

ABSTRACT

The knowledge acquired during university education about organ donation and transplantation (ODT) decisively influences the information future health professionals transmit. This is important in ODT where the participation of the general public is essential to obtain organs.

OBJECTIVE: To determine notions of Spanish Medicine and Nursing students on ODT, and the relation with attitude toward ODT.

METHODS AND DESIGN: A sociological, multicentre, and observational study. Population: medical and nursing students in Spanish universities. Database: Collaborative International Donor Project, stratified by geographic area and academic course. A validated questionnaire (PCID-DTO-RIOS) was self-administered and completed anonymously. Sample: 9598 medical and 10566 nursing students (99% confidence; precision of $\pm 1\%$), stratified by geographical area and year of study.

RESULTS: Completion rate: 90%. Only 20% (n=3640) of students thought their notions on ODT were *good*; 41% (n=7531) thought their knowledge was *normal*; 36% (n=6550) said it was *scarce*. Comparing groups: there were differences between those who believed that their notions on ODT were *good* (44% nursing vs. 56% medical students; $p < 0.000$), and those who believed it *scarce* (54% nursing vs. 46% medical students; $p < 0.000$). Notions on ODT were related with attitude toward the donation of one's own organs: those who considered their notions were *good* were more in favor than those who considered it *scarce* (88% vs. 72%; $p < 0.000$).

CONCLUSION: Only 20% of Spanish medical and nursing students thought their notions on ODT were good. Having good knowledge is related to a favorable attitude towards ODT. Receiving specific information on the subject could improve their knowledge about ODT during their training.

EXPLORING HEALTH SCIENCE STUDENTS' NOTIONS ON ORGAN DONATION AND TRANSPLANTATION: A MULTICENTER STUDY

Martínez-Alarcón Laura^{1,2,3,4}, Ríos Antonio^{1,2,3,4,5}, Gutiérrez Pedro Ramón^{6,7}, Santainés-Borredá Elena⁸, Gómez Francisco Javier⁹, Agras-Suarez María Concepción¹⁰, Iriarte Jorge¹¹, Cañadas-De la Fuente Guillermo Arturo¹², Herruzo Rafael¹³, Hurtado-Pardos Bárbara¹⁴, Blanco Gerardo¹⁵, Bárcena-Calvo Carmen¹⁶, Llorca Francisco Javier¹⁷, Perelló-Campaner Catalina¹⁸, Asunsolo Angel¹⁹, Arribas-Marin Juan Manuel²⁰, Sánchez Pilar²¹, García-Mayor Silvia²², Fernández Ana²³, Soto-Ruiz Maria Nelia²⁴, de Jesús Maria Teresa²⁵, Navalón Juan Carlos²⁶, Lana Alberto²⁷, Bertran-Noguer Carme²⁸, Fuentes L²⁹, Peña-Amaro Maria Pilar³⁰, Hernández JR³¹, Jiménez-Herrera Maria Francisca³², Virseda Julio³³, Blanco-Sánchez Rafaela³⁴, Yelamos Jose³⁵, Calvo-Sánchez María Dolores³⁶, Bondía JA²¹, Prado-Laguna María Carmen³⁷, González-García Alberto³⁸, Martínez-Rodríguez Adelina³⁹, Bas-Sarmiento Pilar⁴⁰, Faus-Gabandé Francisco⁸, Muiños-Álvarez Alicia¹⁰, Peyró-Gregori Loreto⁴¹, Hernández-Martínez Helena⁴², López-Navas Ana Isabel⁴³, Parrilla Pascual^{1,2,5}, Ramírez Pablo^{1,2,3,5,5}

1. Transplant Unit, Surgery Service, University Clinical Hospital Virgen de la Arrixaca, Murcia, Spain. 2. Biomedical Research Institute of Murcia IMIB-Arrixaca, Murcia, Spain. 3. International Collaborative Donor Project ("Proyecto Colaborativo Internacional Donante"), Murcia, Spain. 4. Regional Transplant Centre. Consejería de Sanidad y Consumo de la Región de Murcia, Spain. 5. Department of Surgery, Paediatrics, Obstetrics y Gynaecology, University of Murcia, Spain. 6. Urology Service. Complejo Hospitalario Universitario de Canarias (CHUC). Tenerife. Spain. 7. Department of Surgery (University of La Laguna, ULL) San Cristóbal de La Laguna. Tenerife. Spain. 8. Department of Nursing. Faculty of Nursing. University of Valencia, Spain. 9. University of Granada, Granada, Spain. 10. University School of Nursing POVISA. University of Vigo, Spain. 11. University of Navarra, Spain. 12. Department of Nursing. Faculty of Health Sciences. University of Granada. Spain. 13. Autonomous University of Madrid. Spain. 14. Campus Docent Sant Joan de Deu. Barcelona, Spain. 15. HBP Surgery and Liver Transplant Service, Complejo Hospitalario Universitario de Badajoz, Hospital Infanta Cristina. 16. Department of Nursing and Physiotherapy-Nursing Area. Faculty of Health Sciences. University of León, Spain. 17. University of Cantabria, Santander. Spain. 18. Departament d'Infermeria i Fisioteràpia. Universitat de les Illes Balears. Spain. 19. Departamento de Cirugía, Ciencias Médicas y Sociales. Facultad de Medicina y Ciencias de la Salud. Universidad de Alcalá Campus Científico-Tecnológico. Alcala de Henares. Madrid, Spain. 20. Escuela Universitaria de Enfermería y Fisioterapia "San Juan de Dios". Departamento de Ciencias de la Salud. Universidad Pontificia Comillas. Madrid. Spain. 21. Facultad de Medicina. Universidad de Málaga. Spain. 22. Departamento de Enfermería. Facultad de Ciencias de la Salud. Universidad de Málaga. Spain. 23. Departamento de Ciencias Biomédicas Básicas, Facultad de Ciencias Biomédicas. Universidad Europea de Madrid. Spain. 24. Departamento Ciencias de la Salud. Universidad Pública de Navarra. Pamplona. Spain. 25. Facultad de Medicina. Universidad Rey Juan Carlos, Madrid. Spain. 26. Hospital Vega Baja. Departamento de Cirugía General. Orihuela. Alicante. Spain. 27. Facultad de Medicina y Ciencias de la Salud. Área de Medicina Preventiva y Salud Pública. Universidad de Oviedo. Spain. 28. Departamento de Enfermería. Universidad de Girona. Grupo de investigación Salud y Atención Sanitaria. 29. Departamento de Farmacología y Fisiología. Facultad de Ciencias de la Salud y del Deporte. Universidad de Zaragoza, Spain. 30. Universidad de Jaén. Spain. 31. Facultad de Medicina. Universidad de las Palmas de Gran Canaria, Spain; 32. Departamento de Enfermería. Universitat Rovira i Virgili. Tarragona. Spain. 33. Facultad de Medicina. Universidad de Castilla La Mancha, Albacete. Spain. 34. Departamento de Enfermería. Facultad de Medicina. Universidad Autónoma de Barcelona. Campus UAB. Bellaterra. Barcelona. Spain. 35. Department of Immunology. Hospital del Mar, Barcelona. Spain. 36. Facultad de Derecho. Campus Miguel de Unamuno. Universidad de Salamanca (USAL). Salamanca. Spain. 37. Facultad Enfermería. Campus de Ciudad Real. Universidad de Castilla-La Mancha. Spain. 38. Universidad de Castilla-La Mancha. Facultad de Enfermería de Cuenca. Spain. 39. Departamento Enfermería I. Facultad de Medicina y Enfermería. Universidad del País Vasco UPV/EHU Campus de Leioa, Vizcaya. Spain. 40. Facultad

de Enfermería. Universidad de Cádiz. Spain. 41. Enfermería. Universidad Ceu Cardenal Herrera. Valencia. Spain. 42. Departamento Enfermería y Fisioterapia. Facultad de Medicina y Ciencias de la Salud. Universidad Alcalá. Guadalajara. Spain. 43. Department of Psychology, Universidad Católica San Antonio (UCAM). Murcia. Spain.

E-mail: Martínez-Alarcón Laura (lma5@um.es); Ríos Antonio (arzrios@um.es); Gutiérrez Pedro Ramón (prguti@ull.es); Santainés-Borredá Elena (elena.santaines@uv.es); Gómez Francisco Javier (fgomez@ugr.es); Agras-Suarez María Concepción (subdireccion@cepovisa.com); Iriarte Jorge (jiriarte@unav.es); Cañadas-De la Fuente Guillermo Arturo (gacf@ugr.es); Herruzo Rafael (rafael.herruzo@uam.es); Hurtado Pardos Bárbara (bhurtado@santjoandedeu.edu.es); Blanco Gerardo (gblanco@aecirujanos.es); Bárcena-Calvo Carmen (mbarc@unileon.es); Llorca Francisco Javier (javier.llorca@unican.es); Perelló-Campaner Catalina (c.perello@uib.es); Asúnsolo Ángel (angel.asunsolo@uah.es); Arribas Marín Juan Manuel (juanmarribas@comillas.edu); Sánchez Pilar (pilars@uma.es); García Mayor Silvia (sgmayor@uma.es); Fernández Ana (ana.fernandez@uem.es); Soto-Ruíz María Nelía (nelia.soto@navarra.es); de Jesús María Teresa (mariateresa.dejesus@urjc.es); Navalón Juan Carlos (jnciru@gmail.com); Lana Alberto (lanaalberto@uniovi.es); Bertran Noguier Carme (carme.bertran@udg.edu); Fuentes L (lfuentes@unizar.es); Peña Amaro María Pilar (ppena@ujaen.es); Hernández JR (jurahh@yahoo.es); Jiménez-Herrera María Francisca (maria.jimenez@urv.cat); Virseda Julio (juliovirseda@hotmail.com); Blanco Sánchez Rafaela (rafaela.blanco@uab.cat); Yélamos José (jyelamos@imim.es); Calvo-Sánchez María Dolores (mdcalvo@usal.es); Bondía JA (jabondia@uma.es); Prado Laguna María Carmen (carmina.prado@uclm.es); González-García Alberto (alberto.gonzalez@uclm.es); Martínez-Rodríguez Adelina (adelina.martinez@ehu.es); Bas Sarmiento Pilar (pilar.bas@uca.es); Faus Gabandé Francisco (fausgabande@gmail.com); Muiños Álvarez Alicia (amuinos@cepovisa.com); Peyró Gregori Loreto (lpeyro@uchceu.es); Hernández Martínez Helena (helena.hernandez@uah.es); López-Navas Ana (ailopez@ucam.edu); Parrilla Pascual (pascual.parrilla2@carm.es); Ramírez Pablo (ramirezp@um.es).

Authorship: Contribution to study of the Authors:

- 1) Conception and design: Martínez-Alarcón Laura and Ríos Antonio.
- 2) Acquisition of a substantial portion of data: Gutiérrez Pedro Ramón, Santainés-Borredá Elena, Gómez Francisco Javier, Agras-Suarez María Concepción, Iriarte Jorge, Cañadas-De la Fuente Guillermo Arturo, Rafael Herruzo, Hurtado-Pardos Bárbara, Blanco Gerardo, Bárcena-Calvo Carmen, Llorca Francisco Javier, Perelló-Campaner Catalina, Asunsolo Angel, Arribas Marín Juan Manuel, Sánchez Pilar, García Mayor Silvia, Fernández Ana, Soto-Ruíz María Nelía, de Jesús María Teresa, Navalón Juan Carlos, Lana Alberto, Bertran Noguier Carme, Fuentes L, Peña Amaro María Pilar, Hernández JR, Jiménez-Herrera María Francisca, Virseda Julio, Blanco Sánchez Rafaela, Yelamos J, Calvo-Sánchez María Dolores, Bondía JA, Prado Laguna María Carmen, González-García Alberto, Martínez-Rodríguez Adelina, Bas Sarmiento Pilar, Faus Gabandé Francisco, Muiños Álvarez Alicia, Peyró Gregori Loreto, Hernández Martínez Helena.
- 3) Analysis and interpretation of data: Martínez-Alarcón L, Ríos A, López-Navas A, Ramírez P.
- 4) Drafting of the manuscript: Martínez-Alarcón L, Ríos A, López Navas A.
- 5) Critical revision of the manuscript for important intellectual content: Martínez-Alarcón L, Ríos A, Parrilla P, Ramirez P
- 6) Statistical expertise: Martínez-Alarcón L and Ríos A.
- 7) Obtaining funding for this project or study: Martínez-Alarcón L and Ríos A.
- 8) Supervision: Ramirez P, Ríos A.
- 9) Final approval of the version to be published: Martínez-Alarcón L, Ríos A, López-Navas A, Parrilla P, Ramírez P.

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Corresponding author contact information: Dr. Pablo Ramírez Romero. Hospital Universitario Virgen de la Arrixaca.

Servicio de Cirugía General. Unidad de Trasplantes. 3ª Centro. 30120 El Palmar. Murcia. SPAIN. Telephone number:

+34 968369034. Fax: +34 968369438 **E-mail:** lma5@um.es

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Highlights:

- Only 20% of Spanish medical and nursing students thought their notions on ODT were good.
- Attitude toward ODT is related with having specific knowledge on the subject.
- For improvement in health sciences students' curriculum, it is necessary that it should include topics on basic and ethical aspects of ODT.

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INTRODUCTION: Information received about organ donation and transplantation (ODT) affects attitude toward this therapy[1]. This information may be favorable or unfavorable in terms of ODT, which could lead to the population having a more positive or negative attitude[2]. The knowledge acquired during university education about ODT decisively influences the information future health professionals transmit[3,4]. This is important in ODT, where the participation of the general public is essential to obtain organs[5–7].

Unfortunately, undergraduate medical and nursing education inadequately prepares students to advocate for organ donation[8], even other health sciences disciplines such as veterinarians[9]. Among the few nursing and medical schools that do incorporate organ donation education into their curriculum, many fail to include pertinent topics or assess students' retention[10].

Therefore, the objectives of this study were: 1) To determine notions of Spanish Medicine and Nursing students on ODT, and 2) to analyze the relation with attitude toward ODT.

METHODS: Type of study: A sociological, multicenter, and observational study. The population were medical and nursing students in Spanish universities from the database of the Collaborative International Donor Project[6,11–14], stratified by geographic area and academic year. Sample size: Two groups were selected according degree: A sample of 9598 medical and 10566 nursing students (99% confidence; precision of $\pm 1\%$). Validated attitudinal questionnaire for ODT (PCID-DTO RIOS)[15,16]. This questionnaire includes questions distributed in 4 subscales or validated factors in the Spanish population, presenting a total explained variance of 63.203% and a Cronbach α reliability coefficient of 0.834. After the project was approved in each university, the questionnaire was distributed in the selected courses, all supervised by a professor from each of the universities collaborating with the project. Previously, the project was explained and it was indicated that the participation in the project was voluntary with verbal consent. The questionnaire was completed anonymously and is self-administered. A descriptive statistic was performed, and t test, χ^2 test, and Fisher exact test were performed. P values less than .05 were considered statistically significant.

RESULTS: Completion rate: 90%. Regarding notions on ODT, 20% (n=3640) of medical and nursing students thought their notions were *good*; 41% (n=7531) thought their knowledge was *normal*; 36% (n=6550) said it was *scarce*; 2% (n=359) considered *bad* their notions and the remainder 1% considered their knowledge to be

void. Comparing both groups of students, there were differences between those who believed that their notions on ODT were *good* (44% in nursing vs. 56% medical students; $p < 0.000$), and those who believed that were *scarce* (54% nursing vs. 46% medical students; $p < 0.000$). None of the socio-personal or academic variables analyzed: Sex ($p = 0.875$); age ($p = 0.323$) or academic course ($p = 0.098$), were associated with knowledge of the ODT.

Notions on ODT did have an effect on attitude toward the donation of one's own organs: those who considered their notions on ODT were *good* were more in favor to donate their organs than those who considered scarce their notions (88% vs. 72%; $p < 0.000$).

DISCUSSION: The awareness of organ donation among health professionals is important at the time of transplant promotion. In this sense, training and sensitization of future professionals are fundamental because they will soon join health workers in active service, and a very important group who generates opinions regarding the attitude toward ODT[3,17]. It has been argued that higher donation rates are usually associated with health workers' increased awareness of the issue. In addition, if they are going to be future professionals, it is essential for them to manage accurate information, with simple and clear concepts that communicate with society in a concise way to prevent irrational social fears[18,19]. The lack of information could cause a negative climate in our country, considering that 36% of the health science students in this study believed that their notions about ODT were *scarce* and only 20% considered to have a "*good knowledge of ODT*". It should be noted that the appropriate training of future physicians and nurses in the ODT process will require a specific knowledge about this matter. In fact, this knowledge is directly related with their attitude towards donation[3].

Currently, in Spain, there is no uniform curriculum requirement or a direct training opportunity on ODT for medical and nursing students, as occurs in other countries as the United Kingdom, Poland or China [20–23]. Some students and junior doctors are exposed to ODT by coincidental rotation through a transplant unit[20]. For improvement in health sciences students' curriculum, we recommend that it should include topics on basic and ethical aspects of ODT. In previously published studies, the need for appropriate educational programs on organ donation is often emphasized, and programming on organ transplantation should be included in the

curricula of medical and nursing schools[20,21,24]. This will enable proper preparation of future medical staff to meet the challenges posed in the field of organ transplantation.

To conclude, only 20% of Spanish medical and nursing students thought their notions on ODT were good.

Having specific knowledge on the subject is related to a favorable attitude towards ODT. Receiving specific information on the subject could broaden and improve their knowledge about ODT during their training.

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