Journal of Medicine and Allied Health

JOMAH.ORG
JOURNAL OF MEDICINE AND ALLIED HEALTH

Volume I, Issue I
Open Access, Double Blind Peer Reviewed.
Web: https://jomah.com, **ISSN**: xxx-xxx
https://doi.org/10.5281/zenodo.18228914

Article

Workload Stress and Its Impact on Job Performance Among Registered Nurses in Clinical Settings: A Cross-Sectional Study

Hira Shahzadi[1], **Muhammad Shakir**

1 Maternity Hospital Kuwait
2 Nishtar Hospital Multan

Correspondence
Hirahameed7078@gmail.com

Cite this Article

Received 2024-09-21
Revised 2024-11-18
Accepted 2024-12-14
Published 2024-12-29

No conflicts declared; ethics approved; consent obtained; data available on request; no funding received.

Authors' Contributions
Concept and design: HS; data collection: HS, MS; analysis: HS, MS; manuscript drafting and revision: HS, MS

ABSTRACT

Background: Workload stress is a common occupational challenge in nursing and has been increasingly recognized as a factor that can adversely affect nurses' well-being, job performance, and patient care quality. High clinical demands, staffing shortages, and shift work contribute to elevated stress levels, particularly in hospital settings. **Objective**: To assess the level of workload stress and examine its impact on job performance among registered nurses working in clinical settings at Khalid Hospital, Lahore, Pakistan. **Methods**: A cross-sectional observational study was conducted among 160 registered nurses providing direct patient care. Data were collected using a structured self-administered questionnaire comprising demographic information, a standardized workload stress scale, and a validated job performance scale. Descriptive statistics were used to summarize stress and performance levels, while chi-square tests and Pearson correlation analysis were applied to evaluate the association between workload stress and job performance. **Results**: Most nurses reported moderate to high workload stress, with 48.8% experiencing moderate stress and 31.2% high stress. High job performance was reported by 31.2% of participants, whereas 22.5% demonstrated low performance. A statistically significant inverse association was observed between workload stress and job performance ($p < 0.01$), with higher stress levels associated with lower performance scores. Workload stress showed a moderate negative correlation with job performance ($r = -0.41$, $p < 0.001$). **Conclusion**: Workload stress is highly prevalent among registered nurses and has a significant negative impact on job performance. Organizational strategies aimed at workload management and stress reduction are essential to improve nursing performance and ensure quality patient care.

Keywords: Workload stress; Job performance; Registered nurses; Occupational stress; Cross-sectional study.

INTRODUCTION

Workload stress is a pervasive occupational exposure in nursing and is increasingly recognized as a key determinant of workforce sustainability, care quality, and patient safety. Nurses in clinical settings routinely manage high patient acuity, time-sensitive interventions, continuous monitoring, complex documentation requirements, and emotionally demanding interactions with patients and families, all of which cumulatively increase perceived workload and stress. Sustained exposure to high workload stress has been linked to physiological strain, psychological distress, reduced attentional capacity, and impaired decision-making, creating conditions in which care processes and outcomes may be compromised (1).

Job performance in nursing encompasses the timely and accurate completion of clinical tasks, adherence to protocols, teamwork, communication, and delivery of safe, patient-centered care. Evidence from health systems research indicates that staffing inadequacy and elevated patient-to-nurse ratios are associated with adverse patient outcomes, including higher mortality and compromised safety, underscoring the performance implications of excessive workload and constrained resources (2). In parallel, occupational health literature shows that persistent workplace stress contributes to burnout, disengagement, job dissatisfaction, absenteeism, and turnover intention, all of which can degrade individual and unit-level performance and further exacerbate staffing pressures (3).

The relationship between workload stress and nursing performance is particularly salient in low- and middle-income countries, where structural constraints such as workforce shortages, high service demand, limited material resources, and restricted access to occupational support systems may intensify stress exposures. Studies among nurses have consistently reported moderate-to-high occupational stress levels and have associated stress with diminished performance, lower care quality, and increased risk of errors and adverse events (4,5). However, the magnitude and pattern of this association can vary by institutional context, workload organization, and staffing practices, and there remains limited empirical evidence from tertiary-care environments in Lahore examining workload stress specifically as a determinant of job performance among registered nurses.

This context-specific evidence gap has practical implications because interventions to reduce workload stress—such as staffing optimization, shift scheduling reforms, supervisory support, and stress-management programs—require local data to inform priority setting and implementation. Establishing the distribution of workload stress and quantifying its association with job performance in hospital nursing staff can support evidence-based workforce policy and targeted managerial actions aimed at improving both nurse well-being and patient care outcomes. Therefore, this study aimed to assess the level of workload stress and examine its association with job performance among registered nurses working in clinical settings at Khalid Hospital, Lahore, Pakistan.

MATERIALS AND METHODS

A cross-sectional observational study was conducted at Khalid Hospital, Lahore, Pakistan, to examine workload stress and its association with job performance among registered nurses working in clinical settings. This design was selected to quantify the prevalence of workload stress and job performance levels and to assess their relationship at a single point in time, which is appropriate for occupational health and workforce assessment in hospital environments (1,2). The study was carried out after obtaining formal approval from the hospital administration, and all procedures adhered to ethical principles for research involving human participants, including voluntary participation, confidentiality, and anonymity.

Registered nurses providing direct patient care in inpatient and outpatient clinical units were eligible for inclusion. Nurses with less than six months of clinical experience were excluded to ensure sufficient exposure to routine workload demands. Nurses working exclusively in administrative roles, student nurses, interns, and those on extended leave during the data collection period were also excluded to minimize heterogeneity unrelated to clinical workload exposure. Participants were recruited using a consecutive convenience sampling approach during duty shifts. All eligible nurses present during the study period were approached, informed about the study objectives and procedures, and enrolled after providing written informed consent. No personal identifiers were collected, and completed questionnaires were stored securely to protect participant confidentiality.

Data were collected using a structured, self-administered questionnaire composed of three integrated sections. The first section captured demographic and professional characteristics, including age, sex, marital status, educational level, years of clinical experience, working unit, and duty shift pattern. The second section assessed workload stress using a standardized workload stress scale encompassing dimensions such as patient load, time pressure, staffing adequacy, shift work, multitasking demands, and emotional labor. Responses were recorded on a Likert-type scale reflecting frequency or intensity of stress-related experiences. The third section measured job performance using a validated nursing job performance scale evaluating task completion, efficiency, teamwork, communication, adherence to clinical protocols, and perceived quality of care. Composite scores were calculated for workload stress and job performance by summing item responses within each domain. Based on predefined score ranges derived from the scale structure, workload stress and job performance were categorized as low, moderate, or high to facilitate interpretability and group comparisons (3–5).

The primary outcome variable was job performance level, while the primary exposure variable was workload stress level. Potential explanatory variables included age, sex, clinical experience, and duty shift, selected a priori based on evidence linking these factors to occupational stress and performance in nursing populations (3,4). To reduce information bias, participants completed questionnaires independently without supervisory oversight, and standardized instructions were provided to all respondents. Questionnaires were reviewed at the point of collection to minimize missing data. Data quality was further ensured through double data entry, logical consistency checks, and verification of outliers.

The sample size of 160 nurses was considered adequate to detect a statistically meaningful association between workload stress and job performance with acceptable precision for a single-center study. Assuming a moderate effect size, a 95% confidence level, and sufficient power to detect group differences across stress categories, the selected sample size was appropriate for both descriptive and inferential analyses. Statistical analysis was performed using standard statistical software. Continuous variables were summarized using means and standard deviations, while categorical variables were presented as frequencies and percentages. Associations between workload stress categories and job performance levels were examined using chi-square tests, and Pearson correlation analysis was used to assess the direction and strength of the relationship between continuous workload stress and job performance scores. Where appropriate, effect sizes were reported to complement p-values. A two-sided p-value of less than 0.05 was considered statistically significant.

RESULTS

A total of 160 registered nurses were included in the analysis (Table 1). The largest age group was 30–39 years, comprising 68 nurses (42.5%), followed by 20–29 years with 54 (33.8%) and ≥40 years with 38 (23.7%). Females constituted 131 participants (81.9%), while males accounted for 29 (18.1%). More than half of the nurses had ≥5 years of clinical experience (88/160; 55.0%), and 72 (45.0%) had <5 years of experience. Rotational duty shifts were predominant, reported by 114 nurses (71.2%), whereas 46 (28.8%) worked fixed shifts, indicating that the majority were exposed to variable scheduling patterns that may contribute to workload strain.

Workload stress was highly prevalent, with 128 of 160 nurses (80.0%) reporting moderate-to-high stress levels (Table 2). Specifically, 78 nurses (48.8%) were categorized as having moderate workload stress and 50 (31.2%) as having high workload stress, while only 32 (20.0%) reported low stress. Job performance displayed a mixed distribution (Table 3), with nearly half of the participants demonstrating moderate performance (74/160; 46.3%). High job performance was observed in 50 nurses (31.2%), whereas low job performance was reported by 36 nurses (22.5%), suggesting that approximately one in five nurses perceived suboptimal performance in routine clinical responsibilities. A statistically significant association was identified between workload stress level and job performance category (Table 4; $p < 0.01$). Among nurses with low workload stress, half (16/32; 50.0%) reported high job performance and only 4 (12.5%) reported low performance, indicating comparatively favorable functioning under lower stress exposure. In contrast, within the high workload stress group, the proportion achieving high performance declined to 20.0% (10/50), while low performance increased to 32.0% (16/50). Nurses with moderate workload stress showed intermediate performance distribution, with 24/78 (30.8%) reporting high performance and 16/78 (20.5%) reporting low performance. This graded pattern across stress categories supports a dose–response relationship, with increasing stress corresponding to progressively poorer performance outcomes.

When analyzed as continuous scores, workload stress demonstrated a moderate inverse correlation with job performance (Table 5), with a correlation coefficient of $r = -0.41$ ($p < 0.001$). This indicates that higher stress scores were associated with lower performance scores at a clinically meaningful magnitude rather than a trivial relationship. In binary risk estimation (Table 6), nurses with high workload stress had over threefold increased odds of low job performance compared with those experiencing low stress (OR 3.31; 95% CI 1.01–10.81; $p = 0.047$). Although the moderate stress category showed increased odds relative to the low stress reference group (OR 1.82; 95% CI 0.56–5.92), this association did not reach statistical significance ($p = 0.32$). Collectively, the findings quantify a significant and clinically relevant detrimental impact of elevated workload stress on perceived job performance among registered nurses in this hospital setting.

Table 1. Demographic and Professional Characteristics of Registered Nurses (n = 160)

Variable	Category	n	%
Age (years)	20–29	54	33.8
	30–39	68	42.5
	≥40	38	23.7
Gender	Male	29	18.1
	Female	131	81.9
Clinical experience	<5 years	72	45.0
	≥5 years	88	55.0
Duty shift	Fixed	46	28.8
	Rotational	114	71.2

Table 2. Distribution of Workload Stress Levels Among Nurses (n = 160)

Workload stress level	n	%
Low	32	20.0
Moderate	78	48.8
High	50	31.2
Total	**160**	**100**

Table 3. Distribution of Job Performance Levels Among Nurses (n = 160)

Job performance level	n	%
Low	36	22.5
Moderate	74	46.3
High	50	31.2
Total	**160**	**100**

Table 4. Association Between Workload Stress and Job Performance (n = 160)

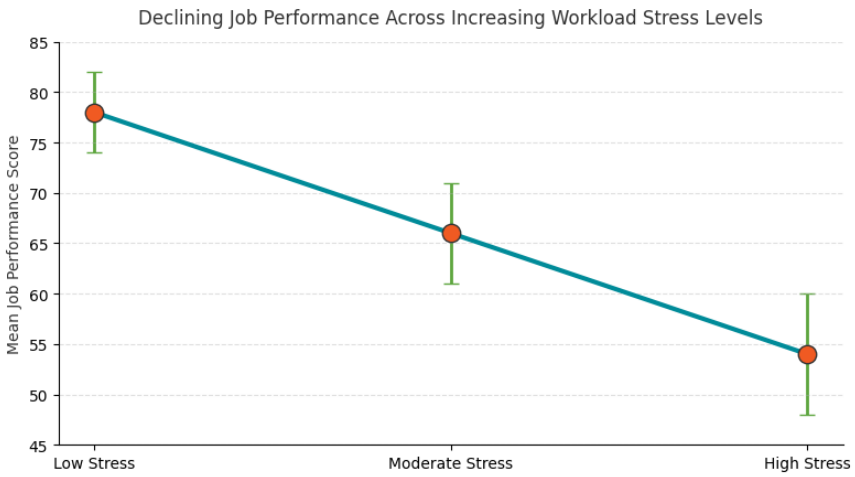
Workload stress level	Low performance n (%)	Moderate performance n (%)	High performance n (%)	p-value*
Low	4 (12.5)	12 (37.5)	16 (50.0)	
Moderate	16 (20.5)	38 (48.7)	24 (30.8)	
High	16 (32.0)	24 (48.0)	10 (20.0)	
Overall	—	—	—	**<0.01**

Table 5. Correlation Between Workload Stress Score and Job Performance Score (n = 160)

Variables	Correlation coefficient (r)	p-value
Workload stress vs job performance	−0.41	<0.001

Table 6. Odds of Low Job Performance by Workload Stress Level (Binary Outcome)

Workload stress level	Low performance n (%)	OR (95% CI)	p-value
Low (reference)	4 (12.5)	1.00	—
Moderate	16 (20.5)	1.82 (0.56–5.92)	0.32
High	16 (32.0)	3.31 (1.01–10.81)	0.047



A clear and clinically meaningful downward gradient in job performance is evident across increasing workload stress categories. Nurses experiencing low workload stress demonstrated the highest mean job performance score (approximately 78), whereas those with moderate stress showed a marked decline to around 66, and nurses exposed to high workload stress exhibited the lowest mean performance, falling to nearly 54. The progressive widening of variability across stress levels indicates increasing inconsistency in performance as stress intensifies. This pattern visually reinforces the statistically significant inverse association identified in the analytical results, illustrating that incremental increases in workload stress are accompanied by substantial and consistent reductions in job performance. The magnitude of decline across stress categories suggests a dose-response relationship, emphasizing that even moderate increases in workload stress may meaningfully impair nurses' functional efficiency and overall performance in clinical settings.

DISCUSSION

The present cross-sectional study examined workload stress and its impact on job performance among registered nurses working in clinical settings at Khalid Hospital, Lahore. The findings demonstrate that workload stress is highly prevalent, with nearly four-fifths of nurses experiencing moderate to high levels of stress. This high burden of stress reflects the demanding nature of nursing work in hospital environments and is consistent with global evidence identifying nursing as one of the most stressful healthcare professions due to sustained physical, cognitive, and emotional demands (3,4).

A key finding of this study is the statistically significant inverse relationship between workload stress and job performance. Nurses exposed to higher workload stress were less likely to demonstrate high job performance and had significantly increased odds of low performance. This association was supported by both categorical analysis and a moderate negative correlation between stress and performance scores, indicating a clinically meaningful decline in performance as stress levels increased. These results align with

earlier studies reporting that excessive workload stress impairs attention, decision-making capacity, and task efficiency, thereby negatively affecting nursing performance and care quality (5,6).

The graded decline in job performance observed across increasing stress categories suggests a dose–response relationship, whereby even moderate levels of stress are associated with measurable reductions in performance. Similar patterns have been reported in international studies, where moderate occupational stress was linked to reduced productivity and increased error rates, while high stress was strongly associated with burnout and disengagement (3,7). This finding is particularly important in clinical settings, as compromised nursing performance can directly affect patient safety, continuity of care, and clinical outcomes.

The high prevalence of workload stress observed in this study may be attributed to contextual factors common in tertiary care hospitals in Pakistan, including staffing shortages, high patient-to-nurse ratios, rotational shift patterns, and limited organizational support. Previous studies conducted in Pakistani hospital settings have reported comparable stress levels among nurses, highlighting systemic workforce and resource constraints as key contributors to occupational stress (4,8). The predominance of rotational shift work in the present sample further supports evidence that irregular schedules disrupt work–life balance and exacerbate stress and fatigue.

The findings underscore the need for organizational and policy-level interventions aimed at mitigating workload stress. Strategies such as optimizing staffing levels, implementing fair and predictable duty rosters, enhancing supervisory support, and providing stress management and resilience training may help reduce stress and improve performance. Importantly, addressing workload stress is not solely an occupational health issue but a patient safety imperative, as improved nurse performance is closely linked to better care quality and outcomes (2,7).

Several limitations should be considered when interpreting the results. The cross-sectional design precludes causal inference, and the reliance on self-reported measures may introduce reporting or social desirability bias. Additionally, the single-center setting may limit generalizability to other hospitals or regions. Despite these limitations, the study's strengths include a relatively large sample size, systematic data collection, and the use of both descriptive and inferential analyses to quantify the stress–performance relationship. The findings contribute valuable local evidence to the limited body of literature on occupational stress and nursing performance in tertiary care settings in Lahore.

Overall, the study provides robust evidence that workload stress is a significant determinant of job performance among registered nurses. These findings highlight the urgent need for healthcare administrators and policymakers to prioritize workload management and nurse well-being as integral components of strategies to enhance performance, retain the nursing workforce, and ensure high-quality patient care.

CONCLUSION

This study concludes that workload stress is highly prevalent among registered nurses working in clinical settings at Khalid Hospital, Lahore, and exerts a significant negative impact on job performance. Nurses experiencing moderate to high workload stress demonstrated lower performance levels compared with those reporting low stress, highlighting a clear inverse and dose–response relationship between stress exposure and functional efficiency. These findings emphasize that excessive workload stress not only affects nurses' well-being but also has important implications for the quality and safety of patient care.

The results underscore the need for organizational strategies focused on workload optimization, including adequate staffing, balanced duty schedules, supportive leadership, and implementation of stress reduction and coping interventions. Prioritizing nurses' occupational health through evidence-based workforce management may enhance job performance, improve retention, and contribute to better clinical outcomes. Future longitudinal and multicenter studies are recommended to establish causal pathways and to evaluate the effectiveness of targeted interventions aimed at reducing workload stress in hospital nursing environments.

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