

Araştırma / Research Article



Sağlık çalışanlarının organ bağıışı hakkındaki bilgi, tutum ve davranışları

Knowledge, attitudes, and behaviors of healthcare workers about organ donation

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ÖZET

Giriş ve Amaç: Organ nakli, organ yetmezliği olan hastaların yaşam kalitesini ve yaşam süresini iyileştirmek için en önemli tedavi yöntemidir. Bu çalışmanın amacı, sağlık çalışanlarının organ bağıışı konusundaki bilgi, tutum ve davranış özelliklerini belirlemektir. **Gereç ve Yöntem:** Tanımlayıcı tipteki bu çalışma Mart-Haziran 2016 tarihleri arasında Türkiye'deki iki üniversite hastanesinde çalışan sağlık çalışanları üzerinde yapıldı. Çalışma iki aşamada gerçekleştirildi. Birinci aşamada, sağlık çalışanlarına organ bağıışında bulunup bulunmadıkları soruldu. İkinci aşamada ise, katılımcılara sosyodemografik özelliklerini, organ bağıışı konusundaki bilgi, tutum ve davranışlarını sorgulayan anket uygulandı. **Bulgular:** Çalışmamızın birinci aşamasına katılan 460 sağlık çalışanından 90'ı (% 19,57) organlarından en az birini bağıışladığını ve organ kartı olduğunu belirtti. İkinci aşamadaki katılımcıların (n = 85) yaş ortalamaları 26-30 arasında, 68'i (%77,5) kadın ve 59'u (%66,6) hemşireydi. Organ bağıışında bulunan katılımcı sayısı 16 (%21,4) olarak bulundu. Katılımcılar organ bağıışında bulunmama nedeni olarak 30'u (%39,3) kendilerini hazır hissetmediklerini, 20'si (%34,2) şimdikiye kadar bu konuda hiç düşünmediklerini, 48'i (%56,5) organ veya doku bekleyen hastalardan başka kimsenin organ bağıışı ile ilgilenmediğine inandıklarını belirtti. **Sonuç:** Çalışmamızda sağlık çalışanlarının organ bağıışı konusunda bilgi eksiklikleri olduğu ve organ bağıışı yapmanın öneminin yeterince vurgulanmadığı bulundu.

ABSTRACT

Introduction and Objective: Organ transplantation is the most important treatment method in terms of improvement survival and quality of life of patients suffering from organ failure. The aim of this study was to determine the knowledge, attitudes, and behaviors of healthcare workers regarding organ donation. **Materials and Methods:** This descriptive study conducted between March-June 2016 with healthcare workers working in two university-affiliated hospitals in Turkey. The study was conducted in two phases: in the first phase, healthcare workers were asked whether they consider donating their organs or not. In the next phase, a survey comprising questions about sociodemographic characteristics, knowledge, attitudes, and behaviors regarding organ donation was conducted. **Results:** Of 460 healthcare workers in the first phase of the study, 90 (19,57%) considered to donate at least one of their organs and had an organ donor card. Participants in the second phase (n=85) were between 26-30 years old, 68 (%77,5) of them were female gender and 59 (%66,6) of them were nurse (profession). There were only 16 (%21,4) participants who have really donated their organs. The reason for not donation an organ, 30 (39,3%) of the participant did not feel ready, 20 (34,2%) of them had never thought about it and 48 (56,5%) of them believed that no one other than patients waiting for an organ or tissue is interested in organ donation. **Conclusion:** The sense of organ donation of healthcare workers and their knowledge was found to be significantly poor.

INTRODUCTION

Organ transplantation is the most important treatment method to improve survival and quality of life of patients suffering from organ failure (1,2). Despite significant medical and technological developments in organ transplantation in last two decades, a number of patients waiting for transplantation is increasing every day, and the majority of them die because of lack of organ donation and chronic diseases (2,3). Since some organs and tissues are obtained only from a deceased donor, unfortunately, today transplantation from deceased donors has still vital importance (2,4).

Organ shortage for transplantation remains a serious problem worldwide. While the number of patients waiting for transplantation increased rapidly, the number of organ donors remained much smaller than those in the waiting list (5). According to the International Organ and Tissue Transplantation records, in 2016 most deceased donor was reported in Spain and in Croatia, while the lowest deceased donor was reported in Malaysia. Turkey is located at the end with the 7:06 ratio in a deceased donation. The organ donation rate from a living donor is 8.2 in Spain, 1.62 in Croatia and 1.27 in Malaysia. In contrast, the organ donations from living donor per million people in

Turkey is ranked first with 45.76 (6). This information shows that who donate organs living in Turkey are generally living donors while living in Europe shows that more than deceased donors (7). On the other hand, the data (for 16/06/2015) of Ministry of Health of Turkey showed that there are 28634 patients in organ transplantation list, while 1987 patients underwent organ transplantation, and 1363 patients underwent corneal transplantation, in Turkey. Additionally, families of 23.4% of individuals with brain death gave consent for organ donation from the patient (2).

The primary problem of transplantation is that there is not enough organ donor. In order to solve this problem, the public and healthcare workers should pay attention to the issue (4). These data can be used to determine the reasons for people to decide whether to donate to eliminate obstacles and increase organ donation rates. Therefore, the reasons for whether people donate an organ should be examined. There are a number of factors such as age, level of education, socioeconomic status, personal and family view, cultural background and religion that affect people's decisions regarding organ donation, including knowledge, attitude and behavior (2). Therefore, the purpose of this study is to determine the knowledge, attitudes, and behaviors of healthcare workers regarding organ donation.

MATERIALS AND METHODS

Study design and participants

The study was planned as a cross-sectional descriptive study and conducted between March and June 2016 with healthcare workers working in two university-affiliated hospitals (one public and the other a foundation hospital) in Istanbul, Turkey. The study was conducted in two phases: in the first phase of the study, healthcare workers accepting to participate in the study were asked whether they consider donating their organs or not. In the next phase, a survey comprising 25 questions about sociodemographic characteristics, knowledge, attitudes, and behaviors of participants regarding organ donation was conducted by face to face interview method. The first part of the survey included 4 questions about age, sex, profession, and education level. The second part of the survey included 11 questions about knowledge regarding organ donation. The third part of the survey included 16 questions about general attitudes and behaviors about organ donation.

Participants' criteria included healthcare workers who work in two hospitals and volunteered for the study. The exclusion criteria included the missing or incorrect answer to the questions and not volunteering.

Participation in the study included physician, nurse, health technician, and nonclinical staff (eg, social service expert, registration secretary, religious commissary). The level of education was divided into 3 levels: low level comprised high school, middle included a bachelor's degree and high level including a master's degree and doctor of philosophy.

This study was carried out in accordance with the principles of the Helsinki Declaration and required permission was taken from the hospital administrations. Approval of ethics committee was obtained from the ethical committee of the university. Verbal consent was also taken from participants.

Statistical analyses

SPSS statistic software version 20 was used for statistical analysis of the data in this study. Numerical data were presented as percentage and categorical variables were described with frequency distributions.

RESULTS

Of 460 healthcare workers in two university-affiliated hospitals who agreed to participate in the first phase of the study, 90 (19,57%) stated that they considered donating at least one of their organs and had already gained an organ donor card. Eighty-five healthcare workers (55, from the public hospital and remaining 30, from the foundation hospital) accepted to take part in the second phase of the study.

Participants in the second phase were mostly between 26 - 30 years old, with female gender (public, 85,5% and foundation 70%), mostly nurse (profession) (public 76,4% and foundation 56,7%), and middle education level (public 56,3% and foundation 43,3%) (Table 1). In the second phase, it was found that 98,2% of healthcare workers know the definition of organ donation and brain death correctly. It was found that there were only a few participants who have really donated their organs (public 12,7% and foundation 30%). The majority of participants stated that they did not feel ready (public 50%) or so far they had never thought about this matter (foundation 47,6%). It was noted that the majority of the healthcare workers (64,4%) could consider donation organs of any of their relatives. The reason for not to want to donate organs of their relatives was not want to take the responsibilities of others (53,9%). 58,6% of the participant said that healthcare workers have partially enough knowledge about organ donation. Lots of participants (public 38,2% and foundation 46,7%) said that organ donation training should begin during undergraduate training for health workers and lots of issues about organ

Table 1. Sociodemographic Characteristics of the Participants

| | Public Hospital (n=55) | Foundation Hospital (n=30) | Total (n=85) |
|--------------------------|------------------------|----------------------------|--------------|
| Sex | | | |
| Female | 47 (85,5%) | 21 (70,0%) | 68 (77,5%) |
| Male | 8 (14,5%) | 9 (30,0%) | 17 (22,5%) |
| Age Groups (year) | | | |
| <20 | 0 (0,0%) | 1 (3,3%) | 1 (1,7%) |
| 21-25 | 14 (25,5%) | 8 (26,7%) | 22 (26,1%) |
| 26-30 | 17 (30,9%) | 7 (23,3%) | 24 (27,1%) |
| 31-35 | 12 (21,8%) | 5 (16,7%) | 17 (19,2%) |
| >36 | 12 (21,8%) | 9 (30,0%) | 21 (25,9%) |
| Education level | | | |
| Low | 8 (14,5%) | 13 (43,3%) | 21 (28,9%) |
| Middle | 31 (56,3%) | 13 (43,3%) | 44 (49,8%) |
| High | 16 (29,1%) | 4 (13,3%) | 20 (21,2%) |
| Profession | | | |
| Physician | 6 (10,9%) | 4 (13,3%) | 10 (12,1%) |
| Nurse | 42 (76,4%) | 17 (56,7) | 59 (66,6%) |
| Midwifery | 1 (1,8%) | 0 (0,0%) | 1 (0,9%) |
| Health Technician | 1 (1,8%) | 4 (13,3%) | 5 (7,5%) |
| Nonclinical Staff | 5 (9,1%) | 5 (16,7%) | 10 (12,9%) |

donation and transplantation should be addressed in continuing education. Organ transplantation stages and coordination (20,5%) and how to make public information (22,3%) are the most important issues that should be addressed in continuing education (Table 2).

The majority of the healthcare workers believes that no one other than patients waiting for an organ or tissue is interested in transplantation and thinks that the press or visual media provide not enough information to society about the subject. Lots of health care workers believe that cultural differences affect thoughts and in their religion organ donation and transplantation are supported with their legal regulations in the country. They think that transplantation is therapeutic and it improves the quality of life. They think that the body integrity of the donor is preserved after organ transplantation. They think that media and some people such as clergymen and artists play an important role in affecting the behavior and attitudes of the public. More than half of the participants approved their organs to be donated by their relatives when they die (public 54,6% and foundation 60%) and they think it is necessary to obtain permission from the first degree relatives after brain death. Most of the participants think that European countries are much better from their country. Lots of them would like to work in an organ transplantation clinic or hospital one day in the future (Table 3).

DISCUSSION

The donated organs are the only treatment for millions of patients worldwide with organ failure (8). Despite the vital importance of organ transplantation, the

low level of organ donations is noteworthy (7). It is seen that studies related to organ donation focus on psychological factors such as family (9), personality traits (10,11), demographic factors such as religion, attitude, intention and altruism (12-14). This study examined the knowledge, attitudes, and behaviors of healthcare workers regarding organ donation.

Our results showed that 98,2% of healthcare workers correctly knew the definition of organ donation and brain death. But, the state of organ donation level was very low (21,4%). Lots of them stated that they have never thought it or they did not feel ready themselves. Knowledge of organ and tissue donation plays an important role in making donations (15,16). Studies have clarified that those who wish to donate their organs generally understand the general information about transplantation and the process of transplantation (17). Specific information about organ tissue donation and organ transplantation, such as brain death, medical-legal issues, and religious beliefs, provides guidance to people who have misconceptions and are not familiar with organ donation (4,18,19). Inadequate knowledge has always adversely affected organ donation (20). According to the studies, knowledge about organ donation is enough in Turkey with 59,6% ratio (21), in India with 69,4% (22), in Nigeria with 82,5% (23). Also, it is found that physicians' knowledge level was significantly higher than other health professionals (22-24). This study has shown that healthcare workers have much knowledge about organ and tissue donation and organ transplantation, but they don't think about it unless there is something they need to think about this matter. The training that will enable them to think about this matter and direct them to organ donation

Table 2. Healthcare Workers Knowledge About Organ Donation

| | Public Hospital (n=55) | Foundation Hospital (n=30) | Total (n=85) |
|---|---------------------------|-------------------------------|-----------------|
| Definition of organ donation | | | |
| Allowing the organs to be used to treat other people after death | 53 (96,4%) | 30 (100%) | 83 (98,2%) |
| Definition of brain death | | | |
| Complete loss of all brain functions irreversibly | 54 (98,2%) | 29 (96,7%) | 83 (98,2%) |
| State of organ donation | | | |
| Yes | 7 (12,7%) | 9 (30,0%) | 16 (21,4%) |
| No | 48 (87,3%) | 21 (70%) | 69 (78,6%) |
| Why do not you donate your organs? | | | |
| I have never thought about it. | 10 (20,8%) | 10 (47,6%) | 20 (34,2%) |
| I don't have enough knowledge. | 2 (4,2%) | 0 (0,0%) | 2 (2,1%) |
| I think it's inconvenient in terms of religion. | 4 (8,3%) | 0 (0,0%) | 4 (4,2%) |
| I approve, but I don't feel ready. | 24 (50%) | 6 (28,6%) | 30 (39,3%) |
| I don't know where to go. | 8 (16,7%) | 3 (14,3%) | 11 (15,5%) |
| I think the integrity of the body will be broken. | 0 (0,0%) | 2 (9,5%) | 2 (4,7%) |
| Do you donate the organs of your relatives? | | | |
| Yes | 36 (65,5%) | 19 (63,3%) | 55 (64,4%) |
| No | 19 (34,5%) | 11 (36,7%) | 30 (35,6%) |
| Why do not you donate your relative's organs? | | | |
| I don't want to take the responsibilities of others. | 30 (54,5%) | 16 (53,3%) | 46 (53,9%) |
| I think my friends will misunderstand me. | 1 (1,8%) | 0 (0,0%) | 1 (0,9%) |
| I approve organ donation, but I don't tolerate my loved ones. | 20 (36,4%) | 10 (33,3%) | 30 (34,9%) |
| I don't believe the process in my country is right. | 4 (7,3%) | 4 (13,3%) | 8 (10,3%) |
| Do you have relatives with organ failure? | | | |
| Yes | 6 (10,9%) | 4 (13,3%) | 10 (12,1%) |
| No | 49 (89,1%) | 26 (86,7%) | 75 (87,9%) |
| Do you think health care workers have enough knowledge about organ donation? | | | |
| Yes | 6 (10,9%) | 8 (26,7%) | 14 (18,8%) |
| No | 12 (21,8%) | 7 (23,3%) | 19 (22,6%) |
| Partially | 37 (67,3%) | 15 (50,0%) | 52 (58,6%) |
| How should organ donation training be for health workers? | | | |
| During undergraduate training | 21 (38,2%) | 14 (46,7%) | 35 (42,5%) |
| Continuous graduation training | 14 (25,5%) | 5 (16,7%) | 19 (21,1%) |
| From the high school must enter the education system | 11 (20,0%) | 6 (20,0%) | 17 (20,0%) |
| Other training channels should be used effectively (newspaper-tv-radio) | 9 (16,4%) | 5 (16,7%) | 14 (16,5%) |
| What issues should be addressed in continuing education? | | | |
| Organ removal and storage | 3 (5,5%) | 3 (10,0%) | 6 (7,7%) |
| The need and cost of organ donation | 4 (7,3%) | 5 (16,7%) | 9 (12,0%) |
| From whom to receive an organ and who will be transported | 11 (20,0%) | 1 (3,3%) | 12 (11,5%) |
| Organ transplantation stages and coordination | 6 (10,9%) | 9 (30,0%) | 15 (20,5%) |
| Legal and ethical aspects of organ transplantation | 3 (5,5%) | 0 (0,0%) | 3 (2,8%) |
| How to make public information | 8 (14,5%) | 9 (30,0%) | 17 (22,3%) |
| All of them | 20 (36,4%) | 3 (10,0%) | 23 (23,2%) |

should be given place, and these training should include especially some topics such as organ transplantation stages and coordination.

In this study, 12,7% of all healthcare workers were registered organ donors and had an organ donor card. Moreover, 56,8% of all healthcare workers were willing to donate organs. Keten et al. (2) stated that 12,4% of all physicians were registered organ/tissue donors and 47,9% of all participants were willing and agreed to donate organs in Turkey. In the literature, it was shown that 12% of physicians in Iran (25), 18% of physicians in Belgium (26) were registered organ donors, while this

rate was 76,3% in the United States (27). 5,2% among healthcare professionals were registered organ donor (28) and 46,6% of healthcare workers were willing for organ donation (29). This study and other similar studies have shown that the proportion of health care workers registered as organ donors is lower than the proportion of those who are willing to donate an organ. This finding is potentially affected by the development level of the country.

In this study, 56,8% of healthcare workers stated that "I want my relatives to forgive my organs after I die". Keten et al. (2) stated that in their study 47,9% of

Table 3. Variables of Attitudes and Behaviours of Healthcare Workers

| | | Totally agree | Agree | Undecided | Not agree | Not totally agree |
|--|-------|---------------|-----------|-----------|-----------|-------------------|
| | | n(%) | n(%) | n(%) | n(%) | n(%) |
| I do not believe that there are people who are interested in the subject, except for the patients waiting for organ transplants. | PH | 9(16,4%) | 21(38,2%) | 10(18,2%) | 12(21,8%) | 3(5,5%) |
| | FH | 7(23,3%) | 11(36,7%) | 7(23,3%) | 5(16,7%) | 0(0,0%) |
| | Total | 16(18,8%) | 32(37,6%) | 17(20,0%) | 17(20,0%) | 3(3,5%) |
| In the case of organ transplantation and donation, the press and visual publications give enough information to the community. | PH | 1(1,8%) | 7(12,7%) | 12(21,8%) | 31(56,4%) | 4(7,3%) |
| | FH | 2(6,7%) | 5(16,7%) | 5(16,7%) | 13(43,3%) | 5(16,7%) |
| | Total | 3(3,5%) | 12(14,1%) | 17(20,0%) | 44(51,7%) | 9(10,5) |
| Cultural differences affect thoughts on organ donation and transplantation. | PH | 16(29,1%) | 29(52,7%) | 4(7,3%) | 5(9,1%) | 1(1,8%) |
| | FH | 8(26,7%) | 17(56,7%) | 1(3,3%) | 2(6,7%) | 2(6,7%) |
| | Total | 24(28,2%) | 46(54,1%) | 5(5,8%) | 7(8,2%) | 3(3,5%) |
| Organ donation and transplantation are carried out in the framework of legal regulations in our country. | PH | 6(10,9%) | 29(52,7%) | 15(27,3%) | 2(3,6%) | 3(5,5%) |
| | FH | 6(20,0%) | 14(46,7%) | 6(20,0%) | 3(10,0%) | 1(3,3%) |
| | Total | 12(14,1%) | 43(50,5%) | 21(24,7%) | 5(5,8%) | 4(4,7%) |
| In our religion, organ donation and transplantation are supported. | PH | 15(27,3%) | 17(30,9%) | 20(36,4%) | 1(1,8%) | 2(3,6%) |
| | FH | 5(16,7%) | 10(33,3%) | 12(40,0%) | 3(10,0%) | 0(0,0%) |
| | Total | 20(23,5%) | 27(31,7%) | 32(37,6%) | 4(4,7%) | 2(2,3%) |
| Organ transplantation is a therapeutic and improving the quality of life. | PH | 26(47,3%) | 22(40,0%) | 4(7,3%) | 0(0,0%) | 3(5,5%) |
| | FH | 15(50,0%) | 14(46,7%) | 1(3,3%) | 0(0,0%) | 0(0,0%) |
| | Total | 41(48,2%) | 36(42,3%) | 5(5,8%) | 0(0,0%) | 3(3,5%) |
| The body integrity of the donor is preserved after organ transplantation. | PH | 12(21,8%) | 23(41,8%) | 10(18,2%) | 8(14,5%) | 2(3,6%) |
| | FH | 12(40,0%) | 9(30,0%) | 7(23,3%) | 2(6,7%) | 0(0,0%) |
| | Total | 24(28,2%) | 32(37,6%) | 17(20,0%) | 10(11,7%) | 2(2,3%) |
| Media has negative effects on organ donation and organ transplantation. | PH | 2(3,6%) | 6(10,9%) | 25(45,5%) | 17(30,9%) | 5(9,1%) |
| | FH | 5(16,7%) | 4(13,3%) | 7(23,3%) | 12(40,0%) | 2(6,7%) |
| | Total | 7(8,2%) | 10(11,7%) | 32(37,6%) | 29(34,1%) | 7(8,2%) |
| I have information about the organ transplantation coordination system. | PH | 6(10,9%) | 17(30,9%) | 22(40,0%) | 9(16,4%) | 1(1,8%) |
| | FH | 6(20,0%) | 9(30,0%) | 10(33,3%) | 5(16,7%) | 0(0,0%) |
| | Total | 12(14,1%) | 26(30,5%) | 32(37,6%) | 14(16,4%) | 1(1,2%) |
| The positive opinions of the people who are accepted by society (artist, scientist) accelerate my decision-making. | PH | 10(18,2%) | 14(25,5%) | 4(7,3%) | 21(38,3%) | 6(10,9%) |
| | FH | 3(10,0%) | 12(40,0%) | 5(16,7%) | 10(33,3%) | 0(0,0%) |
| | Total | 13(15,2%) | 26(30,5%) | 9(10,5%) | 31(36,4%) | 6(7,1%) |
| I want my relatives to forgive my organs after I die. | PH | 20(36,4%) | 10(18,2%) | 18(32,7%) | 2(3,6%) | 5(9,1%) |
| | FH | 10(33,3%) | 8(26,7%) | 5(16,7%) | 6(20,0%) | 1(3,3%) |
| | Total | 30(35,2%) | 18(21,7%) | 23(27,0%) | 8(9,4%) | 6(7,1%) |
| Even if the person makes a donation in his / her health, it is necessary to obtain permission from the first-degree relatives after his death. | PH | 15(27,3%) | 18(32,7%) | 6(10,9%) | 12(21,8%) | 4(7,3%) |
| | FH | 11(36,7%) | 11(36,7%) | 2(6,7%) | 2(6,7%) | 4(13,3%) |
| | Total | 26(30,5%) | 29(34,1%) | 8(9,4%) | 14(16,4%) | 8(9,4%) |
| Organ donation request is made to the families of patients with advanced brain death. | PH | 18(32,7%) | 25(45,5%) | 5(9,1%) | 1(1,8%) | 6(10,9%) |
| | FH | 8(26,7%) | 16(53,3%) | 2(6,7%) | 3(10,0%) | 1(3,3%) |
| | Total | 26(30,5%) | 41(48,2%) | 7(8,2%) | 4(4,7%) | 7(8,2%) |
| The diagnosis of brain death is sufficient for a committee consisting of specialists in anesthesia and neurosurgery. | PH | 12(21,8%) | 7(12,7%) | 13(23,6%) | 19(34,5%) | 4(7,3%) |
| | FH | 9(30,0%) | 10(33,3%) | 3(10,0%) | 6(20,0%) | 2(6,7%) |
| | Total | 21(24,7%) | 17(20,0%) | 16(18,8%) | 25(29,4%) | 6(7,1%) |
| I would like to work in an organ transplantation clinic or hospital in the future. | PH | 13(23,6%) | 14(25,5%) | 12(21,8%) | 11(20,0%) | 5(9,1%) |
| | FH | 7(23,3%) | 13(43,3%) | 5(16,7%) | 5(16,7%) | 0(0,0%) |
| | Total | 20(23,5%) | 27(31,7%) | 17(20,0%) | 16(18,8%) | 5(5,8%) |
| European countries are much better in terms of organ transplantation and donation. | PH | 17(30,0%) | 17(30,0%) | 18(32,7%) | 1(1,8%) | 2(3,6%) |
| | FH | 8(26,7%) | 13(43,3%) | 8(26,7%) | 0(0,0%) | 1(3,3%) |
| | Total | 25(29,4%) | 30(35,2%) | 26(30,5%) | 1(1,2%) | 3(3,5%) |

PH: Public Hospital, FH: Foundation Hospital

physicians wanted their family members to let organ donation after their death. Similarly, Wale et al. (30) stated that 56,6% of healthcare workers were willing to donate their organs after death in the United Kingdom. In this study, we didn't ask participants if there is a need would you like your relatives to give you their organs. In literature, Uzuntarla (21) stated that 94.5% of the participants would accept an organ donation in the case of organ failure within their relatives, but, if the participants' relatives were diagnosed with brain death, only 44.8% of participants would donate their relative's organs. Enginyurt et al. (31) stated that 77.4% of healthcare workers would accept organ donation in case of need, but, only 36.7% of participants would donate their organs in Turkey. Alsaied et al. (32) stated that 62.6% of healthcare workers would accept organ donation, but only 29.5% would donate their relatives' organs if brain death was diagnosed in their relatives in Qatar. People volunteered to donate organs of their relatives are less than people who accept an organ donation. So, it is believed that people approach such a sensitive subject mainly for individual interests and cannot empathize with other people who need an organ.

In this study, 90,5% of healthcare workers considered organ donation is a therapeutic and improving the quality of life. Similarly, Keten et al. (2) stated that 93.6% of physicians considered organ donation is an important life-saving issue, and this rate was 97.7% in Saudi Arabia (33).

The legal framework is crucial for increasing organ donation rate (8,34). In this study, 64,7% of healthcare workers thought that organ donation and transplantation are carried out in the framework of legal regulations in Turkey. Legislative law knowledge was 84% among ICU nurses and patients and 60% among healthcare students in Austria (35), 44% in Swiss (36) and 51% in France (37) among medical students. In contrast to these studies, Hamed et al. (20) reported that approximately 83% of participants thought there was no law regulation about organ donation or they did not hear or read the law. In Turkey, there is a law numbered 2238 about organ donation.

In this study, more than half of healthcare workers stated that organ donation request is made to the families of patients with advanced brain death and the diagnosis of brain death is sufficient for a committee consisting of a specialist in anesthesia and neurosurgery. Brain death, irreversible functional loss of the brain and brain stem, is considered to be a legal and medical death (21,38). According to the 2238 numbered law in Turkey, the diagnosis of brain death must be decided by two specialists. One of this specialist must be a neurologist

or a neurosurgeon, and the other must be an intensive care specialist or anaesthesiology and reanimation specialist. In addition, family consent must be given to take organs from a cadaver brain death has occurred. Even if a person has an organ donation card in his/her health, no organ can be taken unless family consent is obtained (21).

In this study, the statement "in our religion, organ donation and transplantation are supported" was agreed by 67,1%, undecided by 37,6% and not agreed by 7,1% of healthcare workers. Keten et al. (2) stated that in their study 63,7% of physicians were agreed that organ donation is compatible with Islamic rules. According to Uzuntarla (21) 16% of all participant in Turkey, and according to another study in the United States (39), in Iran (40), in China (41) 16% of surgeons and medical students hesitated to donate organs for religious reasons. Nonetheless, all Abrahamic religions approved of organ donation. In addition, High Board of Religious Affairs of Turkey gave a fatwa in 1980 and declared that organ donation is allowed in Islam (42). Furthermore, 32 Surah Al-Ma'idah in the Qur'an clearly states that "...whoever saves one - it is as if he had saved mankind entirely..." (2,43).

In this study, 35,3% of healthcare workers stated that the body integrity of the donor is not preserved after organ transplantation. Nadousan et al. (40) in Iran and Hu and Huang (41) in China stated that healthcare workers hesitated to donate an organ because they feared their body integrity would not be maintained.

In this study, more than half of participants (62,4%) thought that the press and visual publications did not give enough information to the community and 80,0% of them thought that media has positive effects on organ donation. Nearly half of the participants stated that the positive opinions of people who are accepted by society such as artists and scientist accelerated their decision-making about organ donation. Uzuntarla (21) stated that media-internet (42.6%) was the main source of information on organ donation. In a similar study, it was found that increasing public awareness, media use, community education and legal arrangements could increase organ donation (44,45). Some studies have shown educational effectiveness about increasing organ donation. In Israel, lack of information was considered the biggest barrier to organ donation and they stated that they have solved this problem (46). Uzuntarla (47) stated that organ donation awareness increased from 11.5% to 88.5% through education on high school students. Similarly, Henry and Rosson (48) stated that organ donation awareness was significantly increased after organ donation education. In some studies, it has been found that some clerics have doubts about

whether organ donation was appropriate to religion (49,50). In our study, to increase organ donation, lots of participants agreed on the need for community and healthcare training.

The limitations of this study are that the study was conducted in two university hospitals and could not be generalized.

CONCLUSION

The sense of organ donation of healthcare workers and their knowledge about the subject was found to be significantly poor. Unfortunately, the ratio between donation and willingness to donate organs among healthcare workers were significantly low, therefore there is a strong need for educational activities about organ donation. Besides that as a vital action for the future, all healthcare workers should inform and motivate their patients for organ donation while providing standard health care.

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