

Current context regarding the organ donation process and its impasses with the COVID-19 pandemic

Contexto actual respecto al proceso de donación de órganos y sus impases con la pandemia del COVID-19

Contexto atual diante ao processo de doação de órgãos e seus impasses com a pandemia de COVID-19

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Abstract

The aim was to identify in the literature the impact of the pandemic on organ donation concerning waiting time and reduction in donors. Integrative review, carried out by collecting scientific data from the last 2 and a half years, through the PubMed databases and the Virtual Health Library Portal. Original articles were selected in English, Portuguese, and Spanish from 2019 to June 2022. First, the titles and abstracts were read, and then, articles that responded to the research intention were recruited so that the analysis could be carried out in full. Given the evaluation of those selected, the fragmentation into three categories is clarified, namely: Justifying the decline in the incidence of donors during the COVID-19 pandemic, family consent in the donation process, and identifying the sociodemographic profile of donors and recipients of organs. Scientific knowledge was presented, understanding organ donation during and after the pandemic, is a vital issue that needs to be carefully addressed.

Descriptors: Transplants; Organ Donation; Brain Death; COVID-19; Nursing.

Resumen

El objetivo fue identificar en la literatura el impacto de la pandemia en la donación de órganos en relación al tiempo de espera y reducción de donantes. Revisión integrativa, realizada mediante la recopilación de datos científicos de los últimos 2 años y medio, a través de las bases de datos PubMed y el Portal de la Biblioteca Virtual en Salud. Se seleccionaron artículos originales en inglés, portugués y español para el período de 2019 a junio de 2022. se leyeron los títulos y resúmenes, y luego se reclutaron artículos que respondieran a la intención de investigación para que el análisis se pudiera realizar en su totalidad. De la evaluación de los seleccionados se aclara la fragmentación en tres categorías, a saber: Justificar la disminución de la incidencia de donantes durante la pandemia de COVID-19, consentimiento familiar en el proceso de donación e identificar el perfil sociodemográfico de donantes y receptores. de órganos. Se presentó el conocimiento científico, entendiendo la donación de órganos durante y después de la pandemia, siendo un tema vital que necesita ser abordado con atención.

Descriptores: Trasplantes; Donación de Órganos; Muerte Encefálica; COVID-19; Enfermería.

Resumo

Objetivou-se identificar na literatura o impacto da pandemia na doação de órgãos em relação ao tempo de espera e diminuição de doadores. Revisão integrativa, realizada através do levantamento de dados científicos dos últimos 2 anos e meio, por meio das bases PubMed e o Portal da Biblioteca Virtual em Saúde. Foram selecionados artigos originais na língua inglesa, portuguesa e espanhola referente ao período de 2019 a junho de 2022. Primeiramente, foram lidos os títulos e resumos, e em seguida, recrutando os artigos que respondiam a intenção da pesquisa para que se realizasse a análise na íntegra. Diante à avaliação dos selecionados, esclarece-se a fragmentação em três categorias, sendo: Justificando o declínio na incidência de doadores durante a pandemia de COVID-19, consentimento da família no processo de doação, e identificando o perfil sociodemográfico dos doadores e receptores de órgãos. Apresentou-se conhecimentos científicos, compreendendo sobre a doação de órgãos durante e após a pandemia, sendo uma questão vital que precisa ser cuidadosamente abordada.

Descritores: Transplantes; Doação de Órgãos; Morte Encefálica; COVID-19; Enfermagem.



professionals and especially to society, as this process is still considered an impasse in health services.

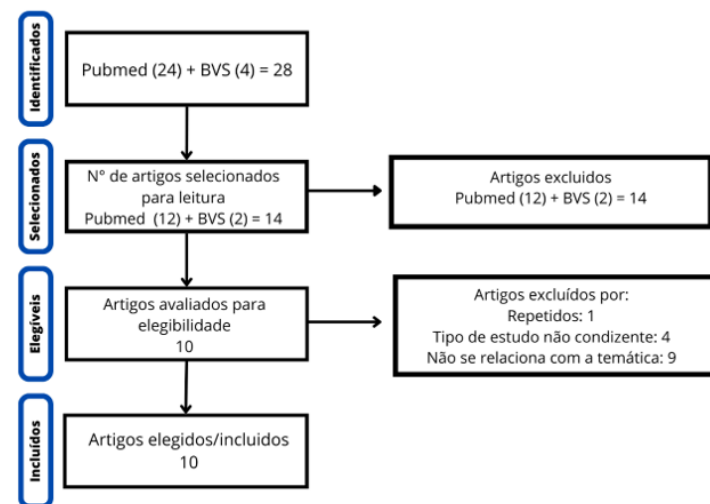
Therefore, during the process, the participation of nurses is necessary, and one of their professional skills is to identify, understand, and teach the community about the need for transplants. The objective of the research is to understand how the literature emphasizes the impact of the pandemic on organ donation: the increase in waiting time and the decrease in donors.

Methodology

This is an integrative review, anchored by the PRISMA protocol. PubMed and the Virtual Health Library (VHL) portal were the basis for the search. Concerning the descriptors used, the following were used: "Transplants", "Organ donation", "Brain death", "COVID-19" (COVID-19), and "Nursing" (Nursing), these being combined by the term AND in English, Portuguese, and Spanish.

The inclusion of periodicals followed articles listed in the period from 2019 to July 2022. The exclusion was of newspaper articles, thesis, book or book chapters, reflective studies, dissertations, experience reports and others that do not fit the question of the original periodical. The selected articles are available in full and free of charge.

Figure 1. Flowchart for selecting journals for research. Maringá, PR, Brazil, 2022



The choice of articles followed the criteria following Figure 1, which was segmented into three stages, namely: 1) Analysis of titles and abstracts, which favored delimitation according to the theme; 2) Full reading of the articles recruited in the first stage, eliminating all duplicates; and 3) Selection of eligible journals, which comprises the results of the search.

Regarding ethical precepts, the following research, as it is composed of a literature review, did not require submission to the Research Ethics Committee, as required by Resolution No. 466/12 of the National Health Council.

Results and Discussion

The eligible journals were found in the PubMed and VHL databases in the English language, as described in Table 1. In relation to the main findings, it is possible to verify that

Introduction

Brain death is determined by the absolute and definitive absence of brain functions and brain stem reflexes. Therefore, because of severe aggression or serious injury to the brain, the blood that comes from the body and supplies the brain is interrupted and the brain dies. Organs and tissues donated by individuals diagnosed with brain death are of paramount importance in helping to treat diseases that can only be treated with transplantation¹.

Organ donation is an act of solidarity, capable of saving lives, the "yes" to donation may be the only chance for individuals who need a transplant to have an increase in survival, thousands of people are waiting on the waiting list, every year. Currently, more than 59 thousand people are in line waiting for an organ. In 2022 alone, on average, more than 45% of families did not agree to the donation².

Brazil has the largest public transplant system in the world, now, approximately 88% of these procedures are funded by the Unified Health System (SUS), therefore, patients receive free and comprehensive assistance, from the beginning of the process until the end. post-transplant, through the public health network. The country is the second largest transplanter in the world and is a global reference around transplantation, behind only the United States (USA)³.

In the donation process there are several challenges and difficulties, in Brazil one of the obstacles is the number of effective donors, that is, when a potential donor manages to donate at least one solid organ for transplantation he becomes an effective donor⁴. In 2018, the family refusal rate when donating organs from patients who died reached 43%⁵. For this reason, the person must express the desire to be a donor to their family members, as no document can be left in life that guarantees donation after death^{5,6}.

In 2019, from January to July, 15,827 transplants took place, in the same period in 2020, there was a drop, with only 9,952 procedures performed, with a waiting list of 46,181 patients⁷. According to the Brazilian Transplant Registry (RBT)⁴, in 2020 the waiting list with active patients reached 43,642 thousand, of which 2,709 patients died.

At the end of 2019, there was an uninterrupted outbreak of pneumonia caused by a new coronavirus, SARS-CoV-2, which is a virus that causes COVID-19 pathology, with a high rate of transmissibility, through droplets of saliva, contaminated handshakes, sneezing, and phlegm, which quickly became a pandemic, responsible for completely changing lifestyle, limiting functions in hospitals and their respective processes and health resources^{8,9}.

Finally, it was observed that during the COVID-19 pandemic, there was a reduction in the number of donors, mainly due to traumatic brain injury, due to the low incidence of individuals in urban areas. The number of donors due to stroke remained stable. Thus, the pandemic caused a reduction in the number of transplants performed, increasing waiting lists, and reducing the chances of candidates receiving organs in a shorter period¹⁰.

Understanding the organ donation process is essential for adequate justification to be presented to



during the COVID-19 outbreak, there was a significant decrease in the number of organ donors and transplants, with an annual average of 68%, however, there was a higher rate of brain death (BD) after the pandemic, among the main causes, the rate of traumatic brain injury showed the biggest drop compared to 2019.

Furthermore, it is possible to verify that there was an increase in family acceptance during the pandemic, in 2018, out of 10 patients, 7 were accepted, and during the pandemic, out of 10 patients, 9 were accepted, but the number of families approached for donation decreased considerably, this may be related to the limitations imposed

by COVID-19, as many families do not go to hospitals for fear of contamination by the virus or prefer to speed up the burial and not wait for the entire donation protocol, which is quite strict in the country.

Regarding the sociodemographic profile, there was no difference in sex, age, cause of death, and number of organs recovered. Therefore, this decrease in donors has caused the waiting list to increase, however, we know that donating organs from deceased people is essential for the treatment of patients on the waiting list. Since donations have been growing gradually in recent years in Brazil.

Chart 1 Synthesis of journals to formalize the integrative review. Maringá, PR, Brazil, 2022

ID	Title	Year	Language	Main results
11	Has the COVID-19 pandemic affected brain death notifications and organ donation time?	2021	English (USA)	The main cause of brain death was intracranial hemorrhage (75%) during the pandemic period.
12	Impact of COVID-19 pandemic on organ donation in Hong Kong: a single-center observational study	2021	English (USA)	During the pandemic, when compared to 2018, there was a 26.9% reduction in the number of deceased organ donor referrals.
13	Brain death diagnosis for potential organ donors during the COVID-19 pandemic	2021	English (USA)	The guideline also suggests that living donors who test positive for COVID-19 should not donate for at least 3 to 6 months until the long-term outcome of cured COVID-19 becomes clear.
14	Management of an organ donation process in COVID-19 pandemic: first case of Turkey	2020	English (USA)	During the COVID-19 pandemic, it is vital to check whether neurologically deceased patients are infected with SARS-CoV-2 in a short period before the transplantation process.
15	Organ donation-not only responsibility of intensive care medicine	2022	English (USA)	In 2019, 756 people died in Germany while on the waiting list for a donor organ. The pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has led to an even greater decline in the number of donors.
16	National survey on deceased donor organ transplantation during the COVID-19 pandemic in Japan	2021	English (USA)	In 2020, the number of brain death donors decreased to 68 (69% of the annual average), and the number of donors after cardiac death decreased to 9 (32% of the annual average).
17	Kidney transplant from a SARS-CoV-2 positive deceased donor	2022	English (USA)	It is becoming increasingly clear that not all donors with a positive nucleic acid amplification test for SARS-CoV-2 are contagious and some of these organs can be transplanted with careful selection. Some cases demonstrate that these transplants can be performed safely without viral transmission to the recipient.
18	Multiple organ retrieval in a brain-dead left ventricular assist device donor	2022	English (USA)	Successful retrieval of intra-abdominal organs can be successfully achieved in selected left ventricular assist device (LVAD) donors. A multidisciplinary team involving a dedicated mechanical circulatory support (MCS) team contributes to providing appropriate management of LVAD donors before and during multi-organ recovery.
19	Impact of the first COVID-19 outbreak on liver transplantation activity in France: a snapshot	2021	English (USA)	There was a 28% decrease in the number of organ donations in 2020 (543 in 2020 vs. 752 organ donations in 2019). A 22% decrease in the number of liver transplants was also observed: 435 in 2020 vs. 556 in 2019.
20	Organ donation in the time of COVID-19: the Israel experience one year into the pandemic-ethical and policy implications	2022	English (USA)	The total number of potential donors was that of 2019 (181 vs. 189). However, the number of families approached for donation is of significant importance (P = 0.02). 19, including brain death determinations due to donor family-restricted limiter coordinator possibilities, provision, emotional support, and insight into the medical situation.

The main findings were divided into three categories, namely: Identifying the sociodemographic profile of organ donors and recipients, Justifying the decline in the

incidence of donors during the COVID-19 pandemic, and Family consent in the donation process.



Identifying the sociodemographic profile of organ donors and recipients

The sociodemographic profile is characterized as a fundamental means for establishing bodies. In the present research, sex, age, cause of death and number of organs recovered from deceased organ donors were not associated with the difference between 2018 and 2020¹². However, in a study of 40 patients diagnosed with brain death, 13 of them before the pandemic and 27 during the pandemic, the average age of real donors was 29.6 years, and 60% were men¹¹.

Traumatic brain injury is physical damage to brain tissue that impairs brain function and may be unrelated to COVID-19 and the profile of donors and recipients. The main cause of brain death was intracranial hemorrhage (75%)¹¹. Traumatic brain injury is physical damage to brain tissue that impairs brain function and may be unrelated to COVID-19 and the profile of donors and recipients. The main cause of brain death was intracranial hemorrhage (75%)¹⁵.

Religiosity may encourage the act of donation, as it is related to the idea of helping others by doing good. German Christian Churches see organ donation as an "act of charity and solidarity beyond death". Organ and tissue transplants have been permitted in Muslim jurisprudence since the 1950s¹⁴.

Although Jewish Law prohibits altering the body of the deceased, many scholars believe it is permitted if it is done to save another person. However, the topic of organ donation appears to continue to be treated very rigorously, especially among members of the Orthodox religious community. Another article in Wales, the United Kingdom of Great Britain, and Northern Ireland discusses in detail the positions of other religions such as Hinduism, Buddhism, and Sikhism on organ donation¹⁴.

Justifying the decline in donor incidence during the COVID-19 pandemic

The reduction in donors during the pandemic caused an extensive wait for recipients. One of the causes was the emergence of COVID-19 as it influenced the healthcare infrastructure in several areas, especially in regions with limited resources. With the lack of intensive care unit (ICU) beds for both organ donors and transplant recipients, there was a general negative impact on donations, consequently reducing the number of transplants¹². There are three reasons for the decline in organ donations seen in France in 2020. First, like other European countries, especially Italy, the French government has made a major effort to substantially increase the total number of ICU beds in the country. The country increased from 5,000 in early March to around 10,000 in April 2020¹⁹.

The efficiency of preventive measures and control strategies against infection may not be related to the COVID-19 pandemic and the number of donors. Based on retrospective observational research, COVID-19 did not affect the number of deceased organ donors in Slovenia and Germany, which may be related to the effectiveness of national preventive measures and infection control strategies¹². In another study, hospitals may not have many

resources, such as personnel and equipment to manage these patients, as organ donation and transplantation are resource-intensive procedures¹³.

Living donors who test positive for COVID-19 cannot donate for at least 3 to 6 months until the long-term results of cured COVID-19 become clear. However, in the case of transplantation, the acceptance criteria for donors with a previous diagnosis of COVID-19, two documented negative COVID-19 tests and 28 days of asymptomatic and another negative test at the time of donation must be used¹³. In Israel, the absolute number of potential donors identified has not changed.

The delimitation of ICU and general medical wards for COVID-19-positive and negative patients was prescribed at the beginning of the pandemic, allowing the continued admission of unaffected patients, including potential donors²⁰.

Family consent in the donation process

During the COVID-19 pandemic, the demand for organ donation presented itself as a dilemma to be faced by families. According to quantitative research in the year 2019, in Turkey, there were 2,309 patients diagnosed with brain death, 619 families consented to organ donation, and in the year 2020 there were 1,385 patients diagnosed with brain death, and 263 families consented to donation¹¹. In another article, in 2020, the confirmation rate of brain death was considerably higher, studies show that the consent rate was similar between the period 2018 and 2020, family consent for organ donation was obtained for 9 patients studied during COVID-19 vs 7 patients in the same period in 2018¹².

The delay in receiving the test results can affect the decisions of many families, increasing the number of families who refuse to donate organs after death. The family consent rate for donation was 15% before the pandemic and 29.6% during the pandemic. Restrictions during the pandemic caused difficulties in contacting family members, 9 families who were asked to reconsider the donation expressed their negative decisions over the phone after the interviews¹¹. There was no change in the consent rate between 2020 and 2019, a total of 58.7% in 2020 and 58.2% in 2019. The first contact with the family was carried out by telephone for 18% of potential donors and this was monitored with restricted contact in the hospital, it was found to negatively interfere with the donation process, presenting an 11% reduction in consents²⁰.

Emotional issues influence the decision to donate organs. When comparing this data in 2019 and 2020, household consent agreement decreased by 57.5%¹¹. Despite the limitations of family visits to the hospital, the Organ Donation Coordinator (ODC) had face-to-face contact with all families of brain-dead patients. The involvement between the family and ODCs in the donation procedure justifies the similar family consent rate during the COVID-19 pandemic¹². It is possible to verify the role of nurses in this process, their autonomy, and the possibility of acting uniquely and collaborating with other specialties that make up a multidisciplinary health team²¹.



Conclusion

Given due research, it is possible to conclude that in the process of organ donation in the face of the COVID-19 pandemic, many impasses were encountered. Family restrictions in the hospital environment, the significant reduction in donation acceptance, and the causes of death can be highlighted as the main factors that interfere in this process.

According to the materials found, to overcome the disproportionate number of patients on the list to the number of transplants, it is important to identify and notify

deaths, especially brain deaths, prepare health professionals, and inform the population about the donation and transplant process with greater emphasis.

Finally, when trained, the nurse - when faced with the donation process - must identify the cause of death, understand the process so that there is an effective donation, educate, prepare, and offer guidance to the family regarding the need for donation, thus favoring an expansion of the management offered by health services in our population.

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