

Attitude of nursing staff toward organ donation in a Spanish hospital with a solid-organ transplant program

Context—Nursing personnel are fundamental in the organ donation and transplantation process, and their attitude toward donation has a decisive effect on patients, patients' families, and the general public.

Objective—To analyze the attitudes of nursing personnel toward donation in a transplant hospital and the factors that determine those attitudes.

Materials and Methods—A random sample of 305 nurses in different hospital services was taken and stratified by type of service. A validated psychosocial questionnaire was used to evaluate attitudes toward donation. The survey was completed anonymously and was self-administered. Student *t* test, χ^2 test, and logistic regression analysis were used for statistical analysis.

Results—Most respondents (63%) favored organ donation. The following variables affected attitude: (1) having a favorable attitude toward donation of a family member's organs ($P < .001$), (2) knowing the concept of brain death ($P < .001$), (3) having discussed organ donation and transplantation within the family ($P = .001$), (4) having a favorable attitude toward autopsy ($P = .006$), (5) fearing mutilation of the body ($P < .001$), (6) a partner's attitude toward organ donation and transplantation ($P < .001$), and (7) the respondent's religion ($P = .009$). Multivariate analysis yielded the following significant factors: (1) fear of mutilation of the body (odds ratio, 9.5), (2) partner's attitude toward organ donation and transplantation (odds ratio, 0.2), and (3) respondent's religion (odds ratio, 2.7).

Conclusions—Attitudes toward organ donation among nurses are similar to attitudes of the general public in Spain. Given the influence of nurses on the general public, promotional campaigns directed at nurses are a priority. (*Progress in Transplantation*. 2009;19:371-377)

**Antonio Ríos Zambudio, MD,
Laura Martínez-Alarcón,
Pascual Parrilla, PhD,
Pablo Ramírez, MD**

Coordinación Regional de Trasplantes de la Comunidad Autónoma de Murcia (AR, LMA, PR), Hospital Universitario Virgen de la Arrixaca (AR, LMA, PP, PR), Murcia, Spain

Corresponding author: Dr Antonio Ríos Zambudio, Avenida de la Libertad nº 208, Casillas 30007, Murcia, Spain (e-mail: ARZRIOS@teleline.es)

To purchase electronic or print reprints, contact:

The InnoVision Group
101 Columbia, Aliso Viejo, CA 92656
Phone (800) 809-2273 (ext 532) or
(949) 448-7370 (ext 532)
Fax (949) 362-2049
E-mail reprints@aacn.org

Transplantation is limited by the shortage of organs available,¹ and many factors contribute to the shortage. In Spain, a country with one of the highest deceased donation rates in the world and with a coordination model (the Spanish model) that minimizes loss of donors due to lack of detection, the main reason for loss of potential donors is refusal of their family members to donate. Family refusal causes the loss of 1 out of every 4 or 5 potential donors.^{2,3} In addition to psychosocial factors in the population,^{4,5} one of the barriers that appears to prevent the procurement of more transplant organs is that a considerable number of hospital professionals may be opposed to organ donation.⁶⁻⁸

Usually, organ donation and transplantation activities have been focused on physicians, but we now know that physicians have the most favorable attitudes toward organ donation of all hospital personnel.⁸⁻¹² Therefore, we should concentrate our efforts on other subgroups of hospital personnel. In this respect, nurses

are fundamental in the organ donation and transplantation process.³ Moreover, nurses frequently have more direct contact with patients and for longer periods than physicians do, which means that they have an important effect on such patients. Therefore nurses' attitudes toward organ donation will affect patients and their families as well as the general public in a decisive way that is reinforced by nurses' status as health care professionals.

In this situation, it is a matter of great concern that various studies have shown that organ donation and transplantation generate stress among nurses and that nurses lack information on the topic,¹³⁻¹⁶ although some authors¹⁷ report that nurses have a very favorable attitude.

Objective

The objectives of our study were (1) to analyze the attitude of nurses toward deceased donation in a tertiary Spanish hospital with various ongoing solid-organ

transplant programs and (2) to analyze the factors that determine such an attitude.

Materials and Methods

Study Population

The study was carried out in a Spanish tertiary level hospital with a deceased organ transplant program (kidney, liver, pancreas, and heart) and a living donation program (kidney and liver). A random sample was taken of nurses from the different hospital services. A total of 305 professionals were selected, and the study was carried out between February and December 2003.

Attitudinal Survey and Study Variables

Attitude was evaluated by using a survey of multiple-choice questions that had been validated in our geographic area.^{8,18,19} Contact was made with the nursing supervisor or a nurse. This person was given an explanation of the survey and was made responsible for the distribution and collection of questionnaires in randomly selected work shifts. The questionnaire was distributed at the start of the work day, when access was available to the whole workforce, all of whom completed the survey at the same time (completing the survey took 3-5 minutes). The survey was anonymous and was self-administered, and the process was coordinated by 2 health care collaborators from the Regional Transplant Coordination Center.

Attitude toward the donation of a respondent's own organs was studied as a dependent variable. The following independent variables were studied: (1) sociopersonal (age, sex, and marital status); (2) work (job situation, and type of service in which the respondent works); (3) knowledge about organ donation and transplantation (previous experience with organ donation and transplantation, knowledge of the concept of brain death, a respondent's belief in the possibility of needing an organ transplant in the future); (4) social interaction (partner's attitude toward organ donation and transplantation, family discussion about organ donation and transplantation, attitude toward donation of a family member's organs upon death, and trust in the health care system [a belief that medical errors are committed]); (5) participation in prosocial voluntary activities (attitude toward carrying out activities concerning the rights and welfare of other citizens); (6) religion (respondent's religion, knowing the attitude of the church toward organ donation and transplantation); and (7) attitude toward the body (attitudes toward cremation of the body, burial of the body, and autopsy; concern about mutilation of the body after donation).

Statistical Analysis

The data were stored in a database and were analyzed by using the SPSS 11.0 statistical package (SPSS

Inc, Chicago, Illinois). Descriptive statistics were carried out on each of the variables. The Student *t* test and χ^2 test were used to compare the different variables, together with an analysis of remainders. The Fisher exact test was applied to contingency tables when cells had an expected frequency less than 5.

In the multivariate study, a logistic regression analysis was applied to the variables that had a significant relationship in the bivariate analysis. In all cases, only *P* values less than .05 were considered statistically significant. Finally, this study was approved as a study of human subjects by the ethics committee at our hospital.

Results

Attitude Toward Organ Donation

The completion rate was 95% (289 respondents of 305 selected). With respect to donation of a respondent's own organs, 63% (*n* = 181) of respondents were in favor and 37% (*n* = 108) were undecided or against.

Two noteworthy reasons were given for being in favor: solidarity (61%) and reciprocity (66%). Most respondents did not give a reason for being against (a negative assertion, 46%), although fear of apparent death was cited in 28% of cases. The vast majority of respondents know that the hospital where they work is a solid-organ transplant hospital (95%, *n* = 275).

Variables Determining Attitude Toward Donation: Bivariate Analysis

An analysis of variables that influence attitude toward organ donation shows that attitude is not related to any of the personal variables such as a respondent's sex, age, or marital status (Table 1).

With reference to job variables, no relationship was found between attitude and job contract situation (*P* = .74), type of service in which health care activity is carried out (*P* = .30), or whether the service is involved in the transplant-donation process (*P* = .80). No differences were found related to whether the respondent has had experience with organ transplantation or donation (*P* = .27), or whether the respondent has been involved in voluntary activities (*P* = .56).

A significant factor is understanding of the concept of brain death. Thus, persons who do not understand the concept of brain death or who are mistaken about it have a more negative attitude toward the matter than do persons who understand the concept (51% who do not understand are in favor of donation, 22% who are mistaken about the concept are in favor of donation, and 70% who understand the concept are in favor of donation; *P* < .001).

A partner's opinion on the subject also has an influence: attitude is more favorable (83% in favor) if the partner is in favor and more negative if the partner is against (27%) or the partner's opinion is unknown

Table 1 Psychosocial variables that influence attitude toward deceased organ donation among hospital nursing personnel

Variable	No. (%) of nurses ^a		P
	Unfavorable attitude (n = 108; 37%)	Favorable attitude (n = 181; 63%)	
Age, mean (SD), y	40 (8)	38 (9)	.11
Sex			
Male (n = 85)	32 (30)	53 (29)	.95
Female (n = 196)	73 (68)	123 (68)	
Does not know/no answer (n = 8)	3 (3)	5 (3)	
Marital status:			
Single (n = 94)	31 (29)	63 (35)	.52
Married (n = 167)	65 (60)	102 (56)	
Widowed (n = 4)	1 (1)	3 (2)	
Separated (n = 12)	3 (3)	9 (5)	
Divorced (n = 9)	5 (5)	4 (2)	
Does not know/no answer (n = 3)	3 (3)	0 (0)	
Type of service			
Surgical (n = 93)	37 (34)	56 (31)	.30
Medical (n = 153)	59 (55)	94 (52)	
Central (n = 40)	11 (10)	29 (16)	
Does not know/no answer (n = 3)	1 (1)	2 (1)	
Service directly related to organ donation and transplantation			
Not related (n = 166)	61 (56)	105 (58)	.80
Related (n = 123)	47 (44)	76 (42)	
Job contract situation			
Permanent (n = 181)	71 (66)	110 (61)	.74
Temporary (n = 58)	22 (20)	36 (20)	
Contracted (n = 46)	14 (13)	32 (18)	
Does not know/no answer (n = 4)	1 (1)	3 (2)	
Experience in donation and transplantation			
No (n = 170)	68 (63)	102 (56)	.27
Yes (n = 119)	40 (37)	79 (44)	
Voluntary activities			
Yes (n = 75)	25 (23)	50 (28)	.56
No nor will I (n = 22)	11 (10)	11 (6)	
No but I would like to (n = 177)	66 (61)	111 (61)	
Does not know/no answer (n = 15)	6 (6)	9 (5)	
Donation of organs of a family member			
Yes (n = 92)	7 (6)	85 (47)	<.001
No (n = 22)	21 (19)	1 (1)	
Would respect opinion (n = 165)	74 (69)	91 (50)	
Does not know/no answer (n = 10)	6 (6)	4 (2)	
Family discussion about donation			
No (n = 66)	36 (33)	30 (17)	.001
Yes (n = 223)	72 (67)	151 (83)	
Knowledge of concept of brain death			
Wrong concept (n = 9)	7 (6)	2 (1)	<.001
Concept known (n = 190)	57 (53)	133 (74)	
Concept not known (n = 90)	44 (41)	46 (25)	
Favorable attitude toward cremation			
No (n = 141)	55 (51)	86 (48)	.58
Yes (n = 148)	53 (49)	95 (52)	
Favorable attitude toward autopsy			
No (n = 185)	80 (74)	105 (58)	.006
Yes (n = 104)	28 (26)	76 (42)	
Concern about mutilation after donation			
No (n = 231)	68 (63)	163 (90)	<.001
Yes (n = 25)	18 (17)	7 (4)	
Does not know/no answer (n = 33)	22 (20)	11 (6)	

Continued

Table 1 *Continued*

Variable	No. (%) of nurses ^a		P
	Unfavorable attitude (n = 108; 37%)	Favorable attitude (n = 181; 63%)	
Partner's opinion about organ donation and transplantation			<.001
Yes, in favor (n = 134)	23 (21)	111 (61)	
Opinion not known (n = 59)	36 (33)	23 (13)	
Yes, against (n = 22)	16 (15)	6 (3)	
No partner (n = 42)	17 (16)	25 (14)	
Does not know/no answer (n = 32)	16 (15)	16 (9)	
Religion			.009
Catholic (n = 233)	76 (70)	157 (87)	
Other religion (n = 32)	18 (17)	14 (8)	
Does not know/no answer (n = 24)	14 (13)	10 (6)	
Possibility of needing a transplant for oneself			.76
Yes (n = 102)	41 (38)	61 (34)	
No (n = 3)	1 (1)	2 (1)	
Doubts (n = 184)	66 (61)	118 (65)	
There are medical errors			.56
Yes (n = 60)	25 (23)	35 (19)	
No (n = 14)	3 (3)	11 (6)	
Occasionally (n = 129)	47 (44)	82 (45)	
Doubts (n = 86)	33 (31)	53 (29)	

^a Values are number (%) unless otherwise specified. Percentages may not total 100 because of rounding.

(40%, $P < .001$). Moreover, attitudes are more favorable when opinions about donation have been discussed at the family level ($P = .001$). Attitude toward donation is also more favorable among those respondents who would be prepared to donate the organs of a family member if the decision had to be made ($P < .001$).

Attitudes toward donation are more favorable among those respondents who would be prepared to accept other options apart from burial after their death, especially the performance of an autopsy (73% vs 57%; $P = .006$). In addition, persons who are concerned about mutilation after donation have a more negative attitude (28%) than do persons who are not concerned about that (71%, $P < .001$).

With respect to religious beliefs, the few respondents who are non-Catholic had a more negative attitude toward donation ($P = .009$). Finally, attitude is not influenced by the belief that one may need a transplant organ oneself ($P = .76$) or the belief that medical errors may occur in the center ($P = .56$).

Variables Affecting Attitudes Toward Donation: Multivariate Analysis

A multivariate analysis shows that 3 variables independently influence attitude toward donation: (1) fear of mutilation of the body: persons with no fear of mutilation are 9 times as likely to have a favorable attitude toward donation (odds ratio, 9.52); (2) the opinion of a respondent's partner toward organ donation: respondents who know that the partner is against donation

are 10 times less likely of being in favor of donation (odds ratio, 0.20); and (3) a respondent's religion: Catholics are 3 times as likely as non-Catholics to have a favorable attitude toward donation (odds ratio, 2.7).

Discussion

Only a few years after the first successes with kidney transplants from deceased donors, various authors began to study the psychosocial factors that influence donation.²⁰ Initially the focus was on the general public, but later more emphasis was placed on studies of other health care workers,⁶⁻⁸ given that part of the problem with organ procurement is found within the hospitals themselves.

Nurses are a fundamental subgroup of health care workers who look after patients and promote health in the population. In this respect, their attitudes toward health matters are fundamental, so if they are against donation, they generate a negative attitude toward donation among persons who might be exposed to such an attitude or they at least generate distrust about the matter. Information offered by health care personnel has a considerable influence on the general public. Moreover, the generation of a negative attitude in the general public from comments made by health care professionals is very difficult to reverse, given that the source of information holds a lot of credibility.²¹

In our study, attitudes toward deceased organ donation are the same as described in our general population (63% in favor vs 63% opposed).²² This similarity

Table 2 Psychosocial variables that influence attitude toward deceased organ donation among hospital nursing personnel. Multivariate study

Variable	Regression coefficient (β)	Standard error	Odds ratio (confidence interval)	P
Concern about mutilation after donation			1	
Yes	2.26	0.53	9.52 (3.356-27.100)	<.001
No				
Partner's attitude toward transplantation			1	
I don't have a partner	0.73	0.45	2.07 (0.86-4.96)	.10
In favor	-1.04	0.50	0.35 (0.13-0.93)	.04
I do not know it	-1.59	0.66	0.20 (0.06-0.74)	.02
Against				
Religion			1	
Other religion				
Catholic	1.00	0.50	2.73 (1.03-7.24)	.04

is important, given that the respondents are professionals who work in a transplant center and many have worked with transplant patients and been involved in the donation and transplant process. These data confirm what has already been found in other European countries, where a negative attitude has been reported and where a lot of fear and uncertainty surrounds the topic of organ donation and transplantation.^{13-15,23-25} In fact, when we analyze the studies reporting that nurses are in favor,^{16,17,26} we see that most have very low questionnaire completion rates, which could cause a positive bias in the selection of the sample because persons who are in favor tend to be more prepared to complete the questionnaire than persons who are against or undecided, and this fact could explain the high favorable attitude. For example, in the study by Molzahn,¹⁷ 92% of nursing respondents are in favor, but the survey completion rate is only 50%. Similarly, in a British survey, de Sque et al²⁶ report quite a favorable attitude (78%) among nursing personnel, but the survey completion rate is very low at around 54%. All these facts lead us to believe that the situation is similar in different countries and hospitals and that the psychosocial profile that influences such an attitude is affected by the same populational factors.²²

Among the factors that influence attitudes on this topic, knowledge of the concept of brain death is very important. This classic factor has been described in the general population, but it is surprising to find it among nursing personnel. Nurses work in health care centers and have extensive training, so it is assumed that they understand the concept of brain death.²⁷ Yet 34% of respondents did not understand this concept. This finding is congruent with the main reason given for not donating organs: fear of apparent death. If we are self-critical, we can see that although we undertake campaigns in the general public, in schools, and so on,²⁸ we have not ensured that our own personnel are well-informed and fully understand what we are doing.

Therefore, it is important to provide information about brain death to health care professionals.²⁹ In this respect, some authors have already highlighted that the establishment of a protocol about the diagnosis of brain death increases confidence in the process and reduces uncertainty.³⁰

Fear of manipulation of the body is another factor that makes donation difficult.³¹ Thus, nurses have a more negative attitude toward donation when they are not prepared to have an autopsy carried out on themselves upon death if it were necessary. Some authors⁶ show that, contrary to the belief that health care professionals are less sensitive than the general public toward the manipulation of the body, they in fact have great difficulty in allowing action to be taken on the deceased donor, even actions as well accepted as transplantation. Thus, our results show that fear of manipulation of the body not only remains an independent factor in the multivariate analysis, but has a high odds ratio (Table 2).

Previous experience with donation and transplantation was not a favorable factor. However, various authors have reported that, as in the general public,⁴ knowing transplant patients has a parallel in the hospital setting,⁶ and therefore it would be useful to highlight the successful organ transplants within the hospital and to make sure that all the professionals know the success rates. Among nurses, this does not seem to be a fundamental factor, because although it is necessary to know transplant patients, it is also necessary to understand the transplant process well in order to avoid unfounded fears. Two noteworthy reasons are given for being in favor of organ donation: solidarity (61%) and reciprocity (66%).

Another significant factor, although it loses a certain amount of importance because most respondents are Catholic, is religion. The Catholic church clearly accepts organ donation and transplantation,³² and Catholics are slowly becoming aware of this situation. Thus, we can see why Catholics tend to have a more

favorable attitude toward donation, being nearly 3 times more in favor than are non-Catholics (odds ratio, 2.7).

Finally, another fundamental factor is the opinion of a respondent's partner toward donation. A respondent's favorable attitude is related to a partner's favorable attitude and vice versa, being against is related to a partner's negative opinion. Moreover, results of the multivariate study indicate that if the partner is against donation and the respondent knows the partner's opinion, the respondent is nearly 10 times less likely to be in favor than a respondent who does not have a partner (odds ratio, 0.2). In this way, we have seen that family discussion about donation is a favorable factor: professionals who have considered the topic of donation in their family have a more favorable attitude. Therefore, as in the population, it seems to be beneficial to encourage dialogue about transplantation and donation within family circles. Caballer et al³³ have shown via logistic regression analysis in the general population that, among the social interaction variables, people showing their opinion toward organ donation to family members or close friends and people knowing that their partner has a positive attitude have a positive effect on the decision to donate.

Conclusions

To conclude, we could say that attitudes toward deceased organ donation among hospital nurses are the same as the attitudes described in our general population, and these attitudes are determined by the same psychosocial variables that have been detected in the general population. Therefore, campaigns to promote organ donation among nurses are becoming a priority, because nurses work in hospitals, where any negative attitude could have a strong influence on the general public. The concept of brain death is one that must be made clear among nurses.

Raising the awareness of health care professionals is a fundamental aspect of the organ donation and transplantation process,²⁹ especially if we want to reduce the 20% rate of refusals to donate in the Spanish population.³ The predisposition of health care professionals toward this treatment as well as the treatment provided to families of patients with conditions likely to evolve into brain death is vitally important when donation is to be considered. What is more, nursing professionals should know that when the condition of a patient with severe structural brain damage changes from critical to another condition that is compatible with brain death, hopeful possibilities are offered to other patients and their families who are awaiting transplant.

Nurses are becoming more and more important in the care and promotion of health care matters in the general public; nurses' attitude affects public opinion, given their position as health care professionals.³⁴⁻³⁶

One of the possible barriers preventing donation might be the attitude of health care professionals who are not always in favor and therefore do not create the right social climate to encourage participation. In this sense, nurses constitute a fundamental group within the health care system, and their work will be important for the promotion of this type of donation.

In addition, although these results could be representative of all hospitals, we should take into account the peculiarities of each hospital. For instance, a transplant hospital is not the same as a hospital not so involved with transplantation. As a general rule, not all hospital personnel are in favor of organ donation and transplantation. Therefore, we should encourage education about organ donation and transplantation as well as the concept of brain death. We believe that a key way to prevent negative attitudes about donation in future health care workers could be to educate university students who are studying health science about organ donation and transplantation.

Financial Disclosures

None reported.

References

1. Cantarovich F. Improvement in organ shortage through education. *Transplantation*. 2002;73(11):1844-1846.
2. Martínez JM, López JS, Martín A, Martín MJ, Scandroglio B, Martín JM. Organ donation and family decision-making within the Spanish donation system. *Soc Sci Med*. 2001;53(4):405-421.
3. Memoria de actividades ONT 2004. 1ª parte. *Rev Esp Traspl*. 2005;14(2):37-52.
4. Martínez JM, Martín A, López Jorge S. La opinión pública española ante la donación y el trasplante de órganos. *Med Clin*. 1995;105:401-406.
5. Conesa C, Ríos A, Ramírez P, et al. Psycho-social profile in favour of organ donation. *Transplant Proc*. 2003;35(4):1276-1281.
6. Frutos MA, Blanca MJ, Rosel J, Ruiz P, Elosegui E. Opiniones de profesionales sanitarios de Málaga sobre donación y trasplante de órganos: actitudes en hospitales con y sin actividad trasplantadora. *Rev Esp Traspl*. 1992;1:221-226.
7. Equipo de Coordinación de Trasplantes del Hospital General de Segovia. Opiniones y actitudes del personal del Hospital General de Segovia acerca de la extracción de órganos para trasplante. *Nefrología*. 1991;11(suppl 1):57-59.
8. Ríos A, Conesa C, Ramírez P, et al. Attitude toward deceased organ donation and transplantation among the workers in the surgical services in a hospital with a transplant program. *Transplant Proc*. 2005;37(9):3603-3608.
9. Gross T, Marguccio I, Martinoli S. Attitudes of hospital staff involved in organ donation to the procedure. *Transpl Int*. 2000;13(5):351-356.
10. Ríos A, Ramírez P, Martínez L, et al. Are personnel in transplant hospitals in favor of cadaveric organ donation? Multivariate attitudinal study in a hospital with a solid organ transplant program. *Clin Transplant*. 2006;20(6):743-754.
11. Zambudio AR, Conesa C, Ramirez P, et al. What is the attitude of hospital transplant-related personnel toward donation? *J Heart Lung Transplant*. 2006;25(8):972-976.
12. Ríos A, Conesa C, Ramírez P, et al. Redes Temáticas de Investigación Cooperativa: Estrategias para Optimizar los Resultados en Donación y Trasplante, Red C03/03. Ancillary hospital personnel faced with organ donation and transplantation. *Transplant Proc*. 2006;38(3):858-862.

13. Collins TJ. Organ and tissue donation: a survey of nurse's knowledge and educational needs in an adult ITU. *Intensive Crit Care Nurs.* 2005;21(4):226-233.
14. Ingram JE, Buckner EB, Rayburn AB. Critical care nurses' attitudes and knowledge related to organ donation. *Dimens Crit Care Nurs.* 2002;21(6):249-2545.
15. Naude A, Nel E, Uys H. Organ donation: attitude and knowledge of nurses in South Africa. *EDTNA ERCA J.* 2002;28(1):44-48, 55.
16. Ozdag N, Bal C. The nurses knowledge, awareness and acceptance of tissue-organ donation. *EDTNA ERCA J.* 2001; 27(4): 201-206.
17. Molzahn AE. Knowledge and attitudes of critical care nurses regarding organ donation. *Can J Cardiovasc Nurs.* 1997;8(2): 13-18.
18. Conesa C, Ríos Zambudio A, Ramírez P, Canteras M, del Mar Rodríguez MM, Parrilla P. Socio-personal profile of teenagers opposed to organ donation. *Nephrol Dial Transplant.* 2004; 19(5):1269-1275.
19. Conesa C, Ríos A, Ramírez P, et al. Rural primary care centres as a source of information about organ donation. *Transplant Proc.* 2005;37(9):3609-3613.
20. Cleveland SE. Personality characteristics, body image and social attitudes of organ transplant donors versus nondonors. *Psychosom Med.* 1975;37(4):313-319.
21. Canteras Jordana M, Conesa C, Ríos A, et al. Importancia de los profesionales de atención primaria en la educación sanitaria de la donación de órganos. *Aten Primaria.* 2004;34(10):528-533.
22. Conesa C, Ríos A, Ramírez P, Canteras M, Rodríguez MM, Parrilla P. Estudio multivariante de los factores psicosociales que influyen en la actitud poblacional hacia la donación de órganos. *Nefrología.* 2005;25:684-697.
23. Boey KW. A cross-validation study of nurses' attitudes and commitment to organ donation in Hong Kong. *Int J Nurs Stud.* 2002;39(1):95-104.
24. Carter-Gentry D, McCurren C. Organ procurement from the perspective of perioperative nurses. *AORN J.* 2004;80(3): 417-421, 424-431.
25. Regehr C, Kjerulf M, Popova SR, Baker AJ. Trauma and tribulation: the experiences and attitudes of operating room nurses working with organ donors. *J Clin Nurs.* 2004;13(4): 430-437.
26. Sque M, Payne S, Vlachonikolis I. Cadaveric donotransplantation: nurses' attitudes, knowledge and behaviour. *Soc Sci Med.* 2000;50(4):541-552.
27. Pugliese MR, Degli Esposti D, Venturoli N, et al. Hospital attitude survey on organ donation in the Emilia-Romagna region, Italy. *Transpl Int.* 2001;14(6):411-419.
28. Ríos A, Conesa C, Munuera C, Pascual FJ, Fajardo D. Campaña informativa sobre la donación y trasplante de órganos en escolares. *Aten Primaria.* 1998;21(9):623-626.
29. Frutos MA. Concienciación para la donación. *Nefrología.* 1999;19:288-293.
30. Dodd-McCue D, Tartaglia A, Myer K, Kuthy S, Faulkner K. Unintended consequences: the impact of protocol change on critical care nurses' perceptions of stress. *Prog Transplant.* 2004;14(1):61-67.
31. Sanner M. A comparison of public attitudes toward autopsy, organ donation, and anatomic dissection. A Swedish survey. *JAMA.* 1994;271(4):284-288.
32. Conesa C, Ríos A, Ramírez P, Parrilla P. Los católicos ante la donación de órganos. *Med Clin.* 2004;123:397-398.
33. Caballer Miedes A, Martínez Sancho M. Variables influyentes en la actitud hacia la donación de órganos. *Psicothema.* 2000; 12(suppl 2):100-102.
34. Jeffres LW, Carroll JA, Rubenking BE, Amschlinger J. Communication as a predictor of willingness to donate one's organs: an addition to the Theory of Reasoned Action. *Prog Transplant.* 2008;18(4):257-262.
35. Pelleriaux B, Roels L, Van Deynse D, Smits J, Cornu O, Delloye C. An analysis of critical care staff's attitudes to donation in a country with presumed-consent legislation. *Prog Transplant.* 2008;18(3):173-178.
36. Pont Castellana T, Masnou Burralló N, Gràcia Gonzalo RM, et al. Health care professionals: what do they know about organ donation? *Prog Transplant.* 2008;18(2):141-145.