

Study of Knowledge and Attitude about Brain Death and Donation of Cornea

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ABSTRACT

We investigated the knowledge and attitude of brain death thought by students in the department of optometry, and investigated the knowledge and attitude of donating cornea to see the relationship. The survey was conducted from September 1 to December 20, 2015 in the subjects of the students who were informed of the study goals and contents, and agreed. We examined gender, grade, religion, etc. And they looked into whether there were any chronic patients in the family, people who wanted to receive organ donation, and whether they wanted to donate their organs or why. Emotional attitudes about donating cornea and key knowledge of brain death are related, it has been shown. Behavioral attitudes toward donating cornea are linked to key levels of brain death and legal knowledge of brain death. Emotional attitude and cognitive attitude scores for donating cornea are related to behavioral attitude scores. The knowledge of donating corneas has been shown to affect the attitude of donating cornea. Therefore, a variety of promotions and educations are needed to promote the donation of cornea.

Keywords: Attitude about donation of cornea, College student, Knowledge about donation of cornea, Knowledge of brain death, Optometry

Introduction

With the rapid development of high-tech medicine, the average human life expectancy continues to rise and man is trying to maintain and promote a healthy life, not just an extension of life. However, Lee & Kim, (2008: 120-129) suggest that the health promotion of terminally ill patients cannot be beyond the limits, and offers organ transplants as the most effective and only solution¹. Brain death is very important in terms of organ transplantation, and the definition of brain death is when the brain, the center responsible for breathing and circulation of the human body, is destroyed by damage, and the patient is unable to regenerate again, and the patient has an artificial respiration system attached, which stops beating soon due to loss of circulation central function by Kwak, (1999)².

Chronic organ failure patients are gradually increasing, and organ transplantation is activated by the development of immunosuppressant, anesthesia, and surgical procedures as their treatment methods. For transplants, donor organs must be actively carried out, which inevitably requires brain death organs. Kwak,

(207: 1-3) suggests that in Korea, as organ transplants have been activated from brain death, it has become a new life-giving treatment for terminally-ill organ failure patients³. The development of immunosuppressant and surgical techniques, the development of effective long-term preservatives, the improvement of the ability of transplant patients to follow-up care, and the increase in the number of adaptive patients with organ transplants, and the decrease in concerns and rejection of organ transplants, have led to a rapid increase in patients and organ transplants in patients requiring organ transplants. In February 2000, Korea enacted the 'Long Term Transplantation Act' to recognize brain death on the premise of organ donation and to provide an institutional basis for organ donation to be made fairly and efficiently. To this end, the National Center for Organizational Management was also set up in the National Medical Center by Kim & Kim, (2013: 225-251)⁴. According to Ha, Hong, Kim, Lee, Song, & Han, (2001: 51-57), despite these efforts, however, demand for organ transplants has increased since the law was enforced, but the number of brain death organ donations and transplants has decreased⁵. Because of the decreased number of organ

donation, procedural problems such as brain death judgment and complex organ distribution processes and the negative attitude toward organ donation due to the influence of Confucianism have emerged as an urgent issue to promote brain death organ donation by Kang & Kim, (2004: 81-86) and Lee, Moon & Kwak, (2001: 217-224)^{6,7}. According to Korean Network for Organ Sharing, (2014), lack of brain death organ donors is a worldwide problem, especially in Korea, with eight Koreans, 36 Spaniards, 27 U.S., 23 Italians and 20 British nationals, compared with the number of brain death organ donors per million populations⁸. A study of non-medicine patients by Kim & Lee, (2016: 3313-3327) showed a relatively positive attitude toward organ transplants, but lacked brain death's medical knowledge of organ transplants, law and organ transplantation management systems, and that most of the information about brain death transplants was obtained through imaging media, showing a lack of professional educational opportunities compared to clinicians⁹.

Meanwhile, According to Korean Network for Organ Sharing eyes during organs are one of the most important organs for modern people to acquire all information and visual information is very important to raise the quality of life. According to statistics from the National Organ Transplantation Center, the total number of corneal transplants was 5,909 in 2000, 368 in 2005, 311 in 2010, 319 in 2015 and 212 in 2017¹⁰. According to a 2011 survey by the Korea Institute for Health and Social Affairs suggested by Chu (2016), the number of people who are blind is estimated to be 256,841, and about 20,000 people who are blind who can regain their eyesight through corneal surgery is estimated to be less than 1 percent a year due to a lack of cornea symptoms¹¹. According to Kim, (2016), to activate brain death organ transplants, both caregivers who participate in the brain death organ transplantation process and nonmedical persons who can affect brain death organ donation are important subjects¹².

Therefore, this research is intended to provide students with optometric and students who will be responsible for the health and safety of the public by identifying the degree of medical knowledge and legal knowledge of corneal and brain death, emotional attitudes, cognitive attitudes, and behavioral attitudes, and to analyze the correlation and provide them as basic data for activating corneal diseases in the future.

Method

Research Subjects: A survey was conducted to investigate the relationship among knowledge and attitude about brain death and donation of cornea in the optometry college student in Choongchung Provinces in this study. Eighty-one male students (46.3 percent) and 94 female students (57.7 percent) surveyed a total of 175 students.

Research Period: The survey was conducted from September 1 to October 5, 2015 in the subjects of the students who were informed of the study goals and contents, and agreed.

Measurement Tools: General information on organ donation asked if you have heard about brain death organ donation and transplants. And if you've ever heard of it, how did you perceive it? I asked if you have any experience in learning about brain death organ donation and transplants. He asked if he would like to donate organs from his family and himself. It is composed of questions such as whether the family has given organ donation or organ transplants.

Knowledge of brain death organ donation was used by Yoo, (2004) and Kim, (2010) in previous studies, but modified and supplemented to the purpose of our study^{13,14}. The list consisted of a total of 23 questions, including six key knowledge on the definition of brain death organ donation, four medical knowledge questions, 10 questions on legal and management systems, and three questions on current and actual conditions. The total knowledge score was treated as 1 point for each question and 0 point for the wrong answer, and the scores for the 23 questions were added. Therefore, the total score of knowledge is zero from a maximum of 23 points, and the higher the score, the higher the knowledge of brain death organ donation.

Attitudes to corneal dysfunction were used by modifying and supplementing the attitude scales of Yoo, (2004) and Kim, (2010). The content is divided into emotional aspects (emotional aspects), cognitive aspects (knowledge, belief), and behavioral aspects (behaviorally). The measurement tool gave the response to a five-point scale of 'very yes' 5 points, 'yes' 4 points, 'normal' 3 points, 'no' 2 points and 'very no' 1 point, and the higher the score, the more positive the attitude.

Result and Discussion

Sociodemographic Characteristics of Subjects:

Sociodemographic characteristics of subjects are sex, grade, religion, presence of chronic and incurable patients in the family, presence of an acquaintance who wishes to receive organ donation, presence of an acquaintance who has received organ donation, your wish to donate organs, reasons to wish for organ donation, why don't you hope to donate an organ, is it recommended that family donate their organs?, presence of information about organ donation organizations, do you wish to participate in training on organ donation?, information on organ donation registration procedure is available, thinking about the cost of organ transplants, whether or not to wish for organ transplant surgery, the one i want to receive when i donate my organs, period of hope for organ donation, opinion on the absence of a price for an organ donor, do you want to pay for organ donation?

Gender was 53.7 percent for women and 46.3 percent for men, and 22.3 percent for first, 28.6 percent for second, 25.7 percent for third and 23.4 percent for fourth graders.

Some 44.6 percent were Christians in religion, 7.4 percent were Catholics, 1.7 percent was Buddhists and 46.3 percent had no religion.

"Presence of chronic and incurable patients in the family" was 14.3 percent with yes and 85.7 percent with no.

"Presence of an order who wants to receive organ donation" was 2.9 percent for yes and 97.1 percent for no.

"Presence of an explanation who has received organ donation" was 4.0 percent for yes and 96.0 percent for no.

Your wish to date organizations was 40.6 percent for yes and 59.4 percent for no.

"Reasons to wish for organ donation" was 1.1%, "Promotion details controlled by organ donor" by 2.3%, "Drama or Movie" 1.7%, "Encouragement of 5.7%" "Why don't you hope to give an organ" is 17.1% of Religion, the fur that the medical staff Will not do their best to prolong my life

There were 22.3% in, 22.9% in 'I Hope my body is intact', 34.9% in 'Family opposition' and 34.9% in 'Scary and unhappy'. "Is it recommended that family donate their organizations?" was 18.9 percent and 81.1 percent.

"Presence of information about organization organizations" had 10.3 percent "yes" and 89.7 percent "no."

"Do you want to travel on organ donation?" 32.6 percent said yes, and 67.4 percent said no.

Information on organ donation registration processing is available was 1.7 percent for know effectively, 18.9 percent for know a little, 79.4 percent for I don't know.

"Thinking about the cost of the organ transfers" was 57.7 percent for "Too aggressive," 37.7 percent for "Suitable" and 4.6 percent for "Not probable."

"Whether or not to wish for organ transplant Surgery" had 70.9 percent "No" of 29.1 percent.

"The one I Want to receive when I don't care" was 34.3 percent for "Family and Relatives," 1.1 percent for "Acquaintance," and 38.9 percent for "Doesn't matter who you are."

"Period of Hope for organ failure" was 0.6 percent for "While Alive," 5.7 percent for In the event of Brain Death and 67.4 percent for "Post-mortem donation."

"Open on the issue of a price for an organ donor" yes 64.6 percent and 35.4 percent no.

"Do you want to pay for organ donation?" was 38.3 percent for yes and 61.7 percent for no.

Mean value on knowledge and attitude about brain death and donation of cornea: Mean value on knowledge and attitude about brain death and donation of cornea is Table 1. Medical knowledge of donating cornea is 0.69 ± 0.16 . Legal knowledge of donating cornea is 0.61 ± 0.30 . Key knowledge of defining brain death is 0.8 ± 0.22 . Medical knowledge related to brain death is 0.83 ± 0.22 . Knowledge of the status of brain death is 0.84 ± 0.21 . Legal knowledge related to brain death is 0.76 ± 0.15 . Emotional attitude is 2.89 ± 0.56 . Cognitive attitude is 3.75 ± 0.59 . Behavioral attitude is 2.84 ± 0.59 .

Table 1: Mean value on knowledge and attitude about brain death and donation of cornea

	M	SD
Medical knowledge of donating cornea	0.69	0.16
Legal knowledge of donating cornea	0.61	0.30
Key knowledge of defining brain death	0.31	0.22
Medical knowledge related to brain death	0.83	0.22
Knowledge of the status of brain death	0.84	0.21
Legal knowledge related to brain death	0.76	0.15
Emotional attitude	2.89	0.56
Cognitive attitude	3.75	0.59
Behavioral attitude	2.84	0.59

Differences in emotional attitude according to sociodemographic characteristics: Differences in emotional attitude according to sociodemographic characteristics are Table 2. The emotional attitude was higher for men than for women, and the first grade was the highest for women those who were Christian were higher, and those who wished to donate their organs were higher. People with information about organ donation centers were higher, and those with accurate information about organ donation procedures were higher. When I donated my organs, there were higher numbers of people who didn't care who the donor was, and those who thought I shouldn't have to pay for the donation.

Table 2: Differences in emotional attitude according to sociodemographic characteristics

Characteristics	Category	M	SD	t/F
Gender	Male	3.03	0.63	3.172*
	Female	2.77	0.46	
Grade	1st	3.03	0.58	3.251*
	2nd	3.01	0.54	
	3rd	2.75	0.39	
	4th	2.77	0.67	
Religion	Christianity	3.00	0.56	3.368*
	Catholicism	2.98	0.40	
	Buddhism	2.27	1.55	
	No religion	2.79	0.52	
Presence of chronic and incurable patients in the family	Yes	2.98	0.72	0.726
	No	2.87	0.53	
presence of an acquaintance who wishes to receive organ donation	Yes	2.56	0.59	-1.134
	No	2.90	0.56	
presence of an acquaintance who has received organ donation	Yes	3.43	0.58	2.625
	No	2.87	0.55	
Your wish to donate organs	Yes	3.06	0.62	3.345**
	No	2.77	0.49	
Is it recommended that family donate their organs?	Yes	3.10	0.58	2.444
	No	2.84	0.55	
Presence of information about organ donation organizations	Yes	3.33	0.72	2.816**
	No	2.84	0.52	
Do you wish to participate in training on organ donation?	Yes	2.89	0.47	-0.042
	No	2.89	0.60	

Conted...

Information on organ donation registration procedure is available	Know exactly	3.93	0.92	6.116** (a>b, a>c)
	Know a little	2.96	0.58	
	I don't know	2.85	0.53	
Thinking about the cost of organ transplants	Too expensive	2.90	0.63	1.463
	Suitable	2.84	0.46	
	Not expensive	3.20	0.37	
Whether or not to wish for organ transplant surgery	Yes	2.90	0.62	0.417
	No	2.87	0.41	
The one I want to receive when I donate my organs	Family and Relatives	2.74	0.46	6.087** (a<c)
	Acquaintance	3.40	0.57	
	Doesn't matter who you are	3.09	0.64	
Opinion on the absence of a price for an organ donor.	Yes	3.02	0.57	4.168**
	No	2.66	0.47	
Do you want to pay for organ donation?	Yes	2.67	0.51	-4.302**
	No	3.03	0.56	

*p<0.05, **p<0.01

Differences in cognitive attitude according to sociodemographic characteristics: Differences in cognitive attitude according to sociodemographic characteristics are as follow.

Cognitive attitude was higher for men than for women, and for those who answered that there was no disease in the family. Those who wanted organ donation were higher, while those who wanted family organ donation were higher. There were higher numbers of people who wanted to participate in organ donation programs, and those who knew the procedure well. There were higher numbers of people who said I'd rather not know the donor if I donated my organs. The price for organ donation was higher for those who opposed the payment.

Differences in behavioral attitude according to sociodemographic characteristics: Differences in behavioral attitude according to sociodemographic characteristics are as follow.

The behavioral attitude was higher among those who wanted organ donation, and those who wanted to recommend organ donation to their families as well. People with information about organ donation and those who wanted to be educated about organ donation were higher. There were higher numbers of people who knew how to register for organ donation and those who received it when I gave it to them. There were more people who did not think about the economic cost of organ donation.

Relation between knowledge and attitude about brain death and donation of cornea: The relationship between knowledge and attitude about brain death and donation of cornea are as follow.

The results of examining the correlation between the medical knowledge of donating cornea and the legal knowledge of donating cornea, the key knowledge of defining brain death, the medical knowledge, the status quo, the brain death law knowledge, etc. were as follows. Emotional attitudes were correlated with the key knowledge of defining brain death. Behavioral attitudes are correlated with key knowledge of defining brain death and legal knowledge about brain death, as well as emotional and cognitive attitudes.

Conclusion

The development of modern medicine and the growth of technology not only sustain human life but also help to live life extension. Organ transplantation is the most cutting-edge technology in modern medicine. Organ transplantation is the removal of one or all of the tissues or organs of the body and implant them into the surface or body of oneself or other objects. The degree of medical and legal knowledge of cornea and brain death, emotional attitudes, cognitive attitudes, and behavioral attitudes were identified among students in optics.

The understanding and knowledge of cornea and brain death were rather low, but in this regard they showed a correlation with attitudes. It is important to develop education and programs to promote correct knowledge of cornea donation and brain death, and it is believed that, among other things, social consensus building will lead to change of perception and more active education and promotion, leading to voluntary participation by attracting more people's attention.

The overall knowledge of donating corneas has been shown to be related to emotional attitudes, behavioural attitudes. And emotional and cognitive attitudes were correlated. The results suggest that disseminating knowledge related to brain death and organ donation may change attitudes and perceptions about donating organs. In addition, at a time when the legal scope for brain and euthanasia is gradually expanding, it is expected that education programs using various media will be able to give hope to more patients.

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