

Do We Need To Maximize the Knowledge and Attitude Level of Physicians and Nurses Toward Organ Donation and Transplant?

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Abstract

Objectives: We sought to assess the knowledge level, attitudes, and personal views of physicians and nurses toward organ donation and transplant.

Materials and Methods: This is a cross-sectional survey, carried out from November 2007 to June 2008 in the intensive care units and accident and emergency departments of the hospitals of the Hamad Medical Corporation. A representative sample of 685 health care professionals working in the hospitals was approached; 521 agreed to participate in the study (76.1%). Face-to-face interviews were based on a questionnaire that included sociodemographic information, knowledge level, and personal views toward organ donation and transplant.

Results: Of the 521 participants, there were 268 physicians (51.4%) and 253 nurses (48.6%). The knowledge level of nurses was significantly lower for most of the questions related to organ donation, compared with physicians. Mean \pm standard deviation for the score reflecting knowledge level was higher for physicians (4.9 ± 1.9) than it was for nurses (4.4 ± 2.0). The majority of the nurses believed, more than physicians, that brain-dead

persons are eligible for organ donation (71.5% vs 63.1%), and that certain organs can be donated while the person is living, including kidneys, lobes of livers, and lungs (71.5% vs 62.3%). Many physicians (72.4%) and nurses (74.7%) did not know that brain death can be described as death. Most physicians and nurses supported organ donation (91.8% vs 79.8%), although a lower proportion of physicians and nurses were willing to donate a kidney to a family member in need (64.6% vs 68.0%). More than physicians (23.9%), nurses (61.3%) agreed that they lacked sufficient information about organ donation.

Conclusions: Although the physicians and nurses had an acceptable level of knowledge about organ donation, the mean knowledge score for physicians showed significantly better understanding of the criteria for organ donation and procurement.

Key words: Knowledge, Behavior, Organ donation, Transplant, Physicians, Nurses

Organ transplant has been widely accepted as a solution for end-stage organ failure (1). The use of human organs for transplant has steadily increased in the past decades (1-9). There is a critical shortage of organs for transplant. Thousands of potential recipients await organs, while many die while waiting. Physicians and nurses are often the first professionals to identify a potential donor. Therefore, to help patients with end-stage organ failure, it is critical that they be educated about organ donation.

In all countries, organ donation and transplant activities are dependent on legislation, attitudes of the general public and health care professionals, and the levels of organization and coordination of transplant units (4, 6-7). Health care professionals have become more involved in the organ

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procurement process (4-18). Research (3, 8-16) has identified that health professionals' attitudes, knowledge, and willingness to approach a family significantly influence the bereaved family's decision-making process about organ donation. Reluctance by health care professionals to identify a dead person as a potential donor is one reason for a shortfall in transplantable organs (9). Some of these health care staff are not convinced of the cost-effectiveness of organ donation. Others may agree with organ donation in principle, but they do not support it in practice owing to their cultural or religious points of view. As a result, many potential organs are lost to donation. Increased organ procurement therefore depends on the attitudes of health care professionals toward organ donation (5, 8, 10-12).

To explore and understand these attitudes continues to be a meaningful issue in today's health care environment. The knowledge level and attitudes of physicians and nurses are of great importance because these individuals can influence their patients in all aspects of organ donation and transplant (3-15). A recent study (31) done in Qatar showed that 31% to 39% of the studied population were willing to donate an organ, while only half of them expressed their willingness to donate an organ while they were still alive.

We sought to assess the level of knowledge, attitudes, and personal views of physicians and nurses toward organ donation and transplant in the intensive care units and accident emergency departments.

Subjects and Methods

This cross-sectional study was carried out from November 2007 to June 2008 at the trauma center and the accident and emergency departments of the Hamad Medical Corporation. A questionnaire was developed based on previous studies (3, 8). A translated Arabic version of the Organ Donation and Transplant questionnaire was revised and tested in a pilot study of 60 physicians and nurses from the trauma center and accident and emergency department.

Face-to-face interviews were based on the above questionnaire that included sociodemographic characteristics, knowledge level, and attitudes and personal views toward organ donation and

transplant. A cluster sampling design was used and a representative sample of 685 health care professionals from the hospitals of the Hamad Medical Corporation was approached by qualified and trained research assistants. Written informed consent to participate in this study was obtained from 521 physicians and nurses (76.1% participation), working at the trauma center and the accident and emergency departments of the Hamad General Hospital, Al-Khor Hospital, and pediatric emergency department. All were approached by trained research assistants to complete the questionnaires. One hundred sixty-four staff were excluded from the study owing to incomplete questionnaires or because they refused to give their consent to participate or because they decided not to participate owing to a lack of time.

Data are reported as means \pm standard deviation. The *t* test was used to determine statistically significant differences between mean values of 2 continuous variables, and the Mann-Whitney *U* test was used for nonparametric statistics. The chi-square analysis was used to test for differences in proportions of categorical variables between 2 or more groups. In 2×2 tables, the Fisher exact test (2-tailed) was used instead of the chi-square test, in particular, when the sample size was small. We used multivariate linear regression to determine factors associated with the knowledge score of organ donation and transplant after adjusting for possible confounders such as age and sex. The Pearson correlation coefficient was used to evaluate the strength of association between variables. Values for *P* less than .05 were considered statistically significant.

Results

Of the 521 participants, there were 268 physicians (51.4%) and 253 nurses (48.6%). Table 1 shows the sociodemographic characteristics of the physicians and nurses by profession. The mean age of the physicians (35.6 ± 6.2) was lower than that of the nurses (36.9 ± 7.1). Nationality, sex, place of living, type of house, religion, and marital status showed statistically significant differences between the physicians and nurses.

Mean age of physicians were 35.6 ± 6.2 and mean age of nurses were 36.9 ± 7.1 .

Table 2 presents the level of knowledge of the

Table 1. Sociodemographic characteristics of the surveyed physicians and nurses by profession

Characteristics	Physicians (n=268)	Nurses (n=253)	P value
Age (years), mean ± SD	35.6 ± 6.2	36.9 ± 7.1	.026
Age group			
< 30 (%)	40 (14.9)	52 (20.6)	
30-39 (%)	173 (64.6)	145 (57.3)	.306
40-49 (%)	45 (16.8)	46 (18.2)	
≥ 50 (%)	10 (3.7)	10 (3.9)	
Nationality			
GCC (%)	18 (6.7)	27 (10.7)	
Other Arabs (%)	181(67.5)	69 (27.3)	< .001
Indian Subcontinent (%)	53 (19.8)	58 (22.9)	
Far East (%)	4 (1.5)	89 (35.2)	
Western (%)	12 (4.5)	10 (3.9)	
Sex			
Men (%)	149 (55.6)	81 (32.0)	< .001
Women (%)	119 (44.4)	172 (68.0)	
Educational level			
Secondary (high school) (%)	0 (0.0)	16 (6.3)	
University (%)	268 (100.0)	237 (93.7)	
Place of living			
Urban (%)	249 (92.9)	183 (72.3)	< .001
Semiurban (%)	19 (7.1)	70 (27.7)	
House type			
Flat (%)	135 (50.4)	193 (76.3)	
Villa (%)	133 (49.6)	60 (23.7)	< .001
Religion			
Muslim (%)	194 (72.)	109 (43.1)	
Christian (%)	40 (1.9)	135 (53.3)	< .001
Buddhist/Hindu (%)	34 (12.7)	9 (3.6)	
Marital status			
Married (%)	237 (88.4)	195 (77.1)	< .001
Single (%)	31 (11.6)	58 (22.9)	
Has children or other dependents			
Yes (%)	192 (71.6)	172 (68.0)	
No (%)	76 (28.4)	81 (32.0)	.340

Abbreviations: GCC, Gulf Council Countries

Table 2. Level of knowledge of physicians and nurses about organ donation and transplant by profession

Knowledge Level ^a	Physicians (n=268)	Nurses (n=253)	P value
Brain death can be best described as death.	74 (27.6%)	64 (25.3%)	< .001
Someone who dies of cardiac arrest is able to donate. (CPR)	48 (17.9%)	31 (12.3%)	< .001
A hospital's involvement with organ donation is monitored according to the state laws.	92 (34.3%)	52 (20.6%)	< .001
According to the state law, people who are brain dead are legally dead.	120 (44.8%)	39 (15.4%)	<.001
The majority of people who need a transplant receive one.	145 (54.1%)	129 (51.0%)	.775
A person must designate themselves as organ donor before he/she can become organ donor	62 (23.1%)	46 (18.2%)	.315
Organs that can be donated while living include kidneys, lobes of livers, and lobes of lungs.	167 (62.3%)	181 (71.5%)	.062
Brain dead persons are eligible for organ donation.	169 (63.1%)	181 (71.5%)	.007
People with a past history of alcohol or intravenous drug abuse are not eligible to receive a transplant.	180 (67.2%)	168 (66.4%)	.086
The costs for donating organs are paid by the donor's family.	66 (24.6%)	57 (22.5%)	< .001
Organs cannot be bought and sold in the state of Qatar.	173 (64.6%)	101 (39.9%)	.001
Care for any patients who have received transplants	161 (60.1%)	170 (67.2%)	.092
Knowledge score, (0-11) mean ± SD ^b	4.9 ± 1.9	4.4 ± 2.0	.010

Abbreviations: ^aNumbers and percentages represent those participants who responded, ^bThe range for possible scores is 0 to 11.

physicians and nurses toward organ donation and transplant by profession. The mean knowledge score was higher for physicians compared with nurses. The knowledge level of nurses was significantly lower for most of the questions. However, a higher proportion of nurses, compared with physicians, knew that brain-dead persons are eligible for organ donation. Also, more nurses than physicians knew that certain organs can be donated while living, including kidneys, lobes of livers, and lungs.

Table 3 presents the attitudes and personal views of the physicians and nurses toward organ donation and transplant. More physicians than nurses supported organ donation, although the proportions of physicians and nurses willing to donate a kidney to a family member in need were similar. Slightly

Table 3. Attitudes and personal views of physicians and nurses toward organ donation and transplant by profession

Variables	Physicians (n=268)	Nurses (n=253)	P value
Willingness to donate			
Previously thought about organ donation	173 (64.6%)	90 (35.6%)	< .001
Support organ donation	246 (91.8%)	202 (79.8%)	< .001
Considering to become an organ donor but need more time to think about it	151 (56.3%)	163 (64.4%)	.059
Willing to donate a kidney to a family member who never discussed their preferences with me	135 (50.4%)	68 (26.9%)	< .001
Willing to donate a kidney to a family member in need	173 (64.6%)	172 (68.0%)	.408
Want to receive an organ transplant if needed one	141 (52.6%)	138 (54.5%)	.658
Talked with family regarding decision to donate or not to donate	111 (41.4%)	62 (24.5%)	< .001
Know someone who donated an organ	136 (50.7%)	70 (27.7%)	< .001
Know someone who received an organ	116 (43.3%)	95 (37.5%)	.183
Would donate a kidney to a stranger	83 (31.0%)	46 (18.2%)	.001
View points about organ donation^b			
He/she lacks sufficient information regarding organ donation	64 (23.9%)	155 (61.3%)	< .001
Organ donation is against his/her religious viewpoints	19 (7.1%)	71 (28.1%)	< .001
Trusts that organs will be allocated fairly	168 (62.7%)	174 (68.8%)	.144
Wants to be buried or cremated with all his/her organs intact	77 (28.7%)	153 (60.5%)	< .001
He/she has personal conflicts or moral objections to organ donation	91 (34.0%)	105 (41.5%)	.076
He/she wants to donate organs to person of his choosing	102 (38.1%)	173 (68.4%)	< .001
He/she has fear of surgery/ disfigurement/post-operative pain	154 (57.5%)	191 (75.5%)	< .001
He/She is concerned that designating himself/herself to as an organ donor will lead to insufficient medical care	99 (36.9%)	159 (62.8%)	< .001
Physicians should have organ donation information available in their office	174 (64.9%)	222 (87.7%)	< .001

Abbreviations: ^aNumbers and percentages represent those participants who responded "yes" to the following statements.

^bNumbers and percentages represent those participants who "strongly agree" or "somewhat agree" with the following statements.

more than half of the physicians and nurses wanted to receive an organ transplant if needed. Nurses were less willing than physicians to donate a kidney to a stranger and to a family member who never discussed their preferences.

Table 4 shows the results of multivariate linear regression to determine the factors associated with the knowledge score. Taking care of patients who had received transplants, and self-rated knowledge of organ donation were significant contributors to the total knowledge score.

Table 4. Multivariate linear regression to determine predictors for knowledge score of organ donation and transplant

Independent variables	Regression coefficient	Standard error	t Value	P Value
Care for any patients who have received transplants	0.809	0.170	4.773	< .001
Knows someone who received an organ transplant	0.451	0.167	2.693	.007
Occupation: Doctor	.436	.161	2.703	.007
Self-rated knowledge of organ donation and transplant	.163	.044	3.656	< .001

Discussion

Many hospital-based studies in the Middle East have identified the level of knowledge and attitudes of the general public toward organ donation and transplant, but few studies have focused on physicians and nurses. The gap between demand and supply of organs is a major problem in organ transplant (14). In Qatar, as in the rest of the world, the major barrier to transplant is a shortage of donor organs such as kidney, liver, lung, and heart. The attitudes of health care staff, especially that of physicians and nurses, about organ donation are important, because these individuals often guide public attitudes and behavior about health problems (15-21). Hence, this study examined the level of knowledge, the attitudes, and the personal views of physicians and nurses working in the accident and emergency departments and the intensive care units of the government hospitals in Qatar toward various issues concerning organ donation and transplant.

Religious views were not a substantial barrier for organ donation among physicians, although slightly more than one-quarter of the nurses considered organ donation to be against their religious viewpoints. Many physicians and nurses supported organ donation in principle, although they apparently do not support it in practice, in part

owing to a lack of knowledge on various issues of organ donation. In a different survey, physicians and nurses reported that lack of information about the suitability of donors led to many potential donors being missed (16). In a Canadian survey of 2400 randomly selected physicians, of the 34.6% who responded, 95% of them supported organ donation (17). Also, 92% of Canadian critical care nurses supported organ donation in principle, but they were reluctant to approach potential organ donors.

In Qatar, the mean knowledge score of physicians and nurses was low compared with the best possible score of 11. The knowledge of nurses was significantly lower for most of the questions compared with physicians. The knowledge score of nurses in Qatar was low, compared with those in a study of nurses at Southern Illinois University (who had a mean score of 7.5) (18). In our study, nurses knew better than did physicians that brain-dead patients can be donors, and what organs can be donated during life. One possible reason for this may be that more than half of the nurses in our study were foreigners, and they might have had more exposure to organ transplant practice. Recent studies have reported that a lack of knowledge has a negative effect on people's attitude toward organ donation (5, 15-20).

The attitudes of physicians toward organ donation were moderately positive and even better than the attitudes of nurses. As for personal views on organ donation, nurses viewed donation in a more positive light than did physicians. Knowledge increased with the level of education. Other research suggests that the educational level of health professionals is positively related to their personal willingness to donate organs (12-22).

When we compared the attitudes and knowledge of physicians and nurses toward organ donation and transplant, we found that physicians had a somewhat higher level of knowledge and more positive attitudes toward organ donation, but their personal views were not satisfactory. In studies that compared the attitudes and knowledge of health care professionals and their performance when faced with a donor-eligible patient, attitudes were of more importance than knowledge regarding successful retrieval of organs (12-17). A positive attitude and more-extensive knowledge regarding organ donation are expected from physicians, perhaps owing to the degree and amount of their training.

Because of the high level of interpersonal skill required to approach a bereaved family regarding organ donation, nurses may not perceive organ donation as part of their professional responsibility. In this study, we explored the views of a group of physicians and nurses in relation to organ donation and transplant in the highly economically developed State of Qatar. However, some limitations are noted. It was difficult to determine the representativeness of the study sample because all participants were from the Trauma Center and Accident and Emergency Department in the Hamad Medical Corporation, which is a tertiary hospital and is in charge of most organ transplants. The attitudes of physicians and nurses working in the other 5 private hospitals were not obtained and may differ from the sample here. The results of this study suggest that the knowledge of physicians and nurses in trauma center and Accident Emergency Department in Qatar is limited to the extent of their information concerning organ donation and transplant. It is important that continuing medical education programs be instituted in potential donor hospitals in Qatar.

The study findings show that although physicians and nurses have an acceptable level of knowledge, and positive attitudes, toward organ donation, physicians showed significantly better understanding of the criteria for organ donation and procurement. More than physicians, nurses agreed that they lacked sufficient information about organ donation. We speculate that one reason for the low level of organ donation in Qatar is a lack of knowledge and inadequate awareness about organ donation and transplant among health care staff. We believe that the results of this study, along with results of previous studies, support the need for educating health care staff about the organ donation process and transplant, because they can positively influence levels of knowledge and attitudes of potential organ donors.

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