



## Attitudes' of University Students towards Organ Donation and Transplantation

### Üniversite Öğrencilerinin Organ Bağışına ve Nakline Yönelik Tutumları

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#### Abstract

**Objective:** The purpose of this study was to identify the consciousness and attitudes toward organ and tissue donation and transplantation among the university students in faculty of economics and administrative sciences, department of health management.

**Material-Method:** This study used a cross-sectional approach. It was conducted between December 2017 and March 2018. Data were collected from 362 students in faculty of economics and administrative sciences, department of health management.

**Results:** According to the results of this study, health management students support organ and tissue donation and transplantation (82%). Despite the fact that a small number of students were generally willing to donate their organs and tissue (3.9%), the majority of the students are in a positive manner toward donation and transplantation. The basic reasons for the students who do not want to donate their tissues and organs are belief (33.8%) and fear (46.2%). When looking at the regression model, being informed is statistically significant predictor for the positive attitude toward organ and tissue donation and transplantation. The other independent variables (gender, age, income, rural / urban) have no role in the regression model.

**Conclusions:** Although the students have knowledge and positive attitude about organ and tissue transplantation and donation, it is seen that the level of consciousness is not sufficient to be a donor. In order to overcome these obstacles, students who do not want to make donations due to fear, family influence or belief need to be educated.

**Keywords:** Organ Donation, Organ Transplantation, Knowledge, Attitude.

#### Özet

**Amaç:** Bu çalışmanın amacı, sağlık yönetimi bölümünde okuyan üniversite öğrencileri arasında organ/doku bağıışı ve nakli konusundaki bilinç ve tutumları tespit etmektir.

**Materyal-Metot:** Bu çalışmada kesitsel bir yaklaşım kullanılmıştır. Çalışma, Aralık 2017-Mart 2018 tarihleri arasında gerçekleştirilmiştir. Araştırma, bir kamu üniversitesinin sağlık yönetimi bölümündeki 362 öğrenciden veri toplanmıştır.

**Bulgular:** Bu araştırmanın sonuçlarına göre sağlık yönetimi öğrencileri organ ve doku bağıışı ve transplantasyonunu desteklemektedir (%82). Az sayıda öğrenci (%3,9), organ ve dokularını bağıışlamaya istekli olmasına rağmen öğrencilerin çoğunluğu bağıış ve transplantasyona karşı olumlu bir tutum içindedir. Doku ve organlarını bağıışlamak istemeyen öğrencilerin temel nedenleri din (%33,8) ve korkudur (%46,2). Regresyon modeline bakıldığında, bilgilendirilmek organ/doku bağıışı ve transplantasyonuna yönelik olumlu tutum için istatistiksel olarak anlamlı bir belirleyicidir. Diğer değişkenlerin (cinsiyet, yaş, gelir, kırsal / kentsel) regresyon modelinde rolü bulunmamıştır.

**Sonuç:** Öğrencilerin organ nakli ve bağıışı konusunda bilgisi ve pozitif tutumu bulunsa da, bağıışçı olma konusunda bilinç düzeyleri yeterli olmadığı görülmektedir. Korku, aile etkisi ya da inanç gibi nedenler ile bağıış yapmak istemeyen öğrencilerin bu engelleri aşması için bu konuda eğitilmesi gerekmektedir.

**Anahtar kelimeler:** Organ Bağıışı, Organ Nakli, Bilgi, Tutum.

#### Introduction

Organ transplantation not only improves the length and quality of life of recipients but also provides effective use of limited health resources. So organ donation is an important health policy question facing all health services worldwide. Organ transplantation is widely accepted as a solution to organ failure at the end of the stage. But the lack of adequate organ donation for transplantation is a major problem and many patients have to wait long time because no suitable donor has been found (1). The number of patients who need organ transplants is increasing day by day, but the number of

donors who want to donate is still low (2).

Some surveys show that the level of education, socio-economic status and being young influence the donation of organ positively (1, 3-6). Many studies have emphasized that youths generally have a more positive attitude to organ donation than other populations (7, 8). Demographic, socioeconomic and cultural characteristics influence the willingness of people to donate their organs (9, 10). The main reasons for the unwillingness to donate are misinformation and the reluctance of relatives (11, 12). On the other hand researches shows that religious reasons were commonly cited

as barriers (1, 4, 6, 13, 14). Although religion is seen as an obstacle, the fact that there is no drawback of the donation of organ has been mentioned in the negative decision.

There are several reasons to argue why students are interested in this study. The most obvious answer is students are available for study and often are required to participate in research studies. However, the more important reason why students are examined is university students are younger and healthier and so they are potential to donate. In literature, it is stated that in order to solve the organ donation problem, every individual in the society, especially health professionals, should have sufficient knowledge and consciousness (15-17). And the education level of health professionals is positively related to their personal willingness to donate organs (18). Although in health management departments, some lectures (such as epidemiology, ethics, health and society) that emphasize the importance of organ transplantation and donation are provided, it is thought that it is not enough to change the attitudes of students. And also it is believed that health managers play an important role in their efforts to increase organ donation because of their communication with patients and their relatives. The present student-based study, intended to identify consciousness and attitudes toward organ and tissue donation (OTD) and transplantation among the university students which are studying in the health management department.

The purpose of this investigative study was to identify the consciousness and attitudes toward human organ/tissue donation and transplantation among the university students which are studying in department of health management in the faculty of economics and administrative science.

## Material and Methods

This study used a cross-sectional approach. It was conducted between December 2017 and March 2018. It was performed in the department of health management of the faculty of economics and administrative science. After detailed literature review it was decided to perform a new questionnaire. In studies which is hold in Turkey, some scales was used but reliability and validity could not calculated in these studies because the researchers use the descriptive questions (15, 17, 19, 20). In this study, the researchers formed a questionnaire which is more comprehensive and appropriate for the study group with the opinions of four academicians who are experts in their fields and by taking into consideration the similar questionnaires (17, 20-25). The Cronbach Alpha test was used to determine the reliability of the measurement. The measure was found acceptable with an overall Cronbach's Alpha 0.77.

The measurement instrument includes two parts; the first one is about descriptive questions and there are 5 questions (age, gender, marital status, rural/urban, family income), the second part including 26 categorical questions is related with the attitudes and knowledge towards OTD. Each item has a "yes," "no," or "I don't know" answer options. The processing of the data was done using the IBM SPSS software package, version 20. Students' general characteristics and organ or tissue transplantation-related characteristics were analyzed

with frequencies, and percentiles. We identified predictors of supporting donation and transplantation by conducting multiple logistic regression. Adequacy of model fit is reported with the Hosmer and Lemeshow goodness-of-fit test.

Of the 397 students who received the questionnaire, 362 students completed it yielding a 91.1% response rate (male, n=162, female, n=200). All respondents were assured that their responses would be treated with complete confidentiality and used only for research purposes. The entire survey took 10 to 15 minutes and each participant completed an in-classroom survey during school hours under the instruction of a lecturer.

## Results

All 362 participants are students in the department of health management in the faculty of economics and administrative science. Age ranged from 18 to 25 years, with a mean age of 20.9 years. About 55.2% of the participants were female, and the remaining 44.8% were male. Of the student's families, 83.1% have been living in a city and the most of them have a moderate income (84.3%).

**Table 1.** General characteristics of the students (n=362)

	f	%
<b>Age</b>		
≤20	181	50.0
≥21	181	50.0
<b>Gender</b>		
Female	200	55.2
Male	162	44.8
<b>Rural / Urban</b>		
<b>Rural</b>	<b>61</b>	<b>16.9</b>
<b>Urban</b>	<b>301</b>	<b>83.1</b>
<b>Family Income</b>		
Low	43	11.9
Middle	305	84.3
High	14	3.9

According to Table 2 a total of 297 participants (82%) approve tissue/organ transplantation, 53.4% students had received formal or informal knowledge on donation and transplantation. Only 9.9% of the participants has a family member who has experienced with transplantation. 3.9% were willing to donate. The main reasons of the disapproval the transplantation are fear (46.2%), to think sin according to their belief (33.8%) and absence of family consent (20%).

Virtually most of health management students (97.2%) think that if they donate their organs they will have done something good for someone (Table 3). The majority (94.2%) also stated that tissue/organ transplantation is an acceptable form of a medical treatment. In general, many of the students reported transplantation and donation are an important topic that should be focused and supported by media and need to be supported financially. Only the 29.3% of the students know the necessity of the family consent.

Table 4 presented the maximum likelihood estimates of the logistic models for factors associated with supporting donation and transplantation. The estimated coefficients for the likelihood ratio chi-square were significant ( $P < 0.05$ ). In the output below, the predictor variable of the getting information about transplantation and donation is significant ( $p < 0.05$ ). The odds of supporting donation and transplantation is about 7.7 times greater for the students which had been informed about donation and transplantation than other students ( $\beta = 0.82$ ). Results of the Hosmer-Lemeshow goodness-of-fit test indicated a good calibration ( $p = 0.59$ ).

### Discussion

The students of the health management will have an important role in health sector. Many of these students will take managerial duties in hospitals or in areas related to OTD and transplantation. It is important to improve awareness about organ and tissue donation of these students for a more sensitive and conscious society. Lack of awareness about OTD and transplantation is a major problem among health management students, as in the community.

In this research, it was found that health management students support OTD and transplantation (82%). These results are consistent with prior studies demonstrating that health related faculty students have a positive attitude toward organ

**Table 2.** Tissue / organ transplantation characteristics of the students

	f	%
<b>Do you support donation and transplantation?</b>		
Yes	297	82.0
No	65	18.0
<b>Have you ever been informed about transplantation?</b>		
Yes	170	46.9
No	192	53.1
<b>Do you have any family members who has experienced of organ transplantation?</b>		
Yes	36	9.9
No	326	90.1
<b>Have you donated your tissue/organs?</b>		
Yes	14	3.9
No	348	96.1
If you don't think of donating your tissue/organs, what is the main reason of this?		
I think it is sin religiously	22	33.8
I think that my family will not consent	13	20.0
I am afraid	30	46.2
<b>Total</b>	<b>65</b>	<b>100.0</b>

**Table 3.** Tissue / organ transplantation attitudes of the students (%)

Items Related Tissue/Organ Donation and Transplantation	Yes	No	No Idea
If I donate my tissue / organ, I will have done something good for the people.	97.2	1.4	1.4
Tissue / organ transplantation is an acceptable form of a medical treatment.	94.2	1.7	4.2
If it is a necessity, the tissue / organ can transplate to me.	93.1	2.2	4.7
I think that more emphasis should be given to the issues of tissue / organ transplantation and donation.	93.1	2.2	4.7
I think that more resources should be allocated for tissue/organ transplantation.	92.0	1.7	6.4
I think tissue/organ transplantation and donation should be further supported by the media.	90.9	1.9	7.2
My response would be positive if I was asked to donate my tissue/organ for my relatives.	90.1	1.7	8.3
If you donate my tissue/organ, it makes me happy that a piece will continue to live after I die.	88.1	6.6	5.2
I think to donate my tissue/organ to people who I do not know.	81.4	2.5	16.1
I think tissue organ transplantation and donation are religiously appropriate.	73.2	4.4	22.4
I think tissue/organ transplantation cost worth saving one's life.	72.4	9.7	18.0
I think tissue/organ transplantation and donation are legally appropriate.	72.1	5.5	22.4
I think it is appropriate to use biologically derived tissue/organ from animals for the human body for therapeutic purposes.	47.9	15.2	36.8
I think it is enough for the person to decide for donation of tissue/organ without family consent.	46.7	29.3	24.0
I think my family will oppose donating my tissue/organ after I die.	22.9	41.4	35.6
I think that filling the Organ Donation Card is enough for organ donation	16.6	39.3	44.0
I think that legal regulations related to organ transplantation and donation in our country are appropriate for today's conditions.	16.3	29.9	53.7
I think it is appropriate to give the tissue/organ for a cost in case of need.	15.8	61.9	22.2
The fact that my body integrity may deteriorate in my life after death is causing me to be anxious about tissue / organ transplantation.	11.1	75.1	13.9
I think that legal regulations related to organ transplantation and donation are sufficient in our country.	7.7	39.0	53.3
If I accepted to donate my tissue/organ, I have anxiety that someone can do something and get my tissues / organs before I die.	7.7	80.9	11.3

**Table 4.** Predictors of supporting donation and transplantation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	-0.380	0.345	1.217	1	0.270	0.684	0.348	1.343
Gender	0.230	0.350	0.432	1	0.511	1.259	0.634	2.502
Rural/Urban	-0.372	0.355	1.092	1	0.296	0.690	0.344	1.384
Low Income			0.777	2	0.678			
Middle Income	-0.301	0.425	0.503	1	0.478	0.740	0.322	1.701
High Income	0.106	0.780	0.018	1	0.892	1.111	0.241	5.129
Information	0.828	0.297	7.740	1	<b>0.005*</b>	2.288	1.277	4.099
Transplantation	0.307	0.519	0.350	1	0.554	1.359	0.491	3.760
Constant	-1.868	0.779	5.742	1	0.017	0.154		

-2 Log likelihood: 323.82  
 Cox & Snell R Square: 0.045  
 Nagelkerke R Square: 0.073  
 Hosmer and Lemeshow Test: 6.439; p=0.598  
 Overall Percentage: 81.9

donation. A study which was conducted by Schaeffner et al. (2004) (26) shows that higher medical education is associated with greater knowledge about and more positive attitude toward organ donation. In this study, the students have significant gaps in formal or informal knowledge regarding the OTD and transplantation (53.1%). Some studies support the fact that medical or health related department students have inadequate knowledge about OTD and transplantation (27-29). This result is not surprising, it can be explained by the absence of a formal course in the department of health management.

Although very few students wanted to donate tissues and organs (3.9%), the majority of students were positive for donations and transplantation. This is similar to the results of other studies in the literature (25, 30, 31). The basic reasons for the students who do not want to donate their tissues and organs are belief (33.8%) and fear (46.2%). Looking at some studies that focus on this issue, it is possible to say that belief may influence donation and transplantation attitudes (28,32, 33). While some studies show that belief motivate the people to donate their tissue or organs others show belief to be a barrier toward donation and transplantation (34-37). The relationship between beliefs and transplantation or donation attitudes, is complex and requires better understanding. In fact, there is no religious rule or regulation for not donating a tissue or organ. Nevertheless, religious and cultural taboos affect attitudes towards OTD and transplantation. (36, 38).

When looking at the regression model, being informed is statistically significant predictor for the positive attitude toward OTD and transplantation. Other variables (gender, age, income, rural/urban) have no role on manner. Similar studies indicate that level of knowledge is related to attitudes of transplantation or donation (39-41).

Organ donation in Turkey is thought to be a lack of organization (42). In accordance with the findings the issue of the donation and transplantation need to be supported financially, religiously and socially by the media, religious authority and governmental regulations. Main reasons are

mistrust on the system, lack of information about donation programs and poor understanding of the brain death concept.

The limitation of this study is sample. These study is limited with the sample of health management students and 91.1% response rate. Additional studies are needed to confirm the results. Next studies may focus on the sample of other programs. The size of sample may be expanded for the generalization. On the other hand, few factors have been evaluated as barrier for donation and transplantation, these factors should be increased in future researches.

## Conclusion

In summary there are 25.656 patients in Turkey according to Ministry of Health (43) in need of an organ transplantation, there are 554 cadaveric donors and 1.597 live donors currently nevertheless 2.151 patient has been transplanted in 2018. The number of organ donors (live or cadaveric) are overwhelmingly lower than the number of patients.

According to findings of this study there is an insufficient knowledge about OTD and transplantation and also being donor among students. The students' lack of knowledge may be due to a deficiency of an appropriate training and similar activities about OTD and transplantation throughout the country. Their families mostly don't like the idea of majority organ transplantation and donation because of the emotional commitment. Belief sometimes may be a barrier in front of the positive attitudes toward donation or transplantation. In some religions it is believed that life after death and the body integrity is important.

Obligation to ask parents looks like another obstacle to be a donor. Organ Donation Card is not valid without family approval for being cadaveric donation after death. As seen in the students response 16.6% students don't know obligation of family consent. Particularly those parents who are less educated and have low socio-economic status, do not have complete information about donation and transplantation process. It is necessary to educate the parents about donation and transplantation.

The recommendations for OTD can be listed as follows:

- State authorities, health administrators and employees have roles in improving awareness for OTD and transplantation. Taking into consideration the culture, beliefs and traditions, it is needed to increase the awareness in cooperation with the media,
- Presidency of Religious Affairs has an important role to play in the dissemination of correct information regarding OTD and transplantation,
- OTD and transplantation should be included in curriculum of the schools and universities
- It should be kept in mind that being a donor is a voluntary work so legal regulations should be developed to encourage individuals and society to become living or cadaver donors.

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