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PERSPECTIVAS DOS ENFERMEIROS NO EMPODERAMENTO DOS FAMILIARES CUIDADORES DE PESSOA COM AMPUTAÇÃO DO MEMBRO INFERIOR

NURSES´ PERSPECTIVES IN EMPOWERING FAMILY CAREGIVERS OF A PERSON WITH LOWER LIMB AMPUTATION

PERSPECTIVAS DE ENFERMEROS EN EL EMPODERAMIENTO DE PERSONAS CON AMPUTACIÓN DE MIEMBRO INFERIOR

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RESUMO

Introdução: A amputação dos membros inferiores é uma das principais causas de incapacidade, principalmente devido a problemas vasculares, representando mais de 80% dos casos. A perda de autonomia conduz a uma incapacidade permanente, exigindo que os cuidadores prestem assistência. Antes da alta de um doente, é essencial avaliar as necessidades e melhorar as competências dos prestadores de cuidados.

Objetivo: Explorar as perspetivas dos enfermeiros relativamente ao empoderamento dos familiares cuidadores da pessoa com amputação major do membro inferior de etiologia vascular no regresso a casa.

Métodos: Estudo exploratório, transversal, descritivo, de abordagem qualitativa. Foram realizadas entrevistas semiestruturadas a 13 enfermeiros de um hospital no norte de Portugal. Foi efetuada análise de conteúdo com recurso ao software ATLAS.ti e à metodologia de Bardin.

Resultados: Quatro categorias principais emergiram das entrevistas: (i) necessidades/dificuldades do amputado; (ii) necessidades/dificuldades dos familiares cuidadores; (iii) transição para o domicílio; e (iv) estratégias para reforçar a capacitação dos familiares cuidadores. Os resultados sublinham a necessidade de melhorar o planeamento da alta e a capacitação dos familiares cuidadores.

Conclusão: As experiências e as perspetivas dos enfermeiros na capacitação dos familiares cuidadores podem contribuir para o desenvolvimento de programas que ajudem os familiares cuidadores da pessoa com amputação major do membro inferior no regresso a casa.

Palavras-chave: amputação; empoderamento; familiar cuidador; membro inferior; enfermeiros

ABSTRACT

Introduction: Lower limb amputation is one of the main causes of disability, primarily due to vascular problems, and represents more than 80% of cases. Loss of autonomy leads to permanent disability and requires caregivers to provide help. Before a patient's discharge, it is essential to assess and improve the needs and skills of caregivers.

Objective: To explore nurses' perspectives on empowering family caregivers of a person with major lower limb amputation of vascular etiology upon returning home.

Methods: This exploratory, cross-sectional, descriptive study used a qualitative approach. Semi-structured interviews were conducted with 13 nurses from a hospital in Northern Portugal. Content analysis was performed using the ATLAS. ti software and Bardin's methodology.

Results: The interviews revealed four main categories: (i) amputee needs/difficulties, (ii) family caregiver needs/difficulties, (iii) transitioning home, and (iv) strategies to promote family caregiver empowerment. The results underline the need to improve discharge planning and the empowerment of family caregivers.

Conclusion: The experiences and perspectives of nurses in empowering family caregivers can contribute to the development of programs that support family caregivers of individuals with major lower limb amputation returning home.

Keywords: amputation; empowerment; family caregiver; lower limb; nurses

RESUMEN

Introducción: La amputación de las extremidades inferiores es una de las principales causas de discapacidad, principalmente debido a problemas vasculares, representando más del 80% de los casos. La pérdida de autonomía conduce a una discapacidad permanente, exigiendo que los cuidadores presten asistencia. Antes del alta de un paciente, es esencial evaluar y mejorar las necesidades y competencias de los cuidadores.

Objetivo: Explorar las perspectivas de los enfermeros en relación con la capacitación de los familiares cuidadores de una persona con amputación mayor de la extremidad inferior de etiología vascular en el regreso a casa.

Métodos: Estudio exploratorio, transversal, descriptivo, con un enfoque cualitativo. Se realizaron entrevistas semiestructuradas a 13 enfermeros de un hospital en el norte de Portugal. Se realizó un análisis de contenido utilizando el software ATLAS.ti y la metodología de Bardin.

Resultados: Cuatro categorías principales surgieron de las entrevistas: (i) necesidades/dificultades del amputado; (ii) necesidades/dificultades de los familiares cuidadores; (iii) transición al hogar; y (iv) estrategias para reforzar la capacitación de los familiares cuidadores. Los resultados subrayan la necesidad de mejorar la planificación del alta y la capacitación de los familiares cuidadores.

Conclusión: Las experiencias y perspectivas de los enfermeros en la capacitación de los familiares cuidadores pueden contribuir al desarrollo de programas que ayuden a los familiares cuidadores de personas con amputación mayor de la extremidad inferior que regresan a casa.

Palabras clave: amputación; empoderamiento; cuidador familiar; miembro inferior; enfermeros

INTRODUCTION

Lower limb amputation (LLA) is a widely observed cause of disability that causes significant changes in an individual's life and functioning. Dysvascular amputations, resulting from complications of peripheral arterial disease, diabetes mellitus, or a combination of both, are the primary causes of lower limb amputations (Bernatchez et al., 2021; Hussain et al., 2019). More than 80% of lower extremity amputations can be attributed to dysvascular factors (Bernatchez et al., 2021; Hussain et al., 2019). People who experience dysvascular limb loss often face a high prevalence of various health issues that can greatly impact their overall well-being and ability to function (Mayo et al., 2022). Nurses view family caregivers from two perspectives: as collaborative care partners and as individuals requiring support (Becqué et al., 2021). The active involvement of family caregivers in transitional care is essential, as it improves care quality and patient safety while benefiting the health of both patients and caregivers and enhancing healthcare provider satisfaction (Thiengtham et al., 2021). This dual perspective includes an instrumental view of caregivers as contributors to care delivery and a relational view that recognises caregivers as individuals with their own emotional, educational, and practical support needs (Becqué et al., 2021). Nurses' attitudes toward family involvement may vary depending on professional background and care setting, influencing the quality of collaboration established with caregivers (Østergaard et al., 2020). Effective collaboration between nurses and family caregivers has been shown to enhance caregivers' preparedness for assuming care responsibilities after hospital discharge (Hagedoorn et al., 2020).

The active involvement of family caregivers in transitional care is essential, as it improves care quality and patient safety while benefiting the health of both patients and caregivers and enhancing healthcare provider satisfaction (Thiengtham et al., 2021). Transitional care should therefore address not only patients' complex care needs but also caregivers' adaptation to the caregiving role, self-care, health, and psychosocial needs (Ferreira et al., 2020). Although healthcare professionals recognise the importance of preparedness and follow-up support during transitions, consistent and systematic approaches to supporting family caregivers remain limited (Køberl et al., 2023; Witt et al., 2024).

1. THEORETICAL FRAMEWORK

The LLA assumes responsibility for physical impairments, which can give rise to restrictions in the everyday functionalities of amputees. Loss of independence can lead to debilitating effects, including physical, behavioral, and psychological changes. The mobility of amputees is affected, resulting in decreased physical activity and difficulties in maintaining an active lifestyle due to increased energy expenditure (Fatima, 2022). LLA causes long-term disability and results in substantial modification of an individual's life and functioning. This condition can result in dysfunction across the physical, psychological, and emotional domains, necessitating caregiver support for general healthcare and rehabilitation (Alessa et al., 2022; Moradi et al., 2015). Loss of autonomy due to LLA results in permanent disability, making it necessary for caregivers to support general healthcare and daily activities.

The LLA is responsible for a functional problem that can imply a restriction of independent movements in the daily routine of lower-limb amputees, leading to increased dependence (Fatima, 2022). Informal caregivers provide support to their care recipients, including medical/nursing tasks, psychosocial support, assistance in activities of daily living (ADLs), and communication with healthcare professionals (Mollica et al., 2020). In the provision of care, informal caregivers need support, and the information/handover of the care provided by the healthcare professional is responsible for the quality of care they provide as well as their well-being (Dixe et al., 2019). The effectiveness of caregiver interventions depends on their seamless design and implementation. Narrowing the gap between evidence and practice helps develop strategies that facilitate the successful delivery of interventions to targeted populations (Ugalde et al., 2019).

The literature establishes a connection between amputation care and the psychological and financial burden, as well as the physical and mental stress experienced by the family. By highlighting the significant challenges faced by caregivers and prioritizing their unmet needs, we can increase awareness of the impact of amputation on the patient's family among healthcare professionals (Çamur et al., 2020). Learning essential skills is particularly important during the transition to caregiver status. The acquisition of the necessary knowledge and skills by the caregivers is important to effectively assist the dependent person with ADLs, including mobilization, transfers, medical assistance, and home care (Simari et al., 2021; Fuhrmann et al., 2021).

Nurses play a crucial role in facilitating the discharge process of dysvascular lower limb amputees as they return home, providing support to family caregivers during the transition, and empowering them to take on their additional caregiving responsibilities. Nurses can be trained in various healthcare settings to assess social support systems, identify unmet needs, and evaluate caregivers' risk factors. This allows for appropriate referrals and dissemination of relevant information (Cloyes et al., 2020).

To guide the conceptual foundation of this study, two nursing theoretical models were incorporated: Orem's Self-Care Deficit Nursing Theory and Meleis' Transitions Theory. Orem's framework is relevant for understanding the self-care limitations and functional deficits commonly experienced by dysvascular amputees, emphasizing the need for supportive interventions when individuals are unable to meet their self-care demands. Meleis' Transitions Theory provides a structure for understanding the hospital-to-home transition experienced by amputees and caregivers, highlighting key transition properties such as awareness,

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engagement, and transition conditions. Together, these models offer a theoretical basis for examining nurses' perspectives on caregiver preparation and empowerment during the return home (Meleis, 2000; Orem, 2001).

The primary aim of this study was to explore nurses' perspectives on the needs, difficulties, and preparation processes involved in empowering family caregivers of individuals with major lower limb amputation of vascular etiology during the hospital-to-home transition. Distinct from previous research, this study focuses on dysvascular amputations and explicitly examines caregiver empowerment within the transitional care context from the nursing perspective. By doing so, it advances current knowledge and offers actionable implications for improving transitional care practices and caregiver support.

2. METHODS

An exploratory, cross-sectional, descriptive, and qualitative study was conducted in a vascular surgery unit of a hospital in Northern Portugal. This unit was selected because it includes a structured follow-up outpatient consultation for patients with peripheral arterial disease, within which individuals with dysvascular lower limb amputation are also routinely followed after discharge. This organizational structure facilitates the identification of individuals with dysvascular lower limb amputation and their family caregivers, and ensures that the nurses participating in the study are involved across the hospital-to-home transition process. This study forms part of a broader research project that also included individuals with dysvascular lower limb amputation and their family caregivers. The Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist was followed.

2.1 Participants

Participants were selected according to the following inclusion criteria: nurses working in the vascular surgery unit for at least one year and having experience in preparing for the return home of a person with a lower limb amputation. Exclusion criteria included nurses without direct clinical practice in the vascular surgery unit, those with less than one year of professional experience in the unit, and those who had no involvement in discharge preparation for patients with major lower limb amputation.

Thirteen nurses participated in the study, including nurse specialists and general care nurses. Participants had varied levels of professional experience, both in nursing practice and in the vascular surgery unit, ensuring a range of perspectives on discharge preparation for individuals with major lower limb amputation.

Participant recruitment continued until data saturation was achieved, defined as the point at which no new relevant information or themes emerged from the data.

2.2 Data collection

Data collection was conducted between May 2023 and June 2023. Two instruments were used in the study. A questionnaire designed by the researchers was used to characterize the participants and included five closed-ended questions regarding their sociodemographic and professional characteristics. The questionnaire was developed based on a review of the relevant literature. The full instrument is provided in Appendix I. Semi-structured interviews were conducted using an interview guide designed by the researchers. The guide was developed based on a review of the literature and previous qualitative studies focusing on dysvascular lower limb amputation, family caregiving, and transitional care. A semi-structured format was chosen to ensure coverage of key topics while allowing flexibility to explore participants' experiences and perspectives in depth. The interview guide comprised six open-ended questions addressing nurses' experiences in preparing family caregivers for the hospital-to-home transition. The full interview guide is provided in Appendix II. The interviews were conducted by a principal researcher who had experience in conducting interviews. Audio recordings were performed with the participants' consent. Data saturation was used as the criterion to determine the adequacy of the sample, and was considered reached when additional interviews no longer generated new relevant information or insights. Data saturation was achieved after 13 interviews.

2.3 Data Analysis

Complete transcription was followed by qualitative content analysis using ATLAS.ti 23.3.4 software (Thomas Muhr, Berlin, Germany) and Bardin's methodology (Bardin, 2020). The interviews were coded to ensure anonymity. The main researcher carried out a thematic-categorical content analysis in three phases: pre-analysis to comprehend the content, exploring the material during which the content was organized, initial ideas systematized and codified, and inference and interpretation of results. At this stage, the three researchers met regularly to discuss categories and reach a consensus on codification.

2.4 Ethical Considerations

The deontological premises recommended by the ethics committee applied to research with human subjects were compiled during the methodological process, and the study was approved by the ethics committee of the hospital where data collection was conducted (Ethics Committee approval number: 13/2022-1), according to the Declaration of Helsinki. All the participants provided written informed consent. Participants' anonymity was preserved by assigning them the acronym N (N = Nurse) along with a sequential interview number.

3. RESULTS

The study sample consisted of 13 nurses, including 12 women and one man. The most represented age group was 31–35 years (46.2%). Regarding professional experience, 46.2% of participants had between 10 and 14 years of nursing practice, and 46.2% had worked in the vascular surgery unit for 1–4 years. In terms of professional qualifications, four participants were clinical nurse specialists, while nine were general care nurses.

Concerning academic background, one participant held a master's degree, while the remaining 12 had a bachelor's degree in nursing; five of these had also completed a postgraduate qualification.

Four main categories emerged from the content analysis: i) amputee needs/difficulties, (ii) family caregiver needs/difficulties, (iii) transitioning home, and (iv) strategies to promote family caregiver empowerment. Table 1 summarizes the categories and subcategories identified during the interviews.

Table 1 – Categories and subcategories identified in the interviews

Categories	Subcategories
Amputee needs/difficulties	Awareness of health condition
	Self-care
	Loss of balance and mobility
	Architectural barriers/equipment
	Need for psychological and emotional support
	Health literacy
Family caregiver needs/difficulties	Awareness of the role of family caregiver
	Architectural barriers/equipment
	Need for psychological, informational, technical, social and emotional support
	Self-care
	Physical and emotional effort
Transition home	Informational/instrumental support
	Referral to social worker
	Skills training for the family caregiver
	Discharge management
	Psychological, motivational and emotional support
	Barriers to family caregiver empowerment
	Functional training for the amputee
	Promoting family caregiver training
	Referral Physical medicine and rehabilitation
Strategies to promote family caregiver empowerment	Extended training time
	Technical aids
	Promoting family caregiver training
	Support groups/peer groups
	Support materials for teaching family caregivers
	Home visits
	Consultation for amputees and caregivers
	Multidisciplinary support team
	Articulation between hospital and community
	Supervision of care/caregiver
	Preparing home accessibility
	Discharge planning
	Phone support
	Skills training for the family caregiver
	Psychological, motivational and emotional support

Amputee needs/difficulties

In the category "amputee needs/difficulties," six subcategories emerged: awareness of health conditions, self-care, loss of balance and mobility, architectural barriers, need for psychological and emotional support, and health literacy. Concerning the changes amputees face, in the subcategory "awareness of health condition," nurses say:

"(...) The first big barrier I feel from them, apart from self-care, is the awareness that they are missing their lower limb' (N1).

"First, there's the mental difficulty of accepting that he's an amputee (...) (N8).

"Self-care" emerges as a difficulty faced by major lower limb amputees:

"Self-care in terms of dependency. I think the first thing they find difficult is the simple fact of getting up, the simple fact of sitting on the edge of the bed, I think that's the first big impact, the first big difficulty" (N1).

"(...) before they are amputated, when they have wounds, they may have more difficulty with transfers, hygiene care, from the moment they are amputated, they start to be much more dependent" (N10).

Regarding the subcategory "loss of balance and mobility", nurses perceived the following:

"(…) these patients end up becoming more dependent, they end up not having the potential they could have. For example, to get up and walk around in a wheelchair and they're more stuck in bed because no one today can help them to be more independent" (N5).

Nurses understand that the subcategory "architectural barriers/equipment" are difficulties faced by people with dysvascular major lower limb amputation when returning home:

"(...) The difficulties are architectural in the houses. Because many of them do not even have wheelchairs, let alone adapted toilets, or even access to the house, so we often have to activate social workers to resolve these architectural barriers (N7).

"(...) they have few resources, they come from homes where most of the houses also have stairs, there are many architectural barriers (...) Their difficulties are: accessibility at home (...)" (N13).

From nurses' experiences working with people with dysvascular major lower limb amputation, these patients deal with a transition from health to disease and "need psychological and emotional support":

"We have a lot of patients who aren't prepared for the situation of being amputated; they aren't even psychologically prepared. It's a failure, now it's more a failure to work with them on the psychological side than the physical side (...)." (N12).

Another subcategory identified by the study participants was difficulties related to "health literacy":

"At first, it's the fear of the unknown; most of them don't know what they're getting into. Health illiteracy is very high, most of our patients are older (...)" (N13).

Family caregiver needs/difficulties

The second category that emerged from the interviews is "family caregiver needs/difficulties identified by the study participants, emerging five subcategories: awareness of the role of family caregiver, architectural barriers/equipment, Need for psychological, informational, technical, social, and emotional support, self-care, and physical and emotional effort. According to the participants, family caregivers show difficulties related to the "awareness of the role of family caregiver":

"In terms of the caregiver's difficulties, I think it's also accepting the situation and realizing that they can help the patient with transfers and hygiene care (...)" (N8).

"(...) they aren't prepared before the patient's surgery, since the surgery isn't emergent, they aren't prepared for the change in daily habits that these patients will have to undergo. And that they have to take care of them" (N9).

"Architectural barriers/equipment" were identified by the participants as having difficulties that family caregivers face when returning home with a person with a major lower limb amputation:

"Mainly the architectural barriers in the home, most houses are not even adapted to the new dependency, and often they don't even understand very well what the patient's dependency will be when they get home" (N2).

"They always say they can't, first they talk about the architectural barriers they have in their homes, small spaces that don't allow wheelchairs (...)" (N9).

Concerning family caregivers' needs, nurses participating in the study identified the subcategory "needs for psychological, informational, technical, social, and emotional support":

"I think what's missing is a part that isn't talked about much, the psychological part. I keep saying that if the psychological part is well worked on, I think it's essential, both for the family and for the caregiver to have the energy to return home" (N6).

"They express a lot of fear and anxiety, the family doesn't understand how to look after them, and they don't feel capable of doing it; they feel they're going to have a lot of difficulties. Then what's it going to be like when we get home? Who's going to help them? Who can they call if they have any doubts?" (N2).

"Self-care" is another subcategory related to family caregivers' needs/difficulties:

"The difficulties are how to bathe, how to get out of bed, how to position, the main ones are bathing, positioning and getting up" (N4).

"(…) But the difficulty is more in terms of transfers and hygiene care..." (N11).

Another challenge identified by nurses regarding family caregivers of people with major lower limb amputations is the "physical and emotional effort" they experience:

"(…) it's an increase in weight, so to speak, while they're unable to have autonomy in the sense of helping, I think that's really it, it's the weight of mobilizing these patients. Weight of mobilization" (N3).

"Often what they say is that they do not think they will be able to take care of the patient because, due to their difficulties, they do not know if they'll be able to be with them for the transfers, if they have the strength to transfer them" (N8).

Transition home

Nurses shared their experiences in preparing dysvascular major lower limb amputees and their family caregivers for discharge home. The "transition home" category emerged, comprising nine subcategories: informational and instrumental support, referral to a social worker, skills training for the family caregiver, discharge management, psychological, motivational, and emotional support, barriers to family caregiver empowerment, functional training for the amputee, promoting family caregiver training, and referral to physical medicine and rehabilitation.

For transition home, nurses mention in their interviews that they use "informational and instrumental support" as important.

"As soon as the patient is amputated, they are given a pamphlet from the National Association of Amputees (NAAMP), either by their relatives or by the patients themselves, if they are conscious and oriented. NAAMP is an association where patients can become members and get some help with adaptation material, prostheses, or some extra help that we often can't provide here at the hospital" (N9).

Nurses also mentioned referrals to social work to help in the transition home:

"Initially, patients with amputations are referred to the social worker, who tries to liaise with the family to see what really exists at home that can be adapted to the patient's new experience" (N2).

"(...) if necessary, we refer them to the social worker, to social assistance, who then comes and does a more detailed study of the needs they may have at home, of help" (N12).

When preparing the discharge of a person with dysvascular major lower limb amputation, nurses referred to "Skills training for the family caregiver" as important:

"(...) we try to integrate the caregiver at the final stage of the hospitalization in terms of self-care and transfers, so that they can understand what it is and how to transfer" (N3).

"We teach bathing, hygiene, transfers…" (N12).

Discharge management was pointed out by nurses as important in preparing to return home:

"There are times when we are able to teach with the right timing or even repeat teachings to other types of family, and there are others when we cannot; it ends up being a bit about time and management, and it depends a bit on how the service is" (N6).

Psychological, motivational, and emotional support is used by nurses when preparing to return home:

"…in the strategies I use, I think these motivational coaching strategies, I think that's what helps. I think so, at least that's what I always try to do, is to support the psychological and motivational, emotional part "(N3).

When preparing for the transition home, nurses identified barriers to family caregiver empowerment:

"First, try to understand the physical condition of the caregiver, because that limits what we're going to try to teach. If it is a person who is often already elderly and has some limitations, that makes it difficult" (N5).

For nurses, functional training of the amputee is essential when transitioning home:

"I try to help with the rehabilitation colleague, to try to make the patient as autonomous as possible, to do some rehabilitation exercises. Some exercises, so that they can transfer on their own, so that they can position themselves in bed, so that they can walk with crutches, for example, or with a walker, so that they can try to be as autonomous as possible at home" (N8).

Referral Physical medicine and rehabilitation are used by nurses to prepare transitional homes.

"That the patient leaves with a physical medicine and rehabilitation appointment, even if they don't have the criteria to regain their previous autonomous status. It is always a concern for them to be able to acquire technical aids as they come from unfavorable backgrounds, there's no money or resources, and they're candidates to obtain technical aids through the hospital, so they're referred" (N13).

Strategies to promote family caregiver empowerment

From the category "Strategies to Promote Family Caregiver Empowerment," fifteen subcategories emerged based on nurses' perceptions from interviews: extended training time, technical aids, promoting family caregiver training, support groups/peer groups, educational materials for family caregivers, home visits, consultations for amputees and caregivers, multidisciplinary support team, coordination between hospital and community services, supervision of care/caregivers, home accessibility preparation, discharge planning, phone support, skills training for family caregivers, and psychological, motivational, and emotional support.

Nurses considered that having an "extended training time" can help family caregiver empowerment:

"I think we'd have more time with video support, and at the same time, we'd be supporting the person doing it, and they'd be doing it. It's not that we are replacing them, but that we are giving them the skills and abilities to do it, I think that would be an asset" (N1).

In regard to nurses' perspectives, having "technical aids" could help empower the family caregiver in the process of caring for a person with major lower limb amputation:

"Other types of equipment that could make life easier, equipment that we can sometimes use here to facilitate transfers, wheelchairs, or adaptive equipment that we could also teach about that" (N5).

Considering nurses' perspectives in promoting family caregivers' empowerment, we have the subcategory "promoting family caregiver training":

"(…) the caregiver will have to adapt to the patient with this disability and their limitations (…) more information and inserting them into care I think the sooner we do that, the greater their ability to take care…" (N3).

"Self-care could be taught while it is being carried out and during hospitalization rather than on the day of discharge. (...) So early contact would be ideal" (N5).

From nurses' perspectives, having "Support materials for teaching family caregivers" can help promote family caregivers' empowerment:

"I can guarantee that anyone listening to me will learn a lot more in half an hour using a video than using a demonstration" (N1).

"…given the access we have nowadays, maybe even more than a leaflet they could see an online video (…)" (N5).

Nurses understand that "support groups/peer groups" can help family caregivers:

"(…) try to understand how other caregivers do it, there are places that talk about help groups and things like that, but maybe they could see other people who are in the same situation…" (N5).

Related to family caregiver empowerment when returning to the community, the subcategory "home visits" emerges:

"(…) a home visit, once a week or twice, maybe the first week twice and then once a week for...until we saw that they were already capable of it" (N4).

Considering the family caregiver empowerment when returning home we have another subcategory "multidisciplinary support team":

"(..) have the support of a multidisciplinary team..." (N9); "(…) home visit should be made by a multidisciplinary team…" (N13).

Another subcategory related to returning to the community is "coordination between hospital and community services":

"The nurse case manager in the community and in the hospital would be important; it would be important if they could communicate effectively" (N13).

Before discharge home, nurses considered it important for family caregivers to have "home accessibility preparation":

"(…) If we could go in and really assess them and see what their physical conditions are, whether they are suitable or not, even to bathe in the bathroom and if they're able to get into a wheelchair…" (N12).

Regarding the subcategory "supervision of care/caregivers", nurses considered the following:

"(…) training tailored to the real need is essential. Above all, supervising what the caregiver does (…) care supervision is a positive incentive" (N2).

Taking into account the interviews, "discharge planning" is essential to family caregivers acquiring capacities in care:

"(…) caregiver education should start in one phase, anticipate the caregiver education phase, and the discharges should only take place when people feel capable" (N10).

Nurses participating in the study say that "skills training for family caregivers" is essential to promote family caregivers' empowerment:

"(…) caregivers should be more present in the education that we do to the patient, and we should also do the caregivers education. The caregiver should be part of the beginning of the patient's rehabilitation" (N8).

According to the interviews, "phone support" was important for family caregivers after hospital discharge:

"It would have been an added value for these patients and their caregivers to be able to ask questions, to have a phone number they could call to ask questions" (N4).

In the interviews, the subcategory "Psychological, motivational and emotional support", regarding family caregiver empowerment:

"(…) there should be psychological support for both the family and the patient, many of whom are not prepared (…) emotional support, because sometimes we forget a little about the emotional part of the caregiver (…)." (N6).

4. DISCUSSION

This study explored nurses' perspectives on empowering family caregivers of individuals with dysvascular major lower limb amputations. The findings are consistent with existing evidence showing that this population frequently experiences marked dependency, particularly in toileting, self-bathing, ambulation, and bed-to-chair transfers, with functional limitations that may persist long after the acute phase of recovery (Madsen et al., 2018). Given the persistence of these limitations, nurses play a pivotal role in preparing family caregivers for the hospital-to-home transition, particularly through the assessment of caregivers' knowledge, prior experience, and specific support needs.

The functional impairments identified by nurses—especially difficulties in safely performing activities of daily living—closely resemble the self-care deficits described in Orem's Self-Care Deficit Nursing Theory, reinforcing the importance of caregiver education and targeted nursing interventions aimed at compensating for reduced self-care capacity.

In interpreting these findings, although both nurse specialists and general care nurses participated in the study, no clear differences were identified in how needs were described or prioritized, as participants' perspectives were largely shaped by their shared clinical context and experience within the vascular surgery unit. As the study was not designed to compare professional roles, the findings reflect a collective nursing perspective rather than role-specific differences.

Nurses in our study emphasized the importance of understanding both the needs and difficulties of the amputee, such as their level of "awareness of the health condition," which influences adaptation, engagement in care, and rehabilitation potential. Participants also identified "awareness of the family caregiver role" as a salient difficulty verbalized by caregivers of dysvascular amputees. According to Meleis et al. (2000), awareness is a core property of transitions and reflects the degree of congruence between individuals' understanding of the transition process, their responses, and their perceptions. Limited awareness—whether of the clinical condition or of the caregiving role—may hinder adaptation, delay the development of caregiving competencies, and increase vulnerability during the transition home.

Insufficient awareness—either of the clinical condition or of the caregiving role—may compromise adaptation and increase vulnerability during the transition home. This is consistent with findings by Veronese et al. (2024), who reported that caregivers often feel unprepared and overwhelmed, particularly when awareness of needs during transition is limited.

"Loss of balance and mobility" emerged as a prominent difficulty among dysvascular lower limb amputees, contributing substantially to their dependence on others for ADLs. Reduced movement and physical deconditioning can result from avoidance behavior, which is an inhibitory response to challenging daily activities. Fear of movement and instability has been shown to directly affect mobility and participation in daily life among individuals with lower limb amputation (Mathis et al., 2020). Consistent with these findings, nurses in our study also identified difficulties related to "self-care" as commonly expressed by both amputees and their family caregivers. According to Orem (2001), self-care deficits arise when individuals are unable to meet their self-care needs due to physical, psychological, or emotional limitations. Considering the self-care and daily activities supported by family caregivers, the "physical and emotional effort" involved emerges as a significant difficulty when caring for a person with dysvascular lower limb amputation. Caregiving is centered on meeting the health and daily needs of another person, frequently requiring continuous assistance with essential activities. Gonzalo-Ciria et al. (2024) reported that 32.8% of caregivers experienced difficulties across all self-care activities, and 46.6% faced challenges related to sleep and rest. The physical and emotional burden is particularly substantial, as caregivers must not only provide daily assistance but also navigate complex psychological and physical adjustment processes affecting both themselves and the individual with impairments. This can lead to discomfort, fatigue, and psychological stress (Abreu et al., 2018). These findings highlight the importance of nurses' roles in identifying self-care deficits, facilitating skill acquisition, and empowering family caregivers through education and support.

Both individuals with dysvascular lower limb amputation and their family caregivers also face challenges related to architectural barriers and inadequate home equipment during the transition home. Environmental factors represent important transition conditions that may either facilitate or hinder adaptation, as described by Meleis (2000). Evidence suggests that appropriate home adaptations and assistive devices can significantly reduce daily living difficulties and fear of falling, while improving quality of life (Schorderet et al., 2022; Keeves et al., 2022). These findings support nurses' emphasis on early home assessment and coordinated discharge planning as essential components of transitional care.

Participants also identified a significant "need for psychological and emotional support" among dysvascular lower limb amputees, many of whom were not psychologically prepared to deal with living with an amputation. The incidence of anxiety and depression increases after amputation, which significantly reduces the quality of life of amputees. To restore balance and well-being, rehabilitation must address both physical and mental health needs (Fatima, 2022). Similarly, nurses identified that family caregivers require psychological, informational, technical, social, and emotional support, particularly when assuming complex caregiving responsibilities. Wang et al. (2021) emphasize that structured institutional support and skills training are essential to improve caregiver outcomes and quality of life.

"Transition home" emerged as a key category in our study, with nurses describing their experiences regarding the preparation of the family caregiver of a person with dysvascular major lower limb amputation returning home after hospital discharge. Based on these accounts, multiple subcategories were identified regarding family caregiver preparation, including informational/instrumental support, referral to social workers, skills training for the family caregiver, discharge management, psychological, motivational, and emotional support, barriers to family caregiver empowerment, functional training for the amputee, promotion of family caregiver training, referral to physical medicine, and rehabilitation. These elements reflect the core components of Meleis' theory, which emphasizes preparation, support, and role clarity as essential strategies to promote healthy transitions. Nurses must systematically assess the family's primary challenges, needs, and potential to fulfill their new roles. Before discharging a dependent person to home care, it is crucial to recognize the needs and skills of informal caregivers. Empowering them to care for their relatives can effectively reduce their burden (Dixe et al., 2019). Evidence reinforces this approach, with Tanrıkulu et al. (2023) showing a nurse-led case management model led to statistically significant improvements in caregiver burden, quality of life, and family functionality.

Finally, the category "strategies to promote family caregiver empowerment" reflects nurses' perspectives on interventions needed to strengthen caregivers' capacity during the transition home. Evidence supports the effectiveness of empowerment-based interventions, with Amal I. Fouad et al. (2022) demonstrating significant improvements in caregiver self-efficacy and reductions in caregiver burden. Developing structured, nurse-led programs that address caregivers' identified needs and difficulties is therefore essential, as such interventions can reduce burden, enhance coping, and improve both physical and psychological well-being (Kazemi et al., 2021; Araújo et al., 2018). Together, these findings reinforce Orem's emphasis on building self-care capacity and Meleis' view that tailored, supportive interventions facilitate healthier and more effective care transitions.

Implications for Clinical Practice and Research

The findings highlight the need to strengthen discharge planning and implement structured strategies to empower family caregivers of individuals with dysvascular major lower limb amputation, thereby supporting a safer transition home and continuity of care. By identifying the needs and difficulties of both patients and caregivers, nurses can better tailor interventions that promote autonomy and family-centered care. This study has limitations, namely the small sample size and the single institutional setting, which may restrict the transferability of the results. Nonetheless, these constraints point to the need for further research on caregiver empowerment in this population. Future research regarding the empowerment of family caregivers of dysvascular major lower limb amputees can be built on the findings of this study. The study results are intended to add to the body of knowledge and aid in developing new interventions and programs to empower the family caregiver of a person with dysvascular major lower limb amputation discharged home.

5. STUDY LIMITATIONS

This study has some limitations that should be considered when interpreting the findings. The study was conducted in a single vascular surgery unit in Northern Portugal, which may limit the transferability of the findings to other healthcare contexts with different organizational characteristics. Nevertheless, the selected setting provided an information-rich context that was well aligned with the study objectives.

The findings reflect nurses' perspectives and do not include the direct viewpoints of individuals with dysvascular lower limb amputation or their family caregivers within this specific analysis, although these groups were included in the broader research project. As with all qualitative research, the findings are context-dependent and shaped by participants' professional experiences and the clinical environment.

CONCLUSION

The present study highlights nurses' perspectives on empowering family caregivers of persons with dysvascular major lower limb amputation during the transition from hospital to home. By exploring nurses' experiences in preparing caregivers to support amputees with ADL dependency, the study provides insight into the challenges encountered and the strategies considered essential to promote effective caregiver empowerment at home.

Understanding the needs and difficulties experienced by both caregivers in assuming their new role and amputees in their health–illness transition is fundamental for developing appropriate strategies and interventions. From the nurses' perspective, gaining knowledge and acquiring practical skills were identified as central components of family caregiver empowerment. Participants emphasized that such preparation may be particularly valuable when initiated early in the care trajectory, when clinically feasible.

To support a safe and healthy transition home, caregivers should receive structured follow-up after discharge, including home visits from health professionals to provide training, guidance, and supervision, as well as assistance in adapting the home environment and securing appropriate technical aids. Post-discharge support through follow-up consultations, telephone guidance, and participation in peer-support groups can further enhance caregivers' confidence and promote successful adaptation. These strategies are essential for designing interventions and programs capable of reducing caregiver burden, improving quality of care, and strengthening empowerment among family caregivers of individuals with dysvascular major lower limb amputation.

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AUTHORS' CONTRIBUTION

Conceptualization: D.R., L.C., and C.P.; data processing, D.R., L.C. and C.P.; research, D.R., L.C. and C.P.; methodology D.R., L.C. and C.P.; project administration, D.R., L.C. and C.P.; Resources, D.R., L.C. and C.P.; supervision, L.C. and C.P.; validation, D.R., L.C. and C.P.; visualization D.R., L.C. and C.P.; writing – original draft, D.R., L.C. and C.P. Writing – review & editing: D.R., L.C., and C.P.

CONFLICT OF INTERESTS

The authors declare no conflict of interests.

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