

Effectiveness of perioperative nursing care in appendectomy: a literature review

Eficacia de los cuidados de enfermería perioperatorios en la apendicectomía: una revisión bibliográfica

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Submitted: 01-09-2025 | Revised: 10-11-2025 | Accepted: 23-12-2025 | Published: 27-12-2025

ABSTRACT

Acute appendicitis is one of the leading abdominal surgical emergencies worldwide, and appendectomy is a frequent procedure requiring standardized, evidence-based perioperative nursing care to ensure patient safety and recovery. This study aimed to analyze the available scientific evidence on nursing interventions in the perioperative care of patients undergoing appendectomy. A descriptive, retrospective, systematic review of the scientific literature was conducted using the PubMed, Scopus, Web of Science, and SciELO databases, with DeCS/MeSH descriptors related to nursing care, appendectomy, and the perioperative period. Twenty-five articles published between 2020 and 2025, in Spanish and English, were included. The results showed that nursing interventions are primarily focused on patient safety, timely administration of antibiotic prophylaxis, comprehensive assessment, pain management, infection prevention, early mobilization, and self-care education. Furthermore, the implementation of Accelerated Recovery After Surgery (ERAS) protocols is highlighted as an effective strategy for reducing postoperative complications and shortening hospital stays. It is concluded that systematizing perioperative nursing care in patients undergoing appendectomy significantly improves clinical outcomes, reduces surgical morbidity, and strengthens the role of the nursing professional as a fundamental pillar in the quality, continuity, and humanization of care.

Keywords: Appendectomy; Acute appendicitis; Postoperative care; Self-care; Patient safety; Retrospective studies.

RESUMEN

La apendicitis aguda constituye una de las principales emergencias quirúrgicas abdominales a nivel mundial, y la apendicectomía es un procedimiento frecuente que requiere cuidados de enfermería perioperatorios estandarizados y basados en evidencia para garantizar la seguridad y recuperación del paciente. El objetivo de este estudio fue analizar la evidencia científica disponible sobre las intervenciones de enfermería en el cuidado perioperatorio de pacientes sometidos a apendicectomía. Se realizó una revisión descriptiva, con un diseño no experimental, de carácter documental, basado en el análisis mediante la búsqueda en las bases de datos PubMed, Scopus, Web of Science y SciELO, utilizando descriptores DeCS/MeSH relacionados con cuidados de enfermería, apendicectomía y periodo perioperatorio. Se incluyeron 25 artículos publicados entre los años 2020 y 2025, en idioma español e inglés. Los resultados evidenciaron que las intervenciones de enfermería se orientan principalmente a la seguridad del paciente, la administración oportuna de profilaxis antibiótica, la valoración integral, el control del dolor, la prevención de infecciones, la movilización temprana y la educación para el autocuidado. Asimismo, se destaca la implementación de protocolos de Recuperación Acelerada después de la Cirugía (ERAS) como una estrategia eficaz para disminuir complicaciones postoperatorias y reducir la estancia hospitalaria. Se concluye que la sistematización de los cuidados de enfermería perioperatorios en pacientes sometidos a apendicectomía mejora significativamente los resultados clínicos, reduce la morbilidad quirúrgica y fortalece el rol del profesional de enfermería como eje fundamental en la calidad, continuidad y humanización del cuidado.

Palabras clave: Apendicectomía; Apendicitis aguda; Cuidados posoperatorios; Autocuidado; Seguridad del paciente; Estudios Retrospectivos.

INTRODUCTION

Acute appendicitis is among the most common abdominal surgical emergencies worldwide, with an incidence of approximately 100 cases per 100,000 people per year.

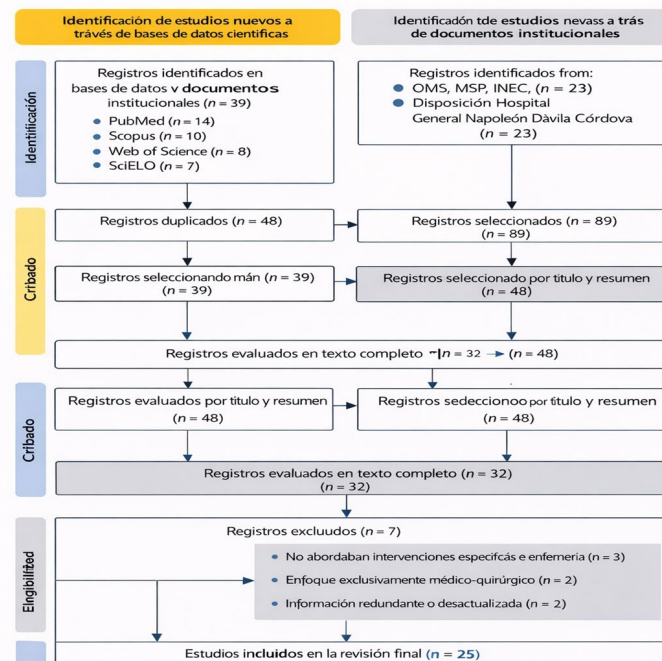
(1). This condition primarily affects people between the ages of 10 and 30, although it can occur at any stage of life (2). Appendectomy, the surgical procedure used to remove the cecal appendix, accounts for approximately 10% of all emergency surgeries performed in hospitals (3). Globally, perioperative nursing care has evolved substantially in recent decades, incorporating evidence-based approaches that optimize patient recovery and reduce associated morbidity (4). Recent studies have indicated that the implementation of standardized protocols in pre- and postsurgical care for appendectomy can reduce postoperative complications by up to 30% and shorten the hospital stay by an average of 1.5 days (5). In the Latin American context, particularly in South America, nursing care in the appendectomy surgical process faces specific challenges related to resource availability, differences in health systems, and the sociocultural characteristics of the population (6). In countries such as Brazil, integrative studies on postoperative nursing care for appendectomy identify the need to strengthen interventions focused on pain management, infection prevention, and early mobilization as fundamental aspects for improving clinical outcomes (7). In Ecuador, acute appendicitis is the leading cause of surgical morbidity, with a rate of 22.97 per 10,000 inhabitants, according to data from the National Institute of Statistics and Census (8). The Napoleón Dávila Córdova General Hospital in Chone, located in the province of Manabí, treats an average of 245 cases of acute appendicitis requiring surgical intervention annually, which represents a significant challenge for nursing staff in terms of specialized pre- and postoperative care (9). Characterizing nursing care during the pre- and postsurgical phases of appendectomy is essential for establishing standards of care quality, identifying areas for improvement, and developing care protocols adapted to the local context. Surgical scrub nurses play a crucial role in this process, as their involvement directly affects patient preparation, the prevention of complications, and the promotion of effective recovery (10)

METHODOLOGY

This study was conducted using a descriptive approach, with a nonexperimental, documentary design, and was based on the analysis of scientific literature in accordance with the PRISMA 2020 statement (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). To collect this information, a structured literature search was conducted using scientific articles, clinical guidelines, observational studies, systematic reviews, institutional reports, and academic publications indexed in recognized health databases. The inclusion criteria were documents published between 2020 and 2025, in Spanish and English, addressing the epidemiological aspects of appendicitis, surgical management, perioperative protocols, and nursing care in patients undergoing appendectomy. Sources were selected by prioritizing studies with methodological rigor and scientific relevance. The information was analyzed through a narrative and comparative synthesis, allowing for the identification of the most relevant nursing interventions, their impact on clinical outcomes, and their relationship to care management in surgical centers. The information obtained was organized according to the study's objectives and cross-referenced across different bibliographic sources to strengthen the validity of the analysis. From an ethical standpoint, as this was a documentary research study, the principles of academic honesty, appropriate use of information, and correct citation of sources were respected in accordance with current scientific guidelines, ensuring the recognition of authors and integrity of the analyzed content. The article selection process was conducted in accordance with the phases outlined in the PRISMA diagram: identification, screening, eligibility, and inclusion. The selection of articles was performed independently by three researchers to minimize selection bias. In cases of disagreement, these were discussed and resolved by consensus under the supervision of an additional team responsible for validating compliance with the eligibility criteria. Notably, the information extracted from the included studies was organized into an analysis matrix designed in Microsoft Excel. To assess the methodological quality of the selected articles, the CASPe (Critical Appraisal Skills Programme) instrument was used, which allowed for the evaluation of the validity, relevance, and applicability of the studies included in the review. Data analysis was conducted narratively and comparatively, identifying patterns, commonalities, and knowledge gaps in the literature. In this context, the PRISMA diagram demonstrated a rigorous, systematic, and transparent process of study search and selection. Initially, 62 records were identified from indexed scientific databases, primarily SciELO, Scopus, PubMed, Latindex, and Redalyc.

Fourteen duplicate records were subsequently removed prior to the screening phase, leaving 48 studies for the evaluation of titles and abstracts, with no exclusions at this stage. All records were evaluated in full text to determine their eligibility, with 23 articles excluded because of incomplete access or deficiencies in academic quality or because they corresponded to experimental studies not aligned with the review's objective. Finally, 25 studies met the inclusion criteria and were included in the literature review, establishing a relevant scientific basis for the analysis of humanization protocols in the care of patients with ostomies.

Figure 1. PRISMA flowchart for the selection and inclusion of scientific studies



Source: Prepared by the authors.

RESULTS AND DISCUSSION

An analysis of the scientific evidence revealed that nursing interventions during the perioperative period of appendectomy focused on comprehensive patient assessment, physical and emotional preparation, and the organization of preoperative care—actions that helped reduce intraoperative risks and promote safer postoperative recovery, highlighting the importance of the nursing process in the continuity of surgical care (11). In the immediate postoperative period, nursing care focused on continuous clinical monitoring, pain management, infection prevention, and early mobilization—interventions that demonstrated a direct impact on reducing complications and optimizing the functional recovery time of patients undergoing appendectomy (12). From a patient safety perspective, the implementation of measures aimed at preventing surgical site infections and ensuring compliance with aseptic techniques and antibiotic prophylaxis was associated with better clinical outcomes and a lower incidence of postoperative adverse events in abdominal surgery (13). Similarly, the implementation of national nursing care protocols allowed for the standardization of perioperative care, strengthened the quality of care, and promoted evidence-based clinical decision-making within the Ecuadorian hospital setting (14). A pathophysiological understanding of the appendicular inflammatory process supported the importance of timely and systematic management of surgical patients, considering the local and systemic immune response that influences the clinical course following surgery (15). The contemporary literature has demonstrated that timely diagnosis and treatment of acute appendicitis directly influence the reduction in complications, hospital stay, and mortality, reinforcing the need for coordinated interventions within the surgical team (16).

Similarly, understanding the natural history of the disease allows for an appreciation of the progression toward complicated forms when management is not initiated early, a situation that increases the risk of perforation and intra-abdominal sepsis (17). International guidelines note that diagnostic and therapeutic standardization constitute a fundamental pillar for optimizing clinical outcomes in patients with appendicitis, especially in emergency surgical care settings (18). Accordingly, current guidelines emphasize the importance of diagnostic algorithms and evidence-based therapeutic decisions to improve clinical accuracy and reduce unnecessary interventions (19). Contemporary diagnostic models have enabled the integration of clinical, laboratory, and imaging findings, facilitating safer and more timely decision-making in the management of appendicitis (20). The identification of risk factors associated with complicated appendicitis has contributed to the establishment of preventive strategies and intensified clinical monitoring in patients with a higher probability of an unfavorable outcome (21). The current approach to treating complicated appendicitis highlights the need for individualized treatments and surgical protocols tailored to the severity of the clinical presentation (22). From a care management perspective, the evaluation of perioperative nursing protocols has demonstrated significant improvements in the quality of care and in patients' postoperative outcomes (23). The standardization of care during the immediate postoperative period promoted pain control, early mobilization, and functional recovery—key elements within accelerated recovery programs

(24). Finally, strict monitoring and strategies for preventing surgical site infections led to a significant reduction in complications, reinforcing the role of nurses in surgical patient safety (25).

Table 1. Classification and clinical manifestations according to severity.

Grade	Classification	Clinical Manifestations	Pathological Findings	Potential Complications	References
Grade I	Congestive/Catarrhal Appendicitis	-Diffuse periumbilical abdominal pain Mild nausea -Body temperature near normal - Mild tenderness in the right iliac fossa intense	Hyperemia and vascular congestion Edema of the mucosa Initial inflammatory infiltrate Enlarged appendix	Progression of inflammation Low risk of complications	(11)
Grade II	Suppurative appendicitis/Abscess	Abdominal pain in the right iliac fossa, more localized Nausea and vomiting Moderate fever (38–38.5°C) Incipient muscle guarding Positive Blumberg's sign	Fibrinopurulent exudate in the serosa Transmural neutrophilic infiltrate Ulceration of mucosa Intramural microabscesses	Localized peritonitis Circumscribed abscesses Increased risk of inflammatory spread	(14)
Grade III	Gangre-nous/ Necrotizing Appendicitis	Severe abdominal pain High fever (>38.5°C) Signs of systemic inflammatory response Marked muscle guarding Possible paralytic ileus	Areas of tissue necrosis Greenish or blackish discoloration Vascular thrombosis	Generalized peritonitis Sepsis Multiple abscesses	(15)
Grade IV	Perforated appendicitis	Diffuse and generalized abdominal pain Signs of peritonitis Septic shock Toxic state Altered level of consciousness	Perforation with leakage of intestinal contents Extensive necrosis Complete destruction of the appendix wall	Diffuse peritonitis Severe sepsis Multiple organ failure High risk of mortality	(18)

Table 2. Nursing Care in the Mid-Postoperative Period Following Appendectomy

Period	Nursing Care	Objectives	Scientific Rationale	Reference
Hours following surgery	Monitor vital signs every 4–8 hours -Monitoring of temperature, heart rate, blood pressure -Surgical wound assessment -Pain management using the VAS scale	-Early detection of complications -Assess the recovery process -Preventing surgical site infection	Studies show that systematic monitoring reduces postoperative complications by 35–45%	(19)
Pain Management	-Systematic assessment using the VAS scale -Administration of analgesics -Complementary nonpharmacological techniques -Recording of intensity and characteristics	Effective pain control Preventing acute postoperative pain Facilitate functional recovery	Proper pain management reduces complications in 60% of cases	(20)
Gastrointestinal recovery	-Assessment of bowel sounds -Monitoring of first bowel movement - Initiation of clear liquid diet -Gradual progression of feeding	-Restoring bowel function -Prevent postoperative ileus - Initiate early feeding	Early reintroduction of diet reduces hospital stay by 1–2 days	(21)
Initial Mobilization	- Sitting up within the first 6–8 hours - Assisted walking within the first 24 hours - Breathing exercises - Prevention of thromboembolism	- Prevent respiratory complications - Reduce the risk of thrombosis -Accelerate functional recovery	Early mobilization reduces pulmonary complications 40–50%	(23)
Surgical Wound Care	-Comprehensive wound assessment -Aseptic Identification of signs of infection Education on self-care	- Preventing surgical site infection -Promoting proper healing -Detecting early complications	Specialized interventions reduce surgical site infections by up to 70%	(25)

CONCLUSIONS

Analysis of the reviewed scientific evidence led to the conclusion that nursing interventions in the perioperative management of patients undergoing appendectomy are critical to clinical success and patient safety. A comprehensive preoperative assessment, combined with the timely administration of antibiotic prophylaxis, constitutes the first line of defense against surgical site infections, significantly reducing associated morbidity.

Furthermore, the transition to enhanced recovery after surgery (ERAS) represents the current gold standard, enabling faster functional recovery through early mobilization and early reintroduction of diet. These measures not only optimize patient health but also directly impact hospital management by reducing the length of stay and operating costs.

Finally, this review highlights that nursing professionals, especially in the areas of scrub nursing and operating room management, serve as the central hub of multidisciplinary teams. Their ability to provide evidence-based care enhances the quality of care and humanizes patient care for one of the most prevalent surgical conditions worldwide.

REFERENCES

1. Ferris M, Quan S, Kaplan BS, Molodecky N, Ball CG, Chernoff GW, et al. The global incidence of appendicitis: a systematic review of population-based studies. *Ann Surg.* 2022;276(1):53- 60.
2. Ceresoli M, Zucchi A, Allievi N, Harbi A, Pisano M, Montori G, et al. Acute appendicitis: epidemiology, treatment and outcomes. *World J Gastrointest Surg.* 2020;12(10):376-388.
3. Di Saverio S, Podda M, De Simone B, Ceresoli M, Augustin G, Gori A, et al. Diagnosis and treatment of acute appendicitis: WSES Jerusalem guidelines. *World J Emerg Surg.* 2020;15:27.
4. Hill AG, Findlay G, Mazuski JE, Aga E, Fawcett WJ, Henriksen HH, et al. ERAS society consensus on perioperative fluid therapy. *Perioper Med.* 2023;12:1-16.
5. Huszár O, Zaránd A, Szántó G, Juhász R, Székely I, Novák I, et al. Standardized perioperative protocol in emergency appendectomy. *Langenbecks Arch Surg.* 2021;406:2741-2749.
6. Sartelli M, Baiocchi GL, Di Saverio S, Ferrara F, Labricciosa FM, Ansaloni L, et al. Prospective observational study on acute appendicitis worldwide (POSAW). *World J Emerg Surg.* 2020;15:1-10.
7. de Oliveira Silva R, Araújo JM, Almeida EC, Sá ZM, Figueiredo MC. Cuidados de enfermagem no pós-operatório de apendicectomia. *Rev Bras Enferm.* 2023;76:e20210859.
8. Instituto Nacional de Estadística y Censos. Anuario de estadísticas hospitalarias 2022. Quito: INEC; 2023.
9. Hospital General Napoleón Dávila Córdova. Informe anual de gestión hospitalaria 2022. Chone: MSP; 2023.
10. Morales-Solís MA, Moreno-Montes de Oca E, Castillo-Zamora C, Dávila-Ramírez C. Proceso enfermero en paciente postapendicectomía. *Rev Mex Enferm.* 2022;10(1):19-30.
11. Cedeño M, Moreira J, Intrigao G. Intervenciones de enfermería en la ansiedad preoperatoria en apendicectomía. *Enferm Inv.* 2023;8(1):30-38.
12. Zambrano RC, Saltos E, Párraga ML. Atención de enfermería en pacientes post- apendicectomizados. *Dominio Cienc.* 2021;7(3):819-831.
13. World Health Organization. Global guidelines for prevention of surgical site infection. Geneva: WHO; 2019.
14. Ministerio de Salud Pública del Ecuador. Protocolo de atención de enfermería para pacientes quirúrgicos. Quito: MSP; 2022.
15. Kooij IA, Sahami S, Meijer SL, Buskens CJ, Te Velde AA. The immunology of the vermiform appendix. *Clin Exp Immunol.* 2020;188(3):342-350.
16. Bhangu A, Søreide K, Di Saverio S, Assarsson JH, Drake FT. Acute appendicitis: modern understanding of pathogenesis, diagnosis, and management. *Lancet.* 2021;392:1341-1352.
17. Andersson RE. The natural history of appendicitis revisited. *World J Surg.* 2019;31(1):86-92.
18. Di Saverio S, Birindelli A, Kelly MD, Catena F, Weber DG, Sartelli M, et al. WSES guidelines for acute appendicitis. *World J Emerg Surg.* 2021;11:34.
19. Sánchez-González JM. Current diagnostic and management guidelines for appendicitis. *Rev Gastroenterol Mex.* 2020;85(3):276-283.
20. Drake FT, et al. Diagnostic algorithm of the appendix in adults. *Surg Infect.* 2021;22(6):725- 734.
21. Cheng Y, et al. Risk factors for complicated appendicitis in adults. *Am J Surg.* 2019;218(3):475-479.
22. Podda M, et al. Complicated appendicitis: current state of the art. *Int J Surg.* 2020;80:43- 52.
23. Torres-Zapata AE, Saturno-Hernández PJ. Evaluación de protocolos de enfermería perioperatoria. *Rev Enferm IMSS.* 2021;29(1):28-39.
24. Díaz-Hernández PI, Alonso-Vera G, López-Morales AB. Estandarización de cuidados postoperatorios en apendicectomía. *Rev Enferm IMSS.* 2020;28(2):89-97.
25. Edmiston CE, et al. Surgical site infection prevention. *Surg Clin North Am.* 2021;101(1):167- 181.7

FUNDING

No financing

CONFLICT OF INTEREST

None

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