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Validation of a protocol of nursing interventions for people with anorectal diseases requiring ambulatory surgery: A clinical tool for perioperative nursing practice in the Canadian context

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Abstract

***Background*:** *Nursing intervention protocols are essential to ensuring high-quality, and evidence-based care in ambulatory surgery. For individuals with anorectal diseases, standardized nursing interventions can improve surgical outcomes, reduce variability in care, support perioperative nursing practice, provide guidance in complex surgical pathways, and assist nurses working in unfamiliar or rotating surgical environments, while enhancing patient experiences through humanized, person-centred care.*

***Methods*:** *A methodological study using the Delphi technique was conducted to validate a protocol of nursing interventions for people with anorectal diseases requiring ambulatory surgery. Thirty-three experts in ambulatory surgery and coloproctology evaluated the protocol through successive rounds, reviewing items related to the complete perioperative process.*

***Results*:** *A high level of consensus was achieved in all rounds, exceeding the predefined agreement threshold of 80%. Experts rated the protocol as "very adequate" (86.07%) and "quite adequate" (4.01%). These findings indicate strong expert consensus on the protocol's clarity, relevance, and feasibility in ambulatory surgical settings, supporting decision-making and promoting efficient, individualized nursing care throughout all perioperative phases.*

***Conclusion*:** *This study presents the validation of a protocol of nursing interventions for people with anorectal diseases requiring ambulatory surgery—a clinical tool for perioperative nursing practice in the Canadian context, evaluated and confirmed through expert consensus. The process highlights the protocol's strength, coherence, clinical feasibility, and suitability for guiding perioperative nursing practice. As a validated framework, it may serve as a reference for developing ambulatory surgery nursing protocols and as a guide for perioperative nursing practice and professionals in diverse healthcare contexts, including the Canadian healthcare system.*

Keywords: nursing intervention, ambulatory surgery, anorectal diseases, protocol validation, perioperative care, Canada

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Introduction

Ambulatory surgery (AS) has become an increasingly vital surgical practice for treating various conditions, including anorectal diseases, such as hemorrhoids, anal fissures, and abscesses, all of which can be effectively managed through outpatient procedures (Brahin et al., 2020; Cruz Rodríguez, 2020, 2023; Pastor Romero et al., 2023). These conditions affect a significant portion of the population and require not only precise surgical intervention, but also a comprehensive, person-centred approach that addresses patients' needs (Barrera et al., 2019; Mustelier Duanes, 2022; Mustelier Duanes & Borroto García, 2018). In this context, nursing intervention protocols are essential to ensure high-quality care, maintaining patient dignity, and well-being during the surgical process (Arias Capote et al., 2019; Reconde-Suárez & Peña-Figueredo, 2019).

Despite advancements in AS, care remains variable, partly due to the lack of standardized, evidence-based protocols. The absence of unified criteria for nursing interventions also contributes to this inconsistency, which can result in negative surgical outcomes, and inefficient use of resources. These challenges may undermine a patient's confidence in the care they receive (Aguilar-González, 2022; Castillo-Ayón et al., 2023; Díaz-Rodríguez et al., 2020; León Román & Cairo Soler, 2020).

In the context of AS for anorectal diseases, nurses play a crucial role in executing interventions that support smooth procedure and recovery (Alvarado Chacon et al., 2024). One

common issue is the failure to select appropriate nursing interventions, due to a lack of critical thinking in decision-making (Estrada Zapata, 2019; Reconde-Suárez & Peña-Figueredo, 2019). Following the nursing care process provides a structured, evaluative approach that ensures comprehensive care in coloproctology, including patient preparation, pain management, and postoperative follow-up, while requiring specific skills and effective resource management during the nursing intervention stage (De las Salas et al., 2023; Miranda-Limachi et al., 2019; Pérez Guerrero, 2023).

Nursing protocols are of particular importance in Canada, where the healthcare system is built on a foundation of evidence-based practices. It consistently emphasizes the integration of research and clinical expertise to enhance patient care quality. National organizations, such as the Canadian Nurses Association (CNA; CNA, 2018) and the Operating Room Nurses Association of Canada (ORNAC; ORNAC, 2025), advocate for standardized protocols to guide nursing practice and ensure effective, evidence-based interventions (CNA, 2018). Such protocols help reduce variations in care, improve patient outcomes, foster collaboration across settings, optimize and uphold high standards of patient safety and care (De las Salas et al., 2023; Miranda-Limachi et al., 2019; ORNAC, 2025; Pérez Guerrero, 2023).

This study aims to validate a nursing intervention protocol specifically designed for individuals with anorectal diseases undergoing outpatient surgery. Through a consensus process with experts in ambulatory surgery and coloproctology, the goal is to validate a protocol that is technically sound and also addresses the holistic needs of patients undergoing these procedures. The validation of this protocol represents a significant step toward enhancing care quality, standardizing decision-making, and providing exceptional nursing care that optimizes the use of time and resources.

Methods

Study Objective

The main goal of this study was to validate a protocol of nursing interventions for people with anorectal diseases requiring ambulatory surgery at hospitals in Camaguey, Cuba. Validation was achieved through expert consensus to ensure that the protocol was relevant, practical, and based on the best available scientific evidence, aiming to improve patient care quality.

Selection of Experts

The expert panel consisted of 33 healthcare professionals with extensive experience in outpatient surgery and management of anorectal diseases. Expert selection was based on the calculation of a competence coefficient, obtained through a self-evaluation survey completed by each candidate. This survey assessed the expert's level of knowledge and argumentative capacity, which were used to calculate the competence coefficient and to identify those experts who met the required criteria to participate in the protocol validation (See Appendix A).

Validation Process

The protocol validation process followed a consensus model among the expert group. It was initially prepared by the research team and then evaluated in detail by experts. The process followed several stages to ensure scientific soundness and applicability to the local surgical context.

1. Preliminary review: During this initial phase, experts reviewed the full protocol (See Appendix B), focusing on its objectives, proposed nursing interventions, perioperative care procedures for anorectal patients, and the resources required for implementation.
2. Evaluation of relevance and feasibility: Experts assessed the clinical appropriateness of the protocol interventions for outpatients and evaluated their feasibility, considering local hospital resources, staffing, and environment.
3. Consensus analysis: Each expert classified the proposed interventions into the following categories: "very adequate", "quite adequate", "adequate", "not very adequate", and "not adequate". For an intervention to be validated, it required at least 80% agreement (complete or with modifications). Discrepancies were solved in additional meetings to refine the protocol.
4. Adjustments and modifications: Experts suggested several adjustments to improve the protocol. Some interventions were revised to make them more specific and aligned with local surgical practice, and new interventions were added as needed to enhance postoperative care.
5. Revalidation: The revised protocol underwent a second round of validation, continuing iteratively until a high level of consensus was reached on all interventions and procedures.

Validation Instruments

The primary instrument was the consensus matrix, used by experts to assess and classify protocol interventions. A review guide was also used to ensure that all aspects of the protocol were thoroughly examined, including key questions to structure expert discussions (See Appendix C).

Key questions addressed during the validation included the following:

- Is the intervention appropriate for the target population (outpatients with anorectal disease)?
- Are the interventions based on the most current scientific evidence?
- Is the protocol feasible for implementation within a hospital setting with available resources?
- Does the protocol incorporate patient-centred care principles, addressing both the surgical and emotional needs of the patient?

Results

The protocol of nursing interventions for people with anorectal diseases requiring ambulatory surgery was validated by a panel of 33 experts. The experts were selected based on their expertise, credentials, and ability to contribute informed opinions on the protocol's relevance and appropriateness in the surgical setting.

The validation process was conducted in two rounds of review using the Delphi method. In each round, experts evaluated the proposed nursing interventions protocol considering their relevance, applicability, and quality of supporting evidence.

In the first round, experts reviewed the initial protocol and suggested adjustments to clarified interventions and ensured alignment with routine surgical practices.

In the second round, the revised protocol was re-evaluated, and additional refinements were proposed. After this iterative process, a high level of consensus was reached, meeting the pre-established criterion of at least 80% agreement required to validate each intervention.

Analysis of validation results by experts

The validation by 33 experts demonstrated a high level of agreement regarding the protocol's relevance and surgical applicability. Most experts rated the protocol as "very adequate" (86.05%), and 4.01% "quite adequate". Minimal negative ratings were observed: 0.13% as "not very adequate", and 0.44% as "inadequate". This demonstrates a strong consensus confirming the protocol validity.

The experts considered several key aspects in their evaluation:

- alignment with surgical knowledge and practical experience in outpatient surgery;
- necessity and relevance for implementation in real surgical settings;
- clarity, completeness, and structure of the interventions;
- feasibility for applying the protocol given available human and material resources; and
- originality and consistency with evidence-based surgical practice.

General Interpretation

The results of the expert validation demonstrate a strong consensus regarding the protocol of nursing interventions for people with anorectal diseases requiring ambulatory surgery: a clinical tool for perioperative nursing practice in the Canadian context. The high proportion of positive ratings, with the majority considering the protocol very adequate, highlights its relevance, clarity, and suitability for implementation in outpatient surgical settings for patients with anorectal diseases. Minimal negative evaluations indicate that concerns or limitations were practically negligible. These findings confirm that the protocol is well-designed and well-accepted by experts, reinforcing its potential to guide safe and effective nursing care in the surgical settings, while also serving as a reference for researchers in perioperative care in the Canadian context.

Discussion

The validation of the protocol of nursing interventions for people with anorectal diseases requiring ambulatory surgery, highlights the importance of involving surgical experts in developing guidelines and protocols. The Delphi method, as an iterative process promoting consensus, proved ideal for validating a tool that directly supports nurses and impacts patient care quality (Lukewich et al., 2020; Vieira et al., 2020). Achieving a high level of consensus on the proposed interventions and adjustments demonstrates that the nursing interventions are relevant, practical, and aligned with the needs of patients undergoing outpatient surgery. Most of the initial protocol was already well-suited, but adjustments during the Delphi process were crucial in optimizing applicability and accuracy, ensuring each intervention was clear for nursing staff and feasible within outpatient surgical settings.

When comparing our findings with previous studies on nursing protocol validation, Brousseau-Foley et al. (2024) and Scolari et al. (2022) show consistent trends in using expert validation to ensure high-quality health protocols. These studies also applied the Delphi method, emphasizing the role of expert validation in improving patient safety, standardizing care, and aligning interventions with evidence-based practices.

However, some limitations of the validation process should be noted. While effective, the Delphi method can be time-consuming and require multiple feedback rounds, which may be challenging in resource-limited settings. Variability in initial responses may affect the generalizability of the findings, as emphasized by Dedewanou et al. (2023). The use of international expert panels may also introduce variability due to cultural and contextual differences, as noted by Délétroz et al. (2023). Expert selection might introduce bias and may not capture the full range of clinical approaches across diverse healthcare settings. Nevertheless, these challenges do not diminish the value of expert validation in ensuring protocols are appropriate, realistic, and evidence-based.

In Canada, protocols and guidelines for best practices are considered critical for improving care quality, contributing to the standardization of care, and ensuring equitable healthcare delivery across institutions (Amigo-Tadin, 2024; Gomes et al., 2021).

Research from Bisch and Nelson (2022) and Nelson et al. (2021), showed reduced complications and hospital stays with Enhanced Recovery After Surgery (ERAS) protocols. These results suggest the validated protocol is a valuable tool for improving patient care and safety, and for standardizing nursing in Canadian outpatient surgery.

The Canadian healthcare system's focus on evidence-based practice makes this tool particularly relevant. Nurses rely on guidelines and standardized protocols to improve outcomes and support clinical decisions aligned with current evidence (Scolari et al., 2022; Vieira et al., 2020).

Although developed and validated in a resource-limited Cuban setting, the protocol's Delphi-based validation provides insights for other healthcare systems, such as in Canada, where standardized perioperative nursing interventions support patient safety, efficiency, and evidence-based practice, helping reduce variability and improve surgical capacity (Canadian Institute for Health Information [CIHI], 2024).

Standardized perioperative pathways, such as ERAS, improve adherence to best practices, reduce length of stay, and enhance efficiency at institutional or provincial levels (Nelson et al., 2021; Sauro et al., 2024). Targeted protocol interventions also reduce turnover and start-time delays, key for operating room throughput (Schouten, Hentschel et al., 2023; Xie et al., 2024). Adapting and piloting the validated Cuban protocol within Canadian perioperative settings could complement existing technology and system-level strategies and support perioperative staffing flexibility, including float nurses, to help mitigate surgical backlogs (CIHI, 2024; Nelson et al., 2021; Sauro et al., 2024; Schouten et al., 2023; Xie et al., 2024).

The nursing protocol developed, specifically focusing on individuals with anorectal diseases undergoing ambulatory surgery, aligns with Canada's commitment to evidence-based, patient-centred care. Validated through expert consensus using the Delphi method, it has the potential to contribute significantly to the Canadian healthcare system by enhancing patient care quality, improving safety standards, and standardizing nursing interventions in a specialized field of practice.

Conclusions

The validation of the protocol of nursing interventions for people with anorectal diseases requiring ambulatory surgery, confirmed its relevance, clarity, and applicability in surgical care settings. The use of the Delphi method enabled a rigorous, consensus-based evaluation by experts in ambulatory surgery and coloproctology, reinforcing the protocol's methodological quality and credibility. The high level of expert agreement, exceeding the predefined validation threshold, demonstrates that the proposed interventions are aligned with current nursing best practices and surgical care needs.

The protocol addresses both the technical and human aspects of care, promotes standardization of nursing interventions, enhances efficiency, and contributes to patient safety. Adjustments made during the validation process strengthened its capacity to guide nursing practice in a coherent and person-centred manner.

Within the Canadian healthcare context, where evidence-based practice and interdisciplinary collaboration are central principles, this validated protocol has the potential to improve the quality of nursing care in ambulatory surgical settings. Furthermore, it may serve as a clinical tool for perioperative nursing practice, enabling the development of the new nursing protocols aimed at reducing care variability, supporting clinical decision-making, and reinforcing nurses' professional autonomy. Ultimately, this protocol represents a meaningful contribution to the continuous improvement of healthcare services and nursing practice.

Author Notes

Yaquelin Mustelier Duanes, BScN, MSc, is a Cuban-trained Registered Nurse holding a Bachelor of Science degree in Nursing and a Master's degree in infectious diseases. She has served as an Associate Researcher and Instructor Professor in Cuba, contributing to clinical research, academic teaching, and the advancement of evidence-based practice in healthcare settings.

She completed four years of doctoral training in Cuba, fulfilling all program requirements except the final dissertation defense. Her doctoral research focused on strengthening perioperative practice standards, quality improvement, and patient safety in surgical care. The present article originates from this doctoral work and builds upon her previous scholarly publications. Her academic interests include perioperative nursing, research-informed clinical practice, and the advancement of high-quality healthcare systems.

Conflicts of Interest

None declared

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Appendix A

Survey Applied to Determinate the Competency Coefficient of the Experts

Name and Surname: _____

Institution:_____

Current position:_____

Professional qualification: _____

Years of experience: _____

The Ambulatory Care Unit of the Provincial University Hospital of Camaguey, Cuba, is conducting a research project aimed at developing an integrated nursing intervention protocol designed to enhance the quality of services provided in this facility.

Based on your level of expertise in this subject, we kindly request your collaboration in this study. We sincerely appreciate the effort you will make to answer this survey as accurately as possible. All responses will be treated confidentially and will be used to determine your individual competency coefficient regarding the topic under study.

1. Please mark with an X your level of knowledge on the topic being investigated.

0	1	2	3	4	5	6	7	8	9	10

2. Please mark with an X the degree of influence each of the following sources has on your judgment regarding the topic under study.

Sources of Judgment	Degree of Influence		
	High	Medium	Low
1. Analyses conducted by yourself.			
2. Your personal experience.			
3. Publications by national authors.			
4. Publications by international authors.			
5. Your own knowledge of the problem.			
6. Your intuition.			

Appendix B

Structured Overview of the Complete Protocol and Example Layout of Nursing Interventions

Protocol structure overview:

- Protocol identification (title, clinical setting, purpose)
- Target population (nurses as implementers; patients as beneficiaries)
- Perioperative stages included (preoperative, intraoperative, postoperative)
- Intervention coding and organization
- Evidence level assignment for each intervention
- Evaluation framework for interventions
- Glossary and definitions

Example of nursing interventions layout:

Nursing interventions/Activities	Level of evidence
Numeric code, Title, and Definition/ Implementation activities	I, II, III.1, III.2, III.3, IV
Evaluation Indicators: Indicator data sheet	
Indicator name: Quality of Nursing Care	
Relevant Area:	Surgical Unit
Dimension:	Level of knowledge of nursing interventions
Type of indicator:	Results
Objective/Justification:	An intervention is any treatment, based on clinical judgment and professional knowledge, performed by a nurse to improve patient outcomes and enhance the quality of care.
Formula:	Knowledge of nursing intervention _____ x 100
Variability in the selection of nursing interventions	
Explanation of terms:	
Standard:	0%
Data source:	Surgeries performed in the Coloproctology Ambulatory Surgery (AS) Units
Population:	Nurses working in the Coloproctology Ambulatory Surgery (AS)
Person responsible for data collection:	Head Nurse of the surgical unit
Data collection Frequency:	Semiannual

Note. This appendix summarizes the overall structure of the nursing protocol designed for ambulatory anorectal surgery. It shows the main components and provides a representative example of how individual nursing interventions are organized, defined, and evaluated within the protocol. The full protocol includes detailed intervention descriptions beyond what is shown here.

Appendix C

Survey Applied to Experts for Protocol Validation

Dear Colleague,

The Ambulatory Care Unit of the Provincial University Hospital Manuel Ascunce Domenech is conducting a research project aimed at developing an integrated nursing intervention protocol to improve the quality of nursing care in ambulatory services. You have been selected to participate as an expert in this study. We sincerely appreciate the effort you will make to complete this anonymous survey. All responses will be processed by competent and trusted personnel.

1. How would you evaluate the proposed protocol? Please mark with an X the cell corresponding to the degree of relevance you assign to each item according to the proposed dimensions. Please refer to the following legend when responding:
VA: Very Adequate
QA: Quite Adequate
A: Adequate
SA: Slightly Adequate
NA: Not Adequate

Dimensions		VA	QA	A	SA	NA
Level of knowledge about anorectal diseases	Level of knowledge acquired in Nursing practice					
	Need for implementation.					
	Novelty					
	Originality					
Effectiveness	Degree to which the integrated Nursing intervention protocol achieves the expected outcomes					
	Ease of implementation under current organizational conditions of the Cuban Health system (SNS)					
	Current organizational structure of the SNS					
	Current infrastructure of the SNS					
	Human resources currently available in the SNS					
	Logistics					
Systemic comprehensiveness	Internal organization (protocol sections)					
	Systemic integration of its constitutive elements					
	Adequacy between indicators and measurement criteria					
Sufficiency	Suitability of the established procedures, methods, and techniques					
	Exhaustiveness of the instrument developed for data collection					
Applicability	Clarity of explanations					
Possibility of generalization	Perspectives for extending the proposal to other similar contexts and conditions					