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NURSING ASSESSMENT IN INTENSIVE CARE UNIT: A SYSTEMATIC REVIEW

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ABSTRACT

Nursing assessment in critical patients in the ICU is a complex process that is essential for supporting standard interventions to improve the safety and quality of nursing care. This study aims to identify and analyze various literature related to nursing assessments and nursing care based on ICU service standards. A total of 293 articles were initially identified from various databases: 52 from PubMed, 145 from ScienceDirect, 83 from Google Scholar, 10 from Scopus, and 3 from ProQuest. After removing 85 duplicate articles, 208 articles remained. The screening process based on title identification, further reduced 55 articles. Subsequent abstract screening yielded 31 articles. Finally, a full text review of these articles resulted in 10 articles selected for inclusion. The literature review found that pre-arrival assessments help prepare for patient care needs before ICU arrival. Quick checklist based assessments can quickly and systematically identify early critical conditions in patients. Comprehensive assessments, using an integrated and ongoing patient assessment format, combined with progress notes and sophisticated monitoring tools, can enhance the efficiency of patient care. The conclusion is that implementing Nursing Assessment through a systematic approach to ICU services significantly contributes to optimizing the quality and safety of critical patient care.

Keywords: comprehensive assessment; intensive care unit; on going assessment; pre arrival and quick assessment

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INTRODUCTION

Intensive Care Unit (ICU) is a treatment room for patients with serious illnesses. Patients in the ICU experience very complex and fluctuating conditions that require intensive monitoring and timely intervention. One of the main problems faced is the lack of comprehensive and systematic nursing assessment. This can increase the risk of complications and extend the length of treatment in the ICU (Rustini et al., 2023). Ministry of Health Republic of Indonesia (2011). ICU nursing service standards, there are four stages that must be carried out by nurses to assess patients with critical conditions who are receiving treatment in the ICU. Assessment before the patient arrives (Pre Arrival). Immediate assessment after the patient arrives (Quick Assessment). Complete assessment (Comprehensive Assessment) and On Going Assessment Assessment).Patient critical who is being treated in ICU room has morbidity And mortality Which high, the prevalence of critical patients worldwide has increased every year. Based on WHO data (2019), it states that 9.8-24.6% per 100,000 people in the world suffer from critical illnesses and receive intensive care and 1.1 - 7.4 million patients die in the treatment room due to critical illnesses. To reduce morbidity, mortality and adverse events ICU events can be prevented through comprehensive and ongoing assessment.

Studies conducted in the United States have shown that non-comprehensive and continuous assessment of ICU patients is associated with an increased incidence of complications, such as ventilator- associated pneumonia (VAP), sepsis, and acute respiratory distress syndrome (Fang et al., 2024). In Indonesia, the prevalence of critical patients was recorded at 33,148 with the percentage of patient deaths in the ICU reaching 36.5%. This can be associated with less than optimal nursing assessments and non-comprehensive assessments, especially in non-verbal patients such as ventilator users, which can cause delays in detecting changes in patient

conditions (Yusefa, Meilando and Agustiani, 2024). Factor affecting Nursing assessment of critical patients in the ICU, such as team readiness, understanding of the patient's condition, and effective communication between health facilities are very influential. The success of this communication ensures that important information, such as initial diagnosis and interventions are obtained before the patient arrives in the ICU. Quick stage check, which aims to identify life-threatening problems quickly, is influenced by experience, training, Comprehensive assessment is greatly influenced by the ability to have a deep understanding of clinical knowledge, technical skills, and sufficient time for a thorough evaluation of the patient's condition. Meanwhile, on-going assessment, which focuses on continuous monitoring of patient conditions, is highly dependent on supporting technology such as automated monitoring devices, accurate documentation, and the ability of nurses to interpret data in real time and adjust interventions according to patient progress. Based on the literature review, it shows various findings regarding strategies, tools, and best practices in nursing assessment in the ICU that have not been optimally integrated into clinical practice. Therefore, a systematic literature review is needed to identify, evaluate, and synthesize the best evidence related to nursing assessment in the ICU.

METHOD

This review uses a systematic approach by collecting data from various studies that discuss nursing assessment in the ICU based on pre-arrival, quick response, and follow-up. check, comprehensive assessment, and ongoing assessment. Review literature carried out on 5 databases, namely PubMed, Science Direct, Google Scholar, Scopus and ProQuest. Search using keywords " Nursing Assessment "OR" Nursing Evaluation" AND " Intensive Care Unit" AND " Pre-Arrival " AND " Quick Assessment " AND " Comprehensive Assessment" AND " Ongoing Assessment ", as well as article filtering by paying attention to limitations covering the years (2019-2024), full text and English, so as to obtain relevant articles. The inclusion criteria for articles are: 1) Taken in the last 6 years; 2) Design using quasi experimental, case report, cross sectional, RCT and cohort study; 3) Using Indonesian and English. Full article text while the article is not full text is excluded.

Amount article Which identified is PubMed 52 article, Science direct 145 articles, and Google Scholar 83 articles and Scopus 10 articles, and Proquest 3 articles, so that totaling 293 articles. Selection based on duplication obtained 85 identical articles, leaving 208 articles. The screening process based on identification title obtained 55 articles. Then screening was carried out based on the abstract, 31 articles were obtained. After the review was carried out in the full text article of these, 10 articles were left to be reviewed. Following diagram flow chart process study selection in the image below:

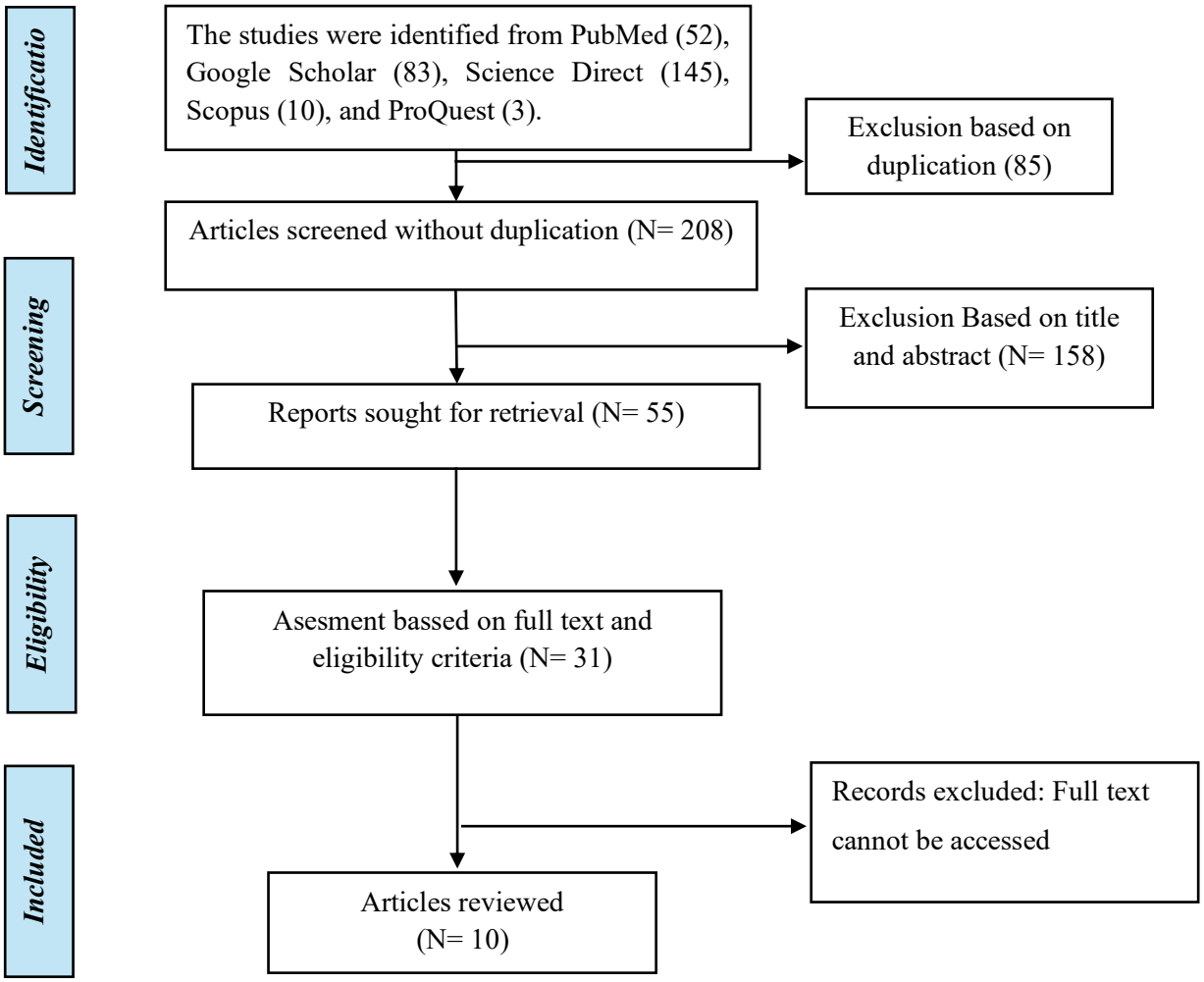

Figure 1: PRISMA Selection Process

RESULT

The studies included in this research were identified from various sources: PubMed 52, Google Scholar 83, Science Direct 145, Scopus 10, and ProQuest 3, with a total of 293 studies identified. The screening process began by removing duplicates, leaving 208 articles. Subsequently, 55 reports were sought for retrieval. The next step involved assessment based on the full text and eligibility criteria, which led to 31 articles meeting the necessary criteria. Finally, 10 relevant articles were reviewed.

Table 1.
Evidance Based Practice

Title of Scientific Paper	Authors	Method	Results
Physical assessment skills practiced by critical care nurses	Rosli, S. N. et al., 2024	Design: Cross-sectional observational study Sample: 40 nurses Variable: Assessment skills Instrument: Questionnaire Analysis: U test Mann – Whitney U, Kruskal – Wallis, and manual analysis for qualitative data	assessment skills possessed by nurses in the intensive care unit (ICU) are influenced by several factors, such as work experience, age, workplace, and advanced training possessed by the nurse. Nurses with more experience use good physical assessment skills more often . such as checking vital signs (blood pressure, body temperature, heart rate), more often. However, more complex skills, such as neurological or cardiovascular examinations, are not often used because they require more specialized knowledge and experience.

Title of Scientific Paper	Authors	Method	Results
Delayed Admission to the Intensive Care Unit and Mortality of Critically Ill Adults	Holdsworth, L. M., et al., 2020	Design: Systematic literature review and meta-analysis Sample: This research included 34 observational studies . Variables: Time to ICU admission. Dependent variable Mortality during ICU stay.	The results of this study indicate that delayed admission to the intensive care unit (ICU) significantly increases the risk of death in critically ill adults. Analysis of 34 observational studies found that patients with delayed ICU admission had higher mortality than those who were admitted promptly. The main factors contributing to the delay included lack of ICU beds, delayed recognition of critical illness, and communication barriers among healthcare providers. This study emphasizes the importance of rapid access to intensive care as a measure to reduce mortality in critically ill patients.
The Interhospital Medical Intensive Care Unit Transfer Instrument Facilitates Early Implementation of Critical Therapies and Is Associated With Fewer Emergency Procedures Upon Arrival	Malpass, H. C., et al., 2019	Design: experimental study. Instrument development Sample: involving two sample groups, namely the preintervention group (134 patients) and the post-intervention group (77 patients) who were transferred to the ICU from outside hospitals . Variables: mortality within 48 hours in ICU, patient stability on arrival Instrument: ICU patient transfer instrument Analysis: Chi- square, Fisher's test, t- test .	The results showed that the use of transfer instruments had a significant positive impact on patient stability upon arrival in the ICU. These instruments facilitated more effective early implementation of critical care therapy, which plays a vital role in maintaining patient stability upon admission to the intensive care unit.
Analysis of the Implementation of Integrated Patient Progress Notes (CPPT) in Inpatient Rooms	Solehudin, S. et al., 2023	Design: analytical descriptive Sample: 5 patient files observed for 5 days in the inpatient ward Instrument: Integrated Patient Progress Record (CPPT) which includes complete medical data, including health history, test results, treatment plans, and patient progress notes. Analysis: Observational analytics on observational data.	Research result show that information medical patient can accessed with consistent by all member team maintenance . Integrated data covers all over aspect health patients , so that make it easier team maintenance For get description complete about condition patient . Integration of records medical this also supports greater collaboration and coordination effective between member team care , ensure every actions taken based on accurate and upto date information .
Knowledge of ICU Nurse Regarding the On going Nursing Assessment of ICU Patients in Khartoum.	Osman, A., et al., 2021	Design: Descriptive cross-sectional Sample: 86 nurses Variable: Level of nurses' knowledge about continuous nursing assessment in the ICU. Instrument: Questionnaire Analysis : Chi-square, t-test	The results of the study showed that nurses had a level of knowledge in the good category, based on standard classification tools. The most frequently used assessment tools were ABCDE followed by Assessment head-to-to . However , there are knowledge gaps such as the use of the BRADEN scale for skin assessment, the MORSE scale for fall risk, and pain assessment.
Adapting Rapid Assessment Procedures for Implementation Research Using a	Holdsworth, L. M., et al., 2020	Design: Rapid Assessment Procedures (RAP) Sample: The study was conducted at four academic medical centers in the	The results showed that the implementation of patient safety interventions in the ICU was influenced by various facilitators and barriers. Key facilitators included an organizational culture that consistently

Title of Scientific Paper	Authors	Method	Results
Team- Based Approach to Analysis : A Case Examples of Patient Quality and Safety Interventions in the ICU.		United States. Variables: Interventions to improve patient safety in the ICU.	supported patient engagement at all levels, frontline staff involvement in innovation design, and a uniform governance structure across ICU units that facilitated program adoption and replication. In addition, an iterative and learning-oriented approach to innovation development was also a strength in the implementation process.
The Effectiveness of an Intensive Care Quick Reference Manual Checklist .	Katja et al., 2019	Design: Randomized Simulation Based Trial. Sample: 48 (16 ICU resident physicians, 16 registered nurses, and 16 specialist ICU nurses). Variable: Quick Usage Reference Manual (QRM) (yes/no) Instrument : Manual QRM Analysis: Fisher's exact test, chi-square, t- test Student, and Mann -Whitney tests	The use of QRM has been shown to help medical teams in the ICU work in a more structured manner, especially in situations requiring complex diagnoses. This suggests that tools such as QRM can be a valuable addition to improving patient safety in the ICU. However, for QRM to be successfully implemented widely, training and socialization to medical teams is essential.
Competence in Intensive and Critical Care Nursing	Aeyd Mushhin et al., 2022	Design: Meta Analysis . Variables: knowledge and thinking critical skills clinical and procedural and intelligence emotional and attitude	The results of the study indicate that competency in intensive and critical care nursing is a multidimensional concept that includes advanced clinical knowledge, critical thinking skills, and emotional intelligence. These competencies are essential for providing holistic care to critically ill patients. Several studies have emphasized the need for continuing education, simulation-based training, and formal competency assessment to improve standards of practice. The study also highlighted the importance of interprofessional collaboration and a supportive work environment as factors influencing nursing competency in intensive care units.
IDDSaM: An Integrated Disease Diagnosis and Severity Assessment for Intensive Care Units	Shi et al., 2020	Design: Development of a machine learning-based computational model for disease diagnosis and severity assessment in ICU patients. Sample: Data from 50,430 ICU cases covering 46,520 patients with 50 types of diseases from nine different classifications. Variables: Laboratory data, bedside monitoring, and medical complications. Disease diagnosis and patient mortality prediction. Instrument: IDDSaM model that integrates multi-source data.	IDDSaM showed significant performance improvements compared to previous mortality and diagnosis prediction models. Specifically, IDDSaM improved mortality prediction accuracy and diagnosis accuracy. These improvements indicate that the multi-source and multi-task approach used by IDDSaM is effective in processing complex data from ICU patients, thus providing more accurate diagnoses and more precise severity assessments.
Assessment of ICU Nurses' Competency Towards Delirium	Hebeshy et al., 2024	Design: Quantitative descriptive. Sample: 150 ICU nurses Variables: Independent	This study showed that the competence of ICU nurses in managing delirium in critically ill patients was at a moderate level. Most nurses had basic knowledge about delirium,

Title of Scientific Paper	Authors	Method	Results
Among Critically Ill Patients		variables: ICU nurse competency (knowledge, skills, and attitudes). Variables of nurses' ability to detect and treat delirium in critical patients. Instrument: Analysis questionnaire descriptive and inferential statistics	but were less able to recognize hypoactive delirium and complex interventions. Practical skills were also at a moderate level, with the majority of nurses able to implement standard interventions, but lacking confidence in escalating cases. Nurses' attitudes toward managing delirium were generally positive, although lack of formal training was a major barrier. A significant relationship was found between knowledge, skills, and attitudes toward the ability to manage delirium,

DISCUSSION

The intensive care unit is a highly complex environment, where successful care is highly dependent on the competence of healthcare personnel, system effectiveness, and multidisciplinary collaboration. The studies analyzed in this context show how each of these elements plays a critical role in improving the quality of healthcare, reducing mortality, and increasing patient safety. Integration of pre stages arrival, quick assessment, comprehensive assessment, until on going assessment shows the importance of a systematic approach in providing nursing care to patients in the ICU. The literature review analyzed shows that each stage is interconnected and determines the success of the next stage. For example, information collected during pre-arrival affect the speed and quality of quick assessment, while the results of the comprehensive assessment becomes the basis for ongoing monitoring (on going Assessment). Thus, strengthening nurse competency, implementing integrated documentation such as CPPT, and using technology-based tools are essential to improve the safety and quality of life of ICU patients overall (Malpass, H. C., Shi, Z., 2020).

Pre arrival assessment is the initial step in handling ICU patients which aims to ensure the readiness of the facilities and health team before the patient arrives. Study on the use of Interhospital Medical Intensive The Care Unit Transfer Instrument emphasizes the importance of structured information collection during the referral process, including the patient's clinical condition, critical therapy needs, and potential complications. This tool has been shown to improve the effectiveness of pre-transfer preparation. arrival by ensuring that the ICU team has sufficient data to plan initial steps of care. Implementation of pre arrival Organized assessment also contributes to reducing response time and preventing delays in critical interventions (Shi, Z. et al., 2020).

Upon arrival of the patient in the ICU, quick Assessment is a priority to evaluate the patient's condition quickly and determine emergency actions. Research on nurse competence in examining airway, breathing, circulation, drugs And equipment, is very important in determining the success of initial patient stabilization. The use of checklists such as Intensive Care Quick Reference The Manual Checklist helps nurses make systematic rapid assessments, thus preventing the missing of critical conditions that require immediate treatment (Katja, M., et al., 2019). In addition, the adaptation of the Rapid Assessment method Team-based procedures expedite decision-making in dynamic situations, ensuring patient safety in this crucial phase (Patterson et al., 2022).

After initial stabilization, comprehensive assessment is conducted to evaluate the patient's condition comprehensively, including physiological, psychological, and social aspects. The implementation of Integrated Patient Progress Notes (CPPT) is very relevant in this context because it allows for structured documentation and interprofessional collaboration. Research shows that CPPT helps nurses and other health care providers identify clinical problems that

require long-term attention, such as the risk of delirium or organ dysfunction (Rosli, S. N., et al., 2023). Comprehensive This assessment is the basis for holistic and integrated follow-up care planning (Sibilio, S., et al., 2025).

On going assessment is carried out continuously to monitor changes in patient conditions during treatment in the ICU. Research on the competence of ICU nurses in continuous assessment shows that dynamic monitoring of the patient's physiological status, such as oxygen saturation, blood pressure, and signs of infection, is very important to prevent complications (Aeyd Mushin, A. et al., 2024). Technology-based approaches, such as Integrated Disease Diagnosis and Severity Assessment, can support nurses in monitoring patient conditions in real time and provide data for faster and more accurate clinical decision-making (Shi, Z., 2020). Ongoing assessment This also includes ongoing communication between professionals to ensure any changes in the care plan can be implemented efficiently.

CONCLUSION

The success of critical care in the intensive care unit (ICU) is greatly influenced by a systematic approach that includes pre-arrival assessment, quick assessment, comprehensive assessment, up to ongoing assessment. Each of these stages is interconnected and contributes to improving the quality of care, reducing mortality, and patient safety. The studies analyzed emphasize the importance of strengthening the competence of health workers, implementing integrated documentation, and utilizing technology in each stage of assessment. With structured implementation and multidisciplinary collaboration, the quality and safety of critical care in the ICU can be significantly improved.

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