



Identification of Effective Factors on Decision Making for Organ Donation in Volunteer Blood Donors in Mashhad

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DOI: 10.24896/jrmds.20186359

ABSTRACT

Nowadays, organ donation is used as a new therapeutic approach to replace the members of the patients with advanced functional disabilities. Also understanding the relationships between altruistic health acts such as blood donation and willingness to donate organs is important to aid therapeutic research advances. This study was done with the scope of exploring the knowledge and opinions of Iranian volunteer blood donors about organ donation. This cross-sectional study was performed on 504 volunteer blood donors referred to blood transfusion centers of Mashhad, Iran, in 2014-5. A researcher-made questionnaire was used to collect demographic and religious data. The validity and reliability of the self-reported questionnaire were confirmed. Participants were selected by cluster sampling. Mann-Whitney U test was performed to compare the means. Categorical variables were analyzed using Chi-square and Fisher's exact test. 473 out of 504 volunteer blood donors (93.85%) were men. The mean age of the participants was 34.44±9.5 years. 80% of the participants were willing to donate organs of their families after brain death whereas only 67 participants (13.29%) had organ donation card. 44% of the volunteer blood donors didn't have information about organ donation. Television programs had prominent great role in motivating people toward organ donation (63.1%). The factors influencing decisions to donate organs in volunteer blood donors are education, gender, the number of donations, and awareness of religious leaders' Fatwa. Volunteer blood donors did not have adequate knowledge towards organ donation. Television programs are suggested to be arranged and broadcast in order to encourage the individuals to donate organs. Advertising and culture creation can lead to positive outcomes in raising awareness about organ donation.

Key words: Organ Donation, Brain Death, Blood Donor, Transplantation, Content Validity

HOW TO CITE THIS ARTICLE: Razieh Yousefi, Seyedeh Fatemeh Shams, Mahdi Talebi, Monavar Afzalaghaee, Yousef Bashiri, Identification of Effective Factors on Decision Making for Organ Donation in Volunteer Blood Donors in Mashhad J Res Med Dent Sci, 2018, 6(3): 387-392, DOI: 10.24896/jrmds.20186359

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Received: 15/01/2018

Accepted: 10/04/2018

By changing lifestyle and increasing life expectancy, chronic diseases are on increase and non-communicable chronic diseases such as diabetes and blood pressure are the most causes of death. Chronic disease increments lead to organ insufficiency and consequently disabilities [1, 2].

INTRODUCTION

Organ transplantation is one of the best options in the treatment of organ incompetency in the end stage of the disease and facing disabilities; the results are very satisfying in the world. Generally, 80-95% of patients continue their life with normal health and quality one year after transplantation [3]. Despite improving transplantation method, it is not used as a regular method in the world, due to organ limitation; thus, most of the patients die before receiving transplanted organ [4, 5]. In a few cases, organs and transplantation tissues can be achieved from a living person, but there are some limitations and problems; most of the countries try to identify and use organs from cadaver and brain death donors [6].

Currently, organs from brain death individuals and on a limited basis from patients with heart death are used for transplantation. The amount of donated organs and tissues is very low in the world. Also, receiving cadaveric transplantation is various from 30 to 40 ppm in USA and Europe while this ratio is 0-20 ppm in Asian and African countries.

Blood donation is a kind of tissue donation; based on different studies about blood donors, altruism is an effective factor in their decision for blood donation. 100% of the needs to blood products are met with voluntary blood donation. Few studies are done about organ donation tendency in blood donors, and the results are inconsistent. Some studies cited that this tendency is higher in blood donors compared to other groups [7] while other researches indicated that attitudes toward blood and organ donation are different. In fact, benevolence and altruism are more obvious in blood donors and organ donors, respectively [8]. In this study, we aimed to assess organ donation inclination and its related factors in Iranian volunteer blood donors.

MATERIALS AND METHODS

This cross-sectional study was done during 2014-2015 in Mashhad city. The blood donors referring to donation centers of Mashhad city were enrolled in this study. The data were collected by a researcher-made questionnaire, which was designed based on studies' evaluation of organ donation trend. This questioner consisted of demographic information (age, gender, educational level, occupation status and religious beliefs) and some questions about awareness about brain death definition, legibility for organ

donation, organ donation qualifications, denotable organs, organ donation tendency, and awareness about religious principles.

The scientific validity of questionnaire was approved by content validity method; first, the questionnaire was designed, and its reliability was computed by retest manner; thus, 25 individuals referring for blood donation and having the inclusion criteria were selected and the questionnaire was completed by them, twice within one week. The obtained correlation was 87.00%. Finally, after obtaining verbal consent, data collection started. 640 blood donors who were selected by cluster random sampling filled out the questionnaire and 80% of them (504 individuals) returned complete questionnaires. The relationship between the variables was assessed by T student and Chi-square tests. P value less than 0.05 was considered significant. Data analysis was done by SPSS. V11.

RESULTS

473 out of 504 (93.8%) attendees were male and 31 (6.2%) were female. Mean age of the studied population was 34.44 ± 9.5 . 92.9% were residing in Mashhad. 95 attendees (18.8%) donated blood for the first time, and the others had the experience of multiple blood donations. As to occupation, 21 (4.3%) were employed in medical system, 65 (13.2%) were student, 204 (41.5%) were self-employed and 201 (40.9%) were employed in other jobs. 258 (45.4%) contributors had college education, 147 (31.5%) had high school education, and the others had lower education.

Most of respondents (318 individuals, 63.1%) declared public media as the source of information. Other information sources included friends (171 individuals, 33.9%), newspaper (72 individuals, 14.3%), health care worker (51 individuals, 10.1%) and scientific books (47 individuals, 9.3%). Only 3 individuals mentioned internet as advertisement source. To answer the question, "Who can donate organs?", 351 of contributors (69.9%) indicated heart failure patients and 120 subjects (23.9%) mentioned brain death patients. 245 cases (48.6%) believed that brain death cases can return to normal life.

Most of the attendees were aware about transplantable organs. Their knowledge about transplantable organ was as follows: 463 individuals (91.9%) about kidney, 444 individuals

Table 1: Demographic characteristics of the studied cases

Variables	Willingness to organ donation				
	Person	P-value	Relative	P-value	
Sex	Male	3.9±1.2	0.01	3.04±1.02	0.03
	Female	4.48±1.02		3.5±1.2	
Education	High school diploma and less	3.8 ±1.3	0.59	2.9±0.95	0.003
	Higher	4.03±1.2		3.2±1.2	
Job	Health	3.61 ±1.4	0.2	2.94 ±0.83	0.67
	Other	3.96 ±1.2		3.07±1.1	
Blood donor	First	3.71±1.3	0.05	2.94±1.1	0.04
	Higher	4.04±1.2		3.5±1.09	
Knowledge	correct	4.1±1.2	0.005	3.2±1.07	0.086
	false	3.8±1.3		3.1±1.07	
	don't know	3.7±1.3		2.92±1.09	
Awareness of positive view of religious officials	no	3.6±1.26	0.00001	2.8±1.18	0.001
	Yes	4.15±1.18		3.2±1.10	
	don't know	3.44±1.3		2.86±1.17	

(88.1%) about heart, 401 individuals (79.6%) about liver, 325 individuals (64.5%) about cornea, 243 individuals (48.28%) about lung, 192 individuals (38.1%) about skin, 161 individuals (31.9%) about bone, and 88 individuals (17.5%) about pancreas.

242(48.00%) cases declared that they were informed about organ donation laws in Iran. Only 88 cases (17.4%) knew card issuing centers and 67 cases (13.30%) had voluntary organ donation card. 327 participants (64.9%) believed that their religion allowed them to donate brain death patients' organ, while 188 of them believed that from overview of their religion, organ donation is allowed from a living person.

In assessment of family consent for organ donation of card owners, 245 cases (56.7%) thought that the donor's family consent is necessary and the other thought that it was not. 340 of them (81.8%) stated that kidney donation is acceptable from live donors and 449 cases (89.9%) mentioned that kidney donation is avowed from brain death patients. 81.3% of the attendees agreed to donate their own organs after brain death, but only 67.6% of them agreed to donate their brain death relatives' organ. As shown in Table 1, brain death relatives' organ donation inclination correlated with gender, educational level, occupation, and blood donation of participants.

The most important causes of opposition in cases who did not agree to donate their own or relatives' organs are as follows: 1- insufficient care of medical team from the donor, while the patient is still alive, and 2- I don't like to keep my organs

in the body of others and be punished for their guilts. These causes are displayed in Table 2.

Table 2: Reasons for lack of tendency to donate organs donation

Cause of not organ donation from brain death patients	Frequency (%)
Not enough medical care from patient, while is alive	30 (16.3.)
Turn off vital instrument , before brain death confirmation	22 (12.00)
Organ sale prevalent	13 (7%)
Cadaver fragmentation	6 (3%)
Religious opposition	12 (6%)
Disrespect to dead	7 (3%)
Belief burial	11 (6%)
Punishment for others sin with my members	4 (2%)
Improper use of donated organ	19 (10%)
Without any causes	81 (44%)

24.9% and 26.0% of the studied individuals revealed that religion of the receiver and age can affect their decision to donate organ, respectively. Actually, age and religion were less important effective factors, while smoking and alcohol drinking were mentioned as the most important effective factors for family consent by 54.6% and 69.2% of the participants, respectively.

DISCUSSION

According to WHO report, 93 million individuals have donated blood from 173 countries worldwide [7]. A study on blood donors revealed that benevolence behaviors are more effective than humanitarian motives in blood donation tendency [9].

In this study, more than 80% of the studied populations like to donate their organ after brain death. This ratio is higher compared to similar

studies in Iran and other Muslim countries in the same area; there were more cases who had organ donation card in this study, too [10, 11]. However, in a study in China on blood donors, they found out that blood donors' information and tendency to donate organ is higher compared to other people in the society. They also found out that organ donation tendency is higher in cases who donate blood more than one time compared to those with one donation experience [12].

In present study, men had donated blood more than women, similar to an Indian research on 530 blood donors [13]. In contrast, the study of Serbian and Pakistan researchers about medical students revealed that women's tendency for blood donation is more [13-15]; our findings support this point, too. Average blood donation in Iranian women was six times lower than the world average [16].

Assessment of the participants' viewpoints demonstrated that people with higher education level had more tendencies for organ donation. Joen *et al.* expressed that education level and job are effective factors in the people's decision for organ donation [17]. We categorized people based on jobs, but there were no any meaningful differences between the people's overview among different occupations. In Scandroglio *et al.*'s study, individuals with jobs related to medical and health system had a lower tendency to donate organ, but it was not significant statistically [18].

50.50% of the studied individuals knew the accurate definition of brain death. 57.8% of the studied population in Cucchetti *et al.*'s research [19] and 82.30% of the participants of Taiwanese research about medical students knew the exact definition of brain death, respectively. 91.6%, 88.8% and 86.5% of the mentioned students knew that the kidney, heart and liver were denotable, respectively [20] while only 36.7% and 33.0% were aware about denotable capacity of the small intestine and islets of Langerhans.

44.0% of the contributors mentioned lack of knowledge as the most important cause of opposition to donate organ; this revealed that training can be very effective in people's attitude toward organ donation. Scandroglio *et al.* mentioned the causes of opposition as follows: 2.47% for removal of the organ from the body while the patient is alive, 2.46% for necessity of burial, and 2.35% for improper use of the organ

[18]. A systematic review in 2013 demonstrated that the most significant causes for opposition were widespread financial incentives and injustice [21]. These concerns are reported by Alsaied *et al.*'s Study in Qatar, which was done on health care personnel [22]. They believed that organ trading is done in their country. Lack of awareness, acceptance of brain death as legal death, lack of trust in the medical system, and cultural and religious misconceptions are reasons for opposition to the organ donation in other studies [21].

It seems that public media, particularly TV programs, were the most effective factor in the prevalence of organ donation culture. 63.1% cited TV as their information source. Only 3 out of 504 studied individuals mentioned the internet while Cucchetti studied cases mentioned the internet and TV program in 37.2% and 19.8% of cases, respectively [19].

Religious is known as a serious obstacle in organ donation and Figueroa stated that religious individuals were less inclined to donate their organ [23] while people who believed that organ donation was allowed in their religion, were more eager for organ donation. In the same studies in Iran, awareness of religious leaders' idea about organ donation had positive effect in organ donation [24].

South Asian Organ Donor in a survey conducted among Asian citizens inhabiting in England demonstrated that cultural and religious factors are not important obstacles for organ donation, but also lack of religious information and idea about this matter is main factor [25].

Over 80% of people expressed that organ donation from brain-dead individual and of their own body are acceptable under any circumstances. 67.7% of the cases agreed to donate their brain dead relatives' organs, while 94.9% and 75.2% of the attendees of an Italian study agreed to donate their own and family organs, respectively [19].

In Wang *et al.*'s study in China, 85.7% of the participants revealed that family consent is a necessary term for organ donation. In this research, 58.5% of the thought that family agreement is prerequisite, but 56.2% said that signing the testimonial by family for owner of organ card is necessary, too [26].

It is suggested that related studies should be performed on bigger larger sample size using interview method, to reduce the errors in completing the questionnaire. It would be better to continue this study on different groups such as students, health care workers, etc. at the same time.

CONCLUSION

Tendency to donate organ is increasing with increase in the educational level. Generally, tendency to donate the relatives' organ is low in this society. People who are more informed about brain death are more eager to donate organ. Organ donation tendency is lower in females and is not higher in blood donors who are known as philanthropic population. Public media, especially TV programs, are very important in spread of organ donation culture. It seems that more activities of public media in this field will be associated with public awareness about organ transplantation and brain death.

Acknowledgments

We are very thankful to the whole personnel of Iranian blood transfusion centers in Mashhad city, who helped to distribute and collect questionnaires, and Iranian blood transfusion research center for their technical supports.

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