

Systematic Literature Review: Nurses' Work Hours and Workload Impact on Patient Safety Incidents

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KEYWORDS

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ABSTRACT

Patient safety is a key indicator in assessing the quality of healthcare services in hospitals, and nurses play a crucial role in maintaining that safety. However, long working hours and high workloads can affect nurses' performance, increasing the risk of fatigue, stress, and burnout, ultimately contributing to medical errors and decreased quality of care. This study aims to conduct a systematic literature review on the effect of nurses' working hours and workload on hospital patient safety incidents. Patient safety is a key indicator in assessing healthcare quality, and nurses play an essential role in maintaining patient safety during daily care. However, long working hours and high workloads can affect nurses' performance, increasing the risk of fatigue, stress, and burnout, ultimately contributing to medical errors and decreased quality of care. Through the analysis of various relevant studies, this review suggests that more flexible working hour arrangements and balanced workload management can reduce the risk of patient safety incidents and improve the quality of care provided. This study also recommends that hospital human resource management to create a healthier and safer working environment for nurses and patients.

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Introduction

Changes in the level of education and social status of the community at this time increase their awareness of getting health services that are not only of high quality but also safe. One of the most important quality indicators is patient safety. Hospital patient safety is a system by which hospitals make patient care safer, which includes risk assessment, identification and management of matters related to patient risk, incident reporting and analysis, The ability to learn from incidents and their follow-up and implementation of solutions to minimize the incidence of risk and prevent injury caused by errors due to acting or not taking action that should be taken Patient safety incidents are part of patient safety which is any unintentional event and condition that results in or has the potential to cause preventable injury to patients, consisting of Unexpected Events (KTD), Nearly Injured Events (KNC), Non-Injury Events (KTC) and Potential Injury Events (KPC) (Darimis et al., 2022).

Patient safety is one of the key indicators in assessing the quality of healthcare services in hospitals. The high incidence of incidents related to patient safety, such as medication errors,

nosocomial infections, or injuries from falls, remains a major challenge in various health systems around the world. In a hospital setting, nurses are crucial in maintaining patient safety as they are directly involved in the daily care process. However, high workloads and long working hours are often considered factors that can affect nurses' performance, which ultimately impacts patient safety. (Sholeh & Chalidyanto, 2021).

Research shows that nurses' working conditions, including the duration of working hours and level of workload, significantly affect the quality of healthcare provided. Excessive working hours and unbalanced workloads can result in physical and mental fatigue, which can reduce focus, increase the risk of errors, and negatively impact clinical judgment. Therefore, identifying the influence of nurses' working hours and workload on patient safety incidents is an important topic that deserves more attention.

In the context of health care, nurses are often faced with high job demands in terms of the quantity of patients to be handled and the complexity of tasks to be completed. In many hospitals, nurses have to handle more patients than is ideal, resulting in limited time to provide individualized attention to each patient. These demands can cause nurses to feel pressure, reduce the quality of interactions between nurses and patients, and potentially neglect the specific health needs of each patient. In this situation, hospital management must be aware of nurses' challenges and find effective solutions.

Long working hours, especially in a shift system, can increase the risk of fatigue, stress, and burnout. Nurses who work irregular or excessively long shifts are likely to experience sleep disturbances and physical and mental fatigue. This fatigue can reduce nurses' alertness and concentration, crucial in providing safe and effective care. With high levels of fatigue, nurses may be unable to function at optimal capacity, potentially leading to medication administration errors or crucial clinical decisions (Pogorzelska & Chlabicz, 2022).

Heavy workloads also often contribute to medical errors. When nurses attempt to complete tasks in a limited time, they may miss important steps in care procedures (Taneja et al., 2021). For example, in a rushed situation, nurses may not check the patient's medical history thoroughly or miss important observations regarding the patient's condition. These kinds of mistakes jeopardize patient safety and can increase nurses' emotional and psychological burden, exacerbating burnout issues.

Therefore, hospitals and healthcare institutions need to evaluate and adjust nurses' work systems. Implementing more flexible work schedules, reducing the number of patients nurses handle at a time, and providing adequate psychological support can help reduce stress and improve nurses' well-being. Thus, these measures will support nurses' mental and physical health and improve the quality of patient care, reduce the risk of safety incidents, and ultimately create a safer and more efficient healthcare environment.

Many studies have shown that nurses who work more than 12 hours per shift or experience excessive workloads tend to have a higher risk of making errors that can harm patients (Santhoshkumar et al., 2022). This not only jeopardizes patient safety but can also affect nurses' well-being. However, while the relationship between workload, working hours, and patient safety incidents has been recognized, there are still differences in research results regarding how much influence they have and how they can be effectively managed to reduce risk.

Thus, the objective of this study is to explore the impact of Lean and Continuous Improvement methodologies on hospital financial management. This study will review the existing literature to

understand how these methodologies contribute to operational efficiency, cost savings, and the overall improvement of patient care. The results of this review are expected to provide valuable insights that can guide hospital administrators in implementing these methodologies effectively to meet the financial and operational challenges of modern healthcare systems.

Materials and Methods

The research design was a systematic literature review that collected and analyzed research on the effect of nurses' working hours and workload on patient safety incidents. The inclusion criteria were studies published between 2019 and 2024 focusing on nurses as subjects. These studies examined the relationship between working hours, workload, and patient safety, and were conducted in English or Indonesian. Exclusion criteria included non-peer-reviewed articles, studies irrelevant to the topic, and studies in languages other than English and Indonesian.

The data search was conducted using PubMed, Scopus, and Google Scholar databases. These databases were chosen due to their broad coverage in health research, ensuring a comprehensive collection of relevant studies. Keywords used included "nurse working hours," "nurse workload," "patient safety," and "patient safety incidents." In addition to journals, book materials and relevant regulations were also used.

The selection of reviewed studies involved a multi-step process. Initially, articles were screened based on titles and abstracts to identify relevance to the research topic. Subsequently, full-text articles were assessed to determine if they met the inclusion criteria. The quality of the selected articles was evaluated using the PRISMA method to ensure that only high-quality and relevant studies were included in the review. Extracted data included the title, year of publication, study design, sample size, and key findings related to working hours, workload, and patient safety incidents. Data were then systematically analyzed to identify research consistency and draw conclusions.

Results and Discussions

Nurse Working Hours

Nurses' working hours are one important factor affecting the quality of health services provided. They are usually organized by shift to ensure continuous care for patients. However, long shifts or excessive working hours can negatively impact nurses' health and patient safety (Riau, 2024).

Long working hours in the healthcare sector, especially among nurses, can lead to significant physical and mental fatigue. Working more than 12 hours a day or more than 60 hours a week consistently increases the risk of medical errors, decreases focus, and increases patient safety incidents by up to 3 times patient safety. It is explained that fatigue due to long working hours affects nurses' performance, decreases cognitive capacity, and increases the likelihood of errors in decision-making (Rahman, 2020; Bahuguna et al., 2023). Other studies have shown that nurses who work long shifts, especially more than 12 hours, are likelier to report low job satisfaction and a desire to leave their profession (Afrashtehfar, Assery, & Bryant, 2020).

Nurse Workload

Health Law No.36 of 2009 states that workload is the product of the number of jobs with time and the amount of work that must be beaten by a position/organizational unit. Every worker can work without endangering himself and the community around him, so it is necessary to adjust the

workload, work capacity, and work environment to obtain optimal work productivity (Manzoor, Wei, Hussain, Asif, & Shah, 2019).

Workload (Asif et al., 2019) is the average frequency of each job activity within a certain period. Workload is a record of work results or volume of work results that can show the volume produced by several employees in a particular section. A group or a person must complete a certain amount of work in a certain time or workload, which can be seen objectively and objectively. Subjective workload is a statement of the measure a person uses to measure feelings of work overload, job pressure, and job satisfaction. Objectively, it is the number of activities performed or the overall time used (Jiang, 2020).

A high workload can result in poor communication between nurses and patients, failure of collaboration between nurses and doctors, nurse turnover, and job dissatisfaction. According to the results of research (Miao, Zhang, Wu, Zhang, & Jiang, 2020), Click or tap here to enter text. indirect nurse activities are activities that are carried out in the inpatient room, and the factors that affect workload are the number of patients, the number of nurses, and the number of activities.

According to the study (Hussain et al., 2019) Factors that affect workload

- a. The number of nurses is a problem that often arises in hospitals, one of which is the unbalanced workload of nurses. It is often difficult for managers to determine the quality of workload because it is more based on subjective complaints. This situation usually starts from the planning stage when the need for nurses is not by the work capacity of a health care institution.
- b. Work environment conditions The work environment can be a source of workload, including work demands, work demands, relationships between nurses and work responsibilities, relationships between nurses are not good enough.
- c. Leadership should also be able to coordinate a conducive and dynamic work environment and actively plan nurses' career development. Motivate nurses to be good nurses and have the foresight to improve their professionalism.
- d. Nurses' responsibilities Nurses are responsible for both their own patients and the patients of other nurses. Working with a new nurse in a particular room, or a newly graduated nurse can increase the workload of other nurses, it can also be because they feel responsible for the safety of the patients being handled by the new nurse.

Nurses' workload certainly affects the time nurses can devote to various tasks. (Kalaja, 2023). With a heavy workload, nurses may not have enough time to perform tasks that can have a direct impact on patient safety. A heavy nurse workload may affect the provider's decision to perform various procedures.

Patient Safety

Hospital patient safety is a system where hospitals make patient care safer. Patient safety consists of six goals, namely, correct patient identification, improving effective communication, preventing medication errors, preventing procedural errors, appropriate location and patients in surgery, preventing the risk of infection and preventing the risk of patient falls, but of these six goals the incidence of patient falls is still a worrying issue throughout hospital inpatients (Okafor & Chen, 2019).

Hand hygiene, washing hands properly before and after contact with patients (Jian Nan Chen, Ren, Xu, Zhang, & Xia, 2022). Use of appropriate protective equipment (e.g., gloves) before patient contact. Respiratory hygiene (e.g., covering mouth when coughing and sneezing). Safety against injections and sharps and proper disposal.

According to (Qinyu Chen et al., 2019) the patient safety standard consists of seven standards, namely:

1. Patient rights Patients and their families have the right to obtain information about service plans and outcomes including the possibility of adverse events.
2. Educating patients and families Hospitals should educate patients and their families about patient obligations and responsibilities in patient care.
3. Patient safety and continuity of care The hospital ensures continuity of care and ensures coordination between personnel and between service units.
4. Use of performance improvement methods to conduct patient safety evaluation and improvement programs Hospitals should design new processes or improve existing processes, monitor and evaluate performance through data collection, intensively analyze adverse events, and make changes to improve performance and patient safety.
5. The role of leadership in improving patient safety
6. Educate staff on patient safety
7. Communication is key for staff to achieve patient safety.

According to the National Hospital Patient Safety Guidelines of the Ministry of Health of the Republic of Indonesia (2015), in implementing patient safety standards, hospitals must implement seven steps towards patient safety (Zhang, Xu, Chen, Li, & Chen, 2022). According to (Nguyen & Nagase, 2019) The seven steps to patient safety are as follows.

1. build awareness of the value of Patient Safety;
2. leading and supporting staff;
3. integrate risk management activities;
4. develop a reporting system;
5. engage and communicate with patients;
6. learning and sharing experiences on Patient Safety; and
7. injuries through the implementation of the Patient Safety system

Individual characteristics are the first level of factors that have a direct impact on the service and the service may still be considered acceptable or substandard (Feleke, Demise, & Garedew, 2020). Individual characteristics include all the qualities that individuals bring to the job such as knowledge, skill level, experience, intelligence, detectability, education and training, state of organism and even attitudes such as alertness, fatigue, and motivation. Knowledge and skills through training programs are essential for them (Umoke et al., 2020).

The nature of the job refers to the characteristics of the job itself and includes the extent to which the procedures used are well defined, the nature of the workflow, the patient load at peak or not, the presence or absence of teamwork, the complexity of care, functional tools and depreciation period, interruptions and competing jobs and the physical/cognitive requirements to perform the job (Sinyiza et al., 2022).

The physical environment includes the design of the workplace and equipment, temperature, humidity, ventilation, lighting, noise, distractions, and hazards. The relationship between the physical

environment and health services is important. Hospital building management must pay close attention to patient safety and staff safety (Haque et al., 2019). With good management, it will be more effective, safe, efficient and patient-centered (Arief, Fahriati, & Kartikasari, 2022).

Interaction between systems and humans is two systems that interact or communicate within the scope of the system. Interactions between systems and humans include the location or placement of tools, medical equipment or equipment, control of tools, mastery of work papers, and mastery of information technology. Health information technology plays an important role in efforts to improve patient safety and quality of care, and more supervision of the use of technology is needed (Akunne, Okonta, Ukwe, Heise, & Ekwunife, 2019).

This external environment includes government policies, economic pressures, health policies, public awareness, political climate, basic knowledge, demographics, and the latest technology. The external environment is a demand for something that is needed by the organization as a form of high commitment in implementing quality through patient safety. This external pressure can have an impact on efforts to improve patient safety (Ivanova & Glukhova, 2020).

Nurses' Role in Maintaining Patient Safety

The Legal Basis for the role of nurses in the implementation of Patient Safety and the protection of patient rights in hospitals The 1945 Constitution of the Republic of Indonesia Related to patient safety which is one of the patient's rights, the patient has the right to receive health services that are fair and in accordance with the values of a civilized nation, contained in Article 28H paragraph (1) and Article 34 paragraph (3) To realize the right to health for patients there must be health care facilities, and one of the health care facilities is the hospital (Dubey & Sahu, 2019). In supporting health services in hospitals, it is necessary to have health workers who support the implementation of the Patient Safety program. One of the health workers is a nurse (Ramayah et al., 2022).

In the implementation of Patient Safety and protection of patient rights in the Hospital involves several health workers who carry out health services including doctors, nurses, midwives, pharmacists and other health workers who support the implementation of Patient Safety and protection of patient rights Santhoshkumar (Elbaz et al., 2023). Nurses have a position as one of the members of the Patient Safety Committee Team, where their duties and responsibilities are as a provider of nursing care in health services. Nursing care that is applied must be based on the six goals of patient safety so that it supports the implementation of the Patient Safety Committee Team program (Rum, Muchtar, & Arif, 2019).

The procedure for implementing the role of nurses must already have STR (Registration Certificate) and SIKP (Nurse Work Permit) in a preventive manner to be a requirement as a professional nurse in accordance with their competence. Nursing services provided by nurses are based on knowledge and competence in the field of nursing science (Usman, 2020). So that nurses carry out nursing care safely because this evidence states that nurses have been declared competent in accordance with their profession and have the authority to carry out nursing actions. Nurses who work at Panti Rahayu Yakkum Purwodadi Hospital already have STRs and SIKPs, including 16 nurses who are research respondents.

Nurses have a very important role in maintaining patient safety in various health settings (Rahmawati, 2020). Here are some key aspects of the nurse's role in this context:

1. Providing Safe and Quality Care

Nurses are responsible for providing safe and quality care to patients. They must follow established clinical protocols and guidelines to ensure that the actions taken are not only effective but also safe for the patient. This includes the administration of medications at the correct dosage, as well as the proper execution of medical procedures (Harisa et al., 2022).

2. Patient Health Monitoring

Nurses routinely monitor the patient's health condition, including vital signs, response to treatment, and symptom progression. Through this monitoring, nurses can detect changes in the patient's condition early and take necessary actions to prevent complications (Elbaz et al., 2019a).

3. Patient and Family Education

Education is an integral part of the nurse's role in maintaining patient safety. Nurses must provide clear and easy-to-understand information about the patient's health condition, treatment plan, as well as preventive measures that can be taken to avoid risks. Patient and family involvement in the care process is essential to increase their awareness and participation in maintaining safety.

4. Health Team Collaboration

Nurses work closely with other members of the healthcare team, including doctors, pharmacists, and other healthcare personnel, to ensure that all aspects of a patient's care are addressed holistically. Good collaboration can reduce the risk of medical errors and improve coordination in the management of care.

5. Incident and Error Reporting

Nurses have the responsibility to report any incidents or errors that occur during the care process. This reporting is important for further analysis and to identify areas that require improvement. By understanding the cause of the error, the healthcare team can take steps to prevent similar occurrences in the future.

6. Implementation of Evidence-Based Nursing Practice

Nurses should implement evidence-based practice in all aspects of their care. By following the latest guidelines and current research, nurses can ensure that they are using the most effective and safe methods and techniques to treat patients.

7. Promoting a Safe Environment

Nurses also play a role in creating a safe care environment, both physically and psychologically. This includes fall prevention, infection control, as well as supporting patients' mental health. By creating a safe environment, nurses can help reduce the risk of injury or complications that may occur.

Through their various roles, nurses contribute significantly to maintaining patient safety and improving the quality of care provided (Fuadah, Helena, & Tazkiyah, 2023). First of all, nurses not only act as care providers, but also as liaisons between patients and the rest of the medical team. In situations where the patient has an urgent change in condition, the nurse is the first person who can identify the problem and take appropriate action. With their knowledge and skills, nurses are able to conduct an in-depth evaluation of the patient's condition and provide accurate reports to doctors or other healthcare professionals. This is crucial in ensuring patients receive prompt and appropriate care.

In addition, nurses have a key role in educating patients and their families about their health conditions and treatment plans. This education not only involves medical information, but also involves preventive measures that can be taken to avoid risks that may occur (Marzel, 2020). By improving the understanding of patients and their families, nurses can encourage them to actively participate in self-care and follow the medical instructions given. This involvement not only increases the patient's self-confidence, but also potentially reduces the number of medical errors that can occur due to the patient's lack of understanding of care instructions.

Nurses also play an important role in creating a safe and comfortable environment for patients. A positive and supportive environment can reduce patients' stress and anxiety levels, which in turn can speed up the healing process (Aini & Yanti, 2021). By minimizing the risk of injuries, such as falls or infections, nurses help maintain overall patient safety. For example, strict implementation of infection prevention protocols can reduce the risk of nosocomial infections, while close supervision of patients at risk of falling can reduce the incidence of injuries.

Furthermore, by consistently carrying out these responsibilities, nurses not only protect patients, but also contribute to efforts to improve safety and quality in the health system as a whole (Lestasi, Fatimah, Siti, & Koeswandari, 2020). Nurses serve as active change agents within healthcare institutions, proposing process and policy improvements that can enhance patient safety. For example, participation in safety audits or quality improvement initiatives can provide valuable insights into areas for improvement. In addition, nurses' collaboration with other members of the healthcare team in quality improvement efforts can create a stronger safety culture within the organization.

Finally, by implementing evidence-based nursing practice, nurses continuously update their knowledge and skills to provide the best care possible. In the ever-evolving information age, nurses are required to always learn and keep up with the latest developments in clinical practice (Hutauruk, 2021). By doing so, they can ensure that the approach taken in patient care is the most effective and in line with current standards. With a high commitment to professionalism and quality of care, nurses actively contribute to the achievement of patient safety goals and overall health system improvement.

The Relationship of Nurses' Working Hours and Workload to Patient Safety Incidents

Hospitals are services that play an important role in people's lives. Hospitals are very complex places, there are hundreds of drugs, hundreds of tests and procedures, many tools and technologies, various professions and non-professions that provide services to patients for 24 hours continuously. (Xaverius Jimmie Mantow, 2022) The diversity and routine of these services if not managed properly can cause unexpected events and can also harm patients and threaten patient safety. Nurses as one part of the nursing service provider have the longest time at the patient's side, allowing work fatigue to occur (Annisa et al., 2024).

People who experience health problems certainly go to the hospital hoping to get help, treatment and recovery from doctors, nurses, and other medical personnel, in the healing process of course supported by medication, hospital equipment and other facilities (Mastur & Budiyo, 2020). However, there are several incidents in the hospital that harm patients, injure patients so that they make the patient's illness worse and instead of getting a cure, some result in death. These events are termed *adverse* events (Fadlian et al., 2021).

The relationship between nurses' working hours and workload and patient safety incidents is an important topic that has been widely researched in the healthcare context. Research shows that long working hours and high workload can contribute to an increased incidence of medical errors and injuries to patients. When nurses work long shifts, they are at risk of fatigue which can affect their concentration and thoroughness in performing nursing tasks. Fatigue can lead to decreased performance, increase the likelihood of negligence, and reduce nurses' ability to identify and respond to emergency situations quickly.

A high workload can also affect the quality of care provided. When nurses have to handle more patients than they can effectively manage, they may not be able to give each patient enough attention. This can result in delays in providing treatment, lack of adequate monitoring of the patient's condition, and difficulty in performing necessary interventions (Syari Tanejafuddin et al., 2021). Research shows that nurses who face excessive workloads tend to feel stressed and depressed, which in turn can contribute to poor quality of care and increased patient safety incidents.

Conversely, studies have also shown that more flexible working hour arrangements and balanced workloads can contribute to improved patient safety. With more regular working hours and manageable workloads, nurses have a better opportunity to rest and recharge, thus providing better and safer care. In addition, a supportive and collaborative work environment can improve nurses' job satisfaction, directly related to the quality of care provided to patients (Zalianty, 2024).

Overall, the association between nurses' working hours and workload and patient safety incidents demonstrates the importance of human resource management in health systems. Nurses' irregular working hours and high workload may contribute to an increased risk of patient safety incidents. Fatigue due to long working hours can reduce nurses' concentration and alertness, thereby increasing the likelihood of medical errors. In this context, it is important for hospital management to evaluate and design adequate work schedules, give nurses enough time to rest, and ensure that they are not overburdened with excessive tasks (Mukrodi, Catio, & Sutoro, 2022).

The right strategy in setting working hours and adjusting workload can improve the quality of care and reduce the risk of patient safety incidents. One approach that can be implemented is the use of a more flexible work schedule rotation system, so that nurses can have adequate rest time between work shifts (Pardede & Mustam, 2020).

Thus, managers of hospitals and healthcare institutions need to consider these factors in workforce planning and management. In addition to setting rational working hours, it is important to provide the necessary training and resources to help nurses manage their workload effectively. By adopting an evidence-based approach to human resource management, hospitals can create a work environment that supports nurses and improves patient safety. (Putri et al., 2022). These efforts will not only benefit patients, but also contribute to nurses' job satisfaction, which is important for maintaining the availability and quality of healthcare services (Koniswara & Lestari, 2019).

Ultimately, attention to the relationship between working hours, workload, and patient safety is a strategic step that healthcare management should take. By creating an adequate work environment, where nurses can work optimally, we can achieve the common goal of improving the quality of healthcare. Patient safety should be a top priority in every policy and practice implemented in healthcare institutions, to ensure that every individual receiving care gets safe, effective and high-quality services.

Conclusion

The relationship between nurses' working hours and workload and patient safety incidents is significant, suggesting that effective human resource management is key to improving healthcare quality. Regular working hours and a balanced workload can reduce the risk of medical errors and increase nurses' focus and alertness. Therefore, it is important for hospital management to implement appropriate strategies in work schedule planning and workload adjustment to create a supportive work environment for nurses and ensure the safety and quality of patient care. This study recommends that healthcare institutions adopt more flexible shift rotation systems, provide adequate training for workload management, and offer psychological support for nurses. For future research, it is suggested to explore specific interventions that can be more effective in reducing workload and improving nurse well-being across different types of healthcare institutions

References

- Afrashtehfar, K. I., Assery, M. K. A., & Bryant, S. R. (2020). Patient Satisfaction in Medicine and Dentistry. *International Journal of Dentistry*, 2020. <https://doi.org/10.1155/2020/6621848>
- Aini, S. N., & Yanti, J. S. (2021). Asuhan Kebidanan Pada Ibu Hamil Dengan Anemia Ringan Di Pmb Hj. Dince Safrina Tahun 2020. *Jurnal Kebidanan Terkini (Current Midwifery Journal)*, 1(1), 32–44. <https://doi.org/10.25311/jkt/Vol1.Iss1.312>
- Akunne, M. O., Okonta, M. J., Ukwe, C. V., Heise, T. L., & Ekwunife, O. I. (2019). Satisfaction of Nigerian patients with health services: A protocol for a systematic review. *Systematic Reviews*, 8(1), 4–9. <https://doi.org/10.1186/s13643-019-1160-z>
- Annisa, A., Surjoputro, A., & Widjanarko, B. (2024). Dampak Dukungan Sosial Dan Keluarga Terhadap Kepatuhan Pengobatan Hipertensi Pada Pasien Hipertensi : Literature Review. *Jurnal Ners*, 8(1), 254–261.
- Arief, I., Fahriati, A., & Kartikasari, N. (2022). *Servqual Scale to Investigate Patient Satisfaction of Pharmaceutical Service at Private Dental Hospital, Jakarta, Indonesia*. 1–6. <https://doi.org/10.4108/eai.11-10-2021.2319535>
- Asif, M., Jameel, A., Sahito, N., Hwang, J., Hussain, A., & Manzoor, F. (2019). Can leadership enhance patient satisfaction? Assessing the role of administrative and medical quality. *International Journal of Environmental Research and Public Health*, 16(17). <https://doi.org/10.3390/ijerph16173212>
- Chen, J.-N., Ren, X., Xu, H., Zhang, C., & Xia, L. (2022). Effects of Grain Size and Moisture Content on the Strength of Geogrid-Reinforced Sand in Direct Shear Mode. *International Journal of Geomechanics*, 22(4). [https://doi.org/10.1061/\(asce\)gm.1943-5622.0002309](https://doi.org/10.1061/(asce)gm.1943-5622.0002309)
- Chen, Q., Beal, E. W., Okunrintemi, V., Cerier, E., Paredes, A., Sun, S., Olsen, G., & Pawlik, T. M. (2019). The Association Between Patient Satisfaction and Patient-Reported Health Outcomes. *Journal of Patient Experience*, 6(3), 201–209. <https://doi.org/10.1177/2374373518795414>
- Darimis, Hidayah, N., Atmoko, A., Ramli, M., Fitriyah, F. K., & Hanafi, H. (2022). Treating Verbal Bullying Among Students Between Cognitive Behavioral Counseling and Group Counseling with Discussion. *Pegem Egitim ve Ogretim Dergisi*, 12(4), 253–259. <https://doi.org/10.47750/pegegog.12.04.26>
- Dubey, P., & Sahu, S. (2019). *Effect of Service Quality on Perceived Value , Satisfaction and Loyalty of Customers : A Study on Selected Hospitals of Chhattisgarh International Journal of Computer Sciences and Engineering Open Access Effect of Service Quality on Perceived Value , Sati. March*.
- Elbaz, A. M., Abou Kamar, M. S., Onjewu, A.-K. E., & Soliman, M. (2023). Evaluating the Antecedents of Health Destination Loyalty: The Moderating Role of Destination Trust and Tourists' Emotions.

- International Journal of Hospitality & Tourism Administration*, 24(1), 1–28. <https://doi.org/10.1080/15256480.2021.1935394>
- Fadlian, A., Irawan, R. B., & Faridah, H. (2021). Pelayanan Hukum pada Pengadilan Negeri Karawang di Era Covid 19. *Jurnal Abdimas Mahakam*, 5(2), 148–153. <https://doi.org/10.24903/jam.v5i2.1479>
- Feleke, A. A., Demise, Y. A., & Garedew, M. G. (2020). Patient Satisfaction and Associated Factors on Inpatient Nursing Service at Public Hospitals of Dawro zone, Southern Ethiopia. *International Journal of Caring Sciences*, 13(2), 1411–1420.
- Fuadah, N. T., Helena, D. F., & Tazkiyah, I. (2023). Dampak Mengonsumsi Makanan Kariogenik dan Perilaku Menggosok Gigi terhadap Kesehatan Gigi Anak Usia Sekolah Dasar. *Jurnal Penelitian Perawat Profesional*, 5(2), 771–782. <https://doi.org/10.37287/jppp.v5i2.1586>
- Haque, A., Kabir, S. M. H., Tarofder, A. K., Anwar, N., Yasmin, F., & Mhm, N. (2019). Pharmaceutical marketing ethics in healthcare quality for patient satisfaction: An islamic approach. *International Journal of Pharmaceutical Research*, 11(1), 1688–1697. <https://doi.org/10.31838/ijpr/2019.11.01.307>
- Harisa, A., Syahrul, S., Yodang, Y., Abady, R., & Bas, A. G. (2022). Analisis Faktor-Faktor yang Memengaruhi Kualitas Tidur Pasien Lanjut Usia dengan Penyakit Kronis. *Jurnal Kesehatan Vokasional*, 7(1), 1. <https://doi.org/10.22146/jkesvo.62916>
- Hussain, A., Sial, M. S., Usman, S. M., Hwang, J., Jiang, Y., & Shafiq, A. (2019). What factors affect patient satisfaction in public sector hospitals: Evidence from an emerging economy. *International Journal of Environmental Research and Public Health*, 16(6). <https://doi.org/10.3390/ijerph16060994>
- Hutauruk, D. (2021). Gambaran Nilai Hematokrit Pasien Tuberculosis Yang Mendapat Pengobatan Obat Anti Tuberculosis (Oat) Di Puskesmas Raya Pematangsiantar. *Klinikal Sains : Jurnal Analisis Kesehatan*, 9(1), 36–46. https://doi.org/10.36341/klinikal_sains.v9i1.1754
- Ivanova, I. A., & Glukhova, T. V. (2020). Aspects of information and analytical support for the supply chain management of healthcare customers' loyalty. *International Journal of Supply Chain Management*, 9(2), 622–629.
- Jiang, S. (2020). The Relationship between Face-to-Face and Online Patient-Provider Communication: Examining the Moderating Roles of Patient Trust and Patient Satisfaction. *Health Communication*, 35(3), 341–349. <https://doi.org/10.1080/10410236.2018.1563030>
- Kalaja, R. (2023). Determinants of Patient Satisfaction with Health Care: A Literature Review. *European Journal of Natural Sciences and Medicine*, 6(1), 43–54. <https://doi.org/10.2478/ejnsnm-2023-0005>
- Koniswara, S., & Lestari, T. S. (2019). Gaya Kepemimpinan Situasional Terhadap Motivasi Kerja Karyawan Pada Pt Garuda Indonesia (Persero) Tbk Cabang Kupang. *EKOBIS: Jurnal Ilmu Manajemen Dan Akuntansi*, 7(1), 1–15. <https://doi.org/10.36596/ekobis.v7i1.69>
- Lestasi, T., Fatimah, Siti, F., & Koeswandari, R. (2020). Efektivitas Mendengarkan Musik Klasik Terhadap Tingkat Insomnia Di Bangsal Rawat Inap RSUD Wates.
- Manzoor, F., Wei, L., Hussain, A., Asif, M., & Shah, S. I. A. (2019). Patient satisfaction with health care services; an application of physician's behavior as a moderator. *International Journal of Environmental Research and Public Health*, 16(18), 1–16. <https://doi.org/10.3390/ijerph16183318>
- Marzel, R. (2020). Terapi pada DM Tipe 1. *Jurnal Penelitian Perawat Profesional*, 3(1), 51–62. <https://doi.org/10.37287/jppp.v3i1.297>
- Mastur, M., & Budiyo, B. (2020). Implementasi Pelaksanaan Perda Kota Semarang Nomor 6 Tahun 2012 Tentang Pengelolaan Sampah Di Kota Semarang. *Qistie*, 13(2), 225. <https://doi.org/10.31942/jqi.v13i2.3911>

- Miao, R., Zhang, H., Wu, Q., Zhang, J., & Jiang, Z. (2020). Using structural equation modeling to analyze patient value, satisfaction, and loyalty: a case study of healthcare in China. *International Journal of Production Research*, 58(2), 577–596. <https://doi.org/10.1080/00207543.2019.1598595>
- Mukrodi, M., Catio, M., & Sutoro, Moh. (2022). *Manajemen Sumber Daya Manusia* (Issue 1).
- Nguyen, T. L. H., & Nagase, K. (2019). The influence of total quality management on customer satisfaction. *International Journal of Healthcare Management*, 12(4), 277–285. <https://doi.org/10.1080/20479700.2019.1647378>
- Okafor, L., & Chen, A. F. (2019). Patient satisfaction and total hip arthroplasty: a review. *Arthroplasty*, 10(1), 1–7. <https://doi.org/10.1186/s42836-019-0007-3>
- Pardede, A. C., & Mustam, M. (2020). Manajemen Sumber Daya Manusia Pegawai Negeri Sipil Dalam Rangka Reformasi Birokrasi Di Kabupaten Semarang. *Journal of Public Policy and Management Review*, 6(4), 122–140.
- Pogorzelska, K., & Chlabicz, S. (2022). Patient Satisfaction with Telemedicine during the COVID-19 Pandemic—A Systematic Review. *International Journal of Environmental Research and Public Health*, 19(10). <https://doi.org/10.3390/ijerph19106113>
- Putri, E. A., Tajriani, A., Syifa, A., Nurrachmawati, N., Rivai, A. A., & Amri, A. (2022). Penerapan fungsi MSDM untuk mengembangkan produktivitas kerja karyawan di lingkungan perusahaan Unilever Indonesia. *Insight Management Journal*, 2(3), 81–90. <https://doi.org/10.47065/imj.v2i3.156>
- Rahmawati, F. (2020). Hubungan Sleep Hygiene Terhadap Kualitas Tidur Penderita Diabetes Mellitus Tipe 2 the Correlation Between Sleep Hygiene and Sleep Quality on People With Type 2 Diabetes Mellitus 1. *Jurnal Pengabdian Sriwijaya*, 8(1), 945–949. <https://doi.org/10.37061/jps.v8i1.12412>
- Ramayah, T., Dastane, O., Domaradzki, J., Khalilur Rahman, M., Abu Issa Gazi, M., & Mai, G. (2022). Determinants of patients' satisfaction and trust toward healthcare service environment in general practice clinics. *Frontiers in Psychology*.
- Riau, U. M. (2024). ANALYSIS OF THE INTERNATIONAL ACCOUNTING CODE OF ETHICS ANALISIS KODE ETIK AKUNTANSI INTERNASIONAL Rahmi Rafiza Rafiza Kode Etik Akuntansi Internasional adalah kerangka kerja yang mendefinisikan standar menjamin kepercayaan publik dan melindungi kepentingan. 4(1), 71–77.
- Rum, M., Muchtar, F., & Arif, S. K. (2019). Penatalaksanaan Syok Sepsis pada Pasien Community Acquired Pneumonia Pasca Stroke Iskemik dengan Disfungsi Organ. *Jurnal Anestesia Dan Critical Care*, 37(3), 107–119.
- Santhoshkumar, F., Jeyarajasekar, T., & Kumar, S. A. S. (2022). Kano's model for customer satisfaction analysis of a hospital. *International Journal of Health Sciences*, 11081–11089. <https://doi.org/10.53730/ijhs.v6nS1.7654>
- Sholeh, M., & Chalidyanto, D. (2021). The Effect of Service Quality on Loyalty Through Patient Satisfaction in Outpatient of Hospital X, Malang. *JMMR (Jurnal Medicoeticolegal Dan Manajemen Rumah Sakit)*, 10(2), 148–157. <https://doi.org/10.18196/jmmr.v10i2.10239>
- Sinyiza, F. W., Kaseka, P. U., Chisale, M. R. O., Chibatata, C. S., Mbakaya, B. C., Kamudumuli, P. S., Wu, T. S. J., & Kayira, A. B. (2022). Patient satisfaction with health care at a tertiary hospital in Northern Malawi: results from a triangulated cross-sectional study. *BMC Health Services Research*, 22(1), 1–9. <https://doi.org/10.1186/s12913-022-08087-y>
- Syarifuddin, S., Ilyas, J. B., & Sani, A. (2021). Pengaruh Persepsi Pendidikan & Pelatihan Sumber Daya Manusia Pada Kantor Dinas Dikota Makassar. *Bata Ilyas Educational Management Review*, 1(2), 1(2).
- Tanaem, G. H., Dary, M., & Istiarti, E. (2019). Family Centered Care Pada Perawatan Anak Di Rsud Soe Timor Tengah Selatan. *Jurnal Riset Kesehatan*, 8(1), 21. <https://doi.org/10.31983/jrk.v8i1.3918>
- Taneja, Dr. N., Gupta, Dr. S., & Nidhi Kaur, Dr. K. (2021). A Study on Patient Satisfaction With Services in Out-Patient Department At a Government Teaching Hospital, New Delhi, India. *International Journal of Indonesian Social Sciences*, Vol. 5, No. 10, October 2024

- Journal of Engineering Applied Sciences and Technology*, 6(6), 138–142.
<https://doi.org/10.33564/IJEAST.2021.v06i06.020>
- Umoke, M. J., Umoke, P. C. I., Nwimo, I. O., Nwalieji, C. A., Onwe, R. N., Emmanuel Ifeanyi, N., & Samson Olaoluwa, A. (2020). Patients' satisfaction with quality of care in general hospitals in Ebonyi State, Nigeria, using SERVQUAL theory. *SAGE Open Medicine*, 8.
<https://doi.org/10.1177/2050312120945129>
- Usman, L. (2020). Pelaksanaan Atraumatic Care Di Rumah Sakit. *Jambura Health and Sport Journal*, 2(1), 7–11. <https://doi.org/10.37311/jhsj.v2i1.4559>
- Xaverius Jimmie Mantow, F. (2022). *Hubungan Kualitas Tidur dengan Tekanan Darah pada Pasien Pra Vitrectomy Posterior*. 7–12.
- Zalianty, at all farida nurul badriatul alliah jenny. (2024). Manajemen Sumber Daya Manusia. In *Laboratorium Penelitian dan Pengembangan FARMAKA TROPIS Fakultas Farmasi Universitas Muallawarman, Samarinda, Kalimantan Timur* (Vol. 1, Issue 1).
- Zhang, L., Xu, M., Chen, H., Li, Y., & Chen, S. (2022). Globalization, Green Economy and Environmental Challenges: State of the Art Review for Practical Implications. *Frontiers in Environmental Science*, 10(March), 1–9. <https://doi.org/10.3389/fenvs.2022.870271>