











Support for Educational Technologies in the Interview for Child Organ and Tissue Donation

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Section editor: Ilka de Fátima Santana F. Boin 

Received: July 22, 2025 | Approved: Feb. 09, 2026

ABSTRACT

Objectives: To identify available information to support the development of educational technologies in the context of family interviews for organ and tissue donation with parents of children and adolescents. **Methods:** This is an integrative literature review conducted in six stages, according to the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses: 1) elaboration of the research question; 2) search for primary studies in the literature; 3) extraction of data from the selected studies; 4) evaluation of the included studies; 5) analysis and synthesis of the results; 6) presentation of the review. The search for primary studies was conducted in the following databases: LILACS, PubMed, CINAHL, Embase, Scopus, SciELO, and Web of Science. The methodological quality was assessed according to the tool proposed by the Johns Hopkins Evidence-Based Practice Model for Nursing and Healthcare Professionals. **Results:** Twenty-one studies were included, with different designs, such as qualitative, cross-sectional, prospective, quasi-experimental, and mixed-methods studies. Among the strategies identified to support the development of educational technologies, the following stood out: training for communicating brain death, emotional support for families, management of religious and cultural beliefs, strengthening the bond with parents, and inclusion of the topic in academic training and continuing education. **Conclusion:** The evidence gathered reinforces the importance of a scientific basis in the development of effective educational technologies to qualify the performance of professionals in family interviews for organ and tissue donation of children and adolescents. The strategies identified show promise to guide future initiatives for training and development of educational technologies. However, the scarcity of studies with robust methodological designs highlights the urgent need for additional research to deepen the understanding of the topic and validate the application of these technologies in clinical practice.

Descriptors: Educational Technology; Organ and Tissue Donation; Health Education; Pediatric Health; Interview.

Apoio às Tecnologias Educacionais na Entrevista para Doação de Órgãos e Tecidos Infantis

RESUMO

Objetivos: Identificar informações disponíveis para apoiar a construção de tecnologias educacionais no contexto da entrevista familiar na doação de órgãos e tecidos com os pais de crianças e adolescentes. **Métodos:** Trata-se de uma revisão integrativa de literatura, conduzida em seis etapas, conforme as recomendações do Preferred Reporting Items for Systematic Reviews and Meta-Analyses: 1) elaboração da questão de pesquisa; 2) busca de estudos primários na literatura; 3) extração de dados dos estudos selecionados; 4) avaliação dos estudos incluídos; 5) análise e síntese dos resultados; 6) apresentação da revisão. A busca de estudos primários foi realizada nas bases de dados LILACS, PubMed, CINAHL, Embase, Scopus, SciELO e Web of Science. A qualidade metodológica foi avaliada conforme a ferramenta proposta pelo Johns Hopkins Evidence-Based Practice Model for Nursing and Healthcare Professionals. **Resultados:** Foram incluídos 21 estudos, com diferentes delineamentos, como estudos qualitativos, transversais, prospectivos, quase-experimentais e métodos mistos. Dentre as estratégias identificadas para subsidiar

o desenvolvimento de tecnologias educacionais, destacaram-se a capacitação para comunicação da morte encefálica, apoio emocional às famílias, manejo de crenças religiosas e culturais, fortalecimento do vínculo com os pais e inclusão do tema na formação acadêmica e na educação permanente. **Conclusão:** As evidências reunidas reforçam a importância do embasamento científico no desenvolvimento de tecnologias educacionais eficazes para qualificar a atuação dos profissionais na entrevista familiar para doação de órgãos e tecidos de crianças e adolescentes. As estratégias identificadas mostram-se promissoras para orientar futuras iniciativas de capacitação e desenvolvimento de tecnologias educacionais. Contudo, a escassez de estudos com delineamentos metodológicos robustos evidencia a necessidade urgente de pesquisas adicionais que aprofundem a compreensão do tema e validem a aplicação dessas tecnologias na prática assistencial.

Descritores: Tecnologia Educacional; Doação de Órgãos e Tecidos; Educação em Saúde; Saúde Pediátrica; Entrevista.

INTRODUCTION

The family interview for organ and tissue donation in the context of children and adolescents is one of the most sensitive stages of this process, requiring technical, emotional, and communicative preparedness from healthcare professionals working with families. The death of a child or adolescent represents an abrupt loss, profoundly impactful for family members, demanding an empathetic, accessible, and humanized approach from the healthcare team¹⁻².

Families of children and adolescents facing the possibility of a child's death experience a unique and profoundly impactful moment. Such news disrupts the family unit³. Due to the emotional shock, the grieving process can be prolonged and involve a range of feelings, given the unexpected nature of the loss⁴. This reality can be amplified when considering the decision to donate the organs and tissues of a child or adolescent. The pain can be immeasurable, given that making the decision involves accepting the irreversibility of the situation⁵.

Conducting family interviews for organ and tissue donation requires that the healthcare team be trained to provide care during the dying process, communicate death sensitively, offer emotional support, and provide clear information, working in conjunction with the support network^{6,7}.

Studies show that empathetic and accessible communication, combined with active listening, compassion, and sensitivity, is an effective strategy for healthcare teams to recognize the emotions and stages of grief experienced by parents of children and adolescents undergoing organ donation^{3,6,8}. The same studies show that when families of children and adolescents are interviewed about organ and tissue donation and receive support from trained and qualified teams, without criticism or judgment, to cope with the loss and make this decision, the grieving process tends to be experienced in a more structured and less traumatic way^{3,8}.

Despite significant advancements in organ and tissue donation, the interview process remains a challenge for healthcare professionals, especially when dealing with minors. This is partly due to the constant presence of a caregiver throughout the intensive care unit stay, which strengthens the bond and makes the approach more delicate. Studies indicate that many professionals do not feel comfortable welcoming the family during hospitalization and subsequently questioning them about organ and tissue donation^{9,10}.

In Brazil, this reality may be linked to low consent rates for organ donation, as indicated by recent data from the Brazilian Association of Organ Transplantation (Associação Brasileira de Transplante de Órgãos), which reported a family refusal rate of 46% at the time of the interview in 2024¹¹. Therefore, it is essential that healthcare teams be adequately supported and competent in assisting parents during the family interview. It is worth noting that the interview consists of several stages that involve communicating the death, providing emotional support, and offering information about organ and tissue donation¹².

Faced with these challenges, investing in educational strategies that empower healthcare professionals to act more safely and sensitively becomes fundamental. In this sense, educational technologies are becoming established as innovative and effective tools in this training process, enabling dynamic access to technical content and the development of socio-emotional skills. Resources such as simulations, role-playing, and online courses have proven promising in supporting learning and promoting more humanized communication with families^{13,14}.

Studies indicate that educational technologies based on simulations, role-playing, comic books, games, and other methods can improve communication skills, teamwork, situational awareness, problem-solving, and decision-making^{15,16}. In the context of organ and tissue donation, educational technologies are significant tools that offer quick access and low cost, capable of assisting the healthcare team in improving competencies and, in particular, communication skills in the process of death and dying, the grieving process, communicating death, and providing emotional support¹⁷⁻¹⁹.

Given this context, the guiding question of this study is: what information is available to support the development of educational technologies in the context of family interviews regarding organ and tissue donation with the parents of children and

adolescents? Its objective is to identify information that supports the development of educational technologies in the context of family interviews on organ and tissue donation with parents of children and adolescents.

METHODS

This is an integrative literature review in which, through a critical and extensive analysis of studies available in databases, it was possible to obtain significant, comprehensive, and important information related to the object of investigation. It is worth noting that the processes of searching, selecting, evaluating, and synthesizing relevant studies help achieve the proposed objective²⁰.

First stage

The research question was formulated using the acronym PICO (patient, problem, interest, context), where P corresponds to family members; I, to the phenomenon of interest, namely the information supporting the development of educational technologies; and Co, to the family interview with children and adolescents. Thus, the guiding question emerged: “What information is available to support the development of educational technologies in the context of family interviews in organ and tissue donation with the parents of children and adolescents?”

Second stage

A search for primary studies was conducted in the literature, opting for databases relevant to the health field. Thus, the following databases were searched: *Literatura Latino-Americana e do Caribe em Ciências da Saúde* (LILACS), National Library of Medicine and the National Institutes of Health (PubMed), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Embase, Scopus, SciELO and Web of Science. With the assistance of a librarian with expertise in the field, search strategies were developed according to the PICO themes to identify descriptors indexed in Medical Subject Headings (MeSH) and *Descritores em Ciências da Saúde* (DeCS). After selecting the concepts, the strategy was adjusted for each database, maintaining consistent terminology and using Boolean operators (AND and OR). The search was conducted on September 27, 2024. Table 1 provides an example of the search strategies applied in one of the databases.

Table 1. Review search strategy.

Database	Search strategy
Embase	(“Tissue And Organ Procurement” OR “Organ Procurement” OR “Organ Procurements” OR “Required Organ Donation Request” OR “Organ Donation” OR “Organ Donations” OR “Transplants” OR “Transplantation” OR Transplant*) AND (“Family” OR “Familie” OR “Families” OR “Familiar” OR “Child” OR “Children” OR “Childhood” OR “Preschool” OR “Preschools” OR “Infancy” OR “Infant” OR “Infants” OR “Adolescent” OR “Adolescents” OR “Adolescence” OR “Adolescent” OR “Teens” OR “Teen” OR “Teenagers” OR “Teenager” OR “Youth” OR “Youths”) AND (“Health Personnel” OR “Health Care Professional” OR “Health Care Professionals” OR “Healthcare Worker” OR “Healthcare Workers” OR “Nurses” OR “Physicians” OR “Physician”)

Source: Elaborated by the authors.

At this stage, inclusion and exclusion criteria were established to select articles. Among the selection criteria, primary studies that addressed information to support the development of educational technologies in the context of family interviews on organ and tissue donation with parents of children and adolescents, available in English, Portuguese, or Spanish, and published in the last 6 years, were included. Literature review articles, grey literature material, studies not available in full, and those unrelated to the topic were excluded.

The searches from each database were exported to Rayyan Systems Inc® software, where they were organized, and duplicate records were removed according to the method described in the literature. Then, two independent reviewers selected items in a blinded manner. Four independent reviewers carried out two selection stages. The first stage consisted of reading the title and abstract, and the second, the full text. In both stages, a consensus meeting was held with a third reviewer, an experienced field expert, to resolve any conflicts.

Third stage

After selecting the studies according to the pre-established criteria, data were extracted from the selected studies: information characterizing the study (title, authors, database, year of publication, and country), elements about the study's development (objective, design, main results, outcomes, evidence, and recommendations), and classification of the level of evidence. Subsequently, a summary table was constructed, allowing for the complete extraction of relevant data to answer the research question.

Fourth stage

In this stage, the included studies were evaluated. Therefore, the proposal to assess the robustness of the evidence and the quality of the selected studies was followed, given that the assessment of each study's results, regarding the presence of elements that weaken or strengthen confidence in the evidence presented, has a significant impact on the effect estimate²¹. The stage began with a description of the methodological approach, study design, and type, as the authors themselves indicated. Subsequently, the level of evidence was assigned according to the classification proposed by the Johns Hopkins Evidence-Based Practice Model for Nursing and Healthcare Professionals. This model includes qualitative and quantitative studies, distributed across three levels of evidence, as illustrated in Table 2²².

Table 2. Classification of the level of evidence, according to the Johns Hopkins Evidence-Based Practice Model for Nursing and Healthcare Professionals.

Level	Type of evidence
I	Experimental research, randomized controlled trial (RCT), explanatory mixed methods design that includes only a level I quantitative study, systematic review of RCTs, with or without meta-analysis.
II	Quasi-experimental research, an explanatory mixed methods design that includes only a Level II quantitative study, a systematic review of a combination of RCTs and quasi-experimental research, or only quasi-experimental research, with or without meta-analysis.
III	Non-experimental research, systematic review of a combination of RCTs and quasi-experimental and non-experimental research, or just non-experimental research, with or without meta-analysis, exploratory, convergent or multiphase mixed methods research, explanatory mixed methods design that includes only a level III quantitative study, qualitative research, systematic review of qualitative research with or without meta-synthesis.

Source: Elaborated by the authors.

Fifth stage

The analysis and synthesis of the results were conducted descriptively, presenting an overview of each included study in summary tables. After selecting the studies relevant to the research, data analysis and synthesis were conducted to identify patterns, trends, and pertinent information to support the development of educational technologies for family interviews on organ and tissue donation with parents of children and adolescents. Subsequently, the data were classified according to the objectives of the review and the main evidence. Following this, a thorough analysis of the findings was conducted, highlighting trends, main results, and potential divergences across the studies.

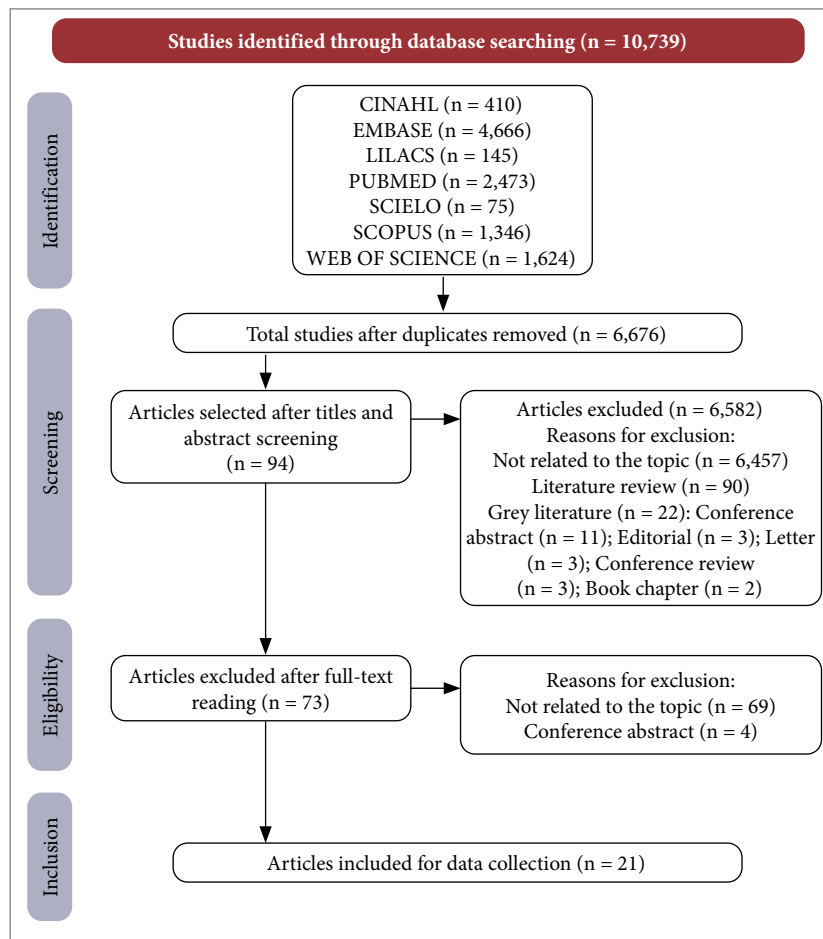
Sixth stage

This stage consisted of discussing and presenting the integrative review; the main goal was to provide input for the development of future educational technologies, identify knowledge gaps, and guide new studies. The analysis of the level of evidence and the methodological quality of the studies may contribute to the implementation of changes in clinical practice, especially regarding communication with the family during the family interview for organ donation. Furthermore, classifying the level of evidence enhances the scientific rigor of the data extracted from the studies selected for this review. The results of this stage will be presented in tables and categories, with the main evidence supporting the development of educational technologies. The categories were formed considering the stages of the Alicante model: communication of death, emotional support, and information about donation¹².

To ensure methodological rigor, the protocol for this review was registered in the Open Science Framework scientific repository, and parts of the recommendations from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) were followed²³.

RESULTS

Among the results obtained in this review, 10,739 articles were found. After removing duplicate records ($n = 4,063$), 6,676 studies remained for title and abstract screening. Of these, 6,582 were excluded, leaving 94 studies for full-text review. Of these 94, 73 were excluded due to outcomes outside the scope of this research ($n = 69$) and publication type (e.g., conference abstracts, $n = 4$). Thus, the final sample comprised 21 studies, as shown in the PRISMA flowchart. The Embase and PubMed databases presented the highest volume of publications (28.57%). The countries with the highest number of publications on the subject were the Netherlands and Brazil, totaling five studies (23.8%). The years with the highest number of publications were 2021 and 2022 (23.8%). Figure 1 presents the details of the information collected from the studies included in the review.



Source: Elaborated by the authors.

Figure 1. Diagram of the study selection according to the PRISMA-Scoping Reviews flowchart.

The extracted data were organized into spreadsheets containing study characterization data (title, authors, search source, country of origin, and objectives), as shown in Table 3. Regarding the study structure, Table 4 presents the study design, level of evidence, main findings, and strategies to support the development of educational technologies.

Table 3. Articles identified in the searches.

Title (author)	Search source	Country	Objectives
Demographic characteristics of brain death cases in our clinic and causes of family refusal for organ donation (Boran et al. ²⁴)	Embase	Turkey	To analyze the attitude of family members towards organ donation in cases of BD and to understand the reasons for refusals.
Physician experiences with communicating organ donation with the relatives: a Dutch nationwide evaluation on factors that influence consent rates (Witjes et al. ²⁵)	CINAHL	Netherlands	To recognize elements of communication that can be modified and that impact families' decisions about organ donation.
Family approach to organ donation: perception of nurses (Marcondes et al. ²⁶)	CINAHL	Brazil	To explore how nurses perceive the process of talking to family members about organ donation.
Appointing nurses trained in organ donation to improve family consent rates (Witjes et al. ²⁷)	CINAHL	Netherlands	To assess whether family counseling by professionals trained in donation increased the rate of family consent for organ donation.
Grief reactions of potential organ donors' bereaved relatives: an observational study (Oliver et al. ²⁸)	Embase	Spain	To report on the emotions of family members of potential donors and examine how these emotions relate to the process of illness and death.

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Table 3. Continuation.

Title (author)	Search source	Country	Objectives
Brain death determination: an interprofessional simulation to determine brain death and communicate with families focused on neurology residents (Morris et al. ²⁹)	Embase	USA	To prepare residents, using simulations, to conduct BD determination and communicate with family members.
Obtaining tissues and organs: empowering actions of nurses in the light of ecosystem thinking (Tolfo et al. ³⁰)	PubMed	Brazil	To study, from an ecosystemic perspective, how nurses' work can increase organ and tissue donation rates.
Validation of the factors influencing family consent for organ donation in the UK (Curtis et al. ³¹)	Scopus	United Kingdom	To gain a deeper understanding of how various factors relate to and impact the family's decision regarding organ donation.
Edgework emotion management: A constructivist grounded theory of organ donation nurses' experiences and practices (Avilés et al. ³²)	CINAHL	Chile	To analyze nurses' reports of their interactions with families when requesting donations to improve professional practice.
Factors that influence the care of family members of patients with brain death (Alves et al. ³³)	LILACS	Brazil	To investigate the intervention actions of nurses with family members of patients with BD.
Fragilities and experiences of nurses in the approach to the family of the organ and tissue donor (Oliveira et al. ³⁴)	LILACS	Brazil	To reveal the challenges faced and experiences of nurses when interacting with families of organ and tissue donors.
The gift of life: interprofessional organ donation curriculum in pediatric critical care (Bursac et al. ³⁵)	PubMed	Canada	To present an interprofessional training program developed to empower pediatric intensive care physicians regarding the donation process and support for the families involved.
Challenges in preloss care to parents facing their child's end-of-life: a qualitative study from the clinicians perspective (Kochen et al. ³⁶)	PubMed	Netherlands	To understand the challenges that healthcare professionals face when caring for parents facing the end of their children's lives.
Brain death: health team's experience with parents of children and adolescents (Knihs et al. ⁹)	Scopus	Brazil	To understand how healthcare professionals experience the support provided to parents of children and adolescents during the implementation of the BD protocol.
The experiences of family members of deceased organ donors and suggestions to improve the donation process: a qualitative study (Sarti et al. ³⁷)	Embase	Canada	To investigate the donation process through accounts from interviews with family members of hospitalized patients.
Deceased donor's family experience during the organ donation process: a qualitative study (Fernández-Alonso et al. ³⁸)	LILACS	Spain	To describe how the donors' families experienced nursing care throughout the donation process.
How doctors manage conflicts with families of critically ill patients during conversations about end-of-life decisions in neonatal, pediatric, and adult intensive care (Spijkers et al. ³⁹)	PubMed	Netherlands	To prospectively explore conflicts between staff and family, including their main topics, complicating factors, physicians' conflict management strategies, and the effect of these strategies.
Facilitators and barriers in the donor family interview process from the perspective of hospital staff: a cross-sectional study (Nejatollahi et al. ⁴⁰)	PubMed	Korea	To analyze the similarities and differences between the factors that favor or hinder organ donation in public and private hospitals.
The bereavement experiences of families of potential organ donors: a qualitative longitudinal case study illuminating opportunities for family care (Dicks et al. ¹⁰)	PubMed	Australia	To clarify care opportunities in the context of organ donation from deceased individuals, exploring pre-existing characteristics of the family and healthcare professionals, hospital experiences, and ongoing adjustments through the lens of grief theory.
Evaluation of reasons for not giving donor consent by families of patients with brain death: a retrospective, mixed-method study (Gulsoy et al. ⁴¹)	Embase	Turkey	To identify the reasons why families refuse organ donation after a diagnosis of BD and to detail these justifications.
Family concerns in organ donor conversations: a qualitative embedded multiple-case study (Van Oosterhout et al. ⁴²)	Embase	Netherlands	To explore what family concerns arise in the donation process, how these concerns manifest during and after the donation conversation, and how doctors respond to these concerns during that conversation.

Source: Elaborated by the authors.

Table 4. Articles identified in the searches.

Study design	Level of evidence	Key findings	Strategies capable of supporting the development of educational technologies.
Retrospective ²⁴	III	Factors leading to refusal: religious beliefs (41.3%) and beliefs about not disturbing the integrity of the body after death (37.3%). Factors leading to acceptance: desire to help other people (91%).	Prepare the team on different religious beliefs, the functionality of the donation system, and beliefs related to the body.
Cross-sectional ²⁵	III	When the conversation about the futility of treatment took place ($p = 0.004$), the family understood the term BD ($p = 0.002$) and consulted a donation specialist before requesting donation ($p = 0.001$).	Prepare the team to communicate the BD; prepare the transplant coordinator to contact the family before discussing donation; separate the discussion of organ donation from the communication of death.
Qualitative ²⁶	III	Lack of knowledge related to the organ donation process, especially regarding BD.	Discussions and clinical reasoning to deepen understanding of the steps in diagnosing BD, clinical changes, and outcomes related to its pathophysiology.
Prospective ²⁷	III	Consent rate with trained staff: 58.8%; consent rate without training: 41.4%.	Preparing professionals to communicate early with the family about the brain injury and to explain the Glasgow Coma Scale. Establishing a relationship of trust through clear and open conversations about the patient's clinical situation.
Qualitative ²⁸	III	Families facing unexpected deaths exhibit more intense emotional reactions and less acceptance of death. Inadequate treatment by the staff and weak relationships worsen their understanding of death.	To provide professionals with the opportunity to understand the emotional reactions of families facing the grieving process in tragic and unexpected deaths. The team needs to understand that unexpected deaths, stressors, fragile family relationships, and intensified emotions during this process tend to make understanding death a more difficult time.
Quasi-experimental ²⁹	II	Without training on BD, 25% felt comfortable talking about BD diagnosis; after training, 67% felt comfortable/very comfortable discussing BD.	Discussion of the BD protocol. Simulated family meetings to approximate real practice.
Explanatory mixed-methods study ³⁰	II	There are statistical differences in the support the team provides to families regarding organ donation acceptance.	Training on the topic of organ and tissue donation while still at university. In-depth discussion on supporting families, so professionals can identify care strategies to be with the family in the face of their needs, in the face of the fragility of death and the decision to donate organs and tissues.
Cross-sectional ³¹	III	The patient's ethnicity, religious beliefs, sex, socioeconomic status, and knowledge of a patient's donation decision were strongly associated with consent ($p < 0.001$). In the absence of an organ donation specialist nurse, consent rates were significantly lower for donation after BD (0.031).	Discussion beginning during undergraduate studies and continues throughout the training and development activities, given that it is a complex topic that is difficult for the team to manage and for family members to accept. There is a strong recommendation for professional preparation before beginning work in the donation process.
Qualitative ³²	III	Caring for the family in the organ donation process was demonstrated by recognizing internal and familial emotions, giving meaning to the families' emotions, and making sense of their lived experiences.	Education is essential to support the team in caring for bereaved families, given the significant impact on healthcare professionals in institutions. Therefore, better support is needed through a multidisciplinary approach to assist families throughout the donation process.
Qualitative ³³	III	Family members lacked clarity regarding the diagnosis of BD and, consequently, the entire organ and tissue donation process.	Inclusion of subjects related to this topic in undergraduate nursing programs to strengthen this body of knowledge. Ongoing education to further deepen this important theme in these care settings.
Qualitative ³⁴	III	The main weaknesses involve talking about organ donation, communicating bad news and a diagnosis of BD, and discussing the determining factors for obtaining organs and tissues.	The importance of training and preparing nurses, through the managers responsible for health facilities, regarding discussions about organ donation and the delivery of bad news. Preparing nurses to establish a bond with patients and their families based on mutual trust and a humanistic approach.

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Table 4. Continuation...

Study design	Level of evidence	Key findings	Strategies capable of supporting the development of educational technologies.
Quasi-experimental ³⁵	II	Following the training, the average ability to manage cases increased from 65 to 79, with significant improvements in topics such as communicating bad news, donation after cardiocirculatory death, and neurological determination of death.	It is recommended to expand the curriculum, implement formal educational programs on organ donation in pediatric intensive care units, involve a multidisciplinary team to improve communication and coordination among team members, and teach using real-life cases to enhance professionals' practical skills.
Qualitative ³⁶	III	All healthcare professionals emphasized the importance of supporting parents in the best way possible in response to the emotional demands they face and the grief they experience, since they cannot relieve the end-of-life phase of their children's lives. Healthcare professionals feared disappointing parents by failing to meet their needs, increasing the pressure to provide the best possible care.	To prepare healthcare professionals to deal with sustaining hope versus realistic perspectives, achieving emotional closeness versus emotional distance, and exploring emotions versus containing emotions. The team needs skills to inform about the severity of the child's situation. Skills to develop closeness and trust with parents. Given that, due to their own emotional burden and their fear of becoming emotionally involved, they maintain a certain distance.
Qualitative ⁹	III	Even after developing training programs, they feel the organ donation process is permeated by weaknesses in both the team and the families, which require continuous development.	Ongoing training is necessary to strengthen professionals, especially those who work with bereaved families, understand their emotions and deepen their skills in supporting them in the face of suffering. This ongoing training is important because new situations constantly arise. Discussions are needed in all contexts, from undergraduate studies to the daily work of institutions at the bedside.
Qualitative ³⁷	III	Families report needing greater support during the donation process, including from people with experience in critical care, and after the donation. There is a strong feeling of becoming orphaned of support when the body goes for organ retrieval.	Professionals need to be prepared to improve support during critical moments, especially when organ donation occurs, and the donor is sent for organ retrieval. Discussion of how to support families post-donation. How to continue supporting these individuals when they return home.
Qualitative ³⁸	III	Families highlighted the nurses' kindness, care, and attention as fundamental to the grieving process. Conversations with the nurses were essential in deciding to donate organs.	Discussions related to the team's contact, trust, and credibility with the family are fundamental. The professional needs to be able to develop tact in supporting the family, manage time effectively for each family (clinical situation of death, family structure), and minimize the risk of imprudent comments from other families and even healthcare professionals. The professional needs to be skilled in planning the interview.
Qualitative ³⁹	III	The main conflicts involved: treatment decisions; decision-making moments and/or conversations regarding treatment termination; patients' current and future health status; responsibility for decision-making; and patients' (presumed) wishes.	Conflict management between family members, patient, and staff. Improving communication to inform about prognoses and decisions to discontinue long-term therapy. Preparing the staff, explaining simply and clearly what is happening with the patient, and inviting the family to make decisions together with the staff.
Cross-sectional ⁴⁰	III	Facilitating factors: the team's availability to be with the family (80.7%) and the presence of a nurse at the bedside (57.7%). Regarding barriers: doctors' lack of communication skills (79.2%), poor communication among the medical team (75%), and insufficient time to discuss organ and tissue donation with family members (77.8%).	The involvement of a qualified team in family interviews and their communication skills are fundamental to the success of the interview and to the comfort and support of the families. The team's preparedness to demonstrate their availability is key to the family's understanding of the patient's prognosis.
Qualitative ¹⁰	III	Hospital care has a strong impact on the decision, due to the close relationships formed with the staff, family relationships and values, the understanding of the patient's death, and the ongoing family adjustment.	Training that incorporates trauma-informed lens, grief theory, systems theory, meaning-making, and storytelling will enable healthcare professionals and families to identify and utilize opportunities for symptom reduction, active participation, anticipatory grief, and meaning-making.

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Table 4. Continuation.

Study design	Level of evidence	Key findings	Strategies capable of supporting the development of educational technologies.
Mixed methods ⁴¹	II	The reasons for not donating can be grouped into five themes: distrust (communication difficulties, frustration, anger, not meeting expectations), thoughts that the procedure would not bring benefits, fear (not accepting death, not understanding BD and experiencing the loss), reluctance to compromise bodily integrity, and phobia of social reactions.	Prepare professionals to support families from the moment the patient is admitted to the hospital. Healthcare professionals involved in the donation process need specialized training in this area. All competencies must be developed before they begin their work.
Qualitative ⁴²	III	Family concerns arose from the moment the patient was admitted to the hospital, and became even more pronounced with the bad news and conversations about donation. The main concerns were: the life event of a relative's death; dying well; anxieties and fears about donation; experiences over time; procedural clarity; involving (absent) family; and post-donation concerns.	It is necessary to recognize the family's concerns, as there are situations in which the information provided does not address them. The medical and healthcare team needs to understand the emotions expressed to connect with the families. Understanding that there are different views on life and death among family members and even the team itself. The perception that body mutilation may be linked to culture and religious beliefs. Skills to explore the family's feelings.

Source: Elaborated by the authors.

DISCUSSION

Among the main findings, the challenges in family care stand out, particularly those that involve communication, understanding the stages and diagnosis of BD, support for emotional reactions, respect for the immediate grieving period, and support in the context of organ donation^{9,10, 25-28,32-34,36-38,42}.

The complexity of the process and the ongoing need for training and support for healthcare professionals are evident, since, after training sessions, professionals feel capable of communicating bad news and providing guidance on the diagnosis of BD, with their professional practice anchored in approaches that consider the emotional and cultural dimensions of families^{27-31,35,39}. Therefore, continuing education and the development of strategies for educational technologies play a fundamental role in improving practices related to organ and tissue donation.

The data highlight both the emotional needs and experiences of family members and the healthcare team's competencies and weaknesses in addressing this issue. This is a sensitive context, influenced by multiple factors that affect the decision regarding organ donation, including: religious beliefs, preservation of bodily integrity, communication difficulties on the part of the medical team, insufficient time to discuss with family members, fear, and difficulty in accepting death^{24,31,40,41}. Conversely, factors that favor acceptance of donation are associated with the desire to help other families, prior knowledge about the donation process, the availability of the team to support family members, the presence of a nurse at the bedside, and the bond established between the healthcare team, the patient, and the support network^{24,31,40,41}.

The lack of knowledge and communication among healthcare staff regarding BD and the donation process is frequently associated with inadequate preparation and training, creating a gap that compromises family understanding and acceptance^{29,35}. Educational technologies can serve as effective tools to minimize these weaknesses through simulations and in-depth discussions about the diagnosis of BD, clinical changes, and family communication^{25,27,30,39}.

The importance of humanized, trust-based communication is highlighted in the literature, especially regarding the ability to convey the seriousness of the clinical situation, establish a bond with parents, and manage family conflicts, as these are crucial aspects for the success of the family interview for organ and tissue donation^{25,26,28}. Thus, it is understandable that the difficulty professionals encounter in communicating with families during this time of strong emotional impact also translates into the barriers researchers face when addressing this topic in scientific research. In this sense, educational technologies can simulate complex scenarios, allowing professionals to practice communicating bad news, managing time, and exploring family feelings, minimizing the risk of imprudent comments and improving tact in supporting bereaved families^{30,32-34,42}.

Healthcare professionals face numerous challenges when communicating a BD diagnosis, especially given the religious and cultural beliefs of families, the public's lack of knowledge about the subject, and the grieving process experienced by family members themselves^{25,28,33,42}. The healthcare team's lack of preparedness to communicate with families can make the process even more challenging, as family members need clear, accessible, empathetic communication grounded in active listening. The team's weakness in this aspect constitutes a significant barrier, with the potential to directly compromise the family's decision regarding donation^{25,26,28,30,32,34,42}.

Beyond communication skills, sensitivity to families' religious and cultural beliefs is a determining factor in organ donation decision-making. In many cases, family refusal is associated with conceptions about the integrity of the body after death, with organ removal perceived as mutilation. This perception reflects deeply rooted cultural and religious values. Given this scenario, it is fundamental to train healthcare professionals to welcome and understand these perspectives at a time of extreme family vulnerability. The use of educational technologies emerges as a promising strategy to prepare teams, promoting cultural competencies and offering resources for a more respectful, sensitive, and informed approach to the organ donation and transplantation process^{24,34}.

Emotional support and continuity of care for families, both during and after the donation process, were identified as latent needs. Families reveal a need for greater support during critical moments, especially when the donor is referred for organ retrieval, and a strong perception of lack of support following donation. Educational technologies that include trauma lenses, grief theory, systems theory, and meaning-making and narrative construction can empower professionals to identify and leverage opportunities to reduce anticipatory grief symptoms, foster active participation, and meaning-making^{9,30,32,36,37,41}.

In addition to training professionals in the field, the study reinforces the need to include theoretical and practical education in undergraduate programs on BD, organ donation, and the grief surrounding these topics^{27,31,32}. More than just improving the skills and understanding of new graduates regarding the subject matter, fostering discussions and promoting in-depth theoretical reflection and study on the topic allows for its deconstruction as a taboo in the popular imagination, as well as sparking interest in research in the area, contributing to the expansion and improvement of knowledge about this delicate process, not only for family members but also for professionals^{9,35,41,42}.

In short, strategies supporting the development of educational technologies for organ and tissue donation interviews for children and adolescents should encompass the improvement of technical and scientific knowledge about BD and the donation process, the development of communication skills based on empathy and humanization, an understanding of the cultural and religious dimensions involved, and the provision of continuous emotional support to families. Incorporating these dimensions into educational technologies has the potential to enhance the training of healthcare professionals, thereby contributing to a more sensitive, efficient donation process centered on dignified, respectful care for vulnerable families.

CONCLUSION

The findings of this study demonstrate that the interview for organ and tissue donation in the pediatric context is a complex process, permeated by emotional, cultural, ethical, and communicational elements. In this scenario, educational technologies emerge as promising tools to enhance professional practice by fostering stronger bonds with families, providing empathetic, clear information, and supporting sensitive, respectful management of grief and decision-making. The strategies identified highlight the importance of integrating technical and scientific improvements in BD, sensitivity to cultural beliefs, and emotional support for families during the grieving process. These elements should be incorporated across the board in the training of healthcare professionals, from undergraduate studies to continuing education, especially for those working in pediatric intensive care units.

Despite the relevant contributions, there is a scarcity of studies with robust methodological designs contextualized to the Brazilian reality, underscoring the need for future research to develop, validate, and evaluate the impact of educational technologies applied to the family interview process for organ and tissue donation among children and adolescents. The qualification of listening and professional presence, mediated by technical knowledge and humanized care, can transform pain into an opportunity for solidarity and the continuation of life.

CONFLICT OF INTEREST

Nothing to declare.


AUTHOR'S CONTRIBUTION

Substantive scientific and intellectual contributions to the study: Knihs NS, Burg MCC, Silva AM; **Conception and design:** Knihs NS, Burg MCC; **Data analysis and interpretation:** Knihs NS, Burg MCC, Silva AM, Silveira EL, Betta ESD; **Article writing:** Knihs NS, Burg MCC, Silva AM, Silveira EL, Betta ESD, Silva LAG; **Critical revision:** Knihs NS, Burg MCC, Silva AM, Silveira EL, Betta ESD, Treviso P, Costa JM, Silva LAG; **Final approval:** Knihs NS.

DATA AVAILABILITY STATEMENT

All data are presented in the article.

FUNDING

Conselho Nacional de Desenvolvimento Científico e Tecnológico 

Grant no: Bolsas PIBITI 2024/2025-Edital Propesq 04/202

DECLARATION OF USE OF ARTIFICIAL INTELLIGENCE TOOLS

The authors declare that no artificial intelligence tools were used in the preparation, writing, data analysis, or review of this manuscript.

ACKNOWLEDGEMENT

Not applicable.

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