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ORIGINAL PAPER

Knowledge of Technical Nursing Professionals About the Subject of Brain Death and the Process of Organ Donation and Transplantation

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ABSTRACT

Background: The low percentage of effective organ donations result from challenges encountered by the team in identifying and maintaining potential donors, the need for knowledge regarding the subject, and the health system's structural adversities. It is the role of nursing to act actively throughout the family decision-making process, expanding the focus beyond the donation of organs and tissues, respecting the suffering of the family and providing integrated care to those involved. **Objective**: This study aims to verify the knowledge of technical nursing professionals working in an intensive care unit about brain death, organ donation, and transplantation. **Method**: A cross-sectional study in which the nursing technicians personnel from the General Adult Intensive Care Unit of a university hospital were interviewed and invited to answer a questionnaire containing demographic variables (age and gender), work (work shift, workload, another job, time in the position and if you have already witnessed the performance of a clinical test, and complementary examination of brain death), and the questions related to the process of organ donation and brain death, with descriptive and multiple choice questions. **Result**: A total of 137 nursing technicians were included in the study, predominantly female (80%). Of these, 97 (71%) did not consider themselves capable of answering questions about organ donation and transplants. When questioned about participation in events and training that addressed the subject of brain death, organ donation and transplants, 112 employees (82%) had never participated. When asked about "which professionals can diagnose brain death?," 26% correctly answered the professional who is qualified to perform the diagnosis of brain death. Ninety percent of the study participants correctly stated that you must notify your family to be a donor. However, 50% of the technicians believe that it is necessary to register with an identification document valid in the country. Erroneously, 79% of the interviewees answered that it would not be required for the patient to be on mechanical ventilation to start the investigation of brain death. **Conclusion**: We concluded that there is a deficit in the knowledge of nursing technicians in intensive care units of the referred hospital regarding brain death and organ donation for transplantation.

Descriptors: Tissue and organ procurement. Brain death. Organ transplantation. Nursing care.

Conhecimento de Profissionais Técnicos de Enfermagem Acerca da Temática de Morte Encefálica e o Processo de Doação e Transplantes de Órgãos

RESUMO

Introdução: O baixo percentual de doações de órgãos efetivadas é resultado de desafios encontrados pela equipe no processo de identificação e manutenção dos potenciais doadores, a falta de conhecimento referente ao tema e as adversidades estruturais do sistema de saúde. É papel da enfermagem atuar de forma ativa em todo processo. **Objetivo**: Este estudo visa verificar o conhecimento dos profissionais técnicos de enfermagem, que atuam em Unidade de terapia intensiva, acerca da temática de morte encefálica e o processo de doação e transplante de órgãos. **Método**: Estudo transversal em que foram entrevistados técnicos de enfermagem da Unidade de Terapia Intensiva Geral Adulto, de um hospital universitário, os quais foram convidados a responder um questionário contendo variáveis demográficas (idade e sexo), laborais (turno de trabalho, carga horária, outro emprego, tempo

no cargo e se já presenciou a realização de algum teste clínico e/ou exame complementar de morte encefálica) e as questões relativas ao processo de doação de órgãos e morte encefálica, com questões descritivas e de múltipla escolha. **Resultado**: Foram incluídos no estudo 137 técnicos de enfermagem, com predominância do sexo feminino (80%). Destes, 97 (71%) não se consideravam aptos a esclarecer dúvidas sobre doação de órgãos e transplantes. Ao serem interrogados a respeito de participação em eventos e capacitações que abordasse o tema de morte encefálica, doação de órgãos e transplantes, 112 funcionários (82%), nunca haviam participado. Quando questionados sobre "quais profissionais podem realizar o diagnóstico de morte encefálica?", 26% responderam acertadamente o profissional que está habilitado a realizar o diagnóstico de morte encefálica. Noventa por cento dos participantes do estudo afirmaram de forma correta que para ser doador é necessário avisar sua família. No entanto 50% dos técnicos acreditam ser necessário o registro em documento de identificação válido no País. Erroneamente, 79% dos entrevistados responderam que não seria necessário o paciente estar em ventilação mecânica para iniciar a investigação da morte encefálica. **Conclusão**: Pode-se concluir que existe um déficit no conhecimento dos técnicos de enfermagem das unidades de terapia intensiva do referido hospital a respeito da temática de morte encefálica e doação de órgãos para transplante.

Descritores: Doação de órgãos e tecidos. Morte encefálica. Transplante de órgãos. Cuidados de enfermagem.

INTRODUCTION

Improving organ and tissue transplant was a true milestone in the health field. With the evolution of surgical techniques and the development of new immunosuppressive drugs, in addition to legislation and the elaboration of a brain death protocol, it became possible to offer society transplantation as a routine procedure, and the doors to organ donation were opened[1]

The first Brazilian legislation regarding transplants was published in 1968, with Law No. 5,479, which regulates the removal and allocation of organs and tissues from deceased patients for therapeutic and scientific purposes. Since then, several changes have been made, with the enactment of Law No. 9,434 in 1997, which, together with Law No. 10,211/01 and Resolution of the Federal Council of Medicine (CFM) No. 1,480/97, established the guidelines that are the basis for the national policy on organ and tissue donation to this day.[2]

Failure to perform transplants and the delay in care result in numerous negative consequences, reducing the chances of recovery of potential recipients and the survival of grafts and patients and negatively impacting society in general, especially patients and families involved.[3]

According to Article 4 of Law No. 10,211, of March 23, 2001, family consent is required for the donation of organs and tissues to be carried out in Brazilian territory. The law defines informed consent as family authorization and the positive manifesto for organ donation: "the removal of tissues, organs and body parts of deceased persons for transplants and/or other therapeutic purposes, will depend on the authorization of the spouse or relative, of legal age".[4]

Brazil has the most extensive public transplant system in the world[5], and it is the second in the number of kidney transplants per year in absolute number and the 33rd when analyzed per million population[6,7] Currently, the Unified Health System finances more than 90% of transplants, also providing free immunosuppressive medication that is necessary during the postoperative period.[5,8]

Research so far indicates the family's refusal to donate organs and tissues as a fundamental reason for the limited advancement of organ donation in Brazil.[9,10] Among the reasons for the denial are lack of knowledge about the concept of brain death, misinformation about the will of the potential donor, religiosity, slow release of the body and fear of selling organs.[10] According to the Brazilian Transplant Registry, the rate of family non-authorization in 2019 in Brazil was 40% and in the State of Rio Grande do Sul, 41%.[6]

Brain death is characterized as the absolute and irreversible absence of brain functions, established by the end of cortical and brainstem activities, meaning the individual's death. According to art. 1 of Resolution No. 2,173, of November 23, 2017, procedures to determine brain death are indicated for all patients in a non-perceptive coma, with the absence of supraspinal reactivity and persistent apnea.[11]

Since the 1960s, the criteria for diagnosing brain death have been established, which include clinical parameters and, in some countries, such as Brazil, the execution of complementary tests.[12]

Over the last few years, organ transplantation has come to be considered a safe and economically beneficial treatment method, an advance made possible by the demystification of the subject and the improvement of techniques over time.[12]

The participation of health professionals who work on the front line in this process is fundamental in all stages, namely: the detection of possible donors, confirmation of the diagnosis of brain death, and definitive communication with family members so that they are aware of the situation and obtaining consent for the removal of organs and tissues.[13]

One of the major obstacles encountered during the organ donation process is the difficulty of the team working in the intensive care unit in recognizing and maintaining potential donors.

Researchers claim that the process of donating, transplanting and harvesting organs does not cease to be affected by the inexistence or lack of potential donors but rather by the complexity of transforming them into effective donors.[13]

The low percentage of effective donations is the result of challenges encountered by the team in the process of identifying and maintaining potential donors, as well as ignorance regarding the subject and the structural adversities of the health system, problems that can be classified as *universal*.[14,15]

The work of health professionals, especially members of the nursing team, is essential in organ and tissue donation. They are the ones who provide care to the potential organ donor, identifying legal formalities of the process and possible complications such as cardiovascular instability, metabolic disorders and tissue hypoperfusion.[16]

It is the role of nursing to act actively throughout the family decision-making process, expanding the focus beyond the donation of organs and tissues, respecting the suffering of the family and providing integrated care to those involved. Ethical and humanized multidisciplinary care requires that commitment to the care provided is independent of a positive or negative family decision to donate organs.[17]

The qualification of nursing professionals, including nurses, is essential for communicating the prognosis of patients with brain death, the impact of this diagnosis, and the possible reactions of family members involved in the process. The donation process is exhausting for the entire family involved, so nursing care is required at all stages.[18] In this delicate context, the specific training of health professionals is of paramount importance, making them skilled and competent in the preparation and implementation of care planning, and thus capable of minimizing the suffering and anxiety of family members at this critical moment and directing the situation for a desirable result.[17]

This study aims to verify the knowledge of technical nursing professionals who work in an intensive care unit on brain death and organ donation and transplantation.

METHOD

The present is a cross-sectional study carried out in an adult general intensive care unit of a university hospital in the city of Porto Alegre, in Rio Grande do Sul State.

Nursing technicians who had worked in the general intensive care unit of the hospital, aged over 18 years, both male and female, were invited to participate in the study, and employees with less than two years of working time in the intensive care unit were excluded.

Data were collected through the application of an instrument containing demographic variables (age and gender), work (work shift, workload, other jobs, time in the position and if they have already witnessed the performance of any clinical test and complementary examination of brain death) and questions related to the process of organ donation and brain death, with descriptive and multiple-choice questions:

1. Have you participated in any event/training in the field of organ donation and transplantation?
2. Do you consider yourself an organ donor?
3. Do you consider yourself capable of answering questions about donations and transplants?
4. Do you consider yourself capable of clarifying what brain death is?
5. About organ donation after death: what is necessary for someone to be an organ donor? (Check all the items that you think are correct).
6. About organ donation after death: which organs can be donated?
7. About organ donation after death: what conditions are necessary for the assistant team to investigate brain death in an adult patient? (Check all the items that you think are correct).
8. Which definitions below about organ donation and transplantation do you consider trustworthy?
9. Check the nursing care(s) to be provided in maintaining the potential donor in brain death (check all items you consider correct).
10. About organ donation after death: which professionals can diagnose brain death? (Check all the items that you think are correct).

In three questions of the questionnaire, assertions were offered in which the interviewee should agree with or disagree with the statement:

11. On organ donation after death: on the assertion "Organ donors, whose interval between the diagnosis of brain death and delivery of the body to the family is greater than 24 h, must be veiled with the coffin closed due to the accelerated process of decomposition of the body".
12. On organ donation after death: on the assertion "organ and tissue donors, from whom organs and tissues such as lungs, corneas and skin were removed, must be veiled with a closed coffin due to the deformity that the removal surgery causes in the body".
13. On organ donation after death: on the statement "when accepting the donation of organs and tissues, one must be aware that all organs and tissues that can be used for transplantation will be removed, and the family cannot choose which organs or tissues you do not want to be removed".

These questions used as the research object were elaborated after reviewing the literature and discussion among the authors, thus becoming a questionnaire with descriptive and multiple-choice questions about the process of organ donation and brain death.

Data were collected in the morning, afternoon and night shifts from Monday to Friday. The application of the questionnaire to the nursing technicians was carried out within the intensive care units by the researchers responsible for the study.

Descriptive analysis included measures of central tendency (mean and median) and variability (standard deviation and variability) for continuous variables and frequencies, relative and absolute, for categorical variables.

Data was collected after approval by the Ethics and Research Committee following the opinion CAAE 41310620.3.0000.5336, and the nursing technicians were invited to read and sign the free and informed consent form.

RESULTS

A total of 137 nursing technicians were included in the study, of which 110 (80%) were women and 27 (20%) were men. In the sample interviewed, 97 (71%) nursing technicians did not consider themselves capable of clarifying doubts about organ donation and transplants.

The respondents are between 19 and 62 years old, with a mean age of 32 years old and a median age of 31 years old.

When asked if they could clarify the definition of brain death, 78 (57%) employees thought they were able; 112 (82%) employees had never participated in events that addressed the topic of brain death, organ and tissue donation and transplants. Almost half of the nursing technicians, 58 employees (42%), had never witnessed the performance of a clinical test and complementary examination of brain death.

Among the nursing technicians interviewed, 18% did not consider themselves organ donors, totaling 13 people.

Eight questions were asked regarding knowledge about the organ donation process for transplantation and brain death.

Figure 1 illustrates the participants' response to the question about organ donation after death: "What is necessary for someone to be an organ donor?"

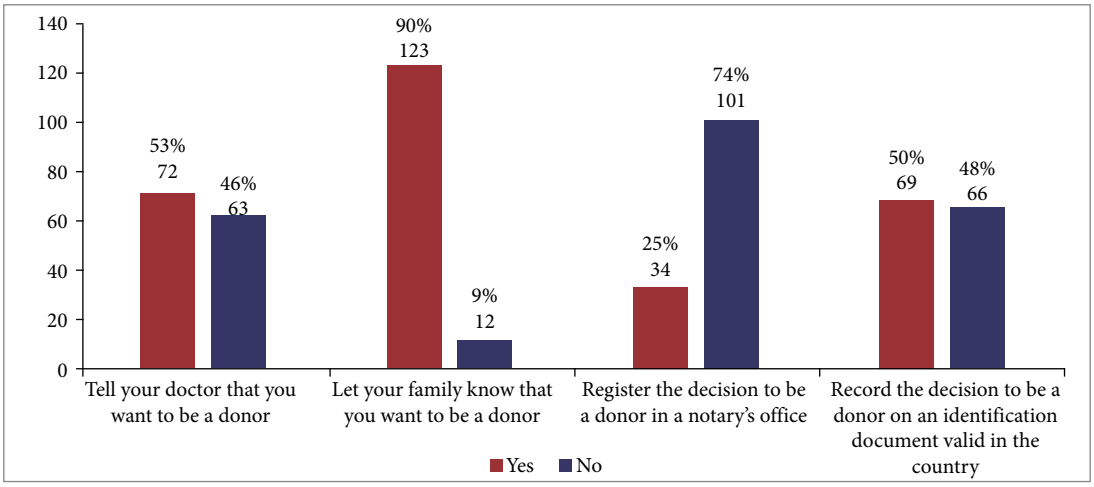

Figure 1. Knowledge about the requirements to be an organ donor.

When asked which organs could be donated, most of the participants (80%), 110 employees, answered correctly, stating that the heart, the two lungs, the liver, the two kidneys, the pancreas, the intestine could be donated, corneas, bones, skin and heart valves.

Figure 2 demonstrates that regarding the question "what conditions are necessary for the assistant team to start the investigation of brain death?" there was a disparity in the responses. Still, the alternative "known brain injury compatible with brain death" prevailed.

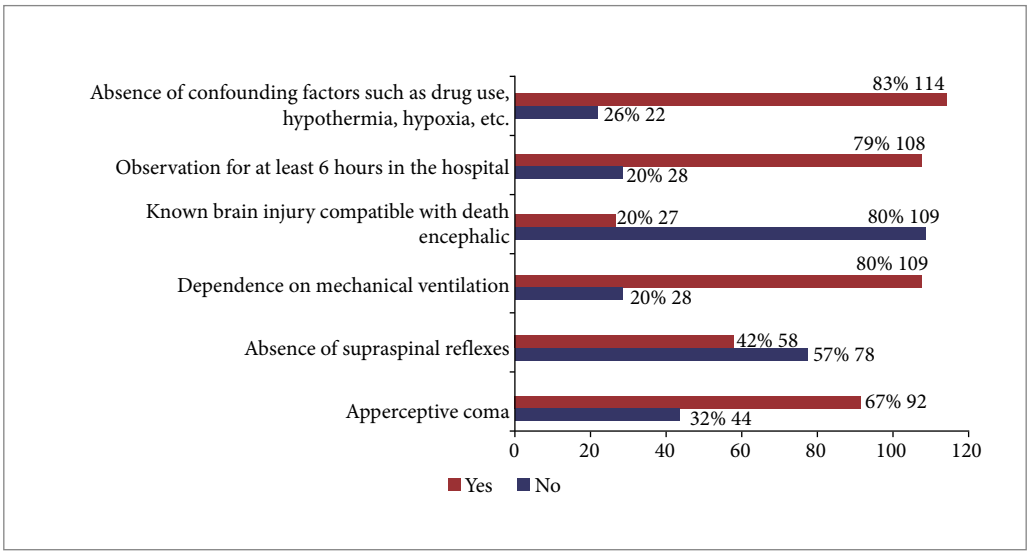

Figure 2. Criteria for initiating the investigation of brain death.

From the question, "Which of the definitions below about organ donation and transplantation do you consider true?" The following alternatives are available:

- Possible donor: a patient with a severe brain injury that needs mechanical ventilation.
- Potential donor: when the operation to remove the organs begins.
- Registered donor: the person who, if brain death is confirmed, will be donated organs, regardless of family awareness.
- Eligible for donation: when the diagnosis of brain death is confirmed, and there is no previously known contraindication for donation.

The above results are shown in Fig. 3. Then, the participants were asked to mark the nursing care(s) to be provided in the maintenance of the potential donor in brain death and the following responses were shown (Fig. 4).

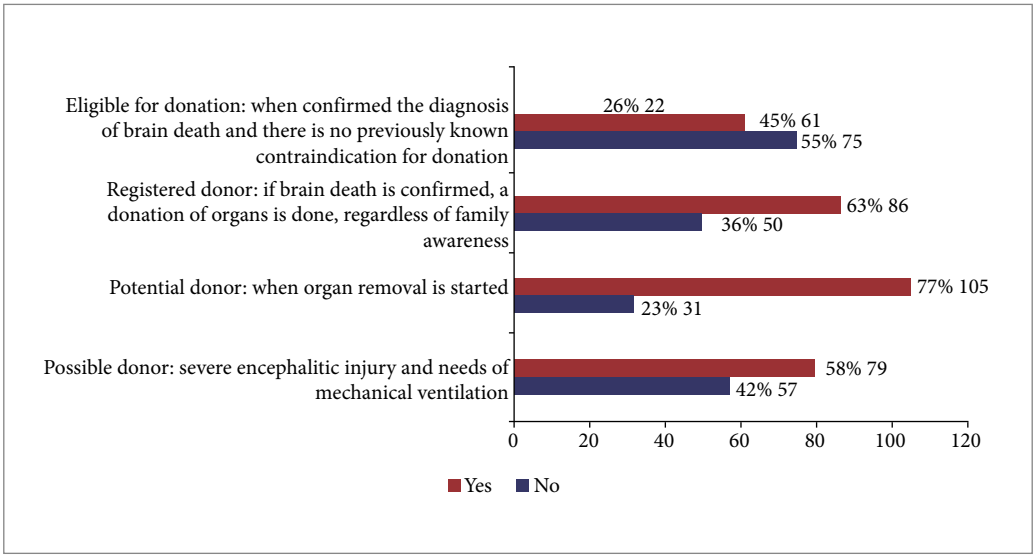

Figure 3. Definitions regarding the terminology adopted in organ donation and transplantation.

Regarding the question "which professionals can perform the diagnosis of brain death?" the responses shown in Fig. 5. Among the available alternatives, the option prevailed: "Doctor specialized in neurology, pediatric neurology, neurosurgery, intensive care medicine, pediatric intensive care medicine or emergency medicine" with the affirmation of 106 participants.

Among the nursing technicians participating in the study, 66% agreed that, when authorizing organ donation, all organs will be removed, with no possibility of choice on the part of the family.

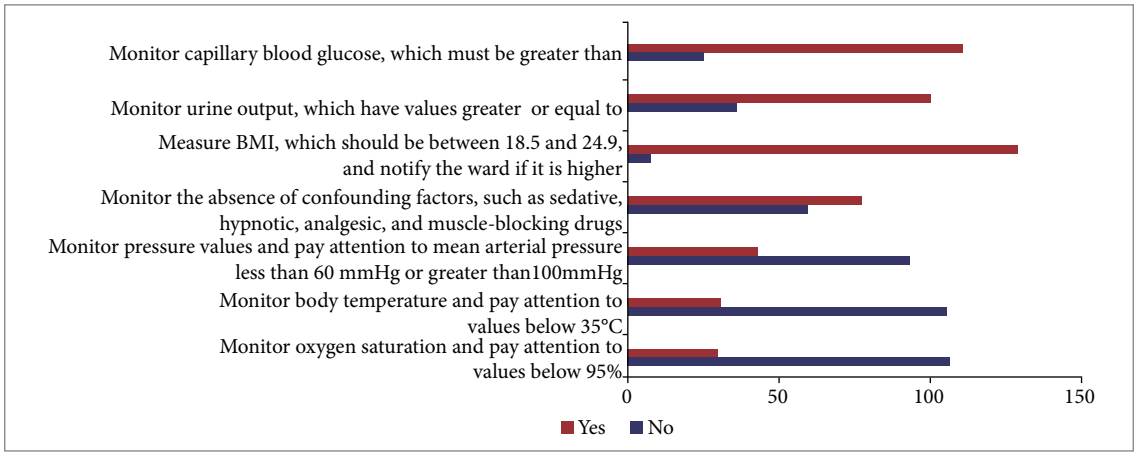

Figure 4. Necessary nursing care in maintaining the potential brain-dead donor.

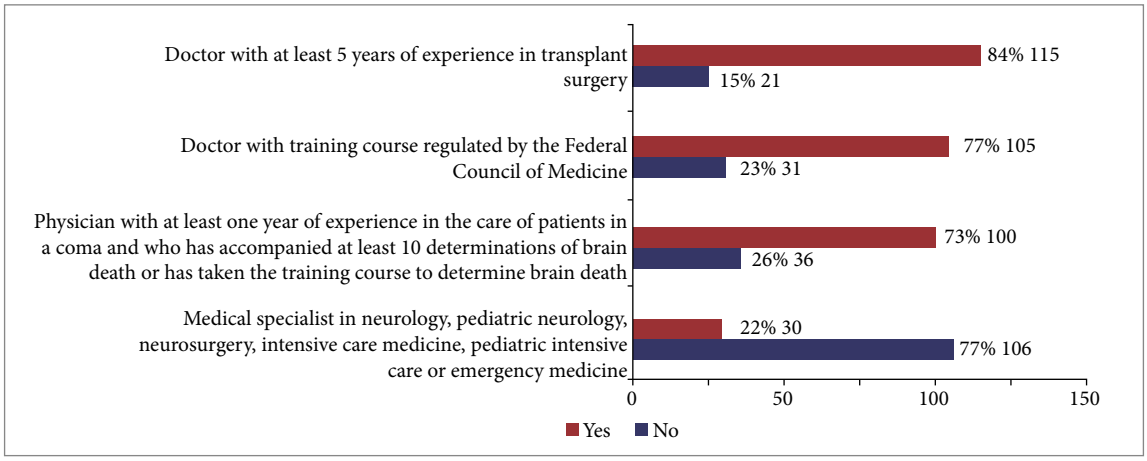

Figure 5. Professional able to diagnose brain death.

The study brings 50% of respondents agreeing that the time between the removal of organs and the delivery of the body to the family influences the deterioration of the body, and 53% believe that the removal of organs causes deformity to the body, not allowing, therefore, a traditional wake open coffin.

DISCUSSION

The donation of organs for transplantation and brain death are topics of due knowledge for the population in general, considering that the donation is a generous gesture of a family providing a new organ and destiny for the one waiting for a transplant.[1]

Through the present study, the profile of the interviewees was listed, demonstrating that most nursing technicians were female and were in the age range of 19 to 62 years, with an average of 32 years. These findings align with other studies that address this issue and show the prevalence of women in the profession. However, this study's age range was more comprehensive than others addressing the same problem.[19,20]

Since education associated with the participation of health workers and society in general, is a determining factor for the success of transplant programs,[20] a lack in this aspect is evidenced in this study, as only 18% of respondents had participated in some training or event in the area of organ donation and brain death.

Most of the research participants (71%) were unable to clarify doubts about donation and transplants, which is in line with the responses found since, when asked about what is needed to be an organ donor, 50% of respondents incorrectly stated that it would be necessary to register the decision to be a donor in an identification document valid in the country.

A survey carried out with nursing technicians and nurses who work in intensive care units showed the importance of the nursing team in clarifying issues related to the care provided to patients who are potential organ donors, and also emphasized the need for the team to understand the protocol and the conducts taken as a result of suspected brain death so that the professional has more information on the subject and feels part of the organ donation process.[21]

When asked what care would be needed for potential organ donor patients, nursing technicians showed several doubts, as 56% mistakenly indicated that monitoring the absence of confounding factors would not be a matter for potential organ donors. It is known that the monitoring of likely donor patients requires attention and control of the following parameters that are configured as prerequisites for determining brain death:[11]

a) Presence of brain injury of known cause, irreversible and capable of causing brain death;
b) Absence of treatable factors that could confuse the diagnosis of brain death;
c) Treatment and observation in the hospital for a minimum period of 6 hours; when the primary cause of the condition is hypoxic-ischemic encephalopathy, the minimum treatment and observation period should be 24 hours;
d) Body temperature (esophageal, bladder or rectal) greater than 35 °C, arterial oxygen saturation greater than 94% and systolic blood pressure greater than or equal to 100 mmHg or mean arterial pressure greater than or equal to 65 mmHg for adults.

According to Article 4 of Law No. 10,211 of March 23, 2001, family members up to the second degree can authorize the donation of organs and decide which organs they wish to donate.[4] Among the interviewees, 66% agreed that, when authorizing the donation, all organs are removed, with no possibility of choice on the part of the family.

We have health professionals as great propagators of information and knowledge for the lay population in general. Still, we highlight the importance of knowledge on the subject coming from technical nursing professionals in intensive care units, who are sometimes the professionals who maintain more significant contact with family members of patients hospitalized in these units.

More than half of the nursing technicians interviewed erroneously believe that the removal of organs causes deformity to the body and the 24 hours between the removal of the organs and the delivery of the body, as well as the scarring after the removal surgery, could make it impossible to have a wake with an open coffin. It is worth mentioning that it is imperative that the team is aware of this information and can clarify it when asked by the family since the integrity of the deceased's body is directly related to the family's acceptance of organ donation.[22]

A study carried out in Curitiba, in which 101 health professionals were interviewed about organ donation and transplants, showed that 31% of health professionals, including physicians, nurses, nursing technicians and assistants, physiotherapists, psychologists and pharmacists, were not aware of the current legislation on organ donation in Brazil. Only 65% of these professionals correctly reported the concept of brain death, which can be classified as a low percentage, emphasizing the need for health professionals to clarify the subject.[23] Concerning the nursing technicians interviewed, only 57% of the participants thought they could explain what brain death is, which is still low compared to the study mentioned above.

Respondents showed interest in learning more about the donation and transplantation process, which instigates researchers to propose continuing education strategies to the institution.

CONCLUSION

Most nursing technicians from the intensive care units interviewed are organ donors. However, it is perceived some lack knowledge about all stages of the donation process until transplantation since only 18% had participated in some training on the subject.

There was a predominance of inadequate responses regarding donor maintenance and management, reinforcing the respondents' need for knowledge regarding the donation process and the Brazilian legislation on transplantation.

Given the great importance of the theme of organ donation and brain death, the relationship between health professionals' knowledge and the transformation of potential donors into effective donors and the importance of adequate responses to the families' questions on their part, there is a need for improvement of professionals on the subject, considering the results found in this study.

For this, it is necessary to invest in new training and dialogue on the subject, bringing professionals moments of discussion and continuing education, making them feel part of the process required and co-responsible for the increase in donations. Thus, it is possible to provide a greater understanding of the moment that the family members of potential donors face and may resolve any doubts arising from the moment.

CONFLICT OF INTEREST

Nothing to declare.

AUTHOR'S CONTRIBUTION

Substantive scientific and intellectual contributions to the study: Dib L, Bartolomay C and Figueiredo AE; **Conception and design**: Dib L, Bartolomay C and Figueiredo AE; **Data analysis and interpretation**: Dib L, Bartolomay C and Figueiredo AE; **Article**

writing: Dib L, Bartolomay C and Figueiredo AE**; Critical review**: Dib L, Bartolomay C and Figueiredo AE; **Final approval**: Dib L, Bartolomay C and Figueiredo AE.

DATA AVAILABILITY STATEMENT

Data will be available upon request.

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REFERÊNCIAS

1. Maia BO, Amorim JS. Morte encefálica: Conhecimento de acadêmicos de enfermagem e medicina. J Bras Transpl 2009;12:1088-91.
2. Cicolo EA, Roza BA, Schirmer J. Doação e transplante de órgãos: Produção científica da enfermagem brasileira. Rev Bras Enferm 2010;63(2):274-8. https://doi.org/10.1590/S0034-71672010000200016
3. Marinho A, Cardoso SS, Almeida VV. Disparidades nas filas para transplantes de órgãos nos estados brasileiros. Cad Saúde Pública 2010;26:786-96. https://doi.org/10.1590/S0102-311X2010000400020
4. Lei n.º 10.211, de 23 de março de 2001 (BR) [acesso nov 23 2021]. http://www.planalto.gov.br/ccivil_03/leis/leis_2001/l10211.htm
5. Coelho GHF, Bonella AE. Doação de órgãos e tecidos humanos: a transplantação na Espanha e no Brasil. Rev Bioét 2019;27(3):419-29. https://doi.org/10.1590/1983-80422019273325
6. [ABTO] Associação Brasileira de Transplante de Órgãos. Dimensionamento dos Transplantes no Brasil e em cada estado. ABTO, Registro Brasileiro de Transplantes. 2019(4). [acesso nov 30 2021]. https://site.abto.org.br/wp-content/uploads/2022/03/leitura_compressed-1.pdf
7. Piovesan A, Nahas WC. Estado atual do transplante renal no Brasil e sua inserção no contexto mundial. Revista de Medicina 2018;97(3):334-9. https://doi.org/10.11606/issn.1679-9836.v97i3p334-339
8. Guerra SKS, Nóbrega ÍMF, Randau KP. Transplante renal no Brasil: Panorama farmacêutico. Res Soc Dev 2022;11(5):e39611528427. https://doi.org/10.33448/rsd-v11i5.28427
9. Rech TH, Rodrigues Filho ÉM. Entrevista familiar e consentimento. Revista Bras Ter Intensiva 2007;19(1):85-9. https://doi.org/10.1590/S0103-507X2007000100011
10. Dalbem GG, Caregnato RCA. Doação de órgãos e tecidos para transplante: Recusa das famílias. Texto Contexto Enferm 2010;19(4):728-35. https://doi.org/10.1590/S0104-07072010000400016
11. Resolução CFM nº 2.173, de 23 de novembro de 2017. Diário Oficial da União, Edição 240, Seção 1, p. 50-275. [acesso nov 23 2021]. https://saude.rs.gov.br/upload/arquivos/carga20171205/19140504-resolucao-do-conselho-federal-de-medicina-2173-2017.pdf
12. Garcia C, Garcia V, Pereira J. Manual de doação e transplantes: Informações práticas sobre todas as etapas do processo de doação de órgãos e transplante. Porto Alegre: Libretos, 2017.
13. Silva JRF, Silva MHM, Ramos VP. Familiaridade dos profissionais de saúde sobre os critérios de diagnósticos de morte encefálica. Enferm Foco 2010;1(3):98-103. https://doi.org/10.21675/2357-707X.2010.v1.n3.36
14. Souza SS, Borenstein MS, Silva DMGV, Souza SS, Carvalho JB. Estratégias de enfrentamento da enfermagem no cuidado ao potencial doador de órgãos. Rev Rene 2013;14(1):92-100.
15. Sadala MLA. A experiência de doar órgãos na visão de familiares de doadores. J Bras Nefrol 2001;23(3):143-51.
16. Fonseca MAA, Carvalho AM. Fragmentos da vida: representações sociais e doação de órgãos para transplantes. Interações 2005;10(20):85-108.
17. Ribeiro KRA, Prado LS, Santos FR, Gonçalves FAF, Borges MM, Abreu EP. Brain death and the process of donation of organs: A family care / Morte encefálica e o processo de doação de órgãos: Uma atenção ao familiar. R Pesq Cuid Fundam Online 2020;12:190-6. https://doi.org/10.9789/2175-5361.rpcfo.v12.7197

18. Cinque VM, Bianchi ERF. Estressores vivenciados pelos familiares no processo de doação de órgãos e tecidos para transplante. Rev Esc Enferm USP 2010;44(4):996-1002. https://doi.org/10.1590/S0080-62342010000400020

19. De La Longuiniere ACF, Lobo MP, Leite PL, Barros RCS, Souza AN, Vieira SNS. Conhecimento de enfermeiros intensivistas acerca do processo de diagnóstico da morte encefálica. Rev Rene 2016;17(5):691-8.

20. Freire ILS, Mendonça AEO, Pontes VO, Vasconcelos QLDAQ, Torres GV. Morte encefálica e cuidados na manutenção do potencial doador de órgãos e tecidos para transplante. Rev Eletr Enferm 2012;14(4):903-12. https://doi.org/10.5216/ree.v14i4.14598

21. Silva TRB, Nogueira MA, Sá AMM. Conhecimento da equipe de enfermagem acerca dos cuidados com o potencial doador em morte encefálica. Rev Enferm UFPI 2016:24-30.

22. Pompeu MH. Aspectos intervenientes na efetivação da doação do tecido ósseo durante o acolhimento e a entrevista familiar para doação de órgãos e tecidos (Thesis). São Paulo: Universidade de São Paulo. https://doi.org/10.11606/T.22.2019.tde-28012019-151736

23. Bedenko RC, Nisihara R, Yokoi DS, Candido VM, Galina I, Moriguchi RM, et al. Análise do conhecimento da população geral e profissionais de saúde sobre doação de órgãos após morte cardíaca. Rev Bras Ter Intensiva 2016;28(3):285-93. https://doi.org/10.5935/0103-507X.20160043