NANDA-I diagnoses in perioperative care: an integrative review

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ABSTRACT

This integrative review aimed to identify the most frequently used NANDA-I nursing diagnoses in perioperative care to support their inclusion in structured perioperative care pathways. A systematic search of MEDLINE and CINAHL databases was conducted, and eight studies meeting the inclusion criteria were analyzed. Diagnoses were extracted and categorized according to perioperative phases (preoperative, intraoperative, and postoperative) and NANDA-I domains and classes. The intraoperative phase showed the highest concentration of nursing diagnoses, reflecting the critical role of nurses in patient safety and monitoring during surgery. The most recurrent diagnoses belonged to the Safety and Protection domain, including *Risk for infection*, *Risk for aspiration*, *Impaired tissue integrity*, and *Risk for perioperative positioning injury*. Other relevant diagnoses involved respiratory function, pain management, hypothermia, anxiety, and deficient knowledge. The findings highlight the central role of NANDA-I diagnoses in guiding clinical reasoning and intervention planning in perioperative nursing. Integrating standardized nursing diagnoses into perioperative care pathways may enhance patient safety, interdisciplinary communication, and the quality of nursing documentation, while strengthening the application of the nursing process in clinical practice.

FUTURE IMPROVEMENTS:

Although promising, this review is published in the *Educational* section of *Dissertation Nursing* because it is outdated, as it does not include the NANDA-I 2024–2026 diagnoses.

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Diagnosi NANDA-I nell'assistenza perioperatoria: una revisione integrativa

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ABSTRACT

Questa revisione integrativa ha avuto l'obiettivo di identificare le diagnosi infermieristiche NANDA-I più frequentemente utilizzate nell'assistenza perioperatoria, al fine di supportarne l'inclusione in percorsi assistenziali strutturati. È stata condotta una ricerca sistematica nei database MEDLINE e CINAHL e sono stati analizzati otto studi che soddisfacevano i criteri di inclusione. Le diagnosi sono state estratte e classificate in base alle fasi perioperatorie (preoperatoria, intraoperatoria e postoperatoria) e ai domini e alle classi della tassonomia NANDA-I. La fase intraoperatoria ha mostrato la maggiore concentrazione di diagnosi, evidenziando il ruolo centrale dell'infermiere nella sicurezza del paziente e nel monitoraggio continuo durante l'intervento chirurgico. Le diagnosi più ricorrenti appartenevano al dominio Sicurezza e Protezione, tra cui *Rischio di infezione*, *Rischio di aspirazione*, *Compromissione dell'integrità tissutale* e *Rischio di lesioni da posizionamento perioperatorio*. Altre diagnosi rilevanti riguardavano la funzione respiratoria, il dolore, l'ipotermia, l'ansia e il deficit di conoscenze. I risultati sottolineano l'importanza delle diagnosi NANDA-I nel guidare il ragionamento clinico e la pianificazione degli interventi infermieristici. L'integrazione delle diagnosi standardizzate nei percorsi assistenziali perioperatori può migliorare la sicurezza del paziente, la comunicazione interdisciplinare e la qualità della documentazione infermieristica, rafforzando l'applicazione del processo di assistenza nella pratica clinica.

MIGLIORAMENTI FUTURI:

Pur mantenendo una certa rilevanza, questa revisione viene pubblicata nella sezione *Educational* di *Dissertation Nursing* in quanto da considerarsi obsoleta, non includendo le diagnosi NANDA-I 2024–2026.

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BACKGROUND

The nursing process is the guiding framework for professional nursing practice, representing the main methodological tool for providing care and documentation [1]. As theorized by Wilkinson, the nursing process comprises six interdependent phases: data collection, diagnosis formulation, setting care objectives, planning, implementing interventions, and evaluating outcomes [2]. Within this framework, nursing diagnoses are clinical judgments that guide the selection of appropriate interventions to achieve desired patient outcomes [3]. The use of nursing diagnoses ensures a holistic approach to patient care, leveraging a structured body of knowledge to enhance care quality and promote continuous improvement among nurses [4]. Furthermore, nursing care gains added value through the adoption of widely recognized taxonomies such as NANDA-I, NOC, and NIC [5]. The importance of evidence-based nursing diagnoses in perioperative nursing has been recognized since the 1980s, focusing on pre-, intra-, and postoperative phases [6-8]. Specifically, perioperative nursing plays a critical role in protecting patients from risks such as improper positioning, surgical site infections, and the early identification of rare but critical changes in patient conditions requiring immediate intervention [9-11]. Given the barriers to the systematic use of nursing diagnoses, including time constraints [11], the development of documentation tools tailored to the nursing process—not solely focused on technical aspects—

can facilitate care delivery and enhance communication among healthcare professionals involved in the three perioperative phases [6]. The primary objective of this study was to identify the most utilized NANDA-I nursing diagnoses in the perioperative context, supporting their inclusion in perioperative care pathways.

METHODOLOGY

Study design

This study employed an integrative literature review methodology to systematically group, analyze, and summarize research findings, with the aim of incorporating evidence into clinical nursing practice [12-14]. This approach follows a structured five-step process: problem identification, literature search, evaluation of included articles, data analysis, and presentation of findings [13, 15].

Search strategy

Between 3 August and 10 August 2022, two authors (CRI and ER) independently searched the MEDLINE (via PubMed) and CINAHL (via EBSCOhost) databases. Search strings combined keywords such as "Perioperative," "Operating Room," "Nursing Diagnoses," "NANDA," and terms from MeSH and CINAHL Subject Headings. The specific search strategies and results are detailed in Table 1.

Table 1. Search string and results

Database	Search String	Results
CINAHL	(Operating Rooms OR Operating Room Nursing OR Perioperative Care) AND (NANDA Nursing Diagnoses)	205
MEDLINE	((((Operating Room[Mesh]) OR (Perioperative Care[Mesh])) AND (Nursing Diagnoses[Mesh]))	298

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Inclusion and exclusion criteria

The studies were included or excluded based on the following criteria outlined in Table 2: publication year, language, study design, population, and outcome measures. Key inclusion criteria were studies published in the last 10 years, in English, with a focus on perioperative nursing practice and NANDA-I nursing diagnoses. Studies were excluded if they did not evaluate NANDA-I diagnoses, did not focus on the perioperative setting, or had a qualitative or case study design.

Table 2. Inclusion and exclusion criteria

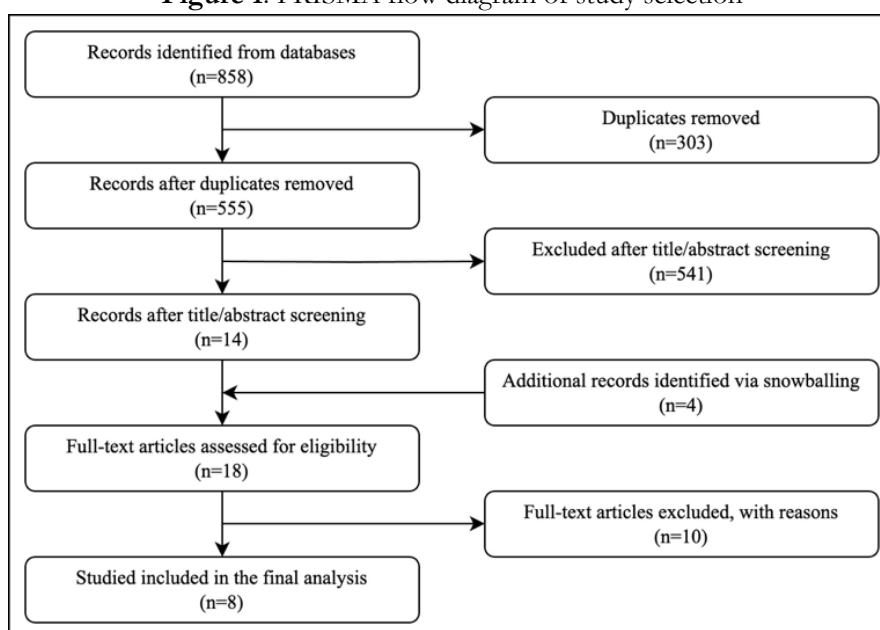| Inclusion	Exclusion
Language: English, Italian	Other languages
Article type: Primary or secondary research	Book chapters
Setting: Operating rooms and PACUs	Inpatient wards/ICUs
Population: Adult patients	Pediatric patients
Taxonomy: NANDA-I	Other taxonomies (e.g., PNDS)
Timeframe: 2002–2022	Publications before 2002

Study selection

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology was used to guide study selection [16]. Two authors (LR and ER) independently assessed titles, abstracts, and full texts, with disagreements resolved by a third author (CRI). Articles were evaluated for rigor, methodology, and relevance using the Critical Appraisal Skills Program (CASP) checklist [17]. Figure 1 presents a flow diagram that visually depicts the search and structured screening process, including the number of publications identified at each stage of the review.

Data extraction and synthesis

References were organized using EndNote, and data were extracted for each included study, including authors, publication year, study design, sample, and key findings. Thematic analysis was used to identify and synthesize common NANDA-I nursing diagnoses reported across studies.

Figure 1. PRISMA flow diagram of study selection

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RESULTS

Database searches identified 858 records. After removing 303 duplicates, 555 records remained for screening. Title and abstract screening yielded 144 records for closer evaluation, of which 130 were excluded, leaving 14 records for full-text review. Snowballing identified 4 additional records, for a total of 18 full-text articles assessed for eligibility. Ten full-text articles were excluded with reasons, and 8 studies were included in the final analysis.

From these articles, NANDA-I diagnoses were extracted and grouped by domain and class. Diagnoses were further categorized based on their application in preoperative, intraoperative, and postoperative phases.

The data extraction table provides insights into the use of NANDA-I nursing diagnoses across perioperative phases (preoperative, intraoperative, and postoperative), surgical specialties, and methodological approaches (Table 3).

Title	Year	Author	Study Methodology	Surgical Specialty	Key Diagnoses	Preoperative	Intraoperative	Postoperative
Clinical indicators of nursing outcomes	2019	Bjorklund-Lima et al.	Cohort Study	Elective Surgeries	Risk for perioperative positioning injury	0	1	0
Conceptual definition of nursing care	2021	Ribeiro et al.	Integrative Review	Various Surgeries	Hypothermia	0	1	0
Integrative review on perioperative care	2019	De Castro Santos et al.	Integrative Review	Neurosurgery	Risk for infection, Risk for constipation	0	0	10
Nursing diagnoses in perioperative care	2015	Nakasato et al.	Integrative Review	Cardiac Surgery	Imbalanced nutrition, Risk for infection	16	10	28
Nursing diagnoses in perioperative period	2019	Garcia Melo et al.	Cross-sectional Observational Study	General and Urological Surgery	Compromised urinary elimination, Risk for aspiration	0	15	0
Assessment of perioperative nursing care	2020	Silva et al.	Observational Study	Orthopedic Surgery	Risk for impaired skin integrity	4	8	5
Outcomes in perioperative nursing care	2018	Martins et al.	Integrative Review	Gastrointestinal and Colorectal Surgery	Acute pain, Risk for delayed surgical recovery	2	6	12
Evaluation of nursing diagnoses in OR	2022	Fernandez et al.	Cross-sectional Observational Study	Gynecological Surgery	Risk for infection, Ineffective breathing pattern	3	7	9

Preoperative phase

In the preoperative phase, the identified nursing diagnoses focused on preparing patients for surgery and mitigating potential risks. Common diagnoses included "Risk for infection," which was associated with ensuring asepsis and preventing complications during surgical preparation [18-21]. Additionally, "Anxiety" was frequently noted among patients undergoing general and urological surgeries, addressing their emotional concerns prior to the procedure [19, 21]. Furthermore, "Deficient knowledge" highlighted the importance of educating patients about the surgical procedure and postoperative care [21].

Intraoperative phase

The intraoperative phase featured the highest concentration of nursing diagnoses, reflecting the critical need for continuous patient monitoring and safety during surgery. Common diagnoses included "Risk for aspiration," which was associated with airway management during anesthesia in general and urological surgeries, and "Impaired tissue integrity," related to surgical wounds and positioning during

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lengthy procedures [22, 21]. "Ineffective breathing pattern" addressed respiratory challenges under anesthesia [18]. Additionally, "Risk for perioperative positioning injury" focused on preventing complications due to prolonged surgical positions [18, 23, 21]. Moreover, hypothermia is a recurring issue among trauma victims, critically ill patients, and those undergoing anesthetic-surgical procedures. This condition often arises after anesthetic induction in the perioperative period, as these pharmacological agents can decrease metabolism and impair thermal regulation [18, 24-25].

Postoperative phase

In the postoperative phase, the nursing diagnoses aimed to facilitate patient recovery and address post-surgical complications. "Acute pain" was a common priority in postoperative care plans, particularly for patients undergoing general and orthopedic surgeries [19, 21, 22]. "Risk for infection" remained a concern as patients recovered from surgical wounds, as did "Ineffective breathing pattern" [22, 21]. Additionally, cases of "Delayed surgical recovery" were observed in patients with underlying conditions that prolonged their healing process [20].

DISCUSSION

While the findings highlight the importance of perioperative nursing in protecting patients from surgical risks, several challenges must be considered. The use of standardized nursing terminologies like NANDA-I may face resistance from healthcare providers accustomed to traditional approaches, as well as concerns about the time and resources required for implementation and maintenance [26]. Additionally, the limited integration of NANDA-I diagnoses into perioperative care pathways suggests their value may not be fully recognized or prioritized within the healthcare system [11, 4]. Critics may argue that the systematic use of nursing diagnoses may not always be practical or feasible in the fast-paced and complex perioperative setting, where time constraints and competing priorities present significant challenges

[11, 10]. Further, the benefits of using NANDA-I diagnoses in perioperative care have not been conclusively demonstrated, and additional research is needed to understand their impact on patient outcomes and healthcare provider satisfaction [8]. Integrating NANDA-I diagnoses into perioperative care pathways may also require substantial organizational changes and resource investments, which some healthcare systems may be reluctant to undertake. Ultimately, while the use of standardized nursing terminologies holds promise, the counterarguments highlight the need for a balanced and nuanced approach that considers the practical realities of the perioperative setting.

Limitations

The findings of this review are subject to several limitations. First, the included studies were predominantly conducted in Brazil, with limited representation from other countries and healthcare systems. Additionally, the majority of the studies utilized retrospective chart reviews, which may not capture the full scope of NANDA-I diagnoses used in practice. To gain a more comprehensive understanding of NANDA-I usage in perioperative care, future research should include a diverse geographic representation and employ a variety of methodological approaches, such as prospective observational studies. Second, the review was limited to studies that explicitly mentioned the use of NANDA-I nursing diagnoses. It is possible that other studies have utilized similar taxonomies or locally developed diagnoses without explicitly referencing NANDA-I, which were not included in this analysis. Lastly, the review did not assess the accuracy or appropriateness of the identified NANDA-I diagnoses, as this was outside the scope of the current study.

Diagnoses by Domains and Classes

Analysis of the extracted NANDA-I diagnoses revealed prevalent patterns of usage, with the diagnoses categorized by their corresponding domains and classes. The most prevalent domains were:

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- **Safety and Protection:** This domain encompassed a substantial portion of the identified diagnoses, such as "Risk for aspiration," "Impaired tissue integrity" [18, 21], and "Risk for infection" [19, 20, 18, 21]. These diagnoses underscore the pivotal role of perioperative nurses in ensuring patient safety and preventing complications.
- **Activity and Rest:** This domain included diagnoses like "Ineffective breathing pattern," reflecting the respiratory challenges encountered during and after surgical procedures [18, 21].
- **Health Promotion:** Diagnoses such as "Anxiety" and "Deficient knowledge" emphasized the significance of patient education and preoperative preparation [21, 19].

CONCLUSION

This review highlights the importance of nursing diagnoses in perioperative care. By identifying commonly used NANDA-I diagnoses, the study provides a foundation for integrating them into perioperative care pathways, which can improve patient outcomes and interdisciplinary communication. However, further research is needed to address barriers to implementation and deepen the understanding of this topic. Integrating NANDA-I diagnoses into perioperative care pathways is a crucial step towards enhancing the adoption of the nursing process as a framework for clinical decision-making, leading to improved quality of care and patient safety in the perioperative setting. The findings underscore the critical role of perioperative nursing diagnoses in enhancing patient safety, guiding intervention planning, and promoting holistic care. Diagnoses like "Risk for perioperative positioning injury" directly address common surgical risks, while the inclusion of diagnoses like "Anxiety" reflects an emphasis on addressing both physical and psychological needs. Furthermore, nursing diagnoses provide a structured framework for selecting appropriate nursing actions, improving the quality of care and patient safety in the perioperative setting.

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