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Analysis Of the Relationship Between Workload, Service Quality, And Performance of Health Workers in Hospitals: A Narrative Review

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Abstrak

Rumah sakit sebagai institusi pelayanan kesehatan memiliki peran penting dalam memberikan pelayanan yang optimal kepada pasien, sedangkan kinerja tenaga kesehatan merupakan salah satu faktor utama yang menentukan kualitas pelayanan. Beban kerja merupakan salah satu faktor yang diduga berkaitan dengan kinerja tenaga kesehatan dan kualitas pelayanan. Tinjauan naratif ini bertujuan untuk merangkum bukti mengenai hubungan antara beban kerja, kinerja tenaga kesehatan, dan kualitas pelayanan di rumah sakit di Indonesia. Artikel yang diterbitkan pada periode 2021–2025 diidentifikasi melalui Google Scholar dan Garuda, dengan total 261 rekaman, dan sebanyak 11 penelitian dimasukkan dalam tinjauan ini, yang sebagian besar melibatkan perawat. Karena sebagian besar penelitian menggunakan desain potong lintang (cross-sectional) atau korelasional, temuan yang diperoleh menunjukkan hubungan antarvariabel, bukan hubungan sebab-akibat. Lima dari tujuh penelitian mengenai kinerja melaporkan bahwa beban kerja yang lebih tinggi berkaitan dengan penurunan kinerja, sedangkan dua penelitian lainnya tidak menemukan hubungan yang signifikan. Sementara itu, keempat penelitian mengenai kualitas pelayanan melaporkan adanya hubungan dengan beban kerja. Ketidakkonsistenan temuan tersebut dapat mencerminkan perbedaan karakteristik populasi, lingkungan penelitian, pengukuran beban kerja dan luaran penelitian, serta model statistik yang digunakan. Kualitas metodologis penelitian yang disertakan secara umum masih rendah, terutama karena faktor perancu yang tidak dikendalikan, validitas dan reliabilitas instrumen yang tidak dilaporkan, serta penggunaan analisis statistik yang tidak konsisten atau kurang tepat. Temuan ini menunjukkan bahwa manajemen rumah sakit perlu memantau dan mendistribusikan beban kerja secara proporsional. Namun, penelitian longitudinal dengan instrumen pengukuran yang terstandar masih diperlukan untuk mengonfirmasi arah hubungan antara beban kerja, kinerja tenaga kesehatan, dan kualitas pelayanan..

Kata Kunci: Beban Kerja, Kinerja Tenaga Kesehatan, Kualitas Pelayanan, Rumah Sakit

Abstract

Hospitals as health service institutions have an important role in providing optimal services to patients, and the performance of health workers is one of the key determinants of service quality. Workload is one of the factors thought to be associated with performance and service quality. This narrative review aims to summarize the evidence on the relationship between workload and the performance of health workers and the quality of services in hospitals in Indonesia. Articles published between 2021 and 2025 were identified through Google Scholar and Garuda (261 records), and 11 studies were included, most of which involved nurses. Because most studies used cross-sectional or correlational designs, the findings reflect associations rather than causal effects. Five of the seven studies on performance reported that higher workload was associated with lower performance, whereas two found no significant association; all four studies on service quality reported an association with

workload. The inconsistent findings may reflect differences in populations, settings, measurement of workload and outcomes, and statistical models. The methodological quality of the included studies was generally low, mainly due to unaddressed confounding, unreported instrument validity and reliability, and inconsistent or inappropriate statistical analyses.These findings suggest that hospital management should monitor and distribute workload proportionally, but longitudinal studies with standardized measures are needed to confirm the direction of the relationship.

Keywords : Workload, Health Worker Performance, Quality Of Service, Hospital

INTRODUCTION

A hospital is an institution that provides individual health services in a complete manner, which provides inpatient, outpatient and emergency services. Hospitals are established and organized with the main purpose of providing health services, medical and diagnostic procedures as well as medical rehabilitation efforts to meet the needs of patients. The recovery of treated patients is one of the goals of patient care in hospitals. In order to support patient recovery, the role of nurses is very decisive in providing care in services at the hospital(Pratama et al., 2024).

Health workers are a work profession that specializes in handling patient care or care for patients with varying work demands, depending on certain characteristics in carrying out their work. These characteristics include task characteristics (which require speed, alertness and shift work), organizational characteristics, and work environment characteristics, both physical and social environments. In addition, health workers are also burdened with other additional tasks and often carry out activities that are not their function (Cesilia & Kosasih, 2024).

According to Domestic Regulation No. 12 of 2008 (articles 1 and 2), Workload is measured management that is carried out to obtain information on knowledge of the level of effectiveness and efficiency in organizational work according to volume. Workload is a work situation with tasks that must be achieved within a certain period of time (Cesilia & Kosasih, 2024).

Workload is one of the factors associated with the performance of health workers and the quality of service. (Ramadana N et al., 2023)Ramadana et al. (2023) reported a relationship between workload and the performance of health workers, and (Suryani & Rambe, 2022) reported a significant association between workload and service quality. The problem of workload has a wide impact, so it needs the attention of health service institutions. A high workload among health workers has been linked to lower nurse performance and poor communication between patients and nurses, which may affect the patient's condition and, in turn, the quality of health services.

The novelty of this study lies in its synthesis of Indonesian evidence on the relationship between workload and both the performance of health workers and the quality of services in hospitals, an area where similar reviews are still very limited. This review is important considering that the increasing number of patients and the limited number of health workers may worsen the quality of health services in Indonesia if not addressed immediately. Therefore, this narrative review aims to summarize and critically discuss the evidence on the relationship between workload and the performance of health workers and service quality in Indonesian hospitals, and to outline its implications for hospital management. The findings are expected to provide insights for managing health worker resources more effectively.

METODE

This study is a narrative literature review. A narrative review summarizes and critically discusses the available evidence on a topic without the exhaustive search and formal synthesis procedures of a systematic review; the earlier description of the study as

"qualitative analytical descriptive" refers to the descriptive way in which the findings were summarized. To improve transparency, the search, selection, appraisal, and synthesis procedures are reported below, guided by the elements recommended for narrative reviews (Baethge et al., 2019), and the flow of records is shown in Figure 1.

Literature search

Articles were searched in Google Scholar and Garuda on May 2025 using the Indonesian keywords "beban kerja" (workload), "kinerja tenaga kesehatan" (performance of health workers), "kualitas pelayanan" (quality of service), and "Indonesia". The keywords were combined using the Boolean operator AND/OR, with no additional filters applied. The search was limited to articles published between 2021 and 2025.

Study selection

The inclusion criteria were: (1) research conducted in hospitals in Indonesia; (2) original articles published between 2021 and 2025; (3) full text freely accessible; and (4) the article examined the relationship between workload and the performance of health workers and/or the quality of services. Articles were excluded if they were off topic, were conducted outside hospital settings or outside Indonesia, were published outside 2021-2025, were not original research articles, were not available as free full text, or did not examine the relationship between workload and the performance of health workers and/or service quality. The search identified 261 records. No. duplicate records were identified. Titles and abstracts were screened by one reviewer, and 238 records were excluded as off topic, leaving 23 articles for full-text assessment. Of these, 12 did not meet the inclusion criteria because they did not meet the predefined criteria regarding publication year, leaving 11 studies for the review (Figure 1).

Quality appraisal

The methodological quality of each included study was assessed using the Joanna Briggs Institute (JBI) critical appraisal checklist appropriate to its design (analytical cross-sectional studies and qualitative research) (Moola et al., 2020). The appraisal was conducted by one reviewer, with item-level judgements documented and statistical results re-checked against the reported data. Studies were rated as high (≥70% of items met), moderate (50-69%), or low quality (<50%); these cut-offs were defined by the reviewers, as JBI does not prescribe a scoring threshold, and the ratings were used to inform interpretation rather than to exclude studies.

Data extraction and synthesis

For each study, the setting, participants, design, sample size, instruments for workload and outcomes, main findings, and key statistics were extracted. Because of the heterogeneity of designs, measures, and populations, the findings were synthesized narratively, grouped by outcome (performance and service quality) and by professional group, and the direction of association was tabulated. No meta-analysis was performed.

RESULT AND DISCUSSION

Study selection

The study selection process is presented in Figure 1. A total of 261 records were identified, of which 11 studies met the inclusion criteria.

Characteristics of the included studies

The 11 included studies were published between 2022 and 2025 and were all conducted in Indonesian hospitals, including 6 public, 4 private, and 1 unknown (Table 1). Seven studies examined the performance of health workers and four examined service quality. Ten studies were reported as quantitative, mostly cross-sectional or correlational; one (Pioh et al., 2023) was reported as qualitative. Eight studies involved nurses or nursing paramedics, one involved medical record staff (Linda et al., 2025), and two involved broader groups of health workers or medical personnel (Kristanti et al., 2024; Magfirah & Risambessy, 2023). Details on sample sizes, instruments, and key statistics are given in Table 2.

Workload and performance

Of the seven studies on performance, five (Kristanti et al., 2024; Magfirah & Risambessy, 2023; Weslly et al., 2024) reported that higher workload was associated with lower performance, whereas two (Bariah et al., 2025; Syahputri & Rahmawati, 2023) found no significant association. Among nurses, three of five performance studies reported an association; the two studies of other health workers both did.

Workload and service quality

All four studies on service quality (Dewi et al., 2024; Linda et al., 2025; Novita & Riza, 2023; Suryani & Rambe, 2022) reported that workload was associated with service quality. (Novita & Riza, 2023) also reported that most inpatient nurses had a light workload yet still provided good service quality, and the finding of (Suryani & Rambe, 2022) that the productive-workload category had a 4.1 times risk of poor service quality should be interpreted with caution.

Methodological quality of the included studies

Of the 11 included studies, none was rated high quality, one was rated moderate (Syahputri & Rahmawati, 2023), and ten were rated low (nine quantitative studies and the qualitative study). The main limitations were the cross-sectional design, which precludes causal inference, the absence of identified or adjusted confounders in all quantitative studies, small single-hospital samples with unclear inclusion criteria, reliance on self-reported questionnaires with often unreported validity and reliability, and statistical analyses that were inconsistent or violated test assumptions.

Figure 1. Flow diagram of study selection

Records identified through Google Scholar (n = 261)
Records after duplicates removed (n = 261)
Records screened by title and abstract (n = 261); excluded as off topic (n = 238)
Full-text articles assessed for eligibility (n = 23); excluded for not meeting the inclusion criteria (n = 12: [reasons])
Studies included in the review (n = 11)

Table 1. Characteristics of the included studies (n = 11)

Author (year)	Setting	Participants	Outcome	Purpose	Design
Nurses and nursing paramedics					
Dewi et al., 2024	Emergency room, RSUD Dr. Doris Sylvanus, Palangka Raya	Implementing nurses	Service quality	Identify the relationship between workload and service quality among implementing nurses in the emergency room	Correlational, cross-sectional

Author (year)	Setting	Participants	Outcome	Purpose	Design
Novita & Riza, 2023	Inpatient ward, Pertamedika Ummi Rosnati Hospital, Banda Aceh	Inpatient nurses	Service quality	Analyze nurses' workload in relation to the quality of nursing services in the inpatient ward	Descriptive analytic, cross-sectional
Suryani & Rambe, 2022	Class 1 inpatient ward, RSUD Kota Padangsidimpuan	Inpatient nurses	Service quality	Analyze nurses' workload in relation to the quality of nursing services in the inpatient ward	Quantitative, cross-sectional
Syahputri & Rahmawati, 2023	Hermina Hospital, Bogor	Inpatient nurses	Performance	Identify and analyze workload and work motivation in relation to the performance of hospital nursing human resources	Quantitative, saturated sampling
Bariah et al., 2025	Karya Medika I Hospital, Cikarang	Inpatient nurses	Performance	Analyze workload, competence, and motivation in relation to nurse performance	Quantitative, observational descriptive
Weslly et al., 2024	Emergency room, General Hospital Santo Antonius	Nurses (emergency department)	Performance	Determine the relationship between workload and nurse performance	Quantitative , cross- sectional
Pioh et al., 2023	GMIM Siloam Sonder General Hospital, Minahasa	Care paramedics (nursing staff)	Performance	Analyze motivation, work stress, and workload of care paramedics and their relationship to performance	Reported as qualitative
Wicaksono et al., 2022	Inpatient ward, Hospital X, Bogor City, West Java	Inpatient nurses	Performance	Analyze workload, work stress, rewards, and sanctions in relation to the work performance of inpatient nurses	Quantitative, cross-sectional
Other health workers					

Author (year)	Setting	Participants	Outcome	Purpose	Design
Kristanti et al., 2024	Rokan Hulu Regional General Hospital	Healthcare professional	Performance	Test workload, job satisfaction, and work motivation in relation to the performance of health workers	Quantitative, correlational
Magfirah & Risambessy, 2023	Bhayangkara Hospital Tk III, Ambon	Medical personnel	Performance	Analyze the work environment and workload in relation to the performance of medical personnel	Causal-associative quantitative, positivist approach
Linda et al., 2025	Langsa Hospital	Medical record staff	Service quality	Identify the relationship between medical record staff workload and service quality in 2024 (workload, human resources, job description)	Analytical survey, cross-sectional

Table 2. Sample size, instruments, main findings, key statistics, and methodological quality of the included studies

Author (year)	Sample size	Instruments	Main findings	Key statistics	Quality (JBI)
Nurses and nursing paramedics					
Dewi et al., 2024	40	Workload questionnaire and a service quality questionnaire	Moderate workload 70%; good service quality 97.5%; the authors report an association	Pearson chi-square = 7.179 (df = 2; p = 0.028); likelihood ratio p = 0.114; linear-by-linear p = 0.054; 4 of 6 cells with expected count < 5	1/8 (12.5%), low
Novita & Riza, 2023	107	Questionnaire on task demands, effort, performance, and service quality; not described	Task demands and performance were associated with service quality, whereas effort was not; good service quality 91.6%	Chi-square: task demands p = 0.001; effort p = 1.000; performance p = 0.021 (abstract: 0.009)	1/8 (12.5%), low

Author (year)	Sample size	Instruments	Main findings	Key statistics	Quality (JBI)
Suryani & Rambe, 2022	30	WISN calculation and proportion of productive/non-productive activities; service quality questionnaire (not described)	Productive activity was 70% (not yet effective, < 80%); poor service quality 60%; the authors report an association; 33 nurses required versus 30 available	Reported chi-square p = 0.001 (results text 0.004) and OR = 4.167 (95% CI 1.194–14.541); recalculated from the cross-tabulation: p = 0.745, OR = 1.3; WISN ratio = 0.8	1/8 (12.5%), low
Syahputri & Rahmawati, 2023	49	Closed questionnaire on workload, motivation, and performance (34 of 48 indicators retained); PLS-SEM and F test	Workload was not significantly associated with performance; high workload was associated with high work motivation	Workload performance −0.044 (p = 0.799); motivation performance 0.263 (p = 0.546); workload motivation 0.575 (t = 4.189; p < 0.001); performance R^2 = 0.058; F = 1.076 (p = 0.349)	4/8 (50%), moderate
Bariah et al., 2025	63	Questionnaires on workload, competence, motivation, and performance; not described	Workload had no significant effect; competence and motivation had significant effects; all three were significant simultaneously	Multiple linear regression: workload t = 1.829 (p = 0.072); competence t = 7.788 (p < 0.001); motivation t = 2.694 (p = 0.009); F = 41.348 (p < 0.001)	1/8 (12.5%), low
Weslly et al., 2024	30	NASA-TLX (workload); 30-item observation sheet on nursing care (performance)	Workload was mostly heavy (63.3%) and very heavy (20%); 50% showed good performance; no association between workload and performance	Spearman r = −0.166; p = 0.380	2/8 (25%), low

Author (year)	Sample size	Instruments	Main findings	Key statistics	Quality (JBI)
Pioh et al., 2023	10	In-depth interview guide and document review; theory triangulation	Motivation, job stress, and workload were perceived as related to performance; staff shortages per shift and limited facilities were the main constraints	None (qualitative study)	3/10 (30%), low
Wicaksono et al., 2022	95	Likert questionnaire, 1–5 (work stress, workload, reward and punishment, performance); validity and reliability not reported	Work stress and workload had a significant negative effect on performance; reward and punishment had a significant positive effect; all three were significant simultaneously	Multiple linear regression: work stress β = −0.299 (p = 0.003); workload β = −0.100 (p = 0.043); reward and punishment β = 0.588 (p < 0.001); R^2 = 0.605; F = 46.487	2/8 (25%), low
Other health workers					
Kristanti et al., 2024	262	Questionnaire on workload (6 indicators), job satisfaction (5), motivation (5), and performance (5)	Workload had a negative effect, whereas job satisfaction and motivation had significant positive effects on performance	PLS-SEM: workload performance β = −0.499 (t = 4.881; p < 0.001); satisfaction performance 0.446 (p = 0.001); motivation performance 0.440 (p < 0.001); R^2 = 0.607 (adj. 0.585); Q^2 = 0.416	3/8 (37.5%), low
Magfirah & Risambessy, 2023	66	Likert questionnaire (work environment, workload, performance); validity r count > 0.2387; Cronbach's α 0.773–0.778	Work environment and workload had a significant positive effect on performance (the discussion, however, states that heavy workload has a negative impact)	Regression: work environment β = 0.512 (t = 4.773; p < 0.001); workload β = 0.585 (t = 5.775; p < 0.001)	2/8 (25%), low

Author (year)	Sample size	Instruments	Main findings	Key statistics	Quality (JBI)
Linda et al., 2025	31	Researcher-developed questionnaire (workload, human resources, job description, service quality); validity not reported	Workload, human resources, and job description were associated with the quality of medical record services; workload was mostly light (54.8%)	Chi-square: workload p = 0.001; human resources p < 0.001; job description p = 0.001	1/8 (12.5%), low

DISCUSSION

Workload and the Performance of Health Workers

Tasks in general are things that must be done by a member of an organization or an employee in an agency on a regular basis according to his ability to complete programs that have been made based on the goals, vision and mission of an organization (Ramadana et al., 2023).

Workloads that match the abilities and competencies of health workers may encourage them to work with more focus and productivity, which is associated with better performance. Likewise, workloads that are challenging but still within the limits of health workers' abilities may increase motivation and enthusiasm to complete tasks well, which may support the development of nurses' competencies and performance (Iman Gautama & Wardani, 2025).

However, excessive workload has been associated with physical and mental fatigue and emotional reactions such as headaches, indigestion, and irritability, whereas too little workload may cause boredom and monotony and a lack of attention to work that can endanger workers (Suryani & Rambe, 2022). These mechanisms are explanations drawn from the wider literature; most of the included studies did not measure fatigue or boredom directly.

The findings of this review have practical implications for hospital management. Hospitals may need to ensure that the workload given to health workers is in line with their capabilities and to provide adequate support, such as training, career development, and facilities, to help health workers manage their workload. Because most included studies are cross-sectional, these recommendations should be regarded as management considerations rather than proof that changing workload will change performance.

Inconsistent Findings Across Studies

Not all studies agreed. (Bariah et al., 2025; Syahputri & Rahmawati, 2023) found no significant association between workload and nurse performance, in contrast to five studies reporting that higher workload was associated with lower performance. Several explanations are possible. First, the two studies with null findings analyzed workload together with other predictors (work motivation; competence and motivation), which may have reduced the apparent contribution of workload; however, several studies that did find an association also included other predictors (Kristanti et al., 2024; Pioh et al., 2023; Wicaksono et al., 2022), so model specification alone does not explain the difference. Second, workload and performance were measured in different ways across studies with self-report questionnaires in most, NASA-TLX or WISN-based activity proportions for workload in two, and an observation sheet for performance in one, and these approaches capture different aspects of both constructs. Third, the studies differ in hospital type, unit (emergency or inpatient), and sample size, and small samples may lack the power to detect an association. Fourth, the relationship may be non-linear, with moderate workload associated with good performance and both very low and very high workload associated with poorer performance, which a linear test can miss. These explanations are tentative, because the extracted information does not allow them to be tested.

Findings on service quality were more consistent, as all four studies reported an association. Nevertheless, all were cross-sectional, and if workload and service quality were

reported by the same respondents, the associations may be inflated by common-method bias. (Novita & Riza, 2023) also showed that nurses with a light workload can still provide good service quality, which indicates that workload is only one of several factors related to quality.

Heterogeneity of the Study Population

The included studies involved nurses, nursing paramedics, medical record staff, and broader groups of medical personnel and health workers. Nurses contributed most of the evidence (8 of 11 studies), so the discussion above applies mainly to nurses. Studies of different professions were combined because the construct of interest, the match between work demands and capacity in hospital settings, is shared across professions, and because the number of studies per profession is too small for separate reviews. However, workload has different meanings across professions: for nurses it relates to patient care, shift work, and nurse-patient ratios, whereas for medical record staff it relates to administrative volume, as in (Linda et al., 2025), where the registration and assembling sections had the heaviest workload. For this reason, the findings for nurses and for other health workers are presented separately in Tables 1 and 2, and conclusions for non-nursing staff should be regarded as preliminary.

Workload and the Quality of Service

Quality assurance or health service quality assurance is an activity to measure the degree of perfection of health services compared to health service standards, followed by systematic and continuous improvement actions to achieve optimal service quality. Excellent service quality will create real service, namely customers who are satisfied, proud to choose service organizations and even happy to become loyal customers after they experience the quality of health services they provide (Sarnia et al., 2022).

Excessive workload that is not in line with workers' abilities has been linked to lower work quality because workers feel overwhelmed and exhausted, which may reduce concentration, self-supervision, and accuracy. As a result, work outputs may not meet the standards set, and complaints may arise when patients are not satisfied. A high workload may also increase fatigue, sickness, and absenteeism, which affects organizational performance. Quality is closely related to customer satisfaction, and an institution is considered good when it pays attention to the needs of the people it serves; patient satisfaction can be seen from the first impression of the nursing services provided (Ariyani et al., 2024).

The studies included in this review indicate that higher workload is associated with lower service quality. It has been proposed that stress may mediate this relationship, but this pathway was not examined in the service quality studies summarized in Table 2, and the evidence is cross-sectional, so the direction of the association cannot be established.

CONCLUSION

This narrative review of 11 studies in Indonesian hospitals suggests that workload is associated with the performance of health workers and with service quality. Most studies reported that higher workload was associated with lower performance and with poorer service quality, although two of the seven performance studies found no significant

associationThe evidence is mostly cross-sectional and drawn largely from nurses, so the findings indicate association rather than causation, and their generalisability is limited by heterogeneity and the generally low appraised quality of the studies. Hospitals should evaluate and manage workload so that it matches the capacity of health workers, as part of efforts to support a healthy work environment and service quality amid increasing patient numbers and limited health workers. Future longitudinal studies with standardized measures and separate analyses by profession are needed to clarify the direction and size of these associations.

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