

Nursing Care in the Rehabilitation of People with Limb Amputation: Integrative Review

RESUMO

Objetivo: identificar na literatura científica os cuidados de enfermagem direcionados à reabilitação de pessoas com amputação de membros. Método: Revisão integrativa da literatura realizada nas bases LILACS, MEDLINE/PubMed, SciELO e Scopus. Foram incluídos estudos originais, disponíveis na íntegra, que abordassem o cuidado de enfermagem a pessoas amputadas. A seleção seguiu as diretrizes do PRISMA e os dados foram analisados descritivamente. Resultados: A amostra resultou em sete artigos. Os cuidados de enfermagem envolveram controle da dor, prevenção de complicações, apoio emocional, estímulo ao autocuidado e articulação com a rede de atenção. As principais fragilidades foram a escassez de protocolos específicos e a descontinuidade do cuidado. Conclusão: A enfermagem tem papel estratégico na reabilitação de pessoas com amputação de membros, sendo necessária a sistematização do cuidado e o fortalecimento da prática baseada em evidências.

DESCRIPTORES: Amputação; Reabilitação; Cuidados de enfermagem; Enfermagem; Revisão integrativa.

ABSTRACT

Objective: to identify nursing care in the scientific literature aimed at the rehabilitation of people with limb amputation. Method: Integrative literature review conducted in the LILACS, MEDLINE/PubMed, SciELO and Scopus databases. Original studies, available in full, that addressed nursing care for amputees were included. The selection followed the PRISMA guidelines and the data were analyzed descriptively. Results: The sample resulted in seven articles. Nursing care involved pain control, prevention of complications, emotional support, encouragement of self-care and coordination with the care network. The main weaknesses were the lack of specific protocols and discontinuity of care. Conclusion: Nursing has a strategic role in the rehabilitation of people with limb amputation, requiring the systematization of care and the strengthening of evidence-based practice.

KEY WORDS: Amputation; Rehabilitation; Nursing care; Nursing; Integrative review.

RESUMEN

Objetivo: identificar en la literatura científica los cuidados de enfermería dirigidos a la rehabilitación de personas con amputaciones de miembros. Método: Revisión integradora de la literatura realizada en las bases de datos LILACS, MEDLINE/PubMed, SciELO y Scopus. Se incluyeron estudios originales, disponibles en su totalidad, que abordaron la atención de enfermería a los amputados. La selección siguió las pautas PRISMA y los datos fueron analizados descriptivamente. Resultados: La muestra resultó en siete artículos. La atención de enfermería incluyó el control del dolor, la prevención de complicaciones, el apoyo emocional, el estímulo del autocuidado y la coordinación con la red de atención. Las principales debilidades fueron la falta de protocolos específicos y la discontinuidad de la atención. Conclusión: La enfermería tiene un papel estratégico en la rehabilitación de personas con amputaciones de extremidades, requiriendo la sistematización de la atención y el fortalecimiento de la práctica basada en la evidencia.

DESCRIPTORES: Amputación; Rehabilitación; Atención de enfermería; Enfermería; Revisión integradora.

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Received: 05/16/2025

Approved: 05/30/2025



DOI: <https://doi.org/10.36489/nursing.2025v29i323p10738-10751>

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INTRODUCTION

Limb amputation, whether due to traumatic, infectious or chronic causes such as diabetes mellitus, represents a significant milestone in the individual's life trajectory, with profound implications for their physical, emotional and social well-being, as well as having a high incidence in various contexts¹. In the United States, it is estimated that there are approximately 185,000 amputations a year². In Brazil, in 2022 alone, more than 31,000 lower limb amputations were recorded in the Unified Health System (SUS)³.

These data reflect not only the magnitude of the problem, but also the urgent need for qualified and humanized rehabilitative care. The rehabilitation of amputees must consider the multiple dimensions involved in the loss of a limb: the functional impact, pain, including phantom pain, the reconstruction of body image, limitations in activities of daily living and the risk of social exclusion^{4-5,1}.

In this context, the role of nursing throughout the entire care process stands out, from preparation for surgery to care in the home environment, acting as an essential agent in promoting comfort, self-care, qualified listening and strengthening the autonomy of the amputee^{4,6,1}.

Despite the importance of this care, the literature still shows gaps in the organization of nursing care for this population. The lack of specific protocols, the fragmentation of the care network and the absence of systematized practices hinder the continuity and comprehensiveness of care, contrary to the principles of the Unified Health System (SUS) aimed at the rehabilitation and inclusion of people with disabilities⁷⁻⁹.

Given this scenario, it is essential to understand how nursing has acted in the rehabilitation process of people

with limb amputation. The aim of this integrative review is to identify in the scientific literature nursing care aimed at the rehabilitation of people with limb amputation, with a view to subsidizing evidence-based practices and contributing to the qualification of the care provided.

METHOD

This study is characterized as an integrative literature review, whose purpose is to compile and analyze the results of research related to a specific topic, in a systematic and structured way, with the aim of deepening knowledge on the subject in question¹⁰.

Literature reviews in nursing play a fundamental role in the advancement of scientific knowledge, as they provide important resources for evidence-based practice, aiding clinical decision-making and the development of health policies. In addition, it makes it possible to identify areas that have not yet been explored, stimulating new research that can meet these needs, thus promoting constant improvement in the quality of nursing care¹¹.

The development of this review followed systematized stages, starting with the definition of the topic and the formulation of the guiding research question. Next, the inclusion and exclusion criteria for the studies were established, as well as the search strategy in the databases. The information to be extracted from the selected articles was then defined and organized into relevant categories. The next stage consisted of a critical analysis of the content of the studies included, followed by synthesis and interpretation of the findings¹⁰.

To guide the construction of this integrative review, we used the PICO strategy, which helps formulate research questions in qualitative studies. In this model, P represents the

population (people with limb amputation), I refers to the intervention (nursing care in rehabilitation) and Co refers to the context (physical and functional rehabilitation). Based on this structure, the following guiding question was defined: What nursing care is described in the scientific literature related to the rehabilitation of people with limb amputation?

The search was carried out between January and February 2025 in the electronic databases: LILACS, MEDLINE/PubMed, scopus and Scielo using controlled and non-controlled descriptors combined with Boolean operators, such as "amputation", "nursing care", "rehabilitation", "nursing care", "amputation" and "rehabilitation". The search strategy was adjusted according to the specificities of each database.

We included original articles available in full, in Portuguese, English or Spanish, which addressed nursing care in the rehabilitation process of amputees, at any level of health care. No time frame was adopted, considering the scarcity of studies on the subject, in order to broaden the scope of the search. Literature reviews, duplicate studies, case reports, letters to the editor, theses, dissertations and studies whose focus was restricted to exclusively technical aspects of prostheses, with no direct relation to nursing care, were excluded.

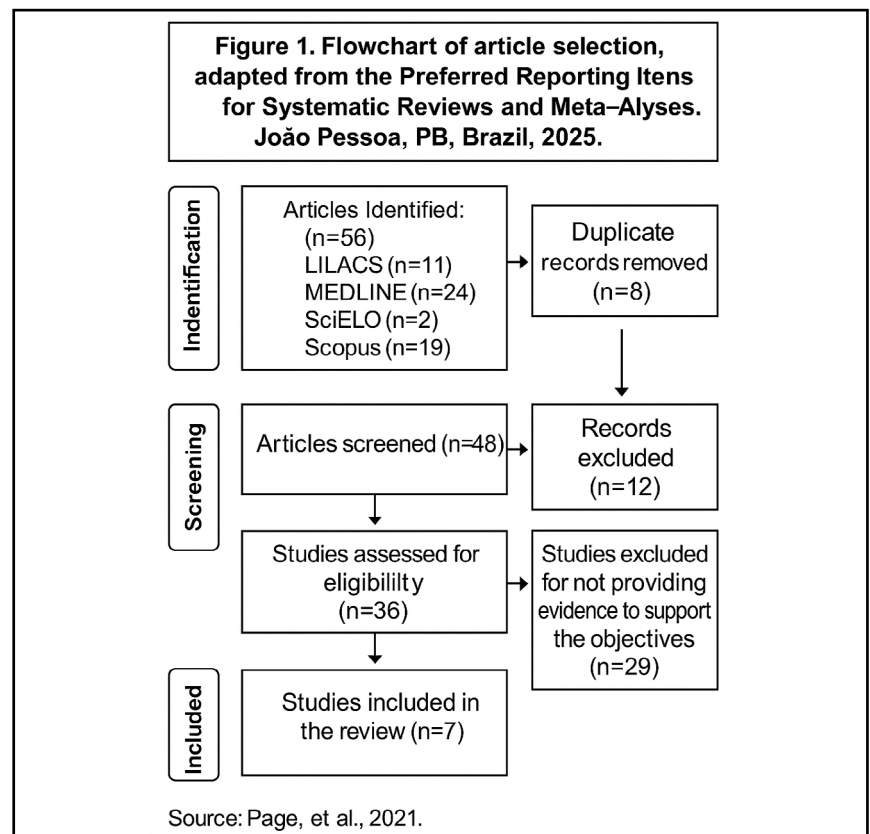
The studies were selected in two stages: the titles and abstracts were read, followed by a full reading of the eligible articles by two researchers independently. In cases of disagreement, a third reviewer was called in to resolve the disagreements. To ensure the reliability of the process, the rate of agreement between the reviewers was checked. The selection of studies followed the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)¹².

The information extracted from the selected studies was organized in a data collection form containing: authors, year of publication, objective of the study, type of study, population/sample, nursing care, results and conclusions. Finally, an integrative synthesis of the results was carried out, with the aim of highlighting the main contributions of nursing to the rehabilitation process of amputees and pointing out gaps that could guide future research.

RESULTS

The search in the LILACS, MEDLINE (via PubMed), SciELO and Scopus databases resulted in the identification of 56 articles, 8 of which were excluded due to duplication. After reading the titles and abstracts, 12 studies were excluded because they did not meet the previously defined inclusion criteria.

The remaining 36 articles were analyzed in full to assess eligibility; however, 29 studies did not answer the review's guiding question, resulting in a final sample of 7 articles. The selection and exclusion of studies followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, as shown in Figure 1 (flowchart).



Most of the studies were carried out in Brazil, with the exception of one conducted in Egypt¹³ and another in Portugal¹⁴. The period of publication ranged from 2014 to 2022, which reflects a growing but still very incipient interest in the subject. Despite the methodological diversity and the different health care contexts, the

studies had common points in terms of describing care practices aimed at comprehensive care. Among the most frequently reported care practices were: self-care guidelines, pain management, emotional support, preparation for discharge and home monitoring, see table 1.

Chart 1 - Characterization of the articles selected from the databases, João Pessoa, Paraíba, 2025.

Author / Year	Country	Study objective	Nursing Care	Conclusions
Santos; Sousa, (2022) ¹⁴	Portugal	Characterize the post-amputation rehabilitation process of the lower limb, due to vascular etiology.	- Rehabilitation with nurses in the immediate post-operative period; - Support for self-care and hygiene;	Early rehabilitation improves functional independence. The nurse's role is essential in adapting to the home and promoting autonomy.

Negreiros, et al., (2021) ¹⁵	Brazil	Report on the nursing process applied to an elderly man with type 2 diabetes who had undergone transtarsal foot amputation.	<ul style="list-style-type: none"> - Application of the nursing process based on NANDA, NIC and NOC; - Interventions for self-care, pain, infection prevention and physical and emotional rehabilitation. 	Nursing makes a significant contribution to coping with the post-amputation condition, with actions based on diagnosis and systematic planning.
Lima et al., (2022) ⁶	Brazil	To build and validate a nursing care protocol for people with amputations due to diabetes complications.	<ul style="list-style-type: none"> - Patient identification data; - Pain control; - Stump and dressing care; - Motor difficulties; - DM control; - Emotional care; - Self-care; - Post-discharge care; - Adaptation to the prosthesis; - Referral. 	The nursing care protocol is a valid tool, validated by judges and the target audience.
Ferreira, et al. (2018) ⁷	Brazil	To analyze the process of referral and counter-referral in the health care of people with amputation, from the perspective of nurses from the point of view of bioethics.	<ul style="list-style-type: none"> - Acting in the care network; - Inter-consultation, functional assessment, prosthesis search; - Ethical commitment and comprehensive attention to user needs. 	Despite the lack of protocols, nurses show commitment and creativity to ensure comprehensive and continuous care for amputees.
Attalla; El-Sayad, (2020) ¹³	Egypt	To evaluate the effectiveness of a rehabilitation nursing protocol on phantom pain and lifestyle modification in amputee patients.	<ul style="list-style-type: none"> - Rehabilitation protocol focusing on pain, mobility, stump care and self-care education; - Individualized follow-up with educational material. 	The protocol reduced phantom pain and improved quality of life. Structured programs with active nursing involvement are recommended.
Santos, et al., (2018) ¹⁶	Brazil	Know the existing hospital services and protocols in the pre- and post-amputation periods, and the referral process for rehabilitation.	<ul style="list-style-type: none"> - Stump care and dressings; - Compression bandaging; - Infection assessment; - Educational activities and multi-professional referrals. 	Lack of knowledge about referrals and specific techniques has an impact on rehabilitation. Team training is essential for effective care.
Mariano et al., (2014) ⁴	Brazil	To investigate how nurses deal with caring for patients with amputated extremities and what actions contribute to rehabilitation after hospital discharge.	<ul style="list-style-type: none"> - Psychological support in the face of the difficulty of accepting amputation; - Pain management and active listening to phantom pain; - Help with motor difficulties and adapting to limitations; - Participation in hospital discharge planning and post-operative guidance; - Referral to the Home Care Program (PAD); - Working as part of a multi-professional team, with support from psychology and social work; - Educational activities aimed at reducing readmissions and improving adaptation. 	Nursing care goes beyond physical care to include emotional and social support for amputees. The lack of specific protocols compromises the standardization of care. Creating systematized guidelines and strengthening post-discharge care can make a significant contribution to rehabilitation and reducing readmissions.

Source: Author's elaboration (2025)

DISCUSSION

The rehabilitation of amputees requires continuous and targeted interventions, which begin in the hospital environment and extend to the home, going through the preoperative phase, the immediate postoperative phase and the pre- and post-protection phases¹. Studies have shown the importance of pre- and post-operative guidance, as well as family involvement in preparing for discharge^{4,14}.

Self-care education is imperative in this process, as it allows patients to acquire autonomy and safety in the management of the stump, in the prevention of complications, in mobilization, in physical strengthening and in the use of auxiliary devices^{13,17}. Early and intensive guidance, support and assistance for this population contributes to a reduction in complication rates and enhances the results of rehabilitation processes, promoting the development of functional skills for better adaptation to a new life condition¹⁴.

The nurse, as the protagonist of the nursing care process, acting in the coordination and execution of care, must plan educational actions for self-care based on the particularities of each amputee, such as comorbidities, physical and mental conditions and the socio-economic-cultural context in which they are inserted, so that effective information can be offered to the patient and family about what they need to know, understand and do about their new condition¹⁸⁻¹⁹. It is worth noting that caregiver training is a determining

factor in the success of rehabilitation at home¹.

Emotional support is another indispensable dimension in the rehabilitation of this population. In the studies analyzed, psychological support is cited as the "starting point" for comprehensive care. Professionals reported difficulties in patient acceptance and recognized the importance of more humanized care, with active listening and empathy. Amputation has a profound impact on the individual's identity and self-esteem, often leading patients to face feelings of sadness, revolt, mourning the loss of the limb and fear of dependence^{4,5}.

In this context, the concept of total pain highlights the interrelationship between physical, emotional, social and spiritual suffering. In a complementary way, the Comfort Theory emphasizes that nurses should intervene to promote comfort in all these dimensions, especially in the face of irreversible bodily changes, such as amputation²⁰⁻²¹.

Pain, especially phantom pain, is a recurring complaint in amputee patients. In addition, the risk of infection and complications in the stump requires continuous attention from the nursing team²². A study carried out in Egypt demonstrated the effectiveness of a structured nursing rehabilitation protocol, which included techniques for pain relief, edema control and early mobilization¹³.

Another study highlighted the use of Systematized Nursing Care (SNC) to identify and treat early signs of infection and acute pain¹⁵. Effective pain control and continuous monitoring of stump integrity are essential components in reducing readmissions and ensuring safe rehabilitation. Nursing must act preventively, with actions based on evidence and up-to-date protocols²³⁻²⁴.

The lack of specific care protocols for amputees was a limitation highlighted in some of the studies analyzed. Professionals reported that the care provided was often based on individual experiences, without systematized guidelines to guide

pre- and post-operative care. In addition, they reported that poor material resources, lack of environmental adaptations (such as grab bars and suitable chairs), and work overload make it difficult to provide safe, patient-centered care^{4,16}.

The inadequate structure and lack of care standards directly compromise the quality of care and increase the risk of care failures. However, a study carried out in Pernambuco stands out as a positive counterpoint, presenting a nursing care protocol aimed specifically at people with amputations due to complications from Diabetes Mellitus⁶.

The tool, built on scientific literature and validated by specialists and the target audience, represents a significant advance in the standardization of care. The protocol covers everything from glycemic control to dealing with motor difficulties, offering a replicable model for health services. Its implementation can reduce variability in care, qualify clinical practice and promote greater safety for patients⁶. Although the lack of protocols is still a reality in many contexts, initiatives such as these point to promising ways of strengthening evidence-based, ethical and patient-centered practice.

Care for amputees requires integrated action between different professionals, such as physiotherapists, psychologists, doctors, social workers and, above all, nurses. Coordination between health care levels is essential to guarantee access to rehabilitation, prosthetics and support at home⁷. However, there are still significant weaknesses in the care network, with failures in post-discharge follow-up and a lack of clear articulation between hospital and home care, which compromises continuity of care and reveals the fragmentation of the system⁴.

Networked care and multi-professional work are indispensable in the physical and psychosocial rehabilitation of people with disabilities, and must be aligned with the principles of integrality and humanization of the SUS⁹. In this scenario, nursing plays a strategic role in linking the

different points of the healthcare network, going beyond technical assistance by incorporating qualified listening, welcoming and educational guidance actions. Consolidating systematized practices, strengthening the link with network services and ensuring continuous follow-up of patients are essential steps to promote effective rehabilitation, centered on the dignity and rights of the amputee⁶.

CONCLUSION

Rehabilitating an amputee goes beyond physical adaptation: it involves re-constructing meanings, providing emotional support and promoting autonomy in all spheres of life. This integrative review showed that nursing care is fundamental in this process, not only because of its technical and assistance role, but also as educational, emotional and social support. The nurse's role can be decisive in preventing complications, promoting self-care and reintegrating the individual into community life.

Despite the identification of weaknesses in care, such as the lack of systematized protocols, structural limitations and fragmentation of the care network, there has been an emergence of proposals aimed at standardizing nursing care, especially in complex contexts such as amputation due to diabetes complications. The development and validation of specific protocols have proved to be promising strategies for qualifying clinical practice, promoting patient safety and strengthening evidence-based nursing practice.

This reinforces the importance of improving nursing practice at the various levels of care, integrating technical, educational and humanized actions. Investing in the construction of clinical guidelines, continuing training and networking are fundamental measures for overcoming challenges and consolidating comprehensive, safe care centered on the real needs of amputees.

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