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Hospital Characteristics and Nursing Attitude toward Organ Donation

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Abstract

Background: In our organ procurement unit, based on empirical evidence, the chance of turning a potential donor into an actual one is less than 30 percent and nursing plays a crucial role in this regard.
Objectives: We aimed to clarify nursing viewpoints and probe limitations that affect the organ donation process.
Methods: In this cross-sectional study, a self-constructed 28-item questionnaire including information regarding hospital characteristics, nursing attitudes, and level of knowledge was prepared. Our study population was all nurses who consented to fill in the questionnaire using the Quota sampling method.
After content validity, the questionnaire was circulated in cyberspace and the nursing society was invited to complete it. After one month, the response rate was 46 percent and the completed forms were analyzed.
Results: The majority of participants had not attended any organ donation training program (67%). Also, only 30% of nurses were aware of their crucial role in the donation process. In total, 61.7% of the participants had a high level of knowledge regarding brain death definition and donor maintenance. A positive attitude was observed in 59.1% of nurses with a significant difference in the high record of services (p=0.04). It was also, significantly higher in whom with the experience of working in private hospital (64% vs. 54%, p=0.05); hospitals with neurosurgery-ward (67.7% vs. 54.7%, p=0.01), transplant ward (67.4% vs. 54.9%, p=0.03). Attending training programs had a considerable impact (67.7% vs. 50.8%, p=0.03) but, being in ICU didn't affect nursing attitudes.
Conclusion: Hospital characteristics affect the nursing attitude toward organ donation and transplantation. It is recommended that all health staff obtain appropriate working experience in transplantation wards of the hospitals.

Keywords: Attitude, Brain death, Hospital characteristic, Organ donation

1. Background

The number of people on the waiting list for organ transplantation rises several times faster than that of potential donors (1, 2). In our organ procurement unit (OPU), there is a 27.7 percent chance (unpublished data news) for a potential organ donor becomes an actual donor, and different members of the OPU team can increase this percentage by performing their role correctly. Accordingly, switching potential donors to actual ones is of great importance.

It has been stated that the characteristics of hospitals influence the organ donation process in terms of performing some interventions to improve both donor identification and proper organs selection (3). Chatterjee et al. reported that the strategies including the laws of first-person consent, donor registration, public awareness, paid leave, and tax motivations all had no considerable impacts on the donor pool (4). In America, 15–45 percent of donor loss occurs during the family approach (5).

Nurses are one of the most important groups in donation teams that can improve this process with a positive attitude, better knowledge, and appropriate performance (6).

Nurses are often the first health staff to observe the condition of a patient with loss of consciousness and inform other medical teams. Also, they have a constant presence with brain death cases and usually are in close contact with their families (7). Most nurses allow families of brain-dead cases to visit their patients, and they see the adherence between the patient and his or her family, which allows them to understand the thoughts, feelings, and opinions of families and play an important role in convincing them to donate (8).

In addition, considering that brain death patients need more attention and care due to a lack of brain function, donor maintenance is of great value in the organ donation process (9). In this regard, maintaining stable hemodynamics in brain death patients is one of the important tasks of nurses that affect the outcome (10). This responsibility is directly influenced by their attitude toward organ transplantation. Otherwise, nurses have little incentive to care for the potential donors (10).

Guido et al. reported that moderate preparation in many nurses in response to "being prepared or not to deliver care to patient potential organs and tissue donors" and only a few nurses were completely prepared for it (9). Excessive stress, lack

of scientific and legal information in this field, hesitation in diagnosis due to lack of awareness, religious issues, beliefs, and different emotional and biological reactions in dealing with these cases and their families can affect all stages, from the diagnosis of brain death to organ donation (11). So, beyond the attitudes, nurses try not to take responsibility for this process due to the difficulty and sensitivity (8). Indeed, caring for brain death patients puts nurses in a stressful psychological state. Besides, knowledge and attitudes, the nurses' performance is an important factor in managing the outcomes of organ donation. It is important to note that only a small percentage of the nurses have an organ donation card (12).

2. Objectives

In this study, we aimed to clarify nursing viewpoints and probe limitations that affect the organ donation process considering their hospital characteristics.

3. Methods

3.1. Design

In this cross-sectional approach, a 28-item self-constructed questionnaire was prepared by OPU of Masih Daneshvari Hospital, Tehran, Iran. The Questionnaire includes information regarding hospital characteristics, nursing attitude, knowledge, and performance. Content validity was assessed and some questions regarding the content or available answers were modified. The final content validity index was more than 90 percent for all questions. Then, the questionnaire was circulated on August 2021 on social media, and the nurses were invited to collaborate to complete it. Our study population was all nurses willing to complete the questionnaire using the non-probability sampling method (Quota) based on the respondents.

3.2. Data Collection Procedure

The social media channels and groups were utilized for notifying the probable respondents including websites, WhatsApp, Telegram, and Instagram. All nurses were welcome to enter the study and in case of completing the questionnaire, the forms were eligible for analysis, and after a month of data collection, the results were reviewed and analyzed.

3.3. Questionnaire

The questionnaire included four important sections:

1. Demographic characteristics including gender, age, the record of service, hospital characteristics, experiences regarding working in ICU, transplant ward, neurosurgical ward.

2. Nursing attitude toward organ transplantation considering willingness to sign the organ donation consent when facing the relatives becoming potential organ donors, attitude toward online registration for self-donation and obtaining organs from brain death cases. The Cronbach's Alpha for five items was measured at more than 0.8.

3. Nursing knowledge about brain death definition and donor maintenance regarding their answer to five questions related to the management of hypotension, controlling electrolytes, and making a decision about organ transplantation was assessed. In the case of obtaining a score of more than three, it was considered a high level of knowledge, otherwise, the nurse had a low level of knowledge, (Cronbach's Alfa > 0.8).

4. The limitations, challenges, and opportunities according to national regulations.

3.4. Ethical Consideration

The study was approved by the Ethics Committee of NRITLD with the reference number of IR.SBMU.NRITLD.REC.1400.085. The questionnaire was anonymous and all participants were invited to complete the questionnaire after obtaining their consent.

3.5. Statistical analysis:

All information from the questionnaires was collected using SPSS 17.0 software. The quantitative data are stated as Mean±SD and the categorical data are expressed as counts and percentages. The between-group comparison was assessed with the Chi-square test for proportions and the T-test for unpaired samples in the case of normally distributed data. Logistic regression was used to report the Odds ratio. The statistical significance level was considered by the P-value of less than 0.05, and a confidence interval of 95%.

4. Results

The questionnaire was circulated for one month, the response rate was 46% and 469 nurses with a mean age of 32.78 ± 9.6 years participated in the study, of which 80% were female. In total, 75.1, 12.4, 18,8 percent of nurses worked at public, private, and special organization-related hospitals, respectively with overlaps in some situations. Regarding the work experience of the participants, 55% of the participants had more than six months of experience in the intensive care unit.13.2% of them work in the hospital neurosurgery department, also12.6% of nurses work at a hospital with an organ transplant ward.

In terms of training courses, 67% of nurses have not participated in any training course or organ donation workshop so far. Thus, only 30% of nurses believed in the importance of their role as the key

group in the organ donation process.

In response to the question, "What are the causes the treatment team to pay less attention to the issue of care for possible brain deaths in the intensive care unit?" Lack of knowledge about the organ donation process and lack of medical staff accounted for 72% and 20% of the priority, respectively. About 3% of nurses did not trust the organ transplant system and stated that this was the reason for non-cooperation. Also, 5% of the nurses mentioned the lack of motivation for this cooperation as the first reason. (A multiple-choice question).

Regarding the source of information related to the donation process, 22.4% of nurses obtained their information from television; 35.4% from cyberspace; 36% from www.ehda.ir or other related sites; 24.7% during conversation, and 73.1% from the hospital environment.

4.1. Nursing Attitudes:

To measure attitude, 5 items were used to assess willingness to have an organ donor card, making decisions for donation, obtaining an organ from brain death cases. Each item has one score and in the case of getting four or five, a positive attitude was mentioned. For score 3 we decided on the willingness to obtain an organ from brain dead patients, if the answer to this question was negative, a negative attitude was considered.

A positive attitude was observed in 59.1% of nurses. The mean age of subjects with positive and negative attitudes was 32.56 ± 9.38 and 33.04±10.09, respectively, P = 0.69. Record of service in people who had a positive attitude was significantly higher than those who had a negative attitude 17.17±7.8 against 9.8±2.6 years, p=0.04 (Table 1).

The positive attitude was significantly higher in hospitals with neurosurgery wards and hospitals with organ transplantation wards. However, being in ICU didn't affect nursing attitudes (Figure 1). Moreover, attending training programs has a considerable impact (67.7% vs. 50.8%, p=0.03) on nurses' attitudes. In other words, 74.1% of people with negative attitudes did not participate in any organ donation workshops. Likewise, the negative attitude was significantly lower in nurses with the experience of facing several brain death, 48.4% vs. 63.7% (p= 0.01).

4.2. Level of knowledge

The mean level of Knowledge was 3.35±1 and there was no significant difference between participants with negative and positive attitudes. 61.7% of participants have a high level of knowledge regarding brain death definition and donor maintenance with no difference in age and record of services. However, 67% of all participants were not aware that organ transplantation from brain death is free of charge in Iran.

The mean age of nurses with a high and low level of knowledge was 33.28±10.9 and 32.23 ± 8 years, respectively. P = 0.38. Moreover, a record of service was 11.8±6.7 vs. 9.7±3.7 (p=0.1). The results showed that the high level of knowledge about the care of brain death cases in people who worked in the neurosurgery department was significantly higher than in other nurses. However, working in the intensive care unit and organ transplants has not changed nurses' knowledge much (Table 2). Having an organ donation card increased the probability of having sufficient information about brain death by 25%. OR=1.25

4.3. Willing to donate and registry:

In response to the question, "To what extent do you encourage a patient who needs a kidney transplant to receive a kidney from a brain-dead person instead of a kidney from a living person?" 61% of nurses strongly agreed and 16% of nurses disagreed with receiving a kidney from brain death, 33% of nurses did not comment on this item. Also, in 24% of cases, nurses were reluctant to donate a brain-dead person who is a relative.

Participant's response to the question regarding "probability of being on the waiting list or a brain-dead donor, during the lifetime?" in 34% was correct.

Based on what the participants announced, the most important cause for unwillingness to donate was being uninformed about the procedure (48%), high workload(25%), stressful tasks regarding donor approach (10%), unaware of national regulations (17%).

Among the participants, 45% had an organ donation card, and by providing legal information and explaining that the card is not legally effective and just used for obtaining family consent, 24% were still not interested in receiving an organ donation card. It is worth mentioning that 60% of nurses reported that having an organ donation card was stressful for them.

Having donation cards (45%) and obtaining information from www.ehda.ir significantly affected nursing knowledge and attitudes.

Table 1. Demographic information and the level of knowledge regarding nursing attitudes.

Variable		Positive Attitude	Negative Attitude	P-value
Gender	Female	56.7 %	43.3%	0.9
	Male	55.6 %	44.4 %	
Age		32.56 ± 9.38 years	32.56 ± 9.38 years	0.69
Record of service		17.17±7.8 years	9.8±2.6 years	0.04
Level of knowledge out of 5		3.35±1.05	3.34±1.06	0.89

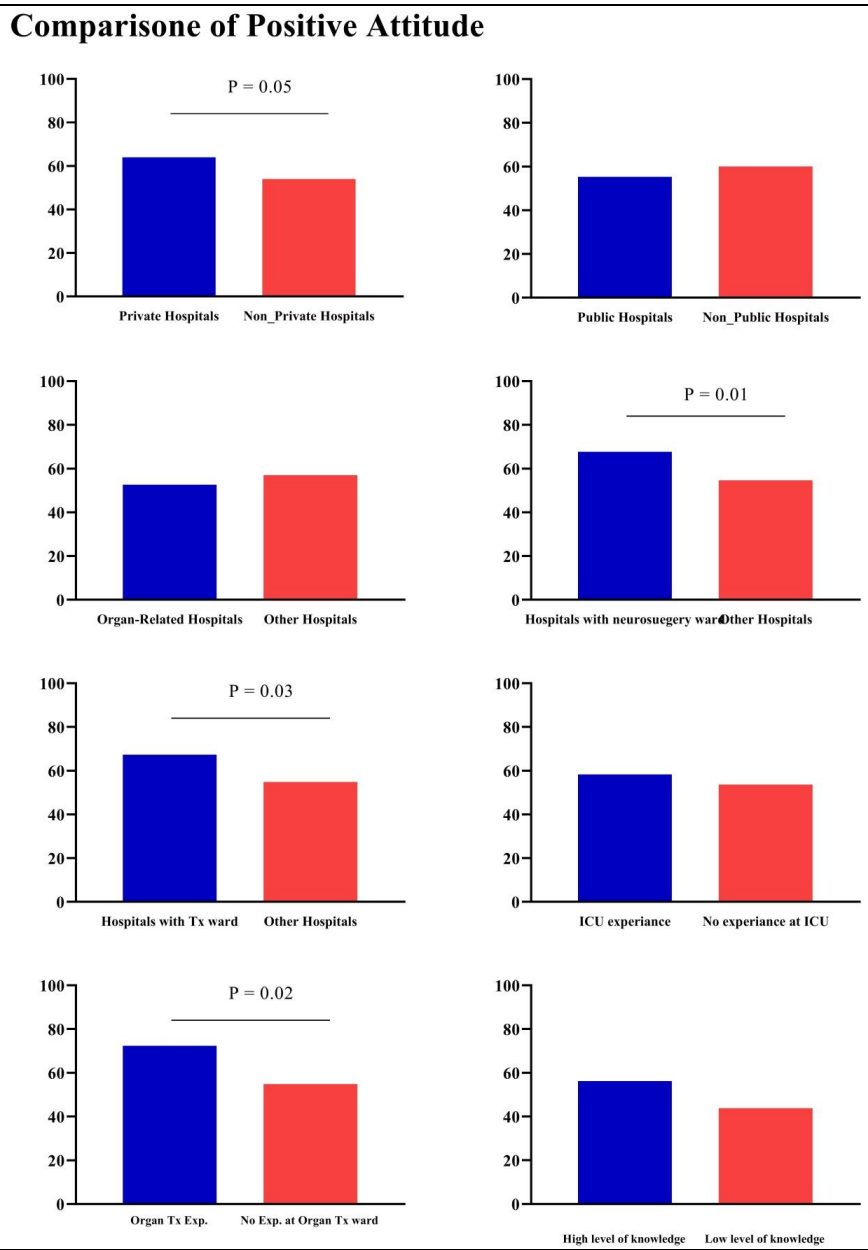

Figure 1. Comparisone of Positive attitude in different hospital characterictics

Table 2. The effect of different conditions and experience of nurses on high level of knowledge

Types of hospital	High level of knowledge%	P-value
Public hospitals	68.6	0.15
Private hospitals	60.9	0.22
Organization related hospitals	66.6	0.9
Hospitals with neurosurgery ward	67.7	0.000
Hospitals with organ transplantation ward	65.8	0.8
Experience at ICU	71.2	0.08
Experience at Organ Transplant Ward	61.7	0.5
Training course of organ donation	71	0.1
Donation registry	72.6	0.02

Regarding the reasons for the low attention of medical staff regarding the issue of organ donation, the nurses who stated that the most important reason for unwilling to organ donation had a negative attitude in 66.7%, and those who considered the lack of staff as the main cause of this problem had a negative attitude in 30.7%.

4.4. The sources of information

The rate of negative attitude toward organ donation was significantly lower when nurses obtained related information from organ donation-related websites, compared to scenarios in which nurses obtained information from cyber space, television, talking to others, and the hospital

environment (P=0.003).

5. Discussion

More than half of the participants had positive toward organ donation from brain dead cases in which this approach was more remarkable in hospitals with neurosurgery or organ transplantation ward. However, being in ICU didn't affect nursing attitudes. Moreover, attending training programs has a considerable impact on nurses' attitudes. While our study showed that about 70% of nurses haven't participated in workshops related to brain death that was in line with a study conducted in 2018 in Korea which indicated that 85.1% of the nursing students did not receive any training about donation (13). While participating in workshops, in addition to giving them the necessary and sufficient information, causes their attitudes and beliefs to change positively (14).

Only 1–2% of all deaths meet the criteria to be a candidate for organ donation, all potential donors should have the chance to be actual donors. Nurses are the most important group who create opinions in the donor family, and their negative attitudes would significantly impact society's performance regarding organ donation. While in our study, 70% of nurses believed that the role of medical staff in the organ donation process is less important than that of society and artists.

In this regard, Paul Vincent et al. stated that in a difficult and exhausting situation where the deceased family has to make a decision, an informed and experienced nurse is so effective even though the importance of public awareness is not ignorable (15). Being aware of the nursing role is not sufficient, since, in another study (8), nurses who do not provide psychological support to the deceased family believed that they are not responsible for the donation process. Hence, not only awareness but also a positive attitude is crucial.

Unluckily, more than half of our nurses were not informed about free of charge organ transplantation process in Iran, and 40% of them had no concept to persuade patients on the kidney waiting list to obtain an organ from a brain dead. Likewise, in another study from Turkey, 87.7% of the nurses had a positive attitude toward organ donation, but only 10.8% knew the donation regulations (16).

Based on their opinions, insufficient information regarding donation, an increase in workload, and lack of medical staff are the most important factors in the low attention of the medical staff to brain dead patients. Considering that brain death cases need special and double attention to maintain both donor and organs, patient care would be stressful for them (10) which may lead to negative attitudes (17). To be more precise, in our study, the highest percentage of negative attitudes was in public hospitals due to the high workload and low manpower.

Vlaisavljević et al. showed that work experience and education are two important factors for creating a positive attitude towards adopting new science. Indeed, a piece of adequate information and experience can both reduce nurses' stress and increase the opportunity to procure appropriate organs (6). According to our data, a considerable proportion of our nurses had no sufficient knowledge regarding brain death diagnosis and donor maintenance. Unhappily, nurses who had a high level of knowledge didn't have a positive attitude in 43.8% since the source of obtaining information doesn't cover all aspects of the donation process. Indeed, the proper source of information influence not only the knowledge but also the attitude of the person. In this regard, Conesa et al. in 2004 indicated that the most important source of information for transplantation was television (18). In 2020, Almela-Baeza et al. mentioned TV as the main source for people aged more than 65 years (19) and our results showed that there is a relationship between getting information from proper websites will create a positive attitude in addition to providing information.

In the study of Flodén et al. (20) less than half of the nurses trusted the diagnostic system without angiography, while in our study about 85% of nurses trust the brain death diagnosis system. However, having faith in diagnostic procedures is necessary but not sufficient for competent performance.

The donation registry, as evidenced by Sophie et al, has improved the attitude of society (21). In Iran, an organ donation card is a cultural symbol for society with no legal burden. However, less than half of nurses have an organ donation card. Among the nurses who did not have a donation cart, after realizing that the card was not legally valid, about one-fourth of them still did not want to receive a donation card, but the remarkable thing was that most of them changed their decision to get the donation card, agree to donate their relatives in case of brain death situation while one study indicated that only 36.7% of the nurses agree to donate the organs from their family members (16).

Allahverdi et al. conducted a study to assess the impact of a training program on nursing students who believed religion and culture disrupt the organ donation process. The researchers found out that willingness to donate organs rises with proper information (22). To be more precise, the knowledge that nurses acquire while studying at university is not enough for the organ donation process, but experience and teamwork can have a significant impact in this field (6). Ethical and appropriate training for nurses, especially in the ICU, creates positive and perspective attitudes and this leads to time savings in gaining healthy organs (9).

This study had some limitations regarding the study population and questionnaire circulation. Indeed, non probably sampling was used and

external generalization was affected. All study subjects were not in the same condition and the answers may be affected by their situation. However, the study provided an overview and would be effective for further planning.

6. Conclusion

Hospitals' characteristics affect nursing attitudes toward organ donation and transplantation. It is recommended that all health staff have experience working at hospitals with transportation wards.

It seems that training courses related to organ donation should be held frequently for nurses. Also, regarding the organ donation process and transplant outcomes, the obtained data should be shared with nurses to be aware of the lifesaving procedure. Additionally, we recommend that each nurse has a rotation in an OPU to have the opportunity to take care of brain death cases.

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