



## Research Article

# Knowledge and Attitudes of Intensive Care Nurses on Organ Donation

 Elif Oksan Calikoglu,<sup>1</sup>  Sara Salcan,<sup>2</sup>  Hilal Betul Akcay,<sup>1</sup>  Ali Gumus,<sup>1</sup>  Ozlem Dilara Aydin<sup>3</sup>

<sup>1</sup>Department of Public Health, Ataturk University Faculty of Medicine, Erzurum, Turkey

<sup>2</sup>Department of Public Health, Erzincan University Faculty of Medicine, Erzincan, Turkey

<sup>3</sup>Department of Anesthesiology and Reanimation, Ataturk University Faculty of Medicine, Erzurum, Turkey

### Abstract

**Objectives:** We aimed to determine the knowledge and attitudes of intensive.

**Methods:** The population of this descriptive cross-sectional study was composed of 92 nurses working in three intensive-care units in Erzurum province center. Participation rate was 80.4% (n=74). Descriptive statistics were presented as mean±standard deviation, percentages, and frequency distributions. The Chi-Square test was used for bivariate comparisons, and p<0.05 was considered as statistically significant.

**Results:** The mean age of the nurses participating in the study was 28.8±5.93 years. The majority (73%, n=54) stated that religious beliefs did not prohibit organ donation, and 98.6% (n=73) admitted that organ donation in Turkey was not enough. Of the participants, 68.9% (n=51) were ready to receive organ transplantation in case of need. Those who accepted to receive organs were also ready to donate.

**Conclusion:** Despite the relatively positive attitudes towards organ donation, action on getting donation cards is lacking, which suggests more vigorous actions concerning donation campaigns and educations is needed.

**Keywords:** Intensive care, organ donation, nursing personnel

**Cite This Article:** Calikoglu E, Salcan S, Akcay H, Gumus A, Aydin O. Knowledge and Attitudes of Intensive Care Nurses on Organ Donation. EJMO. 2018; 2(4): 238-242

Rising chronic diseases and resulting organ failures make organ donation more and more valuable, which sometimes becomes the only treatment option. "Organ transplantation" can be defined as taking a healthy organ from a living donor or from an individual with brain death and transferring it to patients with organ failures, whereas a person's will to permit his/her organs to transplant to other people after his/her death is named "organ donation".<sup>[1-3]</sup> Organ transplantation has taken significant advances in modern medicine and has become a routine in various end-stage diseases.<sup>[4, 5]</sup>

Although the number of transplanted patients and the rate of success rise steadily, the numbers of organ donations do

not increase in parallel. There exists a big deficit between those waiting for transplants and donor volunteers. The reasons behind insufficient organ donations may be legal, religious, or educational in origin.<sup>[6-8]</sup>

Request for organ transplantation escalates day by day. In 2015, more than 143 thousand patients had been waiting in the list of organ transplantation in Europe, and five patients were adding to the list for each passing hour.<sup>[9]</sup> The highest donation rate is in Spain worldwide, which was 35.1 per million people in 2012 while it was only 4.6 for Turkey.<sup>[10]</sup> According to the data of Ministry of Health of Turkey, just 472 of 1969 brain death patients' families permitted organ transplantation in 2015.<sup>[11]</sup>

**Address for correspondence:** Ali Gumus, MD, Ataturk Universitesi Tip Fakultesi Halk Sagligi Anabilim Dalı, Erzurum, Turkey

**Phone:** +90 442 231 87 46 **E-mail:** draligumus15@gmail.com

**Submitted Date:** July 16, 2018 **Accepted Date:** July 26, 2018 **Available Online Date:** October 11, 2018

©Copyright 2018 by Eurasian Journal of Medicine and Oncology - Available online at [www.ejmo.org](http://www.ejmo.org)



To increase organ donation and transplantation, the awareness and level of knowledge among people must be raised. Besides individual educations in the general population, health workers should be equipped with sufficient information and materials. Health professionals' knowledge levels, attitudes and behaviors on organ donation and transplantation have a positive impact on organ donation rates.<sup>[12, 13]</sup>

Intensive care unit (ICU) nurses have a special role in the identification of potential donors.<sup>[14]</sup> With this study, we aimed to assess the knowledge and attitudes of intensive care nurses about organ donation.

## Methods

This descriptive and cross-sectional study was conducted on intensive care nurses in Erzurum during April 2016. Erzurum is a city in Eastern Anatolia with 750 thousand inhabitants. All 92 nurses working in the three intensive during the study period were invited to join the study. Ethical approval for the study was taken from the Local Ethics Board of the Atatürk University Medical Faculty (IRB number: B.30.2.ATA.0.01.00/27-25.02.2016/2-01). a data collection form after a rigorous literature search and inclusion of expert opinions, which consisted of 24 questions including demographic variables. After pretesting in a small sample, the questionnaire with a stamped envelope was sent to all intensive care nurses via the Provincial Health Directorate and collected back by snail mail. Participation rate was 80.4% (n=74). Data were analyzed using SPSS 22.0 for Windows (SPSS, Inc., Chicago, IL). Descriptive statistics were presented as the mean±standard deviation (SD), percentages and frequency distributions. The Chi-Square test was used for the evaluation of the data, and  $p < 0.05$  was considered as statistically significant.

## Results

Mean age of the 74 respondents was  $28.8 \pm 5.93$  years (min: 20, max: 42). Of the nurses, 77% (n=57) were females, and 43.2% (n=32) had bachelor degrees. Their mean duration

in the occupation was  $86.1 \pm 56.9$  months and their mean duration of occupation in the present institution was  $49.3 \pm 43.1$  months.

Of the participants, 98.6% (n=73) expressed that organ donation rates in Turkey were not enough, 70.3% (n=52) perceived to have enough knowledge about organ donation, while 48.6% (n=36) admitted having insufficient education on this topic. To the question whether or not religious beliefs were hindering organ donations was answered as "no" by 73% (n=54) of the nurses. Descriptive statistics for the responses are presented in Table 1.

Of the nurses, 68.9% (n=51) were ready to receive organ transplantation in case of need. The participants would be indecisive about donating organs of a brain-death relative. Other attitudes and behaviors of the respondents on organ donation are presented in Table 2.

In bivariate comparisons, there was no association between organ donation and gender, educational status, opinion on religious believes and donation, or worry about misuse of donated organs ( $p > 0.05$ ) (Table 3). However, there was a significant relationship between organ donation status and perceived knowledge or perceived importance of the organ recipient. Nurses who did not consider organ transplantation for themselves also did not donate their organs (Table 3).

## Discussion

Our study demonstrated that intensive care nurses, an essential part of the organ donation and transplantation chain, have significant drawbacks in this issue. Although they have relatively positive attitudes towards donation, seemingly this attitude does not project into practice.

It was reported that the number of individuals who donate their organs increases by expanding the knowledge about organ donation.<sup>[3]</sup> In a study by Balci et al.<sup>[15]</sup> conducted on nurses, 46.5% answered they had enough knowledge about organ donation. Similar to our study, nurses who do-

**Table 1.** Knowledge and attitudes of participants related to organ donation

	Yes		No	
	n	%	n	%
Do you feel having enough knowledge about organ donation?	52	70.3	22	29.7
Were you exposed to sufficient courses on organ donation?	36	48.6	38	51.4
Could religious beliefs hinder organ donation?	20	27.0	54	73.0
Should the administration provide information about organ donation?	64	86.5	10	13.5
Does the media provide enough information about organ donation?	22	29.7	52	70.3
My primary source of knowledge on organ donation is the mass media.	13	17.6	61	82.4
Cultural differences affect attitudes about organ transplantation and donation.	56	75.7	18	24.3
Do you think organ donation in Turkey is sufficient?	1	1.4	73	98.6

**Table 2.** Organ donation situation and attitudes of the nurses

	n	%
Ready to accept organ transplantation to himself/herself		
Yes	51	68.9
Not sure	20	27.0
No	3	4.1
Ready to donate organs of a relative in case of brain death		
Yes	31	41.9
Not sure	35	47.3
No	8	10.8
Is it important who is the organ recipient in case of organ donation?		
Yes	22	29.7
No	52	70.3
Ever donated blood		
Yes	32	43.2
No	42	56.8
I am considering organ donation.		
Yes	23	44.8
Not sure	3	5.2
No	29	50.0
I donated my organs		
Yes	18	24.3
No	56	75.7
I have an organ donation card		
Yes	13	17.6
No	61	82.4
I do not donate because I do not want to have interfered with my body		
Yes	15	26.8
No	41	73.2
I am worried about the misuse of my organs if I donate		
Yes	13	17.6
No	61	82.4

nated their organs perceived to have enough knowledge about the topic compared to those who didn't donate. Of the participants of another study conducted by Akış et al.<sup>[1]</sup>, 72% specified they knew about tissue and organ transplantation. In our study compatible with others, 70% of the nurses denoted they had knowledge about organ donation, and nurses who thought to have enough awareness significantly donated their organs compared to others.

There is literature supporting that education considerably affects organ transplantation and donation.<sup>[16]</sup> In an extended study conducted on more than one thousand students, higher education level was correlated with positive attitudes about organ donation.<sup>[17]</sup> In another investigation by Efil et al.<sup>[18]</sup>, organ donation was correlated with educational levels of the participants. Although our study findings were not significant in this regard, we can speculate that, if the level of education is increased in the population, the donation rates will also improve.

In our research, we found that 44.8% of the nurses considered of donating their organs. However, the results indicated that 50% of those who considered did not get into action. In the investigation by Balci and his colleagues<sup>[15]</sup>, 98.1% of the nurses did not donate their organs. In a similar study by Aktaş and his friends<sup>[14]</sup>, 66.7% of the nursing students wanted to donate their organs while only 1.3% carried organ donation cards. Hu Dongmei et al.<sup>[19]</sup> found that 49.3% of the participants wished to donate their organs, but 37% were indecisive.

As to our findings, 47.3% of the nurses were indecisive about donating the organs of relatives in case of brain death. In the research by Koçak and his friends<sup>[2]</sup>, 24% of the participants did not accept a donation. Efil et al.<sup>[18]</sup> found similar results and determined that 44.8% of the participants were not sure about organ donation. We observed that 68.9% of our respondents considered organ transplantation in case of need. Besides, there was a correlation between self-re-

**Table 3.** Relationship between organ donation status and other variables

	Organ Donation Status		Donated		Not donated	
	n	%	n	%	$\chi^2$	p
Gender						
Male	2	11.8	15	88.2	1.891	0.145
Female	16	28.1	41	71.9		
Educational status						
High school and vocational school	6	15.8	32	84.2	3.777	0.287
Undergraduate and graduate	12	33.3	24	66.7		
Having enough knowledge about donation						
Yes	16	30.8	36	69.2	3.947	0.047
No	2	9.1	20	90.9		
Ready to receive organ donation if in need						
Yes	18	35.3	33	64.7	10.727	0.005
No or not sure	0	0	23	100		
Would donate their brain-dead relative's organs						
Yes	13	41.9	18	58.1	9.711	0.008
No or not sure	5	11.6	38	67.9		
It cares who is the organ recipient						
Yes	1	4.5	21	95.5	6.654	0.010
No	17	32.7	35	67.3		
Religious beliefs hinder with organ donation						
Yes	5	25	15	75	0.007	0.934
No	13	24.1	41	75.9		
Worried about the misuse of donated organs						
Yes	1	7.7	12	92.3	2.370	0.124
No	17	27.9	44	72.1		

questing of organ transplantation and organ donation. In the observation by Demir and his colleagues [20], 72% of the participants considered to accept organ transplantation. In a study conducted in Afyon [18], 76.3% of the participants agreed to have organ transplantation. Finally, in our study, the frequency of allowing for undergoing organ transplantation was higher than the frequency of donating organs. This of the nurses who believed that the organ recipient is important did not donate their organs. Similarly, in another study [15], 88.8% of the nurses said they would donate if one of the family members would be in need, while only 18.4% stated they would donate if a stranger required the organ.

There is a widespread misconception among people that organ or tissue transplantation is not permitted by the religion.[21] In an observation conducted in Afyon, 58.5% of the participants specified that religious beliefs are not barriers for organ donation.[18] Another study among lecturers found that 85.4% consider that organ transplantation is religiously appropriate.[21] Our results were compatible with the literature as we showed that 75% of the nurses thought religious beliefs do not interfere with organ donation. In a study by Özer et al.[12], 56.9% of the students agreed with the proposition that "I worry that my donated organs will

be abused after my death." Likewise, Göz and Güreli [22] found that one of the reasons of avoidance from donating organs among ICU nurses (21.4%) was the fear of removal of their organs illegally before death. We also observed this fear at a lower rate (17.6%) among our nurses. This fear may be as a result of inappropriate news about persons who donate or receive organs in illegal ways.

This study demonstrated that half of the ICU nurses considered donating their organs. However, just 17.6% had organ donation cards. On the other hand, 51.4% claimed that they did not take enough information about organ transplantation during their education.

Having higher organ/tissue transplantation rates can be possible with awareness and sensitivity related to the subject. Our study shows that there is conscious awareness, but the attitudes cannot be turned into actions. One of the most effective ways to improve existing positive thinking and to turn it into behavior is education. Revision of curricula to include organ transplantation during education, as well as planned, continuous and uninterrupted graduate educations and in-service training may all aid to get positive results. Another way can be promotion campaigns run by health authorities to catch people who are ready to par-

ticipate. As medical staffs constitute a health-related role-model to the community, they need to be addressed first.

### Disclosures

**Ethics Committee Approval:** Ethical approval for the study was taken from the Local Ethics Board of the Atatürk University Medical Faculty (IRB number: B.30.2.ATA.0.01.00/27-25.02.2016/2-01).

**Peer-review:** Externally peer-reviewed.

**Conflict of Interest:** None declared.

**Authorship Contributions:** Concept – E.O.C, S.S.; Design – A.G.; Supervision – O.D.A.; Materials – H.B.A, A.G.; Data collection &/or processing – S.S, E.O.C.; Analysis and/or interpretation – H.B.A.; Literature search – H.B.A.; Writing – E.O.C, S.S.; Critical review – O.D.A.

### References

- Akış M, Katırcı E, Uludağ HY, Küçükılıç B, Gürbüz T, Türker Y, et al. Knowledge and attitude of Suleyman Demirel University staff About organ-tissue donation and transplantation. *SDÜ Tıp Fakültesi Derg* 2009;15:28–33.
- Koçak A, Aktaş EÖ, Şenol E, Kaya A, Bilgin UE. Ege University Faculty of Medicine undergraduates' knowledge level regarding organ donation and transplantation. *Ege Tıp Dergisi* 2010;49:153–60.
- Sungur MA, Mayda AS. [Knowledge and Attitudes of Term I and Term VI Students of Duzce University School of Medicine Towards Organ Donation]. *Düzce Üniversitesi Sağlık Bilim Enstitüsü Derg* 2014;1:15–20.
- Stadlbauer V, Steiner P, Schweiger M, Sereinigg M, Tscheliessnigg KH, Freidl W, et al. Knowledge and attitude of ICU nurses, students and patients towards the Austrian organ donation law. *BMC Med Ethics* 2013;14:32. [CrossRef]
- Wang W, Tian H, Yin H, Liu H, Zhang XD. Attitudes toward organ donation in China. *Chin Med J (Engl)* 2012;125:56–62.
- Vicdan AK, Peker S, Üçer B. Determination of the Attitudes of Akşehir Health High School Students Concerning Organ Donation. *TAF Prev Med Bull* 2011;10:175–80. [CrossRef]
- Duzenli Y. Organ Transplantation On Basis Of Islamic Resources. *Türkiye Klinikleri J Med Ethics* 2005;13:125–30.
- Dontlu AÇ. Ethical, religious, and legal approaches to organ donation and transfer. *Diyaliz, Transplant ve Yanık* 2004;2:69–76.
- European Day for Organ Donation and Transplantation 2017. Available at: <https://www.coe.int/en/web/pristina/-/european-day-for-organ-donation-and-transplantation-2017>. Accessed Oct 9, 2018.
- Karasu D, Yılmaz C, Mercanoğlu Efe E, Özgünay Şe, Apaydin Y, Karaduman İ, et al. Views of relatives of patients in intensive care unit and outpatients at anesthesiology clinics on organ donation. *Anatol J Clin Investig* 2015;9:194–202.
- Organ transplantation statistics. Minist Heal Turkey 2016. Available at: <https://organ.saglik.gov.tr/OTR/70Istatistik/OrganNakillIstatistikKamusal.aspx>. Accessed Oct 9, 2018.
- Özer N, Sarıtaş S, Özlü ZK. Knowledge and thoughts of Nursing Students about Organ Donation and Transplantation. *J Anatolia Nurs Heal Sci* 2010;13:1–11.
- Salmani Nadoushan M, Nozary Heshmati B, Shabanzadeh Pirsaraee A, Salmani Nodoushan I, Jafari Nadoushan R, Yazdi F. Knowledge and Attitude of Iranian Physicians towards Organ and Tissue Donation. *Int J Organ Transplant Med* 2014;5:66–70.
- Aktaş YY, Karabulut N. Knowledge and Attitudes of Nursing Students Who Have Been Training in Giresun University Faculty of Health Sciences About Brain Death and Organ Donation. *Firat Tıp Derg* 2012;17:129–34.
- Balcı E, Şahingöz M. Perspective on organ donation for nurses. *Cumhur Med J* 2014;36:503–11. [CrossRef]
- Lima CX, Lima MV, Cerqueira RG, Cerqueira TG, Ramos TS, Nascimento M, et al. Organ donation: cross-sectional survey of knowledge and personal views of Brazilian medical students and physicians. *Transplant Proc* 2010;42:1466–71. [CrossRef]
- Bharambe VK, Rathod H, Angadi K. Knowledge and attitude regarding organ donation among medical students. *BANTAO J* 2016;14:34–40. [CrossRef]
- Efil S, Şişe Ş, Üzel H, Eser O. Evaluation of Knowledge With Regard to Organ Donation Among The Health Care Professionals At Afyon Kocatepe University School Of Medicine And Outpatients At Neurosurgery Department. *Gümüşhane University Journal of Health Sciences* 2013;2:361–84. [CrossRef]
- Hu D, Huang H. Knowledge, Attitudes, and Willingness Toward Organ Donation Among Health Professionals in China. *Transplantation* 2015;99:1379–85. [CrossRef]
- Demir T, Selimen D, Yildirim M, Kucuk HF. Knowledge and attitudes toward organ/tissue donation and transplantation among health care professionals working in organ transplantation or dialysis units. *Transplant Proc* 2011;43:1425–8. [CrossRef]
- Sipkin S, Sen B, Akan S, Malak AT. Organ donation and transplantation in Onsekiz Mart Faculty of Medicine, Fine Arts and Theology: Academic staff's awareness and opinions. *Adnan Menderes Univ Tıp Fak Derg* 2010;11:19–25.
- Göz F, Salk Güreli S. Thoughts about ties with organs of intensive care nurses. *Firat Journal of Health Services* 2007;2:77–88.