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Research Article

THE RELATIONSHIP BETWEEN NURSE WORKLOAD AND THE QUALITY OF NURSING CARE IN THE INPATIENT WARD AT MUHAMMADIYAH BABAT GENERAL HOSPITAL

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Abstract:

Background: The quality of nursing care represents a core barometer of clinical hospital performance, heavily modulated by staff workload. An excessive or disproportionate nursing workload provokes physical and emotional exhaustion, delays clinical responsiveness, and increases missed nursing care, directly threatening patient safety and clinical satisfaction.

Objective: To analyze the empirical relationship between nurse workload and the quality of nursing care in the inpatient ward at Muhammadiyah Babat General Hospital (Muhammadiyah Babat Hospital). Methods: A quantitative correlational study utilizing a cross-sectional approach was conducted in 2026. The study recruited all 43 registered nurses assigned to inpatient wards (Jannatun Naim/Firdaus, Jannatul Ma'wa, and ICU) using a total sampling technique. Primary data were gathered using validated structured Likert-scale questionnaires measuring multidimensional workload (physical, mental, emotional, temporal, and non-clinical demands) and nursing care quality (safety, timeliness, efficiency, effectiveness, patient-centeredness, equity, and integrated care). Data were evaluated through descriptive univariate analysis and bivariate Spearman's rank correlation.

Results: The majority of respondents perceived their workload in the moderate category (53.5%, n = 23), with 32.6% (n = 14) reporting low workload and 14.0% (n = 6) reporting high workload. Similarly, nursing care quality was predominantly appraised in the moderate category (58.1%, n = 25), while 20.9% (n = 9) rated it as high and 20.9% (n = 9) as low. Bivariate statistical analysis revealed a statistically significant relationship between nurse workload and nursing care quality (Spearman's rho = 0.579, $p < 0.001$), reflecting a moderate positive correlation.

Conclusion: Nurse workload is significantly correlated with the quality of nursing care delivered in the inpatient wards of Muhammadiyah Babat Hospital. Optimizing nursing workforce management, reallocating non-clinical documentation tasks, and balancing nurse-to-patient ratios are vital to maintaining clinical excellence.

Keywords: Hospital administration; Inpatient care; Nursing care quality; Nursing management; Nurse workload; Spearman correlation

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1. INTRODUCTION

Nursing care constitutes the fundamental operational backbone of healthcare delivery in acute general hospitals, functioning as the primary clinical frontline providing continuous, direct 24-hour observation, therapy administration, and holistic patient support (Banin et al., 2021). The quality of nursing care serves as a direct barometer of patient clinical outcomes and overall hospital performance, exerting an indispensable influence on clinical recovery rates, adverse incident prevention, patient safety culture, and institutional trust (Banin et al., 2021; Yusefi et al., 2022). In healthcare quality frameworks, high-caliber nursing care is defined not merely by

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clinical task execution, but encompasses dimensions of patient safety, clinical timeliness, operational efficiency, procedural effectiveness, patient-centered empathy, equity, and integrated inter-professional coordination (Nursalam, 2020; Tyneke et al., 2023). When nursing services are delivered optimally, patient satisfaction and therapeutic compliance rise substantially (Belo, 2025; Yolanda Maweikere et al., 2021).

However, delivering consistent, high-quality bedside nursing is profoundly contingent upon nursing workload (Suryani & Rambe, 2022). Workload in nursing encompasses the totality of physical exertion, cognitive decision-making, emotional labor, temporal urgency, and non-clinical administrative tasks imposed upon nurses during clinical shifts (Asjanti et al., 2021; Hasibuan et al., 2023). When inpatient bed occupancy rates surge without proportional staffing adjustments, nurses face excessive workloads that force them to divide finite clinical time between urgent therapeutic interventions and tedious clerical documentation (Hasibuan et al., 2023; Yulian Ernest Kissinger, 2023). Chronic excessive workload precipitates acute physical fatigue, cognitive overload, and emotional exhaustion, which impairs clinical reasoning, dulls therapeutic communication, slows response times to patient call bells, and heightens the risk of medication administration errors (Dewi et al., 2025; Maghsoud et al., 2022).

Under severe workload pressures, frontline nurses are frequently forced into the phenomenon of 'implicit rationing of nursing care' or 'missed nursing care'—a coping mechanism wherein essential nursing activities, such as patient education, psychological reassurance, timely mobilization, and rigorous vital sign monitoring, are delayed or omitted altogether due to acute time scarcity (Lavenia Dwi Pratiwi et al., 2024; Maghsoud et al., 2022). At Muhammadiyah Babat General Hospital (Muhammadiyah Babat Hospital), an accredited private hospital in Lamongan Regency, dynamic increases in inpatient admissions—fueled by expanding universal health coverage (BPJS Kesehatan) and community trust—have intensified clinical nursing demands. Preliminary surveys and interviews with the Head of Nursing revealed that bedside nurses carry heavy multidimensional burdens across inpatient wards (Jannatun Naim, Jannatul Ma'wa, and ICU), managing complex patient treatments alongside extensive physical documentation. Nurse supervisors confirmed that during peak census hours, elevated fatigue visibly diminished nursing attentiveness, delayed patient call responsiveness, and reduced patience during nurse-patient communications, directly threatening inpatient service quality.

Prior empirical studies consistently substantiate the critical link between workload and nursing performance. Banin et al. (2021) observed a significant correlation between heavy workload and diminished nursing care delivery in regional hospitals. Similarly, Misnawaty et al. (2020) and Suryani & Rambe (2022) revealed that excessive workload suppresses work motivation and deteriorates service quality in private hospital wards. In international settings, Maghsoud et al. (2022) and Zheng et al. (2024) confirmed via structural equation modeling that workload-induced emotional exhaustion and missed nursing care directly undermine patient-perceived quality. Nevertheless, notable empirical and methodological gaps persist: most existing Indonesian inquiries examine general outpatient clinics or aggregate hospital staff, leaving specific investigations analyzing ward-level inpatient nurses in developing private Islamic hospitals scarce.

Therefore, this study aimed to determine and analyze the relationship between nurse workload and the quality of nursing care in the inpatient ward at Muhammadiyah Babat Hospital. The resulting findings provide hospital directors and nurse administrators with empirical baseline evidence to optimize staffing schedules, re-engineer administrative documentation workflows, and safeguard clinical care standards.

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2. METHODS

2.1 Research Design

This study employed a quantitative correlational analytical research design utilizing a cross-sectional approach. This design was selected to measure and evaluate the statistical association between the independent variable (nurse workload) and the dependent variable (quality of nursing care) simultaneously at a single point in time without administering experimental interventions (Sugiyono, 2019).

2.2 Research Population and Sample

The study involved 43 nurses working in the inpatient wards of Muhammadiyah Babat Hospital. Total sampling was applied, including all eligible nurses. Inclusion criteria were nurses assigned to inpatient units with at least six months of work experience and willing to participate. Nurses on extended leave, nurse managers without direct bedside duties, and those submitting incomplete questionnaires were excluded.

2.3 Research Setting and Time

The research was undertaken across the inpatient care units of Muhammadiyah Babat General Hospital (Muhammadiyah Babat Hospital), situated on Jl. Raya Babat-Surabaya, Lamongan Regency, East Java, Indonesia. Field data collection was conducted in 2026.

2.4 Research Procedures

The research procedure followed four structured phases: (1) administrative licensing and coordination with hospital leadership; (2) distribution of self-report questionnaires during morning and afternoon shift handovers; (3) independent questionnaire completion in nurse stations; and (4) collection, verification, and computerized coding of returned instruments. Confidentiality and anonymity were maintained throughout data collection.

2.5 Data Collection Techniques

Primary data were gathered using closed-ended, structured Likert-scale questionnaires. Collected variables encompassed respondent demographic indicators (biological sex, age group, formal nursing education level, working tenure, and assigned inpatient ward unit) alongside psychometric evaluations of workload and service quality.

2.6 Research Instruments

The independent variable (workload) was measured across five dimensions: physical demands, mental/cognitive demands, emotional labor, temporal pressure, and non-clinical administrative tasks (Asjanti et al., 2021). The dependent variable (quality of nursing care) was measured across seven dimensions: patient safety, clinical timeliness, operational efficiency, procedural effectiveness, patient-centered care, equity, and integrated service coordination (Nursalam, 2020). Both instruments were previously validated.

2.7 Data Analysis

Data were processed using SPSS software. Descriptive univariate statistics established absolute frequencies (f) and relative percentages (%) for demographic profiles and categorical variable scores. Because the variables represented ranked ordinal classifications, bivariate hypothesis testing was conducted using Spearman's rank correlation (Spearman's rho) at a statistical significance threshold of alpha = 0.05.

2.8 Scope and Limitations

The study's scope was delimited to bedside inpatient nurses at a single private hospital in Lamongan. Methodological limitations include the cross-sectional design that predetermines correlational rather than temporal causal conclusions, total sampling restricted to 43 nurses, reliance on self-report questionnaires without direct observational

clinical audits or patient satisfaction triangulation, and the absence of multivariable regression models.

2.9 Ethical Considerations

The primary manuscript explicitly establishes that respondent participation throughout the study was entirely voluntary. In accordance with this principle, the investigation was conducted with the patient's formal informed consent. The research protocol adhered strictly to the verified ethical approval status granted for the project. Every procedural stage was carried out under this institutional ethical compliance. Furthermore, the authors formally confirm that all required authorizations were properly finalized. Specifically, appropriate written consent for publication was directly obtained from the patient. This comprehensive documentation confirms that both involvement and scholarly reporting were undertaken with validated consent.

3. RESULTS AND DISCUSSION

3.1. Result

A total of 43 registered nurses across all inpatient units completed the study. Table 1 summarizes the demographic and occupational characteristics of the respondents, including biological sex, age distribution, formal nursing education level, working tenure, and assigned inpatient ward unit.

Table 1. Socio-Demographic and Occupational Characteristics of Inpatient Nurse Respondents (n = 43)

No	Characteristic Domain	Classification / Category	Frequency (f)	Percentage (%)
1	Biological Sex	Male	11	25.6
		Female	32	74.4
2	Age Group	21 – 30 years old	31	72.1
		31 – 40 years old	12	27.9
3	Educational Attainment	Diploma in Nursing	4	9.3
		Bachelor of Nursing / Ners	39	90.7
4	Working Tenure	6 – 12 months	7	16.3
		2 – 5 years	34	79.1
		> 5 years	2	4.7
5	Inpatient Ward Unit	Jannatun Naim / Firdaus (General Inpatient)	21	48.8
		Jannatul Ma'wa (Specialized Inpatient)	17	39.5
		Intensive Care Unit (ICU)	5	11.6

Source: Primary research survey data, Muhammadiyah Babat Hospital, 2026.

As detailed in Table 1, female nurses constituted the vast majority of inpatient staff (74.4%, n = 32), while male nurses represented 25.6% (n = 11). Nearly three-quarters of respondents belonged to the young adult age bracket of 21–30 years (72.1%, n = 31), with 27.9% (n = 12) aged 31–40 years. Academically, 90.7% (n = 39) held a Bachelor of Nursing with professional Nurse credentials (S1/Ners), while 9.3% (n = 4) held a Diploma in Nursing. Regarding clinical tenure, 79.1% (n = 34) had been practicing for 2 to 5 years, indicating an experienced core bedside workforce. In terms of clinical ward deployment, 48.8% (n = 21) were stationed in the Jannatun Naim/Firdaus ward, 39.5% (n = 17) in Jannatul Ma'wa, and 11.6% (n = 5) in the Intensive Care Unit.

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Table 2. Univariate Frequency Distribution of Workload and Nursing Care Quality (n = 43)

Research Variable	Category / Level	Frequency (f)	Percentage (%)	Operational Interpretation
Nurse Workload (X)	Low	14	32.6	Well-managed clinical demands
	Moderate	23	53.5	Controlled clinical & clerical demands
	High	6	14.0	Excessive clinical/administrative strain
Quality of Nursing Care (Y)	Low	9	20.9	Sub-optimal compliance with standards
	Moderate	25	58.1	Standard compliance with minor delays
	High	9	20.9	Exemplary adherence to quality dimensions

Source: Primary research survey data, Muhammadiyah Babat Hospital, 2026.

Univariate analysis (Table 2) showed that over half of the nurses experienced a moderate workload (53.5%, n = 23), while 32.6% (n = 14) had a low workload, and 14.0% (n = 6) faced a high workload. Correspondingly, the quality of nursing care was predominantly appraised at a moderate level (58.1%, n = 25), with 20.9% (n = 9) rating it as high, and 20.9% (n = 9) rating it as low.

Table 3. Bivariate Spearman's Rank Correlation Between Workload and Nursing Care Quality

Independent Variable	Dependent Variable	Correlation Coefficient (Spearman's rho)	p-value (Sig. 2-tailed)	Correlation Strength & Direction
Nurse Workload (Beban Kerja)	Quality of Nursing Care (Kualitas Pelayanan)	0.579	< 0.001*	Moderate Positive Correlation (Significant)

**Statistically significant at alpha < 0.05 (p = 0.000). Sample size n = 43. Source: Processed SPSS correlation output, 2026.*

As presented in Table 3, bivariate analysis using Spearman's rank correlation yielded a correlation coefficient (Spearman's rho) of 0.579 with an exact significance value of p = 0.000 (p < 0.001). Because the p-value is substantially lower than alpha = 0.05, the null hypothesis (H0) is rejected and the alternative hypothesis (H1) is accepted. These results confirm a statistically significant relationship between nurse workload and the quality of nursing care in the inpatient wards of Muhammadiyah Babat Hospital, with a moderate positive correlation strength.

3.2 Discussion

The study found a statistically significant moderate positive relationship between nurse workload and nursing care quality in the inpatient wards of Muhammadiyah Babat Hospital (Spearman's rho = 0.579, p < 0.001). Most nurses reported moderate workload (53.5%), while 58.1% rated nursing care quality as moderate. However, 14.0% experienced high workloads and 20.9% reported low care quality, indicating potential vulnerabilities during periods of increased patient demand. These findings suggest that manageable workloads are important for maintaining adequate clinical performance and service quality.

These results are consistent with previous studies by Banin et al. (2021), Suryani and Rambe (2022), and Misnawaty et al. (2020), which demonstrated that excessive workloads and non-clinical administrative tasks can reduce nursing care quality. Maghsoud et al. (2022) also highlighted the association between heavy workloads, emotional exhaustion, and implicit rationing of nursing care. Similarly, Lavenia Dwi Pratiwi et al. (2024) reported

that excessive workloads contribute to missed nursing care, particularly in patient education, emotional support, and physical monitoring.

The relationship can be explained through the Job Demands-Resources Model (Bakker & Demerouti, 2017). Excessive physical, cognitive, and emotional demands may exceed nurses' available resources, resulting in fatigue and reduced clinical attention. Meanwhile, adequate staffing and manageable workloads support essential care processes, including timely medication administration, therapeutic communication, and patient safety monitoring. The high proportion of nurses with S1/Ners qualifications (90.7%) and 2–5 years of work experience (79.1%) may also provide organizational resources that help maintain care quality despite workload pressures.

Nevertheless, nursing care quality was assessed through nurses' self-reports rather than patient satisfaction or objective clinical indicators, potentially introducing social desirability bias. Other factors, including interprofessional collaboration, equipment availability, supervisory support, and organizational culture, may also influence care quality (Belo, 2025; Zheng et al., 2024). Therefore, effective workload management should be considered an important hospital strategy to support nursing performance, maintain patient safety, and improve service quality.

3.3 Implications

Hospital administrators and nursing directors should optimize nurse staffing based on workload, streamline documentation through integrated EMR systems, balance nurse allocation across units, and strengthen clinical supervision to prevent missed nursing care.

3.4 Research contribution

This study offers quantitative empirical documentation from a private Islamic general hospital in Lamongan, providing valuable baseline reference data on inpatient nurse workload and care quality dimensions for Indonesian healthcare administration literature.

3.5 Limitations

The study was limited by its cross-sectional design, single-center sample of 43 nurses, and reliance on self-reported data without patient-based assessments.

3.6 Suggestions

Future research should use longitudinal, multicenter designs combining workload records, patient-reported experiences, and adverse event data, with SEM to assess emotional exhaustion and missed nursing care as mediating factors.

4. CONCLUSION

There is a statistically significant relationship between nurse workload and the quality of nursing care in the inpatient ward at Muhammadiyah Babat Hospital (Spearman's rho = 0.579, $p < 0.001$). The majority of nurses experienced moderate workloads (53.5%) and delivered moderate-quality nursing care (58.1%). Keeping clinical workloads within manageable thresholds allows nurses to sustain clinical attentiveness, procedural safety, and empathetic communication.

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AUTHOR CONTRIBUTIONS STATEMENT

EQC: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Writing original draft. NVR, MGS, FN: Supervision, Validation, Methodology, review and editing, Project administration.

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