



There Is Great Ignorance About the Brain Death Concept Among the Population in Santiago de Cuba (Cuba)

A. Ríos^{a,b,c,*}, A. Sánchez^a, A. López-Navas^{a,d}, L. Martínez^{a,c}, M.A. Ayala^{a,e,f,g}, J. Carillo^{a,b}, J.J. Ruiz-Manzanera^{a,b,c}, A.M. Hernández^h, P. Ramírez^{a,b,c}, and P. Parrilla^{a,b,c}

^aProyecto Colaborativo Internacional Donante (International Collaborative Donor Project), Murcia, Spain; ^bDepartment of Surgery, Pediatrics, Obstetrics y Gynecology, University of Murcia, Spain; ^cTransplant Unit, Surgery Service, IMIB-Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, Spain; ^dDepartment of Psychology, UCAM, San Antonio Catholic University, Murcia, Spain; ^eHospital Regional de Alta Especialidad del Bajío, León, Guanajuato, Mexico; ^fRegional General Hospital No. 58 of the IMSS, Delegación Guanajuato, México; ^gEscuela de Medicina de la Universidad de Quetzalcoatl en Irapuato, México; and ^hEndocrinology and Nutrition Service, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, Spain

ABSTRACT

Introduction. The knowledge of the brain death (BD) concept is important when determining the attitude toward organ donation.

Objective. To analyze the level of knowledge of the BD concept among the population in Santiago de Cuba and determine the factors that condition it.

Methods. From the Collaborative International Donor Project, we obtained a sample of Cubans living in the area of Santiago de Cuba ($n = 455$). The attitude was assessed using a validated questionnaire (PCID-DTO-RIOS). The survey was self-administered and completed anonymously. Student t test, χ^2 , Fisher, and logistic regression analysis were used.

Results. Forty percent ($n = 180$) of the respondents know the BD concept and consider it as the death of an individual. Of the rest, 43% ($n = 199$) do not know about it, and the remaining 17% ($n = 76$) consider that it does not mean the death of a patient. The variables significantly related to the correct knowledge of BD in the multivariate analysis and considered as independent are: level of studies; the opinion of the couple toward organ donation; the religion of the respondent; having offspring; and a favorable attitude toward organ donation.

Conclusion. There is ignorance about the brain death concept among the population of Santiago de Cuba. This lack of knowledge has a direct relationship with various psychosocial factors.

MOST Latin American countries have a system of organ donation and transplantation and they are establishing the Spanish Model of Transplant Coordination that was developed by the Spanish National Transplant Organization, which has shown the best results in obtaining donors for transplant. Despite this, the donation rates of these countries are still low compared with those of Spain [1]. Knowing the attitude toward organ donation and the psychosocial factors related to it could explain the low donation rates that still exist in Latin American countries, especially in Cuba [1] where refusal rates are still relatively high. One of the most important factors that determines a favorable attitude toward organ donation is knowledge of the brain death (BD) concept [2]. The objective of the

present study is to analyze the knowledge of the brain death concept of the population of Santiago de Cuba (Cuba).

METHODS

Population Screened

The authors screened the residents over 15 years old who reside in Santiago of Cuba. A population reference from the last census was taken to understand the population with these characteristics. A stratified sample was obtained by gender and age.

*Address correspondence to Dr. Antonio Ríos, Avenida de la Libertad n° 208, Casillas, 30007, Murcia, Spain. Tel: 34.968.27.07.57. E-mail: arorios@um.es or arorios4@gmail.com

Table 1. Variables Affecting Conocimiento de Muerte Encefálica Entre la Población de Santiago de Cuba: Bivariate Analysis

Variable	In Favor	Not For	P
Sociopersonal Variables			
Sex			.574
Civil status	Not single	Single	.008
Offspring	Yes	No	<.001
Level of studies	University students	No studies	<.001
Variables: Social Interaction and Prosocial Behavior			
Family comment on donation and transplantation	Yes	No	<.001
Opinion of the couple toward donation and transplantation	In favor	Not known	<.001
Variables: Religious			
Religion of the respondent	Atheist/Agnostic	Catholic	<.001
Attitude Toward Organ Donation After Death			
Attitude toward organ donation	In favor	Not for	<.001

Boldface type in table indicates significant values.

Appraisal Tool

The measuring instrument used was a validated questionnaire of attitude toward organ donation and transplant-PCID-DTO RIOS (Questionnaire of Proyecto Colaborativo Internacional Donante sobre Donación y Trasplante de Órgano [in Spanish]), developed by Dr. Ríos [2-9], submitting a total of explained variance of 63.203% and a Cronbach's alpha reliability coefficient of 0.834.

Fieldwork Research

A random selection of the people was surveyed according to the stratification. The completion was anonymized and self-administered. Verbal consent was asked to collaborate in the study.

Statistics

A descriptive statistic was performed, and Student *t* test, χ^2 , Fisher, and a logistic regression analysis were applied.

RESULTS

Knowledge of Brain Death Concept

Of the 455 Cuban residents in Santiago de Cuba surveyed, 40% (n = 180) know about the brain death concept and consider it as the death of the individual, 43% (n = 199) do not know about it, and 17% (n = 76) consider that it does not mean the death of the patient.

Factors Associated With Knowledge of Brain Death Concept

As can be seen in Table 1, there are several variables associated with knowledge of the brain death concept, such as variables of sociopersonal, social interaction, and prosocial behavior; religious variables; and variables of attitude toward organ donation. After performing the multivariate analysis to assess which of the variables persist as independent, the following were obtained (Table 2): level of studies (OR = 3.476, *P* = .001); opinion of the couple (OR = 4.580, *P* = .005); religion of the respondent (OR = 2.305, *P* = .011); having a descendant (OR = 2.221, *P* < .001); and favorable attitude toward organ donation (OR = 2.507, *P* = .001). Of the individuals who are in favor of organ donation (n = 316), 47.8% of them know and accept the concept of brain death, whereas the 79.14% who were not in favor (n = 139) did not know or accept the concept.

DISCUSSION

Currently, the majority of donors in Western countries are donors in brain death. This situation generates fear in a

Table 2. Variables Affecting Knowledge of Brain Death Concept Among the Population of Santiago de Cuba: Multivariate Analysis

Variable	Coefficient of Regression β	Standard Error	Odds Ratio (confidence interval)	P
Level of studies				
Primary			1	
Secondary	0.811	0.380	2.251 (1.070-4.737)	.033
University	1.245	0.378	3.473 (1.656-7.287)	.001
Without studies	0.913	0.533	2.493 (0.877-7.086)	.087
Opinion of the couple toward organ donation				
Does not know it			1	
In favor	0.353	0.259	1.424 (0.857-2.365)	.172
Has not got couple	0.238	0.297	1.269 (2.272-0.708)	.423
Against	1.522	0.548	4.580 (1.565-13.408)	.005
Religion of the respondent				
Catholic			1	
Atheist/agnostic	0.597	0.260	1.817 (1.092-3.021)	.021
Other religion	0.835	0.329	2.305 (1.211-4.390)	.011
To have a descendant				
Yes			1	
No	0.798	0.224	2.221 (1.431-3.449)	<.001
Attitude toward organ donation at death				
No for				
In favor	0.919	0.228	2.507 (1.425-4.411)	.001

Boldface type in table indicates significant values.

group of the population because they see a person connected to a respirator who looks good and seems to be in a coma. This situation makes the fear of apparent death one of the factors that has most affected the refusal to donate organs. Thus, in Western countries, where this fear has descended considerably, over 50% of the population does not know the concept of brain death. In populations of Latin American origin, the data are less positive, and it is indicated that ignorance of the concept of brain death is between 70% and 80% [2]. In our population group of Santiago de Cuba, the results are more encouraging; ignorance is 60%. The relationship between the favorable attitude toward organ donation and the knowledge and acceptance of the concept of brain death is confirmed in our study. For this reason, it is recommended that clear information on the concept of brain death is included in campaigns to promote donation and organ transplantation [6,10]. In conclusion, we can say that there is ignorance about the brain death concept among the population residing in Santiago de Cuba. This lack of knowledge has a direct relationship to the attitude toward organ donation and is associated with various psychosocial factors.

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