Survey knowledge and practice of health personnel of educational-therapeutic centers in Rasht city regarding organ donation after death in 2014-2015

Encuesta conocimiento y práctica del personal de salud de los centros educativos y terapéuticos en la ciudad de Rasht sobre la donación de órganos después de la muerte en 2014-2015

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Abstract

Introduction: Healthy tissues of brain death patients are used in maintaining the health of patients, to reduce mortality and the cost of treatment for patients with advanced disease and on the waiting list.

The demand for organ transplants has increased in the most countries of the world while the number of donors has relatively remained constant.

The success of the organ donation process from identifying the potential donor to the stage of harvesting members is closely related to the knowledge and practice of physicians and nurses

The purpose of this study was to determine the knowledge and practice of physicians and nurses working in educational centers of Rasht.

Methods: 423 people were chosen by stratified random sampling in December 2014. The researcher-made questionnaire was analyzed into software SPSS version 21 using Mann-Whitney, Kruskal-Wallis and Chi-square tests.

Results: Blood donation card holders (p = 0.014). Individuals who had relatives with donation cardholder (p = 0.004). Experience of caring for organ donor (p <0.010) and Experience of caring for organ recipient (p = 0.007) had a higher knowledge score. There was a significant relationship between knowledge and practice (P = 0.0001).

Conclusion: The role of physicians and nurses in persuading people to donate and thus health promotion is not at the optimum level. It is suggested research should be done on the influence of education and retraining courses and holding conferences with the presence of patients who were organ recipients on nowledge and practice of doctors and nurses about organ donation.

Keywords: Organ donation, Knowledge, Practice.

Resumen

Introducción: los tejidos sanos de pacientes con muerte cerebral se utilizan para mantener la salud de los pacientes, para reducir la mortalidad y el costo del tratamiento para pacientes con enfermedad avanzada y en lista de espera.

La demanda de trasplantes de órganos ha aumentado en la mayoría de los países del mundo, mientras que el número de donantes se ha mantenido relativamente constante.

El éxito del proceso de donación de órganos desde la identificación del donante potencial hasta la etapa de recolección de miembros está estrechamente relacionado con el conocimiento y la práctica de los médicos y enfermeras.

El propósito de este estudio fue determinar el conocimiento y la práctica de los médicos y enfermeras que trabajan en los centros educativos de Rasht.

Métodos: se seleccionaron 423 personas mediante muestreo aleatorio estratificado en diciembre de 2014. El cuestionario realizado por el investigador se analizó en el software SPSS versión 21 utilizando las pruebas de Mann-Whitney, Kruskal-Wallis y Chi cuadrado.

Resultados: titulares de tarjetas de donación de sangre (p = 0/014). Individuos que tuvieron parientes con el titular de la tarjeta donación (p = 0.004). La experiencia en el cuidado del donante de órganos (p <0.010) y la experiencia en el cuidado del receptor de órganos (p = 0.007) tuvieron una puntuación de conocimiento más alta. Hubo una relación significativa entre el conocimiento y la práctica (P = 0.0001).

Conclusión: el papel de los médicos y las enfermeras en persuadir a las personas para que donen y, por lo tanto, la promoción de la salud no se encuentra en el nivel óptimo. Receptores en la actualidad y la práctica de los médicos y enfermeras sobre la donación de órganos.

Palabras clave: Donación de órganos, conocimiento, práctica.

Introduction

Nowadays, the donation of healthy organs and tissues of brain death patients is considered as one of the most important sources of organ transplantation in patients with advanced organ failure. This leads to maintaining health, improving the quality of life, reducing mortality[1], and reducing the treatment costs of patients waiting in the list of transplantation[2].

The demand for organ transplantation has increased in most countries of the world, while the number of donors has remained relatively stable. In Germany, about 12,000 patients are awaiting organ transplantation (2010), annually lose more than 1,000 people of them due to the lack of transplantation[3]. In Iran, given the high rate of accidents, we see the highest brain death rate compared to other countries[2], while less than 10% of brain deaths are part of the donors, and thousands of patients waiting for transplantation die every year[4].

The number of organ transplantation in Iran is also much lower than Europe and the United States due to the lack of transplanted -donation members; thousands die every year. The number of donated cases in Iran with a population of 77 million in 2012 with 25,000 needy transplant patients is 1,904 (8.7 per million), while the ideal number should be 7,114 (48.7 per million). Brain death is an important source for organ donation, so that the use of their healthy organs is considered as a kind of retrieval of the organs for the health of others[5].

Various factors can have an impact on organ donation. Kodami (2010) points out in his study the role of factors such as culture, religion, socioeconomic factors, and health employees' awareness of organ donation[6]. In his examination, Radunz (2010) has identified the awareness and beliefs of health care employees as the patterns for increasing public willingness to register in the donors list[7]. Collins (2005), in his study on the level of knowledge and educational needs of nurses in special departments, showed that this group lacked the confidence and experience of approaching relatives to obtain satisfaction with the organ donation from the families of donors. Further studies are needed to identify the level of awareness and educational needs of nurses regarding organ donation[1]. In their study, Deghani (2011) et al showed that receiving a donation card before death has a positive effect on family decision making and minimizes the lack of organs for transplantation[8]. In his study, Fukushima (2012) suggests that in order to improve the status of organ donation in any country, there is a need to develop training programs for medical students, doctors and nurses in the field of awareness of (donation laws, diagnosis of brain death patients, donor evaluation and management system for the allocation and maintenance of transplantation organs and support for the donor families), because these groups play an important role in public awareness in their working departments[9].

Therefore, most of the studies consider importance of the role of care and treatment employees in increasing the number of donation organs. An increase in the number of transplant organs also requires the extensive interventions of various organizations, center of transplantation organs provision (to create proper guidelines for organ donation and transplantation), and the employees at health centers. Physicians and nurses are in charge of each stage of procurement, such as identifying brain death donors and announcing it to the transplantation management center, the clinical evaluation of donors[28]. Therefore, the failure to report cases of brain death and negligence in the procurement of an organ due to the lack of accountability in the evaluation of brain death, unsuccessful management and care of organ donors (including the transmission of infectious diseases from the donor to the recipient), as well as the creation of operational problems during surgery can also lead to the loss of golden opportunities in the production of organ or transplantation tissue, followed by increased waiting times and high mortality rate in patients. This issue is important because of its adverse effects in the society. The information provided by the physicians and nurses also has very high acceptability due to the close relation with the donors' families[10].

Hence, considering the importance of the subject of organ donation, and since the best starting point for solving the problem is the description of the status quo, and also considering the key role of the staff of the health educational centers as health messengers and their pattern role in promoting health behavior (Obtaining a donation card), the researchers agreed to determine the level of knowledge and performance of the units under study in relation to postpartum organ donation; thus, the quantitative and qualitative description of the behavior and performance of health care staff in the field of organ donation and treatment via transplantation in the patients waiting for transplantation will be able to maintain and improve health in the society.

Materials and methods

This is a descriptive-analytic cross-sectional study in which the knowledge and practice of physicians and nurses about the post-mortem organ donation has been assessed. Data collection of this study was carried out in 7 health educational centers of Rasht from December 4 to 20, 2015. Inclusion criteria for participation in study included having the responsibility of direct care of the patient or pursuing his/her treatment at the centers of interest, as well as having Bachelor degree,

Master degree, being general practitioner and specialized assistant, and specialized physician with different orientations and oral satisfaction to participate in the study.

Considering the error limit of relative estimation of 10%, the sample size necessary to determine the level of awareness of the medical staff (doctors and nurses) in relation to the postpartum organ donation was determined according to the results of the study of Ghadi Pasha et al. with confidence of 95%, by 390 people or more and according to the following sampling formula:

$$N = \frac{z^{\left(\frac{1-\alpha}{2}\right)^2} \times P\ (100-P)}{d^2}$$ tion formula:

Attitude Percentage Based on the Study of Ghadi Pasha

$$N = \frac{(1.96)^2 \times 49.6\ (100 - 49.6)}{(0.1 \times 49.6)^2}$$

Relative Estimation error limit of 10% = d

N ~ 390

$$\text{Nurse } n_i = \frac{N_i \text{ population of nurse group}}{\text{N } total\ population\ of\ group\ in\ hospital}$$

$$\text{Physician } n_i = \frac{N_i \text{population of physicians group}}{\text{N } total\ population\ of\ group\ in\ hospital}$$

The samples were selected by stratified random sampling. Firstly, by dividing the number of nurses and doctors in each hospital to the total number of nurses and doctors of seven health educational centers in Rasht, the number of samples of each hospital was determined. Then, according to the list of nurses and physicians, the subjects were selected randomly using a number of interval determined by lottery. The required sample size was determined with the confidence of 95% and with a relative estimation error limit of 10% by 390 people or more. In the present study, with the removal of ten incomplete questionnaires, 423 people included in the study; the researcher referred to the research environment in the morning, evening and night shifts, and accessed the samples under study in different departments.

The data collection tool was a researcher-made questionnaire based on the related texts from THT related books and articles in three sections. The first part includes personal and social information (age, gender, religion, marital status, number of children, certificate), service department, having blood donation card for himself and his relatives, having an organ donation card in relatives, experience record of caring for the organ donor and recipient, history of blood donation, organ recipient and donor in the close relatives, and the second part was related to awareness questions and the third part related to the performance of the person (having organ donation card). Validity of the questionnaire was measured by content validity method. After collecting the suggestions and points of view of 10 members of the faculty, applying the necessary changes to determine the minimum value of the content validity ratio based on the table of Laushe, the expressions whose ratio was higher than 0.62 were maintained. To assess the reliability of the awareness questionnaire, the Couder Richardson formula 120 was used and 0.82 was obtained which indicates the internal consistency of the test. The test-retest method was used to determine the time reliability and repeatability of the tool. So, the questionnaire was provided to 20 qualified physicians and nurses of this study at Poursina Hospital in Rasht, Iran, for a period of 10 days at two different times. After completing it, the Pearson Correlation Coefficient of the awareness scores was calculated r=0.945, p=0.0001. The second part of the questionnaire consists of 23 expressions about the awareness of the post mortem organ donation process and the rules and regulations of its implementation. It is defined as three items of yes, no and I do not know. When entering the data in the SPSS software for the correct answers, the score is 1 and for the incorrect answers and I do not know the score is zero. To score the Awareness Questionnaire according to the study of Ghadi Pasha et al., the score below 50% (i.e. the maximum score of 11 or less) was considered in the area of weak awareness and the score between 50-75% (that is, the maximum score obtained from 12-17) under moderate awareness and the score higher than 75-100 as high level of awareness.

The third part of the questionnaire was designed with the aim of determining the performance of the individual by having organ donation card as the item of "yes" and "no". Also, in assessing the distribution of normality of the awareness score, the Kolmogrov Smirnov test was used, according to which the awareness was not of the normal distribution (p = 0.028). To determine the status of awareness and performance after categorization of their frequency and their comparison in terms of individual-social variables, Mann-Whitney, Kruskal-Wallis and Chi-square tests were used respectively. The tool was obtained by obtaining permission from the research vice president and medical ethics committee to the inclusion of the samples to participate in the study, and they were assured that their information would remain confidential.

Results

According to (Table 1), the majority of research participants were women (74.2%) in age groups with a mean and standard deviation of 35 ± 7.66 years and with nursing BSc (70.4%), Shi'a (99.3%), Married (74.2%) and having one child (30.5%).

14.4% of the samples had a blood donation card. 33% of the relatives had organ donation card. 13.3% of the samples had organ donation care experience and 14.4% of them had organ recipient care experience. 21.1% em-

barked upon a blood donation. 11.1% had organ recipient in their close relatives and 5.3% had organ donor.

The highest rate of incorrect responses was related to the question of the maximum time lag in burial (92.9%), the rules of organ donation in persons sentenced to death (82%), the referral of costs[5] [organ harvesting, transplantation and burial 71%6], registration procedures (69.7%), and donation laws in the unknown persons (62.2%).

Table 1. Distribution of the units under study according to the social-individual characteristics

Individual-social characteristics		Number	Percentage
Age		Mean and standard deviation	24.55±7.66
Gender	Male	109	25.8
	Female	314	74.2
	Sum total	423	100.0
Education	Nursing BSc	297	70.4
	MSc of nursing	19	4.5
	General physician	50	11.8
	Resident	20	4.7
	Specialized physician	27	6.4
	Subspecialty	9	2.1
	Sum total	422	100.0
Religion	Shi'a	414	99.3
	Sunni	3	0.7
	Sum total	417	100.0
Marital status	Unmarried	109	8.25
	Married	314	2.74
	Sum total	423	100

The distribution of awareness score according to social-demographic characteristics was not statistically significant based on Mann-Whitney, Kruskal-Wallis test (p>0.05). Also according to (Table 2) and according to the Mann-Whitney test, those whose relatives had a donation card (p=0.004); the individuals with personal care of the donor (p<0.010), and experience of personal care of the recipient had higher awareness score (p=0.007). Also, the awareness score of those with blood donation card was higher than the awareness score of those without blood donation (p=0.014).

Also, the distribution of performance score in terms of individual-social characteristics was not statistically significant based on Chi-square test (P>0.05). There was a significant statistical correlation between having organ donation card (P<0.001), close relatives with organ donation card (p<0.001), having care experience (P<0.002), history of blood donation (P<0.008), and presence of donor member around the samples (P< 0.204) on the one hand and the performance on the other hand, based on chi-square test. Only 14.89% of the samples had received a donation card. Also, according to (Table 3), there was a significant statistical relationship between the awareness and donation of an organ based on Man-Whitney Rob test (P=0.0001).

Based on the findings of (Table 2), there was no statistically significant correlation in the attitude score according to the individual-social characteristics (p>0.05).

Table 2. Comparison of the statistical indices of the attitude score of the units under study in terms of individual social variables

Awareness Individual-social characteristics		Number	Mean	Median	Standard deviation	Significance level	Type of test
Gender	Male	109	11.7	11.00	4.03	0.19	Mann-Whitney
	Female	314	10.00	10.00	4.14		
Religion	Shi'a	414	10.32	10.00	4.12	0.374	
	Sunni	3	11.67	13.00	2.31		
Marital status	Unmarried	109	10.11	10.00	4.11	0.638	
	Married	314	10.34	10.00	4.15		
Number of children	0	73	10.41	11.00	4.44	0.98	Kruskall-Wallis
	1	129	10.18	10.00	4.35		
	2	95	10.42	11.00	3.73		
	2 or more	4	10.75	11.50	2.87		
Education	Nursing BSc	297	10.015	10.00	4.14	0.153	
	MSc of nursing	19	11.42	13.00	5.014		
	General physician	50	10.16	9.50	3.74		
	Resident	20	11.20	11.00	4.24		
	Specialized physician	27	10.85	11.00	4.10		
	Subspecialty	9	8.089	10.00	3.86		

Table 3. Relationship between the attitude score and the performance of units under study

Variable	Do you have an organ donation card	Number	Mean	Standard deviation	Significance level	Test
Score of awareness	Yes	63	12.31	3.421	0.0001	Mann-Whitney
	No	360	9.92	4.146		

The results of this research showed that there was a significant relationship between the performance of the subjects under study and the history of blood donation. McCenzie (2012) et al also showed that the blood donors and those who have organ donation card tend more likely to the organ donation; the blood donors were likely to donate organ three times more than non-blood donors[11]. Therefore, it would be better to co-operate with people who have a history of blood donation because of their consent to the donation process, including increasing public awareness on donation results in referrals to donation units. In this regard, further study is required on the factors relevant to having organ donation card and blood donation card. Of course, in the study done by Emdadi et al. (2011), there is also a statistically significant association between having organ donation card and having relatives with the organ donation card[12]. Blood donation is also a performance in line with the person's willingness to help fellow man and save the lives of patients in need of blood. Perhaps these people have more mental readiness to provide an organ for the purpose of transplantation.

The results of this research showed that the units were not well informed about legal issues related to organ donation. In the study done by John et al, the awareness of the rules on the organ donation, the authority of cost payment and the identification of brain death patients was less than (40%)[13].

Based on the findings of this research, only 14.89% of the samples have received organ donation card while the results of the GHadipasha (2008) on the doctors in Kerman showed that 80% of the samples had organ donor card[4]. Zohoor (2003) also showed that 79% of the samples under his study were satisfied with the completion of organ donation card[14]. The difference in the data obtained in these two studies with the present study is indicative of the poor performance of the participants in the study in relation to postpartum organ donation. Considering the fact that two researches and the present research have been carried out in three different provinces of the country with different types of socio-cultural backgrounds, it seems that the role of mentioned factors is important in the rate of postpartum organ donation. Also, the difference in the field of study of the subjects under the research can also be the reason for the difference in the results.

In the present study, those who have relatives with the organ donation card had a higher awareness score ($p = 0.004$). In the same vein, the study results of Wong (2010) also showed that people who did not have a donation card said that they did not have a registered card because they have not seen a person among their relatives who has organ donation card[15]. The results of these studies show the role of families and relatives on the level of awareness of individuals.

In the present research, having a personal experience of caring organ donor ($p<0/010$) and that of caring the recipient also had an effect on the level of awareness, so that people who had this experience had a higher awareness score ($p=0.007$). In this regard, Lima (2010) also showed that the awareness and experience of caring donor and recipient in physicians and nurses can be effective factors in promoting postpartum organ donation due to their close relationship with families and the provision of objective and precise information to them[16]. In the study of Joan et al. (2012), a significant relationship was found between the score of awareness and the experience of caring the organ donor ($p=0.03$)[13]. But Demir (2011) achieved a contradictory result in his study, so in his study, no statistically significant relationship was found between the awareness and experience of donor care in the dialysis patients and between the awareness score and experience of care of the organ recipient in people who worked in the transplantation department[17]. It seems that the difference between the subjects under research in the two above-mentioned researches, and the current research, is a key point in the difference in results. Therefore, by doing further researches, the existing situation can be better described[21]. Also, the findings of this table showed that the awareness score of people with blood donation card was higher than the awareness score of people without blood donation ($p=0.014$)[22,34].

Concerning the determination of the relationship between awareness and blood donation, Symvoulakis (2012) showed a significant direct correlation between the awareness about renal donation in blood donor and non-donor nurses ($P<0.05$)[18]. According to these findings, there is a direct relationship between awareness and performance[23]. Therefore, it is better to cooperate with the individuals of the health team who in the organ donation process have a history of blood donation[24,33].

In this study, the mean score of awareness in those with organ donation card was higher than those who did not have organ donation card, and this difference was statistically significant on the basis of the Mann-Whitney test[25]. Top Bes (2011) also revealed that one of the main reasons for not volunteering to donate organ by receiving organ donation card was the lack of awareness about organ donation and its processes[19]. However, in the study of Arjmand (2008), there was not a meaningful relationship between awareness and volunteering for obtaining organ donation card[20]. This difference in the results seems to be due to the fact that increasing the level of awareness through employee and society education can increase the rate of registration for obtaining organ donation card (performance), but awareness alone is not effective in contributing to organ donation and opportunities should be provided to create an engagement to get enough information [26,27,32].

The results of this research showed that having a care experience influences the performance of individuals. Demir (2011) in his study showed that nurses working in the transplant department have a better performance than nurses working in the dialysis department[17]. Care for patients who are transplanted or needed for a transplant can affect their awareness and subsequently their performance[34].

Conclusions

According to the findings of this study, the majority of the subjects under study had poor awareness and performance regarding postpartum organ donation. Therefore, it is suggested that the next researches are done to investigate the effect of education and courses on retraining and holding conferences with the presence of patients who were organ recipients on the awareness and performance of doctors and nurses about the organ donation as well as a research to determine the factors affecting the organ donation[28,31]. Also, the findings showed that there is a significant direct relationship between the history of blood donation and the performance of the units under study in relation to postpartum organ donation. Therefore, it is suggested that a comparable research be carried out in different occupations of health care employees such as blood transfusion units and blood donors. So, it will contribute to accurate and effective policy making and planning for improving health in the society[29,30].

The unrecognizable physical and mental status in the relevant units can affect how they respond to the questionnaire, which was not controllable by the researcher.

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