



ORGAN AND TISSUE DONATION AND REASONS FOR ITS NON-REALIZATION DOAÇÃO DE ÓRGÃOS E TECIDOS E MOTIVOS DE SUA NÃO EFETIVAÇÃO DONACIÓN DE ÓRGANOS Y TEJIDOS Y MOTIVOS DE SU NO EFECTIVIDAD

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ABSTRACT

Objective: to describe characteristics of the process of organ and tissue donation and identify the determining factors for their non-realization. **Method:** descriptive, cross - sectional, retrospective and documentary study with quantitative approach. The sample consisted of 102 medical records. Data were tabulated and stored in a *Microsoft Office Excel* spreadsheet, submitted to statistical analysis in the SPSS, version 18.0. **Results:** among the reasons for non-realization of donations were found: family refusal (19); non-consent declaration of the patient while in life (13); religious issues (5); and the family's lack of knowledge about the patient's wishes (2). In 21 cases, the donation did not occur because of clinical contraindications that prevented the completion of the donation process. **Conclusion:** the study provided information about the main reasons for the non-realization of organ and tissue donation of potential donor patients and contributes to the advancements of strategies to potentiate this process, directed to modifiable factors that are identified as limiters to the effectiveness of donations. **Descriptors:** Tissue Donors; Refusal of Participation; Brain Death; Obtaining Tissues and Organs; Nursing.

RESUMO

Objetivo: descrever características do processo de doação de órgãos e tecidos e identificar fatores determinantes para a sua não efetivação. **Método:** estudo descritivo, transversal, retrospectivo e documental, de abordagem quantitativa. A amostra foi composta por 102 prontuários. Os dados foram tabulados e armazenados em uma planilha eletrônica no *Microsoft Office Excel*, submetidos à análise estatística pelo SPSS, versão 18.0. **Resultados:** entre os motivos da não efetivação, estão: a recusa familiar (19); declaração em vida de não doador (13); questões religiosas (5); e desconhecimento da família sobre a vontade do paciente (2). Em 21 casos, a doação não ocorreu devido a contraindicações clínicas que impediram a finalização do processo de doação. **Conclusão:** o estudo proporcionou conhecimento sobre os principais motivos da não doação de órgãos e tecidos do paciente potencial doador, contribuindo para o desenvolvimento de estratégias que potencializem esse processo, direcionadas aos fatores modificáveis, identificados como sendo limitantes para a efetivação da doação. **Descritores:** Doadores de Tecidos; Recusa de Participação; Morte Encefálica; Obtenção de Tecidos e Órgãos; Enfermagem.

RESUMEN

Objetivo: describir características del proceso de donación de órganos y tejidos e identificar factores determinantes para su no efectividad. **Método:** estudio descriptivo, transversal, retrospectivo y documental, de enfoque cuantitativo. La muestra fue compuesta por 102 prontuarios. Los datos fueron tabulados y almacenados en una planilla electrónica en *Microsoft Office Excel*, sometidos al análisis estadístico por el SPSS, versión 18.0. **Resultados:** entre los motivos de la no efectividad están: la recusa familiar (19); declaración en vida de no donador (13); cuestiones religiosas (5); y desconocimiento de la familia sobre la voluntad del paciente (2). En 21 casos, la donación no ocurre debido a contraindicaciones clínicas que impidieron la finalización del proceso de donación. **Conclusión:** el estudio proporcionó conocimiento sobre los principales motivos de la no donación de órganos y tejidos del paciente potencial donador, contribuyendo para el desarrollo de estrategias que potencialicen ese proceso, dirigidas a los factores modificables, identificados como siendo limitantes para la efectividad de la donación. **Descriptor:** Donantes de Tejidos; Negativa a Participar; Muerte Encefálica; Obtención de Tejidos y Órganos; Enfermería.

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INTRODUCTION

Organ and tissue transplantation is a process that occurs through the donation of an organ or tissue from a *post-mortem* or living donor, and is considered as the only therapy for the treatment of several chronic and disabling conditions.¹⁻² In Brazil, the removal of organs and tissues for the purpose of transplantation and treatment is governed by Laws nº 9,434 of February 4, 1997, and Law nº 10.211, of March 23, 2000.

In order to become a potential donor, the patient must have a diagnosis of brain death (BD). According to the Federal Council of Medicine (FCM) Resolution nº 1,480/97,³ BD is understood as the total and irreversible cessation of brain functions, which should be characterized and confirmed through clinical and complementary exams, observing the time variation between the exams defined for each age group.

The donation of organs from *post-mortem* donors involves a set of actions aimed at effectuate the process from the identification of a potential donor, whose multiple donation of organs and tissues may benefit more than ten recipient patients. Among the main causes for non-realization of the organ and tissue donation process are: the refusal of the family; the fact that potential donors do not declare their wish to their relatives; the degree of knowledge about brain death and about the legislation that regulates the process of donation and distribution of donated organs and tissues;^{2,4-5} the degree of satisfaction with the care provided and the humanization of this process; and failure to detect and report potential donors.²

According to the Brazilian Transplant Registry, 47,108 transplants were carried out in Brazil in 2011 and 47,711 transplants in 2012.⁶

Considering that the number of potential donors reported is significantly greater than the number of effective donors, the understanding and modification of the factors that influence the positive or negative response to the effectuation of potential donor can contribute to the planning of actions to promote donation of organs and tissues, contributing to modify the current data of potential and effective donors contributing this way to reduce the waiting times for transplantation.

OBJECTIVES

- To describe the characteristics of the process of organ and tissue donation.

- To identify determining factors for its non-realization.

METHOD

A descriptive, cross - sectional, retrospective, documentary study with quantitative approach was developed in a public hospital for high complexity care of adult patients in a municipality in the southern region of the country. The study population consisted of medical records of all patients characterized as potential donors of organs and tissues, hospitalized in the institution during the period from January 2011 to December 2012, totaling 113 medical records.

The study included medical records of subjects of both sexes and over 18 years old, coming from all sectors/units of this hospital. Unintelligible or incomplete medical records (11 medical records) were excluded from the survey. The study sample was established by convenience and consisted of 102 records, which were included in the process of organ and tissue notification and retrieval, regardless the effectuation of the donation.

The project of the present study was sent to the Ethics Committee of Research with Human Beings of the Feevale University and of the participating institution, being approved according to Opinions nº 185,384 and nº 224,755, respectively. All ethical procedures were respected in order to ensure the privacy and confidentiality of participants and of the hospital.⁷

Data were collected in August 2013 using a questionnaire, tabulated and stored in a *Microsoft Office Excel* electronic spreadsheet and subjected to statistical analysis using the *Statistical Package for Social Sciences* (SPSS) software, version 18.0. The nominal variables are expressed based on frequency analysis and the continuous variables, based on mean $\pm$ standard deviation. Data are presented in tables.

In order to verify the association between the donation of organs and age, the t-test for independent samples was used, and for the association with the other variables, the α^2 test was used, respecting their respective assumptions. In order to verify the association between the reason for failure of the donation and the other variables, the α^2 test was used, also respecting the assumptions. The normality of the data was verified with the Kolmogorov Smirnov test. For all tests, a $p < 0.05$ was considered significant.

RESULTS

From the 102 records of potential organ and tissue donor patients analyzed, it was

found that 56.86% were female, with ages ranging from 18 to 79 years, the average being 49 years, according to Table 1.

Table 1. Characteristics of potential organ and tissue donors and place of diagnosis of Brain Death. Porto Alegre (RS), Brazil, 2012.

Variables	n=102	%
Sex		
Male	44	43.14
Female	58	56.86
Age	49.02 ± 15.80	
Schooling		
Illiterate	7	6.86
Complete primary education	77	75.49
Complete high school	15	14.71
Complete higher education	3	2.94
Place of diagnosis		
ICU	78	76.47
Emergency	18	17.65
Recovery Room	6	5.88
In the item age, data were expressed in terms of mean ± standard deviation.		

Regarding the schooling of the sample, there was predominance (75.49%) of Complete primary education. Intensive Care Units (ICU) were the most frequent place of diagnosis of BD (76.47%), followed by emergency and anesthetic recovery rooms. This finding is justified by the fact that patients who progress to BD need intensive follow-up to adequately maintain their clinical conditions.

Regarding the clinical tests performed for realization of the diagnostic protocol for BD, it was observed that the medical specialties that most frequently apply them are the intensivists and the neurosurgeons; the former predominate in the first test (65.69%) and the latter perform the second clinical test more frequently, as can be seen in Table 2.

The sample showed that the time for the 1st clinical test was between 12 and 24 hours after hospitalization in 29.41% of the cases. Regarding the time between the 1st and 2nd test, this was also between 12 and 24 hours in 82.35% of the cases. No patient performed the 2nd clinical test in less than six hours after the first test.

As for the time elapsed between the 2nd clinical test and the image examination, it was found that this occurred in less than 24 hours in 28.43% of the cases, followed by a period of more than 72 hours in 27.46% cases. Uninformed data correspond to patients who did not complete the brain death protocol due to hemodynamic instability, clinical contraindication, and/or evolution to death during the BD protocol.

Regarding the cause of BD, there was predominance (27.45%) Subarachnoid Hematoma (SAH), followed by Traumatic Brain

Injury (TBI) (22.55%) and Hemorrhagic Stroke (HH) (22.55%), among other less frequent causes.

Table 2. Clinical tests and medical specialties that applied the Brain Death protocol and cause of such diagnosis. Porto Alegre (RS), Brazil, 2012.

Variables	n	%
Medical specialty that performed the 1 st test		
Neurosurgeon	24	23.53
Intensivist	67	65.69
Trained first-aid professional	1	0.98
Not informed	10	9.80
Medical specialty that performed the 2 nd test		
Neurosurgeon	66	64.71
Intensivist	9	8.82
Trained first-aid professional	9	8.82
Not informed	18	17.65
Time elapsed before the first test		
06 - 12 hours	18	17.65
12 - 24 hours	30	29.41
24 - 36 hours	5	4.9
36 - 48 hours	3	2.94
60 - 72 hours	20	19.61
>72 hours	9	8.82
Not informed	17	16.67
Time from the 1st until 2nd test		
06 - 12 hours	6	5.88
12 - 24 hours	84	82.35
60 - 72 hours	1	0.98
>72 hours	1	0.98
Not informed	10	9.80
Time elapsed between the 2 nd test and the image examination		
< 24 hours	29	28.43
< 48 hours	11	10.78
<72 hours	7	6.86
>72 hours	27	26.47
Not informed	28	27.46
Cause of BD		
Subarachnoid Hemorrhage	28	27.45
Traumatic Brain Injury	23	22.55
Hemorrhagic Stroke	23	22.55
Traumatic Brain Injury + Subarachnoid Hemorrhage	10	9.80
Others	8	7.85
Ischemic Stroke	5	4.90
Subarachnoid Hemorrhage + Hemorrhagic Stroke	3	2.94
Brain Tumor	1	0.98
Brain Tumor + Subarachnoid Hemorrhage	1	10.98

Table 3 shows that 50.98% of the interviews were performed by a nursing technician. Nurses were the second professionals who most performed interviews with the family. In

cases in which the family approach was not performed, the reason was the non-conclusion of the BD protocol.

Table 3. Family interview, professional who carried out the interview and degree of kinship of the interviewee with the BD patient. Porto Alegre (RS), Brazil, 2012.

Variables	n	%
Professional		
Nursing Technician	52	50.98
Social Worker	4	3.92
Others	20	19.61
Nurse	10	9.80
No interview	16	15.69
Degree of kinship		
Adult children	26	25.49
Partner	21	20.59
Parents	18	17.65
Brother, sister	9	8.82
Uncle, aunt	1	0.98
Other	3	2.94
Not registered	24	23.53

We observed that among the potential donors, 41.18% had the process completed,

and one patient was referred to perform the extraction of the organs in another hospital,

according to the recommendation of the State Transplant Center. Among the reasons stated for non-realization of the donation, the most frequent were family refusal (31.67%) followed by non-consent declaration of the patient while in life, religion and the family's lack of knowledge about the patient's wishes.

Among the reasons for the family refusal, it was found that these were related to: previous traumatic event; family approached in an inappropriate time; family members who want the body in integral state; and divergent opinions among relatives. All these are considered modifiable variables. It should be noted that non-modifiable factors related to clinical contraindication were also found.

In this study, 35% of the non-donations were due to other reasons, such as death before starting or completing the BD protocol (47.62%), patient with contraindication (38.10%), expired time for donation after death (4.76%), patient residing in a therapeutic community who was dependent on judicial authorization to be a donor (4.76%) and patient with non-donor declaration (4.76%).

The association between realization of the process of organ and tissue donation with other variables was checked, and a statistically significant association between the realization of the donation and the patient's age was identified. Patients with the lowest mean age were the ones that had the most frequently completed the donation process (p 0.04), as shown in Table 4.

The sample showed that among the cases of organ and tissue donors in which the donation occurred, females (61.90%) prevailed, with a mean age of 42.26 ± 15.54 years. The most frequent cause of BD was TBI (30.95%). The family was approached by nursing technicians (37.81%) and the family member most frequently approached was the husband (30.85%).

Among cases of non-completion of donation, females (53.33%) prevailed, with a mean age of 51.66 ± 15.57 years. The most frequent cause of BD was Subarachnoid Hemorrhage (26.67%). The family was approached by nursing technicians (35%) and the most frequently family members approached were adult children (23.33%).

Table 4. Association between realization or non-realization of donation and the other study variables. Porto Alegre (RS), Brazil, 2012.

Variables	Effective donation		P
	Yes = 42	n No n= 60	
Sex			
Male	16 (38.10%)	28 (46.67%)	
Female	26 (61.90%)	32 (53.33%)	
Age	42.26 ± 15.54	51.66±15.57	0.04
Cause of BD			0.37
Traumatic Brain Injury	13 (30.95%)	10 (16.67%)	
Hemorrhagic Stroke	7 (16.67%)	16 (26.67%)	
Ischemic Stroke	2 (4.76%)	3 (5%)	
Brain tumor	0 (0%)	1 (1.67%)	
Subarachnoid Hemorrhage	12 (28.57%)	16 (26.67%)	
Subarachnoid Hemorrhage + Hemorrhagic Stroke	1 (2.38%)	2 (3.33%)	
Brain Tumor + Subarachnoid Hemorrhage	1 (2.38%)	0 (0%)	
Traumatic Brain Injury + Subarachnoid Hemorrhage	5 (11.90%)	5 (8.33%)	
Others	1 (2.38%)	7 (11.67%)	
Family approach			0.06
Nurse	2 (4.76%)	8 (13.33%)	
Social worker	1 (2.38%)	3 (5%)	
Nursing Technician	31 (73.81%)	21 (35%)	
Not realized	0 (0%)	16 (26.67%)	
Others	8 (19.5%)	12 (20%)	
Degree of kinship			0.23
Parents	11 (26.19%)	7 (11.67%)	
Siblings	6 (14.29%)	3 (5%)	
Uncle, aunt	0 (0%)	1 (1.67%)	
Adult children	12 (28.57%)	14 (23.33%)	
Partner	13 (30.95%)	8 (13.33%)	
Others	0 (0%)	3 (5%)	
Not realized	0 (0%)	24 (40%)	
Data expressed as mean ± standard deviation			

We also found an association between the reasons for non-donation and other variables, as shown in Table 5.

Table 5. Association between the reasons for refusal of organ donation with the other variables of the study. Porto Alegre (RS), Brazil, 2012.

Reasons for non-realization of donation						
Variables	Family refusal n=19	Religion n=5	Lack of knowledge about the patient's will n=2	Non-consent declaration while in life n=13	Other reasons n=21	p
Sex						0.07
Male	8 (42.11%)	3 (60%)	0 (0%)	10(76.92%)	7 (33.33%)	
Female	11(57.89%)	2 (40%)	2 (100%)	3 (23.08%)	14(66.67%)	
Schooling						0.71
Illiterate	0 (0%)	0 (0%)	0 (0%)	3 (15.38%)	2 (9.53%)	
Complete primary education	15 (78.95%)	5(100%)	1 (50%)	8 (61.54%)	15 (71.43%)	
Complete High School	3 (15.79%)	0 (0%)	1 (50%)	2 (15.38%)	4 (19.05%)	
Complete Higher Education	1 (5.26%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
Place of diagnosis						0.07
ICU	16 (84.21%)	1(205%)	2 (100%)	10(76.92%)	17(80.95%)	
Emergency room	2 (10.53%)	4 (80%)	0 (0%)	3 (23.08%)	3 (23.08%)	
Recovery room	1 (5.265%)	0 (0%)	0 (0%)	0 (0%)	1 (4.76%)	
Other data expressed from frequency analysis.						

Among cases of potential donors in which the donation did not occur, 12.75% had non-consent declarations while in life, were mostly males (76.92%), mostly with complete high school (61.54 %) and with diagnosis of BD in 76.92% of the cases.

Among the cases of potential donors in which the donation did not occur, 21.67% were due to family refusal, mostly female (57.89%), with Complete Primary Education (63.64%).

DISCUSSION

Regarding the characteristics of potential organ and tissue donors related to age and sex, this study showed a higher incidence of females and mean age of 49.02 years. The data presented here differ from another study⁸ that reported a higher incidence in males (63.5%), with predominance of 51-79 years of age (48.6%). The data also differ from those pointed out by the Ministry of Health, that between 10 and 69 years of age, males die more frequently than females, and over 70 years this reality reverses, with female mortality being higher than the male.⁹

Although part of the research studies show a higher incidence of males among potential donors, studies conducted in São Paulo¹⁰ and Rio Grande do Norte¹¹ corroborate the results of the present research.

The characteristics related to the sex and age of the potential donors are in agreement with other studies carried out in Brazil on the same theme, in which the majority is male, aged up to 45 years. This is justified by the prevalence of severe violent traumas such as

wounds caused by gunshots or melee weapons and traffic accidents among men. Regarding the age group, there are indications that this is increasing, possibly due to the aging process of the Brazilian population and the flexibilization of clinical criteria for inclusion of organ donors.¹²

When the schooling was analyzed, the sample of the present study showed that 75.49% had Complete Primary Education (n = 77), similar to the results of one of the previously mentioned studies.⁸ However, there are studies that indicate lower schooling as predominant.

Regarding the place where the diagnosis of BD occurred, the ICU showed predominance. The potential organ and tissue donor require specific and intensive care due to various physiological and mainly hemodynamic changes.¹⁰ It is in the ICUs that patients with severe acute neurological injuries, especially traumatic ones, that often evolve for BD are treated.² According to FCM Resolution nº 1,480/97.³, in order to diagnose brain death, it is necessary to perform clinical and complementary exams during variable time intervals, according to each age group. The data obtained during the BD protocol should be recorded in the Term of Declaration of Brain Death, which should include the registration of the clinical exams as performed by different medical professionals.³ These professionals cannot be linked to the team of recruitment and transplantation of organs and tissues.¹³

Clinical evaluations should occur at varying time intervals and at different moments,

depending on the age group of the patient. In adult patients, the interval between the two evaluations should be six hours.⁶

The main causes of death among potential donors were: Traumatic Brain Injury in 32% cases; hemorrhagic stroke in 29.8% cases, firearm injury (FAI) in 23.4% cases; unknown causes in 8.5% cases; and other reasons in 6.3% cases.⁸

The interview with relatives or guardians is a delicate moment, since the severity and the imminence of death are traumatic situations for the family and, in most cases, this does not accept the loss, resulting in sadness and stress.¹⁴

Intra-Hospital Transplant Commissions allow better organization of organ harvesting, better identification of potential donors, adequate approach to family members and better articulation, thus tending to increase the amount of organs and tissues retrieved.^{6,15} For this reason, the organ and tissue retrieval team should be composed of professionals from different categories. The approach can be performed by a physician, nurse, social worker, psychologist or nursing technician. These professionals should not compose the team that assists the patients during their hospitalization.¹⁶

The evaluation of potential organ and tissue donors begins with a careful review of the clinical and social history and detailed physical examination of the patient, because in some cases, BD is caused by tumors of the central nervous system, drug use and intoxication. This care is necessary because contraindication is an impediment to donation of organs and tissues.¹⁷

According to the data obtained in this study and related to the transplant waiting list, the causes that lead to failure of the donation process are in most cases modifiable factors, such as family refusal. In this perspective, nurses have a fundamental role to achieve the success in organ recruitment. They are responsible for promoting high-quality assistance to both the potential donors and their families.¹⁸

CONCLUSION

In view of the high demand, the waiting list for transplantation and the low rate of donation of organs and tissues, the present study provided more information about the characteristics of the process to which the potential organ and tissue donors are subjected. The non-realization of donations was directly linked to modifiable factors such as family refusal, non-consent declaration of

the patient while in life, and religious beliefs. Thus, it is necessary that educational campaigns be carried out with the purpose of promoting the registration of donors and incentive for them to share this decision with their families, seeking to reduce the denials of organ and tissue donation due to refusal of the family. We also found contraindications among the reasons for not effectuation of the donations, and this is a non-modifiable factor.

It is important to emphasize that the family interview is also an important aspect for the donation to take place. It is necessary that the team be properly trained to approach the family, because this is a delicate and painful moment for the relatives. The approach should take place in a quiet place where the family feels comfortable and all the doubts of the family should be clarified so that a better decision may be taken.

The role of nurses in the process of organ and tissue donation and retrieval is essential and crucial. It is up to them to plan, execute, coordinate, supervise and evaluate the nursing procedures provided to potential organ and tissue donors. Therefore, nurses must be trained and qualified to provide care to potential donors so that the best use of all possible organs be effectuated. We believe that these strategies may contribute to the reduction of the rate of non-donation when related to the abovementioned modifiable factors, thus increasing donations and reducing the waiting time for transplantation.

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