, and 55-72 strong core nursing resources[19]. The Persian version was culturally adapted and psychometrically validated, showing good content validity (CVI=0.91–1), construct validity confirmed through exploratory and confirmatory factor analyses, and high internal consistency (Cronbach's alpha=0.93). In the current study, Cronbach's alpha was 0.93.

Data collection methods: The researcher obtained approval from the ethics committee and a research permit from Zanjan University of Medical Sciences to conduct this study (Ethics approval number IR.ZUMS.REC.1401.132). The researcher then visited the relevant faculties, introduced himself, explained the study's goals and methodology, and assured participants that their information would remain confidential. Questionnaires were distributed by the researcher across all shifts (morning, evening, and night) over three months. To minimize response bias, the researcher was present with the participants to encouraged complete the questionnaires and to address any questions uniformly and consistently. Once the questionnaires were completed, the researcher thanked the managers and participants, assuring them that the results would remain confidential and be shared with them if they expressed interest.

Data analysis: Data analysis was performed using descriptive and inferential statistics. Initially, the mean, standard deviation, frequency, and frequency percentage were used to describe the demographic characteristics and values of the main research variables. Then, the study data were examined for normality using the Kolmogorov-Smirnov test, and according to the test results, the normal distribution of the data was confirmed (P-value>0.05). Therefore, parametric tests were used to analyze the data. Thus, Inferential analyses included Pearson correlation, t-tests, and ANOVA, with assumptions such as homogeneity of variance checked for each test. Analyses were conducted to examine the relationships between core nursing resources and dimensions of job burnout. In all analyses, a significance level of 0.05 was considered.

Results

The average age of participating nurses was 32.18 years, with an average of 8.65 years of work experience. The majority were female 73.4% and married 63.9%. Regarding educational level, 92.2% had a bachelor's degree, and only 3.3% held a master's degree. Most were employed permanently 46.3% and worked in rotating shifts 93.4%. Only 9.4% were pursuing further education, and 10.7% had chronic illnesses—the most common being intervertebral disc disorders 4.5%.

In terms of job satisfaction, 77% were dissatisfied with their income, and 50.8% expressed low satisfaction with the nursing profession. Moreover, 91% worked at only one healthcare center, while 9% had a second job.

According to the burnout questionnaire, emotional exhaustion was reported as high in frequency and moderate in intensity. Depersonalization and reduced personal accomplishment were moderate in both frequency and intensity.

Assessment of core nursing resources showed moderate levels in psychological and physical domains, and good levels in social resources. Overall, the total score for core nursing resources was moderate, as presented in Table 1.

There was a significant negative correlation between core nursing resources and job burnout: frequency (r=-0.149, P-value=0.02) and intensity (r=-0.205, P-value=0.001) (Table 2).

Table 1. Mean and standard deviation of burnout dimensions and core nursing resources (n=244)

Variable	Dimension	Scale	Mean (SD)
Burnout	Emotional exhaustion	Frequency	34.61 (12.68)
		Intensity	37.60 (13.17)
	Depersonalization	Frequency	11.71 (6.29)
		Intensity	13.20 (7.16)
	Reduced personal accomplishment	Frequency	35.64 (9.34)
		Intensity	37.69 (7.28)
Core nursing resources	Psychological resources		18.25 (4.60)
	Social resources		19.42 (5.71)
	Physical resources		14.04 (3.01)
	Total score		51.71 (10.12)

Table 2. Correlation between core nursing resources and burnout dimensions

Core nursing resources	Burnout dimension	r	P-value
Psychological resources	Emotional exhaustion (frequency)	-0.292**	<0.001
	Emotional exhaustion (intensity)	-0.320**	<0.001
	Depersonalization (frequency)	-0.170**	0.008
	Depersonalization (intensity)	-0.135*	0.035
	Reduced personal accomplishment (frequency)	0.354**	<0.001
	Reduced personal accomplishment (intensity)	0.193**	0.002
Social resources	Emotional exhaustion (frequency)	-0.009	0.885
	Emotional exhaustion (intensity)	-0.141*	0.027
	Depersonalization (frequency)	-0.035	0.582
	Depersonalization (intensity)	-0.074	0.251
	Reduced personal accomplishment (frequency)	0.885**	<0.001
	Reduced personal accomplishment (intensity)	0.409**	<0.001
Physical resources	Emotional exhaustion (frequency)	-0.273**	<0.001
	Emotional exhaustion (intensity)	-0.259**	<0.001
	Depersonalization (frequency)	-0.302**	<0.001
	Depersonalization (intensity)	-0.200**	0.002
	Reduced personal accomplishment (frequency)	0.286**	<0.001
	Reduced personal accomplishment (intensity)	0.129*	0.044
Total resources	Emotional exhaustion (frequency)	-0.329**	<0.001
	Emotional exhaustion (intensity)	-0.326**	<0.001
	Depersonalization (frequency)	-0.262**	<0.001
	Depersonalization (intensity)	-0.187**	0.003
	Reduced personal accomplishment (frequency)	0.336**	<0.001
	Reduced personal accomplishment (intensity)	0.193**	0.002
	Total burnout (frequency)	-0.149*	0.020
	Total burnout (intensity)	-0.205**	0.001

The table includes correlation coefficients (r) and P-values for each dimension of core resources in relation to burnout frequency and intensity. Significant relationships are marked by * for P-value<0.05 and ** for P-value<0.01.

Pearson correlation showed that core resources were positively correlated with age (r=0.136, P-value=0.033) and work experience (r=0.151, P-value=0.018). Based on ANOVA and independent t-tests, significant differences in core resources were found based on employment type, hospital, general health status, unit, job title, income satisfaction, professional satisfaction, and overtime. The significance level was set at P-value<0.05. Post-hoc analyses (Tukey) were

performed where ANOVA was significant; details are reported in the text (Table 3_a and 3_b).

Table 3a. Relationship between quantitative demographic variables and main study outcomes

Variable	Mean (SD)	Core nursing resources (P-value)	Burnout frequency (P-value)	Burnout intensity (P-value)
Age	32.18(6.58)	0.033 (r=0.136)	0.003 (r=-0.188)	0.013 (r=-0.159)
Correlation (r)		0.136	-0.188	-0.159
P-value		0.033	0.003	0.013
Work experience	8.65(6.82)	0.018 (r=0.151)	0.005 (r=-0.179)	0.021 (r=-0.148)
Correlation (r)		0.151	-0.179	-0.148
P-value		0.018	0.005	0.021

Table 3b. Comparison of mean±SD of core nursing resources and burnout (frequency and intensity) across categorical variables

Variable	Group (n)	Core nursing resources Mean±SD	Burnout frequency Mean±SD	Burnout intensity Mean±SD
Employment type	Company (n=11)	42.54±9.91	83.72±17.18	87.18±24.09
	Contract (n=9)	53.22±15.77	83.72±17.18	83.77±26.39
	Project (n=54)	50.64±9.32	75.00±19.63	93.38±19.89
	Permanent (n=57)	52.33±7.69	88.16±16.40	87.85±11.99
	Official (n=113)	52.68±10.71	77.12±14.20	86.98±23.32
	P-value*	0.025	0.016	0.378
Hospital	Beheshti (n=39)	56.43±9.99	79.48±19.30	80.58±20.47
	Mousavi (n=119)	51.58±8.49	82.62±18.18	91.45±33.21
	Valiasr (n=86)	49.74±11.57	82.19±17.28	87.98±18.78
	P-value*	0.003	0.636	0.016
Work unit	Internal (n=42)	50.42±13.51	84.11±16.68	88.61±20.79
	Surgery (n=27)	52.81±5.26	79.03±15.02	88.50±17.23
	CCU (n=23)	52.65±5.62	81.78±13.96	87.65±15.90
	ICU (n=34)	49.17±9.96	82.55±21.96	88.29±19.07
	Psychiatry (n=29)	57.20±9.16	77.34±15.62	79.37±20.40
	Burn (n=3)	56.33±7.37	58.33±3.21	75.66±9.60
	Cardiac (n=16)	55.25±11.26	87.31±21.74	96.93±28.71
	P-value*	0.014	0.175	0.149
Overall health status	Very poor (n=8)	40.37±13.21	105.25±20.14	122.00±72.20
	Poor (n=29)	47.10±10.42	87.41±30.17	91.75±14.15
	Normal (n=153)	52.42±9.32	82.12±38.18	88.49±55.20
	Good (n=39)	52.38±10.02	75.48±53.14	82.20±11.16
	Very good (n=15)	57.66±9.75	74.33±86.11	80.73±79.23
	P-value*	<0.001	<0.001	<0.001
Job title	Head nurse (n=7)	63.71±2.50	78.42±15.59	82.14±19.14
	Staff (n=7)	55.28±12.86	81.57±9.69	87.42±11.20
	Bedside nurse (n=225)	51.18±9.89	82.04±18.45	88.96±20.82
	His nurse (n=5)	53.60±8.01	84.20±10.03	77.60±19.08
	P-value*	0.009	0.950	0.534
Income satisfaction	Low (n=188)	50.32±9.51	83.58±18.54	90.88±20.82
	Moderate (n=56)	56.35±10.79	76.55±15.04	80.46±17.78
	P-value**	<0.001	0.010	<0.001
Professional satisfaction	Low (n=124)	49.30±9.84	86.47±19.35	94.68±21.68
	Moderate (n=102)	52.98±9.99	77.56±13.92	82.98±16.13
	High (n=18)	61.11±4.95	75.88±7.73	77.11±6.60
	P-value*	<0.001	<0.001	<0.001
Overtime	Yes (n=223)	51.00±9.93	82.53±18.01	89.21±20.41
	No (n=21)	59.19±9.28	76.00±17.29	80.90±21.61
	P-value*	<0.001	0.112	0.077

*** Independent t-test, ** One-way ANOVA**

Discussion

The findings of the present study showed that nurses working in the teaching hospitals of Zanjan were at mild to moderate levels in terms of core nursing resources. Specifically, psychological and physical resources were reported at moderate levels, while social resources were found to be favorable. These results are consistent with previous studies conducted in Iran and other countries, which also reported improvements in social support among nurses[8]. Factors such as the growing professional status of nursing, greater media attention to nurses' roles—particularly during the COVID-19 pandemic—and enhanced organizational communication and collaboration may have contributed to this improvement[21, 22].

Although several correlations between core nursing resources and burnout dimensions were statistically significant, the effect sizes were small (r=-0.149), suggesting weak but meaningful relationships. This finding indicates that burnout is multifactorial in nature, with multiple factors contributing cumulatively rather than any single variable exerting a dominant effect[23, 24]. Therefore, while statistically significant, these associations should be interpreted cautiously, and further studies with larger and more diverse samples are recommended to confirm these findings.

The results also revealed that emotional exhaustion was severe, while other dimensions of burnout were moderate. This is consistent with previous studies identifying emotional exhaustion as the most common and severe dimension of burnout among nurses[25, 26]. Interestingly, social resources demonstrated weaker correlations with emotional exhaustion compared to psychological or physical resources. One explanation may be that in high-pressure nursing environments, time constraints and heavy workloads limit the capacity of social support to buffer stress effectively[27]. Future research should therefore investigate not only the availability but also the quality and effectiveness of social support in mitigating emotional exhaustion among nurses.

A major finding of the study was the significant inverse relationship between core nursing resources and both the frequency and intensity of burnout. Nurses with greater access to psychological, social, and physical resources were less likely to experience burnout. This result supports theoretical models and empirical evidence emphasizing the importance of organizational support, positive interactions with managers and colleagues, and adequate working conditions as protective factors against burnout[28, 29]. Similarly, Van der Heijden et al. (2019) reported that access to job resources—including quality of leadership, professional development opportunities, and supervisor support—was associated with lower burnout and better job outcomes among nurses, underscoring the value of resourceful and supportive work settings[30].

Employment status also emerged as an important determinant. Burnout was higher among nurses with contractual or project-based employment, consistent with Garcia et al. (2016), who found that job insecurity and temporary contracts increase stress and emotional strain[16]. Such employment instability may expose nurses to psychological risks such as anxiety, reducing their motivation and negatively affecting care quality. Conversely, nurses reporting good health status had better access to resources and experienced lower burnout, confirming previous findings that improved overall health strengthens resilience and protects against occupational stress[31, 32].

Differences were also observed across clinical wards. Nurses in psychiatric wards had greater access to resources, while ICU nurses had the least. This finding likely reflects variations in job characteristics and work environments. Tomaszewska et al. (2024) similarly found that psychiatric nurses benefit from more social and psychological support, whereas ICU nurses face higher stress levels and limited resource access, factors associated with lower job satisfaction[33]. Moreover, the present study showed that 93.4% of nurses worked rotating shifts—a factor strongly linked to burnout and decreased quality of life. Dall'Ora et al. (2020) emphasized that rotating and night shifts increase the risk of sleep disorders, stress, and anxiety; thus, revising shift systems and providing psychological support for shift-working nurses are strongly recommended[34].

Consistent with Van der Heijden et al. (2019), contract and project-based nurses in the present study had lower access to nursing resources, reflecting their reduced job stability and organizational support[30].

The findings of the present study are consistent with international research reporting a negative association between workplace resources and burnout among nurses. For instance, studies conducted in Finland and Sweden have shown that higher levels of organizational and social support significantly reduce emotional exhaustion and depersonalization among nurses[35, 36]. In contrast, research from East Asian countries such as Japan and South Korea has indicated that cultural expectations of long working hours and hierarchical management structures may exacerbate burnout despite the availability of physical resources[37, 38].

Financial dissatisfaction also emerged as a major contributor to burnout. The majority of nurses expressed dissatisfaction with their income, which negatively affected their access to nursing resources. Dall'Ora et al. (2020) identified financial dissatisfaction as a key factor that undermines motivation and increases the likelihood of job turnover[34, 39]. Financial strain is also associated with mental health issues such as depression. In this study, 77% of nurses reported income dissatisfaction, directly linking financial strain to stress and emotional exhaustion. Prior studies have identified income level as a key determinant of job quality and turnover risk, suggesting that chronic financial stress depletes psychological and physical resources, thereby increasing vulnerability to burnout[40, 41].

A significant inverse relationship between age and burnout was also observed, indicating that as age increased, burnout decreased. This aligns with previous findings showing that younger nurses often experience higher burnout levels due to limited professional experience and coping skills, whereas older nurses are better equipped to manage stress through experience and support networks[42, 43]. Furthermore, only 7.4% of nurses reported full satisfaction with their profession, while more than half were dissatisfied. Given that job dissatisfaction

is a major driver of burnout and reduced productivity, this finding calls for urgent policy-level interventions[40, 41].

Overall, this study confirms that sufficient psychological, social, and physical resources play a critical role in reducing burnout and enhancing job satisfaction among nurses. It also highlights that financial dissatisfaction, temporary employment, and shift work remain key occupational stressors. The results are consistent with contemporary nursing research, emphasizing that access to resources, job security, shift patterns, and income satisfaction directly influence both burnout and job satisfaction. Improving nurses' well-being thus requires comprehensive reforms in human resource policies, enhanced managerial support, and improved work environments.

Conclusion: The present study highlighted the importance of core nursing resources as protective factors against burnout. The findings underscore the responsibility of policymakers and nursing managers to mitigate burnout by strengthening organizational support, optimizing workplace conditions, and addressing financial and welfare challenges. Strategies such as enhancing organizational communication, improving shift systems, increasing job satisfaction, and offering targeted support to vulnerable groups—including young nurses and those working in high-stress wards—are recommended. Future interventional and longitudinal studies are needed to further clarify the protective role of core nursing resources in reducing burnout and promoting sustainable nursing practice.

Implications: This study provides useful insights into core nursing resources and burnout among nurses working in teaching hospitals in Zanjan. The findings inform policymakers and healthcare leaders about the need to develop strategies to enhance access to resources and ultimately reduce burnout—thereby improving both nurses' well-being and patient care quality.

Ethical Considerations

Ethical approval was obtained from the ethics committee of Zanjan University of Medical Sciences (Ethical code:(IR.ZUMS.REC.1401.132). Informed written consent was obtained from all participants. All procedures performed in the studies involving human participants were following the institutional and/or National Research Committee's ethical standards and the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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Conflict of Interest

The author has declared no conflicts of interest in connection with this manuscript.

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