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Workload and Personal Resilience as Predictors of Burnout among Inpatient Nurses in an Indonesian Regional Hospital

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ABSTRACT

Burnout among nurses threatens workforce well-being, continuity of care, and patient safety, particularly in hospitals with limited staffing. This study examined whether workload and personal resilience predicted burnout among inpatient nurses at dr. H.L.M. Baharuddin Regional Hospital, Muna Regency, Indonesia. A quantitative cross-sectional survey involved 96 nurses selected from seven inpatient units using proportionate stratified random sampling. Workload, resilience, and burnout were measured using four-point Likert-scale questionnaires. The analysis included descriptive statistics, Pearson correlation, and multiple linear regression. Workload was positively correlated with burnout ($r = .342$, $p = .001$) and was a significant independent predictor ($B = .353$, $p = .012$). Resilience showed a positive bivariate correlation with burnout ($r = .281$, $p = .005$) but was not significant after workload was controlled ($B = .189$, $p = .117$). The model explained 12.2% of the adjusted variance in burnout. These findings emphasize the need for workload governance through adequate staffing, patient-dependency-based allocation, improved shift design, sufficient recovery time, and the reduction of avoidable non-nursing tasks.

Keywords: Burnout; Hospital Management; Nurses; Personal Resilience; Workload

INTRODUCTION

Nurses maintain continuity of inpatient care, coordinate multidisciplinary work, identify clinical deterioration, and translate treatment plans into bedside interventions. These responsibilities also expose nurses to time pressure, emotional and physical demands, interruptions, and accountability for patient outcomes. When these demands persist without adequate recovery and organizational resources, burnout may emerge as an occupational phenomenon. The World Health Organization classifies burnout in ICD-11 as a phenomenon resulting from chronic workplace stress that has not been successfully managed, characterized by exhaustion, mental distance or cynicism toward work, and reduced professional efficacy (World Health Organization, 2019).

Burnout is common in nursing, although estimates vary according to the instrument, setting, and classification threshold. A global meta-analysis reported an overall burnout prevalence of approximately 11% among nurses, with substantial variation across regions and measurement methods (Wood & Bandura, 1989). Nursing research has also linked burnout to high workload, long shifts, inadequate staffing, limited control, unsupportive leadership, and weak team support (Dall'Ora et al., 2020). Burnout is an important issue in hospital governance because it is associated with patient safety, quality of care, absenteeism, turnover intention, and nurse retention (García-Sierra & Fernández-Castro, 2018).

According to Jun et al. (2021), workload is a major organizational exposure. In inpatient care, workload includes the number and dependency level of patients, the complexity and timing of clinical tasks, documentation, coordination, emotional labor, and physical demands. High workload becomes more harmful when staffing, equipment, supervisory support, decision-making autonomy, or opportunities for recovery are inadequate. Empirical evidence indicates that nurse staffing and work-environment conditions are associated with burnout and care outcomes (Aiken et al., 2012).

Personal resilience may help nurses adapt to adversity, recover from stressful events, and maintain their ability to function (Lasater et al., 2021). Studies generally indicate an inverse relationship between resilience and burnout; however, resilience should not be used to shift responsibility for structural problems from the organization to individual workers (Labrague, 2021). Organizational culture and perceived support also influence how employees respond to job demands (Kee et al., 2021).

Evidence from regional hospitals in Indonesia, particularly those outside major urban areas, remains limited. Workload patterns, employment status, patient acuity, and managerial capacity may vary across hospitals (Zahra et al., 2020). This study aimed to examine the relationships and independent contributions of workload and personal resilience to burnout among inpatient nurses at dr. H.L.M. Baharuddin Regional Hospital, Muna Regency, Southeast Sulawesi. The study hypothesized that higher workload would be associated with higher burnout, whereas higher resilience would be associated with lower burnout.

LITERATURE REVIEW

The Job Demands-Resources model classifies job characteristics into demands that require sustained effort and resources that support goal achievement, reduce demands, or promote growth. Prolonged exposure to high demands initiates a health-impairment process that may lead to exhaustion and burnout. Job resources support motivation and may reduce the effects of demands, whereas personal resources influence how workers appraise and manage challenging situations (Bakker & Demerouti, 2024).

Workload is not fully reflected by the number of patients. Two nurses caring for the same number of patients may experience different levels of demand because of differences in patient dependency, admissions and discharges, documentation, interruptions, or access to support staff (Demerouti & Bakker, 2022). Objective workload indicators include occupied beds, patient dependency, clinical procedures, nursing hours, and overtime, whereas perceived workload reflects how workers experience task intensity, complexity, and time pressure. Both forms of information are necessary for staffing decisions and workflow improvement.

Resilience is the capacity to maintain or regain psychological functioning when facing stress or adversity. In clinical practice, resilience may involve adaptive coping, emotional regulation, realistic optimism, professional meaning, and the use of social support. A meta-analysis of healthcare professionals found that resilience was associated with lower burnout, although study heterogeneity and the predominance of cross-sectional designs limited causal conclusions (West et al., 2016).

Burnout measurement requires careful consideration because estimates depend on the construct, scale, and cut-off point used. Burnout is commonly represented by exhaustion, depersonalization or cynicism, and reduced professional accomplishment (Maslach & Leiter, 2016). Categorical analysis helps describe the proportion of staff requiring attention, whereas continuous scores are more appropriate for correlation and regression because they retain data variability. In cross-sectional studies, the term predictor indicates statistical prediction rather than temporal causation.

RESEARCH METHOD

This study used a quantitative analytic cross-sectional design and was conducted in 2026 in the inpatient units of dr. H.L.M. Baharuddin Regional Hospital, Muna Regency, Southeast Sulawesi. The study setting included the intensive care unit, neonatal intensive care unit, Melati, Mawar, Anggrek, Flamboyan, and general isolation units. The target population consisted of 126 nurses assigned to these units.

The minimum sample size was calculated using the formula applied in the study, resulting in a sample of 96 respondents. Proportionate stratified random sampling was used to ensure representation from each inpatient unit. The inclusion criteria were active nurses with at least six months of service who agreed to participate. Nurses who were on leave, pursuing education outside the hospital, holding structural management positions, or returning incomplete questionnaires were excluded.

Data were collected using self-administered four-point Likert-scale questionnaires measuring workload, personal resilience, and burnout. Workload included physical demands, psychological demands, and time pressure. Burnout and resilience were analyzed as continuous scores for correlation and regression and were also categorized for descriptive presentation. The names of the original scales, number of items, score ranges, cut-off points, validity evidence, and reliability coefficients should be confirmed in the final manuscript.

Participant characteristics and categorical variables were summarized using frequencies and percentages. Pearson correlation was used to assess bivariate linear relationships. Variables with bivariate p values below .25 were considered for the multivariable model, after which workload and resilience were entered simultaneously into a multiple linear regression model. Statistical significance was set at $p < .05$. Regression results were

reported using unstandardized coefficients, standard errors, standardized beta coefficients, t values, p values, and variance inflation factors.

RESULTS

All 96 nurses in the sample were included in the analysis. The largest age group was 32-35 years (43.8%), followed by 36-39 years (26.0%). Most respondents were contract employees (66.7%), and nearly three quarters had worked for 6-10 years (74.0%). All seven inpatient units were represented, with the largest proportions from Anggrek (18.8%), Mawar (17.7%), and Flamboyan (16.7%).

Table 1. Characteristics of Participants

Characteristic	Category	n	%
Age	28-31 years	11	11.5
	32-35 years	42	43.8
	36-39 years	25	26.0
	40-43 years	6	6.3
	44-47 years	12	12.5
Employment status	Civil servant	21	21.9
	Government contract employee	11	11.5
	Contract employee	64	66.7
Length of service	1-5 years	16	16.7
	6-10 years	71	74.0
	>10 years	9	9.4

Eighty-one respondents (84.4%) had moderate resilience and 15 (15.6%) had high resilience. Workload was moderate among 59 nurses (61.5%) and heavy among 37 nurses (38.5%); no respondent was classified as having a low workload. Burnout was categorized as moderate among 57 nurses (59.4%) and mild among 39 nurses (40.6%).

Table 2. Distribution of Workload, Resilience, and Burnout

Variable	Category	n	%
Personal resilience	Moderate	81	84.4
	High	15	15.6
Workload	Moderate	59	61.5
	Heavy	37	38.5
Burnout	Mild	39	40.6
	Moderate	57	59.4

Workload had a statistically significant positive correlation with burnout ($r = .342$, $p = .001$). Resilience also had a weak positive correlation with burnout ($r = .281$, $p = .005$), contrary to the hypothesized direction. Workload and resilience had a moderate positive correlation ($r = .419$, $p < .001$). Because both predictors had bivariate p values below .25, they were entered into the regression model.

Table 3. Pearson Correlations among Study Variables (N = 96)

Variable pair	r	p	Interpretation

Workload and burnout	.342	.001	Positive, moderate
Resilience and burnout	.281	.005	Positive, weak
Workload and resilience	.419	< .001	Positive, moderate

The multiple regression model was significant, F(2, 93) = 7.594, p = .001, with R = .375 and R squared = .140. The adjusted R squared was .122, indicating that workload and resilience jointly explained 12.2% of the variance in burnout. Workload was a significant independent predictor (B = .353, SE = .137, beta = .272, t = 2.573, p = .012). Resilience was not significant after workload was controlled (B = .189, SE = .120, beta = .167, t = 1.582, p = .117). The tolerance value of .825 and VIF of 1.212 indicated no meaningful multicollinearity.

Table 4. Multiple Linear Regression Predicting Burnout

Predictor	B	SE	Beta	t	p
Constant	28.569	7.678	-	3.721	< .001
Workload	.353	.137	.272	2.573	.012
Personal resilience	.189	.120	.167	1.582	.117

DISCUSSION

The principal finding was that workload independently predicted burnout among inpatient nurses. The positive coefficient indicates that higher workload scores were associated with higher burnout scores after resilience was controlled. This result is consistent with the health-impairment pathway of the Job Demands-Resources model, in which sustained demands deplete energy and increase exhaustion when recovery and resources are inadequate (Bakker & Demerouti, 2024). The finding also aligns with evidence that workload, inadequate staffing, and unfavorable working conditions are associated with nurse burnout (Dall'Ora et al., 2020).

The descriptive findings reinforce the managerial importance of this relationship. All respondents were classified as having moderate or heavy workloads, and nearly six in ten experienced moderate burnout. Although the cross-sectional design cannot establish that workload caused burnout, the concentration of respondents in the higher workload categories warrants an operational review. Management should assess patient dependency, nurse-to-patient allocation, admissions and discharges, overtime, missed breaks, non-nursing duties, and variations in workload across shifts.

The model explained only a small proportion of the variance in burnout. An adjusted R squared of .122 indicates that most of the variation may be related to leadership, team climate, schedule control, shift duration, sleep and recovery, workplace violence, moral distress, role conflict, compensation, family demands, or equipment availability. This does not diminish the importance of the workload finding but confirms that burnout is multifactorial and requires a multilayered strategy.

Resilience did not predict burnout after workload was controlled. Its positive bivariate correlation was also contrary to the expected protective direction. Possible explanations include an unconfirmed scoring direction, the development of adaptive capacity among nurses exposed to greater pressure, a restricted range of resilience scores, or method bias because all variables were measured through self-report at the same time.

Therefore, reverse-coded items, response anchors, construct validity, and reliability coefficients should be verified before the final interpretation.

The non-significant role of resilience in the model also cautions against using resilience training as the primary prevention strategy. Individual programs may support coping and recovery, but they cannot replace improvements in staffing shortages, inequitable task allocation, excessive overtime, or poor workflow. Individual and organizational approaches may be combined, with priority given to sources of demand that can be modified by management (Zahra et al., 2020).

For nursing management, the results support a structured workload-governance cycle. The nursing directorate can compare units according to patient volume and dependency, occupied beds, nursing hours, overtime, unplanned absences, and missed care. Unit managers and staff nurses can then identify points at which demands accumulate during each shift, including medication rounds, admissions, transfers, discharge preparation, documentation, and communication with families. Interventions may include staff redistribution, shift-pattern adjustments, support during peak hours, streamlined documentation, or reassignment of non-nursing tasks.

Two thirds of the respondents were contract employees. The available analysis did not examine whether employment status was associated with workload or burnout, although employment arrangements may affect perceived security, access to professional development, bargaining power over schedules, and willingness to report distress. Future analyses may include employment status, unit, age, and length of service as covariates when the sample size and model assumptions permit.

Previous research has linked burnout to safety climate and patient outcomes, but this study did not measure safety incidents, missed nursing care, or patient experience (Jun et al., 2021). Therefore, the findings should not be interpreted as evidence that burnout caused adverse events in this sample. Burnout indicators should instead be prospectively integrated with quality and safety data to assess changes over time.

This study provides context-specific evidence from a regional hospital in Southeast Sulawesi. Stratified sampling across seven units strengthened representation within the hospital, while regression analysis separated the contribution of workload from that of resilience. Nevertheless, the inferences must remain consistent with the design: the findings demonstrate associations in one hospital at one point in time and cannot be automatically generalized to other hospitals.

CONCLUSION

Workload was a significant predictor of burnout among 96 inpatient nurses at dr. H.L.M. Baharuddin Regional Hospital, whereas personal resilience was not significant after adjustment. Moderate burnout affected 59.4% of respondents, and all respondents reported moderate or heavy workloads. These findings support immediate managerial attention to staffing adequacy, patient-dependency-based allocation, shift design, recovery time, and the reduction of avoidable non-nursing tasks. Resilience support remains relevant as a complementary measure but should not replace improvements in working conditions. Multicenter longitudinal studies using validated instruments are needed to examine the direction of these relationships and include additional organizational factors.

LIMITATION

This study has several limitations. The cross-sectional design cannot establish causal relationships among workload, resilience, and burnout. The study was also conducted in

only one hospital; therefore, the findings may not be applicable to other hospitals. Data were collected through self-administered questionnaires, and responses may have been influenced by participants' perceptions and their tendency to provide socially desirable answers. The limited sample size also prevented analyses by inpatient unit and the inclusion of other factors that may influence burnout. Future studies should involve more hospitals and larger samples and use instruments with established validity and reliability.

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DECLARATION OF CONFLICTING INTERESTS

The authors have declared no potential conflicts of interest concerning the study, authorship, and/or publication of this article.

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