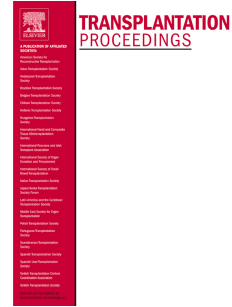


## Accepted Manuscript



Do religious factors influence the attitude toward organ donation among medical students? Spanish multicentre study

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PII: S0041-1345(18)31118-7

DOI: <https://doi.org/10.1016/j.transproceed.2018.11.003>

Reference: TPS 28822

To appear in: *Transplantation Proceedings*

Received Date: 13 August 2018

Revised Date: 24 November 2018

Accepted Date: 26 November 2018

Please cite this article as: Ríos A, López-Navas A, Gutiérrez P, Gómez F, Iriarte J, Herruzo R, Blanco G, Llorca F, Asunsolo A, Sánchez P, Fernández A, de Jesús M, Martínez Alarcón L, Lana A, Fuentes L, Hernández J, Virseda J, Yelamos J, Bondía J, Hernández A, Ayala M, Flores-Medina J, Carrillo J, Sánchez Á, Ramírez P, Parrilla P, Do religious factors influence the attitude toward organ donation among medical students? Spanish multicentre study, *Transplantation Proceedings* (2018), doi: <https://doi.org/10.1016/j.transproceed.2018.11.003>.

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**ABSTRACT**

**INTRODUCTION.** Religious factors have conditioned the attitude toward Organ Donation and Transplantation (ODT) since the beginning of the transplant, despite the fact that most religions are in favor of transplantation. In health professionals, this situation is considered as overcome, although there are studies that indicate otherwise.

**OBJECTIVE.** To assess the impact of religious beliefs of medical students on their attitude toward ODT.

**METHOD.**

- *Population under study:* Medical students in Spanish Universities.

- *Study sample:* Stratified by geographical area and academic course.

- *Assessment instrument:* Attitude ODT questionnaire "PCID-OTO-Rios". Anonymity and self-administered completion.

**RESULTS.** Of all students, 42% (n=3,907) declare themselves atheists or agnostics. The remaining 58% (n=5,368) declare themselves to be religious, the majority being Catholic (55%, n=5,102). Of the rest, 0.2% are Muslims (n=8), 0.1% Protestants (n=1) and the remaining 2.7% (n=257) indicate other religious doctrines but do not want to specify it. Regarding their attitude towards ODT, those who consider themselves atheists or agnostics have a more favorable attitude than those who consider themselves religious (84% versus 76%;  $p < 0.001$ ). Among those who follow some kind of religion, Catholics are more in favor of ODT than non-Catholics (77% vs. 64%,  $p < 0.001$ ). Note that among religious only 57% (n=3,050) know which religion is in favor of transplantation, while 22% (n=1,152) consider that it has not pronounced on the matter, 13% (n=723) that are against, and the remaining 8% (n=443) do not know.

**CONCLUSION.** The religion professed by medical students conditions their attitude toward donation, being more in favor the atheists and agnostics.

## TITLE PAGE:

## Do religious factors influence the attitude toward organ donation among medical students? Spanish multicentre study

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**Grant information:** This study does not have any financial support.

**Key words:** Cadaveric organ donation; Transplant; Attitude; Psychosocial; University; Students.

**Abbreviations:** DTO: Donación de órganos de cadáver.

**Tables:** 1.

Figures: 0.

The 5<sup>th</sup> Congress of the Spanish Transplantation Society (SET) Poster P9

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**ABSTRACT**

**INTRODUCTION.** Religious factors have conditioned the attitude toward Organ Donation and Transplantation (ODT) since the beginning of the transplant, despite the fact that most religions are in favor of transplantation. In health professionals, this situation is considered as overcome, although there are studies that indicate otherwise.

**OBJECTIVE.** To assess the impact of religious beliefs of medical students on their attitude toward ODT.

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**CONCLUSION.** The religion professed by medical students conditions their attitude toward donation, being more in favor the atheists and agnostics.

**INTRODUCTION.** The attitude towards organ donation (ODT) is modulated by different psycho-social factors (1-4), among which religious beliefs stand out. That is why it is interesting to know the influence of aspects related to religion in different social groups, those considered potential donors, potential candidates for transplantation and health professionals. Current medical students will become agents involved with the ODT process in the near future. In addition to being professionally linked to this therapeutic option, health professionals become agents that modulate the opinion of the rest of the population. Therefore, it is essential to know the attitude toward the ODT of this group of health professionals and analyze the influential factors on it, including religious factors. 86.2% of the Spanish people are, by culture and tradition, believers, and mostly Catholic (70-75%) (5).

The objective of this work is to assess the impact of the religious beliefs of medical students on their attitude towards the cadaveric organ donation.

**METHOD.** *Population under study:* Medical students from 21 Spanish universities, with a total of 9275 respondents. A random representative sample was obtained according to academic year (number of students per course: 1st year=2090, 2nd year=1965, 3rd year=1375, 4th year=1301, 5th year=1113, sixth year=1431). *Valuation tool:* Validated attitudinal questionnaire for organ and transplantation (PCID-DTO RIOS: Questionnaire of "*Proyecto Colaborativo Internacional Donante sobre Donación y Trasplante de Órganos (in Spanish)*") developed by Dr. Rios (5). This questionnaire presents a total explained variance of 63.203% and a Cronbach Alpha Reliability Coefficient of 0.834. *Fieldwork:* For the distribution of the questionnaires, each university was contacted and a collaborating researcher was determined, who was responsible for the distribution, application and sending of the survey in the selected courses of his university. The questionnaire is completed anonymously and self-administered. *Statistics:* A descriptive statistic was performed, and Student's t test,  $\chi^2$ , Fisher and a logistic regression analysis were applied.

**RESULTS.** *Religious attitudes.* Of the 9275 respondents, 58% (n=5,368) are declared religious (Catholics=55% [n=5,102], Muslims=0.2% [n=8], Protestants=0.1% [n=1], others that do not want to specify=2.7% [n=257]) and the remaining 42% (n=3,907) is defined as atheist or agnostic. Those who consider themselves atheists or agnostics have a more favorable attitude toward organ donation than those who consider themselves religious (84% versus 76%,  $p<0.001$ ). Among those who consider themselves religious, Catholics are more in favor of organ donation than non-Catholics (77% versus 64%,  $p<0.001$ ). Regarding the opinion of these doctrines on donation and transplantation, it is noteworthy that of the respondents, the 57% (n=3,050) consider that their religion is in favor of donation and transplantation, while 22% (n=1,152) believe that their religion has not been pronounced about it, 13% (n=723) that is

against and 8% (n=443) do not know. *Religious beliefs and attitude towards organ donation.* In the attitude toward cadaveric organ donation, it should be noted that 80% of those evaluated are in favor (n=7376), against 2% (n=154) and undecided 18% (n=1745). Regarding religious attitudes, there is an objective association between the religious beliefs of those evaluated and the attitude towards organ donation. Thus, 84% (n=3293) of atheists and/or agnostics are in favor; 77% (n=3914) of Catholics and 64% (n=169) of believers in other non-Catholic doctrines ( $p<0.001$ ). It is also interesting to consider that among religious people, it is observed that respondents who believe that the opinion of their religion is favorable towards donation and transplantation are more in favor of cadaveric organ donation than those who consider that their religion has not pronounced on this (79% versus 35%;  $p<0.001$ ).

**DISCUSSION.** It is important to know the attitude towards ODT of the population that in the future will be health personnel due to the influence they can exert on the rest of the population that can be a donor or transplanted. One of the factors associated with this attitude is the religion they profess, because, whether they are believers or not, they will be given certain guides for taking decisions, especially when they have to concern with the mutilation of the body in life or, more, after death. Although up to now, in Spain, the religion professed by the majority of citizens has been Catholic, after decades of immigration from different countries and cultures, other religions are implanted in the country. In the same way, the number of people who consider themselves agnostic and/or atheist grows, especially among young people. It is noteworthy that 30% of respondents say that either their religion has not pronounced about organ donation or they do not know what position it holds. This information is important in relation to being able to propose training campaigns for health personnel in this scope (4, 6-14).

The results are similar with those performed in different populations of university students of health careers and countries previously and a majority position favorable to organ donation (2, 3, 7). Although, it is noteworthy, that the population under study is university medical students who in the future will exercise, if possible, a greater influence on decision making than other health professions analyzed. In conclusion, we can say that professional religion for medical students in Spain conditions the attitude towards organ donation, which is why it is a factor to be taken into account in the promotion of organ donation.

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*Table 1. Attitude towards own organ donation when dying in function of the religious attitude of medical student and the knowledge of the attitude of their own religion towards the donation and transplantation of organs*

VARIABLE	In favor n=7376 (80%)	Not for n=1899 (20%)	p
Religious attitude:			
Catholic (n=5102)	3914 (77%)	1188 (23%)	<0.001
Atheist - Agnostic (n=3907)	3293 (84%)	614 (16%)	
Other religion (n=266)	169 (64%)	97 (36%)	
Attitude of own religion towards transplant according to the respondent			
In Favor (n=3050)	2413 (79%)	637 (21%)	<0.001
Not for (n=723)	536 (74%)	187 (26%)	
Does not know it (n=443)	325 (73%)	118 (27%)	

\*Studied about those who profess some kind of religious beliefs.

HIGHLIGHTS

- 1) The religion professed by medical students conditions their attitude toward donation, being more in favor the atheists and agnostics.
- 2) Those who consider themselves atheists or agnostics have a more favorable attitude toward organ donation than those who consider themselves religious
- 3) Among those who follow some kind of religion, Catholics are more in favor of ODT than non-Catholics.
- 4) Professional religion for medical students in Spain conditions the attitude towards organ donation.