



Knowledge and Opinions of Deceased Organ Donation Among Middle and High School Students in Korea

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ABSTRACT

Background. Adolescents are an important target group for organ donation education. As yet, little is known about the attitude of Korean adolescents toward deceased organ donation, or the factors related to their decision. In this study, we explored the knowledge and opinions of deceased organ donation among middle and high school students in Korea.

Methods. A self-reported survey was conducted among middle and high school students in Seoul, Korea. The questionnaire assessed knowledge, personal experience, and opinions of organ donation. Logistic regression analysis was performed to determine significant factors associated with willingness to become an organ donor.

Results. Of the 323 students, 161 (49.8%) were willing to be a deceased donor, and the other 162 (50.2%) were unwilling or unsure. Neither level of knowledge nor experience of recent public information on organ donation affected students' decisions. Instead, a cohesive family environment and family discussion were strong predictors of the willingness of Korean middle and high school students to be an organ donor.

Conclusions. A donation education program that promotes family communication and discussion about organ donation could increase willingness to be an organ donor among Korean adolescents.

THE DEMAND for donated organs has risen rapidly over the past decade. However, the supply remains insufficient, and the shortage of donated organs poses a major obstacle to saving lives. The situation in Korea is of particular concern. The number of deceased organ donors in Korea is only 8.4 per million people, which is far less than in European countries (35.1 million per people) or the United State (25.9 million per people) [1].

Education is essential to solving the organ shortage problem, and education programs tailored to target audiences are more effective [2,3]. Adolescents are an important target group for organ donation education because adolescence is a key stage in the development of human values, and a positive attitude toward organ donation instilled in adolescence will last a lifetime. In addition, adolescent education can promote discussion with family members about organ donation [3,4]. Therefore, identifying the characteristics associated with willingness to become a deceased organ donor among Korean adolescents will allow a more

targeted education program for this population, and potentially increase deceased organ donation in Korea in the future. However, little is known about Korean adolescents' attitudes toward deceased organ donation or the factors related to their decision. Thus, we explored the knowledge and opinions of Korean adolescents, particularly middle and high school students, toward deceased organ donation, using a self-reported questionnaire.

METHOD

The study population included students attending middle or high school in Seoul, Korea. The purpose of the survey was explained in the classroom, and only those who wanted to enroll in the study

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participated. This study was exempt from Ethical Committee review, according to Korean regulations, because it used a survey procedure and the information obtained was recorded in such a manner that human subjects cannot be identified [5].

Content of Questionnaire

Based on previous studies, the questionnaire was designed to gather information on student demographics, knowledge of organ donation and transplantation, personal experience with organ donation or transplantation, and opinions regarding deceased organ donation.

Student Demographics. Respondents were asked to indicate their gender, age, and religion. Race and ethnicity were not included because almost all middle or high school students in Seoul are of Korean ethnicity.

Knowledge Regarding Transplantation and Deceased Donation. To assess the students' level of knowledge regarding organ donation and transplantation, questions were asked regarding knowledge of the following: (1) the concept of brain death; (2) the fairness of the organ allocation system; (3) disparities in waiting times; and (4) the illegality of organ selling and buying. The response format for the questionnaire items was "yes" or "no."

Personal Experience. Students were asked yes-or-no questions about whether they have: (1) received any type of public information or education about organ donation within the past year; (2) any neighbor, friend, or family member who experienced organ donation and/or transplantation; (3) prior experience with blood donation; (4) a cohesive family environment indexed by response to the following statement: "My family members really care and support one another"; and (5) discussed organ donation with family members.

Willingness to Donate Organs. To examine the students' willingness to donate organs, we asked them to choose from among the following statements regarding their organ donation decision: (1) "Yes, I would like to become an organ donor after death"; (2) "No, I would not like to become an organ donor after death"; or (3) "I am not sure." In addition, respondents were asked whether they have indicated on any document that they will be an organ donor in the future.

Statistics

Groups were defined according to the willingness to become a deceased organ donor. The "donor group" consisted of respondents who answered "I would like to be an organ donor after death," and the "nondonor group" comprised those who answered "No, I would not like to become an organ donor after death" or "I am not sure." Data are summarized as means and standard deviations (SD) or as frequencies and percentages. Wilcoxon-Mann-Whitney tests and Fisher exact tests were used to examine differences between the 2 groups.

A logistic regression analysis was performed to identify factors that significantly influenced respondents' willingness to donate organs after death. Covariates included age (middle school [12–14 years] vs high school [15–16 years]), gender (boys vs girls), blood donation experience (no vs yes), acquaintances with experience of donation or transplantation (no vs yes), recent experience of organ donation–related public education or information (no vs yes), discussion with family member on donation (no vs yes), and level of knowledge or organ donation (low vs high; dichotomized at the median sample score, ≤ 2 vs > 2 questions answered correctly). We

calculated multivariable-adjusted odds ratios (OR) and the corresponding 95% confidence intervals (CI).

Statistical analyses were conducted using the SAS software, package (version 9.3, SAS Institute, Cary, NC, United States). All tests were two-tailed and a *P* value of .05 was taken to indicate statistical significance.

RESULTS

Among the 327 questionnaires gathered, we excluded 4 questionnaires with missing data; the remaining 323 valid questionnaires were analyzed. Table 1 shows the demographic data of the respondents. Of the 323 total respondents, 161 (49.8%) students were classified into the donor group. The other 162 (50.2%) were classified into the nondonor group, of which 88 (27.2%) answered "No, I would not like to become an organ donor after death" and the remaining 74 (22.9%) answered "I'm not sure." Among all of the participants, only 3 (0.9%) students carry a donor card.

The differences in demographic characteristics between the donor and nondonor groups are listed in Table 2. High school students (66.3%) were more willing to become deceased donors than middle school students (43.6%). More girls than boys were willing to be deceased organ donors. The donor and nondonor groups did not differ with regard to religion.

Table 3 presents students' knowledge about organ transplantation and donation. Students were correct on an average of 2.43 ± 0.88 of 4 questions, and there was no group difference in the number of correct answers between the donor and nondonor group.

The relationship between personal experience and the donation decision is shown in Table 4. No differences were found between the donor group and nondonor group with respect to recent public donation education experience, donation or transplantation experience of acquaintances, or blood donation experience. However, a cohesive family environment was significantly more prevalent in the donor group compared with the nondonor group, and the donor

Table 1. Demographic Characteristics of Students (n = 323)

Characteristic	
Age (y; mean \pm SD)	13.54 \pm 1.06
Educational level	
Middle school students	234 (72.4)
High school students	89 (27.6)
Gender	
Boys	155 (48.0)
Girls	168 (52.0)
Religion	
No religion	174 (53.9)
Have a religion	149 (46.1)
Protestant	86 (26.6)
Catholic	42 (13.0)
Buddhist	19 (5.9)
Other	2 (0.6)

Note: Values are expressed as numbers (%), unless otherwise stated.

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