



Knowledge of Brain Death Among the Nigerian Residents in Spain

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ABSTRACT

Introduction. The Nigerian population, an emerging group in Europe, has not been studied in terms of its knowledge of the concept of brain death (BD) and its relationship with organ donation and transplantation (ODT).

Objective. To analyze knowledge of the BD concept among Nigerians living in Spain.

Method. A sample of Nigerians who are ≥ 15 years of age and living in Spain were stratified by age and sex and interviewed. The assessment instrument is the attitude questionnaire for donation and transplantation, Proyecto Colaborativo Internacional Donante sobre Donación y Trasplante de Órgano (in Spanish) Ríos, which was self-administered and anonymously completed. The statistics used were descriptive, χ^2 test, Student *t* test, and a logistic regression analysis.

Results. The questionnaire was completed by 362 Nigerians. Eighteen percent ($n = 66$) know the concept of BD and accept it as a person's death. Of the rest, 58% ($n = 210$) do not know it and 24% ($n = 86$) have a misconception. Those who know the BD concept have a more favorable attitude toward organ donation after death than those who do not know it (29% vs 13%, $P < .001$). Couples' opinions about organ donation ($P < .001$) and level of studies ($P = .039$) are related to the knowledge of the BD concept. In the multivariate analysis, the following persist as independent variables: the attitude in favor ($P < .001$, OR = 3.925) and the opinion of the couples toward donation ($P < .001$, OR = 6.776).

Conclusions. Knowledge of the BD concept is anecdotal among the Nigerian population in Spain.

DONATION and transplant in Nigeria is in an early stage of evolution, where living transplantation, especially kidney transplantation, is slowly growing while cadaver organ transplantation suffers from stagnation, mainly affected by cultural sensitivity and country legislation [1,2]. Among cadaveric donors, most come from people with a state of brain death [3–5]. The lack of knowledge of the BD concept is one of the main psychosocial factors that generates an attitude against organ donation [6,7]. Currently, the Nigerian population has not been studied outside of its borders in terms of knowledge of the BD

concept and its relationship with organ donation and transplantation. Therefore, the objective of this paper is to analyze the knowledge and acceptance of the BD concept among Nigerians residing in Spain and determine those factors influence their attitudes.

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Table 1. Variables Affecting Knowledge of the Brain Death Concept: A Multivariate Logistic Regression Analysis

Variable	Regression Coefficient (β)	Standard Error	Odds Ratio (Confidence Intervals)	<i>P</i>
One's Partner's Opinion Toward Donation and Transplantation:				
I do not know it			1	
Yes, against	0.546	0.419	1.727 (0.759–3.928)	.193
I do not have a partner	0.998	0.366	2.712 (1.323–5.559)	.006
Yes, favorable	1.913	0.459	6.776 (2.758–16.648)	<.001
ODT Attitude:				
Not for			1	
In favor	1.367	0.328	3.925 (2.063–7.465)	<.001

Boldface in table indicate significant values.

METHOD

Population Under Study

The population born in Nigeria who are currently residing in Spain were targeted for this study. A sample of the population who were over 15 years old were stratified by age and sex, according to census data and immigrant assistance associations, and surveyed.

Evaluation Tool

This survey used a validated attitudinal questionnaire for organ donation and organ transplantation—PCID-DTO RIOS: the questionnaire of the Proyecto Colaborativo Internacional Donante sobre Donación y Trasplante de Órgano (in Spanish), developed by Dr. Ríos [8,9].

Fieldwork

A random selection of people were surveyed based on stratification. Support was needed from African immigration support associations to advise on the location of potential respondents. Fulfillment was anonymous and self-administered. Verbal consent was requested to collaborate in the study.

Variables Analyzed

As a dependent variable, knowledge of brain death was studied, whereas the independent variables studied were grouped into demographic variables, sociopersonal variables, knowledge about organ donation, social interaction, religion, and attitude about the body.

Statistics

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

RESULTS

Knowledge of the BD Concept and Related Factors

Three hundred sixty-two people were surveyed. Eighteen percent ($n = 66$) of the respondents know the concept of brain death and accept it as the death of a person. Of the rest, 58% ($n = 210$) do not know it, and 24% ($n = 86$) have a misconception. Of the variables under study, association has been found in the following 3 variables: the attitude toward ODT—those who know the BD concept have a more positive attitude toward the donation of their own organs after death compared to those who do not know (29% vs 13%, $P < .001$); level of studies—those with university

studies have a greater knowledge of BD concept compared to those without studies (44.4% vs 12.6%, $P = .039$); and opinion of the couple—to have a partner and to have an opinion are variables in favor of donation and transplantation (31.6% vs 10.6%, $P = .001$).

Multivariate Analysis

As can be seen in Table 1, independent variables related to knowledge of the BD concept persist, such as attitude toward organ donation and transplantation ($P < .001$, OR = 3.925). Those surveyed with a favorable attitude toward organ donation and transplant are 3925 times more likely to know the BD concept than those who have a less favorable attitude. The opinion of the couple toward organ donation is also a large factor ($P < .001$, OR = 6.776). If the couples of the respondents have an opinion against donation, it makes them 6776 times more likely to know and accept the BD concept than those who do not have a partner.

DISCUSSION

Fear of death is one of the main reasons against organ donation, hence the close relationship that exists between unfounded fear and ignorance of the concept of brain death [6,10]. On the African continent, there are very few studies on attitudes toward donation and transplantation, but it is even more difficult to find any study that provides data on the concept of brain death and its relationship with organ donation and transplantation. There are few studies—such as the one conducted in Nigeria about neurosurgery hospitalized patients, which provides the only data that exist in their country of origin—that reveal results that indicate a low level of awareness among the respondents, with only 22% of people having heard about brain death [11]. On the other hand, there are 2 studies, 1 of which was conducted in South Africa for medical students in which 37% of respondents “believe you are alive if your heart still beats,” which is a factor that is associated with a low willingness to donate ($P < .05$) [12,13]. In Morocco, the students of several faculties, including one of medicine, reflect results similar to the rest, with 24% knowledge of the BD concept in medical students and 17.5% in students of other faculties [14]. In Spain, almost 50% of the Spanish population does not correctly know the BD concept, and having an erroneous

concept remains an independent factor that affects the attitude toward cadaveric organ donation [2,6,15]. The data of our study show that knowledge and acceptance of brain death are very low among Nigerians residing in Spain, at rates lower than those of the Spanish native population [6]. The population data reported by our group, using the same questionnaire, show that 51.4% of the Spanish native population knows and accepts the concept of brain death compared to 18% of Nigerians. The most important factors detected in the population studied are the level of education and the family. The higher cultural level the respondent has, the more likely he or she is to be in favor of organ donation and transplantation. Similar results were found in the Nigerian study [14]. On the other hand, the attitude of the couple is crucial; when the respondent knows that his partner is in favor, he has a more favorable attitude toward this matter. Therefore, it seems to be beneficial to promote dialogue on transplantation and donation issues with family circles and with the couple [2,16,17]. Most studies on this topic indicate a close relationship between knowledge and acceptance of the BD concept and attitudes toward organ donation and transplantation [16,18–20]. Hence, the participants in this study who were more familiar with the BD concept had a more favorable predisposition to organ donation than those who did not. In general, and based on this association, strengthening knowledge and acceptance of the BD concept can contribute to improving attitudes toward organ donation and transplantation [2,19,20].

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