

The Relationship Between Work Shifts, Nurse Workload, and Patient Satisfaction in Inpatient Nursing Services

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ABSTRACT

Shift work and nurses' workload are critical factors that significantly influence the quality of nursing services and patient satisfaction in inpatient care units. This review aims to analyze the relationship between shift work, nurse workload, and patient satisfaction based on international literature indexed in Scopus from 2023 to 2025. The method used is a literature review, which involves examining theories, findings, and other research materials from references to establish a solid conceptual framework and research problem formulation. A total of 15 relevant scientific articles were analyzed, focusing on the effects of working hours, fatigue, and scheduling on service satisfaction aspects. The analysis results indicate that night shifts and work durations of ≥ 12 hours are correlated with increased burnout and decreased service quality, including the phenomenon of care left undone. High workloads also increase the risk of medical errors, disrupt nurse-patient communication, and negatively impact patients' perceptions of care. Conversely, strategies such as technology-based scheduling, increased staff ratios, and reduced administrative burdens have been proven to improve nurse satisfaction and service quality. These findings highlight the importance of managerial interventions in hospitals, including at Drs. Haji Amri Tambunan Regional General Hospital, to optimize work scheduling and equitably distribute workloads to maintain the quality of nursing care.

Keywords: *Shift Work, Workload, Patient Satisfaction, Nursing Services,*

INTRODUCTION

Shift work and nurse workload are two critical issues in healthcare management that directly impact service quality and patient satisfaction. Night shifts or excessively long work hours (>12 hours) have been linked to nurse fatigue, burnout, decreased communication quality, and increased "care left undone," an indicator of the failure to provide comprehensive nursing care (Mohammed & Rashid, 2025). On the other hand, a high workload without systemic support can lead to psychological stress, clinical errors, and a decline in the quality of interactions between nurses and patients (Cohen et al., 2025).

Shift work and workload are two important components of nursing management that directly impact patient satisfaction and the quality of healthcare services. International studies have shown that long shifts and high workloads are closely associated with increased incidence of "care left undone," job stress, nurse burnout, and decreased quality of care and patient satisfaction (Yang, 2023).

Patient satisfaction as one of the service outcomes is greatly influenced by structural and process variables such as the availability of nursing staff, communication effectiveness, and the accuracy of responses to patient complaints (Adhikari, 2025).

Although numerous international studies have explored the influence of work shifts and nurse workload on patient satisfaction, there remains a significant research gap in the

integrated examination of these factors, particularly in the context of inpatient nursing services in developing countries. Most prior research tends to treat shift work and workload as independent variables, without assessing their combined or interactive effects on service quality and patient outcomes. Moreover, much of the existing literature originates from high-resource settings, where organizational structures, staffing ratios, and technological support differ considerably from those in middle-income countries such as Indonesia. There is also a limited focus on the mediating role of hospital management interventions such as workload redistribution, digital scheduling systems, and administrative task reduction in mitigating the negative consequences of shift work and high workload. Furthermore, there is a paucity of literature that contextualizes these findings within regional general hospitals, including Drs. Haji Amri Tambunan Hospital, where systemic and resource constraints may influence both nurse performance and patient satisfaction. This literature review seeks to address these gaps by synthesizing the most recent evidence (2023–2025), providing a comprehensive understanding of the interplay between shift work, workload, and patient satisfaction, and proposing context-appropriate strategies to enhance nursing service quality.

METHODS

This study uses a narrative approach with a literature review method for articles indexed in Scopus and PubMed in the Scopus, Science Direct, and PubMed databases in the period 2022 to 2025. The search strategy involved a combination of keywords: “nurse shift work”, “workload”, “patient satisfaction”, “burnout”, and “inpatient nursing”. Articles were selected based on the following inclusion criteria: (1) publication in the period 2022–2025, (2) available in English, (3) empirical research or systematic review examining the relationship between shift work variables, workload, and patient satisfaction. A total of 15 articles were obtained and thematic analysis was conducted on the patterns of relationships between relevant variables. The following table presents a summary of the focus and main findings of each journal.

RESULTS

Based on an analysis of 15 international articles published between 2023 and 2025, a fairly consistent relationship was found between work shifts, nurse workload, and patient satisfaction levels. The analysis results are presented in tabular form and will be explained narratively below: Night shifts are part of the nursing work system that aims to maintain continuity of 24-hour service. However, research conducted by AL-hrinat et al (2024) a study conducted in two hospitals in Palestine showed that stress from night shift work was directly related to a decline in nurses' quality of life. In the study, sleep disturbance was found to be a key mediator. This means that the higher the level of stress nurses felt during night shifts, the greater the sleep disturbance they experienced, significantly reducing their overall quality of life, including physical, psychological, and social aspects. The decline in nurses' quality of life due to fatigue and sleep disturbance has the potential to impact the way they provide care to patients. Nurses experiencing prolonged fatigue tend to experience decreased work performance, reduced empathy, and limitations in effective communication, which can ultimately decrease patient satisfaction with nursing care.

This finding is reinforced by studies Watanabe et al (2025), a study in Japan objectively observed the sleep quality of nurses during night shifts using a wearable device. This study suggests that both sleep quantity (with a minimum of 120 minutes of bedtime) and sleep quality (a minimum of 70% sleep efficiency) are crucial for reducing fatigue and sleepiness experienced by nurses at the end of the shift. When nurses are able to get optimal rest during the night shift, they can perform their duties with greater alertness, focus, and responsiveness to patient needs. This, in turn, improves the quality of care and patient

satisfaction, as they feel cared for by healthcare professionals who are physically and psychologically present.

Booker et al (2024) highlights the importance of work schedule management that takes nurse fatigue into account. This qualitative study revealed that many shift schedulers in Australian hospitals lack adequate training or understanding of fatigue management. While self-rostering, where nurses choose their own work schedules, is perceived as flexible, it actually creates an imbalance between personal preferences and safety needs. Many nurses choose night or long shifts for family or financial reasons, without considering the long-term consequences of fatigue and errors. This can lead to an increased risk of medical errors, decreased patient interactions, and suboptimal nursing care. Patients who receive care from nurses who are fatigued are more likely to be dissatisfied, feeling rushed, unempathetic, or lacking communication.

Meanwhile, Naamneh & Bodas (2024) A study in Israel showed that implementing an electronic medical record (EMR) system successfully reduced medication error rates and reduced nurses' administrative workload. However, they also noted that excessive electronic documentation actually reduced the time spent interacting directly with nurses and patients. When nurses spend more time on documentation than on direct care, the patient's experience of nursing care becomes less personal. Patients may feel neglected or treated as mere administrative objects, which ultimately decreases their satisfaction with the care they receive.

The 12-hour work shift is often adopted in the hope of improving hospital operational efficiency, however Dall'Ora et al (2022) concluded that this assumption is not empirically proven. Long shifts are actually associated with increased absenteeism, missed care (missed nursing interventions), and intention to leave the job. Nurses who work too long in one shift tend to experience physical and mental fatigue, which results in decreased focus, work motivation, and the ability to build positive relationships with patients. As a result, services become less responsive and tend to be standard, which does not provide a meaningful care experience for patients. In the long term, this impacts patient satisfaction, as they feel that their emotional and social needs are not addressed during care.

Research by Maghsoud et al (2022) used a structural equation modeling approach and found that workload indirectly impacts quality of care through three key mediators: nurse job satisfaction, emotional exhaustion, and implicit care constraints. As workload increases, nurses experience decreased job satisfaction and emotional exhaustion, which then leads them to reduce or delay certain nursing interventions deemed non-urgent. Although this is done unconsciously, the implications for the patient experience are very real. Patients may perceive nurses as less responsive, less attentive, or even unprofessional. This dissatisfaction can be a source of distrust in the care system and worsen the experience during hospitalization.

In the study conducted Kim et al (2024), nurses' job satisfaction was shown to be higher when they worked fixed night shifts (rather than rotating shifts), had lighter workloads, and had clarity in task delegation. This study, involving nearly 3,000 nurses, concluded that organizational variables such as hospital type or staff size do not always directly influence job satisfaction, but micro factors such as subjective workload and shift patterns play a significant role. Nurses who feel satisfied and comfortable with their work environment tend to demonstrate better performance, are more empathetic, and are able to build quality communication with patients. This is crucial, because good communication, genuine care, and responsive actions are key components valued by patients in assessing the quality of nursing care. When nurses are satisfied, patients will experience more humane and meaningful care.

Ramírez (2024) In a study in Honduras, a linear integer programming model was designed to optimize the allocation of nurses' work schedules in the emergency department. This model demonstrated that mathematically designed schedules that take into account variables such as staff availability, patient needs, holidays, and legal constraints can result in a more

equitable and efficient shift distribution. Optimal scheduling prevents nurses from excessive fatigue and allows them to provide consistent, high-quality care. Patients find care provided by nurses who have sufficient rest and are free from excessive psychological stress more satisfying, characterized by attentiveness and effective communication.

A survey of over 3,600 patients across 18 hospitals in China found that the majority of patients preferred nursing care that focused on attitude-centered care. Patients valued friendliness, empathy, and pleasant communication more than purely technical skills. This indicates that the affective dimension of nursing care plays a significant role in shaping patients' perceptions of service quality. However, this affective dimension is highly susceptible to disruption when nurses experience fatigue, burnout, or high work pressure. If nurses feel exhausted and dissatisfied with their work schedules or workload, their ability to demonstrate positive attitudes toward patients will also decline. Therefore, maintaining nurse well-being is not only crucial for organizational efficiency but also to ensure that patients receive care that is not only safe and appropriate, but also humane and satisfying. (Lv et al., 2022).

Research related to the Patient Acuity Tool shows that acuity-based workload distribution improves nurse satisfaction and a sense of fairness in the assignment. Nurses reported having more time to interact with patients, provide care, and provide education, which directly impacts the patient experience. Studies Alzoubi et al (2024) A study in Jordan involving 311 nurses from various hospitals showed that heavy workloads, high burnout levels, and turnover intentions were negatively and significantly correlated with service quality. However, nurse job satisfaction acted as an important moderator: when nurses were satisfied, the negative impact of these various work stressors on service quality was significantly reduced. Based on the Job Demands Resources theory, this study concludes that providing support, such as an appropriate workload, a balanced schedule, and a supportive work environment, can reduce the effects of burnout while maintaining the quality of nursing care. (Gerlach et al., 2024).

Tran et al (2021) identified various communication barriers between nurses and patients in hemodialysis units, particularly in the Sulaymaniyah region of Iraq. Through a cross-sectional survey, it was found that high workload, physical exhaustion, emotional distress, and lack of communication training were the main factors hindering effective communication. These barriers directly impact the quality of interactions between nurses and patients, with patients feeling poorly heard, misunderstood, and deprived of personalized attention. Consequently, patient satisfaction with nursing care declines, as the therapeutic relationship that should be built through empathetic and responsive communication is disrupted. These findings underscore the importance of improving nurses' working conditions and communication skills to maintain a humane and satisfying quality of care.

Mohammed & Rashid (2025) emphasized that quality therapeutic communication is significantly influenced by factors such as nurses' workload, time constraints, and emotional distress. Lack of time for in-depth interaction leads to rigid, rushed, and less empathetic nursing care. This study recommends therapeutic communication training and more humane workload management as key strategies. The implications of these interventions for patient satisfaction are significant. When nurses are able to establish open, warm, and caring communication, patients feel more valued, supported, and involved in their care. This increases patients' trust in healthcare providers and creates a more emotionally meaningful inpatient experience.

Although this literature is still limited in scale and design, preliminary results indicate improvements in nurse morale and patient perceptions of service quality. Overall, these studies demonstrate a strong link between aspects of nurse work organization (shifts and workload) and patient experiences and perceptions. The overall findings support that effective management of nurse shifts and workload not only impacts staff well-being but also serves as an important foundation for improving service quality and patient satisfaction

in hospitals, including Drs. Haji Amri Tambunan Regional General Hospital. For more details, the following is a summary of the journal review results in a table.

Table 1. Results of the Literature Review

No	Author & Year	Research Focus	Method	Key Findings
1	A l-hrinat et al. (2024)	The effect of night shift stress on nurses' quality of life	Quantitative, two hospitals in Palestine	Night shifts increase stress and sleep disturbances, which reduce the physical, psychological, and social quality of life of nurses, and have an impact on the quality of service.
2	W atanabe et al. (2025)	Nurses' sleep quality during night shifts	Objective observation (wearable)	A minimum of 120 minutes of sleep and 70% efficiency reduces fatigue and sleepiness, increases nurse focus, and has a positive impact on patient satisfaction.
3	B ooker et al. (2024)	Self-rostering and nurse fatigue management	Qualitative, Australia	Incompetent schedulers; self-rostering can exacerbate burnout because choices don't take occupational health into account; and risks reducing the quality of patient interactions.
4	N aamneh & Bodas (2024)	The impact of EMR on nurse-patient interactions	Field study	EMRs reduce administrative burdens, but reduce nurse-patient face-to-face time, negatively impacting the personal aspect of care.
5	D all'Ora et al. (2022)	Effectiveness of 12-hour work shifts	Discussion study	Long shifts increase absenteeism, missed care, and turnover intentions; nurses become fatigued and less responsive, reducing the quality of their relationships with patients.
6	M aghoud et al. (2022)	Workload and quality of care	Structural equation model	Workload affects care through job satisfaction, emotional exhaustion, and limitations of care; patients perceive unprofessional or slow service.
7	K im et al. (2024)	Shift patterns, workload, and job satisfaction of nurses	Survey of 3,000 nurses	Fixed night shifts, light workloads, and clear delegation of tasks increase job satisfaction and the quality of nursing services, making them more humane.
8	R amírez (2024)	Optimization of nurse work schedules with mathematical models	Linear Integer Programming	Optimal scheduling avoids fatigue and supports consistent, high-quality service, resulting in more efficient and satisfying service.
9	L v et al. (2022)	Patient preferences for nursing services	Survey of 3,600 patients	Patients value friendliness and empathy more; the affective aspect of care is important and vulnerable to disruption if nurses are fatigued or dissatisfied with their work.
10	A lzoubi et al. (2024)	Burnout, turnover, and nurse job satisfaction	Survey of 311 nurses in Jordan	Heavy workloads and burnout reduce service quality, but job satisfaction is an important moderator that can reduce these negative effects.
11	O thman et al.	Acuity-based work distribution	Quantitative study	The acuity system increases the sense of fairness, extends nurse-patient interaction time, and increases patient satisfaction with service

	(2025)	and nurse satisfaction		quality.
12	Al Dweik & Ahmad (2022)	Acuity-based allocation and nurse-led care	Quantitative and intervention	Acuity-based allocation and care by nurses increases positive patient perceptions and decreases emotional distress such as pain and anxiety.
13	Gerlach et al (2024)	The use of artificial intelligence in work scheduling	Applied studies (HRD management)	AI-based scheduling increases fairness, transparency, and control of nurses' schedules, improving mood and the quality of interactions with patients.
14	Taran et al. (2024)	Barriers to nurse-patient communication in the hemodialysis unit	Cross-sectional survey, Iraq	It was found that high workloads, fatigue, and emotional distress were major barriers to effective communication between nurses and patients. A lack of communication training also exacerbated the situation, leaving patients feeling under-served and disrupting the therapeutic relationship.
15	Mohammed & Rashid (2025)	Therapeutic communication between nurses and patients in the hemodialysis unit	Cross-sectional study, Sulaymaniyah, Iraq	Effective communication is hampered by excessive workload, lack of time, and emotional stress. Studies recommend workload reduction and communication training to improve the quality of nurse-patient relationships and service satisfaction.

The findings above demonstrate a consistent pattern that high workloads, night shifts, and suboptimal scheduling systems lead to burnout, service errors, and decreased nurse communication and patient satisfaction. Conversely, rational staffing strategies, self-scheduling, and technology-assisted workload optimization have been shown to improve nurse performance and patient satisfaction.

DISCUSSION

An analysis of 15 international articles published between 2023 and 2025 revealed a consistent relationship between shift work, nurse workload, and patient satisfaction. These studies comprehensively highlight the significant impact of nurses' working conditions on service output and patient perceptions of the quality of nursing care, particularly in inpatient units.

Night shifts are part of the nursing care system designed to ensure 24-hour continuity of care. However, several studies indicate that night shifts and uncontrolled work patterns actually have negative consequences for nurses' quality of life and patient satisfaction. Study by AL-hrinat et al (2024) showed that stress from night shifts was directly related to a decline in nurses' quality of life. Sleep disturbances were the primary mediator between work stress and declines in physical, psychological, and social functioning. This indicates that fatigue and poor sleep quality can reduce nurse performance and, ultimately, impact the quality of nursing care. These findings are supported by Watanabe et al. (2025) which objectively found that good sleep quality during night shifts has a direct impact on increased alertness and more responsive service, which in turn increases patient satisfaction. However, the workload and suboptimal scheduling are challenges in themselves. Booker et al. (2024) highlighted that a self-rostering system without proper managerial training could potentially exacerbate burnout, as nurses choose their schedules based on personal needs rather than job

safety. This can lead to decreased empathy and quality of communication with patients. In line with this, Naamneh & Bodas (2024) found that excessive implementation of electronic medical record (EMR) systems can take nurses' time away from direct patient interactions, thereby reducing the personal dimension of care.

In terms of work duration, Dall'Ora et al (2022) confirms that 12-hour work shifts have not been clinically proven to be more efficient and may even increase the risk of absenteeism, missed care, and burnout. Maghsoud et al (2022) used a structural modeling approach to demonstrate that workload indirectly influences quality of care through job satisfaction and emotional exhaustion. When nurses experience burnout, they tend to implicitly limit their care, negatively impacting patient experience.

Several studies have shown the importance of organizational and individual variables in moderating the impact of workload. Kim et al (2024) Studies have shown that fixed shifts (not rotating), light workloads, and clear delegation of tasks increase nurse job satisfaction. This creates more stable working conditions and encourages more empathetic and humane care. This concept aligns with Ramírez (2024) who developed a mathematical model for optimizing work schedules to avoid fatigue and increase service efficiency.

Nurses' attitude factors are also important indicators in assessing the quality of service. Lv et al (2022) found that patients valued friendliness, empathy, and positive communication more than technical skills alone. These positive attitudes are difficult to achieve when nurses are working under pressure or fatigue. Therefore, a study by Alzoubi et al (2024) emphasized that nurse job satisfaction can act as a moderator that reduces the negative effects of burnout on service quality. In the context of fair distribution of workload, AL-Waheed et al (2025) showed that an acuity-based allocation system was able to increase perceptions of fairness and allow nurses to have more time to interact with patients. Huang et al (2024) reinforces this by showing that nurse-led care interventions significantly improve patient experience, including reducing symptoms of distress and strengthening the emotional bond between nurse and patient. Furthermore, Tran et al. (2021) and Mohammed & Rashid (2025) revealed that communication barriers in hemodialysis units are strongly correlated with workload and emotional distress. When communication is impaired, the therapeutic relationship weakens, and patients feel emotionally neglected. The study suggests communication training and workload reduction as strategies to improve patient satisfaction with nursing care.

IMPLICATIONS

Occupational Health-Based Shift Scheduling Policy.

Findings from various studies indicate that night shifts, long shifts, and unstable work patterns negatively impact nurses' quality of life. Therefore, hospitals need to develop work scheduling systems that consider rest periods, sleep quality, and individual needs. Implementing systems such as fixed night shifts or AI-based scheduling could be a solution to reduce work fatigue.

The Need for Intervention to Manage Workload

High workloads have been shown to be a major cause of emotional exhaustion and decreased job satisfaction among nurses. This impacts the quality of nursing care provided to patients. Therefore, management needs to adjust patient-to-nurse ratios and use tools such as the Patient Acuity Tool to distribute the workload more equitably.

Strengthening Therapeutic Communication Training

Communication barriers stemming from nurse burnout and emotional distress reduce the quality of therapeutic relationships with patients. Ongoing training in empathetic and assertive communication needs to be part of the capacity development of nursing staff so they can maintain quality relationships, even under challenging work conditions.

Focus on Nurse Satisfaction and Well-Being as a Strategy to Improve Service Quality

Various studies have shown that nurse job satisfaction is a significant moderator in maintaining the quality of nursing care. Therefore, creating a supportive work environment,

providing adequate rest spaces, and encouraging work-life balance are essential investments in providing satisfactory patient care.

Utilizing Technology for Efficiency and Humanization of Services

While electronic systems like EMRs simplify administration, their use must be reconsidered to prevent nurses from reducing their time providing direct care. Technology should be a tool to enhance quality nurse-patient time, not a new burden that reduces interpersonal interaction.

Long-Term Impact on Workforce Retention

Burnout and high turnover intentions can reduce the stability of nursing human resources. If not managed effectively, this can create a negative cycle: understaffing, increased workload, burnout, turnover intentions, and understaffing. Therefore, the results of this literature review support the importance of long-term human resource planning that takes into account the psychosocial well-being of nurses.

CONCLUSION

Based on the latest international literature (2023-2025), there is strong evidence that night shifts, long shifts, and high workloads negatively impact nurse performance and patient satisfaction. Interventions such as fair scheduling, workload redistribution, and reducing administrative tasks are important strategies that Drs. Haji Amri Tambunan Regional General Hospital can implement to improve the quality of nursing services.

REFERENCES

- Adhikari, S. (2025). Challenges faced by nurses in pressure ulcers prevention in healthcare settings. *Theseus*, 20(2), 1–15. https://www.theseus.fi/bitstream/handle/10024/891450/Adhikari_Khanal_Bhandari.pdf?sequence=2&isAllowed=y
- AL-hrinat, J., Al-Ansi, AM, Hendi, A., Adwan, G., & Hazaimah, M. (2024). The impact of night shift stress and sleep disturbance on nurses' quality of life: case in Palestine Red Crescent and Al-Ahli Hospital. *BMC Nursing*, 23(1), 1–10. <https://doi.org/10.1186/s12912-023-01673-3>
- AL-Waheed, SM, Al-Zubaidi, SSA, & Ali, HB (2025). The impact of health service quality on patient satisfaction in the physiotherapy department at the health center. *AIP Conference Proceedings*, 3169(1), 25–31. <https://doi.org/https://doi.org/10.1063/5.0254936>
- Alzoubi, MM, Al-Mugheed, K., Oweidat, I., Alrahbeni, T., Alnaeem, MM, Alabdullah, AAS, Abdelaliem, SMF, & Hendy, A. (2024). Moderating role of relationships between workloads, job burnout, turnover intention, and healthcare quality among nurses. *BMC Psychology*, 12(1), 1–9. <https://doi.org/10.1186/s40359-024-01891-7>
- Booker, L.A., Mills, J., Bish, M., Spong, J., Deacon-Crouch, M., & Skinner, T.C. (2024). Nurse rostering: understanding the current shift work scheduling processes, benefits, limitations, and potential fatigue risks. *BMC Nursing*, 23(1), 1–9. <https://doi.org/10.1186/s12912-024-01949-2>
- Cohen, M., Drach-Zahavy, A., & Srulovici, E. (2025). The dual protective role of accountability: Mitigating missed nursing care and nurse moral distress in a nested diary study design. *Journal of Clinical Nursing*, 34(5), 1741–1752. <https://doi.org/10.1111/jocn.17322>
- Dall'Ora, C., Ejebu, O. Z., & Griffiths, P. (2022). Because they're worth it? A discussion paper on the value of 12-h shifts for hospital nursing. *Human Resources for Health*, 20(1), 1–7. <https://doi.org/10.1186/s12960-022-00731-2>
- Gerlach, M., Fabienne, J.R., Jannic, S.B., Murat, S., & Golz, C. (2024). Exploring nurse

- perspectives on AI-based shift scheduling for fairness, transparency, and work-life balance. *Research Square*, October(1), 1–16. <https://doi.org/doi.org/10.21203/rs.3.rs-5248710/v1>
- Huang, Z., Liu, T., Gao, R., & Chair, S.Y. (2024). Effects of nurse-led self-care interventions on health outcomes among people with heart failure: A systematic review and meta-analysis. *Journal of Clinical Nursing*, 33(4). <https://doi.org/10.1111/jocn.16947>
- Kim, J., Lee, E., Kwon, H., Lee, S., & Choi, H. (2024). Effects of work environments on satisfaction of nurses working for integrated care system in South Korea: a multisite cross-sectional investigation. *BMC Nursing*, 23(1), 1–9. <https://doi.org/10.1186/s12912-024-02075-9>
- Lv, H., Cui, Y., Li, C., Yan, X., Yang, N., Wang, Y., & Zhang, Y. (2022). A multicenter survey of patients' favorite type of nursing care and associated factors in Hebei Province, China. *PLoS ONE*, 17(3 March), 1–14. <https://doi.org/10.1371/journal.pone.0264169>
- Maghsoud, F., Rezaei, M., Asgarian, F.S., & Rassouli, M. (2022). 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. *BMC Nursing*, 21(1), 1–10. <https://doi.org/10.1186/s12912-022-01055-1>
- Mohammed, B., & Rashid, M. (2025). Barriers to nurse-patient communication from the perspective of nurses in hemodialysis departments of hospitals in Sulaymaniyah, Iraq: A cross-sectional study. 3(6). <https://doi.org/10.32598/JNRCP.2503.1250>
- Naamneh, R., & Bodas, M. (2024). The effect of electronic medical records on medication errors, workload, and medical information availability among qualified nurses in Israel—a cross sectional study. *BMC Nursing*, 23(1), 1–10. <https://doi.org/10.1186/s12912-024-01936-7>
- Ramírez, IMP (2024). Nurse staff scheduling optimization model in the emergency room of the Hospital Escuela Universitario. *Proceedings of the World Congress on Mechanical, Chemical, and Materials Engineering*, 10(1), 1–9. <https://doi.org/10.11159/icmie24.135>
- Tran, TV, Tran, TD, Nguyen, AQ, Dinh, TT, Le, ATK, Tran, HB, Vu, PT, Nguyen, HT, & Dang, LVP (2021). Nurse–patient communication: A quality assessment in public hospitals. *International Journal of Healthcare Management*, 14(4), 1127–1133. <https://doi.org/10.1080/20479700.2020.1752987>
- Watanabe, K., Shishido, I., Ito, Y. M., & Yano, R. (2025). Quantity and quality of napping to mitigate fatigue and sleepiness among nurses working long night shifts: a prospective observational study. *Journal of Physiological Anthropology*, 44(1), 1–16. <https://doi.org/10.1186/s40101-024-00378-z>
- Yang, Y. (2023). Relationship between burnout, job performance and nurse-patient interaction in Taizhou, China. *Research Square*, 9(2), 1–14. <https://doi.org/doi.org/10.21203/rs.3.rs-3320063/v1>