

Development of a Nursing Care Protocol for Patients Undergoing Microsurgical Breast Reconstruction**

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ABSTRACT

Objective: To develop a nursing protocol for the care of patients undergoing microsurgical breast reconstruction.

Method: This methodological study used a qualitative approach and adopted the Transitions Theory as its theoretical framework. The protocol development followed the criteria established by the Federal Nursing Council and the phases of Convergent Care Research, with the participation of three nurses and the use of data from 25 women. The International Classification for Nursing Practice (ICNP®) was used as the terminology system for documentation.

Results: The protocol comprises 17 nursing diagnoses, 17 nursing outcomes, and 29 nursing interventions mapped according to the ICNP®. In addition, it includes guidance for the care of patients in the postoperative period following microsurgical breast reconstruction. **Conclusion:** The protocol is a technological tool with the potential to contribute to the field. Its use is expected to enhance patient safety by preventing complications and hospital readmissions. The use of standardized terminology for documentation should also enhance the visibility of nurses' work.

DESCRIPTORS: Standardized nursing terminology. Nursing theory. Breast reconstruction.

Construção de protocolo de cuidados de enfermagem a pacientes submetidas a reconstrução microcirúrgica de mama

RESUMO

Objetivo: Construir um protocolo de enfermagem para o cuidado às pacientes submetidas a reconstrução microcirúrgica de mama. **Método:** Pesquisa metodológica, de abordagem qualitativa, que utilizou a Teoria das Transições como referencial teórico. A elaboração seguiu os critérios do Conselho Federal de Enfermagem e as fases da Pesquisa Convergente Assistencial, com participação de três enfermeiros e com uso dos dados de 25 mulheres. A Classificação Internacional para a Prática de Enfermagem (CIPE®) foi utilizada como terminologia para registro. **Resultados:** O protocolo é composto por 17 diagnósticos, 17 resultados e 29 intervenções de enfermagem mapeados com a CIPE®. Além disso, insere informações de cuidado de pacientes em pós-operatório de reconstrução microcirúrgica de mama. **Conclusão:** O protocolo é uma ferramenta tecnológica com capacidade para contribuição na área. Espera-se que seu uso ofereça segurança, prevenindo complicações e reinternações. O uso de terminologia para registro deve proporcionar a visibilidade do trabalho do enfermeiro.

DESCRIPTORES: Terminologia padronizada em enfermagem. Teoria de enfermagem. Reconstrução da mama.

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Construcción de un protocolo de cuidados de enfermería para pacientes sometidas a reconstrucción mamaria microquirúrgica

RESUMEN

Objetivo: Elaborar un protocolo de enfermería para el cuidado de pacientes sometidas a reconstrucción microquirúrgica de mama. **Método:** Investigación metodológica, con enfoque cualitativo, que utilizó la Teoría de las Transiciones como marco teórico. La elaboración siguió los criterios del Consejo Federal de Enfermería y las fases de la Investigación Convergente-Asistencial, con participación de tres enfermeros y datos de 25 mujeres. La Clasificación Internacional para la Práctica de Enfermería (CIPE®) se utilizó como terminología para el registro. **Resultados:** El protocolo está compuesto por 17 diagnósticos, 17 resultados y 29 intervenciones de enfermería mapeados con la CIPE®. Además, incorpora información para el cuidado de pacientes en el postoperatorio de reconstrucción microquirúrgica de mama. **Conclusión:** El protocolo constituye una herramienta tecnológica con potencial de contribución al área. Se espera que su utilización ofrezca seguridad, previniendo complicaciones y reingresos. El uso de terminología para el registro debe proporcionar visibilidad al trabajo del enfermero.

DESCRIPTORES: Terminología estandarizada en enfermería. Teoría de enfermería. Reconstrucción mamaria.

INTRODUCTION

Breast cancer is the most common cancer among women in Brazil, excluding non-melanoma skin cancer¹. Treatment is lengthy and often involves different combined therapies—especially local therapies such as radiotherapy and surgery—which may result in breast tissue loss².

In cases where patients present extensive tissue loss, treatment may involve microsurgical reconstruction or autologous microvascular breast transplantation, a technique consisting of the transfer of a free or microsurgical flap—that is, the use of the patient's own tissue from an area distant from the injured site³.

Autologous reconstruction provides greater patient satisfaction and reduces risks associated with the use of implants. Furthermore, improvements have been observed in physical and psychosocial well-being, self-esteem, and sexuality among women undergoing reconstruction with microsurgical flaps⁴.

Some of the human responses experienced by women with breast cancer are related to feelings such as fear, isolation, and insecurity, phenomena that extend beyond the physiological aspect⁵. Therefore, when caring for these women, nurses must use tools to support improved care, standardization of interventions, and documentation, ensuring the achievement of positive outcomes for better recovery among women undergoing surgery⁶.

The phenomena resulting from the human responses of women with breast cancer should be represented through standardized terminologies. When protocols are developed based on nursing theory and standardized language is used, it is argued that the evaluation of the care provided becomes feasible and accurate⁷.

As protocols are one of the tools used in nursing care practice, it is important that the language used for documentation be standardized and universal. The International Classification for Nursing Practice (ICNP)[®] is a standardized language classification used to “compose and represent nursing diagnoses, interventions, and outcomes”⁸.

For protocols to be operationalized according to the comprehensive needs of each woman, the use of nursing theory is necessary to support the stages involved in holistic care. One nursing theory capable of supporting protocol development is Afaf Ibrahim Meleis' Transitions Theory.

This is because the theory allows for a holistic and comprehensive approach, capable of guiding care according to the particularities involved and supporting the transition experienced throughout the disease and treatment process, with greater potential for autonomy and achievement of positive outcomes⁹.

Considering the complexity of microsurgical breast reconstruction and the scarcity of studies supporting nurses in the postoperative care of patients undergoing this procedure to prevent flap loss, the development of a nursing care protocol is justified.

OBJECTIVES

To develop a nursing protocol for the care of patients undergoing microsurgical breast reconstruction.

METHODS

This is a methodological study with a qualitative approach, following the criteria for protocol development established by the Federal Nursing Council (COFEN)¹⁰, the phases of Convergent Care Research (CCR)¹¹, and using Transitions Theory as the theoretical framework. The use of Transitions Theory, aligned with the proposed method, provides improvements in care, knowledge construction, and the development of technologies and innovations by nurses, as it allows exploration of individuals' experiences within a given context and the adaptation of those involved in care in a comprehensive manner. This can be observed in the present study, in which women undergo cancer treatment, mutilating surgery, and subsequently breast reconstruction.

The development of this care protocol took place from March to September 2024 at an oncology hospital in southern Brazil, a reference center for reconstructive surgery.

CCR is uniquely integrated into care practice. Furthermore, it goes beyond the biomedical model paradigm by understanding knowledge as a collective and contextualized construction¹¹. It is based on the assumption that there are multiple dynamic realities and that knowledge emerges from the social interaction between researchers and participants¹¹. Thus, it ensures a transformative and collaborative character, oriented toward innovation and change in care settings through democratic relationships and constructivist knowledge¹¹. CCR consists of four phases: conception phase, instrumentation phase, investigation phase, and analysis phase¹¹. COFEN criteria, in turn, include: objectives and evidence; origin and development; conflicts of interest; professional validation; user validation; limitations; flowchart; implementation plan; and outcome indicators¹⁰. The CCR phases and COFEN criteria were carried out simultaneously and in an interrelated manner, as shown in Chart 1.

The participants were three staff nurses who had worked at the institution for more than six months providing direct care to patients undergoing microsurgical breast reconstruction and who were nominated by management. Additionally, the medical records of 25 women who underwent breast reconstruction with microsurgical flaps between January 2017 and June 2023 were included. Thus, data were collected retrospectively, corresponding to the investigation phase of CCR.

Chart 1. Methodological phases of Convergent Care Research related to COFEN criteria for protocol development. Curitiba (PR), 2024.

CCR Phase	COFEN Criteria Simultaneous to the CCR Phase
Conception	Objective Evidence
Instrumentation	Origin Development
Investigation	Conflict of interest
Analysis	Review Validation by professionals Validation by users Limitations Flowchart Implementation plan Outcome indicators

CCR: Convergent Care Research; COFEN: Federal Nursing Council.
Source: Prepared by the authors.

For data collection, an instrument was developed containing the main characteristics to be assessed in microsurgical breast reconstructions, including: personal and family history (comorbidities, allergies, medications); treatments received (chemotherapy, radiotherapy); timing of surgical reconstruction (immediate or delayed); flap characteristics; and the need for surgical reintervention in the immediate postoperative period.

Before data collection began, individual training on ICNP® was provided to the participating nurses, since this terminology is not routinely used at the institution. In addition, the medical records and the proposed data collection instrument were presented to them. Subsequently, a pilot test was conducted with the nurses in order to refine the instrument and clarify any questions.

According to the theoretical framework of CCR, once data collection was completed by the nurses and delivered to the principal researcher, the material was analyzed. The analysis followed three stages.

In the first stage, the data were grouped into an Excel® spreadsheet for analysis, including primary medical diagnosis and nursing team records regarding patient monitoring during the immediate postoperative period.

In the second stage, the participants identified terms for the development of nursing diagnoses, outcomes, and interventions to construct the protocol, since the data collection the institution where data collection took place had not yet incorporated the use of standardized terminology into its nursing documentation culture. The identified terms were submitted to cross-mapping with standardized terminology using the MappICNP tool, an automated method for mapping free-text clinical narratives in Portuguese to ICNP® concepts, published in 2019¹².

In the third stage, agreement among the participating nurses regarding the inclusion of terms in the protocol was assessed through meetings using the Delphi technique, with a 70% agreement index considered the minimum level for consensus. The meetings were documented in minutes by a nurse participating in the study. After consensus was reached, protocol development began.

The full protocol is available in the open-access repository Zenodo, an OpenAIRE project of the European Commission aimed at supporting open data policies by providing a comprehensive repository for research¹³, through the following link: https://doi.org/10.5281/zenodo.14797040. This article presents examples of the main findings.

The study received approval from the Research Ethics Committee of the hospital where the study was conducted, under CAAE number 76921123.2.0000.0098.

The nurses signed the Informed Consent Form (ICF). Because medical record data were used, the researchers signed the Data Use Consent Form.

RESULTS

The data collected from the medical records are presented in Table 1.

Of the 25 patients, four required surgical reintervention due to venous or arterial flap thrombosis—only one flap was salvaged. The other three patients underwent flap debridement and reconstruction using another surgical technique to close the defect.

A total of 44 terms were identified in the nursing progress notes from the medical records. After cross-mapping, three terms that did not correspond to ICNP® were excluded. Following the achievement of 70% agreement consensus among the nurses, 17 Nursing Diagnoses (NDs) were described for the development of the protocol (Chart 2).

Regarding Nursing Outcomes (NOs), 44 terms were suggested for the development of the protocol. The terms “vital signs without significant changes,” “good healing,” and “without significant changes” are not included in ICNP® and were therefore excluded. In the second Delphi round, the nurses decided to retain 17 NOs in the development of the protocol (Chart 3). The NOs “absence of infection,” “improved skin integrity,” “absence of bleeding,” and “absence of falls” were considered applicable to all cases of microsurgical reconstruction by the participating nurses.

Regarding Nursing Interventions (NIs), 110 terms were suggested for the development of the protocol. After data mapping, five were excluded because they were not included in ICNP®, such as: “Perform daily dressing changes,” “Monitor vital signs,” “Reposition every 2 hours,” “Vital signs every 2 hours,” and “Check oxygen saturation.”

Table 1. Sociodemographic and clinical characterization (n=25). Curitiba (PR), 2024.

Data	Absolute frequency	Relative frequency (%)
Age (years)		
40 to 60	7	28
61 to 80	18	72
Comorbidities		
Systemic arterial hypertension	4	16
Depression	4	16
Dyslipidemia	2	8
Hypothyroidism	2	8
Bipolar disorder	2	8
Type 2 diabetes mellitus	1	4
Obesity	1	4
Systemic lupus erythematosus	1	4
Myasthenia gravis	1	4
No comorbidity	7	28
Treatment		
Adjuvant therapy	19	76
Neoadjuvant therapy	6	24
Radiotherapy	14	56
Chemotherapy	18	72
Surgical	25	100
Breast reconstruction		
Immediate	1	4
Delayed	24	96
Hospitalization unit		
Intensive care unit	3	12
Surgical wards	22	88

Source: Prepared by the author

Chart 2. Nursing Diagnoses described after consensus among the nurses, according to the term used (ICNP) and respective code. Curitiba (PR), 2024.

Term used by nurses	ICNP® term	ICNP® code
Risk for fall	Risk for fall	10015122
Acute pain	Acute pain	10000454
Constipation	Constipation	10000567
Risk for infection	Risk for infection	10015133
Bleeding	Bleeding	10003303
Anxiety	Anxiety	10000447
Impaired self-care	Self-care deficit	10023410
Impaired tissue integrity	Impaired tissue integrity	10001080
Nausea	Nausea	10000859
Risk for deep vein thrombosis	Risk for deep vein thrombosis	10027509
Impaired mobility	Impaired mobility	10001219
Impaired skin integrity	Impaired skin integrity	10001290
Impaired dietary pattern	Risk for insufficient food intake	10023021
Decreased fluid intake	Impaired fluid intake	(10029873)
Weakness	Weakness	10022880
Altered vital sign	Altered vital sign	10050516

CIPE: Classificação Internacional para a Prática de Enfermagem.

Fonte: Elaboração própria.

Chart 3. Nursing outcomes from the International Classification for Nursing Practice related to the Nursing Diagnoses suggested for the protocol. Curitiba (PR), 2024.

Nursing Diagnoses – ICNP®	Nursing Outcomes – ICNP®
Risk for fall (10015122)	Absence of falls (10034704)
Acute pain (10000454)	Absence of pain (10029008)
Constipation (10000567)	Reduced constipation
Risk for impaired urinary system function (10045453)	Effective urinary system function (10028615)
Risk for infection (10015133)	Absence of infection (10028945)
Bleeding (10003303)	Absence of bleeding (10028806)
Anxiety (10000447)	Reduced anxiety (10027858)
Self-care deficit (10023410)	Improved self-care
Impaired tissue integrity (10001080)	Improved tissue integrity
Nausea (10000859)	Absence of nausea (10028984)
Risk for deep vein thrombosis (10027509)	Absence of deep vein thrombosis (10036406)
Impaired mobility (10001219)	Improved mobility
Impaired skin integrity (10001290)	Improved skin integrity (10028517)
Risk for insufficient food intake (10023021)	Improved food intake (10047324)
Impaired fluid intake (10029873)	Improved fluid intake (10047330)
Weakness (10022880)	Absence of weakness
Postural dizziness (10045584)	Absence of postural vertigo (10045681)

ICNP®: International Classification for Nursing Practice.

Source: Prepared by the authors.

In the third Delphi round, 29 NIs were retained for inclusion in the protocol. “Assist the patient with ambulation using assistive devices” was suggested for five diagnoses; “assist patient with mobility” for four diagnoses; “monitor laboratory results” and “report condition to the interprofessional team” were suggested for three diagnoses; and “administer medication,” “monitor fluid balance,” “wound care,” “change wound dressing,” “facilitate activities of daily living,” and “provide guidance on ambulation” were suggested for two diagnoses (Chart 4).

The protocol consists of 17 nursing diagnoses, 17 outcomes, and 29 nursing interventions, in addition to information for the care of patients in the postoperative period following microsurgical breast reconstruction, based on the principles of Transitions Theory.

DISCUSSION

The use of Transitions Theory as a framework for discussion facilitated nurses’ understanding of the changes experienced by individuals who are still in the process of understanding their new realities and contexts. The theory proposes a conceptual framework that supports nurses in planning and implementing nursing interventions for individuals undergoing transition processes, seeking effective coping¹⁴. Therefore, it is applicable to patients in the postoperative period following microsurgical breast reconstruction, who have already faced several sequential and simultaneous transitions involving disease diagnosis, treatment, and, finally, reconstruction. In the protocol, there is a correlation between the categories of Transitions Theory and the elements of the Nursing Process.

During Nursing Assessment, objective and subjective data should be collected to obtain information about individuals’ care needs¹⁵. Access to information such as comorbidities and previous treatments enables the healthcare team to define safer interventions.

When, during assessment, nurses identify the presence of clinical or psychiatric comorbidities, as well as social and spiritual factors involved, they may include related diagnoses and plan care while respecting the history of lived experiences, previous treatments, and possible clinical complications that each patient may have experienced¹⁶.

Chart 4. Nursing Diagnoses, Nursing Interventions, and Nursing Outcomes, with International Classification for Nursing Practice codes, for protocol composition. Curitiba (PR), 2024.

Nursing Diagnoses – ICNP®	Nursing Interventions – ICNP®	Nursing Outcomes – ICNP®
Risk for fall (10015122)	- Instruct patients to prevent falls; - Prevent falls (raise bed rails).	Absence of falls (10034704)
Acute pain (10000454)	- Assess response to pain management (control); - Administer medication; - Position patient (in bed); - Assist patient with mobility (in bed).	Absence of pain (10029008)
Constipation (10000567)	- Treat constipation; - Obtain data on food intake; - Provide guidance on fluid intake; - Report condition to the interprofessional team (nutritionist, physician).	Reduced constipation
Risk for impaired urinary system function (10045453)	- Obtain data on urinary condition; - Monitor fluid balance.	Effective urinary system function (10028615)
Risk for infection (10015133)	- Provide wound (surgical) care; - Change wound dressing; - Monitor vital signs; - Assess signs and symptoms of infection after surgery; - Monitor laboratory results; - Assess drains.	Absence of infection (10028945)
Bleeding (10003303)	- Manage bleeding; - Monitor laboratory results; - Report condition to the interprofessional team (surgical team).	Absence of bleeding (10028806)
Anxiety (10000447)	- Promote emotional support; - Teach relaxation techniques; - Report condition to the interprofessional team (psychology).	Reduced anxiety (10027858)
Self-care deficit (10023410)	- Assess ability to perform self-care; - Provide guidance on self-care; - Assist with mobility in bed; - Assist the patient with ambulation using assistive devices; - Assist with dressing (especially postoperative compression garments without breast compression, and elastic stockings); - Facilitate activities of daily living.	Improved self-care
Impaired tissue integrity (10001080)	- Assess tissue perfusion after surgery; - Continuous monitoring of the breast flap; - Monitor laboratory results.	Improved tissue integrity
Nausea (10000859)	- Manage nausea; - Administer medication; - Obtain data on nausea.	Absence of nausea (10028984)
Risk for deep vein thrombosis (10027509)	- Provide guidance on ambulation technique; - Assist the patient with ambulation using assistive devices; - Administer medication; - Apply elastic stockings.	Absence of deep vein thrombosis (10036406)
Impaired mobility (10001219)	- Provide guidance on ambulation technique; - Assist with mobility (in bed); - Assist the patient with ambulation using assistive devices; - Facilitate activities of daily living.	Improved mobility
Impaired skin integrity (10001290)	- Assess wound (surgical) healing; - Provide wound (surgical) care; - Change wound dressing; - Monitor skin integrity.	Improved skin integrity (10028517)
Risk for insufficient food intake (10023021)	- Provide guidance on food intake pattern; - Assist patient with food intake.	Improved food intake (10047324)
Impaired fluid intake (10029873)	- Provide guidance on fluid intake; - Monitor fluid balance; - Assist patient with fluid intake.	Improved fluid intake (10047330)
Weakness (10022880)	- Assist with mobility (in bed); - Assist the patient with ambulation using assistive devices.	Absence of weakness
Postural dizziness (10045584)	- Obtain data on postural vertigo (dizziness); - Assist the patient with ambulation using assistive devices.	Absence of postural vertigo (10045681)

ICNP®: International Classification for Nursing Practice.

Source: Prepared by the authors.

In the results of a multicenter study, authors discuss that patients undergoing autologous reconstruction who were previously treated with radiotherapy present higher rates of complications, such as fibrosis, flap contracture, fat necrosis, and flap volume loss, compared with those who were not treated¹⁷. This finding confirms that thorough knowledge of the patients' history is essential, enabling nurses to better plan immediate postoperative care. Therefore, the protocol includes information regarding data collection during the initial assessment.

In this study, most of the diagnoses, outcomes, and interventions suggested for the composition of the care protocol referred to the health–illness transition type represented in Transitions Theory, with a focus on the physical aspect. Although emotional aspects were mentioned in this study, the predominance of the physical aspect may reflect a care practice resulting from a history of hospital-based clinical care within the biomedical model, as well as the extensive workload of nurses¹⁸. It is essential that nurses address and document diagnoses and interventions encompassing emotional, social, and spiritual aspects, in addition to physical aspects, especially in patients facing highly challenging conditions such as coping with cancer^{15,19}.

The present study identified complications, such as surgical flap loss, corroborating the findings of a study that aimed to analyze the implications for complication management²⁰. This demonstrates the need for detailed documentation of diagnoses and interventions in order to guide care, relating it to the individual aspects of each woman so that early action can be taken to prevent avoidable complications.

Regarding the nursing diagnoses, outcomes, and interventions included in the protocol, the following NDs stand out: “impaired skin integrity,” “risk for impaired tissue perfusion,” “nausea,” “risk for deep vein thrombosis,” “bleeding,” “acute pain,” and “anxiety.”

The ND “impaired skin integrity” was identified by the nurses as a priority for inclusion in the protocol. In the literature, authors describe this diagnosis for postoperative patients. Although generic, its use is justified with the aim of achieving the outcome “improved skin integrity” through the suggested interventions “assess wound (surgical) healing”; “provide wound (surgical) care”; “change wound dressing”; and “monitor skin integrity.” These interventions are intended to prevent the tissue affected during the immediate postoperative period from sustaining further injury, as well as to ensure that the care provided promotes tissue repair and achieves adequate healing²¹. It should be emphasized that the technical details of the interventions were not included in the protocol, since the interventions presented by ICNP® are generic, and their specificities (such as health education, frequency and procedures for dressing changes, among others) should be defined by the institution adopting its use.

The diagnosis “risk for impaired tissue perfusion” is essential for the population in this study, since the identification of alterations and complications may determine the salvage or loss of the microsurgical flap. Some factors are described as causes for this diagnosis, such as decreased motor activity and inadequate peripheral perfusion. In addition, bed immobilization is also considered one of the causes of tissue injury, which does not apply as a justification in this study, since the patients are independent. However, due to the complexity of the surgery, they temporarily require assistance in performing their activities.

Assessment of flap tissue perfusion should be performed clinically or with the aid of tools that assist in its monitoring, evaluating color, temperature, turgor, and capillary refill. Another intervention indicated for this scenario is to avoid applying any pressure to the microvascular flap, such as blankets or compression from body weight. Bed positioning must be strictly controlled, considering that during the immediate postoperative period the patient should not lie on the breast containing the flap. Current literature presents technologies that assist in flap viability assessment, such as oximetric monitoring and thermography²².

In the context of plastic surgery, cases of embolism and thrombosis are major concerns due to their high morbidity and mortality rates. Although many cases are asymptomatic, they may result in patient death. Increased systemic risks are further aggravated when associated with procedure-specific risks, including microvascular anastomotic thrombosis in microsurgical flap procedures²³. Therefore, it is essential that a protocol address this issue.

Although contraceptive use was not investigated as a variable in this study, this reflects the need for improvements in patient history taking and documentation. Authors discuss that a large proportion of patients undergoing plastic surgery,

within age ranges similar to those found in this study, use contraceptives, making this highly valuable information for thrombosis risk assessment²⁴.

The diagnosis “risk for deep vein thrombosis” includes interventions directly related to patient mobility. Since deep vein thrombosis is a surgery-associated risk that increases morbidity and mortality, both pharmacological and non-pharmacological strategies are used for its prevention. Regarding non-pharmacological strategies, a review of international guidelines by the American Society of Plastic Surgeons highlights the importance of using compression devices, such as elastic stockings and intermittent pneumatic compression²⁵.

While interventions such as the controlled administration of anticoagulant medication are essential in the management of postoperative patients for the prevention of thromboembolic events, caution must be exercised regarding their extensive use, as they increase the risk of bleeding. This reinforces the importance of the diagnosis “bleeding,” reported by the nurses for inclusion in the protocol, since the interventions help prevent compromise of flap viability and even complications affecting the patient’s overall condition and prolonged hospitalization^{26,27}.

Another phenomenon experienced by patients and identified by nurses in the evaluated medical records was the term “nausea,” presented as one of the most frequent complications, beginning in the post-anesthesia recovery room. The outcome “reduced nausea” may be achieved through the implementation of interventions such as “manage nausea,” “administer medication,” and “collect data on nausea.” Nursing care for this diagnosis depends on specific institutional protocols²⁸. In this study, the proposed interventions may demonstrate a certain degree of limitation, since other interventions could also be applied depending on the stage the patient is in and the intensity of the nausea.

The diagnosis “acute pain” should be a focus of nursing care, and in addition to factors that contribute to pain relief, behavioral characteristics of the individual as well as the biological effects involved should also be observed. A study that evaluated the impact of anxiety and fear during the preoperative period of elective surgeries on pain supports the importance of correlating the diagnoses of “acute pain” and “anxiety”²⁹.

It is noteworthy that the only diagnosis identified by the nurses during protocol development that represented emotional aspects was “anxiety.” Fear of pain, surgical complications, change, death²⁹, and the emotional impact caused by oncological treatment prior to reconstruction were factors that influenced the participating nurses to suggest this diagnosis.

The nursing diagnoses, outcomes, and interventions grounded in Transitions Theory and using ICNP® represented the care context experienced by patients undergoing microsurgical breast reconstruction and demonstrate the need for protocols applicable in clinical practice, as well as their use and validation for continuous improvement and measurable advances in care.

The developed protocol addresses the different conditions that may inhibit or facilitate the transition process. At times, these NDs, NOs, and NIs are related to other needs presented by individuals with different health conditions; however, the protocol developed in this study focuses on women undergoing microsurgical breast reconstruction according to the clinical, emotional, and social aspects presented. Consequently, the NIs included in the protocol aim to facilitate the transition process in the pursuit of outcome indicators sensitive to nursing care.

Study limitations

The limitations of this study are related to the fact that it was conducted in a single study setting, which may not reflect the distinct contexts of other general or oncology-focused hospitals. Another limitation is related to the initial data collection having been performed retrospectively through medical records, which may not represent the phenomenon comprehensively due to possible inconsistencies in documentation. Additionally, the limited number of studies published by nurses on this topic did not allow comparison with findings from similar research. Furthermore, clinical practice nurses often do not explicitly state the use of a theoretical framework to support their actions, which may result in care based exclusively on the biomedical model, leading to weaknesses in care delivery.

Recommendations

The development of new studies in this area is recommended in order to support nursing practice and to evaluate the applicability and improvement of the protocol in other settings where microsurgical flap reconstructions are performed.

CONCLUSION

The use of protocols supported by nursing theories and organized through standardized language systems is a way to improve comprehensive and humanized care, in addition to facilitating nurses' clinical reasoning.

The participation of nurses contributed indispensably to the development of the protocol, since the professionals were familiar with breast reconstruction procedures and brought forward the main areas of focus from their clinical practice, enriching the study product.

The use of ICNP®, in addition to improving communication among professionals, makes it possible to evaluate the effectiveness of care. The need for continuing education for healthcare professionals is emphasized, especially regarding nursing documentation and standardized terminologies, since these support clinical practice and assist in data collection, enabling future studies.

Furthermore, it is suggested that additional studies addressing the same phenomenon be conducted in other contexts. Reflection is also encouraged regarding the need for broader discussions about the aspects surrounding the feelings of women experiencing breast cancer and facing issues and barriers related to self-image—which are sometimes not fully valued by the healthcare team and may increase suffering and potentially intensify other nursing diagnoses.

The nursing care protocol directed toward patients after microsurgical breast reconstruction is a technological tool with the potential to contribute to the field by promoting safety, preventing complications and readmissions, and providing greater visibility to nurses.

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Author contributions:

LSV: Formal analysis, Conceptualization, Data curation, Writing – original draft, Writing – review and editing, Investigation, Methodology, Visualization.

LHC: Formal analysis, Writing – original draft, Writing – review and editing, Methodology.

FDM: Formal analysis, Writing – original draft, Writing – review and editing, Methodology.

MRC: Conceptualization, Writing – review and editing, Methodology, Supervision, Visualization.

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