Available online at http://www.journalijdr.com

ISSN: 2230-9926

IJDR

International Journal of Development Research
Vol. 12, Issue, 02, pp. 54282-54286, February, 2022
https://doi.org/10.37118/ijdr.24128.02.2022

RESEARCH ARTICLE OPEN ACCESS

CHARACTERIZATION OF ELIGIBLE ORGAN AND TISSUE DONORS FROM A UNIVERSITY HOSPITAL IN THE CITY OF PETROLINA-PE

Lucas Borges de Oliveira[1], Ana Dulce Batista dos Santos[1], Naara Carol Costa Alves[1], Hudson Avelar Caminha Leal[1], Maurício Caxias de Souza*[2], Patrícia Moita Garcia Kawakame[3], Abilio Torres dos Santos Neto[2], Stefani Carvalho dos Santos[2], Adeilza da Silva Barbosa[1], Ana Claudia Araújo da Silva[1], Diego Jeymes da Silva Lopes[1], Emanuella Maria Moura de Oliveira[1], Iris Fernandes da Cruz[1], Jorge Eduardo Freitas da Silva[1], José Leonildo Fernandes de Queiroz[1], Joycilaine Beatriz Barros de Lima[1], Suelen Sá Queiroz[1], Luanna Nayra Mesquita Alvarenga[1], Magável Raulinho de Sousa[1], Mariana Milfont Rangel Lima[1], Marcela Bezerra Lima Deodato[1], Maria Iara de Sousa Rodrigues[1] and Rochelle da Costa Cavalcante[1]

[1]Pesquisador Independente de Enfermagem e Ciências da Saúde. Brasil (BR); [2]Enfermeiro. Integrante do Grupo de Estudos e Pesquisa em Saúde Coletiva (GEPSC/CNPq) da Universidade Federal de Mato Grosso do Sul (UFMS). Brasil (BR); [3]Enfermeira. Professora Doutora. Líder do Grupo de Estudos e Pesquisa em Saúde Coletiva (GEPSC/CNPq) da Universidade Federal de Mato Grosso do Sul (UFMS). Brasil (BR)

ARTICLE INFO

Article History:
Received 06th January, 2022
Received in revised form
28th January, 2022
Accepted 16th February, 2022
Published online 28th February, 2022

Key Words:
Organ Transplantation, Tissue Donors, Brain Death, Nursing.

Corresponding author:
Maurício Caxias de Souza

ABSTRACT

Brain Death occurs when there is a total and irreversible stop of brain functions, which will result in the cessation of the functioning of other organic systems. This study aimed to know the characteristics of eligible donors of organs and tissues of a University Hospital in the city of Petrolina-PE. This is an exploratory, descriptive, documental study from January 2014 to July 2015. 115 medical records were analyzed, 60% men and 40% women, of which 56.5% were brown and 20.7% had not completed elementary school. As for the profession, 36.5% were farmers. Medical Regulation was responsible for 62.6% of case notifications. Of the variables referring to the causes of brain death, 34.8% of the cases were due to traumatic brain injury and 28.7% to hemorrhagic stroke. As for patients who had a diagnosis of traumatic brain injury, the main causes were motorcycle accidents with 75% of the cases. It was concluded that knowing the characteristics of users of an institution makes it possible to base care management and decision-making by the hospital coordination and to suggest new intervention proposals to the network.

Citation: ***Lucas Borges de Oliveira, Ana Dulce Batista dos Santos, Naara Carol Costa Alves, Hudson Avelar Caminha Leal, Maurício Caxias de Souza et al.*** "Characterization of eligible Organ and tissue Donors from a university Hospital in the City of Petrolina-PE*", International Journal of Development Research*, 12, (02), 54282-54286.

INTRODUCTION

With the advancement of studies, resuscitation techniques and life support, brain activity came to define the life or death of the individual, being linked mainly to neurological criteria, characterizing what is currently known as Brain Death (BD) (Guetti; Marques, 2008). BD occurs when there is a total and irreversible stop of brain functions, which will result in the short-term cessation of the functioning of other organic systems. The patient in BD will only have their cardiac and respiratory functions possible if maintained by devices and medications. The criteria for establishing BD according to Resolution 1480/97 follow an order of exams and the presence of specific clinical signs evaluated at a determined time according to age, in addition to a complementary exam. If necessary: apperceptive coma, fixed and reactive pupils, absence of corneal palpebral, culocephalic and oculovestibular reflexes, cough and apnea test, excluding intoxication and hypothermia patients (Neto, 2010). In addition, according to the aforementioned resolution, it is necessary to carry out a complementary exam, which proves brain inactivity, either due to the absence of electrical activity, blood flow or brain metabolic activity. The most frequent causes of BD are traumatic brain injury (TBI), subarachnoid hemorrhage, diffuse brain injury after reversed cardiorespiratory arrest, and massive spontaneous cerebral hemorrhage. In addition to these causes, it can also occur due to large ischemic lesions, meningoencephalitis and fulminant encephalitis (Guetti; Marques, 2008). In 1997, Law No. 9,434 was implemented, which instituted the removal of organs and tissues for transplantation in Brazil. The same, made the Federal Council of Medicine responsible for the diagnostic criteria and legalized BD in this country. In addition, in the same year, Resolution No. 1,480/97 reaffirmed the Brain Death criteria, which are used in the opening and closing of protocols in Brazilian hospitals. In Brazil, in 2014, according to data from the Brazilian Transplantation Registry (RBT),

9,351 potential donors were notified, of which only 2,713 were classified as effective donors. In the Northeast, 2,298 potential donors were totaled, of which only 569 were effective. In the state of Pernambuco, 564 cases of possible donors were reported, of which only 145 were actual donations (RBT, 2014). In Petrolina, between January and February 2015, 23 potential donors were notified (Opo - PE, 2015).Legally, through Resolution 292/2004 of the Federal Nursing Council (COFEN), nurses are supported to act in the process of capturing and transplanting organs and tissues. According to Ramos; Silva and Silva (2010), it is not the role of nurses to diagnose BD, however, they are responsible, according to their Code of Ethics, to document the occurrence of BD. This duty, more linked to the work of Intensivist and Emergency Nurses, since they provide care to critically ill patients at imminent risk of death, and therefore the patients are more susceptible to brain death. Nursing care consists of making organs viable for transplantation until removal, meeting the basic physiological needs of the potential donor, as well as the application of the Systematization of Nursing Care (SAE) during the organ and tissue donation and transplantation process, aiming at care for donors, recipients and family members, before and after the transplant, even if it is not carried out (Araújo, 2013). As nurses have the role of identifying and implementing potential donors from their area of expertise, the need to characterize eligible donors of organs and tissues at a University Hospital in the city of Petrolina-PE emerged. Thus, it was important to carry out the present study in order to contribute to the improvement of health professionals in the region, in addition to greater exposure and clarification on the subject to the population, aiming to instigate professionals to expand their knowledge on the subject.

MATERIALS AND METHODS

This is a descriptive, documentary, exploratory, retrospective and quantitative study. The study was carried out in the Emergency Room (yellow and red room) and the Adult Intensive Care Unit (ICU) of the University Hospital Washington Antônio de Barros (HUWAB) under the administration of Empresa Brasileira de Serviços Hospitalares (EBSERH), located in the municipality of Petrolina, state of Pernambuco, bordering the municipality of Juazeiro and separated by the São Francisco River, being located 714 km from the capital of Pernambuco, with a population of 293,962 inhabitants in 2010 (Secretaria de Saúde do Estado de Pernambuco, 2013; IBGE, 2010).
The HUP is divided into Emergency: red room, intended for patients at risk of life, yellow room, in which serious but stabilized patients who need semi-intensive care are found, green room, which contains stable patients who need medical care and blue room for low-complexity procedures. The hospital has an adult ICU with 19 beds, but with only 16 in operation, intended for critically ill patients who need intensive care (CNES, 2015). The documents used in the research were the medical records of patients diagnosed with BD between January 2014 and July 2015 who were hospitalized in the aforementioned sectors. Data collection took place from August to September 2015. The inclusion criteria were the medical records of patients diagnosed with BD, over 12 years old, which contained the opening and closing of an BD protocol signed by physicians from the institution where the research was carried out. And as exclusion criteria: medical records that the outcome was not brain death. To perform data collection, a research instrument (Appendix A) was used to facilitate the apprehension of information from medical records. The variables collected were: age, birthplace, sex, color, marital status, education, origin, length of stay, cause of BD. The data were organized in spreadsheets in the Excel 2010 program, and a list of the codes used ("code book") was prepared, each of the variables containing their respective codes. A descriptive analysis of the data was carried out in order to characterize the sample in terms of sex, age, marital status, color, education and cause of brain death. For multiple comparisons between the cause of brain death and age and sex, the chi-square test was used to assess the association or not of the data obtained through the Biostat 5.0 statistical package. In all tests used in the research, the result was considered significant if the value was $p<0.05$ and Confidence Interval (CI) of 95%. The research project was submitted to the Ethics and Deontology Committee in Studies and Research - CEDEP of the Federal University of Vale do São Francisco (UNIVASF) and in accordance with Resolution 466/2012 of the National Health Council, being approved by protocol n. 1155141.

RESULTS AND DISCUSSION

The sample of this study consisted of 115 medical records of patients who met the proposed eligibility criteria. As for the characterization of the sample, 69 (60%) were men and 45 (39.1%) were women, aged between 17 and 77 years and mean age ranging from 19 to 38 years. As for marital status, 31 (26.9%) were single and 34 (29.6%) were married.The frequencies referring to sex, marital status, education and place of birth are shown in Table 1.

Table 1. Characterization of the sample of patients eligible for organ donation at the HU in Petrolina-PE, 2015. (In Portuguese)

		N (115)	%
Sexo	Masculino	69	60
	Feminino	45	39,1
	Não identificado	1	0,9
Estado Civil	Solteiros	31	26,9
	Casados	34	29,6
	União Estável	5	4,4
	Divorciados	5	4,4
	Viúvos	4	3,5
	Não informado	36	31,3
Cor	Branco	28	24,3
	Pardo	65	56,5
	Negro	11	9,6
	Não informado	11	9,6
	Analfabeto	10	8,6
	Fun. Incompleto	24	20,7%
Escolaridade	Fun. Completo	7	6
	Méd. completo,	10	8,6%
	Méd. incompleto	2	1,8%
	Sup. Completo	6	5,2%
	Não informado	56	48,7%
Naturalidade	Bahia	50	43,7
	Pernambuco	49	42,6
	Piauí	7	6
	Ceará	6	5,2
	Outros	3	2,6

Source: Data collected by the researcher through the patient's medical record.

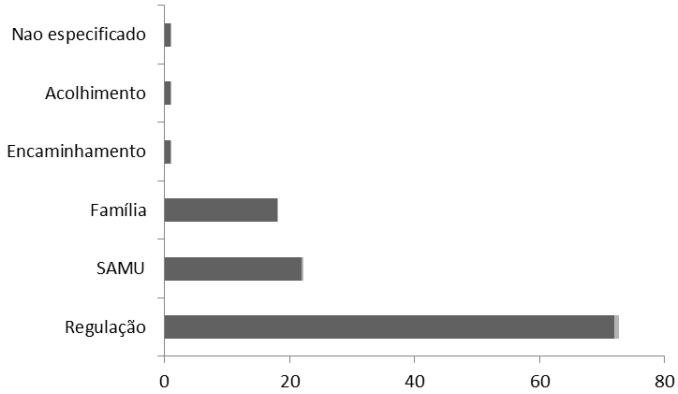
As for the professional occupation of patients, Table 2 shows the professional classes presented.

Table 2. Professional occupation of patients eligible for organ donation at the HU in Petrolina-PE, 2015. (In Portuguese)

	N (115)	%
Agricultor	42	36,5
ACS	1	0,9
Dona do Lar	7	6,0
Costureira	1	0,9
Estudante	2	1,8
Educador Físico	1	0,9
Motorista	3	2,6
Auxiliar de Escritório	2	1,8
Pedreiro	4	3,5
Carpinteiro	1	0,9
Mecânico	3	2,6
Mototaxista	4	3,5
Garçom	1	0,9
Pescador	2	1,8
Gesseiro	1	0,9
Autônomo	2	1,8
Professor	1	0,9
Carroceiro	1	0,9
Pedagogo	1	0,9
Vendedor	5	4,4
Aposentado	4	3,5
Eletricista	1	0,9
Operador de Máquina	1	0,9
Não informado	24	20,8

Source: Data collected by the researcher through the patient's medical record.

Regarding the origin of the patients when they were admitted to the hospital surveyed, 72 (62.6%) were from the Medical Regulation, 22 (19.2%) from the Mobile Emergency Care Service (SAMU), 18 (15.6%) were brought by family members (Graph 1).



Source: Data collected by the researcher through the patient's medical record .

Graph 1. Number of cases of ME by origin at the HU in Petrolina-PE, 2015

The mean length of hospital stay for these patients was 4.8 days. Of the variables referring to the causes of brain death, the following were found: 40 (34.8%) cases of Traumatic Brain Injury (TBI), 18 (15.7%) of Subarachnoid Hemorrhage, 33 (28.7%) of Stroke Hemorrhagic Disorder (AVEH), 13 (11.3%) from Ischemic Stroke (IVA), 6 (5.2%) from Hydrocephalus, 3 (2.6%) from Brain Tumors, 1 (0.9%) from Exogenous poisoning and 1 (0.9%) by infectious diseases. As for the patients who were diagnosed with TBI, the main causes were motorcycle accident with 30 individuals (75%), 3 (7.5%) of car accidents, 2 (5%) of falls, 2 (5%) of firearms. fire (PAF), 2 (5%) of physical aggression and 1 (0.9%) ignored. The correlation between the frequencies of the cause of death, sex and mean age in years can be seen in Table 3.

Table 3: Frequency of causes of death, sex and mean age (in years) of patients eligible for organ donation at the HU in Petrolina-PE. (In Portuguese)

Causa do óbito	N	Sexo	N	Idade média (em anos)
TCE	40	Masculino	32	29.8
		Feminino	8	32.4
HSA	18	Masculino	12	33.5
		Feminino	6	31.6
AVCH	33	Masculino	21	62.4
		Feminino	12	65.7
AVCI	13	Masculino	5	62.1
		Feminino	8	64.2

Source: Data collected by the researcher through the patient's medical record.

From the performance of the Chi-square test, it was possible to observe the statistical relationship between the causes of brain death, sex and age group (Table 4).

Table 4. Causes of death, sex and age group of patients eligible for organ donation at the HU in Petrolina-PE using the chi-square test, 2015. (In Portuguese)

		N (115)	%	$\chi 2$
Sexo	Masculino	69	60	< 0,001
	Feminino	45	39,1	
	Não identificado	1	0,9	
Faixa etária	17 a 40	74	64,3	< 0,001
	41 a 60	32	27,3	
	> 60	9	7,8	
Causas do óbito	TCE	40	34.8	< 0,001
	HSA	18	15.7	
	AVCI	33	28.7	
	Outros	13	11.3	

Caption: $\chi 2$ – Chi-Square test with 95% CI.

Source: Data collected by the researcher through the patient's medical record.

Based on the analysis and discussion of the results, it was possible to trace the sociodemographic and clinical profile of organ and tissue donors. Regarding gender, there was a predominance of males in patients diagnosed with BD. Brazilian Association of Organ Transplants (ABTO) reports that 61% of effective organ and tissue donors in Brazil are male. Other studies also found a prevalence of men in BD. It can be inferred that males are more vulnerable to several risk factors, such as activities, extreme sports, aggression, drinking, violence, among others (Moraes et al., 2009; Aguiar et al., 2010; Fusco et al., 2012). However, in some other studies in Brazilian university hospitals, it was observed that there was a predominance of females, especially in services related to cardiovascular diseases, which have been more prevalent in this gender (Moraes et al., 2009).The results show that there is a higher prevalence of potential donors in the age group between 19 and 38 years, with values close to the national data reported by ABTO, which presented as the most prevalent age groups between 18 and 40 years (Abto, 2008). It is observed that most patients with BD are individuals in the productive phase of life, which is directly related to the national productive force and family financial destabilization. In addition, some studies indicate that the average age of eligible donors has been increasing, which may be related to the aging of the Brazilian population and the modification of some criteria for inclusion of organ donors. Currently, marginal donors are more accepted, that is, donors who are outside the optimal criteria for donation, such as elderly patients (Tslac, 2009; Moraes et al., 2009). The predominant color in this study was brown, in line with other studies (Santos; Massarolo, 2005; Rech; Rodrigues, 2007; Guetti; Marques, 2008; Brasil, 2008). As it is a self-declared data, the definition of skin color causes some confusion. According to the Brazilian Institute of Geography and Statistics (IBGE), about 70% of the Brazilian population declared themselves to be brown (IBGE, 2014). The miscegenation of the Brazilian people led most of the population to classify themselves as brown.

The education of the patients, in which there was information in the medical records, was about five years of studies, that is, incomplete elementary education. Low schooling may be related to the most prevalent occupation in this study, which was farmers. Rural workers are professionals constantly exposed to work accidents. The study by Baracho (2013). reported that rural workers have the highest daily possibility of accidents at work when compared to other professionals. The lack of professional preparation, absence of Personal Protective Equipment (PPE) and unhealthy workplaces are the main reasons for these accidents. The city of Petrolina and its surroundings is one of the main fruit producing and exporting centers in Brazil, thus, there is a large number of rural workers (BEDOR et al., 2009). For this reason, it can be inferred that, in the studied region, accidents with potential risk for BD occur in rural workers, which was exemplified in this research through the number of farmers and TCE. The origin of patients had a higher prevalence through Medical Regulation. The São Francisco Valley region, where the city of Petrolina is located, is a border region between the states of Pernambuco and Bahia. At the end of 2009, the Interstate Health Care Network of the Middle São Francisco Valley, known as the PEBA Network, was established. The pioneering system in Brazil has expanded services of medium and high complexity and has benefited around 1.8 million inhabitants in 55 municipalities in Pernambuco and Bahia. In this network, municipal and state services are integrated into a single management, optimizing high-complexity services between the municipalities of Juazeiro and Petrolina. This network was based on the study by Rehem (2009), who observed a disparity between cities regarding the coverage of the primary and tertiary health network. The PEBA network has integrated the region, promoting equity, a fundamental pillar in the formation of the Unified Health System. As for the causes, the results of this research showed a higher prevalence of TBI. This data differed from most of the literature. Currently, studies have shown a change in the profile of patients with BD, with stroke being the major cause, being related to the aging of the population (MORAES et al., 2009; AGUIAR et al., 2010; FUSCO et al., 2012). Another reason was the implementation

of Law 11,705 of June 19, 2008 ("Lei Seca"), which reduced the number of car accidents by 15%. However, the results of this study show that TBI due to a motorcycle accident still remains the major cause of BD. In the region of the research site, the motorcycle fleet is considered higher than the national average. According to the VIII Regional Health Management (VIII GERES), the motorcycle fleet exceeds 50 thousand vehicles and, for the most part, outside the norms of the Brazilian Traffic Code. Also according to VIII Geres, in 2013 there were almost 50 deaths in Petrolina due to motorcycle accidents, being mostly male. The comparison between sex and age at the diagnosis of BD showed that Ischemic Stroke mostly affected women with a mean age of 64.2 years, unlike Traumatic Brain Injury, which affects more men with a mean age of 29.8 years. . Such data were confirmed with the Chi-Square Test with $p < 0.0001$. The data found in this study corroborate the research by Pestana et al., (2008), in which the number of potential organ donors in the city of São Paulo was evaluated through necropsies performed for violent death in the years 1990 and 1991. demonstrated that the majority of violent deaths were represented by males (86% and 85%, respectively in the 90s and 91s), in the age group between 15 and 45 years (78% and 72%). These data were different from the study by Noronha et al., (2012), in which the Hemorrhagic Stroke (BVA) affects mostly women (42.2%), with a mean age of 43.62 years, as opposed to Traumatic Brain Injury (TBI) that affects more men (50.7%), with a mean age of 26.57 years. The difference between the data shows that the profile of donors varies according to the type of health referral. In the case of the Petrolina region, TBI in young men of working age was the cause with the highest incidence of brain death. In addition to the psychological impacts of the loss, the socioeconomic impact is notable. Families are left helpless and financially unstructured. Individuals who contribute to the country's economic production are also lost. Another important factor is the university hospital's reference in trauma and neurological and orthopedic surgery, which demonstrates a high number of cases observed.

CONCLUSION

With this study, it was possible to characterize brain-dead patients and potential organ donors at the university hospital that is a reference for trauma-orthopedics and neurology in the sub-middle São Francisco region. Statistical results show that TBI due to motorcycle accident, male gender, mixed race and incomplete elementary school were the main characteristics of the analyzed records. Studies that characterize an institution are extremely important to support decision-making by hospital coordination and suggest new intervention proposals to the network. In this research, the diagnosis of brain death by TBI in young men and in farmers shows the need for massive interventions in this group, especially in primary care. Another measure is traffic enforcement, using mechanisms such as the "Lei Seca", which has helped to reduce deaths from motor vehicle accidents. Therefore, it is suggested that the evaluation of the characteristics of patients with brain death be carried out periodically as a way of evaluating the quality of hospital care, as well as actions in the accident prevention network and control of chronic diseases.

REFERENCES

Andrade J. *Associação de Medicina Intensiva Brasileira*. Morte Encefálica. Disponível em: <http://www.amib.org.br/detalhe/noticia/morte-encefalica>. Acesso em: 15 abr., 2015.

Araujo MV. Reflexões sobre a enfermagem e a política de transplante de orgãos. *Conselho Regional de Enfermagem da Bahia* – COREN – BA. Salvador, 2013.

Associação Brasileira de Transplantes de Órgãos. *Registro Brasileiro de Transplantes*. Dimensionamento dos Transplantes no Brasil e em cada estado (2007-2014). São Paulo, Ano XX, n. 4, 2014.Disponível em: < http://www.abto.org.br/abtov03/Upload/file/RBT/2014/rbt2014-lib.pdf> Acesso em: 15 abr., 2015.

Associação Médica Intensiva Brasileira.*Diretrizes AMIB para manutenção de múltiplos órgãos no potencial doador falecido*. São Paulo, 2011.

ASTOLPHI et al. Estudos Observacionais. Disponível em: <http://www.ime.unicamp.br/~nancy/Cursos/me172/Cap4.pdf> . Acesso em: 15 jun., 2015.

Bedor CNG et al.Vulnerabilidades e situações de riscos relacionados ao uso de agrotóxicos na fruticultura irrigada. *Rev. bras. epidemiol.*, v.12, n.1, p. 39-49, 2009.

Brasil. Lei n. 9434, de 4 de fevereiro de 1997 Dispõe sobre a remoção de órgãos, tecidos e partes do corpo humano para fins de transplante e tratamento e dá outras providências. Disponível: < http://www.planalto.gov.br/ccivil_03/leis/l9434.htm > Acesso em: 15 abr., 2015.

Brasil. Ministério da Saúde. *Conselho Nacional de Saúde*. Comissão nacional de Ética em Pesquisa. Resolução 466/12 de 13 de junho de 2012. Aprova diretrizes e normas regulamentadoras de pesquisa envolvendo seres humanos. Diário Oficial da União. Brasília, n. 12, seção 1, p. 59, 2012.

Brasil. Secretaria de Atenção à Saúde. Cadastro Nacional de Estabelecimentos de Saúde. Consulta Estabelecimento- Módulo Hospitalar- Leitos Hospital de Urgências e Traumas. Disponível em: <http://cnes.datasus.gov.br/Mod_Hospitalar.asp?VCo_Unidade=2611106042414>. Acesso em: 15 abr. 2015.

Conselho Federal de Enfermagem. Resolução nº 292 de 7 de junho e 2004. Normatiza a atuação do enfermeiro na captação e transplantes de órgãos e tecidos. Disponível em: <http://www.cofen.gov.br/resoluo-cofen-2922004_4328.html>. Acesso em: 15. Abr. 2015.

Conselho Federal de Medicina. Resolução CFM nº 1346/91. Regulamentação do diagnóstico de morte encefálica. Ética médica. São Paulo (SP): CREMESP; 1996.

Conselho Federal de Medicina. Resolução CFM nº 1480 de 8 de agosto de 1997. Dispõe sobre a caracterização de morte encefálica. Disponível em: <http://www.einstein.br/Ensino/cursos-de-atualizacao/Documents/resolucao-cfn1480.pdf>. Acesso em: 15. Abr. 2015.

Fusco CC et al. Perfil dos doadores efetivos de múltiplos órgãos e tecidos viabilizados pela organização de procura de órgãos de uma instituição pública de cardiologia. JBT: j bras transpl,; v.12, p.1109-12, 2012.

Gil AC. Como elaborar projetos de pesquisa. *São Paulo:* Atlas, 2002.

Guetti NR, Marques IR. Assistência de Enfermagem ao potencial doador de órgãos em morte encefálica. *Revista Brasileira de Enfermagem*. Brasília, v.61, n.1, p. 91-97, 2008.

IBGE – Instituto Brasileiro de Geografia e Estatística. A janela para olhar o Brasil. PNAD – Pesquisa Nacional por Amostra de Domicílios: Brasil e síntese de indicadores 2013. Rio de Janeiro: IBGE, 18/09/2014.

IMIP. Hospital Dom Malan. *Petrolina recebe Organização de Procura de Órgãos*. Disponível em: <http://www1.hdm.imip.org.br/cms/opencms/hdm/pt/noticias/noticias/0015.html>. Acesso em: 19 jun., 2015.

Instituto Brasileiro de Geografia e Estatística- IBGE. Censo 2010. Disponível em: <http://cidades.ibge.gov.br/xtras/perfil.php?codmun=261110>.Acesso em: 04 abr.,2015.

Manzato AJ, Santos AB. A elaboração de questionários na pesquisa quantitativa. Disponível em:< http://www.inf.ufsc.br/~verav/Ensino_2012_1/ELABORACAO_QUESTIONARIOS_PESQUISA_QUANTITATIVA.pdf>. Acesso em: 04 abr., 2015.

Moraes EL.; et al. The profile of potential organ and tissue donors. *Revista Latino-Americana de Enfermagem*., v. 5, n. 17, p. 716-720, 2009.

Neto Corrêa Y. Morte Encefálica: cinquenta anos além do coma profundo. *Revista Brasileira Saúde Materno-Infantil*. Recife, v. 10, n. 2, p. 355-361, 2010.

Noronha MGO. Estudo do perfil dos doadores elegíveis de órgãos e tecidos e motivos da não doação no Hospital Santa Isabel em Blumenau, SC. *Revista da AMRIGS, Porto Alegre,* v. 56, n. 3, p. 199-203, 2012

Organização de Procura de Órgãos – OPO. Notificações e Doações de Órgãos Sólidos por OPO em Pernambuco de janeiro a fevereiro de 2015. Petrolina, 2015.

Pestana JOM et al. Estimativa do número de potenciais doadores de órgãos na cidade de São Paulo. *Rev Ass Méd Brasil*; v. 38, n. 2, p. 97-100, 2008.

Ramos VP, Silva JRF, Silva MHM. *Familiaridade dos Profissionais de Saúde sobre os Critérios de Diagnósticos de Morte Encefálica. Enfermagem em Foco. Recife*, v.01, n.03, p.102-107, 2010.

Rech TH, Filho Rodrigues EM. Manuseio do Potencial Doador de Múltiplos Órgãos. *Revista Brasileira de Terapia Intensiva*. Porto Alegre, v.19 n.2, p. 197-204, 2007.

Rehem TCMSB. Internações sensíveis à atenção primária: limites e possibilidades da lista brasileira de diagnósticos (tese). Universidade de São Paulo, 2009, 125f.

Santos MJ, Massarollo MCKB, Processo de doação de órgãos: percepção de familiares de doadores cadáveres. *Revista Latino-americana de Enfermagem*; 13(3) maio-junho, 2005.

Secretaria de Saúde do Estado de Pernambuco. VIII Gerência Regional de Saúde. Atualização do Plano de Ação Regional da Rede de Atenção às Urgências da VII Região de Saúde de Pernambuco. Petrolina: Secretaria de Saúde do Estado de Pernambuco, 2013.

****