

NURSING STUDENTS' KNOWLEDGE ABOUT ORGAN DONATION AND TRANSPLANTATION: A SPANISH MULTICENTER STUDY

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ABSTRACT

Healthcare professionals and the information that they provide to the public on organ donation and transplantation (ODT) influence attitudes toward this option. Objective: to analyze the knowledge of university nursing students at Spanish universities toward ODT and the factors affecting it.

METHODS AND DESIGN: A multicenter, sociological and observational study including university nursing diploma students in a complete academic year. PARTICIPANTS: A sample of 10,566 students was selected stratified by geographical area and year. Instrument: a validated questionnaire of knowledge toward ODT (PCDI-DTO RIOS), self-administered and completed anonymously.

RESULTS: Questionnaire completion rate: 85% (n=9001). Only 18% (n=1580) believed that their knowledge about ODT was *good*, 40% (n=3578) believed that the information they had was *normal* and 39% that their knowledge was *sparse*. Of the students, 96% believed that organ needs are not covered and 79% that one might need a transplant in the future. Only 39% (n=3493) had attended a talk about ODT. Furthermore, 83% (n=7435) believed that attending a talk, would it be interesting.

The following variables were associated with having a more adequate knowledge: gender (62% men vs. 57% women; $P<0.001$); academic year ($P<0.001$); knowing a donor ($P<0.001$); knowing a transplant patient ($P<0.001$); believing the possibility of needing a transplant oneself in the future ($P<0.001$) attitude toward deceased donation ($P<0.001$); interest in receiving an informative talk about ODT ($P<0.001$).

CONCLUSION: Only 18% of nursing students in Spain believed that their knowledge about ODT was adequate. These results must be considered for possible training plans for these future professionals.

INTRODUCTION. Healthcare professionals and the information that they provide to the public on organ donation and transplantation (ODT) influence attitudes toward this option. Therefore, if the public's perception of transplantation is good, their predisposition toward donation will be positive. This is important in ODT, because the population and patients play a fundamental role in donation. It has been shown that the content of the information and the way in which it is presented influence attitude toward ODT. Moreover, nursing personnel frequently have more direct and longer contact with patients and their families than other healthcare professionals. Thus, the knowledge acquired about ODT during university education will have a decisive influence on professionals, patients, their families, and the general public, which is backed up by their status as healthcare personnel [1,2]. The objectives of this study were to determine the knowledge of Nursing Diploma students about ODT and to analyze factors that affect this knowledge.

MATERIALS AND METHODS. *Study Population:* A multicenter, sociological, interdisciplinary and observational study including university nursing diploma students (n=28000) of Spain in a complete academic year. *Sample size:* A sample of 10,566 students was selected (99% confidence and a precision of $\pm 1\%$) stratified by geographical area and year. *Instrument for measuring attitude:* The instrument used was a validated questionnaire of attitude toward organ donation and transplantation (PCID-DTO RIOS: "International Collaborative Organ Donation Project about Organ Transplantation and Donation (Ríos y col.) [3-5]. This questionnaire includes questions distributed into four validated sub-scales or factors in the Spanish population, having a total explained variance of 63.203% and a confidence interval for Cronbach's alpha coefficient of: 0.834. It was self-administered and completed anonymously. *Study variables:* Knowledge about ODT was the dependent variable. The following independent variables were analyzed: 1) socio-personal, 2) academic, and 3) attitudes toward ODT. *Statistical analysis:* A descriptive statistical analysis was carried out on each of the variables, and for the comparison of the different variables Student's t-test was applied together with the χ^2 test complemented by an analysis of the remainders. Fisher's exact test was applied when the contingency tables had cells with an expected frequency of <5 . P values of less than 0.05 were statistically significant.

RESULTS. The questionnaire completion rate was 85% (n=9,001). Only 18% (n=1580) of students believed that their knowledge about donation and transplantation was *good*, 40% (n=3578) believed that the information

they had about ODT was *normal*, 39% (n=3527) assumed that their knowledge was *sparse*, 2% (n=204) believed that was *bad* and 1% (n=93) believed that they had no information about ODT. Of the students surveyed, 96% (n=8546) believed that organ needs are not covered; and 79% (n=7026) believed one might need a transplant in the future. Only 39% (n=3493) of them, had attended a talk about ODT and 61% (n=5475) no. Furthermore, 83% (n=7435) believed that attending a talk, would it be interesting.

The following variables were associated with having a more adequate knowledge: gender (62% men vs. 57% women; $P<0.001$); academic year ($P<0.001$); knowing a donor ($P<0.001$); knowing a transplant patient ($P<0.001$); believing in the possibility of needing a transplant oneself in the future ($P<0.001$) attitude toward deceased donation ($P<0.001$); interest in receiving an informative talk about ODT ($P<0.001$). In addition, those respondents who had attended any talks about ODT had a better knowledge than those who had never received any formal information about the matter (79% versus 43%; $P<0.001$) (Table 1).

DISCUSSION. The results of this study indicate that only 18% of the students believed they have good information about ODT, although 83% were of the opinion that it would be interesting to receive this information as part of their training as future workers. Similar data have been found among Greek students where only 38% understood the correct definition of ODT, with 86% being interested in receiving more information about the subject [6]. There was also a Turkish study in which 63% of students of medicine and nursing were not aware of the procedures involved in ODT [7]. In this sense, some authors suggest that only a limited time is dedicated to this aspect in the university curriculum [8] and they highlight the need for students to receive information in this regard from the beginning of their university training [9]. Thereby, in our study, only 39% of Spanish students surveyed had attended a talk about ODT.

On analyzing of the profile of the student who has adequate level of knowledge about ODT, we find that the students in the final year have a better knowledge. Academic and healthcare training, with the increase in acquired knowledge, generate greater awareness of the subject and improve attitudes toward ODT [10]. In students of Medicine it has been seen that receiving a specific course about donation before or during their studies is a significant predictor of knowledge about ODT [11,12]. However, other studies have detected that nursing students are afraid of the loss of the body integrity associated to be a donor and they directly relate

being registered as an organ donor with death, leading them to have fear and anxiety about the matter [10,13]. In addition, nurses who understood the concept of death more frequently had a favorable attitude toward ODT, a finding in accord with the primary reason given for not donating organs, that is, fear of apparent death [1,14]. We should remember that donation should be promoted by healthcare professionals because in this way we can improve good health care practices, and transplantation is the only option for achieving health for many patients [15]. Therefore, a specific training course could be useful for increasing awareness about this topic, communicating adequate information and providing familiarity with organ and tissue donation [9]. In this sense, it has been seen that receiving information about donation while at university can improve the capacity of student nurses to identify potential donors when they become health staff [10]. Nursing personnel are fundamental to promotion of health in the population. Their attitudes toward healthcare issues are decisive: if they are against ODT, they will generate a negative attitude, or at least cause distrust, among the public [16].

CONCLUSIONS. To conclude, only 18% of Spanish nursing students believed that their knowledge about organ donation and transplantation is adequate and good. Receiving information about donation while at university can improve the capacity of student nurses to identify potential donors when they become health staff and improve good health care practices.

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Table 1. Summary of the Influence of Different Variables Related to Knowledge about ODT in the Study Group.

Variables	Knowledge About ODT		
	Adequate knowledge (n = 5158; 57%)	Inadequate Knowledge (n = 3824; 43%)	<i>P</i> (≤ 0.05)
Socio-personal variables			
Age (21 ± 2 years)	21 ± 5 y	21 ± 2 y	0.487
Gender	Man	Women	0.000
Academic variables			
Academic year	Third	First	0.000
Variables of attitude toward ODT			
Knowing a donor	Yes	No	0.000
Knowing a transplant patient	Yes	No	0.000
Organ needs covered	No	Yes	0.000
Possibility of needing a transplant	Yes	No	0.034
Attitude toward deceased donation	Yes	No	0.000
Interest in receiving an informative talk about ODT	Yes	Doubts	0.000
Having received an informative talk about ODT	Yes	No	0.000