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Interventions performed by nurses in the maintenance of potential organ donors: a scoping review

Intervenções realizadas por enfermeiros na manutenção do potencial doador falecido: revisão de escopo

Intervenciones realizadas por enfermeras en el mantenimiento de potenciales donantes de órganos: una revisión del alcance

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ABSTRACT

Objective: to map the care interventions provided by nurses in the maintenance of potential deceased organ donors.

Method: a scoping review based on the JBI methodology was conducted from January to July 2025, consulting the following data source: MEDLINE; Scopus; Web of Science; LILACS; Embase; CINAHL; SciELO; Cochrane Library; ProQuest Dissertations Theses Global; Catalog of Theses and Dissertations; Brazilian Digital Library of Theses and Dissertations; and Google Scholar. Studies in English, Spanish, and Portuguese related to the research objective, without time limitations, were included. Duplicate studies, those without full text available, letters to the editor, and those lacking information on population, concept, and context were excluded.

Results: fifty-three studies were included. The scientific evidence was synthesized into eight categories: hemodynamic care; temperature care; ventilatory support; biochemical analysis; blood transfusion care; infection prevention; nutritional support; and corneal care.

Conclusion: nurses perform multiple interventions to prevent, control, and correct changes associated with brain death, such as: administering volume and vasopressor drugs; maintaining protective ventilation; and correcting electrolyte disturbances. However, gaps were also identified in nurses' participation and autonomy in care such as: prescribing and titrating medications; inserting transcutaneous pacemakers; and adjusting mechanical ventilation parameters.

Descriptors: Nursing; Nursing Care; Clinical Management; Organ Transplantation; Brain Death.

RESUMO

Objetivo: mapear as intervenções assistenciais prestadas pelos enfermeiros na manutenção do potencial doador falecido.

Método: revisão de escopo baseada na metodologia JBI, realizada de janeiro a julho de 2025, com consulta nas seguintes fontes de dados: MEDLINE; Scopus; *Web of Science*; LILACS; Embase; CINAHL; SciELO; *Cochrane Library*; ProQuest *Dissertations Theses Global*; Catálogo de Teses e Dissertações; Biblioteca Digital Brasileira de Teses e Dissertações; e Google Acadêmico. Publicações em inglês, espanhol e português relacionadas ao objetivo da pesquisa, sem delimitação de tempo, foram incluídas. Estudos duplicados, sem texto completo disponível, cartas ao editor e sem informação sobre população, conceito e contexto foram excluídos.

Resultados: foram incluídos 53 estudos. As evidências científicas foram sintetizadas em oito categorias: cuidados hemodinâmicos; cuidados com temperatura; suporte ventilatório; análise bioquímica; cuidados com transfusão de sangue; prevenção de infecção; suporte nutricional; e cuidados com as córneas.

Conclusão: os enfermeiros exercem múltiplas intervenções para prevenir, controlar e corrigir alterações da morte encefálica, como: administração de volume e drogas vasopressoras; manutenção de ventilação protetora e correção de distúrbios eletrolíticos. Identificou-se, ainda, lacuna na participação e autonomia dos enfermeiros em cuidados como: prescrição e titulação de medicações; inserção de marcapasso transcutâneo e ajustes de parâmetros da ventilação mecânica.

Descritores: Enfermagem; Cuidados de Enfermagem; Gerenciamento Clínico; Transplante de Órgãos; Morte Encefálica.

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RESUMEN

Objetivo: Mapear las intervenciones de cuidados proporcionadas por las enfermeras en el mantenimiento de potenciales donantes de órganos fallecidos.

Método: se realizó una revisión del alcance basada en la metodología del JBI entre enero y julio de 2025, consultando las siguientes bases de datos: MEDLINE; Scopus; Web of Science; LILACS; Embase; CINAHL; SciELO; Biblioteca Cochrane; ProQuest Dissertations Theses Global; Catálogo de Tesis y Disertaciones; Biblioteca Digital Brasileña de Tesis y Disertaciones; y Google Académico. Se incluyeron publicaciones en inglés, español y portugués relacionadas con el objetivo de la investigación, sin restricciones de tiempo. Se excluyeron los estudios duplicados, aquellos sin texto completo disponible, las cartas al editor y los que carecían de información sobre la población, el concepto y el contexto.

Resultados: se incluyeron cincuenta y tres estudios. La evidencia científica se sintetizó en ocho categorías: atención hemodinámica; atención de la temperatura; soporte ventilatorio; análisis bioquímico; atención de transfusiones sanguíneas; prevención de infecciones; soporte nutricional; y atención corneal.

Conclusión: Las enfermeras realizan múltiples intervenciones para prevenir, controlar y corregir los cambios asociados con la muerte cerebral, tales como: administrar volumen y fármacos vasopresores; mantener la ventilación protectora; y corregir las alteraciones electrolíticas. Sin embargo, también se identificaron deficiencias en la participación y autonomía de las enfermeras en la atención, tales como: prescribir y ajustar medicamentos; insertar marcapasos transcutáneos; y ajustar los parámetros de la ventilación mecánica.

Descriptores: Enfermería; Cuidados de Enfermería; Manejo Clínico; Trasplante De Órganos; Muerte Cerebral.

INTRODUCTION

The disparity between the need for and availability of organs for transplantation is a worldwide reality, considered a global problem[1]. Seeking to equalize this situation, there are increasing efforts to improve the donation and transplantation process[1-2].

In this context, initiatives aimed at optimizing the clinical maintenance of potential donors have been successful. Evidence suggests that competent and prepared teams to provide adequate care to deceased potential donors enable more donations, improve graft quality and increase organ acceptance[3-4].

Nurses, as members of the teams that care for potential donors and as managers of critical care units, occupy a strategic position in adopting measures aimed at assisting these patients[5]. Through the provision of effective, safe and quality care, nurses have great potential to contribute to the effectiveness of organ donation, increasing the number of lives saved by transplantation. For that, nurses need to continually improve their skills [5].

It should be noted that successful initiatives aimed at including nurses more prominently in the provision of care to potential donors have already been underway[6-8]. An example of this is the organ recovery centers created in the United States of America (USA), where there are donor management protocols that allow for rigorous intensive care management by nurses[6-8]. However, this is a unique reality, not identified in other countries [6-8].

The experience of organ retrieval centers in the USA, although recent, has shown promising results, impacting the increase in the quantity and quality of transplanted organs[6-8]. It is worth highlighting that the nurses who work in organ maintenance in these centers possess a specialized knowledge base, combined with complex decision-making skills and clinical competencies[9].

In Brazil, however, the reality is different: there is a lack of protocols, guides, recommendations, or other specific material intended to support nurses in maintaining potential donors[5]. This fact, in addition to weakening the performance of nurses in this stage of the process, goes against Resolution No. 710 of 2022 of the Federal Nursing Council, which provides that nursing care must be supported by institutional protocols based on scientific evidence[10].

The main investigator of this study, a nurse who has worked for 15 years in a Brazilian Transplant Center, has observed in practice, through her daily monitoring of the management of care for potential donors in hospitals, the need for definitions regarding the interventions that nurses should perform in the clinical management of patients in brain death (BD), as well as the relevance of the qualification of professionals to work in this phase of the process. This reality is corroborated in the literature[2,5,9], which reinforces the importance of defining the scope of the nurse's role, combined with their qualification to work in the area.

Thus, due to the expressiveness and relevance of nurses in the context of organ donation and transplantation, in addition to the aforementioned deficiencies, it is essential to understand how these professionals have been included in the measures adopted in the maintenance phase. To this end, it is important to know which care activities are actually being performed and how much preparation and autonomy nurses have in managing changes resulting from BD[5].

The information and guidance found will contribute to guiding the actions of nurses involved in the donation and clinical use of human organs for transplantation, in order to optimize the quality and minimize the risks of these procedures, with a view to ensuring adequate post-donation and post-transplant results[2,5]. In addition, it is expected to foster initiatives aimed at expanding the scope of nurses' actions in the national scenario, advancing towards transforming the practice of these professionals through preparation for the provision of more complex care, with greater autonomy and agility in decision-making, based on scientific evidence[10,11].

Moreover, it is necessary to highlight the actions performed by nurses in the care provided to potential donors, emphasizing the importance and leading role of the profession also in this stage of the organ donation and transplantation process[5].

Therefore, this research aims to map the interventions developed in the practical field of nurses who provide care to potential deceased donors. Thus, the guiding question chosen was: What are the care interventions performed by nurses in the maintenance of potential deceased donors?

METHOD

This is a scope review developed from the JBI recommendations[12], which aimed to map scientific production based on the steps presented below. The checklist Preferred Reporting Items for Systematic reviews and Meta- Analyses extension for Scoping Reviews, whose study protocol was registered in the Open Science Framework. (DOI 10.17605/OSF.IO/GJ56X), was used.

In identifying the guiding question (1st stage), the research question was developed based on the Population, Concept, and Context (PCC) strategy, in which Population refers to nurses, Concept refers to nursing interventions, and Context refers to the maintenance of the potential deceased donor. The question formulated was: What interventions are performed by nurses for the maintenance of the potential deceased donor?

In the search for relevant studies (2nd stage), the materials were retrieved between January and April 2025 in the following databases: Medical Literature and Retrieval System Online (MEDLINE); Scopus; Web of Science; *Literatura Latino-Americana e do Caribe em Ciências da Saúde* (LILACS); Embase (Elsevier); Cumulative Index to Nursing & Allied Health Literature (CINAHL); Scientific Electronic Library Online (SciELO); and Cochrane Library. To make the search broader and more complete, the following grey literature websites were also consulted: ProQuest Dissertations Theses Global (PQDT Global); *Catálogo de Teses e Dissertações* (CAPES); *Biblioteca Digital Brasileira de Teses e Dissertações* (BDTD); and Google Scholar, as described in Chart 1. In addition to these, a reverse search was conducted by identifying articles in the references of publications on the same topic.

Chart 1 – Presentation of databases and search strategies. Florianópolis, SC, Brazil, 2025

Database	Search strategy
MEDLINE, Embase, CINAHL Scopus, *Web of Science,* PQDT Global, *Cochrane Library*	("Organ Donor" OR "Organ Donors" OR "Transplant Donor" OR "Transplant Donors" OR "Organ donation" OR "Organ Transplantation" OR "Organ Transplantations") AND ("Critical Care Nursing" OR "Care Nursing" OR "Nursing Care" OR "Nursing Cares" OR "Nursing intervention" OR "Nursing interventions" OR "Nursing management")

Chart 1 – Cont.

Database	Search strategy
LILACS SciELO BDTD	("Doador de Órgão" OR "Doador de Órgãos" OR "Doador de Transplante" OR "Doadores de Transplante" OR "Doação de órgãos" OR "Transplante de Órgãos" OR "Transplantação de Órgão" OR "Transplantação de Órgãos" OR "Transplante de Órgão" OR "Donador de Órgano" OR "Donadores de Órganos" OR "Donante de Órgano" OR "Donantes de Órganos" OR "Donación de órganos" OR "Trasplante de Órganos" OR "Trasplantación de Órgano" OR "Trasplantación de Órganos" OR "Trasplante de Órgano" OR "Organ Donor" OR "Organ Donors" OR "Transplant Donor" OR "Transplant Donors" OR "Organ donation" OR "Organ Transplantation" OR "Organ Transplantations") AND ("Enfermagem de Cuidados Críticos" OR "Enfermagem de Cuidados" OR "Cuidados de Enfermagem" OR "Cuidado de Enfermagem" OR "Cuidados em enfermagem" OR "Cuidado em enfermagem" OR "Assistência de Enfermagem" OR "Atendimento de Enfermagem" OR "Intervenção de enfermagem" OR "Intervenções de enfermagem" OR "Manejo de enfermagem" OR "Enfermería de Cuidados Críticos" OR "Enfermería de Cuidados" OR "Atención de Enfermería" OR "Cuidados en enfermería" OR "Cuidado en enfermería" OR "Cuidados de Enfermería" OR "Cuidado de Enfermería" OR "Intervención de enfermería" OR "Intervenciones de enfermería" OR "Manejo de enfermería" OR "Critical Care Nursing" OR "Care Nursing" OR "Nursing Care" OR "Nursing Cares" OR "Nursing intervention" OR "Nursing interventions" OR "Nursing management")
CAPES	Doac* AND Órgão* AND Cuidad* AND Enfermagem
Google Acadêmico	Portuguese: ("Doador de Órgão" OR "Doador de Órgãos" OR "Doação de órgãos" OR "Transplante de Órgãos" OR "Transplante de Órgão") AND ("Enfermagem de Cuidados" OR "Cuidados de Enfermagem" OR "Cuidado de Enfermagem" OR "Cuidados em enfermagem" OR "Cuidado em enfermagem" OR "Assistência de Enfermagem") Spanish: ("Donador de Órgano" OR "Donadores de Órganos" OR "Donante de Órgano" OR "Donantes de Órganos" OR "Trasplante de Órganos" OR "Trasplante de Órgano") AND ("Enfermería de Cuidados" OR "Atención de Enfermería" OR "Cuidados en enfermería" OR "Cuidado en enfermería" OR "Cuidados de Enfermería" OR "Cuidado de Enfermería") English: ("Organ Donor" OR "Organ Donors" OR "Transplant Donor" OR "Transplant Donors" OR "Organ donation" OR "Organ Transplantation" OR "Organ Transplantations") AND ("Care Nursing" OR "Nursing Care" OR "Nursing Cares" OR "Nursing intervention" OR "Nursing interventions" OR "Nursing management")

Source: Authors, 2025.

Publications addressing nursing care aimed at maintaining potential deceased donors for transplantation were included, in English, Spanish, and Portuguese, without time limitations. Duplicate studies, letters to the editor, studies without full text available, and those lacking information on the population, concept, and context of interest to this study were excluded.

In the study selection phase (3rd stage), after the search, two independent reviewers with experience in the field of donation and transplantation exported the identified documents to the Rayyan® application (www.rayyan.ai) (version 2024) to manage references and remove duplicates. Titles and abstracts were screened for blind review according to the inclusion criteria by the two reviewers, with a third reviewer assessing discrepancies in search of consensus.

In the data extraction phase (4th stage), after the definition of the materials to be included, they were read again, blindly, and any doubts were clarified by the third evaluator. Then, the data were extracted using a Microsoft Excel® spreadsheet (version 2021), created by the authors, from the materials that comprised

the sample (title, authors, year of publication, study location, objective, design, evidence/interventions developed by the nurses).

In the synthesis of results (5th stage), after exhaustive reading of the information by the researchers, the data were synthesized into tables and figures. In the presentation of evidence (6th stage), the main evidence was grouped by similarities into eight categories: hemodynamic care; temperature care; ventilatory support; biochemical analysis; blood transfusion care; infection prevention; nutritional support; and corneal care.

RESULTS

The search strategy on the selected platforms resulted in 2,543 records. In addition to these, four more articles were included through reverse search, as they were considered potentially eligible, totaling 2,547 publications. After removal of duplicate records (527), 2,020 remained, which were screened by reading the titles and abstracts, resulting in the exclusion of 1,872 studies. This left 148 publications to be read in full and evaluated for eligibility. Of these, 95 were excluded for not meeting the study's objective. Thus, 53 studies constituted the final sample (Figure 1).

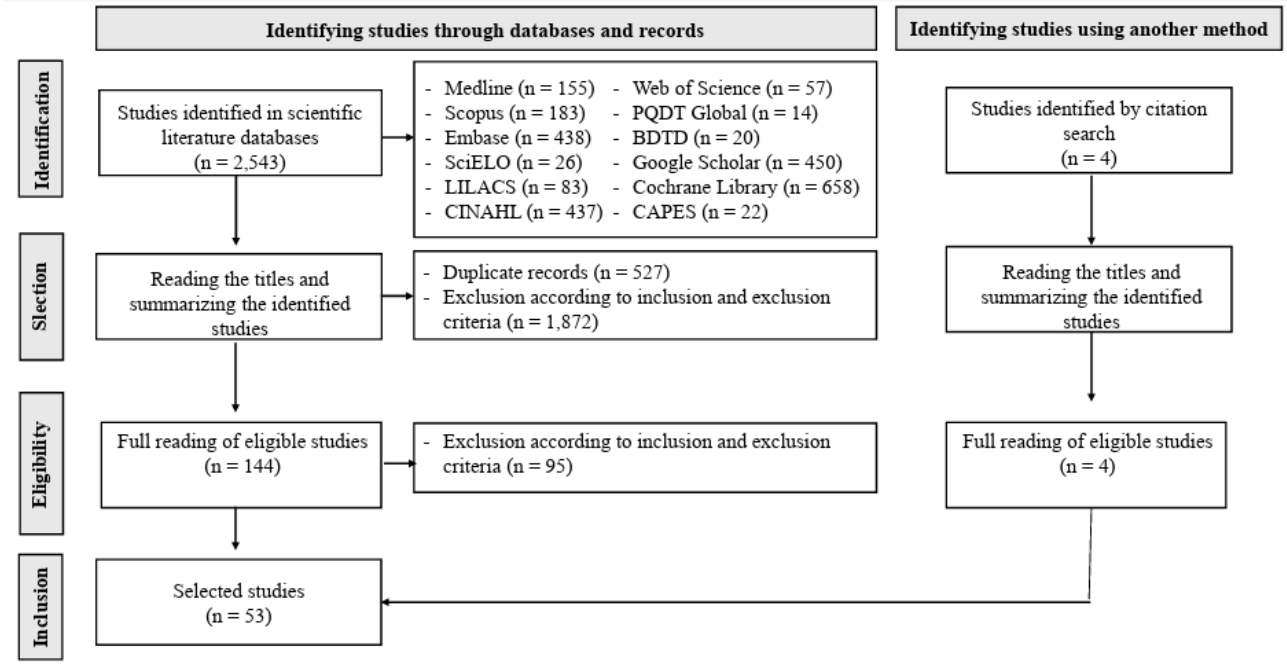

Figure 1 - Flowchart of the selection of studies for scoping review. Florianópolis, SC, Brazil, 2025
Source: Authors' production adapted from the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

Of the 53 records included, 37 were published in the American continent (27 in Brazil, four in the USA, one in Chile, one in Cuba, one in Ecuador, one in Peru, one in Mexico, and one in Argentina); 15 in Europe (12 in Spain, two in Poland, and one in Portugal); and one in Asia (Saudi Arabia). Regarding the year of publication, eight were published between 2001 and 2010, 27 between 2011 and 2020, and 18 between 2021 and 2025. Concerning the methodology used, 37 were review studies.

Due to the extent of the materials obtained, it will not be possible to present all the data in full in this article. Therefore, summarized information from these findings will be presented in Charts 2 and 3. The remaining information is available for consultation as supplementary material. (DOI 10.17605/OSF.IO/GJ56X).

Chart 2 – Characterization of the publications included in the scoping review according to author, title, country, objective and study design. Florianópolis, SC, Brazil, 2025

ID	Author	Title	Country	Objective	Design
A1	Sesma AM, Ollo MZ, 2001[13]	*Cuidados de enfermería en el mantenimiento del donante potencial de órganos en muerte encefálica*	Spain	Describe the pathophysiological changes that occur in donors after brain death and describe the nursing care for each of these changes.	Literature review
A2	Juan JRB, 2005[14]	*Cuidados de enfermería en uci en el mantenimiento del potencial donante de órganos y tejidos*	Spain	Describe the pathophysiological changes that occur during brain death and the nursing care involved.	Experience report
A3	Del Duqui -Lemes MM, Ribeiro-Bastos MA, 2007[15]	*Os cuidados de manutenção dos potenciais doadores de órgãos: estudo etnográfico sobre a vivência da equipe de enfermagem*	Brazil	To understand the experience of the nursing team in caring for potential organ donors.	Ethnographic study
A4	Guetti NR, Marques IR, 2008 [16]	*Assistência de enfermagem ao potencial doador de órgãos em morte encefálica:* [review	Brazil	Describe the role of the nurse in providing physiological care to a potential organ donor.	Literature review
A5	Amorim VCD, Avelar TABA, Brandão GMODN, 2010[17]	*A otimização da assistência de enfermagem ao paciente em morte encefálica: potencial doador de múltiplos órgãos*	Brazil	To understand nursing care for patients with brain death and potential multiple organ donors.	Descriptive study
A6	Souto TC, 2010[18]	*O indivíduo em situação de morte encefálica: importância do cuidado de enfermagem para manutenção do potencial doador de órgãos*	Brazil	To identify in the literature the necessary care for an individual in a state of brain death in order to preserve them as a potential organ donor.	Integrative review
A7	Mendonça AS, Castro DC, Brasileiro ME, 2010 [19]	*Assistência de enfermagem na manutenção do potencial doador de órgãos*	Brazil	To identify the role of the nurse in providing care to potential multiple organ donors.	Bibliographic study
A8	Marcelino CAG, Silva ABV, Kobayashi RM, Ayoud AC, Conceição AP, 2010 [20]	*Diagnósticos e intervenções de enfermagem aplicáveis ao potencial doador de órgãos e tecidos*	Brazil	To identify the main nursing diagnoses and interventions related to potential organ and tissue donors.	Experience report
A9	Pacheco BS, Campos PC, Silva CRM, 2011[21]	*Assistência de enfermagem ao potencial doador de órgãos*	Brazil	To identify the role of the nurse in assisting potential organ donors.	Literature review
A10	Pedrosa EH, Honório RPP, Borges MCLA, Carvalho SMA, Machado EFS, 2011[22]	*Alterações fisiopatológicas na morte encefálica e os cuidados de enfermagem: uma revisão de literatura*	Brazil	To map the scientific production on the pathophysiological changes in brain death and the nursing care inherent to these changes.	Literature review

Chart 2 – Cont.

ID	Author	Title	Country	Objective	Design
A11	Hermosilla González PA, Rocha Ortiz S, Rodríguez Vidal M, 2012[23]	*Cuidados de enfermería en las etapas del proceso donación-trasplante en Chile, aplicado a un caso clínico*	Chile	Apply the steps of the donation-transplantation process to a real-life case from a hospital in Chile and identify the nursing care provided throughout the donation-transplantation process.	Clinical case/ case study
A12	Liberato SMD, Mendonça AEO, Freire ILS, Dantas RAN, Torres GV, 2012[24]	Nursing care of the potential donor of organs after brain death: integrative review	Brazil	To characterize the scientific production on the maintenance of the potential for multiple organ donation, highlighting aspects relevant to nursing.	Integrative review
A13	Molina ER, 2013[25]	*Cuidados de enfermería en el mantenimiento del donante de órganos con muerte encefálica. Los grandes desconocidos*	Spain	Develop a nursing care plan for organ donor treatment based on scientific evidence.	Literature review
A14	Reis PAD, Hansen LL, Osis SL, 2013[26]	*Cuidados intensivos de enfermagem na manutenção do potencial doador de órgãos e tecidos em morte encefálica: estudo de caso*	Brazil	To describe the systematization of nursing care for a patient with a clinical diagnosis of brain death, in order to facilitate organ donation.	Qualitative research
A15	Araujo JPMD, Aguiar VM, Amaral TLM, Genzini T, Prado PRD, 2014[27]	*Padronização da assistência de enfermagem na manutenção de múltiplos órgãos no potencial doador adulto*	Brazil	To conduct a systematic review of the pathophysiological changes in potential brain-dead donors, listing the nursing care to be provided.	Systematic review
A16	Barrio CM, 2015[28]	*Protocolo de cuidados de enfermería del paciente en muerte encefálica potencial donante de órganos*	Spain	Develop a unified and updated protocol to guide the nursing team on the care for maintaining potential donors in cases of brain death.	Literature review
A17	Emperador EC, Puy JFL, 2015 [29]	*Protocolo de cuidados de enfermería al potencial donante de órganos en muerte encefálica*	Spain	Recognize the patient's physiological changes and provide necessary care. Identify appropriate vital signs and parameters, and detect changes through continuous monitoring. Provide maintenance care and psychological support to the family.	Nursing care protocol
A18	Nóbrega EA, 2015[30]	*A importância da assistência de enfermagem ao potencial doador de órgãos em morte encefálica: uma revisão da literatura*	Brazil	To identify and highlight the importance of nursing care for potential organ donors.	Literature review

Chart 2 – Cont.

ID	Author	Title	Country	Objective	Design
A19	Ballesteros AQ, 2016[31]	*Caso clínico: cuidados de enfermería en un potencial donante de órganos. Mantenimiento en UCI*	Spain	Develop a plan of nursing interventions and activities aimed at maintaining organs after brain death in the potential donor patient.	Literature review and case study
A20	Botelho JO, Claudino A, Sousa P, 2016[32]	*Cuidados de enfermagem ao paciente com morte encefálica*	Brazil	To understand the nursing care provided to patients with brain death.	Literature review
A21	Costa CR, Costa LPOTENCIAL DONOR, Aguiar N, 2016[33]	*A enfermagem e o paciente em morte encefálica na UTI*	Brazil	To identify the role of the nursing team in the care provided to brain-dead patients, highlighting essential procedures for maintaining the potential donor, assisting the family, and monitoring all vital functions until the moment of organ donation.	Literature review
A22	Rojo CAM, 2017[34]	*Protocolo de cuidados de enfermería del paciente em muerte encefálica potencial donante de órganos y tejidos*	Cuba	To develop a care protocol for the maintenance of potential organ donors, unifying information collected from different bibliographic sources.	Literature review
A23	Diez MR, 2017[35]	*Cuidados de enfermería en el paciente en muerte encefálica candidato a donante de órganos*	Spain	Describe the current situation regarding the nursing care necessary for the maintenance of brain-dead patients who are candidates for organ donation.	Literature review
A24	Fabiana P, 2017[36]	*Trabajo integrador cuidados de enfermería en el potencial donante*	Argentina	To conduct a literature review on nursing care in the maintenance of potential donors, in order to preserve as many organs as possible for transplantation.	Literature review
A25	Trigueros RH, 2017[37]	*Los cuidados de enfermería en el mantenimiento del potencial donante de órganos*	Spain	To understand the actions of the nursing team in maintaining care for potential organ donors in units such as Intensive Care Units.	Literature review
A26	Malpica-Beltrán MM, 2017[38]	*Cuidados de enfermería y mantenimiento de un potencial donante de órganos en uci: caso clínico*	Spain	Develop a care plan for a patient who becomes a donor after being diagnosed with brain death. Explain the role of nursing professionals in organ maintenance and the care of a potential donor.	Literature review and case study

Chart 2 – Cont.

ID	Author	Title	Country	Objective	Design
A27	Kosek S, Klimczyk A, 2017 [39]	Caring for a potential organ donor at an intensive care unit: the role of the nurse	Poland	To present the procedures related to the declaration of brain death and to portray the role of the nurse in the care of a potential organ donor in an Intensive Care Unit.	Review
A28	Merino- Estébanez C, 2018[40]	*Mantenimiento del donante de órganos en muerte encefálica por enfermería: revisión sistemática*	Spain	To understand the pathophysiological changes that occur after brain death and the nursing care directed at them in order to subsequently perform organ retrieval.	Systematic review
A29	Costa KL, Morais CS, Machado MM, Carvalho LFR, 2018[41]	*Assistência de Enfermagem ao Potencial Doador de Órgãos em Morte Encefálica*	Brazil	To conduct a survey of the main scientific evidence describing nursing care for potential organ donors in cases of brain death.	Integrative review
A30	Tolari VA, 2019[42]	*Aplicativo-guia para manutenção do potencial doador pediátrico*	Brazil	To develop an application to guide nursing care for children suspected of brain death and for potential pediatric organ donors.	Methodological study
A31	Haor B, Wróblewska S, Daszuta K, Daszuta D, 2019 [43]	Confirming the Brain Death and the Nurse's Tasks in the Care of Potential Organ Donors and Their Families	Poland	To analyze the nurse's tasks in the care of organ donors after confirmation of brain death.	Case report
A32	Ramos ASMB, Carneiro AR, Pessoa DLR, Fontenele RM, Machado MCAM, Nunes SFL, 2019[44]	*O enfermeiro no processo de doação e transplante de órgãos.*	Brazil	Reflecting on the importance of nurses in organ donation and procurement.	Integrative review
A33	Benítez Hernández P, 2020[45]	*Cuidados de enfermería al paciente donante de órganos y tejidos en muerte encefálica. Revisión Bibliográfica*	Spain	To obtain evidence regarding nursing care for organ donor patients in brain death.	Literature review

Chart 2 – Cont.

ID	Author	Title	Country	Objective	Design
A34	Anecleto AS, da Silva JLL, da Silva JVL, Oliveira MA, Brezolin CA, Soares LM, 2020 [46]	*O enfermeiro intensivista frente ao paciente potencial doador de órgãos*	Brazil	Describe the nursing care involved in maintaining potential organ and tissue donors in the Intensive Care Unit.	Literature review
A35	da Silva NO, Santos ATF, Fonseca NH, Figueiredo AS, Marinho BBO, Bonifácio FAN et al., 2020[47]	*Manutenção do potencial doador de órgãos e tecidos: atuação do profissional enfermeiro*	Brazil	To identify the role of the nursing professional in maintaining the potential of organ and tissue donors.	Integrative review
A36	Simón EF, 2021[48]	*Cuidados enfermeros en muerte encefálica: revisión bibliográfica*	Spain	To present the most relevant aspects of maintaining potential organ donors, considering nursing care for the patient.	Literature review
A37	Andrade TJFD, 2021[49]	*O enfermeiro na manutenção do potencial doador de órgãos: revisão integrativa*	Brazil	To analyze the scientific evidence regarding nursing care in maintaining the potential organ donor.	Integrative review
A38	Luís SMC, 2022[50]	*Identificação e manutenção do potencial doador de órgãos em morte cerebral: intervenções de enfermagem.*	Portugal	To develop scientific, technical, and ethical skills in individuals undergoing ventilatory and/or artificial circulatory support. To identify and maintain potential donors in cases of brain death and develop competencies in this area.	Internship report
A39	Shepa MFD, Fontenele RM, 2022[51]	*Boas práticas de enfermagem ao potencial doador de órgãos em morte encefálica: revisão integrativa.*	Brazil	To identify the production of knowledge about good nursing practices in the care of potential organ donors in cases of brain death.	Integrative review
A40	da Rocha CAR, Rocha JLM, 2022[52]	*A importância do enfermeiro na manutenção do possível doador de órgãos na UTI: revisão da literatura nos últimos dez anos,*	Brazil	Understanding the maintenance of potential organ donors from the perspective of the intensive care nurse.	Literature review

Chart 2 – Cont.

ID	Author	Title	Country	Objective	Design
A41	Bery A, Ali A, Cypel M, Kreisel D, 2022 [7]	Centralized organ recovery and reconditioning centers	United States of America	Analyze the implementation of specialized centers to optimize donor management.	Review
A42	Bery A, Marklin G, Itoh A, Kreisel D, Takahashi T, Meyers BF et al., 2022[6]	Specialized donor care facility model and advances in management of thoracic organ donors	United States of America	To discuss donor management models and review specific strategies for optimizing thoracic organ transplantation.	Literature review
A43	Chacha MIV, 2023[53]	*Cuidados de enfermería a órganos y tejidos donados para pacientes críticos*	Ecuador	To propose relevant aspects of nursing care for patients in critical areas awaiting organ and tissue donation in Ecuador.	Literature review
A44	Dias MS, Oliveira ACD, 2023 [54]	*Assistência de enfermagem ao paciente com morte encefálica e potencial doador de órgãos*	Brazil	To analyze nursing care in the Intensive Care Unit focused on brain death and the appropriate care for maintaining the organs of potential donors.	Literature review
A45	Guedes MRS, Galindo ARF, Marques BCS, Buarque BS, Leite EFS, Barbosa HS et al., 2023[55]	*Manejo do enfermeiro na manutenção do potencial doador de órgãos na unidade de terapia intensiva: uma revisão integrativa*	Brazil	Describe the nursing care provided to potential organ donors in the intensive care unit.	Integrative review
A46	Tavares, JFO, Cunha, DJNM, 2023[56]	*O papel do enfermeiro na manutenção do potencial doador de órgãos em morte cerebral: revisão integrativa da literatura*	Brazil	To identify the nursing interventions necessary for the maintenance and successful completion of organ transplantation in brain-dead patients.	Review
A47	de Andrade DC, Neves NFL, Queiroz MS, Oliveira POTENCIAL DOADORCA, Maia CMAFG, de Souza LF, 2023[57]	*Manutenção hemodinâmica de múltiplos órgãos em doador elegível adulto falecido*	Brazil	To identify the national scientific production on nursing care for eligible organ donors in cases of brain death.	Integrative review
A48	Solís-López TJ, Gallegos-Martínez J, 2023[58]	*Clinical guide for nursing interventions in the procurement of organs from adults with brain death*	Mexico	To develop a clinical guide for nursing interventions in organ procurement in brain-dead adults using the NANDA-NOC-NIC taxonomy.	Technological innovation - clinical guide

Chart 2 – Cont.

ID	Author	Title	Country	Objective	Design
A49	Lysakowski S, Machado KM, Rocha D, 2023[59]	Manual de enfermagem em doação e transplante de órgãos e tecidos	Brazil	To guide and advise multidisciplinary teams in their work related to organ and tissue donation and transplantation.	Book
A50	Marklin GF, Brockmeier D, Spector K, 2023[8]	The 20-year paradigm shift toward organ recovery centers: 2,500 donors at Mid-America Transplant and broader adoption across the United States	United States of America	Review the history and describe the current situation of hospital-independent organ procurement centers.	Review
A51	Najmi FH, Otayf MAM, Harby SAA, Mousa EMH, Abusharha AA, Alshaikh ZMH *et al*., 2024[60]	Brain death: a comprehensive overview of nursing interventions-an updated review	Saudi Arabia	To provide a synthesis of nursing interventions, diagnostic criteria, and treatment strategies for brain-dead patients, emphasizing evidence-based practices and compassionate care.	Review
A52	Quiroz MMC, 2024[61]	*Revisión crítica: cuidados de enfermería en el mantenimiento del paciente donante de órganos en el servicio de emergencia*	Peru	Identify the nursing care required for organ donor maintenance in the emergency room.	Literature review
A53	Vail EA, Bakhru RN, McGinity AC, Sarge T, Heimbach JK, Tompeck AJ *et al*., 2025[62]	Best practices for intensivists planning and opening hospital-based deceased organ donor care units: part 1	United States of America	To describe the benefits and limitations of hospital-based donor care units and to gather resources and shared experiences in this area.	Experience report

Regarding the mapping of interventions developed by nurses in the clinical management of potential donors, actions focused on hemodynamic maintenance stood out. In addition to these, care directed at temperature maintenance, ventilatory support, biochemical analysis, nutritional support, infection prevention, blood transfusion care, and corneal care were also highlighted, as presented in Chart 3.

Chart 3 – Categories of care and interventions developed by nurses in the maintenance of potential organ donors based on the studies included in the scoping review. Florianópolis, SC, Brazil, 2025

Hemodynamic care
- Monitoring and control of vital signs and/or control of hemodynamics[8, 13-61]
- Monitoring of ECG, heart rhythm and arrhythmias[13-14, 16-18, 20, 24-25, 29, 31-32, 34-35, 38, 40-42, 44-45, 48-49, 56, 59]
- Bladder catheterization[14, 19, 21, 23-25, 28-30, 32, 34-37, 40, 43, 45, 48, 50, 54-57, 59]
- Monitoring of diuresis/urine output[14, 19, 21, 23-25, 28-30, 32, 34-37, 40, 43, 45, 48, 50, 54-57, 59]
- Fluid replacement and/or medication[13-14, 17-18, 20-26, 28, 31-32, 34, 36-38, 40-43, 45-49, 52-59, 61]
- Monitoring of CVP[19, 20-21, 24-31, 34-38, 40-41, 45, 48, 50, 54, 56]
- Fluid/hydro-electrolytic balance assesssment[16-18, 22, 24-26, 30, 32, 37, 41, 45, 48, 51-52, 55, 57, 59]
- Monitoring of CPP[13, 25]
- Monitoring of mucosal hydration and skin turgor/skin fold thickness[13, 23-25, 36-37, 48]
- Monitoring of pulmonary pressure and/or cardiac output using a Swan Ganz catheter[14, 25, 28, 34-37, 40]
- Advanced and basic CPR maneuvers if cardiac arrest occurs[13, 16-18, 22, 24-25, 27, 31, 35, 37, 40, 45, 56, 59, 62]
- Performing echocardiography[6]
- Performing intensive care ultrasound[6-8, 62]
Arterial catheter insertion[6-8, 18, 62]
Central venous catheter insertion[6-8, 62]
- Insertion of dialysis catheter[6, 8, 62]
Temperature precautions
-Temperature monitoring[13-16, 18-21, 26-29, 31, 34, 36-38, 40, 42-45, 47-50, 52, 56-59]
- Maintaining the ambient temperature between 22-24° C[13-14, 27-29, 31, 34, 36-37, 40-43, 45, 48, 52, 56, 59]
- Infusion of warmed intravenous solutions[16-18, 27, 31, 34, 37-38, 40-43, 48-49, 56, 59]
- Administration of warmed fluids in gastric and bladder lavage[16-18]
- Installation and control of thermal blanket/mattress[13-24, 26-29, 31, 34, 36-38, 40-45, 48-49, 52-53, 56, 59]
- Warming of inspired gases in mechanical ventilation and/or performing heated nebulization[13, 16-17, 20, 22, 24, 27-29, 34, 38, 45, 56, 59]
- Outdoor heating with heat lamps/spotlights[13 , 24, 26, 29, 41, 56]
- If hyperthermia occurs, discontinue external heat, administer medication, use cold compresses, and cool the environment[38,58-59]
Ventilatory support
- Monitoring of the functioning and parameters of the mechanical ventilator[8, 13-14, 16-17, 20, 22, 24-26, 28-29, 31, 34-36, 38, 40, 43, 46, 49, 53, 55, 59]
- Maintain gas humidification and/or use a humidifier filter with periodic replacements[13-14, 22, 24-25, 28-29, 34, 36-38, 40, 45, 48]
- Performing periodic manual insufflations to prevent atelectasis[31, 38]
- Continuous monitoring of SpO_2 by pulse oximetry[13, 20, 25, 29, 33-34, 44-45, 50, 52]
- Monitoring of adverse effects of mechanical ventilation (tracheal deviation, infection, barotrauma, reduced cardiac output, gastric distension or cutaneous emphysema)[14, 25, 28, 38-39]
- Heating of inspired gases[22,36]
- Interpretation and monitoring of blood gas analysis results[13-14, 16-17, 24-28, 34, 36-37, 40-41, 43-44, 46, 49-50, 52, 56, 59]
- Performing lung auscultation and identifying abnormalities[26, 38-39, 52]
- Performing tracheobronchial secretion aspiration(sterile technique) [13-14, 19-22, 24-31, 33-34, 36-43, 45-46, 48-54, 56-58, 60]
- Monitoring of the positioning/pressure of the endotracheal tube cuff) [13 , 24-27, 29, 31, 36-37, 41-43, 45, 48-49, 52]
- Positioning the head of the bed at a 30° angle[13, 17, 21, 24-30, 34, 36, 38, 43, 45, 48-49, 54, 57]

Chart 3 – Cont.

- Performing decubitus changes/postural changes[14, 17, 27-30, 49, 54] - Performing bronchoscopy and bronchoalveolar lavage[27] - Performing endotracheal tube exchange[62] - Insertion of chest drain[6, 8, 62] - Therapeutic fiber optic bronchoscopy[6-8, 62]
Biochemical analysis
- Collection of blood samples (arterial and venous)[13-14, 16-17, 20, 23-25, 27-29, 34, 36-37, 40-41, 43-44, 46, 49-50, 52, 56, 59] - Monitoring of blood tests and electrolyte levels (sodium, potassium, calcium, chloride, phosphorus, and magnesium) and monitoring of electrolyte balance[13-14, 16-18, 20, 22-23, 25-26, 29, 31, 34, 36, 43, 49, 57-58] - Blood gas analysis[13-14, 16-17, 20, 24-25, 27-29, 34, 36-37, 40-41, 43-44, 46, 49-50, 52, 56, 59] - Monitoring of urine specific gravity[19, 21, 25, 54] - Checking and recording capillary blood glucose levels[14-26, 32, 34-36, 40, 42-43, 45-46, 48-49, 52, 55-56, 58] - Treatment of alterations: hypo/hypernatremia; hypo/hyperglycemia[16, 25, 28, 35-36, 38, 40, 46, 58]
Care during blood transfusion
-Monitoring blood coagulation[15, 19, 20, 25, 33, 35-36, 38, 41, 44, 47, 49, 54, 56] - Observation and reporting of bleeding/coagulation disorders, such as hematuria, gingival bleeding or persistent bleeding, disseminated intravascular coagulation, hemorrhages from external lesions, bleeding from skin lesions or other [13, 16-18, 24-25, 29, 35-36, 40, 48, 52, 58] - Assessment of the need for transfusion[49, 55, 57] - Administration of plasma, platelets, or packed red blood cells as prescribed[13, 24-25, 29, 34-36, 39, 48-49, 58]
Infection prevention
-Maintenance of personal hygiene[13, 15, 19-20, 23, 25, 28-29, 31, 33-34, 36-37, 39-43, 45-49, 51, 53-54, 56-57, 60] -Maintenance of oral hygiene[25-26, 34, 36-37, 39, 42-43, 45, 50, 52] - Inspection of skin and mucous membranes for the presence of erythema, heat, exudates and lesions[38, 53] - Prevention of pressure injuries, such as changing positions, pyramidal/alternating pressure mattresses, protection of bony prominences and skin hydration[13, 15, 20-21, 23, 25, 28-30, 33-34, 36-37, 39, 41-43, 45-48, 50-54, 56, 60] - Maintaining aseptic care during procedures/dressings, such as insertion points for arterial and venous catheters and other catheters/drains and/or any other lesions[13, 16, 17, 19-22, 25-26, 28-31, 33-34, 36-41, 43, 45-48, 53-54, 56, 60] - Performing hand washing before and after procedures[13, 29, 34, 38, 40, 45, 52-53, 56] - Nasogastric tube drainage by gravity to avoid bronchial aspiration[13-14, 28-29, 34, 45] - Collecting cultures if infection is suspected[14, 25-26, 29, 31, 34, 36, 38, 45, 47-48, 55] - Antibiotic administration[15, 31, 37, 38, 45, 47, 55]
Nutritional support
-Nasoenteral feeding tube insertion and administration[17, 19, 23, 26, 42, 47, 52, 57] - Verification of energy- calorie intake[44, 49, 56] - Monitoring of abdominal distension, gastric residue and/or bowel elimination pattern, adjusting diet when necessary[26, 52]
Corneal care
- Eye wash with saline solution or sterile water[14, 36, 39] - Keep eyelids/eyes closed and moist[13-15, 19, 24-25, 29, 32-33, 35-37, 39, 40, 42, 45, 47-49, 51-53, 57, 61] - Application of epithelizing ointment[14, 28-29, 36-37, 42, 45, 48] - Application of eye drops or lubricating solutions (artificial tears)[13, 24-25, 29, 33, 35-37, 40, 45, 48, 51, 53] - Care with excessive handling and direct contact of the gauze with the cornea[25, 37] - If there is an eye infection, apply antibiotic eye drops[24-25, 29, 35, 45, 48]

Caption: ECG - electrocardiogram; CPA - cardiopulmonary arrest; CPP - cerebral perfusion pressure; CVP - central venous pressure; CPR - cardiopulmonary resuscitation; SpO2 _peripheral oxygen saturation; ICU - Intensive Care Unit; MV - mechanical ventilation.

The selected publications, in addition to presenting the interventions carried out by nurses in the maintenance of the potential organ donor, reinforce the importance of knowledge of the changes triggered in the organism by BD[6-8, 13-62]. Understanding these changes is fundamental for nurses to identify the risks to which potential donors are exposed and to adopt appropriate therapeutic measures[46].

Thus, given the relevance revealed in the approach to pathophysiological changes in all studies[6-8, 13-62], as well as the common symptoms in each phase of brain death, it was decided to create an image that presents, in a synthesized way, the main events that occur in the body with brain death (Figure 2).

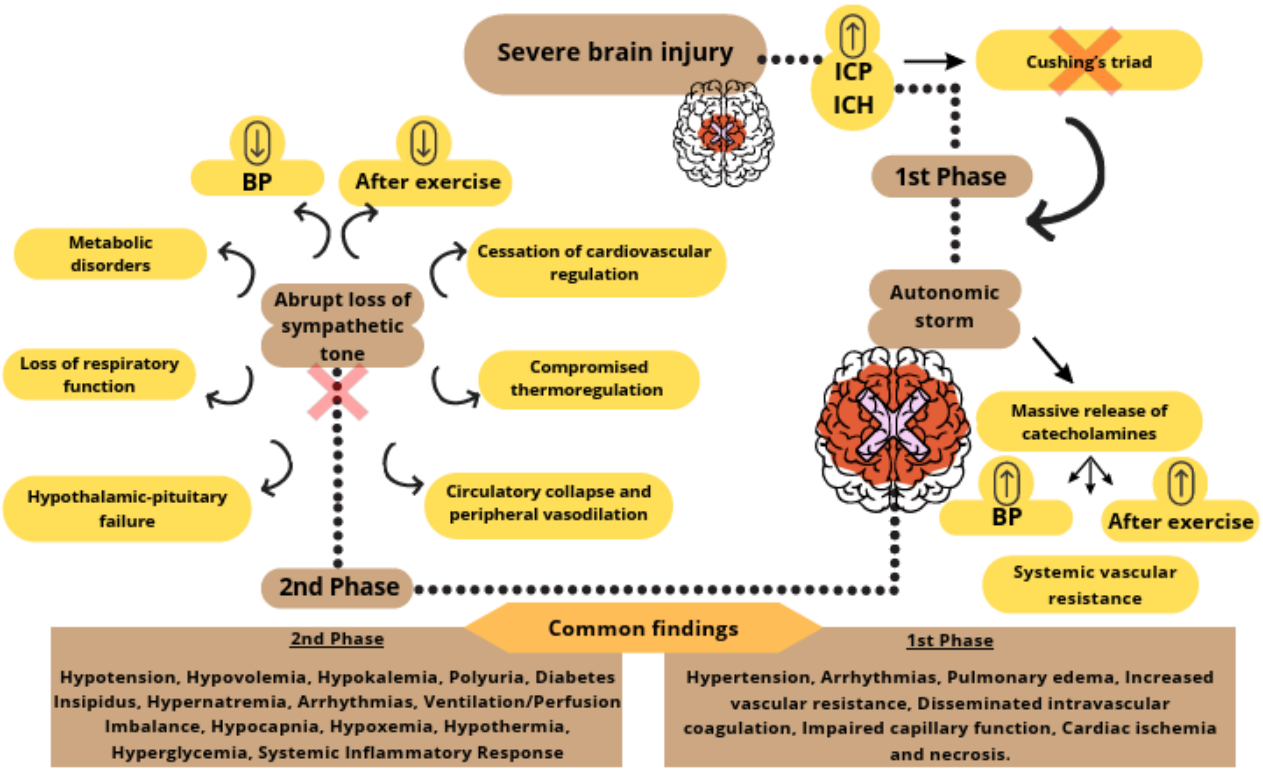

Figure 2 – Main pathophysiological changes caused in the organism by brain death according to the studies included in the scoping review. Florianópolis, SC, Brazil, 2025

Caption: HIC - intracranial hypertension; PA - blood pressure; PIC - intracranial pressure.

Source: Authors, 2025.

DISCUSSION

The potential organ donor is a complex patient requiring special attention due to the changes triggered by brain death[37-41]. This is because, as shown in Figure 2, brain collapse leads to autonomic dysregulation, resulting in the massive release of catecholamines, which cause hypertension. This condition quickly becomes exhausted. Then, the increase in intracranial pressure intensifies, leading to herniation and cerebral ischemia. This results in the loss of central neuro-hormonal regulatory control, hypothalamic-pituitary dysfunction, and a transient increase in sympathetic activity, resulting in tissue hypoxia and amplification of the inflammatory response. If not adequately treated, these changes will cause systemic organ damage[6-8, 13-62].

In this scenario, the data strongly indicate the relevance of the nurse's role, who, by actively participating in direct patient care, can identify early signs and symptoms resulting from BD[13-16, 22, 27]. However, in order to implement effective interventions, it is essential that the professional is attentive and knowledgeable to recognize and adequately manage the pathophysiological changes that arise in each of the phases of BD, in order to avoid organic damage[37-41].

Thus, nursing publications on patient maintenance during brain death and potential organ donation emphasize the importance of a proper understanding of the diagnosis and its organic repercussions, correlating the pathophysiology of the disease with the care activities to be developed by nurses. For example, studies consensually point to the need for care related to hemodynamic maintenance[6-8, 13-62] and correlate it with the instability that affects the patient during brain death, resulting from the loss of central control of the cardiovascular system, respiratory control, baroreceptors and chemoreceptors, and the hypothalamic-pituitary axis[2].

Regarding hemodynamic care, the main intervention mentioned was the monitoring and control of vital signs, with emphasis on actions aimed at maintaining blood pressure through the administration of volume and vasopressor drugs[13-61]. As one of the most common and serious pathophysiological alterations of brain death, resulting from damage to the vasomotor center and consequent generalized vasodilation, arterial hypotension requires prompt identification and treatment by nursing staff[24, 48].

In the category of ventilatory support, one of the main interventions cited by the studies was the control of mechanical ventilator parameters. Inadequate management of artificial ventilation leads to deleterious consequences for the lungs, such as barotrauma and volutrauma, impairing respiratory function that is already altered by the pathophysiology of brain death. Therefore, nurses should establish care aimed at maintaining a protective ventilation strategy, with a recommendation to maintain a tidal volume between 6 and 8 mL /kg of ideal body weight and positive end-expiratory ventilation pressure of 8 to 10 cmH_2O[8, 13-14, 16-17, 20, 22, 24-26, 28-29, 31, 34-36, 38, 40, 43, 46, 49, 53, 55, 59]. Also, in order to avoid further damage to lung tissue, nursing interventions were also listed aimed at aspirating tracheobronchial secretions, monitoring the positioning of the endotracheal tube and cuff pressure, and positioning the head of the bed at a 30° angle[13-14, 19-22, 24-31, 33-34, 36-43, 45-46, 48-54, 56-58, 60].

In addition to the organic insults already mentioned above, BD also affects the endocrine-metabolic system, altering the energy supply to tissues and hydroelectrolytic control. Publications have associated these alterations with the need for biochemical analysis and identified the monitoring of blood electrolyte levels and tests as one of the essential nursing interventions. It is recommended to maintain serum sodium levels below 155 mg/dL potassium between 3.5 and 5.5 mEq/L, and magnesium above 1.6 mEq/L. Hypernatremia is often frequent in BD and can be caused or aggravated by alterations in urinary output, mainly by polyuria associated with *diabetes insipidus*. To correct elevated sodium levels, intravenous free water is administered in the form of a 5% glucose solution or a 0.45% saline solution[16, 25, 28, 35-36, 38, 40, 46, 58].

The literature[13-61] also revealed different activities of nurses aimed at the prevention, control and treatment of disorders related to adequate temperature maintenance, blood transfusion care, infection prevention, nutritional support and corneal care. Among the actions mentioned in these categories are infusion of warmed fluids, monitoring of blood coagulation, maintenance of hygiene routines and execution of aseptic technique in all procedures. Previous reviews, which were selected for this study[13, 24, 40, 45-46, 48, 55], validate these findings and reinforce the importance of rigorous management of multi-organ deterioration triggered by BD.

Regarding some interventions described in the selected publications, it was not possible to identify whether their execution was entirely performed by the nurse or whether the nurse only participated in the intervention by assisting other professionals, such as prescribing medications, titrating vasoactive drugs, inserting a transcutaneous pacemaker, and adjusting mechanical ventilation parameters[13, 23, 28, 45, 48]. This

situation highlights a gap to be explored, opening the possibility for future discussion about the degree of autonomy that the nurse has in decision-making regarding the care provided to the potential donor.

This context is corroborated by a recent experience that evaluated the implementation of a checklist for maintaining the potential organ donor in reducing organ loss due to cardiac arrest in Brazilian Intensive Care Units, where the nurse is described as an active member of the team. However, their role was described as being restricted to completing the checklist and contacting the doctor when goals were not met, with little or no participation in defining the procedures to be implemented[64].

In contrast to the aforementioned scenario, articles on the experience of nurses in the USA[6-8, 62] reveal a different reality, where an expanded praxis is developed, involving complex decision-making skills. Also in the USA, studies carried out in care centers directed at potential donors revealed that nurses, as care coordinators, in addition to being able to offer hemodynamic assistance, have the power and autonomy to deliberate on the care provided. These professionals are responsible for carrying out interventions such as bronchoscopies, pulmonary ultrasounds, insertions of arterial/central catheters and liver biopsies[6-8, 62].

It is important to recognize that the expansion of the scope of nursing, pointed out by some articles, was associated with activities performed by intensive care nurses. After two years of supervised training, these professionals achieved sustained results, thus reducing medical supervision[6-8,62]. These professionals demonstrated the ability to provide exclusive care to the donor, which contributed to an increase in the number of organs recovered for transplantation[6-8].

In the same way that they reveal shortcomings, the publications also present important points, such as the relevance of nurses' training as an effective strategy for the success and quality of care provided to the potential donor. The relationship between the preparation of professionals and the results achieved is recognized by the studies[6-8,13-62]. One article revealed the limited role of nursing professionals in the clinical management of potential donors due to factors such as insecurity, inexperience, lack of knowledge regarding the pathophysiology of brain death and its impact on the body, lack of technical and emotional preparedness, and the absence of specific protocols or guidelines for nurse participation in maintaining potential donors[56].

Regarding the limitations of the research, the selection of publications in only three languages and the failure to search for documents and guidelines on the role of nurses in maintaining potential organ donors on the websites of organizations related to donation and transplantation are noted.

CONCLUSION

This review revealed a wide range of actions performed by nurses to prevent, control, and correct changes that occur in potential deceased donors. Monitoring vital signs was the most frequently mentioned intervention, specifically actions aimed at maintaining blood pressure through the administration of fluids and vasopressor drugs. The importance of the nurse's role in the early identification and management of hypotension is highlighted, as this is one of the most common and serious findings in brain death.

The publications analyzed also highlight the relevance of nurses' role in other care areas such as: maintaining ventilatory parameters that ensure protective lung management; monitoring electrolytes, with special attention to serum sodium and potassium levels; Administration of heated solutions and use of thermal blankets to maintain temperature; monitoring of blood coagulation and transfusion-related care; infection prevention; nutritional support and corneal care.

However, despite the significant number of activities reported, a gap was identified regarding the nurse's participation and autonomy in some care aspects, such as: prescribing medications; titrating vasoactive drugs; inserting a transcutaneous pacemaker; and adjusting mechanical ventilation parameters. This finding highlights the importance of future research and initiatives that explore the autonomy and decision-making power of nurses in the context of care for potential deceased donors.

The interventions found in this review will support nurses who assist potential organ donors, through scientific evidence, in providing safe and qualified care, with a view to ensuring better post-donation and post-transplant outcomes.

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