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Unwillingness to Organ Donation and Religious Concerns in Turkey

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Abstract: This study aimed to determine the Turkish population's attitudes towards organ donation in comparison to European countries and discuss religious concerns regarding organ donation. Public attitudes were studied using the Eurobarometer 72.3 survey which is the most recent survey on organ donation in Europe and is population representative. Among 1,004 respondents from Turkey, over 50% of participants were not willing to donate their organs, and around 16% of people remain equivocal. Only about 19% of respondents were familiar with the national laws regarding organ donation, and the most (35.7%) commonly cited reason for refused organ donation was: "religious reasons". In Turkish socio-cultural context, an essential component for success in organ donation is addressing religious concerns. As the crux of the organ donation is acceptance of 'brain death' as formal death, and Turkish Presidency's guidelines on organ donation do not clarify whether brain death is accepted as death or not, Islamic scholars in Turkey needs to discuss brain death and clarify its permissibility.

Keywords: Attitudes toward organ donation, religious concerns, brain death, Turkey, Islam.

Öz: Bu çalışma ile Türkiye'de yaşayanların organ bağışına yaklaşımının Avrupa ülkelerinde yaşayanlar ile kıyaslanması ve organ bağışı hususundaki dinî kaygıların ele alınması amaçlanmıştır. Bunun için Eurobarometer 72.3 anketi kullanılmıştır. Bu anket, Avrupa çapında en güncel verileri sunmakta ve Türkiye için toplumu temsil edebilir nitelikte olan tek ankettir. Ankete Türkiye'den katılan 1.004 kişinin %50'den fazlası organlarını bağışlamak istemediklerini ve %16'sı da bu konuda kararsız olduklarını belirtmişlerdir. Katılımcıların sadece %19'u organ bağışı ile ilgili hukuki düzenlemelerden haberdardır. Ayrıca katılımcıların organ bağışlamak istememelerinin en yaygın sebebi, (%35.7) dinî gerekçelerdir. Bulgularımız, Türkiye'nin sosyo-kültürel çerçevesinde organ bağışını artırmanın en temel unsurunun dinî kaygıları gidermek olduğunu göstermektedir. Organ bağışıyla ilgili en kritik nokta 'beyin ölümünü' resmî ölüm olarak tanımlayıp tanımlamamakta yatmaktadır. Fakat Diyanet İşleri Başkanlığı'nın organ bağışı ile ilgili kararı, beyin ölümünün ölüm olarak kabul edilip edilmediği ile ilgili bir açıklama barındırmamaktadır. Bu belirsizliği gidermek için Türkiye'deki İslam âlimleri, beyin ölümünü tartışmalı ve izin verilebilirliği hususunu açıklığa kavuşturmalılardır.

Anahtar Kelimeler: Organ bağışına yaklaşım, dinî kaygılar, beyin ölümü, Türkiye, İslam.

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Introduction

In 2016 there were >21,000 people in Turkey waiting for an organ transplant, of which 1,804 died while waiting in Turkey (Table 1). Thus, it is concluded that organ shortage is a severe problem for Turkey as elsewhere. Although Turkey has the highest living donor rate in Europe (Figure 1), it was not sufficient as the number of individuals on waiting lists almost doubled from 2005 to 2014 (Table 1).

Table 1.
Transplantation indicators in Turkey

	2016	**2005**
Total number of kidney transplants	3,423	926
% Transplantation (TX) from living donors	77.1%	70.5%
# of patients awaiting for kidney TX by 31st Dec	21,914	11,676
# of patients died while on the Waiting list	1,804	-
# of patients on dialysis	60,750*	34,294
# of cadaveric organ donors (pmp)	562 (7.1)	153 (2.2)
# of requests for consent to donation	1,988	224
Number of family refusals (%)	1,425 (71.7)	55 (25)

Source: ONT Newsletter Transplant (2017; 2006)

As Turkey's living donor rate far exceeds its deceased donor rate and its deceased donor rate is much lower than that in Europe (Figures 1 and 2), it is sensible for Turkey to try to increase deceased OD. To mitigate organ shortage, Turkey has started many initiatives such as changing regulations for organ transplantation (Sert et al., 2013) and organization of transplant coordinators (Yücetin et al., 2004). Although these efforts increased brain death declarations, it was not a solution to organ shortage as family refusal rate has also increased from 25% in 2005 to 77% in 2014 (Table 1).

This high refusal rate implies that the general population's attitudes towards OD might be negative. Therefore, the present study aimed to determine the general population's attitudes towards OD in Turkey and compare them to those of Euro-

* Number of Patients on dialysis is not available for 2016; therefore the number presented reflects the figures as of 31.12.2015.

pean countries. Moreover, we examine the main reasons, the most common being religious reasons, behind the high refusal rate.

To the best of the author's knowledge, the present study is the first to examine attitudes towards OD in the general population throughout Turkey. Earlier studies on attitudes towards OD were conducted only in 1 location and they lower the unwillingness for OD (Bilgel et al., 1991; Bilgel et al., 2004; Colak et al., 2008) or they were based on selected group of people such as imams or medical professionals (Simsek, 2008; Akgün et al., 2003).

Previous Research on Organ Donation

When demographic characteristics of organ donors are examined, generally those willing to donate their organs are young, educated, have higher socio-economic status, and have less traditional religious belonging (Horton & Horton, 1990; Klieger et al., 1994). Females are found to be more likely to donate their organs (Biller-Andorno, 2002; Thompson, 2003; Decker et al., 2008). For Turkey, Bilgel et al. (2004; 1991) found less willingness to donate among females. Although the education level of an individual is found to be an important determinant of organ donation, it is not always effective for securing higher organ donation consent rates. For example, in the Netherlands, in 1998, the government sent 12 million letters in a country of 16 million asking citizens to register, which did not influence the effective consent rate (Oz et al., 2003). The ineffectiveness of the campaign casts doubt on the role of education since the Netherlands has a highly educated population.

The role of religion in organ donation consent has been widely debated (Bruzzone, 2008; Rady & Verheijde, 2009; Arbour et al., 2012) and whether the formal definition of death from a religious point of view includes 'brain death' is also controversial (Rady & Verheijde, 2016).

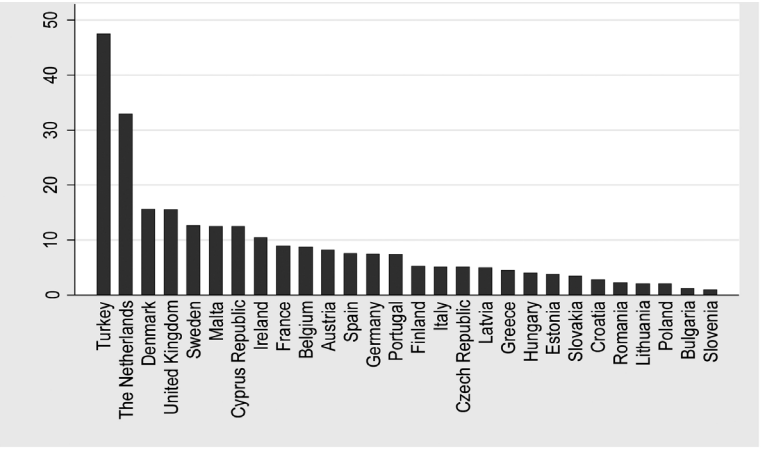

Figure 1. The living organ donor rate per million population in 2017[1]
Source: The International Registry of Organ Donation and Transplantation (IRODaT)

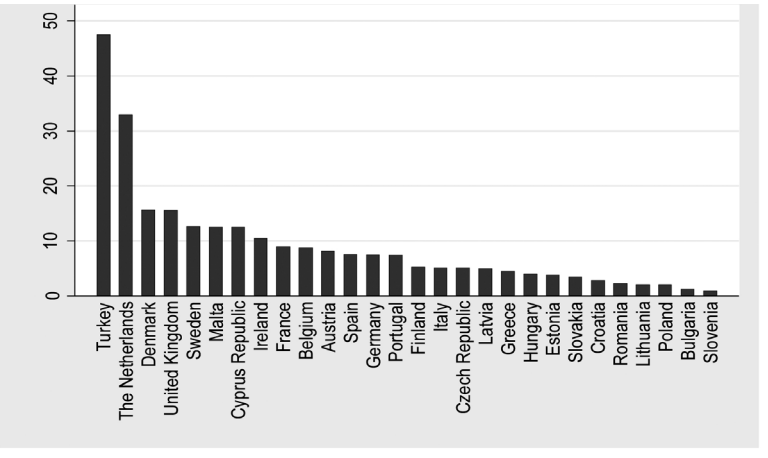

Figure 2. The cadaveric organ donor rate per million population in 2017[2]
Source: IRODaT

In another line of research, for increasing the supply of deceased donors, legislating presumed consent was suggested as presumed consent legislation increases deceased OD (Abadie & Gay, 2006; Ugur, 2015), yet Turkey has informed consent legislation on 3 June 1979 (law 2238).

1 Whenever the data for 2017 is not available, the 2016 figure is used instead.
2 Whenever the data for 2017 is not available, the 2016 figure is used instead.

Materials and Methods

For studying public attitudes, we use individual level data from the Eurobarometer 72.3 survey that was conducted on behalf of the European Commission in late 2009. Although Eurobarometer surveys are conducted biannually, they focus on different topics. The Eurobarometer 72.3 is the latest survey which provides representative information on OD in Europe and also the only survey which provides representative information on OD in Turkey. The sample was drawn from individuals aged ≥15 years, and multi-stage stratified random sampling was employed. Data were collected via face-to-face interviews. The sample was representative of each country's total population. The survey included participants from all 27 EU countries, Croatia, Turkey, the Turkish Cypriot Community, and Macedonia (FYROM). Macedonia, the Turkish Cypriot Community, Luxembourg, and Slovenia were excluded from analysis because IRODaT OD data were not available for these countries. The final sample included 27,248 individuals, of which 1004 were from Turkey. The survey included questions on whether the respondent discussed OD with family members, knows national laws for organ donation, is willing to donate own organs and family member's organs, reasons for refusal for OD. Standard demographics such as sex, age, marital status, etc. were also collected.

Preferences for OD between Turkish and European respondents were compared using chi square and t test depending on the variable. Whenever we say, there is a difference between Turkish and European respondents, and it is based on statistical tests with 5% significance level. Probit regression analysis was conducted to determine who is more likely to be willing to donate their organs and more knowledgeable about OD. All statistical analysis was conducted using STATA 12.0.

Results

As shown in Table 2, when asked whether they are willing to donate their own organs, 50.1% said no and 34.16% said yes in Turkey. Similarly, about 37% of the participants were willing to donate family members' organs, 44% were not willing in Turkey. Europeans show significantly higher willingness to donate their own organs (54.36%) and family members' organs (52.58%) than Turks. Based on these findings, we can conclude that it is more difficult to increase deceased OD in Turkey than in European countries; however, Table 2 shows that Turkey has a considerable percentage of individuals that are undecided (15.74%), a population that should be targeted by the Turkish National Organ Donation Authority for organ donation education.

Table 2.
Willingness to donate organs (%)

	Own organs		Family member's organs	
	Turkey	European Countries	Turkey	European Countries
Yes	34.16	54.36***	37.35	52.58***
No	50.10	27.17***	43.73	24.91***
Undecided	15.74	18.48**	18.92	22.51***
n	1,004	26,244	1,004	27,788

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3 shows public awareness indicators for OD. Only 22.4% of people in Turkey discussed OD with their family members. Individuals that are willing to donate their organs are more likely to discuss OD with family members (35.38%) whereas people not willing to donate are less likely to discuss their preferences (14.08%) in Turkey. Despite the fact that discussing OD entails talking about death which is generally considered to be stressful both for Europeans and Turks, Europeans rate of discussing OD (36.07%) is significantly higher than Turks, indicating that efforts to raise awareness in Turkey are insufficient, as only 18.68% of people in Turkey know the laws regarding OD. This is lower than that of Europeans (27.35%).

Table 3.
Public Awareness Indicators (%)

	Discuss OD with Family		Know Laws for OD	
	Turkey	European Countries	Turkey	European Countries
All	22.40	36.07***	18.68	27.35***
Willing to Donate	35.38	50.64***	32.54	37.47*
No preference	20.39	19.77	15.22	16.08
Not Willing to Donate	14.08	17.84**	10.28	14.39**
n	991	26,095	969	25,455

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4 lists the reasons for refusing to donate one's own organs or family members' organs. In Turkey refusing to donate is most commonly due to religious reasons (35.7%), whereas in European countries it was the least common reason (10.62%). OD refusal due to fear of manipulation of the human body after death is similarly common in Turkey and European countries but refusal due to distrust of the OD system, including the transplantation system, medical professionals are significantly less prevalent in Turkey (20.34%) compared to European Countries (29.83%).

Table 4.
Reasons for refusing to donate organs (%)

	Turkey	European Countries
Religious reasons	35.70	10.62***
Distrust of the system	20.34	29.83***
Fear of manipulation of the human body	35.04	36.40
Other Reasons	8.92	23.15***
n	762	17,523

$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

As the Turkish National Organ Donation Authority has the ability to increase OD, in particular by convincing undecided individuals to do so, this section seeks to clarify the characteristics of those willing to donate organs and those that are undecided, based on a construct of 2 binary variables. The dependent variable in model 1 uses the value 1 for those that are undecided about OD and 0 for those that oppose OD. The dependent variable in model 2 uses the value 1 for those willing to donate and 0 for those not willing to donate. The first 2 columns in Table 5 show the preferences for a donation of one's own organs and the last 2 columns show the preferences for donating a family member's organs.

According to Table 5, females, those more educated, those with internet access, and those with better material wealth (proxied by having a fully paid house) are more likely to have no preference, to be willing to donate their organs or to be willing to donate a family member's organs. Table 6 shows that females, those more educated, those that own a car, and those willing to donate are more likely to discuss OD with their family and to know the laws regarding OD. Fortunately, these individuals are also more likely to donate their organs. In contrast, owning a home that has been fully paid for is negatively associated with discussing OD with family.

Table 5.

Probit regression results for willingness to donate in Turkey (marginal effects)

	Own Organs		Family Members' Organs	
	(1)	(2)	(1)	(2)
Age	0.001 (0.001)	–0.001 (0.001)	–0.001 (0.000)	0.000 (0.000)
Age completed education	0.003 (0.008)	0.014* (0.008)	0.008*** (0.003)	0.017*** (0.002)
Female	0.155*** (0.034)	0.139*** (0.034)	0.037*** (0.009)	0.028*** (0.007)
Married (base: divorced/widowed)	–0.060 (0.083)	0.145 (0.091)	0.005 (0.020)	0.010 (0.011)
Single	–0.073 (0.094)	0.167* (0.098)	–0.025 (0.019)	–0.003 (0.012)
>1-Person household	0.140 (0.099)	–0.068 (0.080)	0.014 (0.016)	0.011 (0.012)
Small Town (base: rural)	0.076* (0.040)	–0.016 (0.044)	–0.011 (0.016)	0.003 (0.013)
Large Town	–0.002 (0.041)	0.052 (0.041)	–0.010 (0.021)	0.002 (0.016)
Have internet access	0.082* (0.043)	0.095** (0.042)	0.036** (0.015)	0.072*** (0.011)
Have a car	–0.016 (0.039)	0.033 (0.039)	0.039*** (0.014)	0.060*** (0.008)
Have a fully paid house	0.046 (0.034)	0.108*** (0.035)	0.031** (0.013)	0.013 (0.013)
Have not fully paid house	–0.038 (0.089)	0.030 (0.091)	0.017 (0.016)	0.033** (0.013)
n	642	827	611	795

Robust standard errors are in parentheses, * p < .1, ** *p* < .05, *** *p* < .01

Table 6.
Probit regression results for public awareness indicators (marginal effects)

	Turkey	
	Discuss	Know Rules
Age	−0.000 (0.001)	0.000 (0.001)
Age completed education	0.027*** (0.005)	0.009* (0.005)
Female	0.085*** (0.027)	0.045* (0.025)
Married (base: divorced/widowed)	−0.025 (0.062)	0.068 (0.059)
Single	−0.086 (0.069)	−0.010 (0.065)
>1-Person household	0.028 (0.058)	−0.109** (0.052)
Small Town (base: rural)	−0.019 (0.034)	0.063** (0.030)
Large Town	0.019 (0.031)	−0.059** (0.030)
Have internet access	0.026 (0.031)	0.080*** (0.029)
Have a car	0.070** (0.028)	0.085*** (0.026)
Have a fully paid house	−0.056** (0.027)	−0.057** (0.025)
Have a not-fully paid house	−0.062 (0.064)	−0.068 (0.064)
Have no preference	0.050 (0.038)	0.044 (0.037)
Willing to donate	0.169*** (0.026)	0.196*** (0.025)
n	966	945

Robust standard errors are in parentheses, * $p < .1$, ** $p < .05$, *** $p < .01$

Discussion

In this section, we discuss our findings in comparison to previous studies and try to understand why religion seems to be a barrier for OD, although the Presidency of Religious Affairs, a governmental department that provides religious information in Turkey, has endorsed OD since 1980 (High Council for Religious Affairs, 2011).

Our findings show much higher unwillingness for OD (50.1%) when compared to the 18.3% reported by Bilgel et al. (2004) and 33.7% in Bilgel et al. (1991). Both studies are based on measurements in Bursa, Turkey. The difference can be due to lack of geographic diversity in those studies. We believe our results are more reliable since even among medical professionals, only 44.2% reported to be willing to donate their organs (Akgun et al., 2003). Moreover, a large percentage of people having a not positive attitude (50.1% unwilling + 15% undecided) is in accord with 77% official family refusal rate.

There are other differences between our findings and the previous literature. We find refusal for religious reasons to be mostly cited reason (36%) whereas Bilgel et al. (2004) found this rate to have dropped down to around 16% level. However, even among Turkish health care professionals, 21.6% cited religious reasons for not donating their organs to be used after death (Topbas et al., 2005). Moreover, because 99% of its population is Muslim, we expect that religion plays a significant role in ethical reasoning as deceased OD rates are also very low in other Islamic countries such as Algeria, Iran, and Malaysia (ONT, 2015). Also, the willingness for OD being low (23.6%) among the Faculty of Theology students in Turkey suggests that religion can be perceived as a barrier for OD (Nacar et al., 2009).

Although many people cite religious reasons for not willing to donate their organs in Turkey, The Presidency of Religious Affairs encourages OD, declaring it is an act of charity since the 1980s (Presidency of Religious Affairs, 2015). This view of OD is linked to a verse in the Quran (5:32), "whoever saves one [a soul]-it is as if he has saved mankind entirely". Also, the religious ruling (Ijtihad) over OD is also positive according to the Islamic Jurisprudence Assembly Council in Saudi Arabia and The Muslim Law Council of UK (Golmakani et al., 2005).

According to the Turkish High Board of Religious Affairs (a committee for religious rulings under the Turkish Presidency of Religious Affairs) (decision number 396, 03.03.1980) the conditions under which OD is approved are as follows:

(1) Absolute necessity; organ transplantation must be the only option for treating a disease and, other methods must not be available;

(2) There must be a consensus among specialists that a disease can be cured with organ transplantation;

(3) For deceased OD, the person whose organs will be taken should be dead;

(4) Living OD must not jeopardize the donor's health;

(5) Both the organ donor and recipient must give consent. In cases of deceased donation the deceased family members must give consent;

(6) There must be no material benefit or payment for OD.

Unfortunately, these conditions do not provide very clear guidance for the concept of brain death which is the crux of the matter for OD. In the medical community, the brain death is largely accepted as an equivalent to death with some refinements (Beecher, 1968; *Defining Death: Medical, Ethical, and Legal Issues in the Determination of Death*, 1981; Wijdicks, 2002; Bernat, 2013). The logic of brain death is that irreversible loss of clinical brain functions is sufficient for declaring death (Pallis, 1983; Bernat, 1992, 1998; Gardiner et al., 2012), because the brain is necessary for the functioning of a human as a whole (Widjdicks, 2003; Bernat, 2013). There are a few medical scholars that reject the brain criterion altogether (Truog, 1997; Shewmon, 2004). The majority of medical scholars accept whole-brain based determination of death, but may disagree on the standards or practices for determining brain death (Bernat, 1998; Chiong, 2005). Turkey's medical protocols for determining brain death are similar to those in many European countries (Wijdicks, 2002).

The religious validity of the brain-based determination of death remains controversial. Among Islamic scholars, there is some degree of heterogeneity regarding the acceptability of brain death (Padela et al., 2013). The Islamic Organization for Medical Sciences (IOMS), decided in 1985 that brainstem death can be categorized as unstable life, but the patient in such a state is not formally dead (Ebrahim, 1998). The Senior Religious Scholars Commission in Saudi Arabia considers brain dead patients as cadavers and allows their organs to be recovered (Sachedina, 2009). Ayatollah Khomeini, representing the Shiite Muslims, allowed organ transplantation from brain dead patients since 1964 (Haque, 2008). The Organization of Islamic Conferences' Islamic Fiqh Academy (OIC-IFA), which is among the most influential institutions of Islamic scholarship, has considered whole-brain death as the equivalent to legal or human death since 1987 (Ebrahim, 1998). The Turkish Presidency of Religious Affairs ' decision (Article 3) permits OD only from 'dead' individuals. What dead means is not defined. But, for any religious ruling on OD to have any practical

effect on patients and physicians, whether or not brain death (specifically, which type of brain death) is accepted as the equivalent to human death must be clarified.

The Turkish Presidency of Religious Affairs' stance on OD is more conservative compared than that of OIC-IFA. Although OIC-IFA considers brain death equivalent to human death, Karagöz (2015) -a member of the High Board of Religious Affairs- mentioned that there is a lack of consensus concerning brain death among medical professionals, which can be associated with his reluctance to acknowledge the concept of brain death. Moreover, according to Article 6 of the Higher Board for Religious Affairs' decision on OD, there can be no material benefit in return for OD. Although OIC-IFA (1988) also considers the sale of organs impermissible, it holds the position that the permissibility of using the money to obtain a required organ when necessary, or offering compensation or honoring the donor is subject to the opinions of experts on Islamic jurisprudence. Lastly, Karagöz (2015) suggests that the organs of a homeless person or person that cannot be identified and whose corpse is not claimed by anyone cannot be taken; however, OIC-IFA allows OD if the deceased cannot be identified or does not have any next of kin and if consent is obtained from the head of the Muslim community (Albar, 2010). Karagöz (2015) emphasizes that OD should be based on an individual's uncoerced consent. Evidence shows that some individuals that are willing to donate their organs postpone registration (Ugur, 2015) and die unexpectedly without having registered as a donor. Just as decisions concerning the body of a dead relative is transferred to her/his family, it is possible that another authority can make decisions concerning donating the organs of a dead person that benefit society as a whole.

Moreover, despite the position of the Turkish Presidency of Religious Affairs on OD, approval of OD is not unanimous among Turkey's imams (Simsek, 2008). Publicly known religious leaders such as Prof. Dr. Cevat Akşit (who has both degrees in law and divinity) opposes OD (Yeni Şafak, 2006). Those who oppose OD consider it against the Islamic principle of the sanctity of the human body. According to this principle, all human bodies (dead or alive) deserve respect, as the Quran (17:70, 35:39) describes human beings as, "the most dignified creation of God". Yet, Muslim scholars permit OD according to the Islamic principle that necessity overrides prohibited matters (El-Shahat, 1999; Akrami et al., 2004). This principle is derived from the Quran's (2:173) acceptance of consuming the flesh of swine when it is absolutely necessary, although normally it is prohibited. Muslim scholars that allow deceased OD is of the opinion that OD serves an interest (rescuing another life) that outweighs concerns about violating the sanctity of the deceased's body, as seeking

to choose the lesser of two evils in order to prevent the greater of the two is also an Islamic principle (Salwani, 2013). Moreover, as Brierley et al. (2012) suggest, a lifetime attached to a mechanical ventilator, with bodily functions controlled by a caregiver and/or relative, and little or no privacy or dignity may also be against the sanctity of the human body.

There are some religious misconceptions related to religious belief in an afterlife which can impede consenting to deceased OD. As such, a common misconception is that if organs are donated to another person, the deceased donor might not be able to resurrect materially. Yet, it is well-known that after death the body -organs included- will decay; however, according to the Quran (75:4), "God is even able to proportion humans' fingertips on the Day of Judgment". The Turkish Presidency of Religious Affairs has clearly stated its position; humans do not need their organs to be materially resurrected. Karagöz (2015) suggested that a drowning victim whose corpse was eaten by a fish or a person that died and completely burned in a fire will also rise on the Day of Judgment. The belief in hereafter holds that after death the body will be resurrected anew.

One religious misconception associated with OD is that the sins committed by the body from which organs will be donated transferred to the recipient. As the Quran (41:20, 24:24, 36:65) explicitly states that, "on the Day of Judgment organs will testify about the deeds of that person", people are confused about whom an organ used by two people will give testimony for. Karagöz (2015) posits that the essence of committing a sin is the use of free will, not the use of organs; therefore, when a sin has been committed the person that used free will is going to be responsible for the sin. Furthermore, the Quran is very clear not to hold someone else responsible for the acts of another person in several verses (39:7, 53:38, 35:18, 17:15, and 6:164), "No bearer of burdens shall be made to bear another's burden.".

Another misconception might be related to believing in destiny. Many Muslims believe that whatever is written in the destiny for that person will be experienced. Therefore, extra efforts to prolong one's life through organ transplantation may be interpreted as a fight against destiny. However, Prophet Muhammed is reported to encourage people to seek medical treatment by saying "There is no disease that God has created, except that He also has created its remedy."(Bukhari). Therefore, from an Islamic point of view, neither the belief in destiny, hereafter nor the religious background of an organ donor is a barrier to OD. However, these points are not effectively communicated to the public as the Ministry of Health's Organ Donation website does not even mention the religious aspect of OD [Organ Tissue Transplan-

tation and Dialyses Services Department (Organ Doku Nakli ve Dializ Hizmetleri Daire Başkanlığı), 2016]. Organ donation pamphlet only mentions that OD is in accord with Islam, but does not address these issues (See Elazığ City Health Department, 2016). Clearly, The Ministry of Health needs to work together with The Presidency of Religious Affairs for debunking those misconceptions.

In addition, the reluctance of medical professionals to acknowledge or address in a compassionate way to religious concerns related to OD might further compound the reluctance. Medicine professionals are generally of the view that when there is a conflict between secular and religious views, secular medical views should be of great importance (Brierley et al., 2012). However, Spain's great success in OD is attributed to the country's positive use of dedicated transplant coordinators to convince family members to consent to OD (Matesanz & Miranda, 2002). Based on these findings, we think that the development of thoughtful guidelines and education of medical professionals about how to approach grieving families and how to successfully negotiate for organ donation request while remaining sensitive to religious values can reduce distrust in the medical system and increase the deceased organ donate rate in Turkey.

The present study's primary limitation is that the survey was conducted in 2009 and the result may be seen as not reflecting current views of the public. However, we think our results are still relevant as the attitude towards organ donation is not likely to change easily. Also, there has not been any major policy towards the general public which would alter the perception of OD.

To sum up, firstly individual level data suggests that the Turkish population is less willing to donate organs than the European population. According to our results, the organ shortage problem is partly due to an information gap. Therefore, efforts to improve awareness of and knowledge about organ donation in Turkey must be increased. People cannot be expected to freely discuss organ donation with their families, as talking about death is generally perceived as unpleasant; therefore, we posit that policy makers must promote organ donation to the general population via intelligent use of the media. Secondly, as the most common reason for not donating organs in Turkey are religious considerations; The Turkish Presidency of Religious Affairs can take a more proactive role by improving awareness among religious officials, such as local imams, who can, in turn, mitigate religious misconceptions about organ donation among the general population. Furthermore, for any of the Presidency of Religious Affairs' efforts to increase organ donation to have practical effects, whether brain death is accepted as an equivalent to death must be clarified.

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