



# Factors Affecting Attitudes Toward Organ Donation in Health Care Professionals

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## ABSTRACT

**Background.** Health care professionals can affect attitudes toward organ donation in society. The aim of this study was to examine health care professionals' attitudes toward and the affecting factors of organ donation.

**Materials and methods.** This descriptive and cross-sectional study was conducted between June and September in 2018. The sample consisted of 220 health professionals (nurses and physicians) who worked in the University Hospital and Family Health Centers located in Northern Turkey. The data were collected by using a sociodemographic form, an organ donation questionnaire, and the Organ Donation Attitudes Scale. Descriptive statistics (means, standard deviations, and ratios), independent t test, Kruskal-Wallis test, and correlation analyses were used.

**Results.** The mean age of the participants was  $36.05 \pm 7.52$  years (range, 20–52 years). The mean score of the participants was  $100.98 \pm 13.18$  for the positive dimension and  $46.81 \pm 17.61$  for the negative dimension of the scale. It was found that nurses and health care professionals working in university hospitals and intensive care units have higher negative organ donation attitudes ( $P < .01$ ). It was found that negative attitudes toward organ donation decreased as age increased ( $r = 0.146$ ;  $P = .016$ ). Overall, 17.7% of the participants had a donor card.

**Conclusion.** Because the negative attitudes of nurses are higher in this study, the results reflect the need for intervention studies to determine the sensitivity to organ donation. It is striking that health care professionals who work in intensive care units have high negative attitudes toward organ donation. It can be recommended that interventional studies be performed with intensive care health care professionals.

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**O**RGAN limitation is still an important worldwide problem for transplantation [1]. The organ transplants carried out worldwide can only meet 10% of the existing needs. While organ requirements cannot be covered, the number of patients on the organ waiting list is increasing year to year. In Turkey, the number of transplants from living donors is very high; however, the number of deceased donors is very low [2].

Health professionals have important roles in informing people about organ donation and brain death, ensuring trust in the health care system, and ensuring that organ donation is discussed with family members [3,4]. Nurses are effective in identifying potential donors and in the decision-making

processes of families. It was reported in previous studies that health care professionals must have adequate knowledge and a positive attitude toward organ donation [5].

In the literature, it was determined that most health care professionals supported organ donation; however, 30% to 40% were not sure about organ donation [6,7]. It was reported that 57% of nurses did not have adequate knowledge

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about brain death and organ transplantation [8]. The factors that influence the positive attitudes of health care professionals about organ donation were determined as the educational status, having talked with family members about organ donation, having a chronic disease, and having a positive attitude about family [6]. In a study conducted in Turkey, it was determined that 69.5% of the nurses and 78.6% of the doctors had accurate information on brain death and organ donation, and doctors were found to be more willing to donate compared with nurses [9]. In another study, it was reported that most of the nurses were willing to donate their organs [10]. The aim of this study was to examine health care professionals' attitudes toward and the affecting factors of organ donation.

## MATERIALS AND METHODS

A descriptive and cross-sectional design was used in this study. The data were gathered between June and September in 2018. The study participants were health care professionals in a university hospital and family health center in northern Turkey.

The sample calculation that was required for this study was performed using the G\*Power (Heinrich-Heine-Universität Düsseldorf, Dusseldorf, Germany) statistical analysis program with type I error as 0.05 and type II error as 0.20 (80% power), and the effect size was 0.5. In a study by Söylemez and Ordin [11], the required sample size was determined to be 160 health care professionals by using mean scores. A total of 220 patients were enrolled in the study.

This study was approved by the University Non-Invasive Clinical Research Ethical Committee and the hospital where the study was conducted. All participants were informed about the aim and methods of the study, and their written informed consents were obtained.

## Instruments

The data were collected by using a sociodemographic form, an organ donation questionnaire and the Organ Donation Attitudes Scale (ODAS). The sociodemographic form consisted of 9 questions about age, sex, educational status, occupation, number of children, institution worked, clinic, and years at work. The organ donation questionnaire was prepared by the researchers and consisted of 12 questions. Eight questions were about obtaining attitudes, 2 questions were about the organ donation system in Turkey, and 2 questions were about brain death. The Organ Donation Attitudes Scale (ODAS) is a valid and reliable self-report instrument for determining attitudes toward organ donation in Turkey. ODAS is a 6-point Likert scale: 1 corresponds to "strongly agree" and 6 corresponds to "strongly disagree." It consists of 40 items, 20 of which are negative statements and 20 are positive statements. The score varies between 20 and 120 for both positive and negative dimensions of the scale. A high score from the positive dimension of the ODAS indicates a positive attitude toward organ donation, and a low score indicates a negative attitude. Items of the positive dimension focus on humanity and moral conviction, and items of the negative dimension focus on fears of medical neglect (FMN) and fears of bodily mutilation. The validity and reliability of the ODAS for the Turkish population were examined by Yazici Sayin [12]. The internal consistency reliability coefficient (Cronbach  $\alpha$ ) was 0.857 for the scale, 0.925 for the positive dimension, and 0.914 for the negative dimension in Turkey. In the present study, Cronbach  $\alpha$  was 0.799 and 0.853 for the positive and negative dimensions of the ODAS, respectively.

## Data Analysis

The data were analyzed with SPSS 22.0. Package Program (IBM, New York, NY, United States). Sociodemographic data and clinical characteristics were presented in number, percentage, mean, and standard deviation. Pearson correlation, independent t test, and Kruskal-Wallis test were used to analyze the affecting factors. In all cases, a *P* value of  $< .05$  was considered statistically significant.

## RESULTS

The participants were between 20 to 52 years of age (mean,  $36.05 \pm 7.52$  years) and were working for 1 to 30 years (mean,  $12.43 \pm 7.81$  years). The participants were predominately female (76.80%) and working in the university hospital (76.8). A total of 72.8% of the participants were nurses, 71.8% were married, and 34.1% had no children; 58.2% of the participants had undergraduate education, and 23.6% of them worked in internal medicine clinics. The mean score of the participants was  $100.98 \pm 13.18$  for the positive dimension of the ODAS and  $46.81 \pm 17.61$  for the negative dimension of the scale. The mean scores for humanity and moral conviction, FMN, and fears of bodily mutilation were  $100.98 \pm 13.18$ ,  $20.95 \pm 10.15$ , and  $25.85 \pm 9.88$ , respectively.

A total of 52.7% ( $n = 116$ ) of the health care professionals stated that in the case that one of their family members had brain death, they could donate his or her organs. The organs that the participants considered to be the most important to donate were as follows: kidney (77.7%), heart (77.3%), bone marrow (77.3%), liver (72.3%), lung (69.1%), eye (67.7%), cardiac valve (65.5%), pancreas (57.7%), bone (55.9%), and skin (54.5%). About half of the participants (42.5%) reported that they had not decided to donate their organs yet; 17.7% of the participants had a donor card, and 57.3% of the participants attended to activities related to organ donation. Family consent was considered a necessary practice for organ donation after brain death in our country by 55.9% of participants. Most of the participants (91.4%) stated that they knew that there was an organ donation system in Turkey and that they knew the definition of and criteria for brain death. Physicians that worked in a family health care center or in the general clinic had lower FMN attitude scores ( $P < .001$ ) (Table 1). Also, health care professionals working in university hospitals and intensive care units had higher negative organ donation attitudes ( $P < .01$ ). It was found that there was a significant, negative, weak relationship between the age and the fear of being neglected (FMN) sub-dimension of the OADS ( $r = 0.146$ ;  $P = .016$ ). It was also determined that there was no statistically significant relationship between the number of years worked and the subdimensions of the OADS ( $P < .05$ ).

## DISCUSSION

In the present study, health care professionals were shown to have a higher score for positive attitudes and lower negative attitudes toward donation. In previous studies, it was determined that health care professionals had high positive attitudes toward organ donation [6,13]. The data

**Table 1. Factors Associated With Attitude Toward Deceased Organ Donation**

	ODAS Positive Dimension	Fears of Medical Neglect	Fears of Bodily Mutilation
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD
<b>Sex</b>			
Female (n = 169)	100.86 $\pm$ 12.60	21.51 $\pm$ 10.12	26.15 $\pm$ 9.91
Male (n = 51)	101.37 $\pm$ 15.05	19.11 $\pm$ 10.16	24.86 $\pm$ 9.82
Test	t = 0.238	t = 1.481	t = 0.817
P	.812	.140	.415
<b>Marital status</b>			
Married (n = 158)	100.10 $\pm$ 13.63	20.95 $\pm$ 10.19	26.17 $\pm$ 9.97
Single (n = 62)	103.24 $\pm$ 36.75	20.96 $\pm$ 10.13	25.04 $\pm$ 9.70
Test	t = -1.596	t = -0.008	t = 0.757
P	.112	.994	.450
<b>Children</b>			
No (n = 75)	100.66 $\pm$ 14.51	21.34 $\pm$ 10.15	25.36 $\pm$ 9.64
Yes (n = 145)	101.15 $\pm$ 12.48	20.75 $\pm$ 10.18	26.11 $\pm$ 10.03
Test	t = 0.065	t = -0.406	t = 0.533
P	.949	.685	.595
<b>Occupation</b>			
Physician (n = 60)	103.20 $\pm$ 11.05	13.50 $\pm$ 5.08	23.71 $\pm$ 9.54
Nurse (n = 160)	100.15 $\pm$ 13.83	23.75 $\pm$ 10.18	26.65 $\pm$ 9.92
Test	t = 1.530	t = -7.455	t = -1.977
P	.127	.000*	.049*
<b>Education</b>			
High school (n = 25)	101.72 $\pm$ 16.25	26.48 $\pm$ 11.28	26.48 $\pm$ 9.00
University (n = 128)	100.23 $\pm$ 12.75	23.24 $\pm$ 10.03	26.84 $\pm$ 10.13
Master's (n = 7)	93.14 $\pm$ 22.46	23.42 $\pm$ 8.42	23.85 $\pm$ 10.12
Doctor of Medicine (n = 60)	103.20 $\pm$ 11.05	13.50 $\pm$ 5.08	23.71 $\pm$ 9.54
Test	KW = 3.086	KW = 57.539	KW = 4.563
P	.379	.000*	.207
<b>Workplace</b>			
University hospital (n = 169)	90.60 $\pm$ 13.39	22.52 $\pm$ 10.32	26.77 $\pm$ 10.05
Family health center (n = 51)	105.26 $\pm$ 11.39	15.76 $\pm$ 7.62	22.80 $\pm$ 8.72
Test	t = -2.880	t = 4.333	t = 2.545
P	.004**	.000*	.012*
<b>Clinic</b>			
Internal medicine clinic (n = 52)	96.63 $\pm$ 13.08	22.63 $\pm$ 11.00	26.94 $\pm$ 10.85
Family health center (n = 51)	105.56 $\pm$ 11.39	15.76 $\pm$ 7.62	22.80 $\pm$ 8.72
Surgical clinic (n = 36)	101.05 $\pm$ 11.63	20.36 $\pm$ 8.81	26.13 $\pm$ 9.33
Emergency (n = 33)	98.09 $\pm$ 15.68	21.81 $\pm$ 10.35	26.63 $\pm$ 9.05
Intensive care unit (n = 27)	97.92 $\pm$ 14.11	26.85 $\pm$ 9.45	29.77 $\pm$ 10.46
Children's clinic (n = 21)	101.57 $\pm$ 12.91	21.52 $\pm$ 11.26	23.80 $\pm$ 10.04
Test	KW = 9.046	KW = 28.629	KW = 11.586
P	.107	.000*	.041*

Abbreviations: KW, Kruskal-Wallis test; ODAS, Organ Donation Attitudes Scale; SD, standard deviation.

\*P > .05.

\*\*t test: the significance of the difference between 2 means.

about opinions or attitudes of health care professionals in Turkey have not been collected with a questionnaire that has not been tested for its validity and reliability.

In our study, it was determined that approximately half of the health care professionals did not decide to donate their organs yet, and only 17.7% of them had donor cards. A low donation rate can be explained by health care professionals' lack of knowledge and awareness about donation [6,14-16]. It has been recommended that trainings related to brain death, organ donation, and transplantation planning for health care professionals be provided [14].

In the present study, it was determined that the negative organ donation attitudes of the physicians were lower compared with the nurses, similarly to attitudes reported in the literature [14,17,18]. The data can be explained by physicians having a higher education level and more information about organ donation. It was reported in previous studies that there were no statistically significant differences based on the age of the health care professionals toward organ donation [13,15]. In our study, we found that negative attitudes of younger health care professionals toward organ donation were higher. To improve the organ donation attitudes of younger health care professionals, the organ

donation issue can be added to the education curriculum and interventional studies can be developed.

It was determined that the negative attitudes of the health care professionals who worked in the family health centers were lower. In another study, nurses at local hospitals reported a more positive attitude toward organ donor advocacy overall compared with nurses at larger regional or university hospitals [19]. In our study, the reason health care professionals who worked in the family center had higher organ donation attitudes can be explained by an organ donation boost in their center and by their work with the organ donation department in their center.

Intensive care units are the most important units for organ donation. Health care professionals working in the intensive care units must be better informed and have positive attitudes toward organ donation. It was reported in previous studies that intensive care nurses are better informed and have better attitudes toward organ donation [19,20]. In 1 previous study, it was determined that nurses who work in intensive care units had more positive attitudes and were better informed about brain death [21]. In our study, on the other hand, it was determined that intensive care nurses had higher negative attitudes toward organ donation. It can be recommended that trainings about organ donation be developed for nurses. It can also be recommended that interventional studies be performed for intensive care health care professionals.

## CONCLUSION

In the present study, it was found that negative organ donation attitudes of nurses were higher than those of physicians. In addition, younger age, lower educational level, and working in an intensive care unit had negative effects on organ donation attitudes. We recommend including organ donation information in the nursing educational programs. We also recommend that interventional studies are conducted to affect organ donation attitudes of health care professionals in a positive manner.

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