

## Attitude and Performance of Staff Working in Educational Hospitals Regarding Organ Donation

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### Abstract

**Introduction:** The demand for organ donation has increased in most countries of the world, while the number of donors remains relatively stable.

**Objective:** The aim of this study was to determine the attitude and performance of physicians and nurses in Rasht city.

**Materials and Methods:** This cross-sectional descriptive analytical study was conducted to investigate the attitude and performance of physicians and nurses working in educational centers in Rasht. The sample size was 423 people (296 nurses and 94 physicians), who were selected using stratified random sampling in December 2014. The research instrument was a researcher-made questionnaire, including socio-demographic characteristics and attitude questions that were analyzed using Independent t-test, ANOVA and Chi-square.

**Results:** The findings indicated that 62.5% of the samples responded to the questionnaire using 'no idea' option (no agreement, no disagreement). Blood donation card recipients ( $P=0.05$ ) and those whose relatives had donation card ( $P=0.035$ ) along with those with organ donor card ( $P=0.05$ ) had a more 'agreed' attitude. There was also a statistically significant relationship among the those with blood donation card and blood donation history ( $P=0.008$ ), people having relatives with organ donation card ( $p=0.001$ ), the presence of a member among close relatives ( $P=0.024$ ), and having experience of taking care of the donor or recipient ( $P=0.002$ ) with the performance of subjects (having organ donation card).

**Conclusion:** The results of this study show that the role of physicians and nurses in encouraging people for organ donation and, therefore, promoting health in the community is not at a desirable level. Therefore, health practitioners and policymakers had been asked to propose solutions for correcting the culture of post-mortem organ donation in order to promote good attitudes and take basic measures in managerial, research, and care areas.

**Keywords:** Tissue and Organ Procurement, Organ Transplantation, Attitude, Professional Practice

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## Introduction

Transplantation is an effective treatment and is the only way to save the lives of patients with advanced organ failure that leads to protection of health, reduction in illness as well as mortality, and also significantly improves the quality of life of these patients [1]. It is also effective in reducing the treatment costs of patients on the waiting list of organ transplants [2]. The demand for organ transplants has increased in most countries of the world, while the number of donors remains relatively stable [3]. In Germany, as many as 12,000 patients are awaiting organ transplantation (2010), over 1,000 of whom die each year due to the lack of organs [4]. The number of transplants in Iran is also much lower than in Europe and the United States due to the lack of donated organs, and thousands die every year. The number of donated cases in Iran, with a population of 77 million in 2013, and with 25,000 patients requiring a transplant, was 1,904 (8.7 per million), while the ideal number should be 7,114 (48.7 per million) [5]. Brain-dead patients are considered an important source for organ donation [6] and the use of healthy organs in order to improve the health of others gives a boost to the organ retrieval process [7].

Given that attitudes largely determine the type of responses to social stimuli [8], various factors can influence people's attitudes toward organ donation. Koddami et al refers—in their study—to the role of culture, religion, socio-economic factors, and health workers' awareness as regards organ donation [9]. Radunz et al emphasized about the awareness and beliefs of the healthcare staff, which he said were models for improving the people's attitudes and increasing their willingness to register as influential donors [10]. However, in his survey, Collins showed that there are a few studies

regarding identification of the level of knowledge and educational needs of nurses in the field of organ donation [1]. Attitudes and behaviors are fundamental factors that have a great influence on organ donation [10]. Deghani et al. showed that receiving a donor card before a death has a positive effect on family decision-making and minimizes the paucity of organs for transplantation [11]. Figuero A also showed in his survey that the treatment staff's attitudes and beliefs regarding organ donation remarkably increased their desire for organ donation and enrollment [12]. Demir, in his study, obtained results inconsistent with those of other studies on organ donation. He showed that although majority of the samples in his survey had a favorable attitude, only a small proportion of them had a donation card and this inconsistency showed that the "agreeing" attitude cannot be effective in obtaining a donation card [13]. The results of Arjmand's study showed that the attitude of the treatment staff influences organ donation due to their important role in various stages of organ donation [14].

Therefore, most studies feel that the role of the treatment staff in increasing the number of organs donated is very important. An increase in the number of transplantation members also requires extensive interventions by different organizations, transplant centers (to create proper guidelines for organ donation and transplantation), and the staff at health centers. Physicians and nurses are responsible for each stage of organ procurement, such as identification of brain-dead donors and its announcement to the organ transplant management center, along with the clinical evaluation of donors. Therefore, the failure to report cases of brain death and negligence in organ procurement due to a lack of diagnosis of brain death, unsuccessful management, and care of 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 a golden opportunity in preparing the transplanted organ or tissue. This, in turn, leads to an increased waiting period for the organ and high mortality rates among patients on the waiting list. This issue is important due to its adverse effects seen in the society [15]. The information provided by physicians and nurses also has a very high acceptability due to its close association with the donors' families [16].

Hence, considering the importance of organ donation, and since the best starting point for solving the problem is to describe the status quo, and also considering the key role of the staff in educational centers as health messengers and their model role in promoting hygienic behavior (receiving organ donation card), the researchers decided to determine the level of knowledge, attitudes, and performance of the subjects. These factors were determined with regard to postpartum organ donation, so that they provide quantitative and qualitative descriptions of the behavior and performance of healthcare staff with regard to organ donation and treatment of patients of organ transplants. Knowing these factors also maintains and improves health status at the social level.

### **Materials and methods**

This is a cross-sectional descriptive-analytical study that determines the attitude and performance of physicians and nurses regarding post-mortem organ donation. Data collection of this study was carried out in seven educational and therapeutic centers of Rasht city from November 25 to December 11, 2015. The inclusion criteria were having the responsibility of direct care of a patient or

pursuing their treatment at the desired centers, as well as having a Bachelor's degree, a Master's degree, and being general practitioners, specialized assistants or specialized physicians with different orientations as well as having the desire to participate in the study. The required sample size to determine the level of knowledge and attitude of the medical staff (physicians and nurses) toward post-mortem organ donation, based on results of the desirable attitude level as per Ghadi Pasha et al.'s study [17], was calculated at CI 95% and relative estimated error limit of 10%, considering the minimum number to be 390. Samples were selected using stratified random sampling. Thus, the sample size in each hospital was determined by dividing the number of nurses and physicians in each hospital by the total nurses and physicians in the seven educational centers in Rasht.

Then, in accordance with the list of nurses and physicians, the subjects were randomly selected using the number of intervals determined by drawing. In the present study, 423 people (296 nurses and 94 physicians) responded to the instruments by eliminating 10 incomplete questionnaires. The researcher referred to the research environment for gathering data in the morning, evening, and night shifts. Information collection instrument was a researcher-made questionnaire based on related texts from books and related articles in three parts. The first part consists of individual-social information (age, gender, religion, marital status, number of children, and level of education) while other data includes information on workplace, blood donation card for self and relatives, organ donation card among relatives, history of care of recipient and donor, history of blood donation, and presence of organ recipient and donor among close relatives. The second part was related to attitude

questions and the third was about function of the person (having a donation card). Validity of attitude questionnaire was measured by the content validity method. After collecting the suggestions and points of view, 10 faculty members of Guilan University of Medical Sciences preserved the statements, the proportion of which was higher than 0.62; some of the statements were also changed. To determine the reliability, the questionnaire was given after 10 days to 20 physicians and nurses of Poursina Hospital in Rasht. These subjects had met the inclusion criteria.

After being completed, the Pearson Correlation Coefficient score of attitude questionnaire ( $r = 0.999$ ,  $p = 0.0001$ ) was calculated. The internal consistency of attitude questionnaire was calculated using Cronbach's alpha coefficient, which was 0.87, indicating internal consistency of the instrument. The attitude questionnaire consisted of 19 items rated using the five-item Likert scale (complete agreement, agreement, no idea, disagreement, and complete disagreement) with a score of 0 to 4. The scores, given the distribution of responses, were categorized as "agree," "no idea" and "disagree" with scores of 1 and 0 in a group called opposite attitude and a score of 2 for the group with no attitude and scores 3 and 4 for the group with an agree attitude. Later, according to Ghadi Pasha et al. [17], responses were categorized as opposite attitude ( $\geq 2$  score) and score of 33.3%–66.3% was for 'no attitude' (24–51 score) and a score of above 66.6% was for "agree" attitude (52–76 score). The third part of the questionnaire was aimed at determining the person's performance, which was known by whether he or she had an organ donation card or not. The Kolmogorov-Smirnov test was conducted to assess normal distribution of the attitude score. Accordingly, the attitude score had normal

distribution ( $p=0/247$ ). Independent t-test, Chi-square, and ANOVA were used to determine the status of attitude and performance after categorization, their frequency, and their comparison in terms of individual and social variables respectively. Independent t-test, ANOVA, and Chi-square were used to determine the attitude and performance status respectively after categorization. It also determined their frequency as well as their comparison in terms of individual-social variables. Data collection was done after obtaining approval from the Medical Ethics Committee of Guilan University of Medical Sciences and the subjects' consent to enter the study. They were later assured that the information would remain confidential.

## Results

According to Table 1, the majority of the research subjects were women (74.2%) in the age groups with mean and standard deviation of  $35 \pm 7.66$  years. Other demographic characteristics of the subjects were as follows: Undergraduate nursing degree (70.4%), Shiite (99.3%), married (74.2%), and having one child (30.5%). A total of 14.4% samples had a blood donation card. Around 33% of the relatives had organ donation cards. Nearly 13.3% and 14.4% of the samples had the experience of taking care of the donor and recipient respectively. Around 21.1% had donated blood. Nearly 11.1% and 5.3% of the samples had organ recipients and donors among their relatives respectively. The majority of the samples (62.2%) received a neutral attitude score on the basis of the instrument. The most important factors influencing the attitude toward organ donation, based on the distribution of raw scores, included the attitude toward post-mortem organ donation, including difficulty in obtaining consent from the deceased's family (48.7%) and fears about the quality of

**Table 1: Distribution of research subjects in accordance with some socio-demographic characteristics**

Socio-demographic characteristics	Number (%)	
<b>Gender</b>	Male	109 (25.8)
	Female	314(74.2)
	Total	423(100)
<b>Education</b>	Bachelor of Nursing	297(70.4)
	MSc in nursing	19(4.5)
	General practitioner	50(11.8)
	Resident	20(4.7)
	Specialist	27(6.4)
	Sub-specialist	9(2.1)
	Total	422(100)
<b>Religion</b>	Shiite	414(99.3)
	Sunni	3(0.7)
	Total	417(100)
<b>Marital status</b>	Single	109(25.8)
	Married	314(74.2)
	Total	423(100)
<b>Age (Mean±SD)</b>	34.55±7.66	

**Table 2: Comparing mean of the attitude scores of the studied subjects in terms of individual social variables**

Socio-demographic characteristics	Attitude	Number	Mean	Median	SD	Sig.
<b>Gender</b>	Male	109	66.86	66.00	6.60	*0.194
	Female	314	67.21	67.00	7.62	
<b>Religion</b>	Shiite	414	67.22	67.00	7.37	*0.308
	Sunni	3	65.33	70.00	8.96	
<b>Marital status</b>	Single	109	67.63	67.00	7.53	*0.331
	Married	314	66.94	67.00	7.31	
<b>Number of children</b>	0	73	66.93	67.00	6.82	**0.613
	1	129	66.30	66.00	7.02	
	2	95	67.21	67.00	7.48	
	> 2	4	76.00	74.00	12.00	
<b>Education</b>	BA in nursing	297	66.40	66.00	7.21	**0.064
	MSc. in nursing	19	67.79	69.00	8.59	
	General practitioner	50	68.66	68.00	7.99	
	Resident	20	68.00	70.50	7.85	
	Specialist	27	70.26	70.00	6.77	
	Sub Specialist	9	69.11	68.00	3.41	

\* Independent T

\*\* Analysis of Variance

organ of the deceased (43.3%). There was no statistically significant difference among distribution of attitude scores in terms of socio-demographic characteristics in the samples based on independent t-test and ANOVA (Table 2). The independent t-test showed that individuals with blood donation card ( $P=0.05$ ), people with relatives who had a donation card ( $P=0.03$ )

as well as those who had organ donor among close relatives ( $P=0.05$ ) had a more favorable attitude score. Also, Chi-square test showed that there was no statistical significance among the samples in terms of distribution of performance score of socio-demographic characteristics. The Chi-square test showed a significant correlation among those having an organ

**Table 3: Relationship between attitude and performance of the subjects**

Variable	Do you have a donation card?	Number	Mean	SD	Sig.
Attitude score	Yes	63	72.19	7.415	*0.0001
	No	360	66.23	6.998	

\*Independent T

donation card, relatives with an organ donation card ( $p=0.001$ ), having a care experience ( $P=0.002$ ), having a history of blood donation ( $P=0.008$ ) and the presence of donors among relatives of the studied samples ( $P =0.024$ ) with performance. Only 14.89% of the samples had received an organ donation card. Also, according to Table 3, there was a statistically significant relationship between the mean attitude score and an organ donation card, which is considered a desirable performance in this study ( $p=0.0001$ ).

### Discussion

The results of this study showed that there was a significant relationship between performance of the subjects and the history of blood donation. McKenzie et al. also showed that blood donors and organ donation participants showed a tendency toward organ donation, and blood donors were likely to donate organs three times more compared to non-blood donors [18]. Similarly, Symvoulakis et al. showed that nurses with a history of blood donation had greater confidence in the skills of the medical team for transplantation compared to nurses without a history of blood donation [19]. Therefore, it is better to use a team of health professionals who have a history of blood donation because of their consent to the donation process, including more awareness about the donation results as far as patient welfare is concerned. Further studies are necessary in the context of factors related to having a donation card. However, in a study, Emdadi et al. also showed a significant statistical relationship between having a donation

card and having relatives with organ donation cards [20]. Blood donation is also a function relating to a person's willingness to help and save the life of a patient in need of blood. Maybe, these people with such thinking would be more prepared to donate organs for the purpose of transplantation. The results of this study showed that having a care experience influences people's performance. Demir, in his survey, showed that nurses working in the transplant department have better performance than nurses working in the dialysis department so far as organ transplant is concerned [13].

It is obvious that taking care of patients who underwent the transplantation process, or need to be transplanted, can influence their attitudes and behaviors. Observing the needs of these patients can stimulate altruistic thinking to influence the attitude of individuals toward organ transplants. The results of this study indicate that there is a relationship between attitude and performance, and this is consistent with the results of Arjmand's study. He also showed in his study that those who had an organ donation card had a more favorable attitude for contributing toward a transplant than people without a donation card [14]. It seems that the type of family attitude influences the performance of individuals. Therefore, it can be concluded that in order to improve the performance of people who work in healthcare centers and those who receive the organ donation card, effort should be made to use appropriate approaches to

change attitudes in order to promote individual performance.

According to the findings of this study, the majority of the studied subjects showed a neutral attitude and poor performance. Therefore, it is recommended that future researchers, who plan to study the effects of education on attitude and performance with regard to organ donation, must look into factors affecting organ donation in the community. They should study similar research works for comparing different functions of health workers, such as those involved in handling blood transfusion units. The unrecognizable physical and mental status of the research subjects can affect their response to the questionnaire, which was not controlled by the researcher.

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#### **Conflict of interest**

No conflict of interest has been declared by the authors.

#### **Author contributions**

All authors have agreed on the final version and meet at least one of the following criteria [recommended by the ICMJE

(<http://www.icmje.org/recommendations/>):

-Substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;

-Drafting the article or revising it critically for important intellectual content.

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