

Determination of the Relationship Between Organ Donation Knowledge Levels and Attitudes Towards Organ Donation Among Health Sciences Faculty Students

Sağlık Bilimleri Fakültesi Öğrencilerinin Organ Bağışı Bilgi Düzeyleri ve Organ Bağışına İlişkin Tutumları Arasındaki İlişkinin Belirlenmesi

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Abstract

Objective: The aim of this study is to determine the relationship between the organ donation knowledge levels of health sciences faculty students and their attitudes towards organ donation.

Methods: This study is a descriptive and cross-sectional study. The sample consisted of 436 students enrolled in Health Sciences Faculty. Study data were collected through a Data Collection Form created by the researchers, the Knowledge Level Scale on Organ-Tissue Donation and Transplantation, the Attitudes towards Organ Donation Scale and a face-to-face survey. Data analysis was conducted using SPSS 26 statistical software.

Results: The students' Organ Donation Knowledge Level Scale total mean score was determined as 12.21±4.31 (above average), and the Organ Donation Attitude Scale total mean score was 53.39±12.18 (average). In this study, it was observed that students receiving training on organ attitudes, having a family member with an organ donation history, and explanations from clergy were effective in increasing students' organ donation knowledge levels and positive attitudes ($P < .05$). A weak positive correlation was found between students' organ donation knowledge levels and their attitudes ($r=.193$; $P = .001$).

Conclusion: As a result of the study, it was determined that there was a positive relationship between organ donation knowledge level and attitude, and education positively affected both of these parameters. In order to increase the community's knowledge level and positive attitudes towards organ donation, it is thought that it is necessary to enhance the knowledge and attitudes of healthcare professionals and, prior to that, health sciences students. Informing students about organ transplantation and donation, integrating the subject of organ transplantation and donation into the education curriculum, and raising awareness by disseminating it on social media will contribute to raising healthy individuals in society and supporting a quality life, which is among the United Nations Sustainable Development Goals.

Keywords: Organ donation, students, transplantation, attitude

Öz

Amaç: Sağlık bilimleri fakültesi öğrencilerinin organ bağışı bilgi düzeyleri ve organ bağışına ilişkin tutumları arasındaki ilişkinin belirlenmesidir.

Yöntemler: Araştırma tanımlayıcı ve kesitsel bir çalışmadır. Örneklemi Sağlık Bilimleri Fakültesinde öğrenim gören 436 öğrenci oluşturmuştur. Çalışma verileri, araştırmacılar tarafından oluşturulmuş Veri Toplama Formu, Organ-Doku Bağışı ve Nakli Konusunda Bilgi Düzey Ölçeği, Organ Bağışına İlişkin Tutumlar Ölçeği ile yüz yüze anket yoluyla toplanmıştır. Verilerin analizinde SPSS 26 istatistik programı kullanılmıştır.

Bulgular: Öğrencilerin Organ Bağışı Bilgi Düzeyi Ölçeği toplam puan ortalaması 12,21±4,31 (orta düzeyin üzeri), Organ Bağışı Tutum Ölçeği toplam puan ortalaması 53,39±12,18 (orta düzey) tespit edilmiştir. Bu çalışmada, öğrencilerin organ tutumu ile ilgili eğitim alması, ailesinden birisinin organ bağışı öyküsünün olması, din adamlarının açıklamalarının öğrencilerin organ bağışı bilgi düzeylerini ve olumlu tutumlarını artırmada etkili olduğu görülmüştür ($P < ,05$). Öğrencilerin organ bağışı bilgi düzeyleri ile tutumları arasında zayıf düzeyde pozitif korelasyon tespit edilmiştir ($r=.193$; $P = ,001$).

Sonuç: Çalışma sonucunda, organ bağışı bilgi düzeyi ile tutum arasında pozitif bir ilişki olduğu, eğitimin bu iki parametreyi de olumlu yönde etkilediği tespit edilmiştir. Toplumun organ bağışı ile ilgili bilgi düzeyini ve organ bağışına yönelik olumlu tutumunu artırabilmek için sağlık profesyonellerinin ve öncesinde de sağlık bilimlerinde eğitim gören öğrencilerin bilgi düzeyinin ve tutumlarının artırılması gerektiği düşünülmektedir. Öğrencilerin organ nakli ve bağışı konusunda bilgilendirilmesi, organ nakli ve bağışı konusunun eğitim müfredatına entegrasyonu ve sosyal medyada yaygınlaştırılması ile farkındalık yaratılması, Birleşmiş Milletler Sürdürülebilir Kalkınma Hedefleri arasında yer alan toplumda sağlıklı bireylerin yetiştirilmesine ve kaliteli yaşamın desteklenmesine katkı sağlayacaktır.

Anahtar Kelimeler: Organ bağışı, öğrenciler, transplantasyon, tutum

INTRODUCTION

Organ donation is the act of allowing healthy people to voluntarily provide their tissues and/or organs for the treatment of individuals in need.¹ In contrast, organ transplantation is a successful treatment for irreversible organ failure that gives patients a shot at a second chance at life. The first successful kidney transplant among humans, performed by Joseph Murray in 1954, marked the beginning of the development of transplantation.² Since this discovery, organ transplantation has become a significant treatment method for patients with end-stage organ failure. In recent years, economic and technological developments, coupled with an aging population and increased prevalence of diseases, have led to a rise in demand for organ transplantation.³ However, despite the increasing number of patients awaiting organ transplantation, the donated organs do not meet the demand.^{4,5} The overall number of organ transplants conducted only covers 10% of the entire need for organ transplantation, according to data from the World Health Organization. According to data from the Turkish Ministry of Health, it has been reported that 25,952 patients are waiting for organ transplantation.⁶ In 2014, the number of living donors who donated organs was 2,132, while the number of deceased donors was 564, of total, 696. However, in 2018, this number increased to 5,595 (4,161 living donors and 1,434 deceased donors). Nevertheless, despite the increase in organ donation numbers in Turkey, the number of donors remains significantly behind the growing transplant waiting list.

It is thought that keeping organ donation on the agenda, prioritizing public education, educating the public, and—most importantly—raising awareness among healthcare professionals are the best ways to solve the issue of organ donation in Turkey. This is believed to increase organ donation.⁷⁻¹⁰

The role of healthcare professionals is crucial as they often serve as the first point of contact between patients and potential donors or the donor's family. Evidence suggests that the attitudes of healthcare workers can play a vital role in organ donation rates, the promotion of organ donation campaigns, and their success.¹¹ In this sense, as aspiring medical practitioners, health science undergraduates will greatly influence public opinion regarding organ donation and transplantation. Any negative attitude among healthcare professionals can hinder the increase in organ donation. Thus, the purpose of this study is to ascertain the association between health sciences faculty students' attitudes and knowledge regarding organ donation and their future status as healthcare professionals.

METHODS

Study Design: The study is cross-sectional and a descriptive study.

Sample of the Research: The population of the research consists of students studying at the Faculty of Health Sciences of a İstanbul Gelişim University. The sample size of 350 was determined with a 95% confidence interval and a 5% margin of error. However, this number was considered minimum, and 436 students who agreed to participate in the study constituted the sample.

Data Collection Method: A face-to-face questionnaire was used to collect data from participants between May 25, 2023, and May 1, 2024.

Data Collection: The Attitudes Toward Organ Donation Scale, the Organ and Tissue Donation and Transplantation Knowledge Scale, Data Collection Form were used to collect data for the study.

The Organ and Tissue Donation and Transplantation Knowledge Scale (OTDTKS),

Emiral and colleagues developed a 17-item scale designed to measure individuals' knowledge levels regarding organ donation and transplantation. The right answer receives one point for questions 1, 3, 4, 5, 7, 11, 12, 14, and 16, while all other options receive zero points. While answering a question correctly, you receive one point; while answering a question incorrectly, you don't receive any points. The sum of the points for each question determines the scale's overall score. A higher score on the scale denotes a greater understanding of organ donation and transplantation, with 0 being the lowest and 17 being the most. The scale's Cronbach's alpha coefficient was determined to be .88. In this study, a Cronbach's alpha coefficient of .837 was obtained.¹²

The Organ Donation Attitude Scale (ODAS)

It is a 15-item measure that was created by Kaça and associates to assess people's opinions about organ donation within the context of the Theory of Planned Behavior.⁹ There are two answers to the fifteenth question, and the first fourteen have a 7-point Likert scale. Questions 1-3 assess individuals' behavioral intentions towards organ donation, questions 4-8 evaluate individuals' attitudes toward organ donation, questions 9-11 assess subjective norms, and questions 12-14 evaluate perceived behavioral control. The 15th question queries whether the behavior will be performed at that moment. Responses vary from "strongly disagree" (ranked as 1) to "strongly agree" (rated as 7) for questions 1, 2, 3, 5, 6, 9, 10, 11, 12, 13, and 14. For the other questions, responses range from "strongly agree" (scored as 1) to "strongly disagree" (scored as 7). Scores from relevant domain questions are summed to obtain the total score for that domain. An increase in score indicates a positive impact on the relevant domain. The Cronbach's alpha coefficient in this investigation was discovered to be .781.¹³

Statistical Analysis

The statistical analysis in the study was conducted using the IBM SPSS (IBM SPSS Corp., Armonk, NY, USA) Statistics 26.0 program. Along with descriptive statistical techniques, the study data were evaluated (mean, standard deviation, frequency, percent). The Mann-Whitney U test was used to evaluate data that did not exhibit a normal distribution, whereas the Student T-test was used to compare data with a normal distribution. More than two normally distributed and non-normally distributed variables were assessed using one-way ANOVA and Kruskal-Wallis tests, respectively. The correlation between the variables was assessed using Pearson and Spearman correlation analysis. The significance level of $P < .05$ and the 95% confidence range were used to analyze the results.

Ethical Considerations: Every procedure carried out in research with human subjects complied with the Declaration of Helsinki's ethical guidelines. The İstanbul Gelişim University Ethics Committee Presidency granted approval for the ethics committee, with a judgment dated November 20, 2023, and numbered 2023-09-47. Prior to filling out the survey and signing the consent form, the study participants were informed about their participation.

RESULTS

Table 1 displays the student's personal attributes, answers to inquiries on organ donation, and the connection between OTDTKS and ODAS. The students' average age was 21.65 ± 2.51 , with 45.4% being in their fourth year, 79.8% being female, and 9.9% having chronic conditions. The average total score for OTDTKS was 12.21 ± 4.31 (above moderate level), and for ODAS, it was 53.39 ± 12.18 (moderate level). In this study, it was observed that students receiving training on organ attitudes, having a family member with an organ donation history, and explanations from clergy were effective in increasing students' organ donation knowledge levels and positive attitudes ($P < .05$).

The correlation between students' age, ODAS, and OTDTKS total scores is presented in Table 2. A weak positive correlation was observed between ODAS and OTDTKS ($r = .193$; $P = .001$) (Table 2).

Table 1. Data collection form, personal characteristics of students, responses to organ donation-related questions, and the relationship between OTDTKS and ODAS (n=436)

	n	%	ODAS* (p)	OTDTKS** (p)
Age (year)***	21.65±2.51			
≥21	300	68.8	.754	.775
<21	136	31.2		
Gender				
Female	348	79.8	.555	.114
Male	88	20.2		
Marital Status				
Married	9	2.1	.989	.429
Single	427	97.9		
Chronic illness status				
Yes	43	9.9	.730	.262
No	393	90.1		
Class Year				
Preparatory Year	2	0.5	.083	.486
Freshman year	137	31.4		
Sophomore year	54	12.4		
Junior year	45	10.3		
Senior year	198	45.4		
Have you ever donated an organ before?				
Yes	6	98.6	.041	.793
No	430	1.4		
Have you received any education/training on organ transplantation?				
Yes	73	16.7	.001	.004
No	363	83.3		
If a member of your family had donated organs, would you want to donate their organs when brain death occurred?				
Yes	301	69.0	.001	.001
No	135	31.0		
Are your religious beliefs an obstacle to organ donation?				

Yes	45	10.3		
No	391	89.7	.001	.033
Would you donate organs to an individual of a different beliefs?				
Yes	364	83.5		
No	72	16.5	.001	.001
Have any of your relatives or acquaintances ever needed an organ donation?				
Yes	73	16.7		
No	363	83.3	.205	.286
If you needed an organ transplant, would you accept it?				
Yes	410	94.0		
No	26	6.0	.001	.001
In your opinion, through which method can be organ donation increased the most?				
The explanations and guidance of religious leaders	55	12.6		
I have no idea	39	8.9	.001	.001
Public education	267	61.2		
Obtaining organs from individuals with brain death through legal regulations	75	17.2		
OTDTKS total score	12.21±4.31 (min:0; max:17)		-	-
ODAS total score	53.39±12.18 (min:14; max:98)		-	-
Behavioral intention	13.25±5.43		-	-
Attitude	18.03±4.18		--	-
Subjective norms	8.47±3.84			-
Perceived behavioral control	13.64±3.95		-	-
Would you fill out a document stating that you have currently donated your organs?				
Yes	175	40.1		
No	261	59.9	.001	.001

Descriptive statistical methods (mean, standard deviation, frequency, percentage), Student T test, Mann-Whitney U test, One-way ANOVA and Kruskal-Wallis tests

* Organ Donation Attitude Scale

** Organ and Tissue Donation and Transplantation Knowledge Scale

*** Since the average age of students was 21.65±2.51, comparisons were made between ≥21 and <21.

Table 2. Correlation between students' age, ODAS, and OTDTKS total scores (n=436)

		Age	ODAS* total score	OTDTKS** total score
Age	r	1	.069	.003
	P		.149	.956
ODAS total score	r	.069	1	.193
	P	.149		.001
OTDTKS total score	r	.003	.193	1
	P	.956	.001	

Pearson and Spearman correlation

* Organ Donation Attitude Scale

** Organ and Tissue Donation and Transplantation Knowledge Scale

DISCUSSION

The results of this study show that those who have had organ donation education, who have previously donated organs, and who think that religious convictions do not prevent organ donation have higher levels of knowledge and attitudes regarding organ donation. These findings will be compared with current literature in this study.

According to a systematic review conducted by Araujo and colleagues, although studies have shown positive attitudes towards organ donation, participants often exhibited inadequate levels of knowledge, especially regarding legal requirements in Brazil, and highlighted insufficiencies in education on this topic.¹⁴ In a multicenter study conducted by Martínez-Alarcón et al. with nursing students in Spain, attitudes towards organ donation and transplantation were found to be associated with having sufficient knowledge on the topic. Knowledge levels and attitudes on organ donation were found to be influenced by variables like gender, academic year, knowing someone who has received or donated an organ, believing in the likelihood of a need of a transplant in the future, and readiness to receive education on the topic.¹⁵ Participants in a study by El Hennawy et al. in Saudi Arabia to evaluate the attitudes and understanding of medical students and healthcare professionals regarding organ donation were found to have adequate knowledge, however this did not always have a meaning as a willingness to donate their organs. The most common reasons for refusing organ donation were fear of compromising bodily integrity and the influence of religious factors. It was also noted that increasing knowledge through the internet and social media was considered the best approach.¹⁶ It was discovered that 88.5% of participants in a study by Kanyári et al. in Hungary to evaluate the attitudes and understanding of healthcare professionals and the general public on organ donation were not aware of the laws governing the practice. Additionally, 25% of physicians and 60% of the public were unaware of the existing organ donation system in the country. Furthermore, in the same study, it was observed that 57% of intensive care physicians and 45% of intensive care nurses had a moderate level of willingness to support the donation of their own organs.¹⁷ Seetharaman et al., conducted a study at a tertiary care hospital to measure the attitudes and knowledge of physicians and students towards organ donation. The results emphasized the need to improve the medical community's knowledge and personal responsibility regarding organ donation. However, they also highlighted the necessity of improving the system to gain their trust.¹⁸ Anwar and Lee conducted studies involving healthcare professionals, students, patients, and their families in Bangladesh. They found that although healthcare professionals were better informed about organ donation compared to non-medical individuals, their attitudes towards organ donation were similar to the general population. It was noted that 43.8% of participants, or fewer, said they would give their organs to benefit others when they passed away.¹⁹ Efil and colleagues conducted a study in Turkey involving intensive care nurses, where it was found that nurses had a high voluntary attitude towards organ donation. It was found, nevertheless, that there were not many nurses who had cards authorizing organ donation.²⁰ This study revealed that students obtaining education had positive views and high levels of knowledge regarding organ donation. Consistent with the literature findings, education has been identified and recommended as an effective factor in increasing

attitudes and knowledge levels about organ donation (Table 1). Additionally, as shown in Table 2, a positive correlation was found between the ODAS and OTDTKS total scores. This result indicates that as the knowledge level of health students about organ donation increases, their positive attitudes also increase. The literature results support the study.¹⁴⁻¹⁹ When examining the literature, especially studies involving healthcare professionals or students, it is believed that education will positively change attitudes towards organ donation and thereby increase the number of organ donors. Additionally, it is thought that such education, particularly when targeted at healthcare students and professionals, will be effective in educating and raising awareness within the community. The study's findings indicate that participants thought religious leaders' justifications would have the biggest impact on the increase in organ donation (Table 1). This conclusion is consistent with El Hennawy et al.'s study findings.¹⁶ That's a reasonable interpretation. The similarity in results between studies conducted in Turkey and Saudi Arabia could indeed be attributed to similarities in religious beliefs prevalent in these countries. The finding in this study that individuals have a higher attitude toward receiving or donating organs if they or a family member needed an organ transplant is consistent with the results of Martinez-Alarcon et al.¹⁵ These two findings demonstrate that if an individual has a personal or family history related to organ transplantation, it can influence their knowledge level and attitude. Our past experiences shape our future lives and decisions. Therefore, healthcare professionals, especially if individuals have had negative experiences in the past, should inquire about them and provide the necessary information and guidance.

The results of this study showed that healthcare students' ODAS and OTDTKS scores were in the middle range. On the other hand, when asked if they would fill out a form claiming that they have currently donated their organs, just 40.1% of participants said "yes." This outcome is consistent with research published in the literature by El Hennawy et al., Kanyári et al., Anwar and Lee, and Efil et al.^{16,17,19,20} Even though the study's sample group included healthcare professionals, their views and level of knowledge about organ donation were not particularly high. It is believed that decisions on organ donation are heavily influenced by fears, religious convictions, and prior experiences.

CONCLUSION

The study results indicate that the average scores for the ODAS and DAS are moderate, with a positive correlation between ODAS and OTDTKS. It was observed that having a family member or oneself in need of organ transplantation positively influences knowledge and attitudes towards organ donation, and that education on organ donation increases both knowledge and attitudes. Participants identified the best way to increase organ donation rates as the explanations and guidance provided by religious leaders. Improving the knowledge and attitudes of healthcare professionals, including students studying healthcare science, is crucial to raising the general public's level of awareness and support for organ donation. Encouraging students to learn about organ donation and transplantation, spreading awareness via social media, and integrating it into the curriculum will help achieve the Sustainable Development Goals of the United Nations, which are designed to advance healthy and high-quality living standards in society.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Istanbul Gelisim University (Date: 20.11.2023, Number: 2023-09-47).

Informed Consent: Participants were informed and their written consent was obtained.

Peer-review: Externally peer-reviewed.

Declaration of Interests: The authors have no conflicts of interest to declare.

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