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The Study of Attitude and Awareness of Residents of Jahrom Country Regarding Brain Death and Organ Donation in 2018

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ABSTRACT

Introduction: Organ donation has rescued many lives all around the world. In fact, body donation has managed to improve the quality of patients' lives as well as their attitudes towards the future. Hence the purpose of this study is to investigate people's attitude and awareness in Jahrom Country respecting brain death and organ donation in 2018.

Methodology: It was a descriptive-cross sectional survey. The population comprised of 201 people of Jahrom Country residents who were examined in 2018. A demographic questionnaire and an organ donation questionnaire were used as data collection instruments. Data was analysed using descriptive statistics (percentage and frequency) and inferential statistics (Mann-Whitney and Kruskal-Wallis) through SPSS Software version 21.

Results: Majority of subjects (67.7%) were ranked medium and higher regarding awareness. Moreover, considering attitude the overwhelming majority of participants were ranked at medium and higher levels which imply a positive attitude among participants respecting body donation. Married people have significantly more positive attitudes toward single donations than donors ($p=0.001$, $p<0.01$).

Conclusion: Although people are quite willing to donate organs, the number of individuals holding a body donor card is very few. Therefore there should be more training through various sources to provide a positive mindset.

Key words: Body donation, Attitude, Awareness, Jahrom, Brain death

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INTRODUCTION

Unlike the past the concept, brain death is currently being defined according to modern biology certainties which includes central nervous system incorporating brainstem that is a control center of the organism. When central nervous system and brainstem stop functioning, the organism is nothing but an aggregation of living cells. Although it is theoretically impractical to examine all brain functions, the irreversible absence of all brain functions is practically determined by unconsciousness, losing brainstem reactions, and confirming tests [1]. Corpses of brain-dead people are the initial resource for organ donation [2]. Due to low quality of life in such patients, organ transplantation is life saving and can save other patients' lives and improve their quality of life. Transplantation of vital organs such as heart, kidneys, lungs, and liver from brain-dead patients before heart stops functioning is crucially significant in saving other patients' lives. A successful transplantation not only enhances life expectancy and quality of life, but also it is efficient in decreasing treatment costs [3]. Social acceptances, religious beliefs, and individuals' level of awareness and attitude affect donation frequency. A significant challenge in body donation is deficiency of donated organs. Improved awareness and mindset in society with the aim of modifying false beliefs can be effective in increasing post mortal organ and tissue

donation [4]. Transplantation of vital organs such as heart, kidneys, lungs, and liver from brain-dead patients before heart ceases to function is crucially significant in saving other patients' lives [3]. Depending on disease, nearly 10% to 25% of patients, who are in need of organ transplantation and registered in waiting list, pass away without receiving organs. According to the Global Organization for Organ Donation (GOOD), 6469 transplantations were carried out in 2010 in Europe. Among most important challenges of organ donation is the deficiency of donated organs [5]. This is a global issue; in the U.S there are over 100,000 individuals waiting to have transplantation, while only a quarter manage to have transplantation and many die before receiving the organ [6,7]. Although organ donation rate in Iran is much lower than European nations, i.e., two million versus 30 million individuals, Iran has the capacity to increase organ donation up to 10 times [8]. Since organ donation varies in each area based on customs, traditions, religious and cultural beliefs, and level of awareness and perspective regarding brain death and organ donation concepts, and because of Jahrom Country success in case of organ donation. The aim of this study is to investigate mentality of Jahrom residents regarding organ donation by brain-dead patients in 2018.

MATERIALS AND METHODS

This was a descriptive-cross sectional study. The target population was all residents of Jahrom Country. After acquiring official letter of introduction by research deputy of Jahrom Medical University and obtaining the moral code (IR. JUMS.REC.1397.032), sample size was determined by a statistics advisor and based on Morgan table. Sampling method was clustering and systematic random, in such a way that Jahrom Country was divided to five clusters (North, Center, South, East, and West) then out of each area one street, one alley, and one house/apartment plate were randomly selected as the head-cluster. Then one person out of the qualified individuals was elected *via* simple random sampling for completing the questionnaire. The criteria for entering the survey include age>20 years, Jahrom residency, and personal consent to participate in research. An incomplete questionnaire was the exclusion criterion.

Data collection instrument contained three sections. The first part had 7 demographic questions including age, gender, marital status, education, job, living location, and economic situation. The second part included 4 awareness-related questions. Answers were in right and wrong format, the right answer would receive 1 point, and the wrong one would receive zero. Score range in awareness part was 0-4. The third part covered 16 items which were allocated to attitudes of brain death and organ donation. Scoring of each item was in Likert spectrum (totally disagree, disagree, neutral, agree, totally agree) ranging 0-4. Score range in this section was 0-64. Reliability was estimated *via* test-retest α=0.79 [9]. Data were analysed using descriptive statistics (percentage and frequency) and inferential statistics (Mann-Whitney and Kruskal-Wallis) through SPSS Software version 21.

RESULTS

Of 201 participants nearly half of them (49.8%) were males and the rest of them were females. Their average age was almost 31 years with the standard deviation of almost 10 years. Maximum age was 75 and minimum age was 16 years. Moreover, most of participants (46.8%) aged 21-30 years old. Considering marital status, majority of them (62.2%) were married. As far as education was concerned, most subjects (43.3%) held a diploma. Taking participants' jobs into account, they mostly declared they were self-employed with an average income. Finally, most of them (84.4%) mentioned that they lived in town. Frequency and frequency percentage of participants are completely presented in Table 1 in terms of demographic variables.

Table 1: Frequency and frequency percentage of participants in terms of demographic indices

Characteristics	Categories	Number	Percentage
Gender	Male	100	49.8
	Female	101	50.2
Age (years)	Under 20	18	9
	21-30	94	46.8
	31-40	57	28.4
	41-50	25	12.4
	Over 50	7	3.5
Marital status	Single	74	36.8
	Married	125	62.2
	Divorced	2	1
Education	Illiterate	17	8.5
	Diploma	87	43.3

	Bachelor degree	82	40.8
	Higher than bachelor	15	7.5
Job	Unemployed	54	26.9
	Employee	42	20.9
	Self-employed	59	29.4
	Housewife	46	22.9
Income	Low	58	28.9
	Average	134	66.7
	High	9	4.5
Living location	Town	167	84.8
	Village	30	15.2

While answering the question, "How much do you know about organ donation procedure?" 10.9% chose "a lot", 54.7% "somewhat", 27.9% "a little", and 6.5% "no information" options. Therefore, just a few people have a lot of information in this regard. Furthermore 10% declared that they had not heard anything about organ donation. Individuals who claimed to have some information about organ donation were also asked about their source of information. Majority of respondents (54.2%) introduced media as their source of information. Next, 20.9% mentioned friends, 10.9% books and the press, 2.5% relatives, 2.5% colleagues, 0.5% congresses and seminars, and 8.5% other sources as their main resource.

Considering organ donation among their family members and relatives, most participants (77.5%) said that no one in their family had ever donated organs. In case of receiving organs also most people (77.1%) declared that among their relatives nobody had ever had transplantation.

In case of organ donor card, a low percentage of individuals (20.4%) said that they had such a card, while most individuals (79.6%) said that they did not have this very card. Among participants who did not have a card, 62.5% said that they tend to receive one, while 37.5% did not reveal any tendency to have one.

Regarding participants' perspective towards organ donation, it was revealed that majority of them (80%) agreed and merely 7.5% disagreed. Also 12.5% of respondents had no idea in this case. Among the opponents, most of them i.e., 46.7% stated reviving probability, 20% its immorality or unlawfulness, 6.7% its uselessness for the receiver, and 6.7% lack of having a defined organization to prevent organ donation abuses as their reason of adversary, in addition 20% of respondents did not specify their reason to oppose. Organ donation supporters answered the question "in you estimation what has to be done to win others' agreement in society?" in this way: majority of respondents (58.1%) by building culture through the media, 21.9% culture building by physicians, 14.4% mentioning the humanistic aspect and heavenly rewards, 3.1% support by well-known religious figures, and 2.5% providing financial support for the donor family. In addition, in case of paying for the donated organ, majority of subjects (49.8%) disagreed, 17.4% agreed, and 32.8% remained dispassionate. Questioning about reviving possibility of the brain-dead patient, most respondents, i.e., 48.7% assumed it impossible, while 25.1% considered it possible, and 26.1% were unaware. Replying the question "is there a rule dedicated to organ donation in our country?" 25.4% answered yes, 49.8% answered no, and 24.9% were uninformed. Furthermore, taking Fatwas by Marjas (religious references) into account, 35.3% stated that their Marja agreed and 9.5% said that their Marja disagreed with organ donation, 55.2% also declared unawareness in this case.

Two questions were asked about brain death in a patient who holds an organ donor card. In this specific case, majority of respondents i.e., 60.7% said that if their patient had a brain death and held an organ donor card, they would agree with organ donation. In addition, 14.9% disagreed and 24.4% did not know what they would decide to do. In this case 40.8% of respondents believed that despite having organ donor card, the family of the brain-dead patient is still required to permit to carry out transplantation. Moreover, 36.3% stated that in this case the patient's family need not to allow for the transplantation, and 22.9% declared unawareness in this respect.

In case of recommending organ donation, 50.3% said that they had recommended it to others and the remaining had not. Respecting the question "as far as your beliefs are concerned how you find organ donation?" majority of participants (69.7%) stated that it is a nice action, 19.4% said that they would recommend it to others, 4.5% believed that it was not a nice thing to do, and 6.5% had no idea. Of all respondents, 74% said that they had thought about organ donation so far and 18.5% had not considered it. Furthermore 7.5% found thinking about organ donation insignificant. At last, 71.1% of respondents said that they had decided to participate in this godly movement from that day on and 5.5% were not willing to participate in organ donation. 23.4% had no idea.

Description of attitude and awareness regarding organ donation

In order to investigate descriptive statistics of individuals' attitude and awareness regarding organ donation, scores of questions related to these two variables were added up and respondents' scores in each of these variables were estimated. Then regarding the variable of awareness of organ donation, score 0 was considered as very low, 1 low, 2 medium, 3 high, and 4 very high. Moreover, score range of variable of attitude towards organ donation was divided to 5 equal sections and rated as very low, low, medium, high, and very high. The results are presented in Table 2. According to this table it can be observed that in case of awareness level majority of individuals (67.6%) are at medium level or over that which indicates a positive mindset of participants regarding organ donation. Spearman coefficient between scores of these two variables equals 0.181 and p value is 0.010 which is significant at 0.05 ($p<0.05$), but regarding the effect size it is estimated as small.

Table 2: Description of variables of awareness and attitude regarding organ donation

Variable	Category	Frequency	Frequency (%)
Awareness	Very Low	19	9.5
	Low	46	22.9
	Medium	64	31.8
	High	49	24.4
	Very High	23	11.4
Attitude	Very Low	0	0
	Low	4	2
	Medium	46	22.9
	High	97	48.3
	Very High	54	26.9

The comparison of individuals' awareness and attitude regarding organ donation in terms of demographic variables

In this section, the scores of participants' attitude and awareness are compared based on demographic variables by calculating average scores of each group and employing Mann-Whithney and Kruskal-Wallis tests. The results are displayed *via* Tables 3 and 4. With respect to the results of variable of awareness level, the only observed significant difference was observed among awareness of people with different education levels which is highly significant at 0.01 ($p=0.002$, $p<0.01$). From Table 3, it can be observed that individuals' awareness significantly increases upon higher education level. Awareness does not show any significant difference in terms of other demographic variables ($p>0.05$).

Regarding the results of variable of attitude towards organ donation, the only observed significant difference is between attitudes of single and married individuals which is highly significant at 0.01 ($p=0.001$, $p<0.01$). Table 4 shows that married people's attitude is more positive than singles individuals' (it is noteworthy that since the divorced participants were very few they were excluded from the analysis). The score of participants' attitude in terms of other demographic variables is not significantly different ($p>0.05$).

Table 3: The average of awareness level in terms of demographic variables calculated by Mann-Whitney or Kruskal-Wallis

Characteristics	Categories	Average scores	Test	Statistics	p-value
Gender	Male	1.92	Mann-Whithney	-1.668	0.095
	Female	2.1881			
Age (years)	Under 20	1.7778	Kruskal-Wallis	2.005	0.735
	21-30	2.1064			
	31-40	2.0351			
	41-50	2			
	Over 50	2.4286			
Marital status	Single	2.0946	Mann-Whithney	-0.476	0.634

	Married	2.048			
Education	Illiterate	1.4118	Kruskal-Wallis	14.437	0.002
	Diploma	1.8851			
	Bachelor degree	2.2317			
	Higher than bachelor	2.8			
Job	Unemployed	2.1852	Kruskal-Wallis	1.079	0.782
	Employee	2.0714			
	Self-employed	1.9831			
	House wife	1.9783			
Income	Low	1.9138	Kruskal-Wallis	2.629	0.269
	Medium	2.0821			
	High	2.5556			
Living location	Town	2.0898	Mann-Whithney	-0.82	0.412
	Village	1.9			

Table 4: Average score of attitude in terms of demographic variables calculated by Mann-Whitney or Kruskal-Wallis results

Characteristics	Categories	Average scores	Test	Statistics	p-value
Gender	Male	24.76	Mann-Whithney	-0.849	0.396
	Female	25.297			
Age (years)	Under 20	23.8889	Kruskal-Wallis	3.667	0.453
	21-30	24.8085			
	31-40	25.6842			
	41-50	25.44			
	Over 50	24.1429			
Marital status	Single	24	Mann-Whithney	-3.271	0.001
	Married	25.64			
Education	Illiterate	25.0588	Kruskal-Wallis	5.055	0.168
	Diploma	24.4023			
	Bachelor degree	25.4268			
	Higher than bachelor	26.4667			
Job	Unemployed	24.537	Kruskal-Wallis	5.451	0.142
	Employee	25.8333			
	Self-employed	24.4576			
	House wife	25.6087			
Income	Low	25.1724	Kruskal-Wallis	1.19	0.552
	Medium	25.0448			
	High	23.8889			
Living location	Town	25.2455	Mann-Whithney	-1.417	0.156
	Village	24.1			

DISCUSSION

In case of awareness of organ donation, majority of individuals (67.7%) were at medium and high status. Also an overwhelming majority of participants (98%) was at medium and higher level regarding their attitude to organ donation which indicates their positive mindset of organ donation. Findings of this survey revealed that over 80% of people consider organ donation a godly and

moral action and agreed to have a humanistic motivation to donate organs and just 7.5% disagreed. In addition, 12.5% of participants had no idea in this regard. Hagihara et al., mentioned public opinion agreement with organ donation issue among reasons to donate organs, also emphasized philanthropy, and Febrero et al., highlighted social factors among reasons to donate organs [3,10,11]. Annually 3000 people come down with brain death in Iran, however organ donation within a year cannot meet even one tenth of this demand [12]. Organ donation supports stated that culture building by the media (58.1%, majority of individuals), culture building by physicians (21.9%), expressing the humanistic aspect and the heavenly rewards (14.4%), support by well-known religious figures (3.1%), and financial support dedicated to donor family members (2.5%) can manage to persuade others to participate in organ donation. In addition, in case of exchanging organs for receiving money, majority of subjects (49.8%) disagreed, 17.4% agreed, and 32.8% had no idea. In a study by Manzari et al., families introduced the media as the best resource to obtain information in this regard which is in accordance with the results of the present study [3]. Matesanz et al. in Sapan [13] and Sander et al. in the U.S [14] found mass media effective on enhancing people's awareness. Sanner et al. in Switzerland [15] and Dahlke et al. in the U.S [16], referred to the role of cultural and social differences on people's attitude, behaviour, and performance facing organ donation. Improved awareness about brain death and organ donation leads to a change in attitude and increased percentage of organ donors. In such a way during a 2-year widespread training program in England, they managed to increase the number of donors following brain death by 16% [17]. With respect to this fact that awareness level and attitude are directly related to organ donation frequency, therefore increasing awareness and attitude in this respect enhances organ donation occurrence throughout society [18]. Among opponents, most of them i.e., 46.7% stated reviving probability, 20% organ donation immorality or unlawfulness, 6.7% its uselessness for the receiver, and 6.7% lack of having a defined organization to prevent organ donation abuses as their reason of adversary, in addition 20% of them did not specify their reason to oppose. The results of other surveys showed that providing training for people who were against organ donation leads to a change in their perspective, knowledge, and religious beliefs and consequently they change their minds to agree with organ donation [17]. Another study by Rodrigue-villar et al. revealed that improving medical staff knowledge can result in increased public awareness regarding organ donation through the society [19]. Although 80% of participants were for organ donation, in case of organ donor cards, just a few individuals (20.4%) stated that they had an organ donor card and majority of them (79.6%) did not possess a card. Among the ones who did not have a card, 62.5% said that they would like to receive a card, while 37.5% were not willing to receive one. In a study by Banas et al., which was carried out in Regensburg, Germany, 98% agreed to have a card, 31.5% had a card, and 49.1% declared they wanted to have one [20]. Despite that religious figures did not see organ donation in contradiction with religion, most people were not aware of religious sentences in this case, moreover most of respondents were unaware of Fatwas by their Marja regarding organ donation and transplantation. A study by Randhawa in England showed that culture and religion are not much of strong obstacles on the way of organ donation and in fact religious Fatwas were very important for many Asians, especially Muslims [21]. Ashraf et al., in Pakistan [22], Kececioglu et al. [23], in Turkey, and Bilgel et al. [24], in Turkey pointed out the role of religion on individuals' attitude. Statistical investigations showed that there is a significant relationship between satisfaction with organ donation and religion ($p=0.001$). It can be said that expressing positive attitudes towards organ donation can play an outstanding role in increasing organ donation occurrence and peoples' tendency to take part in this great project. With regard to the results of variable of awareness level, the only observed significant difference was observed among awareness of people with different education levels which is highly significant at 0.01 ($p=0.002$, $p<0.01$). From Table 3, it can be seen that individuals' awareness significantly increases upon higher education level. Awareness does not show any significant difference in terms of other demographic variables ($p>0.05$). Additionally, in other surveys a significant relationship was found between educations and receiving organ donor card [25,26], Bilgel et al., also displayed that attitude towards organ donation is obviously related to education level, age, and gender [24].

CONCLUSION

In spite of highly tendency to donate organs in Jahrom, just a few people hold an organ donor card. Therefore there ought to be more training through various resources to provide a positive attitude towards it.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this manuscript.

REFERENCES

1. Mori K. KohShingu P. Brain death. Millers anesthesia. 7th Ed. Philadelphia: Churchill Livingstone 2010; 3003-17.
2. Konstantinos L, Fraser J, Freeman WD, et al. Care of the brain-dead, organ donor. Curr Anaesth Crit Care 2007; 18:284-94.
3. Manzari SZ, Mohammadi I, Haideri A. Factors influencing organ donation family decisions by

brain dead patients families. Payesh 2013; 11:913-25.

4. Arjmand B, Aghayan HR, Godarzi P, et al. Knowledge and attitudes about organ donation and tissue donation card makers and members of connective tissue bank products (case/ control). J Med Council Islamic Republic Iran 2008; 26:30-5.
5. Vlaisavljević Ž, Milutinović D, Miličić B, et al. Attitudes and knowledge of nurses on organ legacy and transplantation. Srp Arh Celok Lek 2014; 142:213-8.
6. Mocan N, Tekin E. The determinants of the willingness to donate an organ among young adults: Evidence from the United States and the European Union. Soc Sci Med 2007; 65:2527-38.
7. Dasgupta A, Shahbabu B, Sarkar K, et al. Perception of organ donation among adults: A community based study in an urban community of West Bengal. Sch J App Med Sci 2014; 2:2016-1.
8. Taghiabad AB, Hasanzadeh F, Rayhani T, et al. Comparing attitudes of nursing students and students of Islamic sciences regarding organ donation after brain death in Mashhad in 2008. Mod Care J 2014; 11:63-70.
9. Moradabadi SA, Madani A, Zare F, et al. Awareness and attitude of Bandar Abbas residents towards organ donation. Iran J Health Educ Health Promot 2014; 2:223-31.
10. Hagihara A, Murakami M, Miller AS, et al. Association between attitude towards health promotion and opinions regarding organ transplants in Japan. Health Policy 1997; 42:157-70.
11. Febrero B, Ríos A, López-Navas A, et al. A multicenter study of the attitude of secondary school teachers toward solid organ donation and transplantation in the southeast of Spain. Clin Transplant 2014; 28:259-66.
12. Mehdizadeh A, Fazelzadeh A. Life in death: An overview of solid organ transplant in Shiraz, Iran. Exp Clin Transplant 2007; 5:701-7.
13. Matesanz R. Organ donation, transplantation, and mass media. Transplant Proc 2003; 35:987-9.
14. Sander SL, Miller BK. Public knowledge and attitudes regarding organ and tissue donation: An analysis of the northwest Ohio community. Patient Educ Couns 2005; 58:154-63.
15. Sanner M. A comparison of public attitudes toward autopsy, organ donation, and anatomic dissection. A Swedish survey. JAMA 1994; 271:284-8.
16. Dahlke MH, Popp FC, Eggert N, et al. Differences in attitude toward living and postmortal liver donation in the United States, Germany, and Japan. Psychosomatics 2005; 46:58-64.
17. Zohoor A, Bozorgmagam M. Attitude towards organ transplantation in brain death in Tehran. J Ardabil Univ Med Sci 2003; 2:29-30.
18. Arjmand B. Assessing knowledge and attitudes of intensive care unit nurses and emergency nurses toward organ and tissue transplantation. J Med Iran 2007; 26:348-59.
19. Rodrigue-villar C, Paredes D, Ruiz A, et al. Attitude of health professionals toward cadaveric tissue donation. Transplant Proc 2009; 41:1480-2.
20. Banas B, Blever B, Eckert M, et al. Level of information of students at the University of Regensburg concerning organ donation and transplantation-informed or not informed consent in organ donation? Dtsch Med Wochenschr 2013; 138:775-80.
21. Randhawa G. An exploratory study examining the enfluence of religion on attitudes toward organ donation among the Asian population in Luton. UK Nephrology Dialysis Transplantation 1998; 13:1949-54.
22. Ashraf O, Ali S, Ali SA, et al. Attitude toward organ donation: A survey in Pakistan. Artif Organs 2005; 29:899-905.
23. Kececioglu N, Tuncer M, Yucetin L, et al. Attitudes of religious people in Turkey regarding organ donation and transplantation. Transplant Proc 2000; 32:629-30.
24. Bilgel H, Sadikoglu G, Goktas O, et al. A survey of the public attitudes towards organ donation in a Turkish community and of the changes that have taken place in the last 12 years. Transpl Int 2004; 17:126-30.
25. Ghadipasha M, Nikki Y, Salehi M, et al. The study of physican attitude concerning organ donation and the level of information about laws & sanctions and the procedure in brain death. J Forensic Leg Med 2008; 14:112-6.
26. Merez B. The organ procurement problem: Many causes, no easy solution. JAMA 2000; 254:3285-88.