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TEACHING ORGAN TRANSPLANTATION TO CHILDREN FOR FOSTERING ZAST FOR LIVING AS SCHOOL HEALTH EDUCATION

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Abstract

In spite of the amendment of organ transplantation law to increase the number of donors, especially child donors, the number has not increased. The questionnaire results indicated that even adults could not decide nor express their will because of lack of knowledge about brain death and organ donation. By amendment of the law, children can become donors, so they need proper knowledge to decide and exercise their will in case of brain death. Families wish to respect a dying person's will. However, it is difficult for children to decide, but it not good that other persons (i.e., parents) decide instead of the children themselves. Therefore, it is important for children to be able to exercise their will even though they are young. The answers of respondents who would become school teachers in the near future were compared with those of ordinary persons and this indicated that, firstly, it is important to teach children the facts; implementation, safety, and risk of organ transplantation and how to exercise their will and, secondly, children should be taught how to decide by themselves and exercise their will to donate organs, not increase the number of children's organ donations. In order to attain those educational aims, collaboration of several lesson styles is better than using only one method.

Keywords: Child Donors, Organ Transplantation, School Health Education

1. Introduction

To increase the number of organ donations, the amended version of the law was established in 2009 and enforced the next year (act No. 87 of July 17, 2010) (Ministry of Internal Affairs and Communications—Japan, 2010). The amendment was based on “The Declaration of Istanbul on Organ Trafficking and Transplant Tourism” of the International Summit on Transplant Tourism and Organ Trafficking in 2008 (The Transplantation Society (TTS) and the International Society of Nephrology (ISN), 2008). The declaration required that jurisdictions, countries and regions should strive to achieve self-sufficiency in organ donation by providing a sufficient number of organs for residents in need from within the country or through regional cooperation. Since 2010, in Japan, organ donation can be done without the consent of the dying person if his/her family permits. In addition, children less than 15 years old can become donors.

According to the results of the national questionnaire survey conducted by a newspaper company after the establishment of the amended version of the law in 2009, 71% of respondents supported organ donation without the consent of the dying persons and that of children less than 15 years old, while only 17% opposed it. However, opinions were divided in considering brain death as human death; 40% supported it and 39% opposed it. The youth, especially,

opposed this notion (Asahi Shinbun Company, 2009). In such a confused and contradictory situation where the amendment of an organ donation regulation was supported, but brain death, the prerequisite of organ transplantation was not, children less than 15 years old have become targets for organ donation. Therefore, educating children about health, living and death has become more necessary. Learning about health and life is the core of school health education and an important lesson, “zest for living,” is the backbone of the current national school curriculum (Ministry of Education, Culture, Sports, Science and Technology—Japan, 2008).

The purpose of this study was to investigate what kind of education was necessary for children under 15 years old (in Japan, compulsory school children correspond to the age) and to determine the necessary education the teachers needed.

2. Method

The participants in the study were 75 senior teacher’s education course students of a national university in an ordinance-designated city in Japan. (Every year, 60% of graduates become public compulsory school teachers.)

In 2009, questionnaires were completed anonymously before and after a lecture providing the participants with basic knowledge of brain death and organ transplantation just after the establishment of the amended version of Act on Organ Transplantation. The results of both questionnaires were compared. Later, to study the difference between children’s education and ordinary persons’ need for information, I referred to the national public opinion survey conducted by the Japanese government in 2015 (Cabinet Office, Government of Japan, 2015). My questionnaire preceded the national government survey by six years, so the questions were not exactly the same, but quite well matched. I separated answers of “Neither” and “I don’t know,” and counted only “I don’t know” answers. All the participants were Japanese and questionnaires were written in Japanese.

The lecture for participants to provide basic knowledge of organ transplantation was composed mainly of questionnaire results before the lecture; what participants did not know and what they wanted to know.

The research was approved by the Ethics Committee of Shinshu University in 2009 and the research complied with the guidelines of the Japanese Society of Physical Education Health and Sports Science, Ethics of Researchers.

3. Results

Table 1: Interests and Knowledge of Brain Death and Organ Transplant
 (Questionnaire Results, %)

	Before	After
	the lecture	the lecture
	in 2009	in 2009
*National survey Question by the government No. in 2015 ^[5]		
1. Are you interested in brain death and organ transplantation?		
Yes	46.7	97.3

57.8	No	53.3	2.7
42.2			
2. Do you know the difference between brain death and vegetative state?			
	Yes	4.0	
	I don't know	8.0	
	I thought they were same	41.3	
	(No answer)	46.7	
3. Do you know about the donor card and how to exercise your will to donate organs?			
	Yes	53.3	
	I know I can exercise my will but I don't know how	46.7	
	No	0.0	
4. Do you have a donor card?			
	Yes	5.3	
	No	94.7	

(Source of *: Cabinet Office, Government of Japan, 2015)

More than half the participants were not interested in brain death and organ transplantation before the lecture. The ratio was almost the same as respondents of the 2015 national government survey (National Survey). After the lecture, almost all participants were interested (Question No.1; Q1). Before the lecture, many participants did not have the correct basic knowledge because they did not know or could not explain the difference between brain death and vegetative state well (Q2). As for exercising will to donate organs, many participants knew they could do it. However, half did not know how to do it (Q3), so almost none had donor cards (Q4).

Table 2: Becoming a Donor (Questionnaire Results %)

Question No.	Before the lecture in 2009	After the lecture in 2009
5. Do you want to become a donor?		
Yes	4.0	16.0
If anything, yes	17.3	37.3
If anything, no	6.7	12.0
No	1.3	8.0
Neither	18.7	24.0
I don't know	4.0	2.7
(No answer)	48.0	0.0

More than 70% of participants could not exercise their will to become donors (“neither,” “I don't know” or “no answer”). After the lecture, the number of participants who could not decide decreased and more than 70% could exercise their will—yes or no (including “if anything”; Q5).

Table 3: Agreement of Organ Donation (Questionnaire Results, %)

Question			
* National survey			
No.		in 2009	by the
government in 2015			
<hr/>			
6. Would you agree to donate your family member's organs if he/she exercised his/her will before brain death?			
Yes	60.1	30.7	78.7
Maybe yes	26.9		48.0
Maybe no	3.2		4.0
No	5.3		1.3
I don't know		16.0	
(No answer)		0.0	
<hr/>			
7. Would you agree to donate your family member's organs if he/she did not exercise his/her will before brain death?			
Yes		12.4	39.3
Maybe yes		26.2	
Maybe no		26.1	
No		23.4	
I don't know		11.9	
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8. Would you agree to donate the organs of children less than 15 years old in your family if they exercised their will before brain death?			
Yes		17.3	52.0
Maybe yes		34.7	
Maybe no		14.7	
No		4.0	
I don't know		29.3	
(No answer)		0.0	
<hr/>			
9. What do you think about children less than 15 years old exercising their will to donate?			
It is better to accept		50.7	
It is better for parents to decide instead of children		4.0	
It is difficult for children to decide, but it not good that other persons (i.e., parents) decide instead of the children themselves		22.7	
(Other answers)		5.3	
I don't know		4.0	
(No answer)		13.3	

(Source of *: Cabinet Office, Government of Japan, 2015)

If the dying family member exercised his/her will to donate before brain death, many (78.8%) participants agreed with organ donation (including "if anything"; Q6). However, if the dying family member was less than 15 years old, the number of participants who agreed with organ donation decreased even though the children had exercised their will (Q8). In the national

survey, more (88%) respondents agreed with it if the family member exercised his/her will before brain death (Q6). However, without exercising will, many respondents changed to “no” (including “maybe no”) or “I don’t know” (Q7). Participants wished to respect children’s will whether the children were their family (Q8) or in general (Q9). However, about a quarter of participants worried that it was difficult for children to decide (Q9).

Table 4: Education for Children (Questionnaire Results, %)

Question No.	After the lecture in 2009
10. Do you think it is necessary for children to be taught about organ transplantation and related issues?	
Yes	92.0
No	8.0
11. Can you conduct lessons on organ transplantation and related issues?	
Yes	5.3
No	94.7
12. The reason I cannot conduct lessons on organ transplantation (multiple answers are acceptable)	
I don’t have sufficient necessary knowledge of organ transplantation	96.0
I haven’t experienced lessons on organ transplantation	73.3
I don’t know how to teach even though I have knowledge	5.3
I am not concerned with organ transplantation	3.6
13. Would you like to conduct lessons on organ transplantation in the future?	
Yes	69.3
No	26.7
Neither	4.0
14. What is needed to be able to conduct lessons on organ transplantation? (multiple answers are acceptable)	
Having correct knowledge	97.3
Listening to donors and persons concerned with recipients	74.7
Attending professional training lectures/lessons for teachers	73.3
Understanding organ transplantation law well	65.3
Gathering information from the media	58.7
(Others)	2.7
15. What style will you take if you conduct lessons on organ transplantation for children? (multiple answers are acceptable)	
Discussion in groups	58.7
Deviate	54.7
Lecture	54.7
Team teaching with other teachers	13.3
(Others)	8.0

A majority (92%) of participants thought educating children about organ transplantation and related issues was necessary (Q10). Contrarily, 94.7% thought they could not teach even though they would become school teachers in the near future (Q11). The main reason for “impossible” was they did not have sufficient necessary knowledge. The second major reason was they had not had experience in conducting lessons (Q12). However, about 70% participants wished to conduct lessons in the future (Q13). To be able to conduct lessons, participants thought the most necessary requirement was correct knowledge as well as listening to narratives of donors and persons concerned with the recipients, and professional training for school teachers (Q14). As for lesson style, not only one method, but group discussion collaboration among students, debates and lectures were preferred (Q15).

Table 5: Information Needed (Questionnaire Results, %)

Question * National survey No.	After the lecture in 2009	by the government in 2015
16. What information will you give children in lessons on organ transplantation? (multiple answers are acceptable) [What information do you need? National government survey in 2015] (multiple answers are acceptable)		
Organ transplantation implementation status		90.7
28.2		
Information of safety and risk of organ transplantation		76.0
36.4		
How to exercise will to become a donor		80.0
15.5		
Donor card	84.0	
Support information by the government		30.7
22.2		
Organizations concerned with organ transplantation		33.3
9.9		
Narrative of recipients/persons concerned with donors		64.0
61.3		
Expense of organ transplantation		50.7
32.6		
Process of organ transplantation		60.0
22.3		
Difference between Japan and other countries' situation	69.3	
Brain death	24.0	
Consultation counter / help desk		0.0
19.6		
Institutes/hospitals that can perform organ transplantation		0.0
17.6		
(Others)	8.0	

(Source of *: Cabinet Office, Government of Japan, 2015)

Most participants would provide information about implementation of organ transplantation to children in lessons. In the 2015 national survey, people did not need this information. Participants thought about how to exercise one’s will to donate organs, and information about donor cards that could exercise will was also important. National survey respondents did not require that information. Furthermore, participants thought it important to teach children about the safety and risk of organ transplantation, but few national survey respondents required that information. In addition, more than 60% of both participants and national survey respondents considered the narratives of recipients and persons concerned with donors as necessary (Q.16).

4. Discussion

Coping with the lack of organ donation was a main purpose of amending the Act on Organ Transplantation. The number of donors after brain death has increased since amendment of the law, but the number of donors after cardiac arrest has decreased. Therefore, the total number of organ donations (brain death + cardiac arrest) has decreased for those 10 years (Japan Organ Transplantation Network, 2006-2015).

Table 6: Number of Organ Donors for the Past 10 Years

Year Total	Brain death	Cardiac arrest
2006 112	10	102
2007 105	13	92
2008 109	13	96
2009 105	7	98
2010 (amendment of Organ Transplantation Law) 113	32	81
2011 112	44	68
2012 110	45	65
2013 84	47	37
2014 77	50	27
2015 91	58	33

(Source: Japan Organ Transplantation Network, The Number of Organ Donors and Transplantation, 2006-2015)

Donation from children, especially, has not developed. From 2010 to 2015 (for 5 years), there were nine donors less than 15 years old (Japan Organ Transplantation Network, 2016). The main reason was that the family did not want to donate their children’s organs. Families decided to donate a dying person’s organs because they wanted to respect his/her will, which was clear from the 2015 national survey results; under the condition of the dying person’s will, 88% of

his/her family agreed with the donation, but without the dying person's will, only 39.3% agreed. It was especially difficult to confirm children's will to donate (Uryuhara, 2015). Even parents could not know whether their children really wanted to donate their organs, so parents could not agree. In my questionnaire results, several participants were anxious that it was difficult for children to decide. At the same time, participants thought that other persons, even parents, deciding instead of the children themselves was not good because even young children own their body and soul (Ikoma, 2002).

To cope with such a difficult situation, education for children is very important and necessary. Even though children are young, if they understand brain death and organ donation well, they can decide by themselves and the family (parents) can agree because parents want to respect their child's will. Studying brain death and organ transplantation is suitable for school health education. In addition, they match with the backbone of the current school curriculum—fostering zest for living. Many participants who would become school teachers wanted to conduct lessons for children in the future. However, they did not have the self-confidence to conduct lessons because they did not have enough knowledge of brain death, organ donation, and transplantation, and no prior experience of studying them. Therefore, I conducted a lecture of basic knowledge of brain death, organ donation and transplantation. Only one short lecture changed participants' feelings and attitudes; they became interested in organ transplantation. Participants and ordinary persons (national survey respondents) differed in what to consider important information (to teach or to get). For ordinary persons, narratives of recipients and persons concerned with donors were most important. The ratio (more than 60%) was the same as participants, so narrative information is needed. However, participants who would support children as future teachers considered the facts, for example, implementation, safety, and risk of organ transplantation, and how to exercise will to donate organs much more important for children to learn. Contrarily, ordinary persons did not want to know information of those facts. As for lesson style, participants wanted to use not only lectures but also debates and discussions between students. Having their own will, talking about their opinions and feelings and listening to those of others are important and effective same as obtaining sufficient correct knowledge for learning (Mizokami, 2014). Therefore, collaboration of several lesson styles is better than using only one method. The purpose of teaching children about organ transplantation to foster zest for living as a part of school health education was that children could decide by themselves and exercise their will, not to increase children's organ donations. Teachers should encourage and ensure that children could choose to agree or refuse to donate organs through lessons.

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