

## Review

## Educational technologies used in the hospital discharge process to support patients and caregivers: an integrative review

*Tecnologias educativas empregadas no processo de alta hospitalar para apoiar pacientes e cuidadores: revisão integrativa*  
*Tecnologías educativas utilizadas en el proceso de alta hospitalaria para apoyar a pacientes y cuidadores: una revisión integradora*

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### Abstract

**Objective:** To analyze the educational technologies employed in the hospital discharge process of patients dependent or not on medical technologies and their family caregivers, discussing their advantages and limitations in the training of caregivers and patients. **Methods:** This is an integrative review. The sources used were the Nursing Database (BDENF), Latin American and Caribbean Literature in Health Sciences (LILACS), National Library of Medicine and National Institutes of Health (PubMed), EMBASE, and Scientific Electronic Library Online (SciELO). Studies published between 2015 and 2025, available in full text, in Portuguese, English, or Spanish, that addressed the topic were included. **Results:** Ten articles were selected. The technologies employed were: educational booklets, mobile applications, and in-person training. The technologies proved to be fundamental tools for training caregivers, promoting continuity of care, reducing the risk of readmissions, and promoting the autonomy of those involved. However, the application of these technologies is a challenge that limits their effectiveness and reinforces the importance of personalized and inclusive approaches. **Conclusion:** Educational technologies represent an effective and humanized strategy to transform the hospital discharge process into a safer and more efficient experience. Furthermore, they can contribute to cost reduction, improved quality indicators, and the promotion of more equitable and inclusive care.

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**Descriptors:** Educational Technology; Patient Discharge; Transition to Adult Care; Caregivers; Teaching.

#### What is already known on this?

Educational technologies contribute significantly to improving the continuity of care in the hospital discharge process, especially in the training of caregivers

#### What this study adds?

It provides scientific evidence on the use of educational technologies in supporting patients and caregivers in the process of transitioning from hospital care to the home setting.



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## Resumo

**Objetivo:** Analisar as tecnologias educativas empregadas no processo de alta hospitalar de pacientes dependentes ou não de tecnologias médicas e seus cuidadores familiares, discutindo suas vantagens e limitações na capacitação de cuidadores e pacientes.

**Métodos:** Trata-se de uma revisão integrativa. Utilizaram-se como fontes: o Banco de Dados em Enfermagem (BDENF), Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS), National Library of Medicine and National Institute of Health (PubMed), EMBASE e Scientific Electronic Library Online (SciELO). Incluíram-se estudos publicados entre 2015 e 2025, disponíveis na íntegra, nos idiomas português, inglês ou espanhol, que abordassem o tema. **Resultados:** Dez artigos foram selecionados. As tecnologias empregadas foram: cartilhas educativas, aplicativos móveis e treinamentos presenciais. As tecnologias se mostraram ser ferramentas fundamentais para capacitar cuidadores, promover a continuidade do cuidado, reduzir riscos de reinternações e promover autonomia dos envolvidos. Contudo, a aplicação destas é um desafio que limita sua eficácia e reforça a importância de abordagens personalizadas e inclusivas. **Conclusão:** As tecnologias educativas representam uma estratégia eficaz e humanizada para transformar o processo de alta hospitalar em uma experiência mais segura e eficiente. Além disso, podem contribuir para a redução de custos, a melhoria dos indicadores de qualidade e a promoção de um cuidado mais equitativo e inclusivo.

**Descritores:** Tecnologia Educacional; Alta do Paciente; Transição para Assistência do Adulto; Cuidadores. Ensino.

## INTRODUCTION

Hospital discharge of patients dependent on medical technologies poses a critical challenge for contemporary health systems. This process requires rigorous planning and effective strategies to ensure continuity of care, especially in home-based settings. Patients who require medical devices to maintain their vital functions face significant risks of readmission, which often result from gaps in caregiver training and in the transition from the hospital environment to the home<sup>(1)</sup>.

From this perspective, dehospitalization "refers to the process of removing individuals hospitalized in institutional settings, facilitating a more agile discharge to the home and the reintegration of the person into the care network, in accordance with the principles of humanization, continuity of care, and family participation"<sup>(2)</sup>. In this direction, it can be inferred that care transition is configured as a multifaceted process, characterized by a set of coordinated actions aimed at ensuring continuity of care during the transfer of patients between different levels and contexts of the health system. Such a process requires effective communication among professionals, appropriate guidance for patients and their families, clear definition of responsibilities, discharge planning, and coordination of the resources available in the destination setting<sup>(3)</sup>.

Despite the importance of this topic, many health systems still lack organized care pathways, effective communication mechanisms, and technologies capable of ensuring a continuous, integrated, and resolute care network, with well-defined stages for the diagnosis, treatment, and monitoring of specific conditions<sup>(4)</sup>. In this context, educational technologies have emerged as indispensable tools for preparing formal and informal caregivers, as well as family members, for the demands of home care. Resources such as digital guides, interactive applications, and in-person training are designed to promote caregivers' autonomy and strengthen their confidence in performing complex tasks in the home environment<sup>(5)</sup>. These approaches not only reduce the risks associated with discontinuity of care but also promote the physical and psychological well-being of patients.

Despite the evidence highlighting the benefits of educational technologies during hospital discharge, their implementation still faces considerable challenges. Barriers such as inadequate hospital

## *Resumén*

**Objetivo:** Analizar las tecnologías educativas empleadas en el proceso de alta hospitalaria de pacientes dependientes o no de tecnologías médicas y sus cuidadores familiares, discutiendo sus ventajas y limitaciones en la formación de cuidadores y pacientes.

**Métodos:** Se trata de una revisión integrativa. Las fuentes utilizadas fueron la Base de Datos de Enfermería (BDENF), la Literatura Latinoamericana y del Caribe en Ciencias de la Salud (LILACS), la Biblioteca Nacional de Medicina e Institutos Nacionales de Salud (PubMed), EMBASE y la Biblioteca Electrónica Científica en Línea (SciELO). Se incluyeron estudios publicados entre 2015 y 2025, disponibles en texto completo, en portugués, inglés o español, que abordaran el tema. **Resultados:** Se seleccionaron diez artículos. Las tecnologías empleadas fueron: folletos educativos, aplicaciones móviles y formación presencial. Las tecnologías demostraron ser herramientas fundamentales para la formación de cuidadores, la promoción de la continuidad de la atención, la reducción del riesgo de reingresos y la promoción de la autonomía de los involucrados. Sin embargo, la aplicación de estas tecnologías es un desafío que limita su eficacia y refuerza la importancia de los enfoques personalizados e inclusivos. **Conclusión:** Las tecnologías educativas representan una estrategia eficaz y humanizada para transformar el proceso de alta hospitalaria en una experiencia más segura y eficiente. Además, pueden contribuir a la reducción de costos, la mejora de los indicadores de calidad y la promoción de una atención más equitativa e inclusiva.

**Descriptores:** Tecnología Educativa; Alta del Paciente; Transición a la Atención de Adultos; Cuidadores; Docencia.

infrastructure, overload of multiprofessional teams, and inequalities in access to technological resources limit the effectiveness of these strategies. In addition, variability in caregivers' levels of education and experience reinforces the need to fit educational interventions, ensuring that they meet the specific needs of each family<sup>(6)</sup>.

Therefore, it is essential for health systems to invest in robust and integrated educational programs that combine technological resources with humanized approaches. These programs should be accompanied by continuous post-discharge support, offering caregivers direct communication channels with health professionals. Coordination among hospitals, primary care networks, and home care services is fundamental for educational technologies to reach their full potential<sup>(5)</sup>.

Thus, it is justified to investigate which existing technologies aim to empower caregivers, family members, and/or patients in the home care of patients after hospital discharge, in order to promote more effective, equitable, and integrated educational strategies capable of strengthening the autonomy of caregivers, preventing discontinuity of care, and promoting a safe transition from the hospital environment to the home.

This article aims to analyze the educational technologies used in the hospital discharge process of patients dependent or not on medical technologies and their family caregivers, discussing their advantages and limitations in the training of caregivers and patients. Based on a review of recent literature, it is expected to contribute to the development of more effective and inclusive strategies capable of transforming the transition from hospital care into a safe and efficient process.

## METHODS

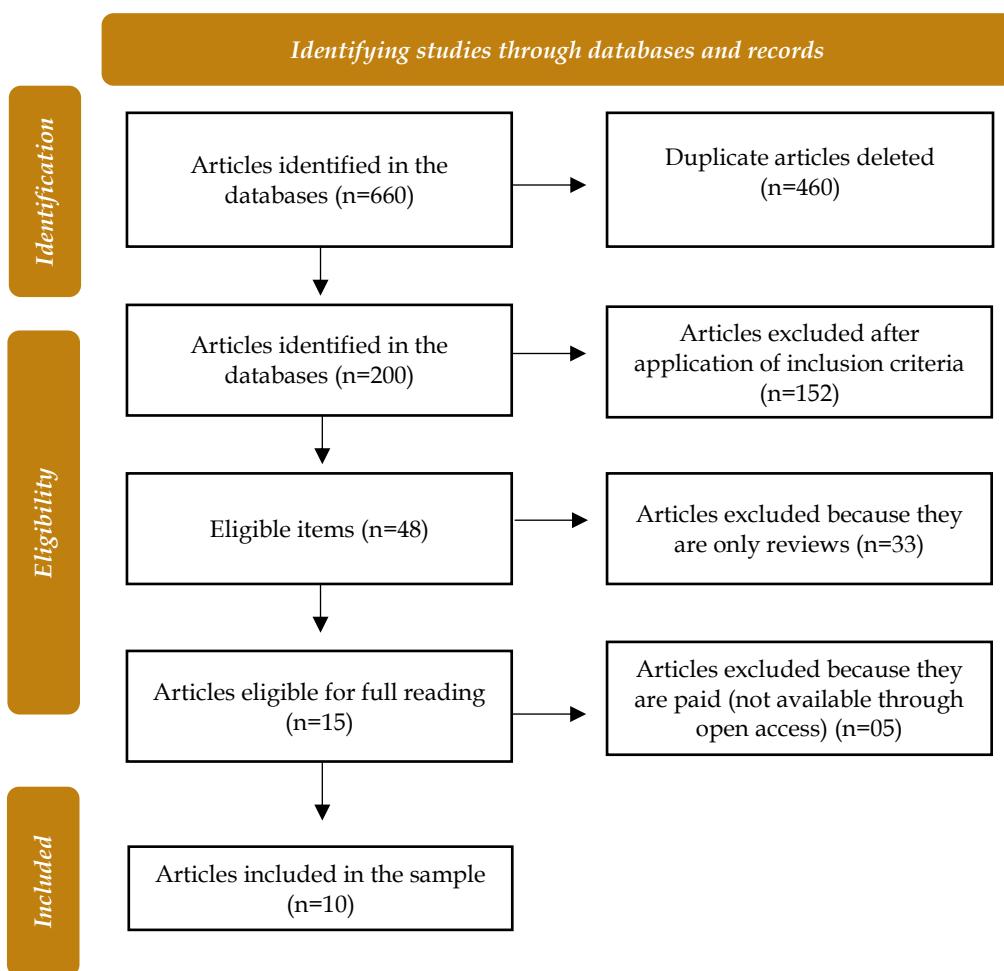
This is an integrative review (IR). This method is an approach that enables a systematic and rigorous bibliographic survey on the topic, providing a synthesis of knowledge that will serve as a basis for the theoretical framework. This type of study organizes the process into detailed stages to ensure the reliability and comprehensiveness of the analysis of the topic under investigation<sup>(7)</sup>. The review follows six stages: 1) definition of the guiding question; 2) search and selection of studies; 3) data collection; 4) critical analysis of the included studies; 5) synthesis of the review results; and 6) presentation of the method<sup>(6)</sup>.

In order to fulfill the first stage, the following guiding question was developed: "What educational technologies are used during the hospital discharge process to support patients who are dependent or not on medical technologies and their family caregivers in the transition of care?" The Population, Concept, and Context (PICo) strategy<sup>(8)</sup> was used to construct the research question, in which the population (P) it comprises patients who are dependent or not on medical technologies, caregivers, and family members; the interest (I) it includes educational technologies and care transition; and the context (Co) it refers to hospital discharge.

The literature search was conducted in January 2025 in the following databases: Scientific Electronic Library Online (SciELO), Nursing Database (BDENF), EMBASE, and the National Library of Medicine and National Institutes of Health (PubMed). For article selection, the search strategy was developed using the Boolean operators AND, OR, and NOT, combined with the following Health Sciences Descriptors (DeCS) and Medical Subject Headings (MeSH): "patient discharge", "hospital discharge", "hospital-to-home transition", "discharge planning", "educational technology", "health education", "educational resources", "hospital discharge", "care transition", "discharge planning", "continuity of care", and "safe transition".

Inclusion criteria for the study were limited to articles published between 2015 and 2025 to capture recent and relevant evidence, those available in full, in Portuguese, English, and Spanish, that address educational technologies in the context of hospital discharge and/or care transition. Exclusion criteria were defined as: duplicate studies, review articles, or grey literature documents.

Based on the chosen descriptors, 660 articles were initially identified, of which 460 were excluded for being duplicates, leaving 200. After applying the inclusion and exclusion criteria, 152 articles were removed, leaving 48 eligible studies. Of these, 33 were excluded, leaving 15 articles for full reading. During the search for full documents, 5 were excluded for not being available in full. In the end, 10 studies met the eligibility criteria to be included in this integrative literature review (Figure 1).

**Figure 1.** Flowchart of the study selection process. Fortaleza, Ceará, Brazil, 2025.

**Source:** prepared by the author.

In the data collection and analysis stage, the articles were analyzed regarding their objective, methodology, main results, and contributions and limitations related to the use of educational technologies in hospital discharge. Subsequently, an analysis was performed for thematic categorization, seeking to identify convergences and divergences in the results based on existing literature. This analysis contributed to an understanding of the topic and to the formulation of new research perspectives.

The findings were systematized and presented in a clear and objective manner, highlighting the main results, their implications for clinical practice, and recommendations for future research.

## RESULTS

The synthesis of the studies included in the review revealed a greater concentration of publications in the years 2021 and 2024, with a predominance in the year 2024, evidencing the growing academic interest in the use of educational technologies in the hospital discharge process.

The studies were published in journals in the health and nursing field, with emphasis on journals such as *Revista Brasileira de Enfermagem*, *Cogitare Enfermagem*, and *Revista Gaúcha de Enfermagem*. The methodologies used varied between qualitative and quantitative studies, literature reviews, and technology validations, reflecting the diversity of approaches to the topic, as can be seen in Box 1 below.

**Box 1.** Description of the studies selected in the integrative review. Fortaleza, Ceará, Brazil, 2025.

<i>Author/Year</i>	<i>Title</i>	<i>Journal</i>	<i>Method</i>	<i>Objective</i>
Dalmolin <i>et al.</i> <sup>(9)</sup> 2020	Implementation of educational technology for hospital discharge of patients with stomas.	Brazilian Journal of University Outreach	Integrative review	Describing the experience of implementing educational technology for patients with stomas.
Delmiro <i>et al.</i> <sup>(10)</sup> 2024	Technologies used in the hospital discharge process for technology-dependent children.	Current Nursing Journal In Derme	Literature Review	Identifying health technologies to guide the hospital discharge of technology-dependent children.
Klein <i>et al.</i> <sup>(1)</sup> 2021	Dehospitalization of technology-dependent children: a multidisciplinary healthcare team perspective.	Gaúcha Journal of Nursing	Qualitative study	Understanding the dehospitalization of technology-dependent children from a multidisciplinary perspective.
Monteiro <i>et al.</i> <sup>(11)</sup> 2024	The use of educational technologies as a teaching and learning tool in the management of urgent and emergency care beds.	Electronic Journal Health Archive	Literature Review	Discussing the use of Care-Educational Technologies to train residents in bed management.
Nietsche <i>et al.</i> <sup>(12)</sup> 2024	Surgical patient preparation guide for hospital discharge: Validation of care-educational technology.	Cogitare nursing	Validation Study	Validating a care-educational technology to prepare surgical patients for hospital discharge.
Ramos <i>et al.</i> <sup>(13)</sup> 2024	Educational technology for empowering patients as active participants in their own care.	Brazilian Journal of Nursing	Validation Study	Building and validate educational technology to empower patients in their healthcare.
Novais <i>et al.</i> <sup>(14)</sup> 2021	Factors associated with the dehospitalization of children and adolescents with complex chronic conditions.	Paulista Journal of Pediatrics	Cross sectional study	Assessing factors associated with the dehospitalization of children and adolescents with chronic conditions.
Rangel <i>et al.</i> <sup>(7)</sup> 2023	The process of dehospitalization and home care in Brazil and its associated factors.	Research, Society and Development	Integrative review	Identifying limiting factors for the effective implementation of dehospitalization and home care in Brazil.
Sato <i>et al.</i> <sup>(5)</sup> 2022	Training caregivers for the discharge of technology-dependent patients.	Rene journal	Qualitative study	Analyzing the preparedness of caregivers for the discharge of technology-dependent patients.
Silva <i>et al.</i> <sup>(15)</sup> 2024	Requirements for building an application for the discharge and transition of newborn care.	Context & Health Magazine	Exploratory Study	Investigating requirements for creating an application for the safe discharge of newborns.

**Source:** prepared by the author.

The most frequently used technologies were educational booklets, mobile applications, explanatory videos, guides, and in-person training, all aimed at supporting patients and caregivers in the transition from hospital care to home care, as shown in Box 2.

**Box 2.** Description of the results of the application of technologies in hospital discharge and the limitations in their employability. Fortaleza, Ceará, Brazil, 2025.

Author	Type of Technology	Mapped Technology	Results	Limitations
Dalmolin <i>et al.</i> <sup>(9)</sup>	Technology of Product	Educational video	Technology has contributed to empowering patients and their families regarding stoma care and the use of collection equipment, reducing hospitalizations.	The study reported no limitations.
Delmiro <i>et al.</i> <sup>(10)</sup>	Process and Product Technology	Care protocols, educational booklets, and teleconsultations	Technology has improved care for chronic diseases and supported communication between the team and families. Furthermore, it has facilitated decision-making and family learning throughout the discharge process.	There is a scarcity of literature for building a theoretical framework to develop and implement technologies in hospital discharge.
Klein <i>et al.</i> <sup>(1)</sup>	Technology of Product	Protocol	Implementing protocols is a positive strategy that can help organize the workflow of this practice.	There is a lack of hospital planning and communication between healthcare professionals and families regarding technology education upon hospital discharge.
Monteiro <i>et al.</i> <sup>(11)</sup>	Process Technology	Care-Educational Technologies	Care-educational technologies have helped improve the quality of care and promote patient safety, facilitating the fulfillment of diverse needs.	The study reported no limitations.
Nietsche <i>et al.</i> <sup>(12)</sup>	Technology of Product	Educational Guide	Validated guide with an index of 0.81; useful for home care of surgical patients.	The study reported no limitations.
Ramos <i>et al.</i> <sup>(13)</sup>	Technology of Product	Booklet	Technology validated with 85% agreement; improved patient-professional relationship.	The study reported no limitations.
Novais <i>et al.</i> <sup>(14)</sup>	Process Technology	Training	The study identified factors such as age, sex, and dependence on devices in hospital discharge. Technology: training and verbal guidance.	The effectiveness of using these technologies is affected by the lack of longitudinal monitoring of patients after discharge.
Rangel <i>et al.</i> <sup>(7)</sup>	Process Technology	Care Plan	Closer contact between professionals and families has proven essential for the effectiveness of care. Technology: care plan.	An integrated relationship is needed between hospital management, healthcare professionals, users, families, and the healthcare network to achieve the desired care outcomes.
Sato <i>et al.</i> <sup>(5)</sup>	Process Technology	Verbal instructions	The training of caregivers is influenced by guidance, combined with interaction and the valuing of learning.	There is a lack of hospital infrastructure, training time, protocols, and practical demonstrations for the use of technologies.
Silva <i>et al.</i> <sup>(15)</sup>	Technology of Product	Mobile Application	Identified requirements involve offline functionality, communication, and support for caregivers.	The study reported no limitations.

Source: prepared by the author.

## DISCUSSION

The analysis of the studies reveals that educational technologies used in the hospital discharge process are fundamental to promoting patient safety, caregiver autonomy, and continuity of care at home. Among process technologies, in-person training and interactive consultations stand out, as they have been widely used to qualify and empower caregivers. Indeed, the use of soft technologies, based on interaction and the appreciation of learning, facilitates the acquisition of the skills and knowledge necessary for home care<sup>(5)</sup>.

However, when observing daily practice in a public hospital, it is noted that despite recognition of the importance of these educational technologies, their implementation still faces considerable barriers. Challenging limitations to the implementation of such technologies include high staff turnover, limited time for the health care team to provide guidance, and institutional shortcomings in the development of protocols that incorporate health education as a structural component of the hospital discharge process<sup>(3,9,10)</sup>.

In addition to this scenario, there is difficulty among caregivers in understanding the guidance provided at the time of discharge, especially when it is delivered in a rapid, highly technical, or decontextualized manner<sup>(9,10)</sup>. It is emphasized that the absence of adequate planning, the overload of multidisciplinary teams, and the predominance of a physician-centered model often result in fragmented and unsafe hospital discharges<sup>(5)</sup>.

This reality highlights a mismatch between theory and practice, often reinforced by a hospital-centered logic that prioritizes bed turnover to the detriment of adequate caregiver preparation. The National Home Care Policy (Política Nacional de Atenção Domiciliar - PNAD), established by the Ministry of Health through Ordinance number 825 of April 25, 2016, already provides guidelines to ensure safe care transitions; however, its implementation is hindered by regional inequalities, workforce shortages, and the absence of standardized protocols<sup>(16)</sup>.

The experience of hospital discharge for neurosurgical patients demonstrated in-person training of family members and patients as a preparatory stage<sup>(17)</sup>. This phase consisted of a central moment in which family members and patients were instructed and trained in the preparation of homemade diets; medication management; hygiene; skin care; management of nasoenteral tubes; tracheostomy care; mobilization and functional transfers; tracheostomy suctioning; performance of intermittent urinary catheterization; and management of nasoenteral tubes. This training was conducted in the most didactic manner possible, always taking into account the families' level of understanding to ensure that care was effectively provided<sup>(17)</sup>.

Thus, it becomes evident that health care technologies should encompass all resources used to provide care to others, including the health professionals themselves, who, through their interactions, also constitute a form of technology. Technical-scientific knowledge, modes of communication with users, and the strategies adopted in care practice together comprise care technologies<sup>(18)</sup>. Health professionals should assume the role of educators, using and adapting educational technological resources that contribute to the systematization of care and of guidance aimed at post-hospital discharge care<sup>(10)</sup>. Such an approach seeks to promote understanding and adherence to home care demands, as well as to identify needs and potential difficulties encountered in this context.

Communication for education carried out by health professionals for patients, caregivers and family members, when combined with tools such as booklets, educational videos and mobile applications can form a powerful hybrid teaching-learning strategy, whose effectiveness depends directly on the sociocultural context of patients and human mediation. In this regard, the importance of validated educational strategies stands out, such as booklets that have achieved an agreement rate of 85% among experts, as they demonstrate quality in the constructive process, strengthening the relationship between the health team and caregivers<sup>(13)</sup>.

The individualization of care was another point of emphasis, given that personalized planning is essential for the functionality of home care, highlighting the role of the multidisciplinary team in offering guidance adapted to the specific needs of each family<sup>(6)</sup>. In addition, the guidelines should promote the patients' protagonism in their therapeutic process, while reinforcing the fundamental role of the family as a source of support and co-participant in care actions. Each activity developed must be personalized, considering the sociocultural and demographic reality and the singularities of the patient, family and/or caregiver<sup>(6)</sup>.

Teamwork enhances the integration of different knowledge and skills, without negating the specificities of each professional or category. It is essential that everyone participates collaboratively,

articulating a common field of practices that promotes both the health of the population and the personal and professional fulfillment of workers<sup>(20)</sup>. In a complementary way, it is necessary to implement continuous training and validated care-educational technologies, crucial to ensure patient safety and improve the management of health services<sup>(11)</sup>. This reinforces the need for investment in continuous interprofessional training focused on safe discharge, a clear challenge in most medium and small-sized public institutions, where staff turnover and the lack of technological resources hinder the consolidation of these practices.

From this perspective, the literature indicates that well-structured health education initiatives significantly reduce readmission rates. However, the Continuing Education in Health programs, foreseen in the National Policy on Continuing Education (PNEPS), established by Ordinance number 198/GM of February 13, 2004, still face limitations in specific actions and in the articulation between levels of care<sup>(21)</sup>. A major challenge is to encourage greater use of technologies for health education and to establish a commitment to the new public health demands related to the process of dehospitalization and transition of care.

Within the scope of product technologies, educational booklets and mobile applications stand out. An educational guide aimed at surgical patients and their companions achieved a validity index of 0.81, standing out for its objectivity and adaptation of language to the target audience, proving to be an effective tool in preparing for home care<sup>(13)</sup>. Another study emphasized the potential of functional applications in supporting hospital discharge, with requirements such as offline support and direct communication with health professionals to meet the demands of caregivers of newborns<sup>(15)</sup>. When well designed and adapted to the users' sociocultural profile, these instruments expand the reach of information and enable monitoring even at a distance. However, it is necessary to consider that a significant proportion of users may not have access to the internet or digital literacy, characterizing a gap in digital accessibility, especially in underserved communities.

Variability in caregivers' educational level and socioeconomic conditions was also identified as a significant barrier. It was observed that a family member, especially women, predominantly assumes the caregiver role—mothers, wives, sisters, and daughters—highlighting a gender bias in the caregiving process<sup>(22)</sup>. This role is often not optional, but rather the result of socioeconomic conditions that make these women responsible for both financial support and the care of the ill family member. Socioeconomic inequality and low educational attainment among caregivers require more inclusive approaches and educational interventions contextualized to the local reality. The use of accessible language, practical examples, visual support, and continuous reinforcement are effective strategies in this context. In practice, the involvement of community health workers can serve as a strategic bridge between technical knowledge and the lived reality of caregivers.

Another study indicated that factors such as age, sex, and dependence on medical devices directly influence the safe transition of care from the hospital to the home environment<sup>(14)</sup>. These findings reinforce the need for personalized, inclusive, and humanized approaches that address the specificities of each patient and family. It is also worth noting the recent amendment to the Organic Health Law (Law number 8,080, of September 18, 1990), through Law 15,126, of April 28, 2025, which officially established humanized care as a principle of the Unified Health System (SUS)<sup>(23)</sup>. As a result, the SUS now has a legal duty to ensure more respectful and empathetic care, considering patients' feelings and dignity—a milestone that may reorient the way educational technologies are conceived, applied, and evaluated.

Sustainability and continuity of support after hospital discharge are critical aspects. Prolonged monitoring strategies that ensure educational and emotional support for caregivers are essential to minimize the risk of readmissions and promote autonomy in the caregiving process<sup>(13,5)</sup>. In addition, there is an assistance gap in the post-discharge period, often limited to sporadic outpatient visits and communication failures between levels of care. Hence, the importance of articulating the Health Care Network (HCN) to ensure continuity of care, especially during transitions between levels. By integrating services and organizing care pathways, the HCN ensures that the care plan is implemented in a coordinated, efficient manner and centered on patient needs, promoting greater effectiveness and preventing discontinuities in monitoring.

In this context, it is highlighted that the transition of care involves the transfer of relevant information about the patient's health condition, aiming to ensure continuity of care at different levels of attention<sup>(24)</sup>. This process is aligned with the principles of integration of health systems and includes

planned actions aimed at ensuring continuity of care, both in transfers within the same service and between different levels of care.

Another aspect that is not widely addressed by studies is the emotional and psychological dimension of caregivers, who experience stress, insecurity and, often, overload when taking on home care without adequate preparation. This highlights the need to consider educational technologies not only as technical instruments, but also as devices for listening, welcoming and strengthening the bond with the health team.

In view of the above, it is clear that educational technologies are used during hospital discharge to support patients and caregivers in the transition of care and continuity of care at home. Verbal guidance, printed materials, explanatory videos and digital tools such as applications stand out. These technologies facilitate understanding of treatment, prevention of complications, and strengthening of autonomy, in addition to supporting the caregiver as an active part of care. The application of these technologies should consider the family context, health literacy, and available resources, ensuring effective and safe educational actions.

However, although the studies in this review demonstrate advances in the construction and validation of educational technologies for the hospital discharge process, structural and human challenges persist. There is a gap between what is proposed in academia and what can be operationalized in public health contexts. Strengthening care transition policies, investing in professional training, digital inclusion, and actively listening to the real needs of patients and caregivers becomes vital.

### Limitations

The limitations of this study relate to the exclusive inclusion of freely available studies, which may have restricted the identification of other technologies currently being implemented.

### Contributions to Practice

This study contributes to improving the transition of care from the hospital to the home environment by highlighting strategies that promote the autonomy and safety of patients and caregivers, through the provision of accessible and understandable information on post-discharge care. Furthermore, it emphasizes the potential of these technologies to reduce hospital readmissions, optimize resources in the health system, and strengthen health education practices. It also offers important support for the training of health professionals and for the development of institutional policies that value health education as an essential component of humanized and continuous care.

## CONCLUSION

Educational technologies prove essential in the hospital discharge process by increasing caregivers' autonomy, strengthening their interaction with health professionals, and reducing the risk of readmissions using guides, applications, and personalized training. In addition to empowering caregivers, these tools have the potential to promote the humanization of care, reduce healthcare costs, and improve quality indicators in hospital services. However, their implementation still faces significant limitations, such as structural barriers related to a lack of technological resources and adequate infrastructure, as well as the overload on healthcare teams. Added to this is the heterogeneity in the educational level and socioeconomic conditions of caregivers, which highlights the need for personalized strategies adapted to the realities of each family.

Thus, this study reinforces the importance of investing in educational technologies as a central strategy to improve the quality of care in the context of hospital discharge. The consolidation of these practices depends on a joint effort between healthcare professionals, managers, and public policy makers, aiming to transform the transition of care into a safer, more efficient, equitable, and individualized process according to the needs of the patients and their caregivers and family members.

## CONTRIBUTIONS

Contributed to the conception or design of the study/research: Pires APB. Contributed to data collection: Pires APB, Leite PAR, Oliveira SA. Contributed to the analysis and/or interpretation of data: Pires APB. Contributed to article writing or critical review: Pires APB, Leite PAR, Oliveira SA. Final approval of the version to be published: Pires APB, Leite PAR, Oliveira AS, Vasconcelos MG.

## REFERENCES

1. Klein K, Issi HB, Souza NS, Ribeiro AC, Santos EEP, Senhem GD. Dehospitalization of technology-dependent children: the perspective of the multiprofessional health team. *Rev Gaúcha Enferm.* [Internet]. 2021;42:e20200305. DOI: <https://doi.org/10.1590/1983-1447.2021.20200305>
2. Olário PS, *et al.* Deinstitutionalization in palliative care: profile of users of a unit in Rio de Janeiro/Brazil. *Cogitare Enferm.* [Internet]. 2018;23(2):e53787. DOI: <https://doi.org/10.5380/ce.v23i2.53787>
3. Hervé MEW, Zucatti PB, Lima MADS. Transition of care at discharge from the Intensive Care Unit: a scoping review. *Rev Latino-Am Enfermagem.* [Internet]. 2020;28:e3325. DOI: <https://doi.org/10.1590/1518-8345.4112.3325>
4. Belga SMMF, Jorge AO, Silva KL. Continuidade do cuidado a partir do hospital: interdisciplinaridade e dispositivos para integralidade na rede de atenção à saúde. *Saúde em Debate* [Internet]. 2022;46. DOI: 10.1590/0103-1104202213321.
5. Sato DM, Teston EF, Andrade GKS, *et al.* Preparing caregivers for dehospitalization of technology-dependent patients: perspective of Home Care professionals. *Rev Rene.* [Internet]. 2022;23:e78658. DOI: <https://doi.org/10.15253/2175-6783.20222378658>
6. Rangel MLSV, *et al.* Process of dehospitalization and home care in Brazil and its associated factors. *Res Soc Dev.* [Internet]. 2023;12(4):e0612440793. DOI: <https://doi.org/10.33448/rsd-v12i4.40793>
7. Mendes KDS, Silveira RCCP, Galvão CM. Use of the bibliographic reference manager in the selection of primary studies in integrative reviews. *Texto Contexto Enferm.* [Internet]. 2019;28:e20170204. DOI: <https://doi.org/10.1590/1980-265x-tce-2017-0204>
8. Lockwood C, Porritt K, Munn Z, Rittenmeyer L, Salmond S, Bjerrum M, *et al.* Chapter 2: Systematic Reviews of Qualitative Evidence. *JBI Manual for Evidence Synthesis.* 2020. DOI: <https://doi.org/10.46658/JBIMES-20-03>
9. Dalmolin A, Gomes ES, Santos EB, Girardon-Perlini NMO. Implementação de tecnologia educativa para alta hospitalar de paciente com estoma: relato de experiência. *Rev Bras Ext Univ.* [Internet]. 2020;11(3):e11394. DOI: <https://doi.org/10.36661/2358-0399.2020v11i3.11394>
10. Delmiro ARCA, Barbosa MGL, Rocha YT, Castaño AMH, Silva KL. Tecnologias utilizadas no processo de alta hospitalar de crianças dependentes de tecnologias. *Rev Enferm Atual Derme.* [Internet]. 2024;98(2):e024360. DOI: <https://doi.org/10.31011/reaid-2024-v98-n2-art360>
11. Monteiro FC, Cruz FTO, Campos CLS, Ferreira IP, Cunha GAD, Soeiro ACV, *et al.* O uso de tecnologias educativas como ferramenta de ensino e aprendizado na gestão de leitos de urgência e emergência. *Rev Eletr Acervo Saúde.* [Internet]. 2024;24(10):e17144. DOI: <https://doi.org/10.25248/reas.e17144.2024>
12. Nietsche EA, Colussi G, Salbego C, Cogo SB, Ramos TK, Girardon-Perlini NMO, Sehnem GD. Guide for the preparation of the surgical patient for hospital discharge: validation of care-educational technology. *Cogitare Enferm.* [Internet]. 2024;29:e93323. DOI: <https://doi.org/10.5380/ce.v29i0.93323>
13. Ramos RS, Aguiar MF, Silva ECG, *et al.* Educational technology to empower patients as participants in their care. *Rev Bras Enferm.* [Internet]. 2024;77(6):e20230359. DOI: <https://doi.org/10.1590/0034-7167-2023-0359>
14. Novais MCM, Victor DS, Rodrigues DS, Freitas BO, Barreto NMPV, Mendes DJS, Saquetto MB. Factors associated with de-hospitalization of children and adolescents with complex chronic condition.

Rev Paul Pediatr. [Internet]. 2021;39:e2020118. DOI: <https://doi.org/10.1590/1984-0462/2021/39/2020118>

15. Silva CTS, Silva JC, Conceição MM, Santana RCB, Silva AP, Camargo CL, Whitaker MCO. Requisitos para construção de aplicativo para a alta e transição de cuidados do recém-nascido. Rev Contexto Saúde. [Internet]. 2024;24(49):e15636. doi:10.21527/2176-7114.2024.49.15636

16. Ministério da Saúde (BR). Portaria nº 825, de 25 de abril de 2016. Redefine a Atenção Domiciliar no âmbito do Sistema Único de Saúde (SUS) e atualiza as equipes habilitadas. Diário Oficial da União. 2016 abr 25;Seção 1:1.

17. Sousa ETG, Maia DB, Neto WZA, Costa MCR, Gama RM, Gomes LFR. Preparação para a alta hospitalar de pacientes neurocirúrgicos e seus familiares: relato de experiência. Rev Enferm UFPE on line. [Internet]. 2013;8(1):207-12. DOI: <https://doi.org/10.5205/1981-8963-v8i1a9626p207-212-2014>

18. Koerich MS, Backes DS, Scortegagna HDM, Wall ML, Veronese AM, Zeferino M T, Santos EKAD. Tecnologias de cuidado em saúde e enfermagem e suas perspectivas filosóficas. Texto Contexto Enferm. [Internet]. 2006;15(spe):178-85. DOI: <https://doi.org/10.1590/S0104-07072006000500022>

19. Merhy EE. Saúde: cartografia do trabalho vivo em ato. São Paulo: Hucitec; 2002.

20. Campos GWS. Saúde Paidéia. São Paulo: Hucitec; 2003.

21. Ministério da Saúde (BR). Portaria nº 198/GM/MS, de 13 de fevereiro de 2004. Institui a Política Nacional de Educação Permanente em Saúde como estratégia do Sistema Único de Saúde para a formação e o desenvolvimento de trabalhadores para o setor. Diário Oficial da União. 2004 fev 13;v. 141(n. 32).

22. Andrade L. Cuidados paliativos e Serviço Social: um exercício de coragem. Holambra (SP): Editora Setembro; 2015.

23. BRASIL. Lei nº 15.126, de 28 de abril de 2025. Altera a Lei nº 8.080, de 19 de setembro de 1990 (Lei Orgânica da Saúde), para estabelecer a atenção humanizada como princípio no âmbito do Sistema Único de Saúde (SUS). Diário Oficial [da] União, Brasília, Seção 1, 29 abr. 2025.

24. Lima MADS, Magalhães AMMD, Oelke ND, Marques GQ, Lorenzini E, Weber LAF, Fan I. Care transition strategies in Latin American countries: an integrative review. Rev Gaúcha Enferm. [Internet]. 2018;39:e20180119. DOI: <https://doi.org/10.1590/1983-1447.2018.2018011>

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