



## PROFILE OF POTENTIAL ORGAN DONORS IN A REFERENCE HOSPITAL\*

*PERFIL DE POTENCIAIS DOADORES DE ÓRGÃOS EM HOSPITAL DE REFERÊNCIA*

*PERFIL DE POTENCIALES DONADORES DE ÓRGANOS EN HOSPITAL DE REFERENCIA*

Thamy Braga Rodrigues<sup>1</sup>, Maristela Inês Osawa Vasconcelos<sup>2</sup>, Maria da Conceição Coelho Brito<sup>3</sup>, Diane Sousa Sales<sup>4</sup>, Regina Célia Carvalho da Silva<sup>5</sup>, Ângela Maria Alves e Souza<sup>6</sup>

The study aimed to characterize the profile of potential organ donors in a hospital in the northern zone of Ceará, Brazil. This is a quantitative, retrospective and documentary study, performed in a hospital of Ceará, from information contained in the medical records of potential donors, from May to September 2009. Data were tabulated, focusing on the identification process and logistic aspects. We identified that the most prevalent diagnoses were traumatic brain injury (51.4%) and stroke (31.4%), and that 57.1% completed the process in time for organ procurement. Thus, we hope that the assessment of policy and donation data contributes to increase the donation rates, supporting the recognition of the process's weaknesses, as well as the implementation of measures to promote its success.

**Descriptors:** Transplants; Tissue Donors; Health Profile.

Objetivou-se caracterizar o perfil de potenciais doadores de órgãos em hospital da zona norte do Ceará, Brasil. Estudo quantitativo, retrospectivo, documental, realizado em hospital do Ceará, com base em informações contidas em prontuários de potenciais doadores, de maio a setembro de 2009. Os dados foram dispostos em tabelas, enfocando o processo de identificação e os aspectos logísticos. Evidenciaram-se o traumatismo cranioencefálico (51,4 %) e o acidente vascular cerebral (31,4 %) como diagnósticos prevalentes, e que 57,1% concluíram o processo em tempo hábil para captação dos órgãos. Espera-se que a avaliação da política e dos dados da doação contribua para intensificação das taxas de doação, favorecendo reconhecimento das fragilidades do processo, bem como execução de medidas promotoras para o êxito deste.

**Descritores:** Transplantes; Doadores de Órgãos; Perfil de Saúde.

El objetivo fue caracterizar el perfil de potenciales donadores de órganos en hospital de la zona norte del Ceará, Brasil. Estudio cuantitativo, retrospectivo, documental, realizado en hospital del Ceará, a partir de informaciones contenidas en registros médicos de donadores potenciales, de mayo a septiembre de 2009. Los datos fueron tabulados, centrándose en el proceso de identificación y logística. Los diagnósticos más prevalentes fueron traumatismo craneoencefálico (51,4%) y accidentes cerebrovasculares (31,4%) y 57,1% completaron el proceso en el tiempo adecuado para captación de los órganos. Se espera, por lo tanto, que la evaluación de la política y de los datos de donación contribuya al aumento de las tasas de donación, a favor del reconocimiento de las debilidades del proceso y aplicación de medidas para promover su éxito.

**Descritores:** Trasplante; Donantes de Tejidos; Perfil de Salud.

\* Extracted from the Nursing Monograph "Assessment of the results from the Intra-Hospital Commission of Organ and Tissue Donation for Transplantation, Santa Casa de Misericórdia of Sobral", presented to the Universidade Estadual Vale do Acaraú (UVA) in 2009.

<sup>1</sup> Nurse. Master in Nursing, Universidade Federal do Ceará (UFC). Fortaleza, CE, Brazil. E-mail: bragathamy@hotmail.com

<sup>2</sup> Nurse. PhD in Nursing from the UFC. Professor of the Nursing Undergraduate Course, Universidade Estadual Vale do Acaraú (UVA), of the Professional Master in Family Health (RENASF/UVA) and the Academic Master in Family Health (CFU/UVA/EFSFVS). Sobral, CE, Brazil. E-mail: miosawa@gmail.com

<sup>3</sup> Nurse. Master student in Family Health from the UFC. Professor of the Nursing Undergraduate Course at UVA. Sobral, CE, Brazil. E-mail: marycey@hotmail.com

<sup>4</sup> Nurse. FUNCAP Scholarship. Master student in Public Health from the Universidade de Fortaleza (UNIFOR). Fortaleza, CE, Brazil. E-mail: diane-enf@hotmail.com

<sup>5</sup> Nurse. PhD student in Public Health from the UFC/UECE/UNIFOR. Assistant Professor, Universidade de Fortaleza (UNIFOR). Fortaleza, Brazil. E-mail: reginacarvalho741@hotmail.com

<sup>6</sup> Nurse. PhD in Nursing from the Universidade Federal do Ceará (UFC). Professor of the Undergraduate Nursing Course and Graduate Program in Nursing at UFC. Coordinator of Bereavement support group – Research and extension project in Grief, Loss and Separation – PLUS+-DENF-UFC. Fortaleza, CE, Brazil. E-mail: amasplus@yahoo.com.br

## INTRODUCTION

Brazil has the largest public transplant program in the world, with approximately 23,388 procedures performed in 2011<sup>(1)</sup>, a significant period for incorporation of this complex procedure in the Unified Health System (SUS). Despite this technological advancement, improvements are still possible, since the transplants performed are not enough to reduce the waiting list.

The insufficient number of organ donations is traditionally related to the lack of public awareness of the need for organ transplantation and donation opportunities. These reasons affect the misunderstanding and insufficient enthusiasm for organ donation. Strategies for organ donation improvement, including legislation, public information, campaigns and registration of potential organ donors in official documents (driver's licenses and identity) failed, by making such a significant disparity between the number of donors and people waiting for a transplant<sup>(2)</sup>.

The organ transplantation issue certainly has characteristics that differentiate it from any other health issue. First of all, it is not restricted to the relationship between the healthcare team and the patient. In order to move forward, it depends on the third element, the organ donor. Thus, even though the transplants are based on technical procedures which present great technological advancement, they cannot occur without a donor<sup>(3)</sup>.

Therefore, the post-mortem removal of organs and tissues for transplantation should be preceded by a diagnosis of brain death, with predefined criteria from the Federal Council of Medicine<sup>(4)</sup>. Soon after, the potential donor is notified to the Organ Notification, Procurement, and Distribution Center (CNCDO). Notification is mandatory for all health facilities, regardless of family's donation intention or medical condition of the potential donor to become effective donor.

The law states that the organ removal from deceased persons for transplantation depends on the consent of the spouse or relative of legal age, obeying the line of succession. Additionally, the transplantation can only be performed after explicit consent of the organ or tissue receptor, duly registered in the unified waiting list, and counseling about the risks and benefits of the procedure<sup>(5)</sup>.

Transplantation is the treatment chosen by many patients. However, it is faced with the reality of the shortage of organs and tissues donation, which increasingly intensifies the waiting list, composed of people in suffering, who see in the organ transplant an alternative to continue living. As soon as transplants were proved as viable treatment, its greatest limitation became the organ shortage, which entails an imbalance between supply and demand<sup>(6)</sup>.

Data show that 2008, through educational programs, was a positive year for transplants in Brazil, with increasing donation rates in 14 states, with Ceará among these (19% higher compared with 2007), reaching the rate of 7.2 effective donors per million population (pmp)<sup>(7)</sup>.

The hospital in the northern area of Ceará is an accredited institution by the Ministry of Health to perform organ procurement since 1999. However, only in 2003 were initiated notifications of potential donors in the Emergency Department and Intensive Care Unit (ICU) of this hospital. The Commission Intra Hospital Donation of Organs and Tissues for Transplantation (CIHDOTT) had effective performance until 2005, with five multiple organs procurement conducted. In May 2009, the institution resumed the CIHDOTT activities with structural changes. For this reason, besides being an innovative service in the region, in just a few months, the results are considered significant and deserve an assessment.

In recent years, the health assessment has

become an important instrument for planning and management of systems and services, not only in order to assess the effectiveness of interventions and the efficient use of available resources, but also to meet all users of the system<sup>(8)</sup>. Therefore, this study aimed to characterize the profile of potential organ donors.

## METHOD

This is a quantitative study of retrospective approach and documentary type, carried out in a hospital in the northern area of Ceará, based on information contained in the medical records of 35 inpatients that opened the protocol for brain death diagnosis, from May to September 2009. The choice for this period is justified for this was the time of the Commission's restructuring and the return of the Organ Donation Policy activities in the region.

For data collection we used a form with information regarding the socio-demographic profile; admission diagnosis; notification to the Transplant Center; clinical diagnosis of brain death; family interview; and logistical and structural aspects.

Data were descriptively organized and analyzed in absolute and percentage values through tables and confronted with the pertinent literature. The study was approved by the Research Ethics Committee of the Universidade Estadual Vale do Acaraú (UVA) in Sobral-CE, Brazil, under protocol n° 797.

## RESULTS

Data were collected from medical records, corresponding to 35 cases of potential donors during the study period. In Table 1 we present the information about the profile of potential donors.

**Table 1** - Identification of potential donors of organs and tissues for transplantation. Sobral, Ceará, Brazil, 2009.

Characteristics	n	%
Clinical diagnosis		
TBI	18	51.4
Stroke	11	31.4
Others	6	17.2
Age		
2 – 15	2	5.7
15 – 28	11	31.4
28 – 41	9	25.8
41 – 54	6	17.2
54 – 67	5	14.2
67 – 79	2	5.7
Sex		
Male	21	60.0
Female	14	40.0
Sector		
Adult emergency	26	74.3
ICU	8	22.8
Pediatrics emergency	1	2.9
Micro-region of Ceará		
Sobral	16	45.7
Tianguá	7	20.0
Crateús	5	14.3
Acaraú	4	11.4
Others	3	8.6

We verified that traumatic brain injury (TBI) (51.4%) and stroke (31.4%) were the major diagnoses. We also highlight the Adult Emergency Department with the greatest number of notifications (74.3%).

The donation logistics began with the closing of the protocols in time for organ procurement. Among the open protocols in this study, 20 (57.1%) managed to complete both clinical and additional examination with

the diagnosis of brain death (BD), 15 (42.9%) were not completed, among the reasons was the hemodynamics instability of the patients (Table 2).

**Table 2** - Donation process flow. Sobral, CE, Brazil, 2009

Characteristics	n	%
Protocols		
Closed	20	57.1
Open	15	42.9
Test performed		
Only the 1 <sup>st</sup> clinical test	8	22.8
Only the 1 <sup>st</sup> and 2 <sup>nd</sup> clinical tests	6	17.2
Only the 1 <sup>st</sup> clinical test and the additional examination	1	2.9
1 <sup>st</sup> and 2 <sup>nd</sup> clinical tests and additional examination	20	57.1
Closed protocols		
Potential donors	12	60.0
Effective donors	8	40.0
Reasons for non-consent for donation		
Medical contraindication and hemodynamic instability	8	67.0
Family refusal	4	33.0

Closed protocols are those who perform both clinical and additional examination. A total of 20 (57.1%) closed protocols were achieved, of which 12 (60%) were not effective donors, since eight (67%) had some setback that made it impossible the donation, such as medical contraindication or hemodynamic instability, and four (33%) were refused by the family.

## DISCUSSION

The study data confirm the findings from another research that presented a double profile for most potential donors, in which a share was caused by TBI in young people and other by cerebrovascular disease in people over 40 years. Corroborating a study in the state of Santa Catarina, where the main causes of death associated with potential donors of ICU were caused by TBI, totaling 23, and 21 by cardiovascular or cerebrovascular disease, and one by other causes<sup>(9)</sup>.

After comparison of the cause of death of organ donors in the state of Ceará and in Brazil, in 2009, with the study data, we identified similarity between the research data and data of Ceará, where TBI presented the highest percentage for cause of death, totaling 46 donors, while there were 37 from stroke and 11 from

other reasons. On the other hand, at national level, stroke stands out as the leading cause of death for donors, representing 48% (752) of all donors, 41% from TBI (633) and 11% (173) from other reasons<sup>(10)</sup>.

It is true that, in Brazil and in most developing countries, TBI remains the leading cause of brain death, mainly due to the high rates of automobile accidents. However, in 2009 this data was different.

Regarding gender, there was a predominance of males, confirming a study conducted in the state of Ceará, from 2004 to 2008, in which 244 organ donors (63.3%) were male<sup>(11)</sup>.

The identification of potential donors with brain death diagnosis is performed in the ICU and hospital emergencies due to the complexities of patients. As regards to the study, most identifications were performed in the adult emergency sector, which is understandable since it is the entrance to the hospital, treating victims of various injuries, especially those of automobile accidents.

This is also justified given the serious clinical condition of patients and mainly because of reserved neurological prognosis, which minimizes the chances of a bed in ICU. Along with this factor, we can also mention

the deficit of beds in Adult ICU in the macro-region of Sobral, which has only nine places for TBI patients in a population of almost 1,600,000 people<sup>(12)</sup>.

One of the reasons why there was only one notification of brain death in the Pediatric Emergency to the State CNCDO is due to the shortage of beds in pediatric and neonatal ICUs during the implementation of organ donation in 2009, since critically ill patients needing these beds were stabilized and referred to hospitals in the capital of the State, Fortaleza. This issue was resolved with the project of the Ministry of Health to implement a pediatric and neonatal ICU, completed in 2011.

Distributing the initial diagnosis that led to the opening of brain death protocols for micro health regions in the State of Ceará, Sobral micro-region presents the highest number of potential donors identification, followed by Tianguá micro-region, a fact consistent with the number of municipalities that compose them, in which the first micro-region comprises 24 municipalities, with a population of 605,005 inhabitants, and the second with eight municipalities and 295,914 inhabitants, representing a large population of the macro-region that has 1,561,698 inhabitants<sup>(12)</sup>.

As for the absolute and relative contraindications to donation, we reiterate that they are characteristics of the potential donor. Both clinical conditions that the potential donor has or develops during the days awaiting for BD confirmation until the process outcome, which depends on the handling by the medical team, and the more trained the staff the better prepared they are<sup>(13)</sup>.

There is a difference between the percentage of people in favor of donation and of those who consent to donate. Probably, this disparity is a result of people's misinformation about the donor condition of the family member. In this sense, educational campaigns in order to promote the registration of donors and encourage sharing this decision with family can be useful to increase consent rates.

Another point to be assessed is the quality of care provided to patients at hospital admission. The demand for assistance in emergency units exceeds that for which the service is structured. Health care professionals, especially nurses, are faced with difficult situations<sup>(14)</sup>. These challenging situations experienced by health professionals and family during hospitalization cause discomfort at the time of the interview to consent for organ donation, which can influence the acceptance or rejection of the donation.

The attention offered to the family and the assessment they make of the patient care can facilitate or hinder the acceptance of organ donation. The family considers the assistance satisfactory when they observe that the service is appropriate and that professionals are engaged in patient care<sup>(15)</sup>. The observation that human and material resources needed to attempt recovery of the family member are used eases anxiety and comforts the family, representing a positive factor to consent for organ donation of the family member.

Another important point relates to the clarification that family members receive regarding occurrences with the patient during the hospitalization<sup>(15)</sup>. When the family is informed about the preliminary tests to confirm the diagnosis of brain death, it has the possibility to prepare for the patient's death<sup>(16)</sup>.

Thus, one of the challenges for professionals who work with organ and tissue procurement refers to the ethical competence to ensure continuous improvement of this process, with emphasis on proper communication between professionals and families, besides investing in work processes that identify everyday issues that make the assistance impersonal and rude<sup>(3)</sup>.

A research conducted in Spain described the perception of six families who consented and three who refused to donate as regards to the decision making about organ donation. For most interviewees, it was a difficult and uncomfortable decision, especially for those who felt pressured during the interview for donation.

Regarding those who refused to donate, they highlighted the time for the consent solicitation, right after BD communication, giving insufficient time to assimilate the news, thus increasing the level of anxiety and stress<sup>(17)</sup>.

If the family does not have enough time for understanding and acceptance of death as an inevitable fact, there may be losses in the grieving process. Family members who participate in the donation process may present doubts, questions or concerns unresolved for months or even years, for having authorized the donation of organs from a family member<sup>(18)</sup>.

The reasons for donate or not become complex. Solidarity, though important, does not seem to be enough to motivate organ donation. Furthermore, the emotional support offered in the assistance to family members and information about the process seems to be essential to encourage donation, thus demonstrating that for organ donation and effective service to family and donor, the information provided by health professionals during the donor's hospitalization and the consent interview are crucial for the decision to donate the organs of the family member.

## CONCLUSION

The study data showed a double profile among most potential donors: a share caused by TBI in young people and other by cerebrovascular disease in people over 40 years.

Regarding gender, there was a predominance of males. Most identifications were performed in the adult emergency sector, distributed in health micro-regions in the state of Ceará. The Sobral micro-region presented the highest number of potential donors' identification, followed by Tianguá micro-region.

Based on this, it is understood that the organ and tissue donation for transplantation involves steps necessary for its achievement. Each segment has its own characteristics, for this reason, the professionals involved, doctors, nurses and nursing staff, and social

workers should know and have an effective attitude, seeking to avoid that difficulties prevent the success of the process.

The management of the potential organ donor is no simple task, because besides the initial illness that led to the patient's admission, the BD process itself involves a lot of disorder that compromises the person's homeostasis. Understanding this process and the factors that influence the outcome is essential to rethink strategies that improve the organ donation process, as well as propose new actions aimed at establishing protocols and actions consistent with the organ donation policy.

Given the above, the study presents as limitation the fact of having been developed in the resumption of the organ procurement activities of the hospital in study. Therefore, we obtained a small sample.

## REFERENCES

1. Associação Brasileira de Transplantes de Órgãos. A Política nacional de transplantes. J Bras Transpl. [periódico na internet]; 2011 [citado 2012 mar 25]. Disponível em: <http://www.abto.org.br>
2. Van Norman G. Controversies in organ donation: donation after cardiac death. Perioper Nurs Clin. 2008; 3(3):233-40.
3. Roza BA, Garcia VD, Barbosa SFF, Mendes KDS, Schirmer J. Doação de órgãos e tecidos: relação com o corpo em nossa sociedade. Acta Paul Enferm. 2010; 23(3):417-22.
4. Conselho Federal de Medicina. Resolução CFM nº. 1.480 de 8 de agosto de 1997. Dispõe sobre a caracterização de morte encefálica. Brasília: CFM; 1997.
5. Brasil. Lei nº. 10.211 de 23 de março de 2001. Altera dispositivos da Lei nº. 9.434, de 4 de fevereiro de 1997, que dispõe sobre a remoção de órgãos, tecidos e partes do corpo humano para fins de transplante e tratamento e dá outras providências [Internet]. [citado 2012 mar 25]. Disponível em:

[http://www.planalto.gov.br/ccivil\\_03/Leis/LEIS\\_2001/L10211.htm](http://www.planalto.gov.br/ccivil_03/Leis/LEIS_2001/L10211.htm).

6. Marques SHB, Cézaro P, Soares DC, Azeredo NSG. Resultados da Comissão Intra-hospitalar de Doação de Órgãos e Tecidos para Transplante (Cihdott) do Hospital Cristo Redentor de Porto Alegre. *J Bras Transpl*. 2007; 10(2):722-5.

7. Associação Brasileira de Transplantes de Órgãos. Dados epidemiológicos dos transplantes no Brasil. *J Bras Transpl* [periódico na internet]; 2008 [citado 2012 mar 25]. Disponível em: <http://www.abto.org.br>

8. Sancho LG, Dain S. Avaliação em Saúde e Avaliação Econômica em Saúde: introdução ao debate sobre seus pontos de interseção. *Ciênc Saúde Coletiva*. 2012; 17(3):765-74.

9. Schelemberg AM, Andrade J, Boing AF. Notificações de mortes encefálicas ocorridas na Unidade de Terapia Intensiva do Hospital Governador Celso Ramos à Central de Notificação, Captação e Distribuição de Órgãos e Tecidos: análise do período 2003 – 2005. *Arq Catarin Med*. 2007; 36(1):30-6.

10. Associação Brasileira de Transplantes de Órgãos. Transplantes no Ceará. *J Bras Transpl* [periódico na internet]; 2009 [citado 2012 mar 25]. Disponível em: <http://www.abto.org.br>

11. Aguiar MIF, Araújo TOM, Cavalcante MMS, Chaves ES, Rolim ILTP. Perfil de doadores efetivos de órgãos e tecidos no Estado do Ceará. *Rev Min Enferm*. 2010; 14(3):353-60.

12. Instituto Brasileiro de Geografia Estatística. Resultados da Amostra do Censo Demográfico 2008. Malha municipal digital do Brasil: situação em 2008. Rio de Janeiro: IBGE; 2010.

13. Rech TH, Rodrigues Filho EM. Manuseio do potencial doador de múltiplos órgãos. *Rev Bras Ter Intensiva*. 2007; 19(2):197-204.

14. Borges MF, Turrini RNT. Readmissão em serviço de emergência: perfil de morbidade dos pacientes. *Rev Rene*. 2011; 12(3):453-61.

15. Santos MJ, Massarollo MCKB. Fatores que facilitam e dificultam a entrevista familiar no processo de doação de órgãos e tecidos para transplante. *Acta Paul Enferm*. 2011; 24(4):472-8.

16. Cinque VM, Bianchi ERF. A tomada de decisão das famílias para a doação de órgãos. *Cogitare Enferm*. 2010; 15(1):69-73.

17. Martínez JSL, López MJM, Scandroglio B, García JMM. Family perception of the process of organ donation: qualitative psychosocial analysis of the subjective interpretation of donor and nondonor families. *Span J Psychol*. 2008; 11(1):125-36.

18. Cinque VM, Bianchi ERF, Costa ALS. O pensamento dos familiares relativos à autorização de doação de órgãos e tecidos para transplante. *J Bras Transpl*. 2008; 11:851-6.

Received: Oct. 16<sup>th</sup> 2012  
Accepted: July 1<sup>st</sup> 2013