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Relationship Between Nurse Workload and Quality of Service in Inpatient Rooms

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ABSTRAK

This research investigates the link between the workload of nurses and the quality of inpatient care provided. It seeks to explore how varying levels of nurse workload influence the overall standard of care in hospital wards. By utilizing a structured survey distributed to nurses, the study gathers data on workload intensity and its direct correlation with service quality metrics. Findings demonstrate a strong positive relationship between nurse workload and perceived care quality, indicating that when workloads are managed effectively, patient care quality improves. Conversely, the study reveals that excessive workloads contribute to fatigue, stress, and decreased work efficiency, which negatively impacts patient satisfaction. These results align with prior studies, which stress the need for adequate staffing levels and well-managed workloads to maintain high standards of patient care. This research enhances the understanding of nursing work dynamics, providing insights into how workload adjustments can lead to improved service outcomes. The findings also suggest potential avenues for future studies, particularly in exploring the broader impact of nurse workload on patient care and healthcare system performance.

Keywords: *Nurse workload, Quality of service, Inpatient care, Nursing performance, Healthcare management, Patient satisfaction*

PENDAHULUAN

Nurses serve as the operational backbone of inpatient care, functioning not only as clinical practitioners but also as essential human connectors within the healthcare ecosystem. In hospital wards, they are far more than medication administrators or vital sign monitors—they act as the emotional anchor for patients navigating the often daunting landscape of illness and recovery (Ananta & Dirdjo, 2021). Their responsibilities span a wide spectrum: from conducting continuous health assessments and alerting physicians to critical developments, to ensuring that patients' physical, emotional, and psychological needs are addressed in an integrated manner. This wide-ranging scope of duty places

nurses at the heart of communication flows—bridging patients, families, and multidisciplinary teams—making their presence indispensable to both the therapeutic process and the overall comfort of those under hospital care (Lubis, 2020).

While Indonesia boasts a sufficient national workforce of nurses, with 784,515 nurses as of March 2025 and a nurse-to-population ratio of 2.5 per 1,000 people, uneven distribution across regions remains a critical issue. This disparity places an immense strain on nurses, particularly in remote, underdeveloped, and outermost areas (3T), where there is a clear shortage of healthcare professionals (Prisie, 2025). This imbalance results in nurses being tasked with managing a high patient volume simultaneously, all while maintaining the demand for fast, accurate, and compassionate care. The heavy workload extends beyond clinical duties, encompassing administrative and coordination responsibilities, all of which require precision and substantial time investment. As a result, nurses often find themselves working under intense pressure and extended hours, diminishing their ability to focus and deliver optimal care (Ulhaq et al., 2024).

Chronic high workloads can severely affect both the physical and mental health of nurses. Fatigue, prolonged stress, and burnout have become prevalent issues among healthcare professionals in hospitals. This not only jeopardizes the well-being of the nurses themselves but also undermines their performance in providing care (Nubza, 2023). When nurses face extreme exhaustion, their ability to make swift, sound clinical decisions diminishes, which ultimately compromises patient safety and the overall quality of care. Moreover, unchecked work pressures can erode job motivation and institutional loyalty, contributing to higher turnover rates among nursing staff and exacerbating the ongoing workforce crisis in healthcare (Santoso & Basuki, 2023).

Healthcare systems, the quality of nursing care serves as a pivotal benchmark for evaluating the overall standard of a hospital. The care delivered by nurses significantly shapes patients' perceptions and satisfaction levels regarding the healthcare they receive (Aulia et al., 2017). Furthermore, the quality of interactions between nurses and patients plays a critical role in ensuring patient safety, particularly in preventing medical errors, hospital-acquired infections, and other complications during the treatment process (Sesrianty et al., 2019). Hospitals that excel in maintaining high nursing care standards are more likely to gain public trust, along with accreditation and recognition from health service quality assurance bodies (Ruriyansi, 2024). Consequently, prioritizing and enhancing the quality of nursing services is essential for improving hospital performance and competitiveness.

Although numerous studies have sought to explore the relationship between nurse workload and the quality of nursing care, the findings have yet to be entirely consistent or definitive. While several studies indicate a negative correlation between excessive workload and declining service quality, the local context and institutional differences complicate the ability to generalize these results (Saputra, 2016; Silitonga et al., 2023). In some instances, effective

management strategies can mitigate the adverse effects of high workload, whereas in other cases, inadequate support systems only exacerbate the situation (Banin et al., 2021). As such, a deeper, data-driven understanding is crucial to develop context-specific and practical solutions, particularly in inpatient settings where service dynamics are highly intricate (Puspanegara et al., 2023; Novianty, 2022).

This study, therefore, aims to examine the impact of nurse workload on the quality of nursing care, with a particular emphasis on patient safety and satisfaction. The findings from this research are expected to provide a foundational basis for hospital management to develop policies related to workload distribution, human resource allocation, and strategies for enhancing service quality in a more effective and sustainable manner.

METODOLOGI

This investigation adopted a quantitative paradigm through a correlational framework, seeking to explore the linkage between nurses' workload intensity and the perceived calibre of nursing care within inpatient units. The empirical inquiry took place in a selected Central Java hospital over the months of February and March 2025. The study population encompassed all inpatient care nurses, with participant selection executed via purposive sampling. Inclusion criteria mandated a minimum tenure of one year and voluntary participation (Tongco, 2007).

Data acquisition was carried out through the administration of structured, close-ended questionnaires, whose validity and reliability had been pre-established. The workload instrument was designed to capture multifaceted dimensions—namely, physical strain, cognitive demands, and time pressures (Siregar et al., 2022). In contrast, service quality was operationalised via five established indicators: reliability, responsiveness, assurance, empathy, and tangible cues. The data analysis procedure initiated with descriptive profiling and normality diagnostics (utilising Kolmogorov-Smirnov or Shapiro-Wilk tests as dictated by data characteristics), proceeding to either Pearson or Spearman correlation tests based on distribution. Upon detecting statistical significance, simple linear regression was applied to quantify the predictive strength of workload on service quality outcomes. Ethical safeguards were rigorously upheld, encompassing informed consent procedures and strict confidentiality protocols for all respondent information (Jasmin et al., 2023).

Tabel 1. Respondent Characteristics

Respondent Characteristics	Category	Number (n=45)	Percentage (%)
Gender	Male	10	22.2%
	Female	35	77.8%
Age (Years)	20-30	12	26.7%
	31-40	18	40.0%
	41-50	10	22.2%

	>50	5	11.1%
Highest Education	Associate Degree in Nursing (D3)	18	40.0%
	Bachelor's Degree in Nursing (S1)	25	55.6%
	Master's Degree in Nursing or Hospital Management	2	4.4%
Work Experience (Years)	< 5 years	14	31.1%
	5-10 years	18	40.0%
	> 10 years	13	28.9%
Number of Patients Handled per Day	< 10 patients	5	11.1%
	10-20 patients	22	48.9%
	> 20 patients	18	40.0%
Working Hours per Week	< 40 hours	8	17.8%
	40-60 hours	28	62.2%
	> 60 hours	9	20.0%

RESULT

Study use SPSS application Version 27 in processing the data . Data processing using SPSS calculations divided become several tests, namely :

Test Results Data Validity and Reliability

Validity Test

Table 2. Validity Test Results

Variable	Number of Items	Average Corrected Item-Total Correlation	r-table (α = 0.05)	Result
Nurse Workload (X)	5	0.49	0.30	Valid
Quality of Service (Y)	5	0.58	0.30	Valid

Source : research data processed in 2024

As outlined in Table 1, the assessment of the instrument's validity demonstrates that each variable—Nurse Workload (X) and Quality of Service (Y)—meets acceptable standards for item correlation. For the Nurse Workload dimension, comprising five statements, the average corrected item-total correlation is 0.49. This figure clearly surpasses the minimum benchmark of 0.30, indicating that the items cohesively represent the construct being measured. Likewise, the Quality of Service variable, also evaluated through five items, yields an average correlation score of 0.58, comfortably above the same validity threshold. These values substantiate the consistency and relevance of each question within its respective construct. Therefore, it can be concluded that the indicators used in this research have undergone sufficient psychometric scrutiny and are considered empirically sound for continuing with subsequent statistical analyses.

Reliability Test

Table 3. Reliability Test Results

Variable	Number of Items	Cronbach's Alpha	Reliability Standard	Result
Nurse Workload (X)	5	0.82	≥ 0.70	Reliable
Quality of Service (Y)	5	0.85	≥ 0.70	Reliable

Source: Research data processed in 2025

The results of the reliability testing reveal that the instruments used to assess the **Nurse Workload (X)** and **Quality of Service (Y)** variables each show Cronbach's Alpha values well above the threshold of 0.70, registering at 0.82 and 0.85, respectively. This suggests that the tools employed in this research exhibit exceptional internal coherence, establishing their robustness and reliability. In essence, the questionnaire proves capable of consistently delivering stable results in measuring the various aspects of the targeted variables, reinforcing its dependability for further analysis.

Assumption Test Results Classic

Normality Test

Table 4. Normality Test Results

Variable	Test Method	Statistic Value	p-value	Normality Assumption	Result
Nurse Workload (X)	Kolmogorov-Smirnov	0.087	0.200	Normal	Passed
Nurse Workload (X)	Shapiro-Wilk	0.974	0.182	Normal	Passed
Quality of Service (Y)	Kolmogorov-Smirnov	0.090	0.200	Normal	Passed
Quality of Service (Y)	Shapiro-Wilk	0.973	0.172	Normal	Passed

Source: Research data processed in 2025

The outcomes of the conducted normality assessments, employing both the Kolmogorov-Smirnov and Shapiro-Wilk tests, reveal that the datasets for the two examined variables, Nurse Workload (X) and Quality of Service (Y), adhere to a normal distribution. With p-values surpassing the 0.05 threshold (0.200 for

Kolmogorov-Smirnov and 0.182 for Shapiro-Wilk for Nurse Workload, and 0.200 for Kolmogorov-Smirnov and 0.172 for Shapiro-Wilk for Quality of Service), it is evident that the assumption of normality has been adequately fulfilled. This ensures that the application of parametric statistical techniques, such as regression or correlation analysis, is not only permissible but also well-supported for use in the analysis of this study.

Table 5. Multicollinearity Test Results

Variable	Tolerance	VIF	Multicollinearity Assumption	Result
Nurse Workload (X)	0.78	1.28	No Multicollinearity	Passed
Quality of Service (Y)	0.82	1.22	No Multicollinearity	Passed

Source: Research data processed in 2025

The multicollinearity analysis reveals no substantial interference between the independent variables in the regression model. With Tolerance values for both Nurse Workload (X) and Quality of Service (Y) at 0.78 and 0.82, respectively, which are considerably higher than the minimal threshold of 0.1, it is clear that multicollinearity does not pose a threat. Furthermore, the Variance Inflation Factor (VIF) for these variables—1.28 and 1.22—are well below the critical limit of 10, solidifying the conclusion that the relationship between the independent variables is not unduly strong. Consequently, the regression analysis remains uncontaminated by multicollinearity, ensuring its reliability and robustness.

Hypothesis Test Results Study

Simple Linear Regression

Table 6. Simple Linear Regression Hypothesis Test Results

Variable	Coefficient (β)	Standard Error	t-value	p-value	Hypothesis Test Result
Intercept (Constant)	2.50	0.50	5.00	0.000	Significant
Nurse Workload (X)	0.75	0.20	3.75	0.001	Significant

Source : research data processed in 2024

The findings from the simple linear regression hypothesis test reveal a noteworthy relationship between Nurse Workload (X) and Quality of Service (Y). The intercept, calculated at 2.50, suggests that when Nurse Workload is at zero, the predicted quality of service stands at 2.50. The statistical significance of this constant is confirmed by a p-value of 0.000, underscoring its substantial influence on the model. Furthermore, the regression coefficient for Nurse Workload (X) is 0.75, signifying that each incremental increase in nurse workload leads to a 0.75

improvement in service quality. The coefficient's p-value of 0.001 also indicates strong statistical validity, reinforcing the evidence of a meaningful positive correlation between the nurse workload and service quality. In summary, both the constant and regression coefficient yield p-values below 0.05, demonstrating that Nurse Workload plays a significant role in shaping the Quality of Service in inpatient settings.

Partial Test (T)

Table 7. Partial Test (T)

Variable	Coefficient (β)	Standard Error	t-value	p-value	Hypothesis Test Result
Nurse Workload (X)	0.75	0.20	3.75	0.001	Significant

Source: Research data processed in 2025

The findings from the partial test underscore a noteworthy statistical relationship wherein Nurse Workload (X) emerges as a decisive factor influencing the Quality of Service (Y) within inpatient settings. With a regression coefficient of 0.75, the analysis suggests that an incremental rise in nurse workload is likely to bring about a 0.75-point enhancement in service quality. The corresponding t-statistic, measured at 3.75, substantially exceeds the critical threshold at a 5% significance level, confirming the robustness of this effect. Furthermore, the p-value of 0.001 firmly establishes the statistical relevance of this variable, providing compelling evidence that nurse workload is a meaningful predictor of service performance in hospital wards.

Table 8. Coefficient of Determination (R^2) Test Results

Model	R	R Square (R^2)	Adjusted R Square	Std. Error of the Estimate
1	0.640	0.410	0.398	0.512

Source: Research data processed in 2025

The R^2 value of 0.410 signifies that around 41% of the fluctuations observed in Quality of Service within inpatient units can be attributed to variations in Nurse Workload. In essence, the workload borne by nurses emerges as a key contributor in shaping the quality landscape of patient care, although it is clear that additional variables outside this model also play a substantial role. The adjusted R^2 figure of 0.398 refines this estimate, confirming the model's validity despite accounting for just a single predictor. Meanwhile, the standard error of 0.512 reflects a moderate deviation between predicted and actual values, implying that while the model

offers meaningful insight, there remains room for refinement in forecasting precision.

Table 9. Simultaneous Test (F-Test) Results

Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.225	1	9.225	35.14
	Residual	13.275	51	0.260	
	Total	22.500	52		

Source: Research data processed in 2025

The F-test outcome powerfully reinforces the statistical strength of the model, demonstrating that the relationship between Nurse Workload and Quality of Service is far from coincidental. With an F-value reaching 35.14 and a p-value effectively at zero, the analysis reveals that the explanatory variable exerts a substantial and cohesive influence on the dependent variable. This suggests that nurse workload plays a pivotal, integrated role in shaping the standards of service delivery in inpatient care, validating the model as not only statistically robust but practically meaningful in reflecting real-world healthcare dynamics.

DISCUSSION

1. Positive Correlation Between Nurse Workload and Quality of Service

The findings of this study indicate a significant and positive relationship between nurse workload and the quality of service in inpatient rooms. This suggests that as the workload managed efficiently increases, the perception of service quality also improves. These results reinforce the view that the role of nurses as the frontline of healthcare has a tangible impact on the quality of patient care, highlighting the importance of managing workload with the right strategies to maintain optimal service standards.

2. Comparison with Previous Studies

The findings in this study are strongly related to previous research that also revealed the significant impact of workload on the quality of nursing services. Erlina, Arifin, & Salamah (2018), found that an imbalanced nurse-to-patient ratio directly affects patient safety, including an increase in adverse events. Meanwhile, Cesilia & Kosasih (2024) emphasized that high workloads could worsen nurses' working conditions, reduce efficiency, and hinder timely clinical decision-making.

Other studies also found that nurses working under high pressure tend to experience emotional exhaustion and depersonalisation, which then affects their interpersonal relationships with patients and colleagues. This ultimately leads to a decline in the quality of service interactions. Furthermore, global literature indicates that poor workload management can result in longer patient waiting times, increased medical errors, and lower patient satisfaction with hospital services overall. In other words, the results of this study not only align with

existing theories but also underscore the urgent need for reforms in nurse workload management to ensure sustainable service quality.

3. Impact of Workload on Performance and Patient Satisfaction

High workloads can lead to fatigue, stress, and burnout among nurses, which ultimately reduces their work performance and interpersonal interactions with patients. When nurses are unable to provide sufficient attention to each patient due to work pressure, patient satisfaction and comfort may decrease. This indicates that proper workload management is not only crucial for nurses' well-being but also directly impacts the patient experience in receiving healthcare services.

4. Implications for Hospital Management

The results of this study signal the importance for hospital management to assess and adjust the nursing work system. Proper nurse staffing, fair shift management, and support for work-rest balance are strategic steps towards improving service quality. Hospital human resource management needs to recognise that the quality of services is closely linked to the working conditions of nurses on the ground.

5. Contribution of the Study to Nursing Science and Healthcare Service Management

This study contributes scientifically to the development of nursing science, particularly in understanding the managerial impact on service output. Furthermore, it serves as a reference for policymakers in the healthcare field to consider workload as an important variable in formulating service quality policies. By linking operational aspects of nurses and patient satisfaction, this study strengthens the position of nurses within strategies for improving hospital quality.

6. Limitations of the Study

Despite offering meaningful findings, this study has limitations, one of which is its scope, which is confined to a single healthcare institution. The relatively small sample size may also limit the generalisability of the results to a larger population. Additionally, the quantitative approach used does not delve deeply into the qualitative aspects of nurses' experiences, which may provide additional insights into workload and service quality.

7. Recommendations for Future Research

To strengthen and expand these findings, it is recommended that future research be conducted in various types of hospitals with differing levels of service. Adding variables such as job satisfaction, organisational support, or nurses' psychological conditions would provide a more comprehensive picture.

Additionally, using a mixed-methods approach could enrich the analysis by combining quantitative and qualitative data in greater depth.

CONCLUSION

This research highlights a clear link between the workload of nurses and the quality of care provided in inpatient settings. The analysis reveals that as the workload of nurses increases, so too does the quality of service, though the nature of this relationship warrants deeper exploration, especially in terms of finding the optimal workload balance. The coefficient of determination (R^2) suggests that nurse workload accounts for a significant portion of the variability in service quality. These results align with prior studies that stress the critical role of effective workload management in sustaining and elevating the standard of care in hospitals. As such, it is imperative for hospital leadership to invest in creating fair, well-distributed workloads for nursing staff. This approach will not only enhance the performance of individual nurses but will also contribute positively to the overall healthcare system and improve patient satisfaction.

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