

*Araştırma Makalesi/Research Article***Knowledge and Attitudes of the Turkish Population about Cadaver and Organ Donation*****Türk Popülasyonunun Kadavra ve Organ Bağışı Hakkında Bilgi ve Tutumları***

Yusuf SEÇGİN¹, Fatıma Feyza SAĞLAM², Sıla KAYA³, Fatma Zehra TEKİN⁴, Zeynep Zekiye KARAOĞLAN⁵, Nesibe YILMAZ⁶

Abstract: Objective: Cadaver is an indispensable educational tool for anatomy and the widespread use of cadaver donation is of critical importance for this discipline. Organ donation is the permission of an individual to use his/her tissues and organs for the treatment of others during his/her life or after his/her death. The aim of this study was to evaluate the level of knowledge and attitudes of individuals in Turkish society about cadaver and organ donation. Methods: The study was conducted by applying a questionnaire consisting of 27 questions to 191 individuals between the ages of 18-55. The questionnaire included demographic questions, questions about cadaveric donation and organ donation. Frequency and chi-square analyses were used to analyze the questions. Results: Of the 191 individuals in the study, 157 stated that they had heard of cadaver donation before, and 187 stated that they had heard of organ donation before. Of the 157 individuals who had heard of cadaver donation, 109 were health care workers or individuals receiving health education. The significant relationship between being a health worker or health educated individual and hearing about cadaveric donation was analyzed by chi-square test and a significant difference was found ($p<0.05$). 157 individuals who heard about cadaver donation were asked from which source they heard about it and 62 individuals answered school-lecture-seminar. 187 individuals who heard about organ donation were asked from which source they heard about it and 81 individuals answered media-internet. To the question "Have you donated cadavers and organs?", 2 individuals answered that they have donated cadavers, and 5 individuals answered that they have donated organs. Conclusions: The results of our study showed that the number of individuals who donated cadavers and organs was low and the number of individuals who wanted to donate cadavers and organs in the future was also low. Necessary social awareness and public policies on cadaver and organ donation should be established.

Keywords: Cadaver, Cadaver donation, Organ, Organ donation.

Öz: Amaç: Kadavra anatomi bilim dalının vazgeçilemez bir eğitim aracı olup kadavra bağışının yaygınlaşması bu bilim dalı için kritik önem arz etmektedir. Organ bağışı bireyin yaşamı sırasında ya da yaşamını yitirdikten sonra doku ve organlarını başkalarının tedavisi için kullanılmasına izin vermesidir. Bu çalışmanın amacı Türk toplumundaki bireylerin kadavra ve organ bağışı hakkındaki bilgi düzeyi ve tutumlarını değerlendirmektir. Gereç ve Yöntem: Çalışma 18-55 yaş aralığındaki 191 bireye 27 sorudan oluşan anket uygulanarak gerçekleştirilmiştir. Anket demografik sorular, kadavra bağışı ve organ bağışı ile ilgili sorular içermekte idi. Soruların analizi için frekans ve ki-kare analizleri kullanılmıştır. Bulgular: Çalışmada yer alan 191 bireyden 157 tanesi daha önce kadavra bağışını duyduğunu, 187 tanesi ise daha önce organ bağışını duyduğunu ifade etmiştir. Kadavra bağışını duyan 157 bireyden 109 tanesi sağlık çalışanı ya da sağlık eğitimi gören bireylerden oluştuğu görüldü. Sağlık çalışanı ya da sağlık eğitimi gören birey olma ile kadavra bağışını duyma arasında anlamlı ilişki ki-kare testi ile

¹Sorumlu yazar: Dr. Öğr. Üyesi, Karabük Üniversitesi, Tıp Fakültesi, ORCID: 0000-0002-0118-6711, yusufsecgin@karabuk.edu.tr

Assist. Prof., Karabük University

²Lisans Öğrencisi, Karabük Üniversitesi, Tıp Fakültesi, ORCID: 0009-0008-0684-282X, fatimafeyzasaglam@gmail.com

Undergraduate student, Karabük University

³Lisans Öğrencisi, Karabük Üniversitesi, Tıp Fakültesi, ORCID: 0009-0009-2787-8845, silakaya.20@gmail.com

Undergraduate student, Karabük University,

⁴Lisans Öğrencisi, Karabük Üniversitesi, Tıp Fakültesi, ORCID: 0009-0009-3622-5176, fatmazehrakn14@gmail.com

Undergraduate student, Karabük University

⁵Lisans Öğrencisi, Karabük Üniversitesi, Tıp Fakültesi, ORCID: 0009-0009-2385-9049, zeynepzkaraoglan@icloud.com

Undergraduate student, Karabük University

⁶Dr. Öğr. Üyesi, Karabük Üniversitesi, Tıp Fakültesi, ORCID: 0000-0002-5527-8507, nesibeyilmaz@karabuk.edu.tr

Assist. Prof., Karabük University

incelendi ve anlamlı fark bulundu ($p<0,05$). Kadavra bağışını duyan 157 bireye hangi kaynaktan duydukları soruldu ve 62 birey okul-ders-seminer cevabını verdi. Organ bağışını duyan 187 bireye hangi kaynaktan duydukları soruldu ve 81 birey medya-internet cevabını verdi. Kadavra ve organ bağışını yaptınız mı sorusuna 2 kişi kadavra bağışını yaptım, 5 kişi organ bağışını yaptım cevabını verdi. Sonuç: Çalışmamız sonucunda kadavra ve organ bağışını yapan birey sayısının düşük olduğu ve ayrıca ileride kadavra ve organ bağışını yapmak isteyen birey sayısının da düşük olduğu görüldü. Kadavra ve organ bağışını konusunda gerekli toplumsal bilinçlendirme ve kamu politikaları oluşturulmalıdır.

Anahtar Kelimeler: Kadavra, Kadavra bağışını, Organ, Organ bağışını.

Introduction

The permission to use part or all of the body for scientific studies after death is called cadaver donation. Cadaver is an important course material in terms of anatomy science and there should be enough cadavers in the relevant departments of faculties. In our country, cadavers are donated to anatomy departments in 2 ways. The first is through the will of volunteers / posthumous consent of families, and the second is through the donation of deceased orphans to the relevant departments of faculties. However, despite this, there are faculties in our country that do not have cadavers. Although there are technological developments that can be used instead of cadavers in our digitalized world, cadavers are still an indispensable course material of anatomy science (Gürbüz et al., 2004; Kesmezacar et al., 2024; Ortadeveci and Öztürk, 2023).

Organ donation is the giving of organs or organs to individuals with organ failure while they are alive or after their death. The individual who wants to donate organs must be over 18 years old and mentally stable. In addition, the approval of at least 2 witnesses and a physician is required. If cadaveric organ donation is to be made after death, the individual must be brain dead, his/her organs must be usable, and his/her relatives must give permission. Whether brain death has occurred is determined by a 2-person committee consisting of a neurologist or neurosurgeon and an anesthesiologist or intensive care specialist. Many organs or tissues such as kidney, liver, cornea, heart, bone marrow, skin, blood, pancreas, small intestine can be donated. As with cadaver donation, the level of organ donation is not sufficient in our country (Kavurmacı et al., 2014; Yaşar et al., 2008; Yıldız et al., 2017). In order to increase this number, the “National Organ and Tissue Transplantation Coordination System” was established within the Ministry of Health in the early 2000s. Through this system, it is aimed to ensure more effective coordination, increase the number of donations, and ensure that donations are ethical and fair (Savaşer et al., 2012).

Individuals' attitudes and thoughts about cadaver and organ donation are related to their socio-economic level, educational level and religious beliefs (Dumanlı et al., 2019).

The number of cadaver and organ donations in a country is directly proportional to the level of development of that country. Because as the level of development of the country increases, the legal, ethical, medical, technological, social and economic frameworks on cadaver and organ donation increase (Kara et al., 2012).

The aim of this study was to evaluate the level of knowledge and attitudes about cadaver and organ donation in our country.

Methods

The study was approved by the decision of Karabük University Non-Interventional Local Ethics Committee dated 15/10/2024 and numbered 2024/1963. The study was conducted on 191 individuals between the ages of 18-55. Individuals were asked to fill out a questionnaire consisting of 27 questions. The first 7 questions were about demographic information, and the other 20 questions were about cadaver and organ donation. In the demographic information section, the participants were asked “Name-surname, age, gender, education level, are you a health worker or health student, education level of your mother, education level of your father”. In the section on cadaver and organ donation, the participants were asked “Have you heard of cadaver donation, if you have heard of cadaver donation from which source, have you heard of organ donation, if you have heard of organ donation from which source, do you know that organ donation can be from both living and dead individuals, Have you donated cadavers, do you want to donate cadavers in the future, if you want to donate cadavers in the future, please mark the reason, if you do not want to donate cadavers in the future, please mark the reason, Have you donated organs, if you donated organs, please specify which organ, would you like to be an organ donor in the future if you have not been an organ donor, if you want to be an organ donor in the future, please mark the reason, If you do not want to be an organ donor in the future, please mark the reason, do you have a belief in a creator, does your belief have an effect on organ donation, do your beliefs have any effect on cadaver donation, do you know that health students teach laboratory courses on cadavers, would you donate the cadavers of your first-degree relatives, would you donate the organs of your first-degree relatives”. The survey questions were determined by modifying existing surveys conducted in Turkey.

The data obtained from the questionnaire were analyzed using SPSS 21 package program and $p < 0.05$ was considered significant. The relationship between categorical data was analyzed with chi-square test.

Results

The study was conducted on 70 male and 121 female subjects, and the ages of the male and female subjects were 21 (18-55) and 20 (19-50) years, respectively. The age of the individuals had a significant difference in terms of gender. Of the individuals who participated in the survey, 9 were high school graduates, 169 were undergraduate, 7 were graduates, and 6 were doctoral graduates. The mothers of 65 individuals were primary school graduates, 41 were middle school graduates, 48 were high school graduates, 30 were undergraduates, 5 were graduates, and 2 were doctoral graduates. The fathers of 31 individuals were primary school graduates, 40 were middle school graduates, 68 were high school graduates, 43 were undergraduate, 7 were graduates, and 2 were doctoral (Figure 1).

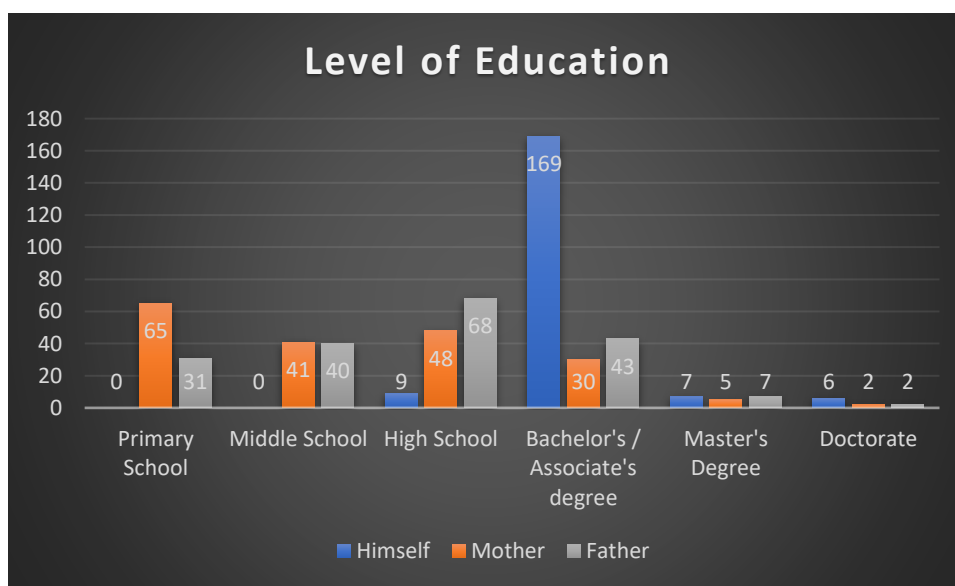


Figure 1. Levels of Education

The 121 people who participated in the survey were health care workers or individuals in health education. When asked if they had heard of cadaver donation, 157 respondents answered yes and 34 said no (Figure 2).

Of the individuals who answered yes, 109 were health workers or health educated individuals. Of the individuals who answered no, 13 of them were health workers or individuals receiving health education. The chi-square test (Continuity Correction) was used to compare the question of whether you are a health worker, or a health educated individual with the question of whether you have heard about cadaver donation and a significant result was obtained ($p=0.01$).

Individuals who heard about cadaver donation were asked from which source they heard about cadaver donation and 60 of them answered as media-internet, 62 as school-course-

seminar, 18 as family-friend circle, 10 as both media-internet and school-course-seminar, and 7 as all three. Among the individuals who participated in the survey, 187 stated that they had heard of organ donation, while 4 stated that they had not (Figure 3).

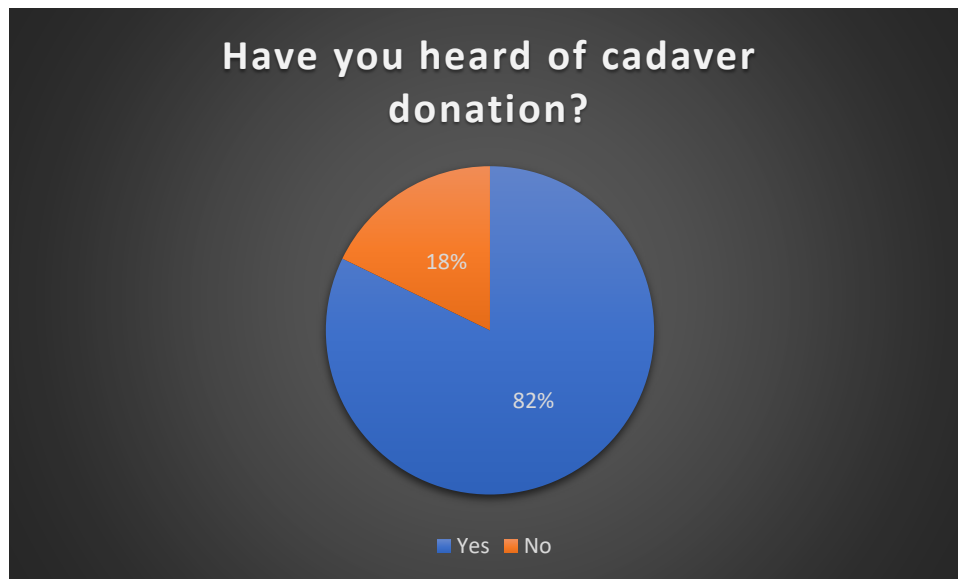


Figure 2. Cadaver Donation Sensation Chart

The chi-square test (Fisher's Exact Test) was used to compare the question "Are you a health worker or a person receiving health education?" with the question "Have you heard about organ donation?" and no significant results were obtained ($p=0.140$). Individuals who heard about organ donation were asked from which source they heard about organ donation and 81 of them answered as media-internet, 66 as school-course-seminar, 18 as family-friend circle, 16 as both media-internet and school-course-seminar and 6 as all three.

To the question "Do you know that organ donation can be from both living and dead people?" 153 respondents said yes. Of these individuals, 101 were health workers or individuals receiving health education. The chi-square test (Continuity Correction) was used to compare the question "Are you a health worker or a health educated individual?" with the question "Do you know that organ donation can be from both the living and the dead?" and a significant result was obtained ($p=0.333$).

There were 2 yes answers to the question "Have you donated cadavers?" and 1 of these individuals was a health worker or a health education student. Individuals who did not donate cadavers were asked whether they would consider cadaver donation in the future and 58 of them answered yes and 131 of them answered no. Those who would consider cadaver donation in the future were asked the reason for this and 36 of them said I want my body to be useful after death, 11 said I want to be useful to students, 11 said I see it as a humanitarian duty. Those who

do not plan to donate cadavers in the future were asked why and 53 of them said there was no specific reason, 19 of them said they did not have enough information, 37 of them said religious reasons, 19 of them said psychological reasons, and 3 of them said family pressure.

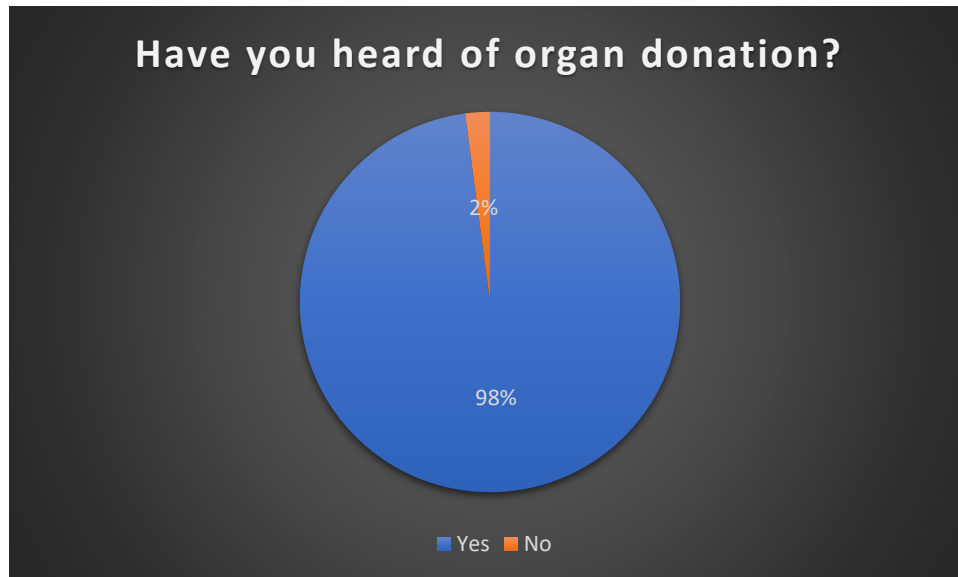


Figure 3. Organ Donation Sensation Chart

There were 2 yes answers to the question “Have you donated cadavers?” and 1 of these individuals was a health worker or a health education student. Individuals who did not donate cadavers were asked whether they would consider cadaver donation in the future and 58 of them answered yes and 131 of them answered no. Those who would consider cadaver donation in the future were asked the reason for this and 36 of them said I want my body to be useful after death, 11 said I want to be useful to students, 11 said I see it as a humanitarian duty. Those who do not plan to donate cadavers in the future were asked why and 53 of them said there was no specific reason, 19 of them said they did not have enough information, 37 of them said religious reasons, 19 of them said psychological reasons, and 3 of them said family pressure.

There were 5 yes answers to the question “Have you donated organs?” and 1 of these individuals was a health worker or a health education student. Those who answered yes were asked which organs they donated and all organs that could be donated were answered. Individuals who did not donate organs were asked whether they would consider organ donation in the future and 128 people answered yes and 58 people answered no. Those who would consider organ donation in the future were asked why and 79 people said I want my organs to be useful after death, 15 people said I want to be useful to students, 27 people said I see it as a humanitarian duty, 4 people said I want my organs to be useful after death and I want to be useful to students, and 3 people chose all answers. Those who did not plan to donate organs in

the future were asked why and 30 of them answered that there was no specific reason, 11 said they did not have enough information, 12 said religious reasons, and 5 said psychological reasons.

To the question “Do you have a belief in a Creator?” 174 people answered yes and 17 people answered no. Individuals who answered yes were asked whether their faith has an effect on organ donation and 82 people answered yes. Individuals who answered yes were asked whether their faith has an effect on cadaver donation and 82 people answered yes to this question.

To the question “Do you know that health students teach their laboratory courses on cadavers?” 153 people answered yes. To the question of whether you would donate the cadavers of your first-degree relatives, 61 people answered yes. To the question of whether you would donate the organs of your first-degree relatives, 123 people answered yes.

Discussion

In this study evaluating the knowledge and attitudes of the Turkish population about cadaveric and organ donation, 82% of the individuals surveyed had heard of cadaveric donation and 98% had heard of organ donation. Of the 157 individuals who had heard of cadaveric donation, 109 of them were health workers or individuals receiving health education. Individuals who heard about cadaver donation were asked where they heard about it and the majority of them answered school-course-seminar. Individuals who heard about organ donation were asked where they heard about it and the majority of them answered media-internet. Among the individuals who participated in the survey, 2 of them reported that they had previously donated cadavers and 5 of them reported that they had donated organs.

Cadaver donation is of critical importance for the training of specialized healthcare personnel in the future and minimizing surgical complications. Because thanks to the cadaver, individuals who receive anatomy education gain the opportunity to see the normal anatomical positions of the structures, the relationship of anatomical structures with each other and variational situations with dissection practice. In fact, nowadays, we see that training is given on cadavers not only in anatomy science but also in other surgical sciences. This contributes greatly to the training of well-equipped health personnel (Boduç and Allahverdi, 2022; Green et al., 2014).

Organ donations can be made while alive or from cadavers after brain death. While 80% of organ donors in European countries donate organs after death, 75% of organ donors in our

country donate while alive. One of the reasons for the low number of cadaveric donations in our country is that families do not give permission. This situation also causes our organ donation rate to be low compared to European countries. In order to prevent this situation, strong communication channels should be established between health personnel and the families of brain dead individuals (Bölükbaş et al., 2004; Özkan and Yılmaz, 2009; Şantaş and Şantaş, 2018).

Ortadeveci and Öztürk (2023) in their study on the Turkish population, only 26 out of 277 individuals (9.4%) donated organs and all of the participants did not donate cadavers (Ortadeveci and Öztürk, 2023). Kesmezacar et al. (2024) in their study on the Turkish population, only 20 out of 633 individuals (3.2%) donated their organs and 23.2% of the remaining individuals stated that they wanted to donate their organs in the future. Among the individuals who did not donate their organs, 8.2% stated that they would definitely not donate in the future. 68.2% of the individuals stated that they heard about organ donation from the media-internet (Kesmezacar et al., 2024). Özer et al. (2010) in their study on the Turkish population, they reported that 75.7% of 460 individuals did not have sufficient information about organ donation and only 1.7% of them donated organs (Özer et al., 2010). Vicdan et al. (2011) in a study of 170 nursing students, it was reported that 94.7% of the individuals had not donated organs before and 14.5% of these individuals had no knowledge about organ donation. It was reported that 46.9% of those who had information obtained information from radio and television (Vicdan et al., 2011). In our study, only 1% and 2.6% of the individuals who participated in the survey were cadaver and organ donors, respectively. 98% of the individuals stated that they had heard about organ donation before and 82% had heard about cadaveric donation. When asked where did you hear about cadaver donation, 39.49% of the individuals answered school-course-seminar, and when asked where did you hear about organ donation, 43.42% of the individuals answered media-internet. These results show that the rate of organ and cadaver donation is very low in our country.

Conclusion

Cadaver and organ donation rates are low in our country. In order to increase these rates, necessary legal regulations, psycho-social support and educational support are required. We believe that this study will contribute to the formation of the necessary support and legal regulations as it reveals the striking facts about cadaver and organ donation.

Ethical Statement: The study was approved by the decision of Karabük University Non-Interventional Local Ethics Committee dated 15.10.2024 and numbered 2024/1963.

Conflict of Interest: The authors declare no conflicts of interest.

Author Contributions: Idea: YS, NY; Design: YS, NY; Check: YS, NY; Sources: FFS, SK, ZZK, FZT; Ingredients: YS, FFS, SK, ZZK, FZT; Data collecting: FFS, SK, ZZK, FZT; Analysis: YS; Literature Review: YS, NY; Posted by: YS, NY; Critical Review: YS, NY.

Peer Review: Internal/External independent.

Funding: This research received no external funding.

Acknowledgements: We would like to thank the organizers and participants of 2024 Sağlık Bilimleri Festivali (Sağlıkfest) for their support to this study.

References

- Boduç, E., & Allahverdi, T. D. (2022). Medical students' views on cadaver and organ donation. *Transplantation Proceedings*, 54(8), 2057-2062. <https://doi.org/10.1016/j.transproceed.2022.08.021>.
- Bölükbaş, N., Eyüpoğlu, A., & Kurt, P. (2004). Organ bağışı hakkında üniversite öğrencilerinin düşünceleri. *Journal of Experimental and Clinical Medicine*, 21(2), 73-77. <https://doi.org/10.5835/jecm.v21i2.107>.
- Dumanlı, A., Ak, Ö. F., Güleler, R. S., Horzum, F., ... Öz, G. (2019). Afyon Kocatepe Üniversitesi Tıp Fakültesi Öğrencilerinin Organ Veya Doku Nakli Ve Organ Bağışı Hakkında Bilgi Tutum Ve Davranışları. *Kocatepe Tıp Dergisi*, 20(2), 58-62. <https://doi.org/10.18229/kocatepetip.413305>.
- Green, C., Bowden, D., Molony, D., Burke, N., Felle, P., & Dudeney, S. (2014). Attitudes of the medical profession to whole body and organ donation. *the surgeon*, 12(2), 73-77. <https://doi.org/10.1016/j.surge.2013.06.002>.
- Gürbüz, H., Karlıkaya, E., & Mesut, R. (2004). Kadavra bağışı üzerine görüşler. *Türkiye Klinikleri J Med Ethics*, 12(4), 234-241.
- Kara, S., Salman, Z., & Öngel, K. (2012). Süleyman Demirel Üniversitesi Tıp Fakültesi sağlık personelinin organ bağışına bakışı. *Ankara Sağlık Hizmetleri Dergisi*, 11(1), 33-39. https://doi.org/10.1501/Ashd_0000000074.
- Kavurmacı, M., Karabulut, N., & Koç, A. (2014). Üniversite öğrencilerinin organ bağışı hakkındaki bilgi ve görüşleri. *Hemşirelikte Eğitim ve Araştırma Dergisi*, 11(2), 15-21.
- Kesmezacar, F. F., Demirarslan, E. I., & Kesmezacar, Ö. (2024). Meslek Yüksekokulu Öğrencilerinin Organ, Kadavra Ve Plazma Bağışı Hakkında Bilgi Ve Tutumları. *Ağrı Tıp Fakültesi Dergisi*, 2(1), 10-18. <https://doi.org/10.61845/agrimedical.1332462>.
- Ortadeveci, A., & Öztürk, H. (2023). Tıp Fakültesi ve Diş Hekimliği Fakültesi Öğrencilerinin Gözünden Kadavra Etiği, Uygulamaları ve Beden Bağışı. *Mersin Üniversitesi Tıp Fakültesi Lokman Hekim Tıp Tarihi ve Folklorik Tıp Dergisi*, 13(3), 692-700. <https://doi.org/10.31020/mutftd.1316876>.
- Özer, N., Sarıtaş, S., & Özlü, Z. K. (2010). Hemşirelik Öğrencilerinin Organ Nakli Ve Bağışı Konusundaki Bilgi Ve Düşüncelerinin İncelenmesi. *Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi*, 13(2), 1-11.
- Özkan, S., & Yılmaz, E. (2009). Hasta yakınlarının organ bağışı ile ilgili bilgi ve tutumları. *Sosyal Politika Çalışmaları Dergisi*, 17(17), 18-29.
- Savaşer, S., Mutlu, B., Çağlar, S., Doğan, Z., & Canbulat, N. (2012). Hemşirelik son sınıf öğrencilerinin organ bağışına bakışları. *Florence Nightingale Journal of Nursing*, 20(1), 1-9.
- Şantaş, G., & Şantaş, F. (2018). Türkiye'de organ bağışının mevcut durumu ve organ bağışında stratejik iletişimin önemi. *Süleyman Demirel Üniversitesi Sağlık Bilimleri Dergisi*, 9(2), 163-168. <https://doi.org/10.22312/sdusbed.298160>.
- Vicdan, A. K., Peker, S., & Üçer, B. (2011). Akşehir Sağlık Yüksekokulu Öğrencilerinin Organ Bağışı ile İlgili Tutumlarının Belirlenmesi. *TAF Preventive Medicine Bulletin*, 10(2), 175-180.
- Yaşar, M., Oğur, R., Uçar, M., Göçgeldi, E., Yaren, H., Tekbaş, Ö. F., & Korkmaz, A. (2008). Bir Sağlık Meslek Yüksekokulu son sınıf öğrencilerinin organ bağışı konusundaki tutumları ve tutumlarına etki eden faktörler. *Journal of General Medicine/Genel Tıp Dergisi*, 18(1), 33-37.
- Yıldız, İ., Sabuncuoğlu, M. Z., & Koca, Y. S. (2017). Organ Nakli Merkezi Kurulması Bölgede Organ Bağışını Etkiler mi?/Does the establishment of organ transplant center effect the organ donation in the region? *Medical Journal of Süleyman Demirel University*, 24(1), 8-11.