






REVIEW ARTICLE

Weaknesses and capabilities experienced by a healthcare team in the organ transplant process: integrative review

Fragilidades e potencialidades vivenciadas pela equipe de saúde no processo de transplante de órgãos: revisão integrativa

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ABSTRACT

The aim of this study is to evaluate the weaknesses and capabilities experienced by professionals working in critical care units during the stages of the organ donation process. This is an integrative review, developed using six databases, between 2015 and 2020, in English, Portuguese, and Spanish. A total of 15 articles were selected. The information was grouped into two thematic categories: team knowledge on the organ donation process; complexity of the organ donation process: emotional aspects of the process. The evidence indicates lack of training of the team and lack of structure of the healthcare organizations as the main weaknesses. Regarding the capabilities, recognition of the stages of and criteria for the diagnosis of brain death and guaranteeing the right of the family to receive information on all the stages of the transplant process stand out. Given the findings, promoting actions of continuing education emerges as an effective strategy to improve clinical practice in this process.

Descriptors: Tissue and Organ Procurement; Transplantation; Critical Care; Patient Care Team; Nursing.

RESUMO

Avaliar as fragilidades e potencialidades vivenciadas pelos profissionais das unidades de pacientes críticos frente às etapas do processo de doação de órgãos. Revisão integrativa, desenvolvida em seis bases de dados, entre 2015 e 2020, nos idiomas inglês, português e espanhol. Foram selecionados 15 artigos. As informações foram agrupadas em duas categorias temáticas: conhecimento da equipe no processo de doação; complexidade do processo de doação de órgãos: aspectos emocionais nesse processo. As evidências apontam como principais fragilidades a pouca capacitação da equipe e estrutura das organizações de saúde. Quanto às potencialidades, destacam-se o reconhecimento das etapas e dos critérios para o diagnóstico de morte encefálica e a certificação do direito da família em receber informações sobre todas as etapas do processo de doação. Frente aos achados, a promoção de ações de educação permanente surge como estratégia efetiva para aprimorar a prática clínica neste processo.

Descritores: Obtenção de Tecidos e Órgãos; Transplante; Cuidados Críticos; Equipe de Assistente ao Paciente; Enfermagem.

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INTRODUCTION

The organ and tissue donation process is complex as it involves different stages, these being identification and validation of the potential donor, diagnosis of brain death (BD), maintenance of the potential donor, family interview for organ donation, logistics in the removal process, organ distribution, and release of the body⁽¹⁾. Within this scenario, the teams from critical care units act in practically all the stages, with the exception of logistics in the removal process and organ distribution⁽²⁾.

Over the years, studies have shown the weaknesses and capabilities of teams allocated to these units. Regarding the weaknesses, underreporting of potential donors related to the difficulty in validating patients with clinical criteria of BD, lack of preparation to conduct a BD diagnosis, and hemodynamic maintenance of the potential donor were specified. Difficulties in the definition of contraindications to donation, communication of initiating the BD protocol, and communication of death to the family also stand out. Among the capabilities are the involvement of professionals in the notification of patients with a BD diagnosis, seeking to improve how the process is conducted, and strengthening of the team to make the process active⁽²⁻⁴⁾.

The healthcare team of critical care units (emergency service and intensive care units) acting in this process, requires knowledge and ability to conduct all the stages. Only as such is it possible for there to be a rapid, agile, and effective process of high quality, avoiding losses of potential donors, adverse events, and, consequently, transplantation problems⁽³⁻⁵⁾.

In Brazil, around 25% of organs for transplant are irrecoverable due to problems related to the intensive care stages in the vital and critical period of the potential donor in the intensive care units (ICUs)⁽⁶⁾. Among the main problems related to such losses are underreporting of potential donors and cardiac arrest. In absolute terms, approximately 4,000 possible donors are not notified by ICU professionals and 3,700 potential donors are lost annually⁽⁶⁻⁸⁾. In addition, more than 4,500 families refuse to donate organs each year, not understanding the BD diagnosis and not trusting the donation process being among the main motives^(9,10).

When the patient presents clinical signs of BD, that is, complete and irreversible loss of encephalic functions, defined by the cessation of cortical activities and those of the brain stem⁽¹⁾, a series of physiological alterations are triggered without compensation of the organism itself to deal with such alterations. At this time, it is essential that the ICU team acts quickly, effectively, and safely, providing all due care as defined in the guidelines of the Brazilian Intensive Medicine Association (*Associação de Medicina Intensiva Brasileira – AMIB*). Moreover, faced with BD evolution, it is necessary that the team communicates to the family clearly and simply how the BD protocol develops, as per the legislation in force

in the country. In accordance with decree 2.175, this diagnosis should be carried out by two doctors with an interval of one hour for each clinical examination, the performance of a complementary exam being required^(1,9,11).

In light of the above, given the significant number of losses of potential donors in Brazil, it is understood that it is essential to know the weaknesses and capabilities of such professionals in activities identifying and validating possible donors, BD diagnosis, maintenance of a potential donor, communication of the BD protocol, and communication of death. Through the information obtained in the present study, it is believed that it is possible to improve the donation scenario and develop the healthcare team. This is because in knowing the weaknesses and capabilities of such professionals, government administrators could propose effective strategies directed at this reality.

Thus, it is understood that the impact of the present study is directed at proposing actions to improve the practice scenario of the organ donation process, making these activities safer, more effective, and with less risk of harm to professionals, potential donors, families and patients undergoing transplants.

Therefore, the guiding question of the study is: Which weaknesses and capabilities are experienced by professionals working in critical care units in the identification and validation of possible donors, brain-death diagnosis, maintenance of the potential donor, communication of the brain-death protocol to the family, and communication of death?

Aim: to evaluate the weaknesses and capabilities experienced by professionals working in critical care units faced during the stages of the organ donation process.

METHOD

This is an integrative review of the literature, developed based on the stages of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)⁽¹²⁾. It was not, however, possible to conclude the systematic review due to non-identification of articles supporting this type of review upon reading in full, given that the studies' levels of evidence were weak.

The research question was elaborated considering the PICO strategy, which is an acronym for Patient, Intervention, Comparison, and Outcomes. The study population was healthcare professionals of critical care units; the Intervention: activities experienced by the professionals regarding the validation of potential donors, diagnosis of brain death and communication of death; Comparison: stages of the organ donation process according to the legislation and guidelines of the Intensive Medicine Association; Outcomes: weaknesses and capabilities of the teams that work in critical care units in the organ donation

stages. The Comparison element of the acronym was not used in the present study. Therefore, the elaborated guiding question was: Which weaknesses and capabilities are experienced by professionals working in critical care units in the identification and validation of possible donors, brain-death diagnosis, maintenance of the potential donor, communication of the brain-death protocol to the family and communication of death?

The databases were defined considering the guiding question, the aim, and the theme, and are listed as follows: Publisher Medline (PubMed), virtual library (Scientific Electronic Library Online – SciELO), The Cumulative Index to Nursing and Allied Health Literature (CINAHL), Latin American and Caribbean Health Sciences Literature (LILACS), Scopus and Web of Science. The following descriptors were used for the search strategy: “Morte Encefálica/Brain Death/Muerte Encefálica; Transplante/Transplantation/Trasplante; Obtenção de Tecidos e Órgão/Tissue and Organ Procurement/Obtención de Tejidos y Organos; Terapia Intensiva/Intensive Care/Cuidados Intensivos; Unidades de Terapia Intensiva/Intensive Care Units/Unidades de Cuidados Intensivos; Pessoal de Saúde/Health Personnel/Personal de Salud; Equipe de Assistência ao Paciente/Patient Care Team/Grupo de Atención al Paciente; Enfermagem/Nursing/Enfermería; Médicos/Physicians/Medicos”. It should be mentioned that for each database a search strategy was developed together with a librarian. Presented below are the search strategies of a database as an example (Chart 1).

Each reviewer searched the databases independently to identify articles published between 2015 and 2020. The material was then transferred to the Mendeley® reference manager, followed by reading of the title and the abstracts by two reviewers, independently and blindly (Reviewer 1 and Reviewer 2). Inclusion criteria: qualitative research articles and quantitative research articles, indexed on the selected databases, published in Portuguese, Spanish, or English,

between 2015 and 2020. This period was chosen in order to identify possible weaknesses in healthcare teams in recent years in this scenario, so that the scientific evidence found could map the most diverse scenarios of practice and suggest strategies to optimize this process. Exclusion criteria: review articles, experience reports, letters, editorials, summaries of annals and events, materials published in other languages besides English, Spanish, or Portuguese.

Upon finishing the reading of the title and abstract, a meeting was held with a third reviewer to reach a consensus on the articles selected for reading in full. During this stage, it was necessary to reevaluate 12 articles that had caused doubts between the two reviewers. Each author read the manuscripts independently, discarding those that were not related to the proposed theme. With the aim of identifying the most relevant information, a table was prepared with the following variables: title, year of publication, authors, periodical, database, aim(s), type of study, level of evidence, results and recommendations.

After elaboration of the table, the authors exhaustively read the information obtained, identifying the characteristics of each article. They also identified the main data related to the capabilities and difficulties of the team in the organ donation scenario. This stage was carried out with two colleagues/authors with ample expertise in intensive care units, care of critical patients, and organ donation, identifying significant information in organ donation, as well as the best levels of evidence.

The Level of Evidence (LE) was classified considering: Level 1: obtained through meta-analysis of controlled clinical studies with randomization; Level 2: obtained through studies with an experimental design; Level 3: almost experimental research design; Level 4: what emerged from cohort studies and case-control studies; Level 5: what emerged from systematic review of descriptive and qualitative studies; Level 6: evidence derived from a single descriptive or qualitative

Chart 1. Search strategies according to the database. Florianópolis, SC, Brazil, 2020.

Database	Sets of terms
CINAHL	(Morte Encefálica OR Morte Cerebral OR Morte Clínica OR Brain Death OR Clinical Death OR Muerte Encefálica) AND (Transplante OR Transplantes OR Transplantação OR Enxertia OR Obtenção de Tecidos e Órgão OR Doação de Órgãos OR Doação de Órgão OR Doação de Tecido OR Doação de Tecidos e Órgãos OR Doador de Órgão OR Doador de Órgãos OR Doadores de Órgãos OR Transplantation OR Organ Donation OR Tissue donation OR Obtención de Tejidos OR Obtención de Tejidos y Órganos OR Obtención de Órganos) AND (Terapia Intensiva OR Unidades de Terapia Intensiva OR Cuidado Intensivo OR Cuidados Intensivos OR Cuidado crítico OR Cuidados Criticos OR Intensive Care OR Critical Care OR Intensive Care Units) AND (Pessoal de Saúde OR Profissional da Saúde OR Profissional de Saúde OR Profissionais da Saúde OR Profissionais de Saúde OR Equipe* OR Equipe de Assistência ao Paciente OR Enfermagem OR Enfermeir* OR Medico* OR Patient Care Team OR Health Personnel OR Nursing OR Nurse OR Nurses OR Physicians OR Personal de Salud OR Grupo de Atención al Paciente OR Enfermería OR Enfermer*)

study; and, Level 7: evidence arising from authority opinion or specialist committee report⁽¹³⁾.

Then, it was sought to develop the interpretation and synthesis of the identified information, comparing the data obtained from analysis of the articles, as well as possible gaps and research bias. The central focus of the analysis was to identify opportunities for improvement on the donation scenario.

For better presentation of the information and easier understanding of the reader, after analysis, the obtained data were grouped by category according to the stages of the donation process cited above: identification and validation of potential donors, brain-death diagnosis, maintenance of the potential donor, and communication to the family.

A total of 1,161 articles were identified on the databases, of which 54 were removed for repetition. The titles and abstracts of the remaining 1,107 were read, of which 72 were

selected for reading in full and 57 were excluded. Of these, 48 were not related to the PICO question (they were not related to the professionals working in critical care units), three were excluded due to weaknesses in the method (sample calculation and how data analysis was conducted were not clear), four were review articles, and two were in a different foreign language to English or Spanish (Figure 1).

RESULTS

Regarding the main results, it can be observed that the database with the highest number of publications analyzed in full was PubMed, with seven (46.6%). The year 2018 stands out with the highest number of publications, with eight (53.3%). Regarding the level of evidence, 13 (86.6%) publications were level 6⁽¹³⁾. All the articles were obtained free of charge in online versions. For better understanding, Chart 2

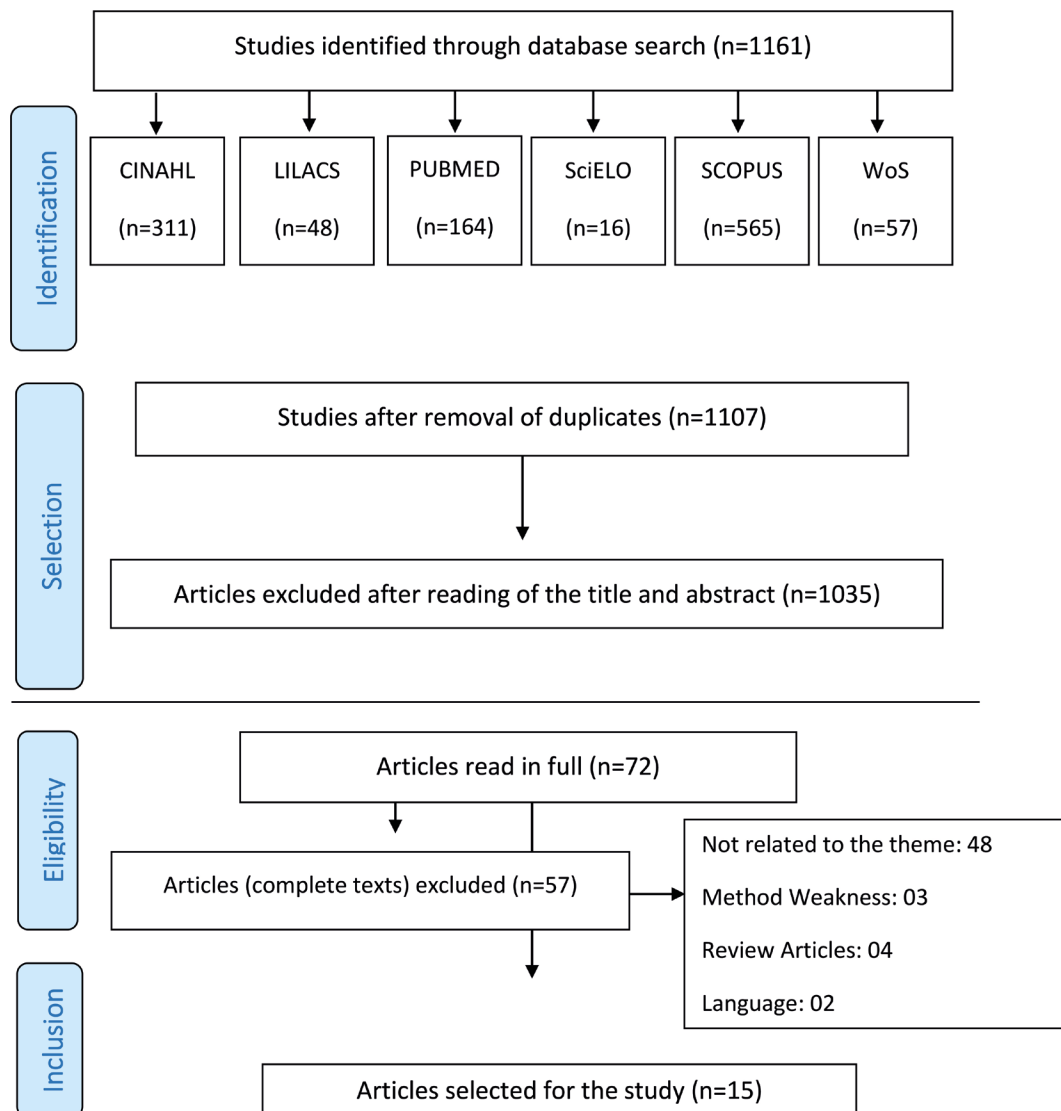


Figure 1. PRISMA⁽¹²⁾ Diagram. Florianópolis, SC, Brazil, 2020.

presents the information obtained in the articles considering title, year, level of evidence, aim, and main results.

The data were analyzed and grouped into two categories, which are presented below, with the aim of better presentation of the evidence for professional practice.

Category 1: Team knowledge on the stages of the donation process

This category shows the capabilities and weaknesses related to team knowledge on the stages of the donation process. The following capabilities stood out: team safety, especially of the nurses in identifying the causes for not opening the BD protocol⁽¹⁵⁾; recognizing the appropriate time for performing tests and the stages of the diagnosis⁽¹⁵⁾; admitting that the

family have the right to be informed about the opening of the BD protocol⁽¹⁵⁾; feeling prepared to care for the BD patient⁽¹⁶⁾; agreeing that BD is the equivalent of death⁽¹⁹⁾; and welcoming the proposal that the potential donor is someone that can save lives⁽²²⁾.

Such information reveals that the critical care team, especially the nurses, are capable of working in activities related to the criteria for initiating diagnosis and care of patients in BD^(15,16). Being qualified and feeling secure in these stages is extremely important and relevant, considering that such team knowledge minimizes the risk of initiating the BD protocol prematurely.

Regarding the weaknesses identified in this category, difficulties validating criteria of absolute contraindication to

Chart 2. Synthesis of the main findings identified in the studies. Florianópolis, SC, Brazil, 2019.

Title/year/level of evidence (LE)	Aim	Weaknesses (W) and capabilities (C)
ICU Nurses' Knowledge, Attitude, and Practice Towards their Role in the Organ Donation Process from Brain-Dead Patients and Factors Influencing It in Iran. 2015; (LE 5) ⁽¹⁴⁾ .	Evaluate the knowledge, attitudes, and practices of intensive care unit nurses in regard to their role in the organ donation process of brain-dead patients and influencing factors in Iran.	Nurses work in the process without a defined role (W); There are nurses working in the process not in agreement with their roles (W); Nurses show little involvement in the practice of this process (W).
Nurses' Knowledge in the Process of Organ Donation. 2015; (LE 6) ⁽¹⁵⁾ .	Verify nurses' knowledge in the process of organ and tissue donation for transplants.	Nurses recognize that the family has the right to be informed about the diagnosis of brain death (C); Nurses recognize hypothermia and the use of drugs that are central nervous system depressors as causes for not opening the brain-death protocol (C); Nurses have knowledge on the appropriate time to perform the evaluations in the diagnosis of brain death (C).
Nursing knowledge in organ and tissue for transplant donor potential maintenance. 2015; (LE 6) ⁽¹⁶⁾ .	Verify nurses' knowledge in the maintenance of a potential donor in brain death, faced with hypothalamic alterations, hematological alterations, and infectious aspects.	Nurses feel prepared to attend to patients in brain death (85.4%) (C); Few nurses (24.2%) have been trained to work in the process. The majority (87.8%) learned during practice (W).
Weaknesses in the care for potential organ donors: the perception of nurses. 2017; (LE 6) ⁽¹⁷⁾ .	Know the perception of nurses on weaknesses in the care for potential organ donors.	Lack of support from the institution for healthcare professionals dealing with this process (W); Lack of equipment and exams for care in this process (W); There are difficulties regarding the physical space (W); High degree of responsibility of nurses in the process (C).

Continue...

Chart 2. Continuation.

Title/year/level of evidence (LE)	Aim	Weaknesses (W) and capabilities (C)
Clinicians' Perception and Experience of Organ Donation From Brain-Dead Patients. 2017; (LE 6) ⁽¹⁸⁾ .	Describe the perception and experience of doctors and nurses regarding organ donation in an intensive care unit.	A fifth of the team report that the organ donation process is stressful (W); The involvement with the culture of the intensive care unit regarding the diagnosis of brain death and donation remains weak (W); (67%) mention having little training related to the theme, making this moment stressful (W); There is little support in the healthcare institution, beyond the slightly positive environment in conducting of the process (W); Professionals that have worked in the process longer make the moment more stressful (W).
Nurses' attitudes and knowledge regarding organ and tissue donation and transplantation in a provincial hospital: A descriptive and multivariate analysis. 2017; (LE 6) ⁽¹⁹⁾ .	Determine if the attitudes and knowledge of the nursing team regarding organ and tissue donation can influence the decision to become a donor.	The knowledge of the nurses needs to be improved to guarantee functionality of the donation system. A mean of greater than 46% got the answers wrong (W); There are doubts in the team regarding transplant system functionality (W); The nurses agree that brain death is the equivalent of death (C).
Brain death and organ maintenance: knowledge of intensive care professionals. 2018; (LE 6) ⁽²⁰⁾ .	Evaluate the knowledge of healthcare professionals working in an intensive care unit on the diagnosis of brain death and organ maintenance in potential donors.	Professionals have knowledge that the declaration of brain death is made when there is irreversible loss of cortical function and brain stem function (C); Sepsis was considered an absolute contraindication for a large part of the participants (W); There were doubts in the team regarding the ideal temperature for conservation of a potential donor (W); 15% of the professionals reported difficulties indicating the stages of the brain-death protocol and care for the potential donor (W).
Management of patients in brain death. 2018; (LE 6) ⁽²¹⁾ .	Identify the knowledge of emergency and intensive care unit nurses in relation to the management of patients in brain death.	The team does not begin reanimation maneuvers in the case of cardiac arrest during diagnosis (27.8%) (W); The team had difficulty indicating care related to maintenance of the donor (72.2%) (W).
Deaths that save lives: the complexities of medical care for patients with suspected brain death. 2018; (LE 6) ⁽²²⁾ .	Understand how doctors from the largest emergency room of a Brazilian city direct the care of serious patients with suspected brain death and potential organ donors.	The team sees the potential donor as someone that can save lives (C); Care of the potential donor is seen as important, but, above all, as work overload on the team (W); The team also sees care of the potential donor as a wake, given that the patient is already dead (W); The team has difficulty explaining the condition of brain death to the family (W).

Continue...

Chart 2. Continuation.

Title/year/level of evidence (LE)	Aim	Weaknesses (W) and capabilities (C)
Perspectives toward brain death diagnosis and management of the potential organ donor. 2018; (LE 6) ⁽²³⁾ .	Identify and discuss the different meanings and experiences of doctors and nurses of an adult intensive care unit regarding brain death diagnosis and maintenance of the potential donor of organs for transplant.	The team still has doubts about the donation process, influenced by the beliefs, culture, and education of each person (W); The team is conscious of the brain-death diagnosis and donation, but often perceives that it is left aside due to work overload, working conditions and the culture of the team (W).
Meaning of nursing care to brain-dead potential organ donors. 2018; (LE 5) ⁽²⁴⁾ .	Understand the meaning of care to brain-dead potential organ donors for nurses, and construct a theoretical model.	The team understands the complexity of care of the potential donor (C); There is distancing on the part of the healthcare team in the conducting of the process (W); The team recognizes the condition of caring for the dead patient, but with the possibility of saving lives (C).
Explaining nurses' experiences of caring for brain dead patients: a content analysis. 2018; (LE 6) ⁽²⁵⁾ .	Disclose the experience of nurses caring for brain-dead patients.	The essential role of the nurse in attending to the brain-dead patient (C); Difficulties of the nurse in the process: stress, emotional overload, fear, and negligence (W); Conflict in the team in regard to the diagnosis of brain death, difficulty and reluctance to communicate brain death and lack of support from the healthcare services (W).
The Nursing Challenges of Caring for Brain-dead Patients: A Qualitative Study. 2018; (LE 6) ⁽²⁶⁾ .	Explore the nursing challenges in caring for patients diagnosed with brain death.	Challenges and tensions in the team may affect maintenance of the potential donor (W); There is a need for greater managerial support for the nursing professional in this process, given its complexity (W); Uncertainties in diagnosis of brain death (W); Conflicts with the team and lack of organizational support (W).
Knowledge and Attitude Toward Brain Death and Organ Donation Among Anesthesiology and Reanimation Professionals. 2019; (LE 6) ⁽²⁷⁾ .	Determine the knowledge and attitude of Anesthesiology and reanimation and/or intensive care professionals, who are (50%) responsible for the diagnosis of brain death.	55.3% considered brain death as death (W). Factors associated with those that considered BD as death: previous experiences with BD diagnosis, the care of such patients in the ICU, participation in the process of organ donation (W).
Understanding of Brain Death Among Health-Care Professionals at a Transplant Center. 2019; (LE 6) ⁽²⁸⁾ .	Evaluate the understanding of brain death among healthcare professionals in an intensive care unit (ICU) in a single institution.	Although most participants converse with the family about BD, few reported having formal training for this moment (C/W). 72.4% manifested interest in receiving training (C). Only 18.0% identified the correct exams for BD (W). In the multivariate analysis, the most right answers to the questions on BD knowledge were associated with time qualified and training (C).

donation were specified⁽¹⁶⁾, as were doubts regarding the tests to be performed for the BD diagnosis^(15,28), and insecurity in the specific care involved in maintaining the potential donor (ideal vital signs, hypothermia, diuresis volume, and glycaemia, among others)⁽²⁰⁾, and low incidence of training programs on the topic^(20,21).

The weaknesses are visible considering that the data indicate obstacles to validating the potential donor, as well as to determining what the absolute contraindications to organ donation are⁽²⁰⁾. In relation to the contraindications, intensive care professionals emphasize sepsis as an absolute contraindication⁽²⁰⁾.

Another weakness shown in this category, was the low incidence of trained professionals. One of the studies^(16,28) shows that only 24.2% of the participants received training, while 87.8% learned from other colleagues during practice. Another study showed that 67% of the participants indicated having little training on the theme⁽¹⁸⁾. Moreover, another article shows that 46% of the participants responded wrongly to questions on the organ and tissue donation process⁽¹⁹⁾. It is important to highlight that this is a unique weakness, considering that lack of or little training on the theme could generate serious adverse effects, such as loss of the potential donor, team dissatisfaction and legal problems⁽¹⁾.

Category 2: Complexity of the organ donation process: emotional aspects of the process

In respect to weaknesses, it was possible to understand the issues of the team in being faced with the care of a dead being with intensive care necessities due to the hemodynamic instability presented after BD^(16-18,22-26). Furthermore, it was discerned that the professionals are knowledgeable on the importance of donation, but at the same time express that they often leave this process aside due to the insufficient amount of human resources, lack of support from the institution, and lack of equipment and physical space^(17,18,22).

Linked to this reality, nurses tend to prioritize the care of living patients, with therapeutic possibilities, which results in situations of stress and emotional consternation in the team^(17,18,23-25). Regarding the BD diagnosis, given the complexity of this procedure due to ethical, moral, legal, and cultural issues, studies indicate uncertainty among some team members regarding the diagnosis^(23,25,26). Therefore, the attitude of such professionals can generate conflicts and distrust of the process among them^(19,25-27).

Another weakness indicated by the nurses was lack of recognition for their actions in the organ and tissue donation process and not having a defined role regarding the care they carry out⁽¹⁴⁾. These nurses feel stressed and dissatisfied at being faced with the care of the potential donor and the family and not being capable or comfortable to deal with such a task^(22,23,25).

The complexity of care when dealing with the family in communication of the BD diagnosis, communication of death, and the development of the grief process, indicates the emotional impact, fear, insecurity, and lack of preparation to deal with this information^(14,15). These moments are described as difficult to confront and experience, especially the moment when the scene on the hospital bed is reminiscent of a wake with the team and the family⁽²²⁾.

Regarding the capabilities in this category, despite the emotional impact, the professionals understand that the family needs to be guided during all stages of the donation process⁽¹⁵⁾. They understand that BD is the equivalent of death and that the potential donor can generate life⁽²²⁾. They also assimilate that this is a complex patient to take care of, demanding great effort from the team, especially from the nurse directly involved in the care of this patient^(19,22,24,25).

In this category, many more weaknesses were identified than capabilities. It is important to understand that such situations are subject to generating stress, physical and emotional fatigue, and errors in the process. Considering that some articles strongly indicate issues of work overload, lack of support from the management, and lack of equipment, administrators need to look closely at the reality. It is already a process that brings strong emotional aspects as it deals with a dead being with the possibility of saving lives and due to the fact that the team is together with the family for many hours supporting these people in the grief process^(16,22).

DISCUSSION

Like many other countries, Brazil has been constantly seeking improvements to the organ donation scenario. Countries such as Spain, Portugal, and the United States have achieved improved results in the absolute number of organ donors⁽⁶⁾. Part of the investments in these countries is directed at training of the healthcare team and refinement of the healthcare structures, besides a quality program tracking progress opportunities in the stages of the donation process^(6,7).

From this perspective, it can be understood that the information obtained in the present study provides relevant evidence in respect to the weaknesses and capabilities of the healthcare team in critical care units regarding the stages of the organ and tissue donation process. It is worth emphasizing that most of this information came from studies developed in 2018. Thus, it can be highlighted that said weaknesses and capabilities are realities recently experienced by the teams. Considering the information obtained, it is understood that there is a necessity to improve working conditions, continuing education, and managerial support for the team working in this scenario, in the sense of promoting the safety, effectiveness, and quality of the care activities and actions during all the stages of the organ and tissue donation process.

In respect to the evidence for better practices, the team knowledge category implicitly brings the knowledge of the study participants in performing the brain-death diagnosis, especially in recognizing the criteria impeding the initiation of this diagnosis, as well as the appropriate time for carrying out tests⁽¹⁴⁻¹⁶⁾. In the context of the BD diagnosis, speed in identifying the clinical signs of BD, as well as security to recognize each phase of the diagnosis, are essential premises for advances, safety, ethics, and legality of the process. The legislation in force determines that in adults the interval between tests for the BD diagnosis should be one hour⁽¹⁾. To optimize this diagnosis and validation of the potential donor, guidelines have been created to support the professionals⁽³⁾. Authors indicate that this diagnosis should be carried out safely and effectively, in the shortest time possible, with the aim of minimizing the stress on the team and the family. Ideally, the diagnosis should not take longer than the time prescribed in the legislation^(2,22).

Another significant indicative, which is able to maximize changes in practice after improvement of the team, is validation of the potential donor. Validation of the potential donor of organs and tissues is described in the AMIB guidelines, which consist of detailed evaluation of individuals with the presence of a brain injury of known cause. This is done through detailed clinical assessment; thorough physical examination; the gathering of clinical, laboratory, and radiology information; the exclusion of disease transmission risk (window period); dismissal of absolute contraindications and hemodynamic instability (hypovolemia, shock, cardiac arrest)^(1,3). The validation actions and care of the patient demand knowledge and ability on the part of the team, and, above all, clinical reasoning in the sense of comparing clinical data, with the physical examination and information obtained from the family so that the patient can be defined and validated as a potential donor. The mastery to proceed with the physical examination, evaluate the biochemical exams, and control hemodynamic alterations is essential to guarantee effectiveness and minimize subsequent complications to the receivers, as a result of donors with hemodynamic instability and/or complications previously present complications that may lead to post-transplant complications^(3,29).

From the perspective of safety in the process, it is essential that the team has the legal and scientific backing to validate the potential donor, since the transplant team will accept the organs of the donor based on the information passed on by the professionals of the critical care units that legitimized a given patient as a potential donor. Thus, it is necessary for the team to be able to track the data related to previous and current health history, attend to any alteration during the physical examination, or any detail mentioned by the family that is judged important⁽⁴⁾.

In this perspective, the nurse, as integral care agent to the potential donor, exercises a fundamental role in tracking possible physical alterations through the physical examination and hemodynamic alterations that appear during nursing care, as well as investigating with the family the risk of a window period or health complications that may have happened and preclude donation⁽¹⁾. The tracking of possible clinical and social alterations of the potential donor guarantees a quality, safe process, especially for the receiver^(3,30).

Also in the knowledge category, the evidence indicates the need for institutional and governmental administrators to create plans for continuing education with the professionals. Eight studies directly or indirectly mention the need for investment in training on the topic^(14-16,18-21,26). Continuing education in healthcare is the way forward to improving and refining the transplant system by promoting transformations to the quality of services. Educative actions should be based on the real necessities of each team in each institution. Therefore, engagement of the healthcare team is important, as is the commitment of administrators to implementing such actions^(31,32).

Thus, it is understood that there is a need for caution on the part of governors in proposing educational strategies for such professionals. The legislation in force directs that medical professionals should have participated in at least 10 BD diagnoses to be considered able to work in this process. Regarding other professionals in the team, the determination is at least 42 hours training prior to entering into care of the potential donor of organs and tissues⁽¹⁾.

In the last three years, there has been an increase of more than 25% in the notification of potential donors to State Transplant Centers, as well as an increase of 12% in the number of effective donors⁽⁷⁾. These data demonstrate important advances on the donation scenario. Moreover, they also demonstrate the importance of team training in regard to this diagnosis, especially for the avoidance of distrust in the process and ethical and legal issues that may appear. The BD diagnosis requires trained and skilled individuals that should be totally committed to each stage of the diagnosis⁽¹⁾.

Given the demand of activities that the team develops in this process, support from the directors of the institutions is necessary, considering that studies indicate the precarious structure of healthcare institutions as one of the main weaknesses. The main difficulties found were regarding the lack of professionals, physical space, and equipment. Such situations not only cause stress to the team, but can also generate delays in the progress of the stages in the process, adverse events, and dissatisfaction and insecurity to the family. A bereaved family dissatisfied with attendance tends to increase the stress and conflicts among team members^(9,10,18).

Therefore, the importance of institutional protocols guaranteeing support to the team and standardization of

procedures and actions applied in each stage of the donation process can be emphasized. Well-managed organ donation programs maintained in healthcare institutions are essential for the success of organ transplants⁽³³⁻³⁴⁾. Besides supporting the team regarding ethical, legal, and moral ambivalence, especially in the care of the dead patient when there are so many other living patients to be cared for^(18,23,24,26), ethical and legal issues connected to the organ donation process and transplants have frequently awakened widespread discussion in the scientific community in recent years⁽³⁴⁻³⁶⁾.

Within this perspective, it is understood as important that the team can be heard and perceived, within the singularities of each human being and professional, regarding their limitations, emotional aspects, and stressors experienced in the process. It needs to be recognized by governmental and non-governmental bodies and administrators that this process is experienced uniquely by each member of the team, considering their beliefs, culture, religion, and ethical and moral precepts. It is suggested that team directors organize frequent meetings to know the reality of the situation, while also creating support groups for these professionals. This support should be based on ethical and bio ethical principles, in the sense of promoting security, support, care, and respect for the family of the potential donor⁽³⁷⁻³⁸⁾.

It is important to understand that the team is faced with a dead patient, with conditions to help other people through donation. The patient, whose body is artificially maintained, has the characteristics of having life. Some studies indicate a divergence in opinions among the team regarding the BD diagnosis, the decision to reanimate the potential donor in the event of cardiac arrest, and the credibility of the transplant system^(19,20,23,24).

In accordance with this discussion, there is evidence regarding the emotional impact faced by the team. Studies indicate difficulties and insecurity in communicating to the family about death upon completing the brain-death diagnosis. Therefore, it was possible to understand the suffering and anguish of the team in dealing with activities such as informing on the initiation of the BD diagnosis, maintenance of the donor's body to help others, and communicating the death to the family^(19,22,24,25). Communication between the healthcare team and the family in the stages of the process of organ and tissue donation is considered one of the most complex and difficult stages. Training of the professionals to be with the family at this moment is indispensable, as is promoting self-knowledge to know how to deal with the significance of death, suffering, and the pain of loss⁽³⁹⁻⁴⁰⁾.

The emotional and psychological support of the family members promoted by the team should occur throughout hospitalization, especially at the imminence of death and confirmation of death⁽⁴⁰⁻⁴¹⁾. To promote such care activities,

the professional should be prepared and available to actively listen. Embracing the family involves empathy, compassion, and love for the other, valuing this contact with the other through an ethical and respectful posture⁽⁴¹⁾.

In this perspective, it is understood that emotional support to the family is secure and effective, with as little harm as possible to them and the team. It is suggested that the professional undergoes training in communication in critical situations and the process of death and dying. They would have contact with communication tools, the stages of grief and aid relationship, being supported to conduct the critical situation and help the family faced with feelings of pain and the phases of grief⁽³⁸⁻³⁹⁾. It is worth highlighting that in the present study the evidence indicates the necessity to strengthen the team for emotional support to the family in the grief process.

CONCLUSION

In respect to the capabilities and weaknesses experienced by the healthcare team in critical care units, what most stood out regarding the weaknesses was the lack of training of the team, generating stress and emotional impact in dealing with the stages of the donation process. Moreover, stress can be generated by the fear and risk of adverse events occurring through not being able to deal with all the activities imposed by the organ and tissue donation process. Other weaknesses specified included: little ability in carrying out maintenance of the potential donor and directing specific care; being unprepared for validating the absolute contraindication to donation; and insecurity in dealing with communication with the family and the grief process.

It can be highlighted that the difficulties dealing with the precariousness of physical structures, lack of support from institutional administrators, conflicts in the team in the conducting of the donation process, divergences in regard to the BD diagnosis, and care of the dead being, were other weaknesses shown in the study.

In respect to capabilities, what stood out was knowledge in identifying the causes for not initiating the BD protocol, besides the recognition of the appropriate time for performing tests and the stages of the diagnosis. There was also the professionals' recognition of the potential donor as a being that can generate new lives and recognition of the right of the family to be informed about all the stages of the process of organ and tissue donation.

Thus, the evidence of the study indicates a need for commitment on the part of administrators to promoting continuing education actions that come to encompass the knowledge of these professionals in the sense of providing security and support to the team, reflecting in an effective and secure donation system.

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