



Determining the Organ Donation Attitudes and Altruism Levels of Teacher Candidates

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Abstract: Organ donation and transplantation rates vary widely around the world, but the number of donors is almost universally decreasing (Rudge et al., 2012). The aim of this research is to determine the relationship between attitudes towards organ transplantation, known as an altruistic behavior, and the altruism levels of teacher candidates. In the research, the relational survey model among general survey models was used. The sample of the research consists of 214 teacher candidates studying at the Faculty of Education of a state university in Turkey in the 2023-2024 academic year. Organ Donation Attitude Scale (ODAS) developed by Parisi and Katz (1986), adapted by Kent and Owens (1995); adapted to Turkish by Yazıcı Sayın (2016) was used as a data collection tool in the study. The research was conducted using the "Altruism Attitude Scale" developed by Ümmet, Ekşi, and Otrar (2013). Additionally, extra questions were created based on the literature and expert opinions. The data were analyzed using the SPSS 22.0 software. The results indicated that there is no direct and strong relationship between the level of altruism and the attitude toward organ donation.

Key Words: Organ donation, Altruism, Teacher Candidates.

Introduction

The conceptual knowledge of prospective teachers on socio-scientific issues is very important in terms of their ability to take an effective stance on these issues. Therefore, care should be taken to structure socio-scientific issues correctly at every level and deficiencies should be eliminated (Türkoğlu & Öztürk, 2019). The awareness of individuals about organ donation is supported by the education provided in schools. In 2003, many countries accepted the importance of socio-scientific issues in science education. In Turkey, the Ministry of National Education programs updated in 2013 and 2017 included organ transplantation and donation as a socio-scientific issue in the curriculum. It is critical for teachers to have a high level of awareness and knowledge on this issue in terms of students developing positive attitudes (Balgün, 2021).

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Organ transplantation is the removal of an organ that is unable to function for various reasons and the transplantation of a healthy organ instead, and it is used as a last resort in cases of many diseases that cannot be treated (Koçak et al., 2010). The organ can be transplanted from a living or dead donor. For this purpose, individuals can donate their organs while they are alive to be used after death. Since organ donation from a cadaver in this way is usually not sufficient, organ transplants are also made from living people to patients' relatives.

Even in mythological writings and records dating back to before Christ, there is information about the transplantation of some limbs, and organ transfer practices, especially in animals, have been carried out since the 1700s (Vatanoğlu, 2007). The world's first human organ transplant was a kidney transplant in Kiev in 1939, but it was not successful. Subsequently, successful kidney transplants continued to increase throughout the world. The first liver transplant was performed in 1963, and the first heart transplant was performed in 1967. The first successful organ transplant in Turkey was in 1975 by Dr. It was recorded as a living-to-living kidney transplant (from mother to son) performed by Mehmet Haberal and his team at Hacettepe University, and was followed by a cadaver kidney transplant performed by the same team in 1978 (Yılmaz, 2012).

Organ donation is the voluntary act of taking one's own organs and allowing them to be used in the treatment of other people. People who are mentally healthy and over the age of 18 can voluntarily donate all or some of their organs and tissues with their own consent (URL 1). If an individual donates all his organs, he gives a new life to at least 8 people (Tay, 2016).

Organ donation and transplantation rates vary widely around the world, but the number of donors is almost universally decreasing (Rudge et al., 2012). The number of patients waiting for organ transplantation around the world varies depending on the development level of the countries. In many European countries, especially in Belgium, all individuals who do not have a rejection application are naturally accepted as donors. On the other hand, while 10% of the society in Germany and Saudi Arabia carries an organ donor card, the rate of carrying an organ donor card in Turkey is only around 0.3% (Erdoğan et al., 2002).

While most of the organ needs in developed countries are provided by cadaveric donors, one of the main problem areas in developing countries, including Turkey, is the insufficient number of cadaveric organ transplants (Tilif et al., 2006). Although the number of patients waiting for organ transplantation is increasing, there is no significant increase in the number of organ donors and organ donation in Turkey has not yet reached the desired level. For this reason, 75-80% of organ transplants are performed with organs taken from living people, although this is

not a very desirable situation. According to the information obtained from the database of the Department of Organ, Tissue Transplantation and Dialysis Services, a total of 60,502 transplants were performed in Turkey between 2008 and 2023, very few of which were cadaveric. Although there are sufficient organ transplant centers and medical personnel in Turkey, organ donation remains far below the need (Özbolat, 2017). Therefore, when compared to the increasing population, the gap between the number of patients waiting for organs and the number of donated organs in our country is gradually widening. According to official records between 2009 and 2020, there were 19,724 cases of brain death, while the number of cases whose families allowed organ transplantation was 5,232. In general, the organ donation rate in our country is approximately 26.4% (Ekici, 2022).

It is very important to identify the factors that affect the low organ donation rates in Turkey and to try to eliminate these factors. Studies have shown that organ donation depends on many factors such as education, sociocultural level, culture and religion. However, religious principles allow organ donation. No religious tradition officially prohibits organ donation and transplantation (Özbolat, 2017).

Organ donation is one of the important altruistic behaviors as a person allows his/her organs to be taken and used in the treatment of other people with his/her own will (Ümmet et al., 2013). Altruism, defined in its most general form as "help given without expecting anything in return", is considered a virtue and, according to August Comte, is the condition for the moral and cultural development of humanity (Düzgüner, 2019).

Positive behaviors towards others are examined in two groups: prosocial behaviors and altruistic behaviors. While a person who engages in prosocial behavior benefits others, he does not pay any personal cost, is not harmed, does not contradict his own interests, and sometimes it may even be in his own interest. For example, when you help a visually impaired person by taking his arm while crossing the road, this does not cost him anything, does not require changing the road, and does not waste extra time and energy. It can even make a person feel better thanks to the approving and appreciative looks of the people around him. However, altruistic behavior is based entirely on voluntariness and is behavior that benefits someone else without any interest, sometimes even by paying a price. For example, when a visually impaired person is helped while trying to cross the other side of the road instead of continuing without crossing the road, the helper has to change his route, maybe be late for his destination, or at least lose time and energy by lengthening his route (Silk & House, 2011; Üzümçeker et al., 2019). Such altruistic actions also gain importance in matters of social benefit, such as organ

donation. There have been many studies on organ donation and altruism in the literature. For example; Dopelt et al. (2022) stated in their study that although the number of people on the organ transplant waiting list increases every year, current organ donations do not respond sufficiently to this demand. In the study, they examined the relationships between altruism, attitudes towards organ donation and behavioral intentions among the Jewish population in Israel and as a result of the study, high levels of altruistic behaviors and positive attitudes towards organ donation were determined; however, it was stated that the level of behavioral intention towards organ donation was low. In the study of Sharp & Randhawa (2004), the concepts of altruism, gift giving and reciprocity in organ donation were examined within the framework of cultural perspectives. The study summarized common perspectives on organ donation and revealed that the motivations of families who decided to donate their relatives' organs varied in different living donation programs. Milaniak et al. (2018) aimed to evaluate the role of empathy and altruism in the organ donation decision-making process among nursing and paramedic students. The results present a very positive picture overall; 99% of the participants stated that they accepted organ donation while they were alive, while 98% supported donation after death. In the study by Jenkin et al. (2023), the attitudes of Australian anatomy students towards body and organ donation were examined. The results show that the rate of participants supporting their own body donation was 26.5%, while the rate of support for their own organ donation was at a high level of 82.5%. In the study by Güner and Cicerali (2021), the psychological and cultural factors affecting organ donation were emphasized. In the study, the reasons for the low organ donation rates were analyzed within the framework of social psychology and behavioral theories, and suggestions were developed to overcome these problems. In the study by Rios et al. (2010), the attitudes of secondary school teachers towards living organ donation were examined and the psychosocial variables affecting these attitudes were tried to be determined. The research results showed that the teachers had positive attitudes towards living kidney or liver donation. All these studies emphasize the role of education in shaping the attitudes and behaviors necessary to increase organ donation in society. Especially considering that teacher candidates can positively affect the perceptions of their students by addressing these important issues in their future education processes (Harman & Çökelez, 2017), it is understood that research in this area should continue.

Educational activities address a number of important dimensions, from their quality to their implementation, from the use of instructional technologies to management and supervision. Although teaching is a profession that requires professionalism, it is also closely related to

teachers' individual views and behaviors (Özbek et al., 2007). Attitude can be defined as the feelings and thoughts an individual has towards an object or subject. Individuals with a positive attitude tend to exhibit positive behaviors towards that subject, while a negative attitude may lead to non-reaction or harmful behaviors. However, the reflection of the attitude on the individual's behavior depends on the strength of the attitude; a strong attitude creates a more pronounced effect on behaviors (Aydm, 2002). As future teachers, teacher candidates will cover important topics such as organ donation in their classes and will be able to positively or negatively affect their students' perceptions on this subject. Therefore, determining the attitudes of prospective teachers towards organ donation is of critical importance both for their own development and for the formation of their students' perceptions (Harman & Çökelez, 2017). In this context, in this study; An attempt was made to determine the relationship between organ transplantation, known as an altruistic behavior, and the altruism levels of teacher candidates.

Method

Design of the research

In this quantitatively designed research, the relational survey model among general survey models was used. Survey research is a research model used to identify trends and attitudes based on the selected sample (Creswell, 2017). The relational survey model is used to determine the presence and degree of change between two or more variables (Bekman, 2022). In this study, the relational survey model was used to evaluate the relationship between organ transplantation and the altruism levels of prospective teachers.

Participants

The participants of the research consist of a total of 214 teacher candidates studying at the Faculty of Education of a state university in Turkey in the 2023-2024 academic year. 164 of these students are girls and 50 are boys. Convenience sampling method was used in the selection of the research group. Convenience sampling involves taking sample members that the researcher can easily reach (Özen and Gül, 2007). Sample size refers to the number of participants required to accurately answer the research question. Therefore, it is of great importance to calculate the sample size before the study begins. Because too small a sample may make it difficult to detect the effect accurately, while too large a sample may cause loss of time and cost (Noordzij et al., 2011). While Bryman & Cramer (2001) suggested that the sample

size should be at least five times the number of items, Comrey and Lee (1992) stated that 50 participants was insufficient, 100 participants was still insufficient and 200 participants was an appropriate sample size.

In this context, considering the number of items in the scales used in the research, it can be concluded that 214 participants are sufficient.

Data collection tools of the research

In this section, the data collection tools used during the study are explained. The first section of the measurement tool used in this research includes questions prepared by the researchers based on the literature and expert opinions, aimed at the participants involved in the study. Students were asked questions such as, "What is your gender?", "Have you received any information about organ donation before?", "Do you think people should donate their organs?", "Have you ever needed an organ transplant?", and "What volunteer activities have you participated in so far?". Additionally, in this study, two separate scales were used because we aimed to reveal the relationship between two variables.

Organ Donation Attitude Scale

This section includes the "Organ Donation Attitude Scale (ODAS)" to determine the attitude levels of teacher candidates towards organ donation. This scale was developed by Parisi and Katz (1986) and adapted by Kent and Owens (1995); It was adapted into Turkish by Yazıcı Sayın (2016). In the Turkish validity and reliability study conducted by Yazıcı Sayın, the Cronbach alpha coefficients of the general, positive attitude and negative attitude sub-dimensions of the scale were determined as 0.857, 0.925 and 0.914, respectively. The scale has a Likert format with 6 options, with each item ranging from completely agree to completely disagree. The first dimension contains 20 positive items indicating people's helpfulness and moral values/beliefs regarding organ donation, while the second dimension contains 20 negative items related to fear of medical negligence and fear of bodily injury. The Turkish adaptation ultimately included 40 items, which were used in this form in the study.

Altruism Attitude Scale

This section includes the "Altruism Attitude Scale", which was developed by Ümmet, Ekşi and Otrar (2013) and consists of 38 items, in order to determine the altruism levels of teacher candidates. The scale consists of seven different items such as "participation in voluntary

activities", "financial aid", "assistance in traumatic situations", "assistance to the elderly/patients", "assistance based on physical strength", "assistance during the education process", "assistance resulting from a sense of closeness". The scale has a Likert format with 5 options, with each item ranging from completely agree to completely disagree. Cronbach Alpha, the reliability coefficient of the scale, was determined as 0.81.

Data Collection Process and Data Analysis

Before proceeding with the data collection process, the ethical and administrative permissions required for the research were obtained. Afterwards, the scales were administered to the teacher candidates by the researchers within an average of one class hour. SPSS 22.0 package program was used to analyze the data obtained. The data used in the research were first entered into this program and went through data cleaning processes. Before starting the analysis process, the suitability of the data for normal distribution was evaluated with the Kolmogorov-Smirnov test. In addition, the kurtosis and skewness values of the data were examined and it was tested whether these values were between +1.5 and -1.5 (Tabachnick & Fidell, 2013). As a result, it was determined that the data met normal distribution criteria.

Correlation is widely used as a measure of the relationship between variables. In correlated data, a change in the magnitude of one variable is correlated if it is in the same direction (positive correlation) or in the opposite direction (negative correlation) as the change in the magnitude of another variable. Correlation generally refers to the linear relationship between 2 continuous variables and is called Pearson product moment correlation. Pearson correlation coefficient is mostly used for data where two variables are normally distributed. For data with non-normal distribution, Spearman rank correlation is used (Schober et al., 2018). Since the data in this study showed a normal distribution, Pearson correlation analysis was used to interpret the relationship between organ donation and altruism level and the relationship between its sub-dimensions. Pearson correlation coefficient (r), also known as product moment correlation coefficient, is one of the most frequently used measurements in the field of statistics (Armstrong, 2019). Gürbüz and Şahin (2018) stated in their study that the coefficients in the correlation analysis indicate a weak relationship between 0 and ± 0.3 , a moderate relationship between ± 0.3 and ± 0.7 , and a strong relationship between ± 0.7 and ± 1 . Frequency distribution, percentage calculations, mean and standard deviation values were used in the analysis of the data.

Findings

This section focuses on the statistical analysis performed on the data obtained from the prospective teachers who participated in the research. First of all, the questions asked to teacher candidates were prepared by reviewing the literature and expert opinions, and the answers to these questions were analyzed. Then, the relationship between organ transplantation and the altruism levels of the participants in the research group was examined.

Table 1. Analysis of Answers to Questions Asked to Teacher Candidates

		n	%
Gender	Female	164	76.3
	Male	50	23.3
Have you ever received information about organ donation?	Yes	77	35.98
	No	137	64.02
Do you think people should donate their organs?	Yes	195	91.12
	No	19	8.88
Have you ever needed an organ transplant before?	Yes	1	0.47
	No	213	99.53
Areas of activity in which you have voluntarily participated so far	In the field of education	37	17.29
	For disabled people	61	28.50
	For refugees	56	26.17
	For those who are poor	33	15.42
	For those affected by natural disasters	19	8.88
	To protect the environment	8	3.74

When Table 1 is examined, it is seen that the majority of teacher candidates are women (76.3%), the majority (64.02%) have not received information about organ donation, 91.12% think that people should donate their organs, and 99.53% have not had organ transplantation before. It was revealed that the field of activity in which they participated voluntarily was mostly for disabled individuals (28.50%).

Table 2. Sub-Dimension Descriptive Statistics: Altruism and Organ Donation Attitudes

Organ Donation Attitude Scale	Mean±SD
Positive Dimension	4,75± ,91337
Negative Dimension	2,73± ,85244
Organ Donation Attitude Average	3,74± ,47893
Altruism Attitude Scale	Mean±SD
Participation in Volunteer Activities	3,87± ,71821
Financial support	4,28± ,58508
Help in Traumatic Situations	4,30± ,64146
Helping the Elderly/Sick	4,23± ,70090
Physical Strength-Based Assistance	4,01± ,76629
Assistance in the Educational Process	4,08± ,62779
Help Derived from a Sense of Closeness	4,18± ,71044
Altruism Attitude Average	4,13± ,54233

According to the findings in Table 2, when examining the average values of the subdimensions of the Organ Donation Attitude Scale, it was determined that the "Positive Dimension" factor has the highest average value ($\bar{X} = 4.75$). On the other hand, when the average values of the Altruism Attitude Scale sub-dimensions are examined, it is seen that the "Help in Traumatic Situations" factor has the highest average value. ($\bar{X} = 4.30$). Additionally, the average score for the Organ Donation Attitude was determined to be ($\bar{X} = 3.74$) and the average score for the Altruism Attitude was ($\bar{X} = 4.13$).

Table 3. Relationship Between Altruism and Organ Donation Attitude Scales Sub-Dimensions: Pearson Correlation Analysis

	r/p	Test Values	Positive Dimension	Negative Dimension	Organ Donation Attitude Average
Participation in Volunteer Activities	r		,176**	-,130	,053
	p		,010	0,57	,443
Financial support	r		,183**	-,169*	,024
	p		,007	,013	,727
Help in Traumatic Situations	r		,213**	-,151*	,069
	p		,002	,027	,316
Helping the Elderly/Sick	r		,227**	-,078	,147*
	p		,001	,253	,032

Physical Strength- Based Assistance	r	,143*	-,137*	,015
	p	,036	,046	,828
Assistance in the Educational Process	r	,219**	-,098	,121
	p	,001	,152	,076
Help Derived from a Sense of Closeness	r	,143*	,137*	,014
	p	,037	,045	,835
Altruism Attitude Average	r	,229**	-,163*	,074
	p	,001	,017	,284

When Table 3 is examined, it was determined that the relationship between the level of altruism and organ donation attitude was at a low level in the sample examined ($r = 0.074$), and this relationship was not statistically significant ($p = 0.284$).

Discussion and Conclusion

Organ donation offers patients with organ failure a better quality of life and the opportunity to save lives. Although organ donation after death is universally accepted, the number of actual donors is quite small. This shows that organ donation is a moral issue and empathy and altruism can affect the decision to donate organs (Milaniak et al., 2018). In this study; An attempt was made to determine the relationship between organ donation, known as an altruistic behavior, and the altruism levels of the teacher candidates in the research group.

When the results obtained from the research are examined, the fact that 91.12% of teacher candidates support organ donation shows that the society has a positive attitude towards organ donation. Indeed, Bölükbaşı et al. (2004) and Özer et al. (2008) listed students' thoughts about organ donation as follows: factors such as saving lives, using the organ that is decaying, and keeping the organ alive in someone else after death are at the forefront. These reasons support students to be sensitive about organ donation and to have positive attitudes about it. Increasing awareness about organ donation can contribute to society becoming more conscious and active about organ donation.

The results obtained from the research show that 64.02% of the teacher candidates have not received information about organ donation before and that voluntary participation is the highest, especially in activities for the disabled, and the number of individuals who have experienced organ transplantation is quite low. The lack of information about organ donation reveals the need to develop education and awareness programs in this field. This study reveals the necessity

of educational programs and awareness-raising activities on organ donation and social responsibility. In this way, society can be more conscious and sensitive about organ donation, thus making organ donation more widespread and saving more lives possible. Supporting this finding, Özbolat (2017) determined that belief patterns, rather than lack of knowledge and education, are responsible for organ donation not being at the desired levels. Kavurmaci et al. (2014) emphasized that increasing the number of successful organ-tissue transplants will be possible with education, awareness-raising and information. In addition, preparing training programs that will raise interest and inform the subject; They stated that educational programs prepared for these purposes should be spread to all educational institutions, starting from primary school.

In this study, it is seen that teacher candidates' attitudes towards the positive dimension of organ donation are more evident, which shows that they generally have a positive attitude towards organ donation. In the altruism attitude, the fact that the helping factor comes to the fore in traumatic situations shows that participants are more inclined to help people in urgent and difficult times. Similarly, Düzgüner and Sevinç's (2020) study revealed that in the examination of the sub-dimensions of altruism, university students achieved the highest score for the "Helping in Traumatic Situations" sub-dimension. Researchers stated this result as university students tend to immediately rush to help in emergencies such as earthquakes, fires, floods, traffic accidents and injuries, and young people feel more responsibility and empathic thinking in emergency situations.

Altruism is one of the factors affecting organ donation (Tekizoğlu, 2018). In this study, it was determined that there is no direct and strong relationship between the level of altruism and organ donation attitude. Additionally, it was found that this relationship was not statistically significant. This reveals that the factors determining organ donation attitudes are complex and multifaceted. Tekizoğlu (2018) stated in his study that the most emphasized factors in the literature regarding organ donation, both positively and negatively, are religion, family, individual differences and level of knowledge. Demir & Sakallı Uğurlu (2016) stated in their study that the factor that best predicts people's approach to organ donation is their belief in preserving their bodily integrity after death, and that religious pressures and restrictions are also effective in organ donation.

Therefore, it can be concluded that it is important to conduct more comprehensive studies and evaluate different variables to understand and increase organ donation attitudes. In particular, the roles of cultural, religious, social and individual factors in influencing organ donation

attitudes should be examined in more detail. It is thought that these studies will contribute to raising awareness about organ donation and positively affecting the society's attitude towards organ donation.

References

- Armstrong, R. A. (2019). Should Pearson's correlation coefficient be avoided?. *Ophthalmic and Physiological Optics*, 39(5), 316-327. <https://doi.org/10.1111/opo.12636>
- Aydın, O. (2002). Davranış üzerine sosyal etkiler. E. Özkalp (Ed.). *Davranış bilimlerine giriş* içinde (s. 261-278). Eskişehir: Anadolu Üniversitesi Yayınları
- Balgün, E. (2021). *Öğretmen adaylarının organ bağıışı hakkındaki fikirleri* (Master's thesis, Balıkesir Üniversitesi Fen Bilimleri Enstitüsü).
- Bekman, M. (2022). Halkla ilişkiler uygulamalarında nicel araştırma yöntemi: ilişkisel tarama modeli. *Meriç Uluslararası Sosyal ve Stratejik Araştırmalar Dergisi*, 6(16), 238-258. <https://doi.org/10.54707/meric.1143322>
- Bölükbaş N, Eyüpoğlu A., & Kurt P. (2004). Organ bağıışı hakkında üniversite öğrencilerinin düşünceleri. *O.M.Ü. Tıp Dergisi*, 21(2), 73-77.
- Bryman, A., & Cramer, D. (2001) *Quantitative data analysis with SPSS Release 10 for Windows: A Guide for Social Scientists*. London: Routledge. <https://doi.org/10.4324/9780203471548>
- Comrey, A.L., & Lee, H.B. (1992). *A first course in factor analysis*. New Jersey: Erlbaum.
- Creswell, J. W. (2017). *Araştırma deseni: Nicel, nitel ve karma yöntem yaklaşımları* (Çev. Ed. S. B. Demir). Ankara: Eğiten Kitap
- Demir, S., & Sakallı-Uğurlu, N. (2016). Ölüm Belirginliği ve Yardım Hatırlatıcısı ile Organ Bağıışını Teşvik Etme. *I. Sosyal Psikoloji Kongresi*. [https://www.final.edu.tr/docs/spkproceedingpdf\[1546786117\]](https://www.final.edu.tr/docs/spkproceedingpdf[1546786117]).
- Dopelt, K., Siton, L., Harrison, T., & Davidovitch, N. (2022). Revisiting the relationship between altruism and organ donation: Insights from Israel. *International Journal of Environmental Research and Public Health*, 19(12), 7404.
- Düzgüner, S. (2019). Pro-Sosyal Davranışlarda diğerkamlığın (özgecilik) tanımı ve konumu. *Bilimname* (40), 351-373. <https://doi.org/10.28949/bilimname.595847>
- Düzgüner, S., & Sevinç, K. (2020). Farklı bölümlerde okuyan üniversite öğrencilerinde özgecilik ve dini tutum ilişkisi. *Türkiye Sosyal Araştırmalar Dergisi*, 22(3), 783-796.
- Ekici, B. (2022). *Çocuk yoğun bakım ünitesinde beyin ölümü gerçekleşen olguların değerlendirilmesi ve çocuklarda organ bağıışı sıklığının belirlenmesi* (Uzmanlık Tezi). Ege Üniversitesi Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları Anabilim Dalı.
- Erdogan, O., Yucetin, L., Tuncer, M., Keçecioglu, N., Gurkan, A., Akaydin, M., & Yakupoglu, G. (2002). Attitudes and knowledge of Turkish physicians about organ donation and transplantation. *Transplant Proc*, 34(6), 2007-2008. [https://doi.org/10.1016/S0041-1345\(02\)02831-2](https://doi.org/10.1016/S0041-1345(02)02831-2)
- Güner, Y. O., & Cicerali, E. E. (2021). Organ bağıışında psikolojik ve kültürel etmenler. *OPUS International Journal of Society Researches*, 17(38), 5735-5763.

- Gürbüz, S., & Şahin, F. (2018). *Sosyal bilimlerde araştırma yöntemleri*. Seçkin Akademik ve Mesleki Yayınlar, Ankara
- Harman, G., & Çökelez, A. (2017). Fen bilgisi öğretmen adaylarının sosyo-bilimsel bir konu olan organ bağışına yönelik metaforik algıları. *Uşak Üniversitesi Sosyal Bilimler Dergisi*, 10(1), 55-70.
- Jenkin, R. A., Garrett, S. A., & Keay, K. A. (2023). Altruism in death: Attitudes to body and organ donation in Australian students. *Anatomical Sciences Education*, 16(1), 27-46.
- Kavurmaci, M., Karabulut, N., & Koç, A. (2014). Üniversite öğrencilerinin organ bağışı hakkındaki bilgi ve görüşleri. *Hemşirelikte Eğitim ve Araştırma Dergisi*, 11(2), 15-21.
- Kent, B., & Owens RG. (1995). Conflicting attitudes to corneal and organ donation: a study of nurses' attitudes to organ donation. *International Journal of Nursing Studies* 32, 484–492.
- Koçak, A., Aktaş, E. Ö., Şenol, E., Kaya, A., & Bilgin, U. E. (2010). Ege Üniversitesi Tıp Fakültesi öğrencilerinin organ nakli ve bağışı hakkındaki bilgi düzeyi. *Ege Tıp Dergisi*, 49(3), 153-160.
- Milaniak, I., Wilczek-Rużyczka, E., & Przybyłowski, P. (2018, September). Role of empathy and altruism in organ donation decisionmaking among nursing and paramedic students. *In Transplantation proceedings* (Vol. 50, No. 7, pp. 1928-1932). Elsevier. <https://doi.org/10.1016/j.transproceed.2018.02.153>
- Noordzij, M., Dekker, F. W., Zoccali, C., & Jager, K. J. (2011). Sample size calculations. *Nephron Clinical Practice*, 118(4), 319-323. <https://doi.org/10.1159/000322830>
- Özbek, R., Kahyaoglu, M., & Özgen, N. (2007). Öğretmen adaylarının öğretmenlik mesleğine yönelik görüşlerinin değerlendirilmesi. *Sosyal Bilimler Dergisi*, 9(2), 221-232.
- Özbolat, A. (2017). "Organlarımla dirilmek istiyorum."-Organ bağışının dini-toplumsal arkaplanı. *Çukurova Üniversitesi İlahiyat Fakültesi Dergisi (ÇÜİFD)*, 17(1), 61-87. <https://doi.org/10.30627/cuilah.326050>
- Özen, Y. & Gül, A. (2007). Sosyal ve Eğitim Bilimleri Araştırmalarında Evren- Örneklem Sorunu, *KKEFD/JOKKEF*, 15, 395-422.
- Özer, F. G., Karamanoğlu, A. Y., Beydağ, K. D., Fidancıoğlu, H., Akıncı, E., Şanlı, İ., ... & Urak, S. (2008). Sağlık yüksekokulunda öğrenim gören bir grup öğrencinin organ nakli/bağışına yönelik görüşleri ve bilgi düzeylerine eğitimin etkisi. *TSK Koruyucu Hekimlik Bülteni*.
- Parisi, N., & Katz, I. (1986). Attitudes toward posthumous organ donation and commitment to donate. *Health Psychology*, 5(6), 565.
- Rios, A., Febrero, B., Martinez-Alarcon, L., Lopez-Navas, A., Sanchez, J., Guzman, D., ... & Parrilla, P. (2010, October). Evaluation of attitudes toward living organ donation: a multicenter study of compulsory secondary school education teachers. *In Transplantation proceedings*, 42(8), 3106-3108
- Rudge, C., Matesanz, R., Delmonico, F. L., & Chapman, J. (2012). International practices of organ donation. *British journal of anaesthesia*, 108(suppl_1), i48-i55. <https://doi.org/10.1093/bja/aer399>
- Schober, P., Boer, C., & Schwarte, L. A. (2018). Correlation coefficients: appropriate use and interpretation. *Anesthesia & analgesia*, 126(5), 1763-1768. <https://doi.org/10.1213/ANE.0000000000002864>

- Sharp, C., & Randhawa, G. (2014). Altruism, gift giving and reciprocity in organ donation: A review of cultural perspectives and challenges of the concepts. *Transplantation Reviews*, 28(4), 163-168.
- Silk, J. B., & House, B. R. (2011). Evolutionary foundations of human prosocial sentiments. *Proceedings of the National Academy of Sciences*, 108(supplement_2), 10910-10917. <https://doi.org/10.1073/pnas.1100305108>
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Pearson
- Tay, M. (2016). Türkiye’de doku ve organ naklinin önemi. *Sağlık Akademisyenleri Dergisi*, 3(3), 106-110.
- Tekizoğlu, F. Y. (2018). Organ bağıışı: bireylerin kararlarını etkileyen psikolojik faktörler. *Muhakeme Dergisi*, 1(1), 21-35. <https://doi.org/10.33817/muhakeme.413846>
- Tilif, S., Gürkan, A., Kaçar, S., Varılsüha, C., Karaca, C., Onursal, K., & Ölmez, M. (2006). Organ bağıışına etki eden faktörler. *Turkish Journal of Surgery*, 22(4), 133-136.
- Türkoğlu, A. Y., & Öztürk, N. (2019). Sosyo-bilimsel konulara ilişkin fen bilgisi öğretmen adaylarının zihinsel modelleri. *Başkent University Journal of Education*, 6(1), 127-137.
- URL 1. <https://www.akdenizorgannakli.net/index.php/akdeniz-organ-nakli-merkezi-organ-nakilleri/97-organ-nakli/159-organ-nakli-nedir>
- Ümmet, D., Ekşi, H., & Otrar, M. (2013). Özgecılık (altruizm) ölçeğı geliştirme çalışması. *Değerler Eğitimi Dergisi*, 26, 301-321.
- Üzümçeker, E., Gezgin, G. N., & Akfırat, S. (2019). Sosyal ve evrimsel psikolojide insan özgeciliğı bilmecesi. *Yaşam Becerileri Psikoloji Dergisi*, 3(5), 93-110. <https://doi.org/10.31461/ybpd.559805>
- Vatanoğlu, E.E. (2007). *Türkiye’de yasal ve etik boyutuyla organ nakli hakkında anket araştırması ve sonuçları* (Doktora Tezi). İstanbul Üniversitesi Sağlık Bilimleri Enstitüsü
- Yazıcı Sayın, Y. (2016). Turkish validity and reliability of organ donation attitude scale. *Journal Of Clinical Nursing*, 25(5-6), 642-655. <https://doi.org/10.1111/jocn.12943>
- Yılmaz, E. (2012). Organ ve doku nakli. *Sağlık Hukuku Digestası Dergisi*, 2(2), 203-230.