



Public Perception of Cadaver Organ Donation in Hunan Province, China

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ABSTRACT

Objective. Our aim was to (1) survey public' perception and attitudes toward organ donation and (2) analyze the relationship between knowledge, attitudes, and willingness to donate.

Methods. We developed a questionnaire, and conducted the survey with stratified random sampling. Overall, 600 residents, aged ≥ 18 who resided in Hunan, and 600 undergraduates from 3 universities in Hunan were surveyed randomly. For this study, 1085 valid questionnaires were completed, with a response rate of 90.4%.

Results. Of the 1085 participants, 581 (53.5%) were students, 504 (46.5%) were residents, and 519 (47.8%) were male and 566 (52.2%) female. The mean accuracy rate was 71.96%, and the students' mean accuracy rate was slightly higher than that of the resident population (73.06% vs 70.68%, respectively). The results showed that 82.2% of public support organ donation, and 53.5% were willing to donate their organs after death. Students scored higher than the residents (88% vs 75.6% and 55.6% vs 51.2%). Nearly 1.8% felt that organ donation was against their religion, 14.9% thought it was important to ensure the integrity of the body, 71.7% agreed that organ donation allowed a positive outcome after a person's death, and 61.5% agreed that organ donation represented a continuation of life, to help families cope with grief. Age and gender were related to attitudes. Public knowledge of organ donation and their attitudes were correlated positively ($r = 0.666$).

Conclusions. Public knowledge of organ donation is poor, biased, and incomplete, and based on television, movies, and communication networks. Positive attitudes toward donation displayed in the surveys were not matched by actual organ donation.

CURRENTLY, organ transplantation is the only hope in patients with organ damage or failure. In China, there are 1 to 1.5 million patients who require organ transplantations, but only 13,000 transplantations have been conducted annually, and <1% of them receive an organ [1,2]. These statistics highlight the organ donor shortage. The Ministry of Health and the Chinese Red Cross started a pilot project of donation after citizens' death in >10 provinces and cities in March 2010 [3,4]. By the end of March 20, 2016, 6624 organ donors were available [5], which was relatively low compared with other countries.

Public attitudes toward organ donation have been studied in many countries. Naçar et al. [6] surveyed the knowledge, attitude, and behaviors of Erciyes University School of

Medicine students regarding organ donation. Chung et al. [7] explored the knowledge and opinions of deceased organ donation among middle and high school students in Korea. Ríos et al. [8] analyzed the attitude toward organ donation

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among Latin American citizens residing in Spain. In China, Hu et al. [9] assessed the knowledge, attitudes, and willingness toward organ donation among the health professionals. Pan et al. [10] explored the family members' attitudes of potential donation after citizens' death donors toward organ donation after cardiac death. Wang et al. [11] showed the results of a survey of individual awareness and attitudes toward organ donation. Liu et al. [12] compared Chinese and Japanese college students' attitudes.

The surveys indicate that the majority of Chinese are favorably inclined toward organ donation. However, the actual donation rates were quite poor. The present study used a survey to assess the knowledge and attitudes of residents and college students in Hunan Province toward organ donation after death. The aims of this survey were to (1) identify residents' and college students' perception and attitudes and (2) analyze the relationship between knowledge, attitudes, and willingness to donate.

MATERIALS AND METHODS

Participants

Data for this study were collected between May 6 and July 25, 2012, in Hunan province. A random sample was obtained, consisting of 600 residents, aged ≥ 18 who reside in Hunan. We also surveyed 600 undergraduates and graduate students from 3 universities in Hunan.

METHODS

A questionnaire designed to assess public knowledge and attitudes was amended after a pretest. There may be invalid questionnaires (calculated according to 15%), so 1200 questionnaires would be issued in this study. And the sample size is expected to reach $1200 \times 85\% = 1020$, which meets the sample size requirements.

Hunan Province, located in China's mid-south, has 14 cities and 31 colleges. To ensure the representativeness of the sample, we conducted the survey with stratified random sampling in 2012. Two cities were randomly selected from the 14 cities, then 1 community and 1 village were randomly selected from each city, and 150 questionnaires were distributed at each site. With the same method, 3 colleges were randomly selected, and 200 questionnaires were issued at each college. In total, 1200 questionnaires were distributed, and 1085 valid questionnaires were returned, for a recovery rate of 90.4%.

Questionnaire

The questionnaire was developed based on a previous study of northwest Ohio community in the United States [13]. We eliminated 2 items linking organ distribution system and race and religion. We supplemented 1 item encouraging willing donors to sign up for a donor card with the Red Cross. The revised instrument was translated into Chinese and reviewed by the Expert review group, which consists of 12 experts from transplantation medicine, medical informatics, and psychology. According to experts' advice, we deleted 2 items related to signing up for a donor card or indicating consent on driver's license to change the quality of medical care received at the hospital and acceptance of an organ or tissue transplant. We supplemented with an item indicating consent to organ donation on drivers' license. Ten medical students and 10 ordinary residents were included in the pilot test. We deleted an

item stating that participants had enough knowledge about organ and tissue donation to make a decision. The revised instrument consisted of 3 sections.

Section I contained items about knowledge of organ donation. Questions were asked as follows: (1) People on the waiting list for a transplant die every day because there are not enough organs available for transplant; (2) There is an age limit on who can donate organs; (3) People with medical conditions cannot be organ or tissue donors; (4) Organ donation disfigures the body so that an open casket funeral is not possible; (5) People who choose to donate a family member's organ end up paying extra medical bills; (6) It is illegal to sell your organs in China; (7) A person can recover from brain death; (8) Rich and famous people on the transplant waiting list get organs before other people; (9) A person can sign a donor card in the Red Cross if they are willing to donate organs after death; (10) A person can specify that they only want to donate certain organs; (11) A person can specify that they only want to donate his organ to certain person; and (12) Once a person has signed a donor card, they cannot change their mind about organ donation. In this section individuals were instructed to answer true or false, and knowledge of donation was measured by the total number of correct answers. Cronbach's Reliability Coefficient was determined for the 12 items assessing knowledge ($\alpha = 0.746$), whereby $\alpha > 0.7$, so the internal consistency of the questionnaire is good.

Section II contained items about attitudes toward donation. The survey required individuals to indicate their level of agreement or disagreement with 8 statements using a 5-point Likert-type scale: (1) I support donation of organs for transplantation; (2) I am willing to donate my organs after death; (3) Organ donation is against my religious faith; (4) I feel it is important for a person's body to have all of its parts when it is buried; (5) Organ donation allows something positive to come out of a person's death; (6) Organ donation can be one continuation of life, which helps families cope with grief; (7) It is important for family members to know my decision about organ donation; and (8) I agree to indicate consent to organ donation on my drivers' license. Attitudes toward organ donation were measured by the sum of the items. To assess internal consistency, Cronbach's reliability coefficient was determined for the 8 items assessing attitude ($\alpha = 0.711$).

Section III contained a question about sources of information on organ donation. Individuals were instructed to mark all the items that applied.

Statistical Analysis

The statistical treatment of data was performed using Social Sciences Statistical Package (SPSS Inc., Chicago, IL) 17.0 for Windows. The results were summarized as counts and percentages, and compared between groups using the χ^2 test. Statistical significance was set at $P < .05$. The potential factors affecting willingness to donate were examined using logistic regression. We conducted correlation analysis of public knowledge and attitudes on donation through linear regression analysis.

RESULTS

Demographics

Of the 1200 surveys that were distributed, 1085 were valid, representing a 90.4% response rate. Of the 1085 participants, 581 (53.5%) were students and 504 (46.5%) residents; 519 (47.8%) were male and 566 (52.2%) female.

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