

## HEALTH WORKERS' THOUGHTS ABOUT BRAIN DEATH AND ORGAN DONATION

Salih YILDIRIM<sup>1\*</sup>

### ABSTRACT

*Organ and tissue grafting (transplantation) is the transfer of a healthy, functioning organ or tissue or a portion of one, from either a living or a brain-dead patient, to replace a corresponding but no longer functioning organ or tissue in the body of another patient. The goal of this study was to ascertain the attitudes and knowledge of the doctors and other personnel in our hospital concerning organ donation, to raise awareness of transplantation in health workers, whom we deem to be the driving force in organ donation, and to identify our shortcomings in this regard. The questionnaire in our study was administered to 315 health care personnel who work at Sivas Paradigm (Numune) Hospital. We conducted the 32-question survey on participating staff members with the aim of determining their positions on brain death, whether they were organ donors, their views on organ donation, and any ideas they might have about changes that could be made in our country to increase organ donation. The results obtained were analyzed and evaluated using the descriptive statistical methods of the SPSS 14.0 software package. Of the employees surveyed, 42 (13.3%) indicated they had no knowledge about brain death, 119 (37.7%) declared they had received no in-service training concerning brain death, and 201 (63.8%) said they were not organ donors. In response to the question of what should be done to improve organ donation, 248 (78.7%) recommended explaining its acceptability from a religious standpoint, 171 (54.2%) advised more frequently sharing with the public both the drama of those awaiting transplant surgery and the great joy of those who now have a new lease on life thanks to organ transplants, 139 (44.1%) said it was necessary to explain the issue to the public at intervals on radio and television, 100 (31.7%) endorsed expressing the importance of this issue to health care professionals during the course of their education, and 32 (10%) indicated cash awards should be offered to the loved ones of potential donors. We believe health care workers are the most important group to lead the community in organ donation. It is our considered opinion that our number one priority is to develop training programs with the aim of enhancing the interest and knowledge of those professionals about this subject, and also to utilize the mass media to change society's perspectives concerning the issue.*

### INTRODUCTION

Organ and tissue grafting (transplantation) is the transfer of a healthy, functioning organ or tissue or a portion of one, from either a living or a brain-dead patient, to replace a corresponding but no longer functioning organ or tissue in the body of another patient. Organ transplantation is seen as the last chance for patients suffering organ failure<sup>1</sup>. Organ/tissue donation is the name given to the certified permission granted by a living person of her own free will for the use of her tissues and organs in the treatment of other patients after she has been medically determined to have reached the end of her life<sup>2</sup>. The purpose of organ transplantation is to save the lives of and improve the length and quality of the lives of patients, the failure of whose organs has brought about the end of their lives or decreased the quality of their lives<sup>3</sup>.

### Keywords

Brain Death,  
Organ Donation,  
Donor

Volume: 1  
Issue: 1  
Page: 21-28

Received:  
12.03.2023

Accepted:  
03.06.2023

Available Online:  
20.06.2023



DOI: 10.5281/zenodo.8113931

<sup>1\*</sup> Sivas Numune Hospital, Sivas, Turkey, uzmanuyutucu@windowslive.com, ORCID: 0000-0002-1490-8832

There are two types of organ transplantation: from live donors and from cadavers. In live donor transplant, the organ is taken from a healthy, living person. Laws provide for a suitable organ to be harvested from among those of a volunteer who is usually a close relative. In cadaver transplant, the organs are removed from people who are clinically dead. "Clinical death" is generally taken to refer to cases of brain death. Organs donated from brain-dead cadavers are transferred to patients who need them and who have tissue compatibility<sup>4</sup>.

Organ and tissue transplantation is an important measure of a country's level of development. Many nations have developed legislation related to organ donation and transplantation. Such laws apropos to brain death and organ transplantation have been passed in Spain, Sweden, and Germany, as well as in other European countries in accordance with European Commission meeting rules<sup>5</sup>. In Turkey, organ transplants are performed in accordance with Law 2238, "On the Removal, Storage, and Transport of Organs and Tissues", dated May 29, 1979. Additionally, it has been reported that our country's High Council of Religious Affairs, in their Decision 396 of 1980, found organ transplantation to be permissible<sup>6</sup>. With the permission of next of kin, upon diagnosis of brain death by relevant specialists, organs can be harvested from the bodies of patients who have suffered irreversible brain injury (brain death) and died in the hospital<sup>7</sup>. Medical death must have taken place in order for the transplant to be performed. In accordance with Law 2238, the decision of medical death must be made unanimously by two physicians.

The human factor is very important in organ donation. When planning education to raise awareness of organ donation, the socio-cultural aspects of the people living in the community must be taken into account. Research has shown that as the education level rises, and as increased importance is given to public education that continuously keeps organ donation on the agenda, so does organ donation also increase<sup>8</sup>.

This study was performed in order to determine both the awareness, attitudes, knowledge, and perspectives of our hospital's staff and physicians concerning organ donation and what can be done with the experience of health workers to bring organ donation in our country up to the desired levels.

## **MATERIALS AND METHODS:**

In this study, a questionnaire was administered to 315 health personnel employed by Sivas Paradigm (Numune) Hospital. A 32-question survey was conducted of the participants for the purpose of determining their views on brain death and organ donation, their ideas about what changes could be made in Turkey to increase organ donation, and whether they themselves were organ donors. The results of the survey were analyzed with the SPSS 14.0 software package, using descriptive statistical methods.

## **RESULTS**

A total of 315 health care workers who work at Sivas Paradigm (Numune) Hospital participated in our study. Of the participants, 75 (23.8%) were physicians and 113 (35.85%) were male; 71 (22.5%) had worked in the health sector for less than five years, 92 (29.2%) for between five and ten years, and 150 (47.6%) for more than ten years (Table 1). Forty-two (13.3%) of the employees participating in the study said they had no knowledge about brain death, and 119 (37.7%) said they had never received in-service training concerning brain death; 201 (63.8%) said they were not organ donors. Of those non-donors, 43 (13.6%) said organ donation was contrary to their religious beliefs and 41 (13%) said they believed it was necessary for the body to remain intact after death (Table 2). In response to the question of what must be done to improve organ donation, 248 (78.7%) said it should be explained that organ donation was compatible with the potential donor's religion, 171 (54.2%) said it was necessary to more frequently share with the public both the drama of those awaiting organ donation and the great joy of those to whom organ donation has given a new lease on life, 139 (44.1%) recommended periodically explaining the issue to the public via radio and television, 100 (31.7%) said the importance of organ donation should be stressed to health care workers in the course of their education, and 32 (10%) advised offering the donors' next of kin cash awards (Table 3).

**Table 1: Employee specifics**

	n	%
<b>Profession</b>		
Doctor	75	23.8
Midwife, nurse, health officer	190	60.3
Health technician (emergency medical technician, laboratory, radiology, anesthesia)	50	15.9
<b>Sex</b>		
Female	202	64.15
Male	113	35.85
<b>How long have you been working in the health sector?</b>		
Less than 5 years	73	23.8
5-10 years	92	29.1
More than 10 years	150	47.1
<b>Where do you work?</b>		
Operating Room.	68	21.6
General Intensive Care Unit	35	11.1
Service Worker	212	67.3

**Table 2: Health workers' level of knowledge and thoughts about brain death**

	n	%
<b>Do you have any knowledge about brain death?</b>		
Yes	254	80.6
No	42	13.3
This subject does not interest me.	19	6.0
<b>If you have knowledge about brain death, in what year did you obtain this knowledge?</b>		
Before 2000	75	23.8
2000-2010	151	47.9
After 2010	65	20.6
No knowledge	24	7.6
<b>Where did you first hear the term "brain death"?</b>		
Newspaper or television	83	26.3
Education	188	59.7
From another health care worker	39	12.4
I've never heard the term "brain death"	5	1.6
<b>Have you ever received education concerning brain death?</b>		
Yes	177	56.2
No	119	37.8
I don't remember	19	6.0
<b>Have you ever had in-service training about brain death?</b>		
Yes	98	31.1
No	199	63.2
I don't know	11	3.5
I don't remember	7	2.2
<b>What is brain death?</b>		
I've only ever heard the term	41	13
Reversible impairment of brain function	60	19
Irreversible impairment of brain function	204	64.8
Impairment in which body organs affect brain functions	2	0.6
When brain functions cause deterioration of body organ functions	8	2.5
<b>Can a brain-dead patient breathe without the assistance of a ventilator?</b>		
Yes	75	23.8
No	226	71.7
I don't know	14	4.4

<b>Is medical treatment and/or mechanical support necessary to preserve the cardiac functions of a brain-dead patient?</b>		
Yes	244	77.5
No	59	18.7
I don't know	12	3.8
<b>Is brain death any different from a coma or a vegetative state?</b>		
Yes	198	62.9
No	94	29.8
I don't know	23	7.3
<b>Do you want to obtain information on brain death?</b>		
Yes	230	73
No	81	25.7
I don't know	4	1.3
<b>Is brain death diagnosed in our hospital?</b>		
Yes	237	75.2
No	42	13.3
I don't know	36	11.4
<b>Who diagnoses brain death?</b>		
Doctors	279	88.6
Nurses	35	11.1
I don't know	1	0.3
<b>Do you know how brain death is diagnosed?</b>		
Yes	167	53
No	91	28.9
I don't know	57	18.1
<b>Have you ever witnessed diagnosis of brain death?</b>		
Yes	104	33
No	211	66.9
<b>Do you believe a person diagnosed as brain dead can come back to life?</b>		
Yes	44	14
No	238	75.6
I don't know	33	10.5
<b>Do you think a person diagnosed as brain dead should continue to receive treatment if his/her organs have not been donated?</b>		
Yes	121	38.4
No	147	46.7
I don't know	47	14.9
<b>What is chronic organ failure?</b>		
Permanent disease of organs	60	19
Reversible organ failure	232	73.7
Irreversible organ failure	15	4.8
I don't know	8	2.5

**Table 3: Health workers' level of knowledge and thoughts about organ donation**

	n	%
<b>Are you an organ donor?</b>		
Yes	81	25.7
No	201	63.8
I'm considering it	29	9.2
I'm not considering it	3	1
I absolutely will not donate my organs	1	0.3
<b>If you are an organ donor, what is your most important reason for becoming one?</b>		
Because I believe that my donation can save a life	52	64.1
Because such a situation could happen to me or my family, I believe organ donation is necessary	20	24.7
Because people who've received organ donations have said it's necessary	7	8.6
Because of my previous education/training	1	1.3
Because of my religious belief that organ donation is necessary	1	1.3
<b>If you are not an organ donor, what is your most important reason for not becoming one?</b>		
Because I'm afraid of becoming an organ donor	40	19.9
Because I believe my organs will fall into the hands of organ thieves	12	3.8
Because I believe it will disrupt the integrity of my body	28	13.9
Because I don't know who my organs will be donated to	12	5.9
Because I don't have enough money	11	5.5
Because I'm not completely sure organ donation is compatible with my religion	98	48.9
<b>According to the laws of some countries, any citizen who is brain dead is considered an organ donor. What are your views on Turkey implementing this practice?</b>		
I support it	114	36.2
I don't support it	117	37.1
I have no opinion	84	26.7
<b>What effect do you think implementation of such a practice would have on the numbers of organ donations?</b>		
It would reduce them	46	14.6
I don't think it would have any effect	94	29.8
It would increase them	175	55.6
<b>If such a law were passed in Turkey, what do you think the public's reaction would be?</b>		
They would accept it	95	30.1
They would oppose it and apply to cancel their donor status	220	69.9
<b>Is one of your loved ones a patient awaiting organ donation?</b>		
Yes	60	19
No	227	72.1
I don't know	28	8.9
<b>If one of your close relatives needed an organ, would you become a donor?</b>		
Yes	175	55.6
No	75	23.8
I don't know	65	20.6

<b>Would you donate the organs of a loved one diagnosed as brain dead?</b>		
Yes	130	41.3
No	63	20
I don't know	122	38.7
<b>Should family permission be required before harvesting the organs of a person who became a willing donor while healthy?</b>		
Yes	166	52.7
No	127	40.3
I don't know	22	7
<b>What do you think should be done to raise the organ donor rate in Turkey?</b>		
The public should be educated about organ donation and told that it is acceptable from a religious perspective	248	78.7
Both the drama of patients awaiting organs and the great joy of patients who got a new lease on life thanks to transplants should be shared with the public	171	54.3
The importance of this issue should be explained at intervals on radio and television	139	44.1
This issue should be explained and its importance continuously stressed to health care workers in the course of their training	100	31.7
Health care workers dealing with this issue should be rewarded	40	12.7
Cash rewards should be offered to the donors' next of kin	32	10.2
I don't know	0	0

## DISCUSSION

In Turkey as in every other country in the world, one of the most important problems standing in the way of organ transplantation is the insufficiency of organ donation. In 2012, the total number of brain deaths in Turkey was 1,477, while the number of organ donors utilized was only 345. The number of patients currently awaiting kidney, heart, liver, pancreas, and lung transplants is over 60,000, and every year between 7,000 and 8,000 patients are added to that list. In 2012, thanks to insufficient organ donation, thousands of people lost their lives while waiting for human organs; meanwhile, the number of cadaveric transplants performed that year was a mere 881<sup>9</sup>. Studies show that while the proportion of Middle Eastern countries' populations who wish to participate in organ donation ranges from 29.7% to 75%, that of European countries varies between 51.8% and 90%<sup>10,12</sup>. In a trial with 408 participants in Pakistan, the organ donation rate was 3.5%; meanwhile, a study in Germany reported a corresponding rate of 20% among 1,002 participants, and the rate in our study was 25.7%<sup>13,14</sup>.

Of the participants in our study, 13.3% indicated they had no knowledge about brain death, 37.8% said they had received no information about brain death during their educational lives, 63.2% had not had in-service training, 35.2% did not know the meaning of brain death, 29.8% said brain death was the same as a permanent vegetative state, 25.5% did not want to learn about brain

death, and 14% claimed a person who had been diagnosed as brain dead could come back to life. These results make it clear that we have not yet been able to ensure that even health care workers understand the meaning of brain death. The vast majority of our study's participants do not approve of organ donations, and 63.8% of the whole have never even considered donating their own organs. While 48.9% of non-donor participants were not sure donation was acceptable according to their religious beliefs and yet 55.6% would accept an organ donation for a loved one who needed one, the fact that the proportion of those who would donate the organs of a next-of-kin who had died dropped to 41.3% is another indicator explaining the insufficiency of transplantation from cadavers in Turkey.

Several studies performed in Islamic countries show that religious beliefs are very important among people's reasons for rejecting organ donation<sup>12,15</sup>. In fact, such studies conducted in communities of Muslim countries have shown that the participants were not aware that organ donation was acceptable in Islam<sup>13</sup>. The Department of Religious Affairs of the Republic of Turkey, in the results of a review performed by the High Council of Religious Affairs, reported in Decision 396 dated March 3, 1980, that organ donation was permissible<sup>5</sup>. The Department must spearhead the education of the community about organ donation and transplantation.

The inclusion by clerics of this subject in their sermons in mosques, as well as the inclusion in the organ donation campaign of positive messages from religious leaders about organ transplantation, can contribute to the rise in the organ donation rate. In our study, in answer to the question, "What is the most important factor affecting your opinion of organ donation?" 13.7% of the participants answered that organ donation was contrary to their religious beliefs, 13.9% said it was necessary for their bodies to remain whole, and 13% replied that they themselves were not healthy enough to donate. Fear was cited by participants (19.9%) in their reasons for refusing to become organ donors. As was stated earlier, it was determined that a large proportion of participants in our survey (37.8%) had not received any information on this subject in the course of their education, and 63.2% of the total had received no in-service training. By educating society at large and raising their information level, we can make donors of those who in the past had harbored negative or ambivalent attitudes toward organ donation and transplantation. The easiest way to transmit information about organ donation and transplantation to the public is via the mass media. Television is the most effective vehicle for informing and mobilizing the public; including some scenes about organ donation and transplantation in broadcasts can lead to increased attention to this topic. We asked the question, "What do you think should be done in Turkey to increase the numbers of brain death diagnoses and of organ donors?". Of the respondents, 78.7% believed it was necessary to educate the public regarding this issue, and to explain that organ donation was acceptable from a religious viewpoint; 54.3% felt that the correct course of action was to share more frequently with the public both the drama of patients awaiting organ transplant and the great joy of those who had gained a new lease on life when they received transplants; 44.1% said they thought this subject should be explained to the public at intervals via radio and television; and 31.7% supported explaining and emphasizing the importance of this issue to health care specialists throughout the course of their education.

## CONCLUSION

Our conclusion is that educating the public about organ donation and transplantation, and having a positive attitude about them, are very important to increasing the number of organ donations. We believe health care workers are the most important group for leading the community in matters concerning organ donation. We feel that the first

priorities should be preparing a training program to increase the interest of health workers in this issue and to educate them about organ donation and transplantation, and utilizing the mass media toward changing society's perspectives about the subject.

## Conflict of interest statement

The authors declare that they have no conflicts of interests.

## Acknowledgements

None.

## REFERENCES

1. Sönmez Y, Zengin E, Ongel K, Kişioğlu N, Öztürk M. Attitude and Behavior Related to Organ Donation and Affecting Factors: A Study of Last-Term Students at a University. *Transplant Proc* 2010;42: 1449-1452.
2. Legislation for Organ and Tissue Transplant Services, 25748-issued official gazette, 07.03.2005. <http://www.saglik.gov.tr/TR/belge/1-560/organ-ve-doku-nakli-hizmetleri-yonetmeligi.html> Date of Access: 01.08.2011.
3. 2238-issued Law Related to Organ and Tissue Receiving, Keeping and Transplanting of Ministry of Health, 29.05.1979. <http://www.saglik.gov.tr/TR/belge/1-445/tarihi29051979--sayisi2238--rg-tarihi03061979--rg-sayis-.html> Date of Access:08.05.2011.
4. Doğan P, Toprak D. Organ nakli tanımı, kapsamı, dini ve kanuni yönü. *Aile Hekimliği Dergisi* 2009; 3(2):
5. Dontlu A. Ç. Ethical, Religious and Legal Approaches in Organ Donation and Transplantation. *Dialysis, Transplantation and Burns* 2004; 15(2): 69-76.
6. Bozoklar A. Donör Tespiti, Organ Nakli Koordinasyon El Kitabı, Antalya, 2001; 38-40.
7. Tokalak İ. Job description of the organ transplant coordinator and his place in the transplantation process. *Dialysis, Transplantation and Burns* 2004; 15(1):1-6.
8. The Association of Organ Transplantation Coordinators (ONKOD) internet page. <http://www.onkod.org> Date of Access: 26.04.2011.

9. Tarhan M, Dalar L, Yıldırımöđlu H, Sayar A, Altın S. The relationship between the attitudes of patients' relatives towards organ donation and transplantation and their social profiles. *Bakırköy Medical Journal* 2013;9: 152-158.
10. Mohsin N, Militsala E, Budriddin M, et al. Attitude of the Omani population toward organ transplantation. *Transplant Proc* 2010; 42: 4305-4308.
11. Conesa C, Rios A, Ramirez P, Conteras M, Rodriguez MM, Parilla P. Attitudes toward organ donation in rural areas of Southeastern Spain. *Transplant Proc* 2006; 38; 3: 866-868.
12. Alashek WA, Ethuish EF, Elhabashi A, Emberish W, Mishra A. Reasons for unwillingness of Libyans to donate organs after death. *Libyan J Med* 2009; 4; 3: 110-113.
13. Saleem T, Ishaque S, Habib N, et al. Knowledge, attitudes and practices survey on organ donation among a selected adult population of Pakistan. *BMC Med Ethics* 2009; 10: 5.
14. Beutel ME, Greif-Higer G, Haselbacher A, Galle PR, Otto G. Attitudes towards cadaveric organ donation results from a presentative survey of the German population. *Z Gastroenterol* 2006; 44; 11: 1135-1140.
15. Örer A, Oto Ö. Cardiac Surgery from Past to Present. *Turkish Journal of Thoracic and Cardiovascular Surgery* 1999; 7(3): 153-160.