

Original Article

A study on the awareness, attitudes and performance of teachers towards the organ donation during 2016-2017

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ABSTRACT

Background & Aim: providing an organ for donation is a fundamental issue, but the rate of donation in our country is not favorable. Having awareness, attitude and performance to the organ donation are essential for groups that affected public opinion. The information and knowledge teachers provide for students is the basis for the future attitude toward this topic. The aim of the present study was to examine the awareness, attitude, and performance of teachers toward organ donation.

Materials and Methods: the research method was descriptive and cross-sectional. The sample of research were 340 teachers in Torbat-e Heidarieh in 1396. Data collection instruments were researcher-made valid and reliable questionnaire which was used to assess demographic information, awareness, attitude and performance of individuals. Data were analyzed by using Spss 22 software, descriptive and analytical statistics.

Results: the mean age of participants were $41/7 \pm 8/01$ and about 68/2 % of them had bachelor's degree. 91/2 % of them did not participate in the course related to the donation. The mean score of awareness, attitude, and participation were $12/66 \pm 2/92$, $98/08 \pm 10/39$ and $2/78 \pm 1/57$ respectively. There were significant relationships among awareness, attitude and teachers performance about organ donation with age, teaching experience, education levels, teaching levels, disciplines of teaching and experience of participation in the course ($P < 0.05$), but there was no significant relationship with gender.

Conclusion: despite the average awareness and favorable attitude towards organ donation, unfortunately, there was no proper performance toward donation. This qualification was related to demographic features of individuals. These finding suggesting a focus on educational and advertising program for teachers that play an important role in changing the existing opinion to organ donation in students, families, and society.

Introduction

Maintaining the life and enjoying the blessing of health is the absolute right of every human being. In Islam, the salvation of human life is of great importance, to the extent that God knows the salvation of a human being equal to the salvation of all human beings in the Holy Quran (1). Medical science has provided many services

for the preservation of human life and one of these valuable services is the progress in the human organ transplantation (2).

Organ transplantation is a medical procedure in which an organ is removed from one body and placed in the body of a recipient in order to repair the damaged and non-recoverable tissues or to replace a damaged or missing organ (3). In addition to improving the quality of life and the increased life expectancy in patients, organ transplantation also saves the treatment costs (4). Many patients in Iran suffer from organ failures and are in need of organ transplant.

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According to the Iranian Society of organ Donation, about 26,000 patients in Iran are on the waiting list of organ transplant and between 7 to 10 of these individuals die every day due to the lack of proper organs (5). Meanwhile, due to the rising prevalence of acute and chronic illnesses and the increase in the number of car accidents and other unfortunate incidents, the number of people in need of organ transplant is increasing day by day.

Despite the advances in medical science and the remarkable scientific ability of Iran in organ transplantation, the provision of the required organ is one of the main problems in this regard (6). The needed organs for transplantation are provided in three ways including the medical artifacts, the organs of animals, and the organs of human body. Due to the limitations of organ provision through the living donors, the need for specific conditions for organ donation after a normal death, and the different genetic structure between the humans and animals, people with brain death are therefore an important and desirable source of organ donation (6). About 90% of the organ transplants are provided by brain death (7). In fact, brain death is the irreversible loss of all functions of the brain, including the brainstem, in which only the function of the cardiovascular system exists, and other organs are healthy and ready for transplantation (8). Given that a brain-dead person never returns to life, organ donation is the best and of course, the most humanitarian action that the family of the brain-dead patients can do for other patients who are in need of organ transplantation. This action is simple in speaking, but in practice, it is a very difficult situation for families to decide on. According to the Iranian Society of Organ Donation, about 5,000 to 8,000 brain deaths occurred in 2016, with around 2500 to 4000 people being qualified for organ donation; however, only 870 cases of donation have been reported (5). The results of the study conducted by Aghaei et al. (1395) in Mashhad showed that 51.8% of the brain death cases were satisfied with the organ

donation (9). According to the International Association of Organ Donation and Transplantation, the highest statistics in this regard were for Spain (35.9 per million person), while the overall organ donation rate in Iran was reported to be 8.4 PMP. The highest donation rate from the living donors was associated with Turkey (42.5 PMP), and this statistic was reported as 15.3 PMP in Iran (10).

Given the growing need for organ donation in the community, this low donation rate in our country (Iran) is not desirable. The results of the study done by Hejazi et al. in Bojnourd showed that the awareness of the majority of people is at the moderate level in this regard; people also did not have a favorable attitude toward the organ donation. Thus, public education is necessary in this respect in order to correct the misconceptions, develop positive attitudes, and increase the citizens' awareness level (11). Organ donation is a process which is not only the health system involved in, but many other organizations, such as the Broadcasting, Health Charities, Ministry of Education, and many other institutions, also have an impact on the expansion of the culture of organ donation.

The results of the study conducted by Sadic et al. indicated that there is a need for greater collaboration between the health-care personnel, religious authorities, and school teachers to reduce the large difference between the supply and demand of organs for transplantation (12). Therefore, it is necessary to provide a suitable platform for encouraging people to organ donation through the involvement of other groups of society (especially teachers) in the culture-building practices in this regard.

In Spain, the results of the study by Febrero et al. showed that 75% of teachers support the organ donation, and their attitude was influenced by the psychosocial factors (13). In addition, the results of the study done by Roeyz et al. showed that teachers' awareness of the brain death has a positive effect on their attitudes towards the organ donation and, given that teachers are the

educators in the community, training is necessary to increase their awareness level in this regard (14). It should be noted that most teachers and students support the school curriculum on organ donation, and students' training at school has an effect on the views of families in this regard (15). Furthermore, Khaddami et al. showed that the main reasons for not attending the teachers in the process of organ donation included the lack of their awareness of patients with chronic diseases and lack of trust in the organ transplant system. Therefore, building trust in the brain death diagnostic systems, along with the relevant educational programs, is necessary for the teachers (16).

According to the study of Kocaay et al., a better understanding and growing awareness of the organ donation by the individuals affecting the behavioral beliefs of the community can contribute to the people's positive attitudes towards the organ donation and transplantation (17). Hence, it is essential to identify the attitudes of the important social groups, including teachers, who have a great influence on the public opinion. The information and knowledge that teachers pass on to the students is the basis for their future attitudes towards this subject matter (6). Given the large number of teachers and their influencing role in the education and raising the level of students' awareness and consequently, raising their accountability in the education of society, therefore, they can act as an influential body of the society in institutionalizing the culture of organ donation. The present study aimed to investigate the awareness, performance, and attitudes of teachers, as a part of the target group and given their influential role in this regard, towards the organ donation, so that effective steps can be taken with the detailed information about the status quo.

Methods

The present study is a descriptive cross-sectional research which was conducted on teachers who were serving in male and female elementary and secondary schools in Torbat-e Heydariyeh City, Khorasan Razavi

Province in 2017. The sample size was estimated as 338 individuals considering the total volume of the statistical population (2841 individuals, the total number of the teachers in Torbat-e Heydariyeh in 2016) using the Morgan Table, which was finally determined as 355 individuals considering the 5% of falling. At first, the sample size was selected from among the teachers of Torbat-e Heydariyeh using the stratified random sampling method with the proportional allocation, in a way that each of the school grades, including the elementary and secondary schools, was allocated in a separate stratum in terms of their gender (male and female); then the required sample size was determined with regard to the list of employed teachers using the simple random sampling within the strata. The inclusion criteria for the subjects included filling in the written and informed consent form for entering the intervention, serving as a teacher (not to be retired), not being as a health educator with the degree in nursing or other related disciplines, and not suffering from a chronic and debilitating illness.

The research tool was a researcher-made questionnaire consisting of 4 sections including the questions on the demographic information, 19 questions on the assessment of awareness, 25 questions about the attitude, and 8 questions on the evaluation of the performance. The questions of the awareness section included the three choices of correct (1 point), incorrect (0), and I don't know (0), and the total score for this section was equal to 19. In the classification of the awareness scores, the scores less than 6.5 were considered as the poor level of awareness, the scores between 6.5 to 13 as the moderate level of awareness, and the scores higher than 13 as the good level of awareness. The attitude questions were scored based on the Likert Scale from strongly agree (5 points), agree (4 points), no idea (3 points), disagree (2 points), and strongly disagree (1 point) (with the total score of 125). In the classification of the attitude scores, the scores less than 41.5 were considered as the weak attitude, the scores between 41.5 and 83 as

the moderate attitude, and the scores above 83 as the good attitude. The criteria for investigating the performance included having a history of receiving or donating an organ, having a donation card or setting up a legal document in this regard, encouraging others to donate or willingness to organ donation in the case of necessity, and willingness to receive a donation card. In the performance section, positive answers were scored as 1 point and negative answers as 0 (with the total score of 8); in the classification of this category, the scores less than 2.7 were considered as weak performance, the scores between 2.7 and 5.4 as the moderate performance, and the scores higher than 5.4 as the good performance.

Content validity of the questionnaire was confirmed by the review of 10 professors and the corresponding experts majoring in the medical, nursing and healthcare fields at Torbat-e Heidarieh University of Medical Sciences and Gonabad University of Medical Sciences. The Cronbach's alpha method was applied to test the reliability of the questionnaire. The Cronbach's alpha coefficient of 0.79 was determined for the questionnaire as a whole, and the alpha coefficients of 0.53, 0.74, and the Kuder-Richardson coefficient of 0.68 were separately calculated for the awareness, attitude, and performance sections, respectively.

After approving the scientific and ethical considerations (code: IR.GMU.REC.1395.131) of the project at the Gonabad University of Medical Sciences and getting permission from the Ministry of Education of Torbat-e Haidiriyah City, the researcher attended in the elementary and secondary schools of Torbat-e Haidiriyah, and a total of 355 individuals were selected using the stratified sampling method; each of the school grades, including the elementary and secondary levels, was allocated in a separate stratum with regard to their gender (male and female), and then the required sample size was determined regarding the list of employed teachers using the simple random sampling within the strata. After ensuring

that the participants meet the inclusion criteria, and providing the necessary explanations about the research goals, getting informed consent from the participants, and assuring them about the confidentiality of the information, the data were collected using a questionnaire consisting of the four sections on the demographic information, awareness level, performance level, and attitudes of teachers towards the organ donation.

The researchers distributed the questionnaires in the classrooms and after their completion in the form of a self-report scale, they collected them. After that, the incomplete questionnaires were removed from the study and the data of 340 completed questionnaires were analyzed using the SPSS software, version 22. The measures of central tendency and the descriptive statistics dispersion including the mean, standard deviation, amplitude, and the minimum and maximum values are used to describe and explain the levels of teachers' awareness and performance and their attitudes towards the organ donation. The tests of Mann-Whitney, Kruskal-Wallis and Spearman's correlation were also applied for the analysis of the data. The P values less than 0.05 were considered as significant.

Results

The results showed that the mean age of the research units was 41.7 ± 8.01 years and the mean of the work experience was 19.79 ± 8.01 years (Table 1). The number of female teachers was more than men (51.2% of the research units); the number of Muslim teachers was higher than that of other religions (99.4%); Shiites accounted for the 98.8% of the research units. 88.8% of the participants were married, 68.2% had a bachelor's degree, and 80% of them were teaching in the cities. The research units included the secondary schools (49.8%) and the elementary schools (46.9%), and 3.3% of the teachers were teaching at both grades. Most of the teachers (91.2%) did not attend a workshop or a training course related to the organ donation and transplantation (Table 2). The standard deviation and mean scores of

awareness, attitude, and performance of teachers of Torbat-e Heydarieh were 12.66 ± 2.92 , 98.08 ± 10.39 , and 2.78 ± 1.57 , respectively (Table 3). The source of teachers' information on the organ donation included the Broadcasting Organization (78.5%) and healthcare personnel (3.3%) (Table 4). No significant difference was found between the male and female teachers,

Muslim teachers and teachers from other religions, Sunni and Shiite teachers, teachers working in the urban areas and those who were teaching in the rural areas, and the teachers with a history of organ donation in their relatives in terms of their mean awareness, attitude, and performance scores obtained from in the case of organ donation ($P>0.05$).

Table 1. Frequency distribution of the studied subjects based on the age and work experience.

Variable	Standard deviation \pm mean	Max	Min	Median
Age	41/7 \pm 8/01	60	22	43
Work experience	19/79 \pm 8/01	35	2	23

Table 2. Frequency distribution of the demographic characteristics

Variable	N	Percent
Gender	male	166
	female	174
Total	340	100
Religion	islam	338
	other religions	2
Total	340	100
Religion	shia	366
	sunni	4
Total	340	100
Education level	diploma or AD	58
	BA	232
	master's	50
Total	340	100
Teaching levels	primary	159
	secondary	169
	both	12
Total	340	100
Participating on training course on organ donation	yes	30
	no	310
Total	340	100

Table 3.

Standard deviation and mean scores of awareness, attitudes, and performance of teachers towards organ donation

Variable	Median	1 st Percentile	3 rd Percentile
Awareness	13	11	15
Attitude	99	90	107
Performance	3	2	4

Standard

However, there was a significant relationship between the teachers' mean scores of awareness, performance, and attitudes towards the organ donation and their levels of education, teaching levels, and history of participation in the training course related to the organ donation ($P < 0.05$).

There was also a significant relationship between the teachers' mean scores of awareness, performance, and attitude and their teaching disciplines ($P < 0.05$) (Table 5).

Furthermore, the relationships between the teachers' mean awareness and attitude scores with respect to the organ donation and their age (r values for the awareness, attitude, and performance were respectively obtained as 0.20, 0.10, and 0.02,) and teaching experience (r values for the awareness, attitude, and performance were 0.16, 0.11, and 0.03, respectively) were significant despite the low levels of correlation.

Table 4. Frequency distribution of the research units based on the information source about organ donation

Variable	N	%	
Source of information	broadcasting	267	78/5
	Press, book and brochure	26	7/6
	Health care personnel	11	3/3
	Friends and relatives	31	9/1
	Seminar and conference	5	1/5
Total	340	100	

Table 5. Comparison of the mean scores of awareness, attitude, and performance based on the disciplines of teaching

Variable Field of study	Awareness			Attitude			Performance		
	Median	1 st percentile	3 rd percentile	Median	1 st percentile	3 rd percentile	Median	1 st percentile	3 rd percentile
Islamic Studies	13	10	15	105	90	109	4	2	5
Math	13/5	11/25	15	103	93/75	108/75	4	2/25	4
Literature	13	11/25	14	99	92/5	104	3	2	4
Biology	15	12	16	101	99	111	4	3	4
Other fields	12	11	14	97	89	103/5	3	1	3
The result of Kruskal-Wallis test	$\chi^2=10/16$ df=4 P=0/038			$\chi^2=16/76$ df=4 P=0/002			$\chi^2=25/51$ df=4 P=0/001		

Discussion

The results of the data analysis indicated the moderate level of awareness (63.66%), positive attitudes (78.46%), and a relatively weak performance (34.75%) of teachers regarding the organ donation. Based on the results of the present study, the teachers had

a favorable attitude towards the organ donation, but did not have a good performance in this regard. In other words, they did not perform well on decision making for organ donation, encouraging others to do so and receiving a donation card. Despite the moderate awareness level of the

studied subjects, their attitude towards the organ donation was very positive.

This positive attitude can be due to the benevolent, God-friendly, and altruism aspect of the organ donation. The positive or negative attitude of individuals towards the organ donation can determine their performance in this regard.

Considering the relatively poor performance of the studied units in the field of organ donation, it can be concluded that having a positive attitude towards the organ donation is one of the main factors for having a good performance in this regard, but it is not enough; and there are some other factors influencing the willingness to and decision-making for organ donation. The relatively poor organ donation performance of teachers, despite their positive attitudes in this respect, may indicate a weakness in the notification system and inadequate in-service trainings related to the institutionalization of organ donation or the lack of proper infrastructure in this regard. In the study conducted by Khoddami et al., investigating the attitudes of Tehran's teachers towards organ donation, the results showed that despite their favorable willingness and positive attitude towards organ donation, they did not perform well in this regard (16), which is consistent with the findings of this study. In addition, the results of the study done by Amani et al. showed that despite the fact that 70% of people had a positive attitude towards organ donation and their appreciation this action, they did not have an acceptable performance in this regard, and only 10% of them had a donation card (18), which the result is in line with the present study.

The results of this study showed that there was no significant difference between the male and female teachers in terms of their mean scores of awareness, attitude and performance associated with organ donation ($P > 0.05$); this finding is consistent with the results of the study conducted by Arjomand et al., who examined the awareness and attitude of nurses working in the ICUs and emergency departments towards the organ

transplantation (19), and the study of Mohebbi et al., who investigated the awareness and attitudes of students of Qom University of Medical Sciences towards the organ donation (20). Furthermore, the results of this study are in line with the findings of the study done by Emdadi et al. in the Hamadan University of Medical Sciences indicating that there is no significant difference between the male and female students in terms of their performance in receiving the donation card (21). However, the results were not consistent with the study of Safari et al., who assessed the awareness and attitude of residents of Bandar Abbas with regard to organ donation (22). It can be concluded that the lack of difference in the mean scores of awareness, attitude and performance between the male and female teachers in the present study is due to the fact that both groups in this study were among the educated people and those who are involved in the process of education, but in the study of Safari et al., the studied samples of men and women were from different classes.

In the present study, there was also no significant difference between the Muslim teachers and teachers of other religions, as well as between the Shiite and Sunni teachers, in terms of their mean scores of awareness, attitude and performance with regard to the organ donation. It seems that since most of the participants in this study were Muslim and Shia, no significant difference was found between the teachers with different religions in terms of their mean scores of awareness, attitude, and performance. Similarly, no significant relationship was found between the people's religion and their attitudes towards the organ donation in the study of Hejazi et al. (23).

Based on this study, there was a significant difference between the mean awareness, attitude, and performance scores of teachers with respect to their level of education, in a way that with the increase in the level of education, the teachers had better awareness, attitude and performance in term of the organ donation; this finding is

consistent with the results of some other research including the studies conducted by Safari et al. (22), Khan et al. (24), Annadurai et al. (25), Vlajsavljević et al. (26), and Niazi and Shirazi (7). In this study, the highest mean awareness, attitude, and performance scores were associated with the teachers who had the master's degree or higher education level. The study of Safari et al. also indicated that those with higher education level had a higher awareness level (22). Obviously, the level of awareness increases with the increase in the level of education. Given that creating a positive attitude towards organ donation and consequently a desirable performance in this regard requires the increased awareness level, it can be concluded that by increasing the level of education, the levels of teachers' awareness, attitude and performance improve in terms of the organ donation.

According to the results of the present study, there was a significant difference between the mean awareness, attitude, and performance scores of teachers considering their teaching grades, that is, teachers working at high schools gained higher awareness, attitude, and performance scores than the teachers in the primary schools. Based on the obtained result, it seems that there is a direct relationship between the promotion of teachers' awareness, attitude, and performance and their teaching levels. Teachers who teach at the higher levels of study have a better awareness, attitude and performance in terms of the organ donation; this is maybe because of their higher education levels and their specialized knowledge on the subject matter.

In this study, a significant difference was found in the mean awareness, attitude, and performance scores of teachers with respect to their teaching disciplines; so that teachers in the field of biology had a higher awareness, attitude and performance level in terms of the organ donation. Considering their field of study, biology teachers have higher information, which leads them to have a favorable attitude towards organ donation and, consequently, better performance in this

regard; this confirms the role of awareness in the attitude and performance of individuals regarding organ donation. Based on the results of the study done by Imanipour et al., which examined the teachers' awareness and attitude towards the risk factors for the heart diseases, health educators had a better awareness level and attitude than other teachers (27), which is consistent with the result of this study. Also, based on the results of this study, teachers who were teaching in the field of religious studies had a higher mean attitude and performance scores than those in the mathematic and literature discipline. It can be concluded that the religious information and beliefs of the teachers who were teaching the religious studies influenced their attitude and performance in the organ donation. Wakefield's study also showed that those who had religious beliefs had a better attitude towards the organ donation (28). Based on the results of Abdollahi et al., teachers with relevant educational qualifications were more aware of the principles of education (29), which is consistent with the result of this study.

Based on the results, the mean attitude and performance scores of teachers who had previously participated in a course on organ donation were higher, indicating the role of training for organ donation in improving the attitude and performance of individuals in this regard. The results of the study by Cárdenas et al. showed that after taking part in a training course, the students' awareness and attitudes towards organ donation increased (30), which is consistent with the finding of this study.

Despite the low correlation, there was a statistical significant relationship between the history of teaching and the mean awareness and attitude scores of teachers, so that those with more teaching experience had better awareness, attitude, and performance regarding the organ donation. It seems that the increased awareness level as a result of more teaching experiences leads to the positive attitudes and better performance of teachers in terms of the organ donation.

Based on the study of Abdollahi et al., aimed to investigate the level of awareness of the teachers of the elementary schools of the principles of education, the results showed that with the increase in the work experience, the teachers' awareness level increases (29), which is consistent with the result of the present study.

Based on the results, with an increase in the age of the subjects, the mean scores of awareness and attitude increased. There was a significant difference between the age of the studied units, despite the low correlation, and the mean scores of awareness and attitude. However, there was no significant difference between the mean age of the research units and their performance scores. It seems that there is a direct relationship between the aging and the increased level of awareness and attitude of teachers in terms of organ donation.

Therefore, based on the findings of this study, the awareness, attitude, and performance of teachers in relation to organ donation are associated with their demographic characteristics. In line with the present study, Abdollahi and Shokraei found that organ donation is associated with the individual, social and cultural characteristics, and the awareness and attitude of individuals towards the organ donation (31).

The most frequent source of information for the studied units was the broadcasting organization, which is consistent with the results of studies by Iliyasu et al. (32) and Manzari et al. (33). This result can be indicative of the role of the media, especially the national media, in proper informing of the public about the importance and the need for organ donation in the community and institutionalizing the culture of organ donation among people, which should be addressed by the authorities and planners in order to promote the culture of organ donation in Iran. Promoting satisfaction with organ donation requires raising awareness and creating a positive attitude towards this important issue in the community. Organ

transplantation is a topic in which all people of the community should be considered as the target group in its educational and promotional programs. Different groups and classes of people can be effective in creating a favorable attitude towards the organ donation and taking effective steps in this regard, including teachers who play a very important role in promoting the knowledge and awareness of students and consequently, the families and society about the organ donation.

Teachers in every community are considered as the influential groups and their awareness, attitude, and performance in various fields would directly and indirectly influence the society. The results of this study showed that although the teachers had a positive attitude towards organ donation, they did not have a good performance in this regard; and their awareness, attitude and performance regarding organ donation are associated with the demographic characteristics. In addition to providing effective training programs that can influence individuals' attitudes and performance, it is imperative for the community health practitioners to monitor the performance of different strata and organizations that are in some way associated with the cultural, educational and health issues of the community, including the Ministry of Education, and try to direct the policies governing them to promote the culture of organ donation.

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Conflict of Interest

The authors of this study declare no conflicts of interest.

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