

The Awareness and Willingness of Taif Community to Donate Organ After Death: A Cross Sectional Study in Saudi Arabia

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Abstract

Background: previous studies revealed a negative attitude toward organ donation after death in Saudi Arabia.

Purpose: to assess the Taif community's awareness and willingness to donate organs after death.

Design/methodology/approach: A cross-sectional study was conducted on 566 participants from Taif, Saudi Arabia. An online questionnaire was used to collect data about participants' demographics, knowledge and attitude towards donating organs after death and Saudi organ donation law and policy.

Findings: Only 18.5% of the participants agreed to donate their organs after death, and 28.6% were aware of Saudi organ donation law and policy, 45% strongly agreed that organ donation is a wise decision to save lives, and 51.1% agreed it is a good deed. Only 9.4% and 19.1% strongly agreed organ donation after death can cause body disfigurement and registering as an organ donor requires seeking advice from those around him. Only 4.9% strongly agreed that opportunities to register as an organ donor are unavailable in Saudi Arabia and 18.7% of participants' parents agreed with organ donation after death. Participants aged 41-50 years, students, and whose parents support organ donation after death had a significantly higher percentage of those who agreed for donation.

Limitations: the self-reporting questionnaire may have a recall bias.

Practical implications: actions should be taken by health-care providers and media to raise awareness about importance of organ donation.

Originality/value: Awareness campaigns are urgently needed to emphasize the importance of donation and to dispel myths.

Keywords: receptive; community; organs; donation; death; Taif

Introduction

Organ transplantation is the traditional treatment for organ failure; however, the rates of organ donation and transplantation vary by country (Björnberg, 2017; World population review, 2022).

Effective organ donation programs for people in need of life-saving transplants must be prioritized by health-care systems. The rising number of people aged 65 and up (Statistics Canada, 2013) has resulted in chronic diseases such as diabetes and high blood pressure becoming more prevalent in this population. These conditions are risk factors for end-stage renal disease (Arora et al., 2013; Bakris et al., 2000). Kidneys are the most often transplanted organs considering they can be donated by living or deceased persons (Arora et al., 2013; Bakris et al., 2000).

Many recipients of a transplanted kidney, heart, pancreas, liver, or other solid organ in the United States and around the world have lived longer lives and had their physical health improved as a result of organ transplantation in the 50 years since the first successful transplant (Arora et al., 2013; Bakris et al., 2000).

Organ transplantation is unusual surgical procedures, in that the procedure is unable to perform without the donation of an organ or a partial organ from another person (Beyar, 2011). More than 390,000 organs have been transplanted since 1988, with approximately 80% of transplanted organs coming from deceased donors. In 2005, there were 7,593 deceased donors and 6,896 living donors in the United States, resulting in 23,249 transplanted organs (Committee on Increasing Rates of Organ Donation and Board on Health Sciences Policy, 2021).

Saudi Arabia started organ transplantation in 1979 when a kidney was transplanted from a living donor. In 1985, the Saudi Center for Organ Transplantation was established as a government agency responsible for overseeing all national transplant activities in the Kingdom of Saudi Arabia. Since 1985, organ transplantation in the Kingdom of Saudi Arabia has made significant progress. In addition to education, allocation, coordination, and procurement of organs, the Saudi Center for Organ Transplantation plays a significant role in all aspects of transplantation. As part of an ambitious program launched in 2014, a new initiative in the Kingdom of Saudi Arabia aims to improve the identification and reporting of organ donors within three years, with a target of 15 donors per million population (Shaheen, 2016).

The success of organ transplantation as a treatment option, the increasing prevalence of related or contributing medical conditions, advances in immunosuppressive medications, and other factors have resulted in a rapid escalation of the transplant waiting list in recent decades. In 1988, there were 16,026 individuals on the waiting list for an organ transplant; by 1995 the waiting list had increased almost 275 percent to 43,937 (Black et al., 2018). After the foundation of the national transplant organization, rate over decade from 1999-2009, the growth curve for Spanish deceased donor organ which increased from 33.6 to 34.4 donors pmp (only 2.4%) while US in the same decade increased from 20.9 to 26.3 donors (25.8%) (Halldorson and Roberts, 2013).

The Saudi Arabia study assessed the knowledge and attitudes of 1208 participants, among whom 63% reported being willing to donate their organs to a family member. It was reported that 93% of respondents would donate their organs to save the life of someone else. It was found that participants in this study had mild to moderate knowledge about organ donation (AbuAlhommos et al., 2023). Furthermore, In Saudi Arabia, a recent study investigated the acceptance and awareness of organ donation and lung transplantation among the Saudi population. It has been found that the majority of Saudi citizens, both men and women, support organ donation, but are not aware of the policies surrounding organ donation (Darwish et al., 2021).

In addition, many studies have been done in different region of Saudi Arabia to determine the level of willing and acceptance of organ donation. 73.5% of the subjects in the western region stated that they would be willing to donate their organs, with no significant differences between the males and females studied (Soubhanneyaz et al., 2015). In contrast, 41% of those in Riyadh were unwilling to donate their organs (Almufleh et al., 2018).

An age group comparison revealed that older donors in Spain had a much higher donation rate; the number of donors over the age of 70 increased from 3.8 to 8.8 pmp (132 percent), while US donors over the age of 70 increased from 1.0 to 1.3 pmp. Over the same decade, younger donors (15-30 years) decreased (62 percent) in Spain while slightly increasing (15.5 percent) in the US (Rodrigue et al., 2006).

There is a cross sectional study had been performed in Greece on the undergraduate junior and senior health science students [medical, nursing and medical laboratory students] to assist their knowledge and attitudes about organs donation (Symvoulakis et al., 2014). A total of 371 out of 510 students returned a completed questionnaire, and this study discovered that more than half of students were willing to register as deceased kidney donors, while only a small number of these participants were sufficiently well-informed to be registered.

On the other hand, a cross-sectional study conducted in Karachi, Pakistan revealed that there is insufficient knowledge among the general population (25.8 percent), while there is a positive attitude toward organ donation (75.2 percent) (Symvoulakis et al., 2014). In 2017, a study was done in Saudi Arabia and showed that fewer than 50 were willing to donate after death (Al - Harthi et al., 2015).

This study aimed to determine the awareness and willingness of Taif community to donate organ after death.

Materials and Methods

This cross-sectional study was conducted between May 2021 and April 2022 with the purpose of assessing the Taif community's knowledge and willingness to donate organs after death. In order to conduct this study, ethical approval was obtained from the Ethical Committee of Health Affairs of the city of Taif (reference No. 942-171). Participants in this study included all adults of both genders who lived in Taif City in Saudi Arabia and agreed to complete a questionnaire. It should be noted, however, that individuals who did not live in Taif and those who refused to complete or did not complete the questionnaire were excluded from participation.

Questionnaire about assessing the awareness and attitude of the public on organ donation was used (Franklin, 2017), and the questionnaire was distributed through google form. The first section of the questionnaire included items about the participants' demographics, knowledge of the possibility of donating organs after death and Saudi organ donation law and policy and coming across people donated organs after death. The second section included items assessing the participants attitude towards organ donation after death was used, and information was collected from 556 random participants living in Taif city.

In order to analyse the data, we used Statistical Package for the Social Sciences version 23 (International Business Machines Corporation Corp., USA) and Microsoft Excel version 16.16.23. We used nonparametric chi-square tests to analyze categorical variables. The mean and standard deviation were calculated for continuous variables. Significant values (p-values) greater than 0.05 are considered statistically significant.

Results and Discussion

Results

(Table 1) shows that 62.2% of participants in this study ranged in age from 21 to 30 years old, 71.6% were females, 76.3% had a university level of education and 39.6% were students. Most of the participants (79.5%) knew of the possibility of donating organs after death and for (81%) of those who knew, the source of information was Internet / social media. Only 18.5% came across people who have donated their organs after death and only 28.6% knew the Saudi organ donation law and policy.

(Table 2) shows that most of the participants (45% and 55.9%) strongly agree that organ donation is a useful decision to save life and awareness must be made of it and registering as an organ donor can save someone's life, respectively. Of them, 31.7% strongly agree that if they know where can donate organs they will donate, 45.7% believe that organ donation will have a positive impact on the donor in his life or death and almost half (51.1%) reported that organ donation is a good deed, may Allah reward it.

Variable	No. (%)
Age	
21-30	346 (62.2)
31-40	82 (14.7)
41-50	91 (16.4)
51-60	37 (6.7)
Gender	
Female	398 (71.6)
Male	158 (28.4)
Educational level	
Primary	6 (1.1)
Intermediate	12 (2.2)
Secondary	84 (15.1)
University	424 (76.3)
Post-graduate	30 (5.4)
Employment	
Student	220 (39.6)
Not employed	148 (26.6)
Employed	188 (33.8)
Do you have knowledge of the possibility of donating organs after death?	
No	114 (20.5)
Yes	442 (79.5)
What is the source of your information? (No.:442)	
Friends/colleagues	27 (6.1)
Internet / social media	358 (81)
health professionals	25 (5.6)
TV / Radio	29 (6.7)
Magazine / newspaper	3 (0.6)
Have you ever come across people who have donated their organs after death?	
No	453 (81.5)
Yes	103 (18.5)
Do you know the Saudi organ donation law and policy?	
No	397 (71.4)
Yes	159 (28.6)

Table 1: Distribution of studied participants according to their demographics, knowledge of the possibility of donating organs after death and Saudi organ donation law and policy and coming across people donated organs after death (No.: 556).

<i>Variable</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly Disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
Organ donation is a useful decision to save life, and awareness must be made of it?	137 (24.6)	12 (2.2)	16 (2.9)	141 (25.4)	250 (45)
Registering as an organ donor can save someone's life	75 (13.5)	10 (1.8)	13 (2.3)	147 (26.4)	311 (55.9)
If I know where I can donate my organs, I will donate	167 (30)	56 (10.1)	38 (6.8)	119 (21.4)	176 (31.7)
I believe that organ donation will have a positive impact on the donor in his life or death	109 (19.6)	17 (3.1)	19 (3.4)	157 (28.2)	254 (45.7)
Organ donation is a good deed, may Allah reward it	123 (22.1)	8 (1.4)	9 (1.6)	132 (23.7)	284 (51.1)
I think a person registered for organ donation will not find adequate care from doctors in an emergency	50 (27)	176 931.7)	109 (19.6)	64 (11.5)	57 (10.3)
Organ donation after death can lead to body disfigurement	181 (32.6)	130 (23.4)	87 (15.6)	106 (19.1)	52 (9.4)
Organ donation will increase if the family of the deceased is provided social support regardless of whether they donate or not	80 (32.4)	39 (7)	19 (3.4)	182 (32.7)	136 (24.5)
To register as an organ donor, you must take an opinion from those around you	138 (24.8)	75 (13.5)	58 (10.4)	179 (32.2)	106 (19.1)
You cannot find opportunities to register as an organ donor in Saudi Arabia	50 (27)	205 (36.9)	129 (23.2)	45 (8.1)	27 (4.9)
While registering for organ donation, it is difficult to get enough answers to all your questions	252 (45.3)	93 (16.7)	48 (8.6)	105 (18.9)	58 (10.4)
Your health does not qualify you to register as an organ donor	161 (29)1	90 (34.2)	115 (20.7)	59 (10.6)	31 (5.6)
I don't trust the health care system in Saudi Arabia and I'd rather go abroad to donate organs after death	59 (10.6)	185 (33.3)	285 (51.3)	12 (2.2)	15 (2.7)

Table 2: Distribution of participants' opinion about organ donation after death F (ranklin, 2017).

Only 10.3% strongly agreed that a person registered for organ donation will not find adequate care from doctors in an emergency and only 9.4% strongly agreed that organ donation after death can lead to body disfigurement. Of them, 24.5% strongly agreed that organ donation will increase if the family of the deceased is provided social support regardless of whether they donate or not. Only 19.1% strongly agreed that to register as an organ donor, one must take an opinion from those around him and 4.9% strongly agreed that one cannot find opportunities to register as an organ donor in Saudi Arabia. Only 10.4% strongly agreed that while registering for organ donation, it is difficult to get enough answers to all questions, for 5.6% their health does not qualify them to register as an organ donor and 2.7% don't trust the Saudi health care system and will go abroad to donate organs after death.

(Figure 1) shows that 18.7% participants' parents agreed for the idea of organ donation after death, while most of the participants (53.6%) thought it is a good idea (Figure 2).

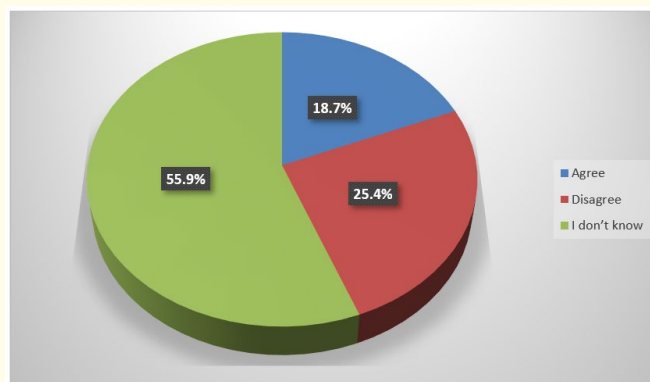


Figure 1: Percentage distribution of participants' parents' opinion of the idea of organ donation after death.

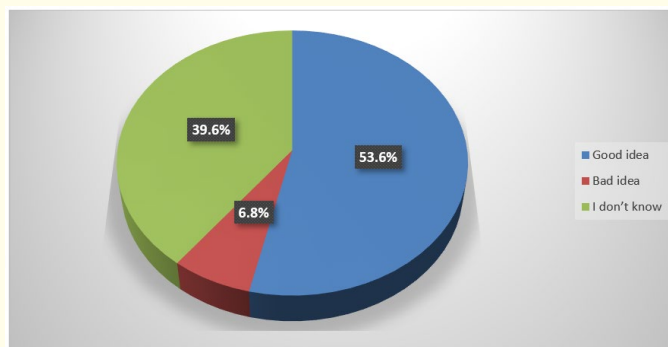


Figure 2: Percentage distribution of participants' beliefs of the idea of organ donation after death.

(Table 3) shows that participants with an age ranging from 41-5 years and students had a significant higher percent of those who thought that organ donation after death is good idea ($p < 0.05$). On the other hand, a non-significant relationship was found between other demographics, knowledge of the possibility of donating organs after death and Saudi organ donation law and policy ($p > 0.05$). For those who came across people who have donated their organs after death, most of them (63.1%) believed that organ donation after death is a good idea, while only 6.3% thought that it is a bad but without a significant difference between them and those who did not come across this experience ($p > 0.05$).

(Figure 3) illustrated that participant whose parents agree to the idea of organ donation after death had a significant higher percent of those who thought that organ donation after death is good idea ($\chi^2 = 65.35$, $p\text{-value} = < 0.001$).

Variable	Your beliefs about the idea of organ donation after death			χ^2	p-value
	Good idea	Bad idea	I don't know		
Age					
21-30	204 (59)	20 (5.8)	122 (35.3)	14.91	0.021
31-40	35 (42.7)	10 (12.2)	37 (45.1)		
41-50	45 (59.5)	5 (5.5)	41 (45.1)		
51-60	14 (37.8)	3 (8.1)	20 (54.1)		
Gender					
Female	220 (55.3)	24 (6)	154 (38.7)	2.33	0.311
Male	78 (49.4)	14 (8.9)	66 (41.8)		
Educational level					
Primary	3 (50)	0 (0.0)	3 (50)	10.13	0.255
Intermediate	2 (16.7)	1 (8.3)	9 (75)		
Secondary	41 (48.8)	6 (7.1)	37 (44)		
University	238 (56.1)	29 (6.8)	157 (37)		
Post-graduate	14 (46.7)	2 (6.7)	14 (46.7)		
Employment					
Student	127 (57.7)	9 (4.1)	84 (38.2)	10.95	0.027
Not employed	83 (56.1)	8 (5.4)	57 (38.5)		
Employed	88 (46.8)	21 (11.2)	79 (42)		
Do you have knowledge of the possibility of donating organs after death?					
No	54 (47.4)	7 (6.1)	53 (46.5)	2.87	0.237
Yes	244 (55.2)	31 (7)	167 (37.8)		
What is the source of your information?					
Friends/colleagues	19 (70.4)	1 (3.7)	7 (25.9)	9.23	0.51
Internet / social media	195 (54.5)	26 (7.3)	137 (38.3)		
health professionals	12 (48)	2 (8)	11 (44)		
TV / Radio	16 (55.2)	2 (6.9)	11 (37.9)		
Magazine / newspaper	3 (100)	0 (0.0)	0 (0.0)		
Have you ever come across people who have donated their organs after death?					
No	233 (51.4)	33 (7.3)	187 (41.3)	4.67	0.097
Yes	65 (63.1)	5 (4.9)	33 (32)		
Do you know the Saudi organ donation law and policy?					
No	202 (50.9)	28 (7.1)	167 (42.1)	4.19	0.123
Yes	96 (60.4)	10 (6.3)	53 (33.3)		

Table 3: Relationship between participants' beliefs about the idea of organ donation after death and their demographics, knowledge of the possibility of donating organs after death and Saudi organ donation law and policy and coming across people donated organs after death (No.: 556).



N.B. ($\chi^2 = 65.35$, $p\text{-value} = < 0.001$).

Figure 3: Relationship between participants' beliefs about the idea of organ donation after death and what their parents think of this idea.

Discussion

It was suggested that a more effective policy be implemented in the field of organ donation and transplantation by assessing and improving community preferences (13,14). The main issue in this hot area is the global shortage of organs available for transplantation, with long waiting lists in most countries. (Harris et al., 2000; Shanmugarajah et al., 2014; Levitt, 2015).

The reported donor shortage emphasizes the need to develop novel methods of increasing donation perception in addition to the methods by which current organs are allocated. To address these issues, a valuation of the underlying values that detect first the criteria for including individuals on the transplant waiting list and then the rules for allocating available organs to those on the list is performed (National Clinical Taskforce on Organ and Tissue Donation, 2007).

By 1993, the National Kidney Foundation in Saudi Arabia had evolved into the Saudi Organ Transplantation Centre in Riyadh, where it is now in charge of organizing end-stage organ disease medical faculties and enhancing national health education, among other things (Saudi Center for Organ Transplantation, 2013). Every year, the need for organs in Saudi Arabia is limited; 13,160 patients receive hemodialysis, and 5,154 are transplant candidates (Saudi Center for Organ Transplantation, 2014).

The current study aimed to determine the Taif community's awareness and willingness to donate organs after death. Also, to disclose the reasons that led to the Taif community refusal to donate organ after death, and to show the ability of the deceased family to donate their organ. According to the findings of the study, more than half of the participants thought that organ donation after death was a good idea, while only 6% thought it was a bad idea. In contrast, less than one-fifth (18.7%) of the participants' parents supported the idea of organ donation after death, and one out of every four opposed it (25.4 percent).

More than three-quarters of those polled agreed that registering as an organ donor can save a life. More than two-thirds of study participants agreed that organ donation is a worthwhile decision that should be promoted. Furthermore, more than two-thirds believe that organ donation will benefit the donor in life or death.

From the point of religious issue which governs the Muslims to have the decision, three quarters of the participants agreed that organ donation is a good deed, may Allah reward it. As for administrative and logistic procedures to register for willing of organ donation in Saudi Arabia, the vast majority of the participants (93%) refused that a person registered for organ donation will not find

adequate care from doctors in an emergency, two thirds (60.1%) refused that you cannot find opportunities to register as an organ donor in Saudi Arabia.

A previous Saudi study done in Riyadh city found that 60% were aware of organ donation from media as the main source of information, while only 30% had knowledge about Saudi center for organ transplantation (SCOT). It was found that 47.7% of the population agreed to donate both organs and tissue and 26% of them accepted the idea of organ donation to please Allah (Alsharidah et al., 2018).

In this study, more than three quarters (84.6%) refused the concept that they don't trust the health care system in Saudi Arabia and they would rather go abroad to donate organs after death. Participants in their twenties and thirties had a more favourable attitude toward organ donation than those in their twenties and thirties. This could be because the younger participants have a better understanding of the phenomenon and its significance as a result of their studies or social media, which was the most widely reported source of information. As for the elderly, they are about to depart and may believe that they can gain some benefits and rewards from Allah by donating organs to those in need. Those who support the idea are also supported by their parents' positive perception and opinion of organ donation.

Flayou K et al. (Flayou et al., 2016) reported similar findings in Morocco, where 43.2 percent previously donated blood, 65.7 percent expressed consent to organ donation during their lifetime, and 82.8 percent expressed agreement to donation after death.

A previous study in Morocco found that more than half of the participants (58%) were hesitant to donate their organs, 28.7 percent were completely supportive, and 5.9 percent were completely opposed. Only 46 percent of those polled agreed to the idea of living organ donation, while 47.1 percent said no. Furthermore, 64.7 percent of participants agreed to donate their organs after death (Haddiya et al., 2020).

Tong A et al. (Tong et al., 2013) carried out a systematic review to assess public awareness and attitudes toward living organ donation. The majority of studies (85.5 percent) confirmed acceptance of the concept of living directed donation (11 studies), with recipient and community benefit as the reported motive. Nonetheless, reported barriers included apprehension about surgical and health risks, a lack of knowledge, a respect for cultural values, distrust in hospitals, and a desire to avoid recipient obligation.

In Saudi Arabia, Darwish et al. (Darwish et al., 2021) found that most of their study participants (87.4%) in favor to organ donation, more than half (53.5%) reported their willing to donate any organs. Also, 46.2% of cases believe that organ donation could be after death, while 39.7% reported it could be during life or after death. vast majority (89.3%) ignores the organ donation rules. Another study revealed that about one third (35.6%) of Saudis did not know that organ donation is legal in the Saudi Arabia. The study also revealed almost all the participants did not know where to go when they decided to donate their organs. Among participants who were willing to donate, the most common purpose was to save someone's life (92%).

In this study, 28.5% of the participants reported that organ donation after death can lead to body disfigurement. In a previous study, the most important barrier (13%) was the belief that their bodies should be kept intact after death followed by ignorance about organ donation (19). While another study found that the most reported barriers were causes of body distortion (39%) and fear of health problems (35%). (Agrawal et al., 2017).

Limitations

A limitation of the present study is having a cross-sectional design that could reveal the associations between variables without declaring the casual relationships. Another limitation is the use of a self-reporting questionnaire that may have a recall bias.

Conclusion

According to the findings of this study, only 18.5 percent of participants had come across people who had donated their organs after death, and 28.6 percent were aware of Saudi organ donation law and policy. Of those polled, 45 percent strongly agreed that organ do-

nation is a wise decision to save lives, and 51.1 percent said it is a good deed, may Allah reward it. Only 9.4 percent strongly agreed that organ donation after death can result in body disfigurement, 19.1 percent strongly agreed that to register as an organ donor, one must seek advice from those around him, and 4.9 percent strongly agreed that opportunities to register as an organ donor are unavailable in Saudi Arabia. Only 18.7 percent of the participants' parents supported the concept of organ donation after death. Participants aged 41 to 5 years, students, and those whose parents support the idea of organ donation after death had a significantly higher percentage of those who thought it was a good idea. With the help of health-care providers, the media, and religious scholars, effective actions should be taken to educate people about the importance of organ donation and to dispel myths.

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