



NURSING PROCESS FOR CRITICAL PATIENTS AND THEIR FAMILIES IN CARDIAC INTENSIVE CARE UNIT

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ABSTRACT

The Cardiac Intensive Care Unit or CICU is a hospital unit specifically for treating acute cardiovascular disease. The implementation of structured nursing standards is very important to ensure optimal quality of care. This narrative review was conducted to compare the application of the NANDA NIC-NOC (3N) model and the 3S Model in improving the quality of care in the CICU. Objective: This study aims to explore the application of nursing standards using the NANDA NIC-NOC model and the Indonesian Nursing Standards 3S (SDKI, SLKI, SIKI) in improving the quality of care in the CICU. Methods: The research design used in this study was a narrative review by searching for articles from PubMed with the keywords Nurses's Roles OR Roles, Nurse's OR Role, Nurse's OR Nurse Role AND Management, Airway OR Airway Control OR Control, Airway. Inclusion criteria included accessible full-text articles in English. Data was analyzed descriptively Results: From the research, 5 articles were obtained that were relevant to the research. This research conducted in several countries found that the implementation of nursing standards can improve the quality of care and patient outcomes in CICUs. The use of NIC and NOC standards helps nurses plan, implement and evaluate patient care systematically and effectively. Conclusions: Implementation of nursing standards has great potential in improving the quality of care in CICUs. There are limitations in empirical validation and adaptation to local context that need to be addressed. Recommendations for further research and development of intensive training programs are needed to ensure the effectiveness and sustainability of implementation of these nursing standards.

Keywords: assessment; CICU; nursing process

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INTRODUCTION

The Cardiac Intensive Care Unit (CICU) is an administratively identified hospital unit, responsible for the specialized management of acute cardiovascular diseases (Bouchlarhem et al., 2023). Patients admitted to the CICU may require artificial ventilation, dialysis therapy, centra venous access and treatment of cardiopulmonary arrest. Cardiovascular emergencies are not only limited to treating heart attacks, but also heart valve disease, heart failure, pulmonary embolism, rhythm and conduction disorders, as well as post-operative cardiac surgery patients (Bourke, 2016). Cardiovascular Intensive Care Unit (CVICU) nurses provide nursing care to patients with critical heart conditions and problems. A CVICU nurse job description will include a variety of duties that include everything from administering IV medications to providing emergency support to heart failure patients. CVICU nurses must be

calm, detail-oriented, and able to make decisions quickly, because CVICU nursing is very complex and fast-paced and your patient is in critical condition. Critical care integrates the diagnosis and management of responses to serious, life-threatening, actual or potential health conditions. The aim is to not only improve the quality of care provided but also to adapt nursing interventions to the specific needs of patients, emphasizing the importance of an individualized approach in critical care (HealthDirect, 2023). Critical care not only improves the quality of care provided but also ensures that nursing interventions are tailored to the patient's needs (Rhodes et al., 2011). Critical care involves the use of special knowledge and skills in carrying out the nursing process in nursing care for life-threatening conditions.

Research by da Silva et al (2021) in the process of approaching nursing care and implementing nursing in CICU using Nursing Classification (NIC) and Nursing Outcomes Classification (NOC). This standard is an important part of the nursing process in the world, including in Indonesia. NIC is used to classify nursing interventions carried out, while NOC is used to measure the results of these interventions. These two classifications can help nurses plan, implement and evaluate patient care systematically and effectively. In the ICU context, the use of NIC and NOC can help nurses provide appropriate and individualized care according to the needs of critical patients (da Silva et al., 2021). Thus, the use of NICs and NOCs can improve the quality of care and patient outcomes in intensive care settings.

In Indonesia, the nursing care approach process uses standards created by the Indonesian National Nurses Association (PPNI), including the Indonesian Nursing Diagnosis Standards (SDKI), Indonesian Nursing Outcome Standards (SLKI), and Indonesian Nursing Intervention Standards (SIKI). That these three standards are the key to improving the quality of nursing care in Indonesia (PPNI, 2017). This standard is designed to provide a systematic and standardized framework for the nursing process, namely assessment, diagnosis, planning, intervention and evaluation (Rezkiki et al., 2022). The use of this standard helps nurses accurately identify patient health problems, plan effective interventions and evaluate the results of nursing care with the ultimate goal of improving and optimizing healing in patients (Rezkiki et al., 2022). In the context of critical nursing, the application of this standard becomes crucial because condition complex patients and not stable so it requires a quick response and appropriate nursing action.

The application of these nursing standards helps nurses to accurately identify patient health problems, plan effective interventions and evaluate the results of nursing care with the ultimate goal of improving and optimizing patient healing. Especially in the context of critical care, where the patient's condition is very complex and dynamic, the application of these nursing standards is very important to provide a quick response and appropriate action according to the patient's needs. Thus, both the use of NIC and NOC and the Indonesian Nursing Standards (SDKI, SLKI, SIKI) prepared by PPNI have a crucial role in improving the quality of nursing care in Indonesia, especially in intensive care environments. Both approaches provide a solid foundation for nurses to provide appropriate, individualized and high-quality care to critical patients. The aim of this narrative review is to compare the application of the NANDA NIC-NOC model and the 3S model in improving the quality of care in the CICU.

METHOD

The study design employed in this research was a narrative review. The articles selected for this review comprised descriptive quantitative and qualitative studies. The purpose of this narrative review was to explore various findings from studies in order to obtain insights about

assessment and the nursing process for critically ill patients in the CICU. Articles excluded from this review were those that were inaccessible, not in English, considered gray literature, or only available as abstracts. Inclusion criteria encompassed full-text articles accessible and published in English, as well as articles with qualitative and quantitative designs and published within a 5-year period (2019-2024). For the search strategy, two databases were utilized: PubMed and Google Scholar. The keywords employed were (Nurses's Roles) OR (Roles, Nurse's)) OR (Role, Nurse's)) OR (Nurse Role)) AND (Management, Airway)) OR (Airway Control)) OR (Control, Airway)) AND (CICU) OR (Cardiac, Intensive Care Unit)) OR (Cardiovascular Intensive Care Unit))). Boolean operators were used as a search strategy, and MeSH terms were utilized in article searches. The researchers selected studies based on the eligibility criteria first. To avoid duplication during the initial selection stage, the researchers used Mendeley as a reference manager. Subsequently, the researchers checked the titles, abstracts, and full-text views to ensure their relevance to the research topic and applied the inclusion and exclusion criteria. Data extraction was performed manually, with information organized into tables including author, study design, sample, country, nursing standards used, and results. All team members participated in data extraction to enhance accuracy and mitigate bias. In cases where discrepancies arose among team members regarding the data, discussions were held to reach consensus. The author then described the results of the article search in the research findings.

RESULTS

STUDY SELECTION

In the initial search stage, a total of 1004 articles were found from two different sources: PubMed (483 articles) and Google Scholar (521 articles). From this total, the process of eliminating duplicates reduced the number to 510 after removing 494 articles. Subsequently, 443 articles did not meet the initial criteria of being full-text articles and were only abstracts, leaving 16 articles. The next selection process involved further assessment of the articles' suitability according to the inclusion criteria, resulting in the exclusion of 11 articles. Finally, 5 articles were selected for further analysis (see Table 1).

Table 1.
Data Extraction

No	Author, Year	Country	Samples	Design	Nursing Process	Results
1	(da Silva et al., 2021)	Brazil	293 patients, 17 patients in ICU and 12 professionals per shift	Qualitative Study	Nanda NIC-NOC (NNN)	Implementation of NANDA NIC-NOC (NNN) in the CICU has had a positive impact on the quality of care, clinical knowledge and professional visibility of nurses. This study emphasizes the importance of continuing education programs and the formation of study groups to overcome obstacles in the implementation of the nursing process.
2	(Martínez Font et al., 2021)	Spain	9 nurses	Case Studies	Nanda NIC-NOC (NNN)	Implementation of NANDA NIC-NOC (NNN) demonstrated improved quality of care. This process helps nurses document nurse performance and

						increase knowledge.
3	(Nurhesti et al., 2020)	Indonesia	30 cases and documentation notes	Descriptive analytics with a comparative approach	NANDA NIC- NOC (NNN) and 3S (SDKI, SLKI, SIKI)	Nursing diagnosis standards in providing nursing care with the use of standard nursing language improve the quality of assessment, diagnosis, planning, implementation, evaluation and documentation of nursing care. NNN has a high level of scientific evidence, 3S was officially used in Indonesia in 2017 and has the potential to become the standard nursing language in Indonesia with further research.
4	(Mukhtar & Risnah, 2023)	Indonesia	400 nursing students	Quantitative design	NANDA NIC- NOC (NNN) and 3S (SDKI, SLKI, SIKI)	The use of NANDA NIC-NOC and SDKI SLKI SIKI in nursing care provides clear and comprehensive guidance for nurses in identifying diagnoses, planning interventions, and evaluating nursing outcomes. These standards help in improving the accuracy of documentation and the quality of nursing care. This study also shows the importance of increasing nurses' knowledge about the use of standard nursing diagnoses through training and outreach.
5	(Kartini & Eka Ratnawati, 2022)	Indonesia	150 nurses	Quasi-experimental	3S (SDKI, SLKI, SIKI)	3S shows that it is effective in increasing nurses' knowledge and abilities in documenting nursing care in the CICU.

In this review, several types of articles are published, including qualitative and quantitative designs carried out in several developing and developed countries. The Nursing Process in CICU often requires the use of high technology and intensive therapy, considering the patient's critical condition (Soares et al., 2013). The use of equipment such as ventilators, hemodynamic monitors and infusion therapy requires special expertise and close supervision by nurses. In the context of the nursing process in CICU effective communication between nurses and other multidisciplinary providers is crucial to providing coordinated and efficient care. In addition, it is important to involve patients and families in care and decision making (McGrath & Cox, 1998). This will be an integral part of the Nursing Process in the CICU.

In other countries, the nursing process may differ depending on local health standards and protocols, available resources and health care culture. In research by da Silva et al., (2021) the Nursing Process in Brazil is closely related to the health service system in that country, specifically the Family Health Strategy (FHS). Where this implementation was implemented in 1994. Since this implementation was implemented, especially in the Cardiac Intensive Care Unit (CICU), patient health has been optimized. The Nursing Process from this research has

encouraged the development of interventions and implementation of a nursing model in the CICU room that emphasizes culture and makes a significant contribution to the family. This reflects that family support for carrying out care in the CICU is very important to apply to the nursing process. In addition, the nursing standards used in Brazil are set by the Federal Nursing Council (COFEN). The standard nursing method in Brazil uses NANDA International, Nursing Intervention Classification (NIC), and Nursing Outcomes Classification (NOC) or abbreviated (NNN) (da Silva et al., 2021).

On studies da Silva et al (2021) shows the challenges and potential of using NNN. These challenges are the lack of theoretical knowledge about the nursing process and difficulties in clinical evaluation of patients. Additionally, an educational emphasis on language and its active use in clinical practicum is critical to advancing nursing knowledge and competency. However, Brazil recognizes and utilizes NNN in its nursing practice and education. The NNN Nursing Standards are not yet fully effective in Brazil partly due to challenges in the language used. Language is a key element in implementing NNN, considering the importance of correct understanding of nursing terminology and concepts. Inadequacies in language mastery or gaps in translation can cause obstacles in the effective use of NNN in the Brazilian environment. However, with increased education and training in languages as well as adjustments in the application of nursing terminology, NNNs have the potential to become more effective, helping to improve the standard and quality of patient care in the country.

From the results of a case study conducted by Martínez Font et al., (2021) on patients with acute myocardial infarction (AMI) cases in Spain, it is stated that the application of nursing care using the NANDA-NIC-NOC taxonomy standard allows ICU nurses to be able to assess the patient's progress at any time. time and is very effective in the nursing process so that it can guarantee the quality of nursing services. Knowledge of techniques and anticipation of problems or potential problems can help in urgent treatment to increase patient stability (Needham & van de Mortel, 2020). However, there are limited comparative articles on the planning process for patients with sternal aperture that can be used to compare treatment plans, so further research and analysis of care cases are needed. Nursing according to the NANDA-NIC-NOC taxonomy in patients with this problem (Jedwab et al., 2019). Implementing nursing care using a standardized taxonomy allows us to assess patient progress over time and the effectiveness of nursing activities, ensuring quality of care (Nurhesti et al., 2020). Knowledge of techniques and anticipation of real or potential problems helps resolve these very urgent situations to achieve patient stability. We want to emphasize the responsibility of nursing personnel because nursing activities are essential for the development of good services (Martínez Font et al., 2021).

Based on study from Indonesia, Nurhesti et al (2020) showing that SIKI and NANDA are acceptable diagnostic standards used in taking decision clinic nursing based on youth usage and explanation diagnostics, reasoning or completeness type of diagnosis. Second standard This influence clinic nurse in analyze case patient. Nurse more familiar against NANDA because Already studied since education, but at home Indonesian disease is dominant using SDKI. Perspective This because the SDKI already exists become standard throughout house sick Indonesian and speak Indonesian so easy understandable and appropriate with culture local (Cross, 2018). However, there is a lack of empirical validation based on practitioners, IDHS and NANDA are necessary adapt with actual existing conditions, for example situation Emergency bleeding and infection so that No can accommodated.

DISCUSSION

Nursing Process in Critical Care

The use of equipment such as ventilators, hemodynamic monitors and infusion therapy requires special expertise and close supervision by nurses. In the context of the nursing process in CICU effective communication between nurses and other multidisciplinary providers is crucial to providing coordinated and efficient care. In addition, it is important to involve patients and families in care and decision making (Carlisle et al., 2021). This will be an integral part of the Nursing Process in the CICU. In other countries, the nursing process may differ depending on local health standards and protocols, available resources and health care culture. In research by Abolwafa et al., (2024) the Nursing Process in Brazil is closely related to the health service system in that country, specifically the Family Health Strategy (FHS). Where this implementation was implemented in 1994. Since this implementation was implemented, especially in the Cardiac Intensive Care Unit (CICU), patient health has been optimized. The Nursing Process from this research has encouraged the development of interventions and implementation of a nursing model in the CICU that emphasizes culture and makes a significant contribution to the family (Himmelreich et al., 2020). This reflects that family support for carrying out care in the CICU is very important to apply to the nursing process. In addition, the nursing standards used in Brazil are set by the Federal Nursing Council (COFEN) (da Silva et al., 2021).

The challenges and potential of using NNN. These challenges are the lack of theoretical knowledge about the nursing process and difficulties in clinical evaluation of patients. Additionally, an educational emphasis on language and its active use in clinical practicum is critical to advancing nursing knowledge and competency (Firdaus et al., 2019). However, Brazil recognizes and utilizes NNN in its nursing practice and education. The NNN Nursing Standards are not yet fully effective in Brazil partly due to challenges in the language used (Phillips, 2020). Language is a key element in implementing NNN, considering the importance of correct understanding of nursing terminology and concepts. Inadequacies in language mastery or gaps in translation can cause obstacles in the effective use of NNN in the Brazilian environment (Dallaire et al., 2012). However, with increased education and training in languages as well as adjustments in the application of nursing terminology, NNNs have the potential to become more effective, helping to improve the standard and quality of patient care in the country.

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Comparative Analysis of Nursing Processes Advantages of Indonesian Nursing Diagnosis Standards

Indonesian nursing diagnosis standards have several significant advantages. First, this standard considers cultural factors and local values, making it easier to accept and implement by practitioners and patients in Indonesia. Additionally, this standard emphasizes holistic

aspects by considering the physical, emotional, social, and spiritual aspects of the patient, enabling healthcare providers to treat patients holistically (Long et al., 2013). Conformity with national health policy and practice directions is also an advantage, facilitating integration into the existing health system. The use of language that is easy for health practitioners to understand facilitates communication within the care team. The flexibility and adaptability of this standard allows adaptation to individual patient needs and different clinical situations, thereby leaving room for effective care. Finally, these standards support professional development by providing clear guidance for healthcare practitioners to develop skills and knowledge to diagnose and treat patients more effectively (Bordbar et al., 2022).

Weaknesses of Indonesian Nursing Diagnosis Standards

Although designed for the Indonesian context, standard nursing diagnoses face several limitations. One of them is local adjustments that may not be fully able to accommodate cultural variations, health infrastructure and local challenges in various regions. Additionally, implementation of these standards is often hampered by a lack of resources such as adequate personnel, facilities, or funding. Difficulty in assessment and monitoring is also a challenge, especially in busy or restricted healthcare environments (Nurhesti et al., 2020). These standards may not have been fully validated empirically, so the effectiveness and safety of proposed interventions may be questioned. Intensive training and education are required to implement these standards, but the availability of resources for such training may be limited. Additionally, consistently defining and measuring relevant outcomes can be challenging, especially in complex healthcare environments or in cases where care outcomes are difficult to measure directly (Lusmilasari et al., 2020).

Lack of Implementation of Indonesian Nursing Diagnosis Standards in the ICU Room

Patients in the ICU/ICCU often have very complex and serious health conditions, which may not be fully accommodated by standard nursing diagnoses or require additional adjustments for complex clinical situations. Additionally, the ICU/ICCU uses advanced technology and complex medical procedures that may not always be covered or considered in detail in the standards. Although standard nursing diagnoses may account for serious health conditions such as emergencies, specific critical management aspects may not be emphasized enough. In the ICU/ICCU, complications such as nosocomial infections or organ disorders are more common, but standard nursing diagnoses may not always provide specific guidance in treating or preventing these complications (Hariyati et al., 2021). Team communication challenges in the ICU are also important, as communication between various members of the care team is crucial, and standard nursing diagnoses may not provide sufficient guidance to facilitate effective communication among such multidisciplinary teams. Additionally, patients in the ICU/ICCU often require very rapid monitoring and evaluation of changes in their health condition, and standard nursing diagnoses may not always support this process in a sufficiently responsive or rapid manner (Hidayat et al., 2013).

CONCLUSION

Study This has evaluate the nursing process in the Cardiac Intensive Care Unit (CICU) with focus on usage Nursing Intervention Classification (NIC) and Nursing Outcomes Classification (NOC) standards as well Standard Diagnosis Indonesian Nursing (SDKI, SLKI, SIKI). Research result show that implementation standards This can increase quality treatment and results patient with integrate approach holistic consideration aspect physical, emotional, social, and spiritual patients. Additionally, use standards This facilitate effective communication between nurses and team multidisciplinary other as well as involve patient and family in the retrieval process decision. Lack study This exists difference culture, sources

power and infrastructure health in various countries possible hinder adaptation and implementation standard This in a way comprehensive.

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