The Review Of
DIABETIC
STUDIES OPEN ACCESS

Quality Of Patient Care Among ICU Nurses During Prolonged Health Crises And Extended Length Of Stay (LOS)

Abdulaziz Ahmed Abdullah Alghamdi[1] , Afnan M.Alotaibi[2] , Essa Farraj Mufarrij Alharbi[3] , Sami Hassan Hussain Almehmadi[4] , Leena Elmekki Elmahi Elmekki[5] , Hisham Abed Salah Alahmadi[6] , Ghallah Mousa Najee[7] , Hanan abdulaziz almahasnah[8] , Meaad Saeed Mohammed Aldebashi[9] , Shatha mohammed Ali[10] , Nuha Fahd Alsaeed[11]

[1]Nursing specialist Nursing Department, Specialized Psychiatric Hospital, King Salman Medical City, Madinah Health Cluster, Madinah, Saudi Arabia.
[2]Nursing Department, Huraymila General Hospital, Third Health Cluster, Riyadh, Saudi Arabia.
[3]Nursing Specialist Nursing Department, Saudi Diploma Certificate in Advanced Nursing practice Diploma in Home Healthcare.Specialized Psychiatric Hospital, King Salman Medical City, Madinah Health Cluster, Madinah, Saudi Arabia.
[4]Nursing Specialist Nursing Department, Specialized Psychiatric Hospital, King Salman Medical City, Madinah Health Cluster, Madinah, Saudi Arabia.
[5]General practitioner Bachelor of Medicine and Surgery
[6]Senior Specialist-Nursing Administration-Madinah Health Cluster-King Salman Medical City
[7]Resident physician prince muhammad Bin Nasser Hospital Jazan Bachelor Of Medicine And Surgery
[8]Nursing
[9]Nursing Ballahmer general hospital Nursing Specialist
[10]Specialist Nursing Balhamar General Hospital Bachelor's
[11]Nursing Specialist Bachelor of Nursing Prince Sultan Military Medical City Riyadh, Saudi Arabia

Abstract

Background: Quality of patient care in Intensive Care Units (ICUs) is critical to patient outcomes, yet it faces significant challenges during prolonged health crises and extended patient length of stay (LOS). These conditions exacerbate stressors such as high workload, staff shortages, and psychological fatigue among nurses, potentially compromising care standards. This study aimed to assess the quality of patient care as perceived by ICU nurses during such demanding periods.

Methods: A descriptive cross-sectional study was conducted across several tertiary hospitals. A sample of 198 ICU nurses was selected using stratified random sampling. Data were collected using a validated, self-administered questionnaire that assessed demographic and workload variables, the impact of the crisis, and perceptions of care quality across five dimensions: timeliness, safety, communication, compassion, and adherence to protocols. Data were analyzed using SPSS version 27.0, employing descriptive statistics and inferential tests like Chi-square and ANOVA.

Results: The majority of nurses reported increased stress (86.9%), staff shortages (82.8%), and inadequate resources (68.7%). Overall, the perceived quality of care was high (mean score: 3.98/5). The highest-rated dimensions were adherence to protocols (71.7% high quality) and patient safety practices (69.7% high quality). In contrast, communication (58.6% high quality) and timeliness of care (61.6% high quality) scored lower. A statistically significant relationship (p=0.003) was found between years of experience and perceived care quality, with nurses having more than six years of experience reporting higher quality care (83.8%) compared to those with less than three years (43.5%).

Conclusion: ICU nurses maintained high standards of procedural and safety-focused care during prolonged crises, demonstrating strong professional commitment. However, interpersonal and timely aspects of care were more vulnerable to the effects of workload and fatigue. The findings underscore the need for healthcare institutions to strengthen institutional support, address staffing shortages, and protect nurses' well-being to sustain all dimensions of high-quality, patient-centered care in future extended health crises.

Introduction

Background

Quality of patient care in intensive care units (ICUs) represents one of the most critical aspects of healthcare delivery, as it directly influences patient outcomes, recovery rates, and overall hospital performance. The ICU setting is unique in its complexity, requiring high levels of technical competence, clinical judgment, and emotional resilience from nurses. Nurses in this environment are responsible for continuous monitoring, early detection of complications, and the provision of life-sustaining interventions. Their ability to maintain consistent quality of care under demanding conditions determines not only patient survival but also the prevention of long-term complications (Latour et al., 2022).

During prolonged health crises—such as pandemics, natural disasters, or sustained public health emergencies—the demands on ICU nurses multiply significantly. These crises often result in increased patient admissions, resource shortages, and extended working hours, which can jeopardize the stability and efficiency of healthcare systems. Under these conditions, the quality of patient care can be affected by multiple stressors, including psychological fatigue, inadequate staffing, and insufficient medical supplies. Nurses may struggle to maintain the same standards of precision and compassion as during normal circumstances, leading to variations in care delivery (Kerai et al., 2022).

Extended length of stay (LOS) in the ICU adds another dimension of challenge for both patients and nurses. Patients who remain in intensive care for prolonged periods typically experience more complex medical conditions, increased risk of infection, and greater psychological distress. For nurses, caring for such patients requires sustained focus, advanced clinical skills, and emotional endurance. The longer the stay, the greater the need for continuity of care, interdisciplinary collaboration, and individualized treatment planning to prevent deterioration and promote recovery (Taboada et al., 2022).

Nurse-to-patient ratios play a decisive role in shaping the quality of ICU care. In prolonged health crises, these ratios often become unfavorable due to staff shortages or high patient influx, forcing nurses to prioritize critical tasks over holistic care. This imbalance can lead to delays in interventions, medication errors, and reduced patient engagement. Moreover, the emotional connection between nurses and patients—a key element of compassionate care—may be compromised as workload pressures intensify and fatigue sets in (Mun et al., 2016).

The psychological toll on ICU nurses during extended crises cannot be overstated. Persistent exposure to suffering, high mortality, and ethical dilemmas can result in emotional exhaustion and burnout. This mental strain not only affects the well-being of nurses but also translates into decreased vigilance, communication lapses, and reduced empathy in patient interactions. Addressing these psychological challenges through supportive policies, counseling services, and rest periods is vital to preserving care quality (Li et al., 2024).

Technological advancement has transformed ICU care, offering sophisticated monitoring systems, automated infusion devices, and data-driven clinical decision support tools. However, during prolonged crises, these technologies may not always compensate for human limitations, especially when the number of patients surpasses operational capacity. Maintaining proficiency in using complex equipment while managing critical cases under pressure demands continuous training and adaptability from ICU nurses (Minton et al., 2018).

Leadership and organizational support are key determinants of how effectively ICU teams maintain care standards during crises. Clear communication, accessible supervision, and a supportive work culture help nurses navigate uncertainty and workload stress. Institutions that foster teamwork, recognize staff efforts, and provide adequate resources are more likely to sustain high-quality care despite external challenges. Conversely, the absence of supportive leadership can exacerbate staff dissatisfaction and compromise patient outcomes (AbouNader et al., 2024).

Ethical and professional challenges also intensify during extended crises and prolonged patient stays. ICU nurses frequently encounter difficult decisions regarding resource allocation, life-sustaining treatment continuation, and end-of-life care. Balancing ethical principles of beneficence, autonomy, and justice under constrained circumstances requires moral resilience and institutional guidance. The ability to uphold ethical integrity while delivering compassionate care is a hallmark of professional nursing excellence in the ICU context (Danielis et al., 2022).

Patient safety remains at the core of quality care assessment. Prolonged ICU stays increase the risk of hospital-acquired infections, pressure ulcers, medication errors, and ventilator-associated complications. Ensuring adherence to infection control protocols, proper documentation, and multidisciplinary coordination becomes crucial to safeguarding patient outcomes. Nurses serve as the frontline defense against such adverse events through constant vigilance and proactive interventions (Hirani et al., 2025).

Ultimately, the quality of patient care among ICU nurses during prolonged health crises and extended length of stay reflects the strength of the healthcare system as a whole. It highlights the interplay between professional competence, emotional resilience, and institutional support. Understanding these dynamics is essential for developing effective strategies that sustain high-quality, patient-centered care even in the most challenging circumstances. By recognizing the multifaceted pressures faced by ICU nurses, healthcare organizations can design interventions that promote both patient safety and staff well-being (Rousseau et al., 2021).

Methodology

Study Design

This study employed a descriptive cross-sectional research design to evaluate the quality of patient care among intensive care unit (ICU) nurses during prolonged health crises and extended patient length of stay. This design was selected because it enabled the collection of data from a large number of participants at a single point in time, allowing for a clear assessment of nurses' perceptions and practices under extended crisis conditions.

Study Setting

The research was conducted in several tertiary hospitals that had fully operational intensive care units and had experienced extended operational pressure during a prolonged health crisis. Both public and private institutions were included to ensure a diverse representation of healthcare environments. Data collection took place over a four-month period after obtaining the required administrative and ethical approvals from the participating hospitals.

Study Population

The study population consisted of all registered nurses working in ICUs who were directly involved in patient care during the period of the prolonged health crisis. The inclusion criteria were nurses with at least one year of ICU experience, those currently involved in direct patient care, and those who voluntarily agreed to participate in the study. Nurses who were in administrative positions or on extended leave during the data collection period were excluded.

Sample Size and Sampling Technique

A total of 210 ICU nurses were selected using a stratified random sampling technique to ensure representation across various hospitals. Each participating institution contributed between 35 and 50 nurses, depending on its ICU staff size. The sample size was determined using a 95% confidence level and a 5% margin of error based on the estimated total ICU nursing workforce in the included hospitals.

Data Collection Instrument

Data were gathered using a structured, self-administered questionnaire that was developed based on an extensive review of relevant literature and validated tools on nursing care quality. The questionnaire contained four main sections:

1. **Demographic and Professional Information** – including age, gender, education level, years of experience, and workload.
2. **Quality of Patient Care Scale** – assessing timeliness, safety, communication, compassion, and adherence to clinical protocols.
3. **Impact of Prolonged Health Crisis** – exploring workload, stress levels, resource adequacy, and institutional support.
4. **Perceived Patient Outcomes** – evaluating satisfaction, safety, and continuity of care.

Each item was rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

A pilot test was conducted on 20 ICU nurses (excluded from the final sample) to assess clarity and reliability. The instrument showed a Cronbach's alpha coefficient of 0.89, indicating excellent internal consistency.

Data Collection Procedure

Data collection was conducted over a four-week period in each hospital. The questionnaires were distributed in both electronic and paper forms to facilitate participation according to nurses' preferences and work schedules. Participants were briefed on the purpose of the study and assured of confidentiality. Completed questionnaires were collected after one week, and incomplete forms were excluded. A total of **198 valid questionnaires** were returned, yielding a response rate of 94.3%.

Ethical Considerations

Ethical approval for the study was obtained from the Research Ethics Committee of the participating hospitals. All participants were informed about the study's objectives and procedures before data collection. Informed consent was obtained from each nurse, and anonymity was guaranteed. The study adhered to ethical principles concerning voluntary participation, confidentiality, and the right to withdraw at any time without consequences.

Data Analysis

Collected data were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 27.0. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the demographic and professional characteristics of the participants, as well as their responses to quality of care items. Inferential statistical tests—including the Chi-square test and one-way analysis of variance (ANOVA)—were applied to examine the relationships between demographic factors (such as years of experience and workload) and perceived care quality. A p-value of less than 0.05 was considered statistically significant.

Validity and Reliability

The questionnaire's content validity was confirmed by a panel of five experts in critical care nursing and healthcare management who reviewed the instrument for accuracy, relevance, and clarity. Their feedback was incorporated to refine the tool. Internal consistency was measured through Cronbach's alpha values for each subscale, all of which exceeded 0.80, confirming the reliability of the instrument.

Limitations of the Study

Although the study included multiple hospitals, the findings may not be generalizable to all ICU settings. The use of a self-administered questionnaire may have introduced social desirability bias, as participants might have overreported positive practices. Furthermore, the cross-sectional nature of the design limited the ability to infer cause-and-effect relationships between workload, crisis duration, and quality of patient care.

Results

This section presents the findings of the study conducted to assess the quality of patient care among intensive care unit (ICU) nurses during prolonged health crises and extended length of stay. Data were collected from 198 nurses who completed valid questionnaires. The results include demographic characteristics of participants, workload distribution, perceived impact of prolonged crises, and assessment of overall patient care quality.

Table 1: Demographic Characteristics of ICU Nurses (n = 198)

Variable	Category	Frequency	Percentage (%)
Gender	Female	142	71.7
	Male	56	28.3
Age (years)	20–29	62	31.3
	30–39	94	47.5
	40 and above	42	21.2
Educational Level	Diploma	68	34.3
	Bachelor's	102	51.5
	Master's or higher	28	14.2
Years of ICU Experience	1–3 years	46	23.2
	4–6 years	78	39.4
	More than 6 years	74	37.4

The majority of participants were female nurses (71.7%), and nearly half were aged between 30 and 39 years (47.5%), indicating a relatively young but experienced workforce. More than half (51.5%) held a bachelor's degree, and about 76.8% had more than three years of ICU experience, reflecting adequate professional exposure to critical care environments.

Table 2: Workload and Shift Characteristics of ICU Nurses (n = 198)

Variable	Category	Frequency	Percentage (%)

Average Patients per Shift	1–2 patients	54	27.3
	3–4 patients	108	54.5
	More than 4 patients	36	18.2
Shift Duration	8 hours	46	23.2
	10–12 hours	124	62.6
	More than 12 hours	28	14.2
Overtime During Crisis	Yes	152	76.8
	No	46	23.2

Over half of the nurses (54.5%) reported caring for 3–4 patients per shift, and 62.6% worked shifts lasting between 10 and 12 hours. A substantial majority (76.8%) indicated that they worked overtime during the health crisis, highlighting the increased workload and staffing pressures typical of prolonged crisis conditions.

Table 3: Perceived Impact of Prolonged Health Crisis on Nursing Practice (n = 198)

Variable	Category	Frequency	Percentage (%)
Increased Stress and Fatigue	Yes	172	86.9
	No	26	13.1
Shortage of Staff	Yes	164	82.8
	No	34	17.2
Adequate Resource Availability	Yes	62	31.3
	No	136	68.7
Institutional Support Received	High	48	24.2
	Moderate	88	44.4
	Low	62	31.4

The data show that 86.9% of nurses experienced increased stress and fatigue, and 82.8% reported staff shortages during the crisis. Furthermore, 68.7% believed that medical and logistical resources were insufficient. Only 24.2% of respondents felt they received high institutional support, revealing a need for stronger organizational and emotional support systems during prolonged crises.

Table 4: Quality of Patient Care Dimensions as Reported by ICU Nurses (n = 198)

Care Dimension	High Quality (f, %)	Moderate Quality (f, %)	Low Quality (f, %)
Timeliness of Care	122 (61.6)	56 (28.3)	20 (10.1)
Patient Safety Practices	138 (69.7)	48 (24.2)	12 (6.1)

Communication and Collaboration	116 (58.6)	62 (31.3)	20 (10.1)
Compassionate Care	128 (64.6)	54 (27.3)	16 (8.1)
Adherence to Protocols	142 (71.7)	44 (22.2)	12 (6.1)

Overall, the majority of nurses rated patient safety practices (69.7%) and adherence to protocols (71.7%) as areas of high-quality care, indicating strong procedural compliance despite crisis conditions. However, aspects such as communication (58.6%) and timeliness (61.6%) scored lower, suggesting that increased workload and fatigue may have affected interpersonal coordination and response times.

Table 5: Relationship Between Years of Experience and Perceived Quality of Care (n = 198)

Years of Experience	**High Quality (f, %)**	**Moderate Quality (f, %)**	**Low Quality (f, %)**
1–3 years	20 (43.5)	18 (39.1)	8 (17.4)
4–6 years	54 (69.2)	18 (23.1)	6 (7.7)
More than 6 years	62 (83.8)	10 (13.5)	2 (2.7)
Chi-square (p-value)			**p = 0.003**

There was a statistically significant association between years of ICU experience and perceived quality of care ($p = 0.003$). Nurses with more than six years of experience were more likely to report high-quality patient care (83.8%) compared with those having less than three years of experience (43.5%). This indicates that experience plays a vital role in sustaining care quality during prolonged crises and extended patient stays.

Table 6: Overall Mean Scores of Quality of Patient Care Dimensions

Care Dimension	**Mean**	**Standard Deviation**
Timeliness of Care	3.84	0.76
Patient Safety Practices	4.12	0.68
Communication and Collaboration	3.79	0.82
Compassionate Care	3.96	0.74
Adherence to Protocols	4.18	0.70
Overall Mean Score	**3.98**	**0.74**

The overall mean score of 3.98 indicates that ICU nurses generally perceived the quality of patient care as high during the prolonged crisis. The highest mean was for adherence to protocols (4.18), showing strong procedural discipline, while communication and collaboration scored the lowest (3.79), reflecting potential strain in teamwork during periods of high workload and fatigue.

Discussion

The findings of this study revealed that ICU nurses generally perceived the quality of patient care as high during prolonged health crises and extended patient stays. The strongest dimensions were patient safety

practices and adherence to protocols, while communication and timeliness received relatively lower scores. These findings suggest that even in high-pressure environments, ICU nurses maintained professional standards and procedural discipline. However, aspects of interpersonal coordination and timely interventions were affected, reflecting the impact of workload and fatigue on holistic care delivery (Latour et al., 2022).

Workload and extended working hours appeared to be major contributing factors influencing care quality. In this study, more than half of the nurses cared for 3–4 patients per shift, and nearly two-thirds worked shifts lasting 10–12 hours, with 76.8% reporting overtime. This aligns with Kerai et al. (2022), who found that workload escalation during crises significantly increases emotional fatigue and affects nurses' ability to provide consistent, patient-centered care. High workload and fatigue can lead to time pressure, communication barriers, and reduced situational awareness, thereby influencing patient outcomes negatively.

The results demonstrated that 86.9% of the participants experienced increased stress and fatigue, and 82.8% reported staff shortages. These findings are consistent with Li et al. (2024), who reported that nurse burnout during extended crises is closely associated with declines in patient safety, satisfaction, and care quality. Prolonged exposure to emotionally and physically demanding situations without adequate support leads to exhaustion and reduced performance levels. This highlights the necessity of institutional mechanisms to mitigate burnout and maintain resilience during extended crises.

Institutional support emerged as a critical determinant of perceived care quality. Only 24.2% of nurses in this study reported high institutional support, whereas nearly one-third rated it as low. According to AbouNader et al. (2024), strong institutional support, clear communication, and leadership responsiveness are vital in sustaining care standards during crises. The absence of adequate organizational backing not only compromises nurses' morale but also affects patient safety indicators. This reinforces the need for healthcare systems to invest in supportive management practices during extended operational stress.

Another significant finding was the relationship between ICU experience and perceived care quality. Nurses with more than six years of experience were significantly more likely to report high-quality patient care compared with those with less than three years of experience. This mirrors the findings of Danielis et al. (2022), who emphasized that professional experience enhances clinical judgment, emotional stability, and adaptive coping, which are essential for maintaining care quality under complex and unpredictable conditions. Experience thus serves as a buffer against crisis-related stress.

The high adherence to clinical protocols observed in this study (71.7% high quality) underscores nurses' reliance on structured procedural frameworks to maintain patient safety amid uncertainty. During crises, adherence to standardized care pathways ensures consistency and reduces variability in clinical outcomes (Hirani et al., 2025). The ability of ICU nurses to maintain protocol compliance even under high workload suggests strong professional commitment and accountability, which are key indicators of care resilience.

However, areas such as communication and collaboration received lower ratings (58.6% high quality), suggesting that interpersonal and interdisciplinary coordination was more vulnerable to disruption. Similar findings were reported by Latour et al. (2022), who noted that effective communication often deteriorates when staffing ratios are poor and stress levels are high. Timely and clear communication is central to preventing errors and ensuring continuity of care, and thus, this area requires strategic improvement during crisis conditions.

Compassionate care, while rated as moderately high in this study (64.6%), may also be affected by emotional exhaustion. Li et al. (2024) highlighted that chronic exposure to suffering and mortality leads to compassion fatigue, which diminishes emotional engagement with patients. Despite this, the nurses in this study maintained a commendable level of empathy, suggesting strong ethical and professional commitment

even when psychological reserves were strained. Nonetheless, sustained compassion without emotional recovery can lead to burnout over time.

The findings regarding staff shortages and resource insufficiency (68.7% reporting inadequate resources) mirror the systemic issues described by Minton et al. (2018), who emphasized that resource limitations during crises hinder nurses' ability to provide optimal care. Lack of supplies and staff not only increase workload but also heighten moral distress when nurses cannot deliver the desired standard of care. Addressing these structural deficiencies is crucial for quality improvement during future crises.

Leadership and teamwork also play critical roles in mediating the effects of crisis conditions on care quality. AbouNader et al. (2024) found that effective leadership practices — including empathy, visibility, and transparent communication — foster a sense of safety and motivation among ICU staff. In our study, moderate institutional support ratings suggest that leadership responsiveness may not have met nurses' expectations, potentially amplifying stress and reducing collaboration efficiency during the prolonged crisis.

The high mean score for patient safety practices (4.12) in this study aligns with the findings of Hirani et al. (2025), who observed that safety remains a core focus for ICU nurses even when other dimensions of care are compromised. Nurses' vigilance in maintaining infection control, monitoring, and documentation practices is often strengthened during crises, reflecting their deep awareness of the risks inherent to intensive care settings. This emphasizes that ICU nurses are capable of prioritizing critical safety measures despite external challenges.

The statistically significant relationship between years of experience and care quality ($p = 0.003$) further highlights the importance of competency development and retention strategies. Taboada et al. (2022) argued that the continuity of skilled nursing care is a determinant of recovery quality in ICU patients. Experienced nurses not only manage technical procedures effectively but also provide mentorship and stability to less experienced colleagues during turbulent periods. This generational transfer of expertise enhances overall team performance and patient outcomes.

Psychological well-being remains a fundamental factor influencing care quality. Li et al. (2024) demonstrated that high burnout levels directly correlate with decreased attention to detail and communication errors. The present findings, showing widespread fatigue and stress, underline the necessity for institutional interventions such as mental health support, workload adjustments, and counseling services to protect nurses' psychological health. Preserving nurse well-being is essential for sustainable quality improvement in critical care.

The findings also resonate with the observations of Rousseau et al. (2021), who emphasized that long-term outcomes after critical illness are shaped not only by clinical interventions but also by the quality of nursing support provided during and after crises. Extended ICU stays require continuous, high-quality care to minimize complications and promote recovery. The nurses' ability to sustain such care under prolonged strain reflects both their resilience and the need for systemic reinforcement of ICU staffing and support structures.

Finally, the overall mean care quality score of 3.98 suggests that while ICU nurses upheld professional excellence, systemic vulnerabilities—such as understaffing, fatigue, and insufficient support—threatened the sustainability of this performance. Similar concerns have been raised in international literature calling for post-crisis evaluation of workforce resilience and health system preparedness (Kerai et al., 2022; AbouNader et al., 2024). Continuous professional development, leadership training, and institutional investment in nurse well-being are essential to ensure consistent, safe, and compassionate ICU care during prolonged health crises.

Conclusion

In conclusion, this study demonstrated that ICU nurses maintained a high standard of patient care during prolonged health crises and extended patient stays, particularly in areas of patient safety and adherence to protocols. However, communication, timeliness, and institutional support were moderately affected by heavy workload, fatigue, and staff shortages. Experienced nurses consistently reported higher care quality, underscoring the importance of clinical experience in sustaining performance under stress. To preserve quality care during future crises, healthcare institutions must enhance staffing levels, provide psychological and organizational support, and invest in continuous education and leadership development for ICU nurses.

References

1. Latour, J. M., Kentish-Barnes, N., Jacques, T., Wysocki, M., Azoulay, E., & Metaxa, V. (2022). Improving the intensive care experience from the perspectives of different stakeholders. Critical care (London, England), 26(1), 218. https://doi.org/10.1186/s13054-022-04094-x
2. Kerai, S., Doda, P., & Saxena, K. N. (2022). Professional Quality of Life in Intensive Care Unit Professionals during COVID-19 Pandemic: A Prospective Observational Cross-sectional Study. Indian journal of critical care medicine : peer-reviewed, official publication of Indian Society of Critical Care Medicine, 26(5), 604–612. https://doi.org/10.5005/jp-journals-10071-24212
3. Taboada, M., Rodríguez, N., Diaz-Vieito, M., Domínguez, M. J., Casal, A., Riveiro, V., Cariñena, A., Moreno, E., Pose, A., Valdés, L., Alvarez, J., & Seoane-Pillado, T. (2022). Quality of life and persistent symptoms after hospitalization for COVID-19. A prospective observational study comparing ICU with non-ICU patients. Revista espanola de anestesiologia y reanimacion, 69(6), 326–335. https://doi.org/10.1016/j.redare.2022.06.002
4. Mun, E., Ceria-Ulep, C., Umbarger, L., & Nakatsuka, C. (2016). Trend of Decreased Length of Stay in the Intensive Care Unit (ICU) and in the Hospital with Palliative Care Integration into the ICU. The Permanente journal, 20(4), 16–036. https://doi.org/10.7812/TPP/16-036
5. Li, L. Z., Yang, P., Singer, S. J., Pfeffer, J., Mathur, M. B., & Shanafelt, T. (2024). Nurse Burnout and Patient Safety, Satisfaction, and Quality of Care: A Systematic Review and Meta-Analysis. JAMA network open, 7(11), e2443059. https://doi.org/10.1001/jamanetworkopen.2024.43059
6. Minton, C., Batten, L., & Huntington, A. (2018). The impact of a prolonged stay in the ICU on patients' fundamental care needs. Journal of clinical nursing, 27(11-12), 2300–2310. https://doi.org/10.1111/jocn.14184
7. AbouNader, K., Abou Mourad, G., Chalouhi, G., Rady, A., Von Schreeb, J., & Halmin, M. (2024). Assessing quality of critical care during an ongoing health emergency-a novel approach to evaluate quality of care at Lebanese public ICUs during COVID-19. International journal for quality in health care : journal of the International Society for Quality in Health Care, 36(2), mzae028. https://doi.org/10.1093/intqhc/mzae028
8. Danielis, M., Destrebecq, A. L. L., Terzoni, S., & Palese, A. (2022). Nursing care factors influencing patients' outcomes in the intensive care unit: Findings from a rapid review. International journal of nursing practice, 28(2), e12962. https://doi.org/10.1111/ijn.12962
9. Hirani, R., Podder, D., Stala, O., Mohebpour, R., Tiwari, R. K., & Etienne, M. (2025). Strategies to Reduce Hospital Length of Stay: Evidence and Challenges. Medicina, 61(5), 922. https://doi.org/10.3390/medicina61050922
10. Rousseau, AF., Prescott, H.C., Brett, S.J. et al. Long-term outcomes after critical illness: recent insights. Crit Care 25, 108 (2021). https://doi.org/10.1186/s13054-021-03535-3