

The Effect of Workload on Nurse Performance in Hospital Inpatient Settings: A Systematic Literature Review

Ai Kurnia¹, Karmilah¹, Najwa Khusnul¹, Siti Fatimah¹, Tanti Intan¹, Heri Ridwan¹,
Iyos Sutresna¹

¹School of Nursing, Universitas Pendidikan Indonesia, Sumedang, Indonesia

Correspondence author: Heri Ridwan

Email: heriridwan@upi.edu

Address: Sukakarya Hamlet 01/04 Cibereum, Sumedang, 45353 Jawa Barat

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ABSTRACT

Introduction: The rising nurse workload and its impact on performance have become a significant concern in hospital inpatient settings. Increased patient numbers and high Bed Occupancy Rates (BOR) have contributed to greater pressure on nursing staff, potentially affecting the quality of care provided.

Objective: The objective of this study was to assess the effect of workload on nurse performance in hospital inpatient settings through a comprehensive review of existing literature.

Method: A systematic literature review was conducted, utilizing national and international journals. The Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) method was applied in four stages: identification (n = 16,816), screening (n = 60), followed by the application of the PICO framework to determine feasibility and relevance, which resulted in 15 articles being included. The literature search involved accessing electronic databases such as Cochrane, PubMed, and Google Scholar.

Result: The review of 15 articles revealed that nurse performance is significantly influenced by multiple factors, with high workload being one of the main contributors. Of the 15 articles analyzed, 14 confirmed that high workload is a major challenge nurses face in performing their daily tasks, leading to potential declines in performance.

Conclusion: In conclusion, the study confirms that a high workload, especially in hospital inpatient rooms, has a significant negative impact on nurse performance. Addressing workload management through staffing optimization and effective policies is essential to improving the quality of care and ensuring better health outcomes.

Keywords: nurse, performance, workload

Introduction

Given that nurses are essential in providing health services, it is necessary to conduct research on this topic. The number of patients and medical conditions available determines how much work facility nurses have to do (Ulrich, Barden, Cassidy, & Varn-Davis, 2019). This also relates to how well nurses perform, specifically with regard to their ability to serve patients in a satisfactory manner or in other ways (Aiken et al., 2018 in (Yosiana, et al 2020). According to predetermined indicators such as work result standards and work targets, performance is the level of achievement obtained by a person within a certain period of time after completing a task (Rivai, 2009 in (Yosiana, et al 2020). It is often recognized that complaints can be filed regarding the services provided by nurses (Aiken et al., 2018) in (Yosiana, et al 2020) Nurses' stress levels are influenced by their workload. Workload can be in the form of assignments, job requirements, organizational structure, and working conditions (Manuaba 2013) in (Susiarty, et al, 2019).

Hospital nurses have mental and physical workloads. Nurses' physical responsibilities include pushing medical equipment, cleaning patient beds, bathing patients, helping patients use the restroom, lifting patients, and comforting sick patients. Shift work systems, keeping lines of communication open with coworkers, supervisors, patients, and patients' families, preparing patients and their families spiritually, especially for those undergoing surgery or in critical condition, and working with specialized skills and responsibility for patient recovery are examples of mental workload.

According to the data, the average workload of nurses increased significantly. Nurses' performance scores of 7.2 (2016), 7.54 (2017), and 7.38 (2018), tended to increase between 2016 and 2018. As a result, nurses are under greater pressure to perform their jobs. The Bed Occupancy Rate (BOR) indicator also increased during the period, reaching 65.1%, 81.3, and 90.2%, respectively. According to Sudra (2014) in (Yosiana, et al 2020), the optimal BOR value is between 85% and 75%. In addition, the number of patients increased from 1,543 in 2016 to 1,723 and 1982 in the following two years. According to the data, the average workload of nurses increased significantly. Nurses' performance scores, which were 7.2 (2016), 7.54 (2017), and 7.38 (2018), tended to increase between 2016 and 2018. As a result, nurses are under greater pressure to perform their jobs. The Bed Occupancy Rate (BOR) indicator also increased during the period, reaching 65.1%, 81.3, and 90.2%, respectively. According to Sudra (2014) in (Yosiana, et al 2020), the optimal BOR value is between 85% and 75%.

In addition, the number of patients increased from 1,543 in 2016 to 1,723 and 1982 in the following two years. As a result, nursing staff may become overworked, and nurses may not be able to perform standard operating procedures for medical services appropriately. This can increase the likelihood of poor management, lower quality of work, potential hazards of nosocomial infections, and decreased cleanliness of infrastructure and medical facilities in healthcare facilities. A sustainable nursing workforce is built on a supportive work environment for nurses, which also provides benefits in terms of improved healthcare (Paguio & Yu, 2020).

As a result, nursing staff may become overworked, and nurses may not be able to perform standard operating procedures for medical services appropriately. This can increase the likelihood of poor management, lower quality of work, potential hazards of nosocomial infections, and decreased cleanliness of infrastructure and medical facilities in healthcare facilities. A sustainable nursing workforce is built on a supportive work environment for nurses, which also provides benefits in terms of improved healthcare (Paguio & Yu, 2020).

According to previous research, employee performance is positively influenced by job stress. This is shown by Lankeshwara's (2016) research in (Susiarty, et al, 2019), which found that employee performance is positively affected by job stress. Prihartini's (2017) research in (Susiarty, et al, 2019), which states that job stress has a favorable and significant impact on performance, gives credence to this research. Therefore, further research is needed through this systematic purpose, which will carefully and carefully select the research that has been done on the effect of workload on nurse performance in hospital inpatient rooms, how the conclusions of some research evidence have been done.

Objective

The objective of this study was to assess the effect of workload on nurse performance in hospital inpatient settings through a comprehensive review of existing literature.

Method

This study employs a Systematic Literature Review approach, utilizing the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) and PRISMAP (Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocols) protocols. The review process followed the stages of identification, screening, and feasibility assessment to ensure comprehensive results. The selected studies met the PICO criteria. Literature was sourced from electronic databases, including Google Scholar, PubMed, and the Cochrane Library, using keywords such as "Workload," "Performance," and "Nurse," and employing Boolean logic ("Workload AND Performance AND Nurse" or "Workload OR Performance OR Nurse"). Filters applied included "Free full text," "Experimental studies," and publications from the last 5 years, sorted by publication date.

Result

In collecting articles on "The Effect of Workload on Nurse Performance in Hospital Inpatient Rooms," the authors (AK, K, NKK, SFA, TIN) followed the PRISMA guidelines for data extraction. A search was conducted using predefined keywords, resulting in a total of 16,700 articles from Google Scholar, 8 articles from PubMed, and 101 articles from the Cochrane Library. After applying the selection criteria, 15 articles were chosen. These selected articles were further evaluated descriptively based on inclusion and exclusion criteria. The quality of the studies was assessed to ensure alignment with the desired outcomes, and the articles were read concurrently by the authors (AK, K, NKK, SFA, TIN) to identify those that met the JBI research analysis standards. Ultimately, the 15 articles that met these inclusion criteria were used as the primary material for this study.

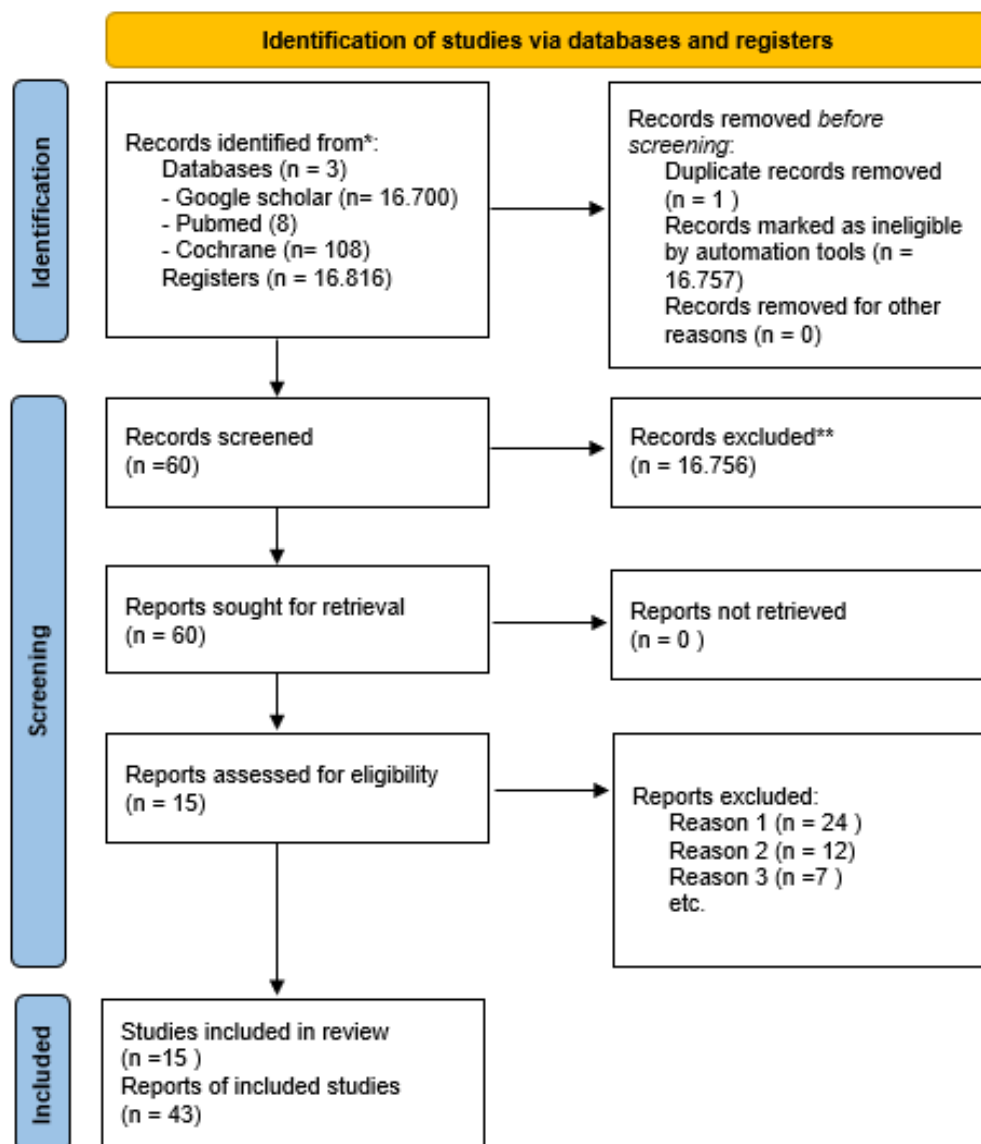


Figure 1. Prisma Flowchart

Discussion

Hospitals, as healthcare facilities, operate around the clock to address the diverse needs of patients, including emergency, non-emergency, and inpatient care. Nurses are integral to these services, comprising approximately 60% of the healthcare workforce in hospitals. They serve as the primary point of contact for patients, engaging directly in care delivery. In addition to their clinical responsibilities, nurses are also key in providing essential communication, offering feedback to patients and their families. They play a critical role in conveying medical information, addressing concerns, and ensuring that patients and their families understand both the patient's condition and the treatment plan being implemented.

Table 1. Data characteristics

Title, Researcher Name, Research Year, Research Location	Methods	Results
Workload and quality of nursing care: the mediating role of implicit rationing of nursing care, job satisfaction and emotional exhaustion by using structural equations modeling approach. (Fateme Maghsoud, Mahboubeh Rezaei", Fateme Sadat Asgarian and Maryam Rassouli). 2022 Place: Kashan University of Medical Sciences, Iran	cross sectional study, in which 311 nurses from four different hospitals were selected by on-site sampling method.	that nurses' workload affects the quality of nursing care through the mediating role of implicit rationing of nursing care, job satisfaction, and emotional exhaustion. After controlling for these mediating effects, there was no direct effect of workload on the quality of nursing care.
The effect of workload and work environment on job stress and its impact on the performance of nurses inpatient rooms at mataram city general hospital. (Afrina Susiarty, Lalu Suparman, Mukmin Suryatni), 2019, and the research site was Mataram City General Hospital.	The research method used is the census method, which is the collection of population data investigated if all elements are one by one. In addition, data analysis and hypothesis testing were carried out using the Partial Least Square (PLS) approach using SmartPLS version 3.0 software.	Workload has a positive and significant effect on Nurses' Work Stress in the patient ward of Mataram City General Hospital. The higher the Workload, the higher the level of Job Stress felt by nurses. Conversely, the smaller the Workload given, the lower the level of Job Stress felt by nurses.
Subtypes of nurses' mental workload and interaction patterns with fatigue and work engagement during coronavirus disease 2019 (COVID-19) outbreak: A latent class analysis. (Jing Wult, Husheng Litt Zha chui Geng1, Yanmei Wang2, Xian Wang2" and Jie Zhang2"), 2021 and the research site is Shanghai Municipal Hospital of Traditional Chinese Medicine, affiliated to Shanghai University of Traditional Chinese Medicine, Shanghai, China.	This was a cross-sectional study conducted through an online questionnaire. The NASA Workload Index, Fatigue-14 Scale, and Utrecht Work Engagement Scale were used to assess nurses' mental workload, fatigue, and work engagement.	The results of this study showed that nurses experienced high mental workload during the COVID-19 outbreak, which contributed to fatigue and behavioral changes. There are three classes of nurses based on perceived workload and self-evaluation.
at Hospital Dr. Tadjuddin Chalid Makassar, Syamsiar S. Russeng, Wahiduddin, Lalu Muhammad Saleh, T. A. Tenri Diah and Harun Achmad. 2020.Hospital Dr. Tadjuddin Chalid Makassar	Observation	there is an influence between workload and emotional exhaustion with p value (0.002) < (0.05), emotional exhaustion with performance p (0.000) < (0.05), and workload with performance p (0.000) < (0.05).
Workloads and burnout of nursing workers. Deciane Pintanela de Carvalho, Laureliz Pereira Rocha, Eliana Cardia de Pinho, Jamila Geri Tomaschewski - Barlem, Edison Luiz Devos Barlem, Leonardo Salomão Goulart. 2019. University Hospital (UH), in the State of do Sul	Observation	Workload has a significant relationship with the role of nurses and workers.
The Analysis of Workload and Work Environment on Nurse Performance with Job Stress as Mediation Variable. Yosiana, Adya Hermawati, Muchlis H. Mas'ud. 2020. Tumpang Subdistrict Health Center	Observation	If a high workload is handled by few human resources, it will result in a high workload and will further increase work stress. A conducive work environment not only helps nurses in controlling stress but can also improve their performance.

Title, Researcher Name, Research Year, Research Location	Methods	Results
Basalamah, F. F., Ahri, R. A., & Arman, A. (2021). The Effect of Work Fatigue, Work Stress, Work Motivation and Workload on Nurse Performance at Makassar City Hospital. <i>An Idea Health Journal</i> , 1(02), 67 -80.	Analytic observational	There were 100 respondents involved in this study. Most of the respondents were in the age group of 31-40 years (70%), female (69%), had a bachelor's degree in nursing (59%), and length of work > 10 years (73%).
Zhan, Y. X., Zhao, S. Y., Yuan, J., Liu, H., Liu, Y. F., - Gui, L. L., ... & Li, S. Y. (2020). Prevalence and influencing factors on fatigue of first-line nurses combating with COVID-19 in China: a descriptive cross-sectional study. <i>Current medical science</i> , 40, 625 - 635.		Multiple linear regression analysis showed that risk groups experiencing anxiety, depression, and perceived stress had higher physical and mental fatigue scores, and there was a significant positive correlation between these variables and nurse fatigue. In addition, exercise frequency had a significant negative correlation with nurse fatigue, while average daily working hours showed a significant positive correlation with fatigue. Weekly night shift frequency also had a low positive correlation with nurse fatigue ($P<0.01$).
Dasrin, F., & Sujianto, M. H. (2020). The Effect of Leadership and Workload on Nurse Performance with Motivation as an Intervening Variable at Rsud Arifin Achmad Riau Province. <i>JIANA (Journal of State Administration Science)</i> , 18(2), 143 -152.	-	that Leadership and Motivation have a significant positive impact on nurse performance. Workload has a significant negative impact on nurse performance. Leadership and workload affect nurse performance through motivation.
The Effect of Workload and Work Fatigue on Employee Performance at RSUH Surabaya City. Anita Oktafia Ellya Shinta: 2015. RSUH Surabaya	Saturated sampling	Workload has a significant effect on burnout. Workload has a positive and significant effect on employee performance. Burnout has a positive and significant effect on employee performance. Workload has a positive and significant effect on employee performance through burnout, so burnout is able to mediate between workload and employee performance.
"The Relationship between Workload and Work Stress on the Performance of Ketapang II Health Center Employees in East Kotawaringin Regency in 2021". Rivaldo Yandrie Pratama et al. 2021 Puskesmas Ketapang II, Kotawaringin Timu Regency	statistical analysis with p-value to determine the relationship between variables	The results showed that most of the respondents had poor performance 22 (51.2%). Most of the workload is heavy 26 (60.5%). Most of the work stress is moderate 24 (55.8%). The results showed there was a relationship between workload ($p=0.003$) and work stress ($p=0.004$) with employee performance.

Title, Researcher Name, Research Year, Research Location	Methods	Results
"Competence and workload motivation on the performance of nursing care implementation" Ruminta Sirait. 2019	Cross sectional study design, Measurement of variables is done once, Using a questionnaire as a data collection tool.	Competence has a positive effect on the performance of the implementation of inpatient care, Workload has a negative effect on the performance of the implementation of inpatient care, Competence and workload simultaneously have a significant effect on the performance of the implementation of inpatient care, The better the nurse's competence (knowledge, attitudes, skills) and the lower the workload, the more the performance of the implementation of inpatient care increases.
"The Effect of Workload on Employee Performance at Pantoloan Health Center with Incentives as a Moderating Variable. Annisa Putri Ana Phalis. 2020. Pantoloan Health Center, Palu	Simple regression analysis, Sample: 71 respondents (all employees of Pantoloan Health Center) Sampling technique: non-probability sampling with saturated sampling method.	Workload has a significant positive effect on employee performance (R Square 0.60 or 60%), Incentives strengthen the effect of workload on employee performance (R Square increases to 0.95 or 95% after the incentive moderation variable) The existence of incentive variables as moderating variables can strengthen or increase the influence of workload variables on employee performance.
"The Relationship between Fatigue and Workload on the Performance of Health Workers at Medika Mulia Tuban Hospital". Kirana Warita Megowati & Dwi Faqihatus Syarifah Hasan.2021. Medika Mulia Tuban Hospital	Cross sectional study, Population: 187 health workers, Sample: 127 respondents with a randomized system, Measurement of fatigue using the FAS method (Fatigue Assessment Scale, Measurement of workload using the NASA -TLX Method.	There is no relationship between work fatigue and workload on the performance of health workers at the medika mulia tuban hospital.
"The effect of workload on employee performance with work stress as an intervening variable (Case Study at BAPENDA Office, Madiun Regency)". Edwin Juni Usmanto. 2022. Office of BAPENDA Madiu Regency	Non-probability sampling technique, saturated sampling with a total of 45 employees Path analysis through SPSS 25, Data collection using questionnaires	that workload has a positive and significant influence on employee performance at BAPENDA Office Madiun Regency. In addition, workload also has a positive and significant effect on work stress, which in turn has a positive and significant effect on employee performance. Work stress functions as an intervening variable that strengthens the effect of workload on employee performance. This research shows the importance of workload management and attention to work stress to improve employee performance.

The vital role of nurses in the health system is indisputable, particularly as they are professionals who interact directly with patients to provide quality services (Afrilia, 2017). Performance evaluation of nurses is essential to understand the extent to which they fulfill their duties based on predetermined indicators, including clinical skills, professional knowledge, and nursing standards. This assessment aims to measure and improve nurses' abilities in the field of nursing, which serves as the foundation for professional development, compensation, and the prevention and management of violations.

However, nurses face a high workload as they are the frontline of healthcare, directly responsible for patient care in various settings, from hospitalization to emergency departments. Their primary duties include monitoring patients' conditions, administering medications, performing medical procedures, and providing emotional support to patients and their families (Ritonga, 2018). Yet, this workload is often exacerbated as nurses are also tasked with additional duties outside their core responsibilities, such as cleaning, administrative work, and sometimes clinical decision-making, which ideally should be handled by other medical personnel.

According to Kusuma (2020), workload arises as a result of communication and task expectations within the work environment, requiring skills and input from employees. Meanwhile, Nabawi (2019) defines workload as the effort individuals exert to complete tasks within their job roles, performed under normal conditions and within a specified time frame, all of which are linked to various indicators. The heavy workload, compounded by a shortage of nurses, alongside the pressure to complete tasks within a set time, can significantly increase the burden on nurses. Tasks may be delayed, resulting in less effective and optimal completion, which in turn impacts nurse productivity. Thus, workload is a critical factor affecting nurse performance (Usmanto, 2022).

The study reveals that several factors influence workload, including working hours, rest time, and the work systems applied within organizations. Additionally, factors such as the physical, chemical, and psychological work environment, as well as psychological factors like motivation, trust, desire, perception, and satisfaction, also play a role in shaping nurses' workload. To prevent workload from negatively affecting nurse performance, it is essential to implement effective time management and task-sharing strategies. Furthermore, creating a supportive work environment—such as providing adequate facilities and management support—can enhance nurses' motivation and job satisfaction. This enables nurses to remain focused on patient care without being overwhelmed by excessive tasks (Alifah, 2020). This high workload is further exacerbated by the shortage of nurses, which is often disproportionate to the number of patients that need care. As a result, nurses frequently work long shifts, care for many patients simultaneously, and experience physical and mental fatigue. These conditions can negatively affect nurse performance, decrease focus and care quality, and increase the risk of burnout.

The results of the literature review conducted on 15 articles indicate that nurse performance is significantly influenced by several factors, with high workload being one of the primary contributors. Among the 15 articles analyzed, 14 confirmed that high workload represents a substantial challenge faced by nurses in performing their daily tasks.

A study by Fatemeh Sadat Asgarian et al. (2022) revealed that nurse workload impacts the quality of nursing care through the mediating roles of implicit rationing of nursing care, job satisfaction, and emotional exhaustion. However, when controlling for these mediating factors, no direct effect of workload on the quality of nursing care was observed, suggesting

that assessing work stress as a mediating variable could improve nurse performance. Similarly, research by Adya Hermawati et al. (2020) found that when a high workload is managed by insufficient human resources, work stress intensifies. A conducive work environment, however, can help nurses manage stress, thereby improving their performance.

High workloads often compel nurses to handle multiple tasks within a limited time frame. In these conditions, nurses are responsible not only for essential nursing duties, such as monitoring patient conditions, administering medications, and performing medical procedures, but also for additional tasks that fall outside their primary roles (Sari & Purwanto, 2021). These extra duties include administrative tasks, medical recordkeeping, and maintaining a clean work environment. Consequently, this excessive workload can lead to physical and mental fatigue, negatively affecting nurses' health and well-being (Hani & Supriyadi, 2022).

Fatigue resulting from high workload levels can directly impact the quality of care provided to patients. Nurses experiencing fatigue may struggle to offer optimal attention to patients, increasing the risk of medical errors such as medication omissions or inadequate monitoring of patient conditions (Kusuma et al., 2023). Furthermore, nurses' inability to fully focus on patients can decrease patient satisfaction. Patients who feel neglected may have a negative experience with care, which could diminish their trust in the healthcare system as a whole (Rukmana et al., 2021).

High workload can also reduce nurses' focus and productivity in carrying out their responsibilities. When nurses face multiple tasks within tight time constraints, stress and pressure can mount, resulting in delays in providing necessary care. These delays can affect the outcomes of care (Yulianto et al., 2022). Thus, the high workload is not only a challenge for nurses but also significantly impacts the effectiveness and quality of care received by patients. This underscores the importance of effective human resource management in hospitals, as better management of nurses' workloads is critical for optimal performance.

To reduce the impact of high workload, hospitals can implement several strategies. Increasing the number of nurses will improve the nurse-to-patient ratio, enabling each nurse to care for fewer patients. Additionally, training programs focused on time management and managerial skills can help nurses manage their tasks more efficiently. The integration of technology in medical administration and recordkeeping can also alleviate nurses' administrative burdens, allowing them to dedicate more time to direct patient care (Isnaini et al., 2023).

Conclusion

This study demonstrates that high workload, particularly in hospital inpatient settings, significantly affects nurses' performance. Excessive workload can diminish service quality, increase the risk of medical errors, and contribute to higher levels of stress and burnout among nurses. Nurses face numerous challenges in their roles, including a high patient-to-nurse ratio, insufficient staffing, and increased administrative responsibilities. To address these challenges, it is crucial to implement integrated strategies to reduce nurses' workload, such as increasing the nursing workforce, optimizing workload management, and utilizing technology to streamline administrative tasks. By effectively managing workload and creating a supportive work environment, nurses will be better equipped to perform their duties, leading to improved healthcare service quality and enhanced patient satisfaction.

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