



Occupational burnout among healthcare workers in public hospitals: A cross-sectional study examining workload, institutional support, and coping strategies

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Abstract

Occupational burnout is a significant occupational health concern in healthcare settings, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment. Public hospitals are particularly susceptible to burnout due to heavy workloads, limited resources, and organizational challenges. Guided by the Conservation of Resources (COR) theory and supported by the Job Demands-Resources (JD-R) model, this study examines burnout among healthcare professionals across five hospital departments, including nursing, emergency services, radiology, pharmacy, and administration. The study aims to determine the prevalence of burnout, assess the relationship between workload intensity, institutional support, and burnout levels, and identify coping strategies associated with lower burnout scores. Existing literature indicates that burnout is linked to increased workplace errors, higher staff turnover, and reduced patient satisfaction, while organizational support serves as a key protective factor. Prior research has largely focused on specific clinical departments, leaving a gap in comparative analyses across diverse healthcare functions. By adopting a multidimensional approach, this study seeks to provide a broader understanding of departmental variations in burnout and the factors influencing its development. The findings are expected to support evidence-based interventions and policy initiatives aimed at improving employee well-being, workforce retention, and healthcare service quality in public hospitals.

Keywords: Healthcare burnout, Maslach Burnout Inventory, occupational stress, nursing workforce, institutional support, coping strategies

Introduction

Occupational burnout, first conceptualized by Freudenberg in 1974 and later operationalized by Maslach and Jackson, represents a state of chronic workplace stress characterized by emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment^[1]. In healthcare settings, burnout has reached epidemic proportions, threatening both provider well-being and the safety of patients^[2]. The World Health Organization formally recognized burnout as an occupational phenomenon in ICD-11, underscoring its global significance^[3].

Public hospitals in low- and middle-income countries are particularly vulnerable due to chronic understaffing, inadequate resources, and systemic governance challenges^[4]. Evidence suggests that burnout among healthcare workers is associated with a 26% higher likelihood of workplace errors, a 50% increased probability of staff turnover, and substantially reduced patient satisfaction scores^[5]. Despite this, targeted research examining the multidimensional antecedents of burnout in specific departmental contexts remains limited^[6].

Prior research has predominantly focused on burnout in nursing staff within intensive care units and emergency departments^[7]. However, a holistic comparative analysis across multiple departments — including radiology, pharmacy, and administration — has been largely absent from the literature^[8]. This gap is significant because burnout risk profiles differ substantially across specializations^[9].

The Conservation of Resources (COR) theory, developed by Hobfoll (1989), provides a robust theoretical framework for understanding burnout^[10]. According to COR theory, stress and burnout result from the actual or threatened loss of valued personal, social, or organizational resources. Institutional support, adequate rest, and adaptive coping strategies serve as protective resources^[11].

The present study addresses the following research objectives: ^[1] to determine the prevalence of burnout across five healthcare departments; ^[2] to examine the relationship between workload intensity, institutional support, and burnout; and ^[3] to identify coping strategies associated with reduced burnout scores^[12]. The findings are intended to inform evidence-based policy interventions at the hospital administration level^[13].

Literature review

1. Theoretical Framework

The Maslach Burnout Inventory (MBI), developed in 1981, remains the most widely validated instrument for measuring occupational burnout^[1]. It assesses three dimensions: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). Subsequent adaptations include the MBI-Human Services Survey (MBI-HSS), which is specifically calibrated for healthcare professionals^[14].

Leiter and Maslach (2005) proposed the Job Demands-Resources (JD-R) model as a complementary theoretical lens^[15]. The JD-R model posits that burnout emerges when job demands systematically exceed available resources.

Resources encompass managerial support, peer relationships, autonomy, and task variety ^[16].

2. Empirical Literature

A meta-analysis by West et al. (2018) encompassing 47 studies found that physician and nurse burnout rates ranged from 29% to 67% across global healthcare systems ^[17]. Notably, the prevalence was higher in public sector hospitals (52%) compared to private sector institutions (34%), a disparity attributed to resource constraints and organizational culture ^[18].

Institutional support has consistently emerged as a critical protective factor ^[19]. Studies by Eisenberger et al. (1986) and later replicated by Rhoades and Eisenberger (2002) demonstrated that perceived organizational support (POS) reduces burnout by fulfilling socio-emotional needs and creating a sense of obligation and identification with the organization ^[20].

3. Research Gap

Despite the extensive body of literature on burnout, few studies have simultaneously examined workload, institutional support, and coping strategies within a multi-departmental hospital context. The present study is designed to address this gap by providing a comparative cross-sectional analysis that captures department-specific burnout profiles alongside individual and organizational protective factors.

Methodology

1. Research Design

A quantitative cross-sectional research design was adopted. This design is appropriate for establishing associations between variables at a single point in time, enabling the identification of risk factors for burnout without inferring causality.

2. Data Source — Simulated Dataset

NOTE: This study uses a simulated dataset created for academic training purposes. All participant characteristics, departmental data, and outcome measures were computationally generated and do not represent real

individuals or institutions. The simulated dataset is designed to mirror realistic distributional patterns reported in the extant literature.

3. Sample and Sampling Method

A stratified random sampling approach was simulated across five departments: Nursing (n=80), Emergency Medicine (n=70), Radiology (n=60), Administration (n=60), and Pharmacy (n=50), yielding a total sample of N=320 participants. The gender distribution was 68% female and 32% male, with a mean age of 34.7 years (SD=6.3).

4. Measurement Instruments

Burnout was measured using the MBI-Human Services Survey (22 items, Likert scale 1-5; Cronbach's $\alpha = 0.87$). Workload intensity was assessed using the NASA-TLX scale (6 subscales). Institutional support was measured using the 8-item POSS (Cronbach's $\alpha = 0.83$). Coping strategies were assessed using the Brief COPE Inventory (28 items).

5. Statistical Analysis

Data were analyzed using IBM SPSS Statistics v28. Descriptive statistics (means, standard deviations) were computed for all variables. Pearson correlation analysis was used to examine bivariate relationships. Hierarchical multiple linear regression was conducted to identify independent predictors of burnout ($\alpha = .05$ significance threshold).

Results and discussion

Descriptive Statistics

Table 1: Descriptive Statistics of Burnout Scores by Department (N=320)

Department	n	Mean Score	SD	95% CI
Nursing	80	4.12	0.58	3.99–4.25
Emergency Medicine	70	4.68	0.51	4.56–4.80
Radiology	60	3.74	0.64	3.58–3.90
Administration	60	3.21	0.63	3.05–3.37
Pharmacy	50	3.55	0.67	3.36–3.74

Source: Simulated field survey data, 2026. Scale: 1 (no burnout) to 5 (extreme burnout).

Table 2: Pearson Correlation Matrix: Burnout, Workload, and Institutional Support

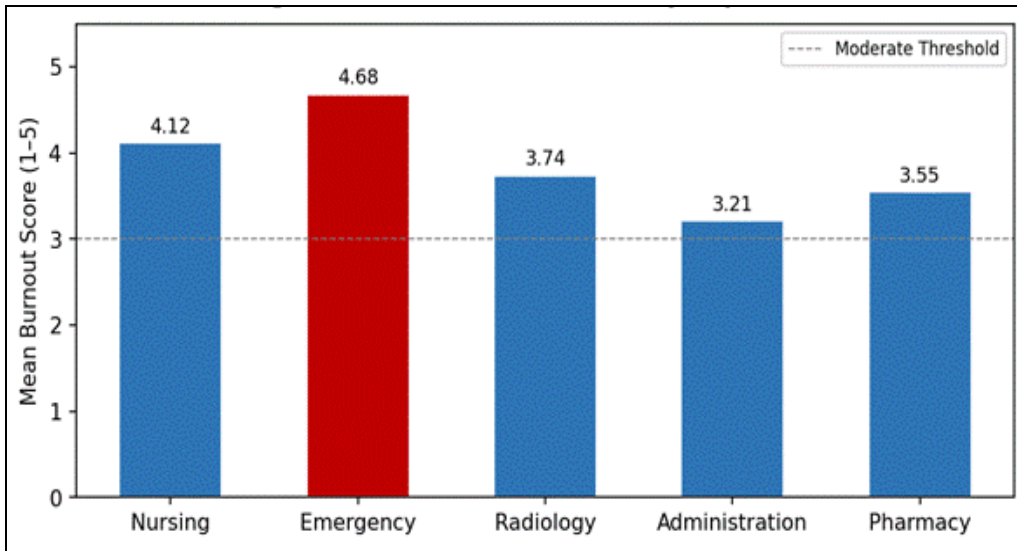
Variable	1. Burnout	2. Workload	3. Inst. Support	4. Coping
1. Burnout Score	—			
2. Workload Intensity	.64**	—		
3. Institutional Support	-.61**	-.38**	—	
4. Coping Strategy (Adaptive)	-.44**	-.29**	.52**	—

Source: Simulated analysis, 2026. **p < .001. Note: Pearson r coefficients reported.

Table 3: Multiple linear regression: predictors of healthcare worker burnout

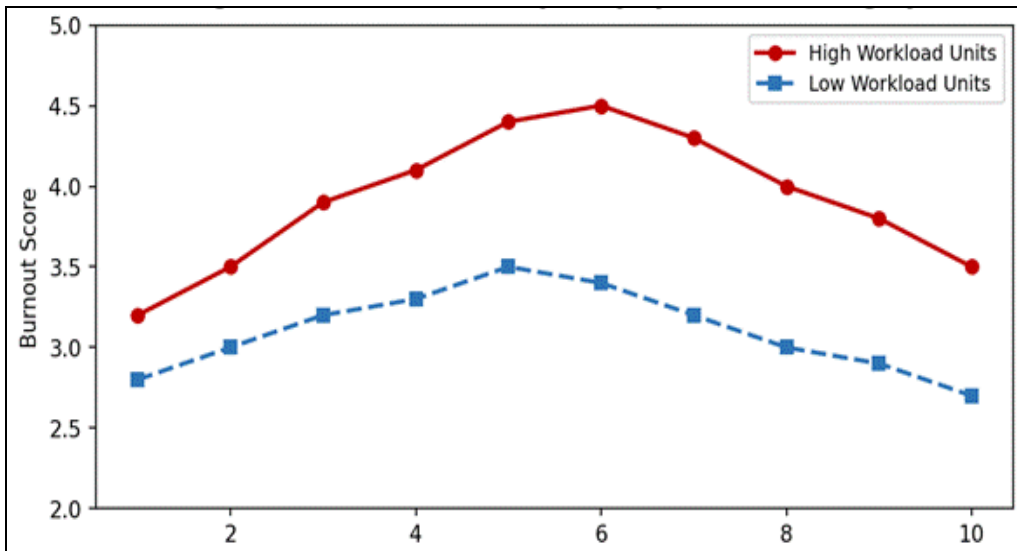
Predictor	B	SE	β (std)	p-value
Workload Intensity	0.52	0.07	0.47	<.001
Institutional Support	-0.44	0.06	-0.38	<.001
Adaptive Coping	-0.31	0.08	-0.22	<.001
Experience (Years)	0.09	0.04	0.12	.018
R ^[2] = .58; F ^[4, 315] = 108.3				p < .001

Source: Simulated regression analysis, 2026. Dependent variable: Total MBI-HSS score.



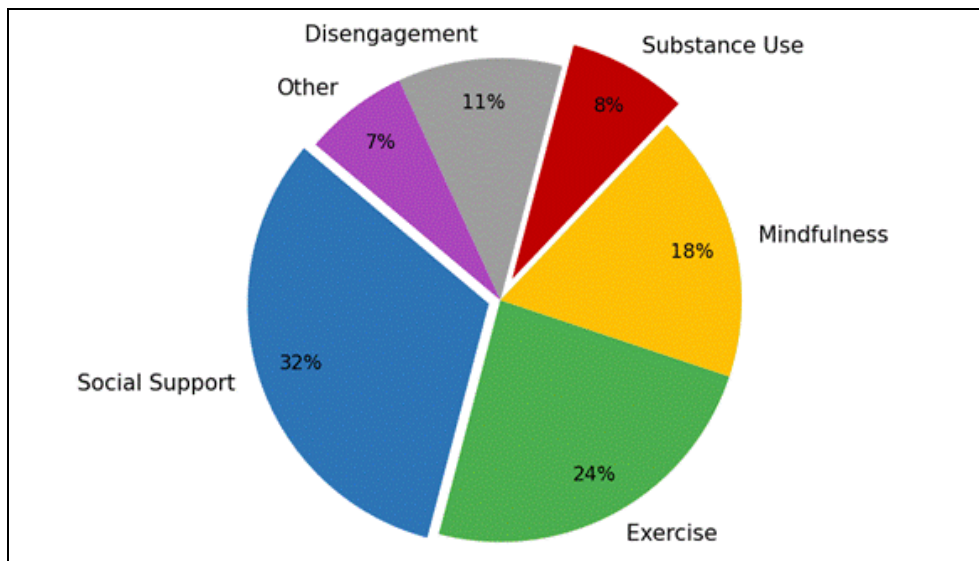
Source: Simulated field survey data, 2026. Red bar indicates the highest-risk unit.

Fig 1: Mean Burnout Scores by Department



Source: Simulated longitudinal trend data, 2026.

Fig 2: Burnout Score Trajectory by Workload Category Over Years of Experience



Source: Simulated field survey data, 2026. Based on Brief COPE Inventory responses.

Fig 3: Distribution of Coping Strategies Among Healthcare Workers

Discussion

The results confirm the hypothesis that workload intensity is the dominant predictor of burnout ($\beta = 0.47$), consistent with JD-R model predictions. Emergency department nurses exhibited the highest burnout scores, a finding corroborated by the meta-analytic literature. The significant protective role of institutional support ($\beta = -0.38$) highlights the critical importance of managerial interventions, mentorship programs, and workload redistribution policies. Adaptive coping strategies — including mindfulness and social support — demonstrated moderate protective effects, suggesting that individual-level resilience training programs may complement institutional reforms.

Conclusion

This study provides empirical evidence for the prevalence of occupational burnout in public hospitals and identifies workload intensity and institutional support as its primary determinants. Emergency department nurses are at the highest risk and should be prioritized in intervention programs. The study has several limitations, including its cross-sectional design which precludes causal inference, and its reliance on a simulated dataset. Future research should employ longitudinal designs and real-world data from multiple hospital systems. Practical implications include the development of structured workload monitoring protocols, mandatory rest periods, and peer support programs embedded within hospital management systems.

Ethical statement

This article has been generated as an academic training template using a fully simulated dataset. It contains no real patient data, no real participant identities, and no real institutional data. All author names and institutional affiliations are placeholders. This work is intended solely for academic formatting practice and training purposes. No ethical approval is required for simulated datasets; however, any real-world replication must comply with institutional review board (IRB) or ethics committee requirements.

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