

## HASTANELERDE ÇALIŞAN FARKLI MESLEK GRUPLARININ ORGAN BAĞIŞINA İLİŞKİN GÖRÜŞLERİ: KESİTSEL BİR ARAŞTIRMA

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### Öz

Bu çalışma hastanede çalışan farklı meslek gruplarının organ bağıışı ile ilgili düşüncelerini belirlemek amacıyla yapıldı. Araştırmanın evrenini bir hastanede çalışan toplam 887 kişi oluşturdu ve çalışmaya katılmaya gönüllü 519 kişi ile çalışma tamamlandı. Anket, Google formları kullanılarak bir link aracılığıyla kurum çalışanlarının cep telefonlarına gönderilmiştir. Katılımcıların eğitim durumu lisans/lisanüstü olanların %91.3'ünün, meslek grubunda doktorların %94.1'inin, hemşirelerin %85.8'inin, tıbbi sekreterlerin %88.2'sinin organ bağıışı hakkında bilgi sahibi oldukları (p=0.001), doktorların %100, hemşirelerin %92.1'i, tıbbi sekreterlerin %95.6'sının organ bağıışını dini açıdan uygun gördükleri, öldükten sonra organ bağıışı yapılmasını istedikleri (p=0.000), ihtiyaç durumunda başka birinin organını kabul edecekleri ve müslüman olmayan kişiye organ bağıışı yapabilecekleri saptandı (p=0.000). Bu sonuçlar doğrultusunda organ bağıışı ihtiyacının fazla olduğu ülkemizde, özellikle hastane personellerinin periyodik olarak düzenlenecek hizmet içi eğitimler ile bilinçlendirilmesi, organ bağıışına yönlendirilmesi ve sağlık çalışanlarının organ bağıışına teşvik konusunda planlamalar yapılması önerilmektedir.

**Anahtar kelimeler:** Organ Bağıışı, Hastane Personeli, Beyin Ölümü, Bilgi Düzeyi.

## THE OPINIONS of DIFFERENT OCCUPATIONAL GROUPS WORKING in HOSPITALS ABOUT ORGAN DONATION

### Abstract

The aim of this study was conducted to determine the opinions of different occupational groups working in the hospital regarding organ donation. The population of the study consisted of a total of 887 people working in a hospital: and the study was successfully completed with 519 individuals who were voluntary to participate in the study. The questionnaire was sent to the mobile phones of the employees of the institution via a link using Google forms. Of the participants, 91.3% of those with undergraduate/graduate education and 94.1% of physicians, 85.8% of nurses, and 88.2% of medical secretaries in the occupational groups had knowledge about organ donation (p=0.001), 100% of physicians, 92.1% of nurses and 95.6% of the medical secretaries found organ donation religiously appropriate, they wanted organ donation after death (p=0.000), they would accept someone else's organ in case of need and they could donate organs to a non-Muslim (p=0.000). In line with these results, it is recommended that awareness about organ donation among hospital staff be raised through periodic in-service trainings, they be directed to organ donation, and healthcare professionals make plans to promote organ donation in Turkey, where there is a high demand for organ transplantation.

**Keywords:** Organ Donation, Hospital Staff, Brain Death, Level of Knowledge

## 1. INTRODUCTION

Organ donation refers the consent of an individual to use her tissues and organs for the treatment of other people after her medical death, with her own will and without being under anyone's pressure. As per its definition, organ donation encompasses donating either a whole organ or a portion of it by alive donors, as well as donating organs from deceased individuals, i.e., cadavers (1,2). Nowadays, the retrieval of organs is feasible from deceased neonates to deceased individuals aged up to 60 years, while individuals who are 18 years old and older and possess a sound mental state are eligible to donate organs<sup>1</sup>. Organ transplantation from either living or deceased donors is a prominent option for patients suffering from dysfunction in particular organs (3).

The primary objective of organ transplantation is to give individuals a chance for a better quality of life by protecting their fundamental rights to life and bodily integrity. Today, it is known that tissue and organ transplantation is the only treatment modality for many diseases (2). The paramount determinant in the achievement of organ transplantation, a treatment method used to replace a vital organ that has been lost or is incapable of adequately performing its function, lies in the accessibility of the necessary organ. The sole option and solution to make this possible would be a satisfactory level of organ donation (1,2,4). Despite notable advancements in recent years in the fields of technology, pharmaceuticals, and surgical techniques, the primary challenge that persists is the procurement of organs (2). In terms of organ procurement, approximately 61% of transplants in the United States and 82% of transplants in Europe are from cadaver donors. Regarding global rankings, Spain holds the top rank with 49.6 cadaveric donors per million people. Turkey ranks 41st in the world, with six cadaveric donors per million people, and approximately 87% of all transplants in the last ten years have been from living donors. As assessed from international perspective, rates of cadaveric organ transplantation in Turkey are not at the required level. And the greatest expectation in the forthcoming years is to increase rates of organ donation from cadaveric donors, as reported in Europe and the USA (5). However, it is evident that organ scarcity remains a worldwide challenge for organ transplantation (6). Because organ transplants in the world can only meet 10% of the existing needs. Due to the insufficiency in organ supply, the number of patients on the organ waiting list increases every year and patients die while waiting for organs (4,7).

The factors causing the insufficient fulfilment of organ demand include lack of knowledge regarding organ donation, religious beliefs, worries about potential disruption to bodily integrity, and views about potential disrespect toward corpse (8). Other factors include inadequate information acquired from the media regarding organ donation, individuals' attitudes toward organ transplantation, lack of continuity in organ donation and deficiencies in the registration system, perceptions surrounding brain death and the acquisition/confirmation of family consent, and medical impartiality in determining procedures, which have emerged as significant challenges in several countries worldwide. Several related studies conducted in Turkey have reported that individuals do not engage in organ donation, nor do they donate their organs voluntarily, nor do they consider organ donation (4,9). These negative attitudes are explained by the fact that organ donation is affected by cultural practices and religious beliefs. Hence, organ donation campaigns and associated trainings have a substantial effect on increasing rates of organ donation. Healthcare professionals play a crucial role in maintaining these campaigns and altering public perspectives. However, a study reported that despite the willingness of nursing students to donate their organs, their knowledge of organ donation, the process of organ transplantation, and brain death was inadequate (4). However, it is stated that in order to increase organ donation, the education level and awareness of healthcare professionals who provide information on this subject are important. Given the significant impact on the development of sufficient social awareness regarding this matter, it is highly effective to emphasize the significance of organ transplantation in the education of healthcare professionals (10). Therefore, in order to increase organ donation, it is necessary to eliminate the lack of knowledge and rejective attitude and overcome the obstacles related to this issue in all areas (8).

In this regard, there is a need to determine the opinions affecting organ donation in different professional groups that are in contact with patients or their relatives, especially in countries with low organ donation rates such as Turkey. Once these opinions are determined, providing sufficient information about organ donation in order to eliminate negative thoughts and strengthen positive thoughts is one of the most effective ways to raise awareness. For this reason, the aim of this study is to determine the opinions of different occupational groups serving in the hospital regarding organ donation.

## **2. METHODS**

### **2.1. Study Design**

This descriptive and cross-sectional study was conducted to determine the opinions of different occupational groups, working in a hospital in the city center of XXXX, regarding organ donation.

### **2.2. Population and Sample**

The population of the study consisted of a total of 887 people employed in a hospital: 80 physicians, 253 nurses, 141 counsellors, 82 porters, 26 security guards, 38 kitchen workers, and 102 housekeepers. It was planned to include the entire population without making sample calculation, and the study was successfully completed with 519 individuals who were voluntary to participate in the study.

### **2.3. Data Collection Tools**

#### **Questionnaire**

It is a questionnaire prepared upon the literature review to gather data on the participants' characteristics (11,12). This form includes 28 questions pertaining to age, gender, profession, educational level, marital status, department, tenure in the profession, and organ donation.

### **2.4. Data Collection**

The questionnaire was sent to the mobile phones of the institution's employees through a link using Google Forms. After completing the questionnaire, the participants were instructed to send it back to the researchers through e-mail. A total of 519 people fully responded to the questions.

### **2.5. Data Analysis**

Chi-square test was used to analyze the data obtained with the questionnaire.  $p < 0.05$  was considered as significant.

### **2.6. Ethical Considerations**

Before beginning the study, approval from the SANKO University ethics committee, permission from the institution where the study would take place, and consent from the participants included in the study were obtained via Google Forms (Approval no: 2020/05, Date: 03.03.2020).

## **3. RESULTS**

It was found that 32.6% of the participants were between the ages of 24 and 29, 57.2% were male, 53.0% were married, 36.6% were nurses, 39.3% had a high school degree, and 54.1% had a tenure of 0 to 5 years ([Table 1](#)).

**Table 1. Distribution of the Participants Based on their Socio-demographic Characteristics (n=519)**

Characteristics	n	%
<b>Age (min.-max.)</b>		
18-23	117	22.5
24-29	169	32.6
30-35	65	12.5
35 and above	168	32.4
<b>Gender</b>		
Female	297	57.2
Male	222	42.8
<b>Marital Status</b>		
Married	275	53.0
Single	244	47.0
<b>Profession</b>		
Physician	17	3.3
Nurse	190	36.6
Medical Secretary	68	13.1
Technician	105	20.2
Administrative/finance staff	33	6.4
Other	106	20.4
<b>Educational Level</b>		
Primary School	68	13.1
High School	204	39.3
Associate Degree	98	18.9
Bachelor's/Master's degree	149	28.7
<b>Tenure (Year)</b>		
0-5	281	54.1
6-11	121	23.3
12-17	48	9.3
18 and above	69	13.3
<b>Total</b>	<b>519</b>	<b>100</b>

### 3.1. Results Pertaining to the Opinions of Occupational Groups Working in the Hospital on Organ Donation

It was determined that 79.8% of the participants had knowledge on organ donation, 44.9% were informed by healthcare professionals, 81.9% were aware of the institutions involved in organ donation, 89.8% stated that organ donation is appropriate for our religion, 84.6% had not donated their organs, 15.8% had not donated their organs due to familial reasons, and 16.2% had not donated their organs due to their poor health condition. Furthermore, it was found that 72.1% of the participants responded that “the family members of an individual who donates his/her organs and has been diagnosed with brain dead may consent to the harvesting of the donated organs”. It was

determined that 67.6% of the participants wanted their relatives to donate their organs after death, 58.2% wanted their relatives to take the intervention for organ donation after brain death, and 27.9% did not want to take the intervention as they were unwilling to assume responsibility for someone else. Moreover, 50.9% of the participants considered that healthcare professionals had insufficient knowledge about organ donation and transplantation; 50.1% of the participants were uncertain about whether or not organs were donated in exchange for financial compensation; and 35.1% were unaware of the possibility of bias in the organ waiting list. It was also found that 91.7% of the participants had no relatives awaiting organs, 80.9% of the participants had no relatives who had ever undergone organ transplantation, 75% of the participants had no relatives who did donate their organs, 89.2% of the participants would accept another person's organ if they needed organ donation, 85.2% of the participants would donate organs to people of the opposite gender, and 75.1% of the participants would donate organs to non-Muslims (Table 2).

**Table 2. Distribution of the Perceptions of Hospital Employees on Organ Donation (n=519)**

Characteristics	n	%
<b>Knowledge on organ donation</b>		
Yes	414	79.8
No	105	20.2
<b>Sources for knowledge regarding organ donation</b>		
Health care professionals	233	44.9
Social media	33	6.4
Television, newspapers or magazines	38	7.3
Relatives	7	1.3
Bachelor's degree	103	19.8
<b>Knowing to which institutions the organ is donated</b>		
State hospitals	16	3.1
Private hospitals	8	1.5
Provincial directorates of health	12	2.3
University Hospitals	58	11.2
All	425	81.9
<b>Thinking that organ donation is religiously appropriate</b>		
Yes	466	89.8
No	53	10.2
<b>Status of donating organ</b>		
Yes	80	15.4
No	439	84.6
<b>Reason for organ donation</b>		
To save lives	42	8.1
Due to their beliefs	-	-
To help people.	7	1.3
For the organ to restore functioning in other people	9	1.7
Thinking of the possibility that he or his loved ones might need an organ transplant in the future	22	4.2

Other	-	-
<b>Reason for refusing organ donation</b>		
Due to their thought that it is not religiously allowable	29	5.6
Due to the fact that bodily integrity will be disrupted.	66	12.7
Due to familial reasons	82	15.8
Due to the fact that they were not knowledgeable with where to apply	34	6.6
Due to their poor medical condition	84	16.2
Due to concerns about the misuse of their organs after death.	51	9.8
Due to the fact that they were not knowledgeable with the recipients of the organs.	21	4.0
Due to the fact that they did not believe that organ transplant centers are capable of delivering satisfactory service	18	3.5
Other	51	9.8
<b>Opinions on the organ donors and the persons pronounced brain dead</b>		
The medical support is sustainable.	108	20.8
The patient can be left untreated without medical support.	23	4.4
Patient care can be sustained at home.	14	2.7
Relatives may consent for the retrieval of the organs donated by the deceased person.	374	72.1
<b>The willingness of family members to donate organs</b>		
Yes	351	67.6
No	168	32.4
<b>Making organ donation initiative for a relative who has been pronounced brain dead</b>		
Yes	302	58.2
No	217	41.8
<b>Reason for no intervention (n=217)</b>		
Due to unwillingness to assume responsibility for someone else	145	27.9
Due to the fact that they do not think organ donation is right	11	2.1
Due to the fact that they believe that they would be misunderstood	21	4.0
Due to the fact that they believe that healthcare workers would be more effective thereof	24	4.6
Other	16	3.1
<b>Thinking whether or not their knowledge about organ donation and transplantation is sufficient</b>		
Yes	255	49.1
No	264	50.9
<b>Reason for considering that they lack sufficient knowledge (n=264)</b>		
Lack of adequate vocational training on this subject	95	18.3
Lack of adequate in-service training	106	20.4
Lack of knowledge on where to get information	40	7.7
Failure of religious clergy to sufficiently inform on this subject	21	4.0
Other	2	0.4
<b>Thinking that organs are donated in return for financial compensation</b>		

Yes	83	16.0
No	260	50.1
I do not know	176	33.9
<b>Thinking that there is bias in the organ waiting list</b>		
Yes	122	23.5
No	182	35.1
I do not know	215	41.4
<b>Family or immediate circle who await organ transplantation</b>		
Yes	43	8.3
No	476	91.7
<b>Family or immediate circle who had organ transplantation previously</b>		
Yes	99	19.1
No	420	80.9
<b>Family or immediate circle who had previously donated organ</b>		
Yes	130	25.0
No	389	75.0
<b>Accepting someone else's organ if they need organ donation</b>		
Yes	463	89.2
No	56	10.8
<b>Considering to donate organs to a person of the opposite gender</b>		
Yes	442	85.2
No	77	14.8
<b>Considering to donate organs to non-Muslims</b>		
Yes	390	75.1
No	129	24.9
<b>Total</b>	<b>519</b>	<b>100</b>

### 3.2. Results Pertaining to the Responses of the Occupational Groups Employed in the Hospital on Organ Donation According to Gender

It was determined that 84.8% of the female participants and 73% of the male participants had knowledge on organ donation ( $X^2=11.102$ ,  $p=0.001$ ), 22% of the female participants and 21.6% of the male participants did not donate their organs due to familial reasons and their poor medical conditions, respectively ( $X^2= 24.705$ ,  $p = 0.002$ ); 77.8% of the female participants and 54.1% of their male counterparts were willing to donate their organs after their death ( $X^2= 32.661$ ,  $p = 0.000$ ); 93.9% of the female participants and 82.9% of their male counterparts would accept someone else's organ if necessary ( $X^2= 16.134$ ,  $p = 0.000$ ); 82.5% of the female ones and 65.3% of the male ones stated that they would donate organs to a non-Muslim ( $X^2 = 20.067$ ,  $p = 0.000$ ) ([Table 3](#)).

**Table 3. Distribution of Responses by the Participants on Organ Donation According to Gender**

Questions	Women (%)	Men n(%)	Statistical Value
<b>Having knowledge on organ donation</b>			
Yes	252(84.8)	162(73.0)	$X^2=11.102$ <b>p=0.001</b>
No	45(15.2)	60(27.0)	
<b>Thinking that organ donation is religiously appropriate</b>			
Yes	271(91.2)	195(87.8)	$X^2=1.609$ p=0.205
No	26(8.8)	27(12.2)	
<b>Status of donating organ</b>			
Yes	49(16.5)	31(14.0)	$X^2=0.626$ p=0.429
No	248(83.5)	191(86.0)	
<b>Reason for organ donation</b>			
To save lives	25(51.0)	17(54.8)	$X^2=1.647$ p=0.680
To help people.	3(6.1)	4(2.9)	
For the organs to restore functioning in other people	6(12.2)	3(9.7)	
For the future needs of themselves and their relatives	15(30.6)	7(22.6)	
<b>Reason for refusing organ donation</b>			
Due to their thought that it is not religiously allowable	11(4.5)	18(9.5)	$X^2=24.705$ <b>p=0.002</b>
Due to the fact that bodily integrity will be disrupted.	32(13.0)	34(17.9)	
Due to familial reasons	54(22.0)	28(14.7)	
Due to the fact that they were not knowledgeable with where to apply	24(9.8)	10(5.3)	
Due to their poor medical condition	43(17.5)	41(21.6)	
Due to concerns about the misuse of their organs	34(13.8)	17(8.9)	
Due to the fact that they were not knowledgeable with the recipients of the organs.	12(4.9)	9(4.7)	
Due to the fact that they did not believe that organ transplant centers are capable of delivering satisfactory service	15(6.1)	3(1.6)	
Other	21(8.5)	30(15.8)	
<b>Willingness of organ donation after death</b>			
Yes	231(77.8)	120(54.1)	$X^2=32.661$ <b>p=0.000</b>
No	66(22.2)	102(45.9)	
<b>Family or immediate circle who await organ transplantation</b>			
Yes	25(8.4)	18(8.1)	$X^2=0.016$ p=0.899
No	272(91.6)	204(91.9)	
<b>Family or immediate circle who had previously donated organ</b>			
Yes	79(26.6)	51(23.0)	$X^2=0.890$



No	218(73.4)	171(77.0)	p=0.346
<b>Accepting someone else's organ in case of need</b>			
Yes	279(93.9)	184(82.9)	X <sup>2</sup> =16.134
No	18(6.1)	38(17.1)	p=0.000
<b>Donating organs to non-Muslims</b>			
Yes	245(82.5)	145(65.3)	X <sup>2</sup> =20.067
No	52(17.5)	77(34.7)	p=0.000

X<sup>2</sup>= Chi-Square, significant at the level 0.05

### 3.3. Results Pertaining to the Responses of the Participants to Organ Donation According to Their Profession

It was determined that 94.1% of doctors, 85.8% of nurses, 88.2% of medical secretaries, 72.4% of technicians, 75.8% of administrative/finance staff member and 69.8% of other employees had knowledge on organ donation (X<sup>2</sup>=19.850, p=0.001), 22.2% of nurses did not donate organs due to familial reasons, 24.2% of technicians, 22.2% of medical secretaries, and 27.6% of administrative/finance staff members could not donate organs due their "health problems" (X<sup>2</sup>=0.000, p=0.000). 57.6% of the administrative staff members were unwilling to donate their organs after death (X<sup>2</sup>=48.834, p=0.000), 100% of the physicians would accept someone else's organs after death if necessary (X<sup>2</sup>=34.193, p=0.000) and 45.5% of the administrative/finance staff members were unwilling to donate organs to non-Muslims (X<sup>2</sup>=54,142, p=0.000) (Table 4).

**Table 4. Distribution of Responses by the Participants on Organ Donation According to Their Profession**

	Yes n (%)	No n (%)	Statistical Value
<b>Knowledge on organ donation according to professional type</b>			
Doctor	16(94.1)	1(5.9)	X <sup>2</sup> =19.850 p=0.001
Nurse	163(85.8)	27(14.2)	
Medical Secretary	60(88.2)	8(11.8)	
Technician	76(72.4)	29(27.6)	
Administrative/finance staff member	25(75.8)	8(24.2)	
Other	74(69.8)	32(30.2)	
<b>Thinking that organ donation is religiously appropriate</b>			
Doctor	17(100)	-(0)	X <sup>2</sup> =10.737 p=0.057
Nurse	175(92.1)	15(7.9)	
Medical Secretary	65(95.6)	3(4.4)	
Technician	91(86.7)	14(13.3)	
Administrative/finance staff member	27(81.8)	6(18.2)	
Other	91(85.8)	15(14.2)	
<b>Status of donating organ</b>			
Doctor	7(41.2)	10(58.8)	X <sup>2</sup> =12.582 p=0.028
Nurse	32(16.8)	158(83.2)	

Medical Secretary	13(19.1)	55(80.9)
Technician	12(11.2)	93(88.6)
Administrative/finance staff member	4(12.1)	29(87.9)
Other	12(11.3)	94(88.7)

**Reason for organ donation**

	Doctor	Nurse	Medical Secretary	Technician	Administrative Staff member	Other	
To save lives	3(42.9)	15(46.9)	8(61.5)	6(50.0)	2(50.0)	8(66.7)	X <sup>2</sup> =21.115
To help people.	2(28.6)	1(3.1)	-(0)	3(25.0)	-(0)	1(8.3)	
Survival of organs in someone else	2(28.6)	3(9.4)	-(0)	1(8.3)	2(50.0)	1(8.3)	
For the future	-(0)	13(40.6)	5(38.5)	2(16.7)	-(0)	2(16.7)	p=0.049
Other	-(0)	-(0)	-(0)	-(0)	-(0)	-(0)	

**Reason for refusing organ donation**

	Doctor	Nurse	Medical Secretary	Technician	Administrative staff member	Other	
Due to their thought that it is not religiously allowable	-(0)	4(2.5)	1(1.9)	10(11.0)	4(13.8)	10(10.6)	X <sup>2</sup> =0.000 p=0.000
Due to the fact that bodily integrity will be disrupted.	1(10.0)	23(14.6)	7(13.0)	13(14.3)	5(17.2)	17(18.1)	
Due to familial reasons	1(10.0)	35(22.2)	8(14.8)	20(22.0)	-(0)	18(19.1)	
Due to the fact that they were not knowledgeable with where to apply	-(0)	18(11.4)	3(5.6)	7(7.7)	1(3.4)	5(5.3)	
Due to their poor medical conditions	-(0)	26(16.5)	12(22.2)	22(24.2)	8(27.6)	16(17.0)	
Due to concerns about the misuse of their organs	2(20.0)	19(12.0)	7(13.0)	7(7.7)	6(20.7)	10(10.6)	
Due to the fact that they were not knowledgeable with the recipients of the organs.	-(0)	8(5.1)	3(5.6)	3(3.3)	-(0)	7(7.4)	
Due to the fact that they did not believe that organ transplant centers are capable of delivering satisfactory service	1(10.0)	9(5.7)	5(9.3)	2(2.2)	-(0)	1(1.1)	
Other	5(50.0)	16(10.1)	8(14.8)	7(7.7)	5(17.2)	10(10.6)	

**Willingness of organ donation after death**

	Yes(n/%)	No (n/%)	
Doctor	13(76.5)	4(23.5)	X <sup>2</sup> =48.834
Nurse	150(78.9)	40(21.1)	

Medical Secretary	58(85.3)	10(14.7)	<b>p=0.000</b>
Technician	63(60.0)	42(40.0)	
Administrative/finance staff members	14(42.4)	19(57.6)	
Other	53(50.0)	53(50.0)	

**Family or immediate circle who await organ transplantation**

Doctor	2(11.8)	15(88.2)	
Nurse	19(10.0)	171(90.0)	$X^2=5.419$
Medical Secretary	3(4.4)	65(95.6)	$p=0.367$
Technician	8(7.6)	97(92.4)	
Administrative/finance staff members	5(15.2)	28(84.8)	
Other	6(5.7)	100(94.3)	

**Family or immediate circle who had previously donated organ**

Doctor	4(23.5)	13(76.5)	
Nurse	48(25.3)	142(74.7)	$X^2=3.319$
Medical Secretary	19(27.9)	49(72.1)	$p=0.651$
Technician	31(29.5)	74(70.5)	
Administrative/finance staff members	6(18.2)	27(81.8)	
Other	22(20.8)	84(79.29)	

**Accepting someone else's organ in case of need**

Doctor	17(100)	-(0)	
Nurse	182(95.8)	8(4.2)	$X^2=34.193$
Medical Secretary	66(97.1)	2(2.9)	<b>p=0.000</b>
Technician	82(78.1)	23(21.9)	
Administrative/finance staff members	26(78.8)	7(21.2)	
Other	90(84.9)	16(15.1)	

**Donating organs to non-Muslims**

Doctor	17(100)	-(0)	
Nurse	165(86.8)	25(13.2)	
Medical Secretary	60(88.2)	8(11.8)	$X^2=54.142$
Technician	66(62.9)	39(37.1)	<b>p=0.000</b>
Administrative/finance staff members	18(54.5)	15(45.5)	
Other	64(60.4)	42(39.6)	

$X^2$ = Chi-Square, significant at the level 0.05

### 3.4. Results Pertaining to the Responses of the Participants to Organ Donation According to Their Educational Level

It was found that 91.3% of the participants with bachelor's/ postgraduate degrees had knowledge about organ donation ( $X^2=20.731$ ,  $p=0.000$ ), 78.6% of those with associate's degree were willing to donate their organs after death ( $X^2=24.987$   $p=0.000$ ), 94.6% of those with bachelor's/ postgraduate degrees stated that they would accept someone else's organs if they needed them, and 87.89% of those with associate's degrees stated that they would donate organs to non-Muslims ([Table 5](#)).

**Table 5. Distribution of Responses by the Participants on Organ Donation According to Their Educational Level**

	Yes n( %)	No n(%)	Statistical Value		
<b>Having knowledge on organ donation</b>					
Primary School	46(67.6)	22(32.4)			
High School	154(75.5)	50(24.5)	$X^2=20.731$ $p=0.000$		
Associate Degree	78(79.6)	20(20.4)			
Bachelor's/ postgraduate degree	136(91.3)	13(8.7)			
<b>Thinking that organ donation is religiously appropriate</b>					
Primary School	62(91.2)	6(8.8)	$X^2=3.362$ $p=0.339$		
High School	178(87.3)	26(12.7)			
Associate Degree	92(93.9)	6(6.1)			
Bachelor's/ postgraduate degree	134(89.9)	15(10.1)			
<b>Status of donating organ</b>					
Primary School	7(10.3)	61(89.7)	$X^2=3.320$ $p=0.345$		
High School	30(14.7)	174(85.3)			
Associate Degree	20(20.4)	78(79.6)			
Bachelor's/ postgraduate degree	23(15.4)	126(84.6)			
<b>Reason for organ donation</b>					
	<b>Primar School</b>	<b>High School</b>	<b>Associate's Degree</b>	<b>Bachelor's Degree</b>	
To save lives	2(28.6)	18(60.0)	9(45.0)	13(56.5)	
To help people	3(42.9)	1(3.3)	1(5.0)	2(8.7)	
Survival of organs in someone else	1(14.3)	3(10.0)	2(10.0)	3(13.0)	$X^2=10.195$ $p=0.281$
For the future	1(14.3)	8(26.7)	8(40.0)	5(21.7)	
Other	-(0)	-(0)	-(0)	-(0)	
<b>Reason for refusing organ donation</b>					
	<b>Primary School</b>	<b>High School</b>	<b>Associate's Degree</b>	<b>Bachelor's Degree</b>	
Due to their thought that it is not religiously allowable	5(8.3)	18(10.3)	1(1.3)	5(4.0)	$X^2=34.898$ $p=0.070$
Due to the fact that bodily integrity will be disrupted.	11(18.3)	21(12.1)	16(21.1)	18(14.3)	
Due to familial reasons	14(23.3)	32(18.4)1	11(14.5)	25(19.8)	

Due to the fact that they were not knowledgeable with where to apply	5(8.3)	5(8.6)	7(9.2)	7(5.6)
Due to their poor medical condition	15(25.0)	37(21.3)	10(13.2)	22(17.5)
Due to concerns about the misuse of their organs	3(5.0)	19(10.9)	13(17.1)	16(12.7)
Due to the fact that they were not knowledgeable with the recipients of the organs.	4(6.7)	10(5.7)	2(2.6)	5(4.0)
Due to the fact that they did not believe that organ transplant centers are capable of delivering satisfactory service	-(0)	5(2.9)	4(5.3)	9(7.1)
Other	3(5.0)	17(9.8)	12(15.8)	19(15.1)

**Willingness of organ donation after death**

	<b>Yes</b>	<b>No</b>	
Primary School	34(50.0)	34(50.0)	
High School	125(61.3)	79(38.7)	X <sup>2</sup> =24.987
Associate Degree	77(78.6)	21(21.4)	<b>p=0.000</b>
Bachelor's/ postgraduate degree	115(77.2)	34(22.8)	

**Family or immediate circle who await organ transplantation**

Primary School	6(8.8)	62(91.2)	
High School	16(7.8)	188(92.2)	X <sup>2</sup> =0.193
Associate Degree	9(9.2)	89(90.8)	p=0.979
Bachelor's/ postgraduate degree	12(8.1)	137(91.9)	

**Family or immediate circle who had previously donated organ**

Primary School	11(16.2)	57(83.8)	
High School	45(22.1)	159(77.9)	X <sup>2</sup> =8.189
Associate Degree	33(33.7)	65(66.3)	<b>p=0.042</b>
Bachelor's/ postgraduate degree	41(27.5)	108(72.5)	

**Accepting someone else's organ in case of need**

Primary School	57(83.8)	11(16.2)	
High School	173(84.8)	31(15.2)	X <sup>2</sup> =12.931
Associate Degree	92(93.9)	6(6.1)	<b>p=0.005</b>
Bachelor's/ postgraduate degree	141(94.6)	8(5.4)	

**Donating organs to non-Muslims**

Primary School	45(66.2)	23(33.8)	
High School	130(63.7)	74(36.3)	X <sup>2</sup> =35.941
Associate Degree	86(87.89)	12(12.2)	<b>p=0.000</b>
Bachelor's/ postgraduate degree	129(86.6)	20(13.4)	

X<sup>2</sup>= Chi-Square, significant at the level 0.05

#### 4. DISCUSSION

The scarcity of cadaveric donors for organ transplantation is still a major obstacle even though organ donation is recognized as a crucial treatment option for patients on waiting lists (6). Hence, it is imperative to raise public awareness regarding organ transplantation and conduct studies on this topic in Turkey, where the number of patients waiting for organs is increasing day by day. As known, healthcare professionals play a crucial role in increasing organ donation through their contacts with patients and their relatives (1,13). When examining the related studies, it was determined that most of the hospital's administrative staff members had knowledge on organ donation and their primary source of this information was healthcare professionals. A study that analyzed university students' views on organ donation reported that students mostly did not have knowledge on organ donation, and they obtained this information from mass media such as television, newspapers, and magazines (14,15). An international study revealed that university students held knowledge on organ donation, which they acquired from healthcare professionals (16). In this study, it was also determined that the majority of those working in different occupational groups had knowledge about organ donation and institutions dealing with organ donation. Likewise, a study conducted by Balcı and Şahingöz with nurses indicated that most of nurses were knowledgeable with these issues (1).

Organ donation is a treatment method eligible for the Islam and does not has any religious objections (17). In this study, it was determined that the majority of the occupational groups stated that organ donation is appropriate in terms of religion, but 84.6% of them did not donate their organs. It has been reported in the literature that the majority of participants have positive attitudes, but they do not have organ donor cards (1,18, 19,20).

These results indicate that although individuals hold a positive attitude toward organ donation, they are unable to turn it into behavior, and this is a universal problem. Hence, it is believed that identifying and eliminating the potential causes to the inability to turn this positive attitude into behavior would be important in increasing organ donation rates.

This study revealed that most of the healthcare professionals were aware of organ donation and transplantation, but they believed this knowledge was insufficient; they did not want to donate their organs due to their poor health condition and familial reasons, they would accept someone else's organs when they need organ donation and they could donate organs to people of the opposite gender and non-Muslims. In a study conducted by Özkan and Yılmaz to assess knowledge and attitudes toward organ donation, they concluded that relatives of patients were unwilling to donate their organs due to distrust in doctors (18). In their study, Balcı et al., found that nurses were undecided about whether or not to donate organs (1). Hence, it is thought that it may be beneficial to increase educational programs aimed at raising social awareness about organ donation.

When it is discovered in Turkey that organ transplantation is performed for pecuniary advantage, the activities of the relevant center are immediately suspended, and the judicial authorities are notified in accordance with the provisions of Law No. 5237. Furthermore, the center and its employees, whose activities are suspended as described in this article, are prohibited from engaging in organ transplantation activities (21). The participants in the study by Balcı and Şahingöz stated that there was no pecuniary advantage (1). Similarly, 50% of the participants in this study stated that there is no pecuniary advantage in organ transplantation. However, the rate of the participants who responded with "I do not know" was nearly 50%. Furthermore, it was determined that 41.8% of the participants responded "No" to the question "Would you donate the organs of a relative who has been pronounced brain-dead?" and the reason for refusing to donate organs was "unwillingness to assume the responsibility of someone else". The literature yielded similar findings (22). Hence, it is thought that maintaining the prominence of organ donation and facilitate its discussion within family, as well as addressing this matter in visual and print media, television series, movies, and maybe most

importantly, in school curricula, as well as extending organ donation activities throughout the year rather than confining them to a single week, may yield more favorable outcomes.

In the study, it was found that the rates of organ donation, willingness to have their organs donated after death, acceptance of someone else's organs in case of need and organ donation to a non-Muslim were higher in women when compared to men, and the difference between the groups was statistically significant. In their study, Balcı and Şahingöz found that this rate was higher in men<sup>1</sup>. This result is thought to be associated with regional differences.

It was found that doctors and nurses had a higher rate of knowledge on organ donation than administrative staff members, and the difference between the groups was significant. In their study, Aytaş et al., found that 40% of nurses had sufficient level of knowledge about this issue (23). Similarly, Şıpkın et al (24), reported that 93.9% of nurses had sufficient level of knowledge, while Akış et al., found that 72% of nurses had sufficient level of knowledge (25). Given that the rate of organ donation would rise as the level of knowledge about organ transplantation elevates, those who now hold negative attitudes toward organ donation and transplantation and are indecisive about becoming organ donors may be more inclined to donate their organs if they are provided with training aiming at raising public awareness. In the literature, it has been also reported that educational level is a significant factor in determining the willingness to donate organs, and individuals with higher educational level held positive attitudes toward organ donation (1,22). This study revealed that especially those with bachelor's/postgraduate degree had higher rates of knowledge about organ donation, were willing to donate their organs after death, would accept someone else's organs in case of need, and would donate organs to non-Muslims.

Compared to the other occupational groups, medical secretaries had a higher rate of willingness to have their organs donated after death, while this rate was the lowest in administrative/finance staff members. Also, the rates of accepting someone else's organs in cases of need and donating organ to a non-Muslims were higher in doctors and nurses and lowest in administrative/finance staff members. In the literature it has been also reported that healthcare professionals working in the positions of doctors and nurses have a higher rate to donate their organs than other personnel (6,26,27).

There are some limitations that limit the level of evidence of the study. This study is limited to the staff working in the hospital where the study was conducted, and the results can only be generalized to this group. Future studies should be conducted with a larger population and multicenter trainings. It should be evaluated with a larger population to determine comprehensive results.

## 5. CONCLUSION AND RECOMMENDATIONS

This study revealed that those who had a bachelor's degree and postgraduate degree and were doctors, nurses and medical secretaries had knowledge on organ donation, donated organs, perceived organ donation as religiously appropriate and were willing to donate organs after death. Although a great majority of hospital staff deemed organ donation appropriate, they did not donate organs. Based on these results, it is recommended that awareness about organ donation among hospital staff be raised through periodic in-service trainings, they be directed to organ donation, and that healthcare professionals develop plans to promote organ donation in Turkey, where there is a high demand for organ transplantation.

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## CONFLICTS OF INTEREST

All authors of this study declare that they have no conflicts of interest. Manuscript has been seen and approved by all authors.

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