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Awareness of Cornea Donation of Registered Tissue Donors in Nanjing[△]

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Objective To evaluate the current cornea donation awareness of tissue donors in the city of Nanjing, China.

Methods Altogether 2000 registered tissue donors in the Red Cross Eye Bank of Nanjing by the end of 2010 and 2000 control residents of Nanjing in February to June 2011 were randomly selected to participate in our field questionnaire survey. The questionnaire consisted of questions regarding the understanding of cornea donation, the attitude toward cornea donation, and attitude toward legislation and free donation. The awareness of cornea donation between the registered tissue donors and residents was compared. Related factors of the willingness to donate corneas and to become a tissue donor were evaluated with univariate and multiple logistic regression analysis.

Results A total of 1867 (response rate: 93.4%) tissue donors and 1796 (response rate: 89.8%; effective questionnaires: 1697) residents participated in this survey. For the questions about the knowledge of cornea donation, 90.3% tissue donors (residents: 78.9%) knew that donated corneas could be used for transplantations; 71.2% tissue donors (residents: 47.6%) knew that the appearance would not be destroyed after cornea donation; 70.7% tissue donors (residents: 20.0%) knew the formalities to become a cornea donor. For attitude toward cornea donation, 82.2% tissue donors (residents: 45.1%) were willing to donate corneas or eyeballs after death; 84.0% tissue donors (residents: 30.2%) had discussed with their families about donation; 85.1% tissue donors (residents: 24.8%) supported their families' or friends' cornea donation. For attitude toward legislation and free donation, 88.3% tissue donors (residents: 61.3%) approved of legislation to regular cornea donation; 72.2% tissue donors (residents: 38.8%) thought that cornea or organ donation should be gratis. The difference between two groups was significant ($P < 0.001$). However, some tissue donors did not know cornea donation well, some even opposed the legislation of cornea donation and free donation protocol. For the factors influencing the willingness to donate corneas, population was the most

relevant factor ($P<0.001$), since tissue donors were more willing to donate corneas than residents. Other significantly related factor were age, gender, occupation, and education level ($P<0.001$), while political status or religion were not significant. For the factors related to becoming a tissue donor, older age, male, white-collars (including white-collar, civil servant, teacher, soldier, lawyer, salesman, healthcare provider), higher education level, party members (including the Chinese Communist Party members, democratic party members, and the Communist Youth League members) ($P<0.05$).

Conclusions The registered tissue donors have better understanding and more positive attitude towards cornea donation than control residents do. They approve of the legislation of cornea donation and free donation protocol. It may be more effective to target the population of over 58 years old, male, white-collars, well-educated people, and party members in the promotion of cornea donation.

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AT present, corneal transplantation is the primary treatment for blindness of corneal etiology. The corneas for transplantation are mainly donated corneal tissues provided by eye banks. A large population of cornea donors is a positive factor for the promotion of corneal transplantation. Eye bank in the United States acquired 59 784 donated corneas in 2009.¹ In India, there are nearly 200 Eye Banks with more than 15 000 corneas donated every year.² In contrast, the number of donated corneas is very small in the Eye Bank in China,^{3,4} which is severely insufficient for the huge population with visual impairment. According to the Second National Handicapped Person sampling survey in 2006, there were about 12 155 visually disabled people of corneal etiology in Nanjing alone,^{5,6} most of whom needed a corneal transplantation for visual rehabilitation. However, due to the shortage of donated corneas, less than 100 corneal transplantations can be performed in Nanjing each year, in comparison with 50 000 performed in the world each year.⁷ The disproportion between the supply and demand has obviously restricted the development of corneal transplantation. Therefore, expanding the pool of cornea donors is an urgent issue in China.

The corneas preserved in the Red Cross Eye Bank of Nanjing were donated by registered tissue donors and constitute the main source of corneas for transplantation in Nanjing. All the tissue donors had filled out the volunteer cards to indicate their willingness to donate tissues (including corneas, unless with a special statement to refuse to donate corneas) after death (with their relatives' signature and notarization). By the end of 2010, there were more than 4 650 tissue donors registered in Nanjing, and about 700 of them had actually donated all their body tissues. Altogether 110 donated corneas were ultimately transplanted. The tissue donors' willingness of cornea donation is the most important factor influencing the potential supply of corneas in Eye Bank. This study evaluated

the current cornea donation awareness of tissue donors in Nanjing, hoping to find possible means to expand the population of cornea donors.

MATERIALS AND METHODS

Study population

By the end of 2010, there were about 4 000 registered tissue donors in the Red Cross Eye Bank of Nanjing set up in the Department of Ophthalmology of Nanjing First Hospital, and 2 000 of them were randomly sampled based on computer-generated random numbers to participate in the study. As controls, 2000 residents in Nanjing were randomly selected with stratified cluster sampling method to participate in our field survey from February to June 2011.

Questionnaire-based data and implementation

The questionnaire in this study was based on the questionnaire used by the Central Florida Lions Eye and Tissue Bank in America (approved for use) and modified according to the specific situation in China, containing the demographics data and 12 single-choice questions concerning the knowledge of cornea donation, attitude towards cornea donation, and legislation and free donation. It was an on-the-spot anonymous questionnaire and was retrieved by trained investigators who were professional coordinators of the Red Cross Eye Bank of Nanjing.

The Eye Bank monitored and assisted the whole survey. Informed consent was obtained from all the participants after explaining the aims of this study. All the participants were voluntary to finish the questionnaire independently within 15 minutes. The sampled registered tissue donors who were illiterate or handicapped were allowed to complete the questionnaire with the help of investigators without any hints. Non-participants consisted of those who refused to participate in the study, were unable to complete the questionnaire, or un-contactable

(failed to be contacted after 3 different times of attempts on one day). The questionnaires with no missing information or multiple choice of the 12 questions were taken as effective for following analysis.

Statistical analysis

Data were initially recorded and sequentially entered into the EpiData (version 3.0, EpiData Association) database twice independently by two data clerks, followed by double-check and correction as necessary. Data analyses were performed by STATA 11.1 software (StataCorp, College Station, TX, USA). Quantitative data were presented as means $\pm$ SD, compared by *T*-test or analysis of variance; qualitative data were expressed as frequency (%), and compared by chi-square test or likelihood-ratio chi-squared test; grade data were compared by Wilcoxon rank sum test or Kruskal-Wallis rank sum test. The willingness of cornea donation was described as a binary-class grade data: "non-willing" and "willing" to donate corneal, in which "non-willing" included both "unwilling to donate corneal" and "having no consideration of cornea donation now". Related factors were screened by step-wise regression

analysis (inclusion criteria: $P \leq 0.05$; exclusion criteria: $P > 0.05$). $P < 0.05$ was considered statistically significant (two sided test, size of test $\alpha = 0.05$) and 95% confidence intervals adjusted accordingly.

RESULTS

General information of participants

A total of 1867 registered tissue donors participated in this study (response rate: 93.4%). Thirty-four of the sampled 2000 registered tissue donors refused to participate in this study for privacy protection, 26 were unable to complete the questionnaire, and 73 were un-contactable. In the control population, 1796 residents participated in this study (response rate: 89.8%), providing 1697 effective questionnaires (94.5%). The demographic data of the registered tissue donors and residents are shown in Table 1.

Responses to questions regarding cornea donation

The responses to the 12 questions about the awareness of cornea donation were summarized and compared in Table 2.

Table 1. Demographic data of registered tissue donors and residents

Demographic factors	Residents (n=1697)	Registered tissue donors (n=1867)	Total
Age (years)			
Median	22	66	58
Mean $\pm$ SD	39 $\pm$ 21	64 $\pm$ 15	52 $\pm$ 22
Range	10-89	13-98	10-98
Gender [n (%)]			
Male	637 (42.2%)	872 (57.8%)	1509 (44.3%)
Female	1006 (53.1%)	890 (46.9%)	1896 (55.7%)
Occupation [n (%)]			
White-collars*	59 (10.2%)	520 (89.8%)	579 (18.2%)
Worker	358 (37.3%)	603 (62.7%)	961 (30.2%)
Farmer	190 (80.2%)	47 (19.8%)	237 (7.5%)
Student	890 (98.2%)	16 (1.8%)	906 (28.5%)
Others	148 (29.8%)	350 (70.3%)	498 (15.7%)
Education level [n (%)]			
Illiteracy-primary school	267 (67.1%)	131 (32.9%)	398 (11.9%)
Junior middle school	286 (39.6%)	436 (60.4%)	722 (21.6%)
High school-junior college	218 (20.1%)	864 (79.9%)	1082 (32.3%)
University	908 (80.7%)	217 (19.3%)	1125 (33.6%)
Master or doctor	5 (21.7%)	18 (78.3%)	23 (0.7%)
Political status [n (%)]			
Party members [†]	1028 (66.7%)	513 (33.3%)	1541 (58.6%)
Others	631 (58.0%)	457 (42.0%)	1088 (41.4%)
Religion [n (%)]			
Specific religions [#]	208 (70.0%)	89 (30.0%)	297 (14.2%)
Others	1414 (78.6%)	385 (21.4%)	1799 (85.8%)

*White-collars include white-collar, civil servant, teacher, soldier, lawyer, salesman, and healthcare provider; [†]Party members include the Chinese Communist Party members, democratic party members, and the Communist Youth League members; [#]Specific religions include Christians, Buddhists, and Muslims.

Table 2. The awareness of cornea donation of registered tissue donors and residents

Questions [<i>n</i> (%)]	Residents (<i>n</i> =1697)	Registered tissue Donors (<i>n</i> =1867)	<i>Z</i>	<i>P</i>
Knowledge of cornea donation				
1. Do you know corneas can be used for transplantations?				
a: No.	160 (9.4%)	82 (4.4%)	−9.437	<0.001
b: Have heard of that, but not sure.	199 (11.7%)	100 (5.4%)		
c: Yes.	1338 (78.9%)	1685 (90.3%)		
2.Do you know that the appearance will not be destroyed after cornea donation?				
a: No.	660 (38.9%)	367 (19.7%)	−14.530	<0.001
b: Have heard of that, but not sure.	229 (13.5%)	170 (9.1%)		
c :Yes.	808 (47.6%)	1330 (71.2%)		
3.Do you know how to become a cornea donor and related formalities?				
a: No.	1002 (59.1%)	363 (19.4%)	−29.567	<0.001
b: Have heard of that, but not sure.	356 (21.0%)	184 (9.9%)		
c: Yes.	339 (20.0%)	1320 (70.7%)		
4.Do you know the Red Cross Eye Bank of Nanjing?				
a: No.	1057 (62.3%)	517 (27.7%)	−22.552	<0.001
b: Have heard of that, but not sure.	180 (10.6%)	145 (7.8%)		
c: Yes.	460 (27.1%)	1205 (64.5%)		
Attitude to cornea donation				
5.Are you willing to donate your corneas or eyeballs after death?				
a: No.	199 (11.7%)	61 (3.3%)	−22.930	<0.001
b: Have not considered of it.	732 (43.1%)	271 (14.5%)		
c: Yes.	766 (45.1%)	1535 (82.2%)		
6.What will you donate, corneas or other tissues, or organs, when you are a donor?				
a: Corneas only.	899 (53.0%)	288 (15.4%)	−31.718	<0.001
b: Eyeballs.	178 (10.5%)	53 (2.84%)		
c: Other organs, besides eyeballs.	362 (21.3%)	253 (13.6%)		
d: The whole body.	258 (15.2%)	1273 (68.2%)		
7.When would you like to be a cornea donor?				
a: Never.	152 (9.0%)	54 (2.9%)	−31.998	<0.001
b: Later.	1332 (78.5%)	565 (30.3%)		
c: At present.	213 (12.6%)	1248 (66.9%)		
8.Have you discussed with your families about cornea or tissue donation?				
a: No.	1184 (69.8%)	298 (16.0%)	−32.547	<0.001
b: Yes.	513 (30.2%)	1569 (84.0%)		
9.What will you do, if your families disagree your cornea donation?				
a: Follow families' advice and give up.	122 (7.2%)	68 (3.6%)	3.679	<0.001
b: Convince them.	509 (30.0%)	777 (41.6%)		
c: Insist on donation.	1066 (62.8%)	1022 (54.7%)		
10.Do you support your families or friends' cornea donation?				
a: No.	370 (21.8%)	26 (1.4%)	−36.397	<0.001
b: Neutrality.	906 (53.4%)	253 (13.6%)		
c: Yes.	421 (24.8%)	1588 (85.1%)		
Legislation and free donation				
11.Is it necessary of legislation to regular cornea donation in China right now?				
a: No.	60 (3.5%)	21 (1.1%)	−18.690	<0.001
b: Yes, but relieve.	144 (8.5%)	34 (1.8%)		
c: Yes, may be pilot at first.	453 (26.7%)	164 (8.8%)		
d: Yes.	1040 (61.3%)	1648 (88.3%)		
12.Do you think that cornea or organ donation should be gratis?				
a: No	198 (11.7%)	80 (4.3%)	−19.521	<0.001
b: No, but establish some incentive strategies.	510 (30.1%)	267 (14.3%)		
c: No, but give a symbolic subsidy.	330 (19.5%)	172 (9.2%)		
d: Yes	659 (38.8%)	1348 (72.2%)		

As revealed in the responses to questions regarding the knowledge of cornea donation (questions 1-4), 90.3% registered tissue donors (residents: 78.9%) knew that donated

corneas could be used for transplantations; 71.2% registered tissue donors (residents: 47.6%) knew that the appearance of the body would not be destroyed after cornea

donation; 70.7% registered tissue donors (residents: 20.0%) knew how to become a cornea donor; 64.5% registered tissue donors (residents: 27.1%) knew the Red Cross Eye Bank of Nanjing. The intergroup difference in the knowledge of cornea donation was significant ($P<0.001$).

As for the questions under the category of "attitude to cornea donation" (questions 5-10), 82.2% registered tissue donors (residents: 45.1%) were willing to donate corneas or eyeballs after death; 68.2% registered tissue donors (residents: 15.2%) chose to donate all the body tissues including corneas and eyeballs; 66.9% registered tissue donors (residents: 12.6%) chose to be a cornea donor soon; 84.0% registered tissue donors (residents: 30.2%) had discussed with their families about donation; 41.6% registered tissue donors (residents: 30.0%) chose to convince their families if faced with objection against cornea donation; 85.1% registered tissue donors (residents: 24.8%) supported their families' or friends' decision to donate corneas. The difference between registered tissue donors and residents was significant ($P<0.001$).

For questions about legislation and free donation requirements (questions 11-12), 88.3% registered tissue donors (residents: 61.3%) approved of legislation to regular cornea donation; 72.2% registered tissue donors

(residents: 38.8%) agreed that cornea or organ donation should be gratis. The intergroup difference was significant ($P<0.001$).

However, as show in Table 2, some registered tissue donors did not have clear understanding of cornea donation, some had a negative attitude to cornea donation, some (21/1867, 1.1%) opposed the legislation of cornea donation, and some (519/1867, 27.8%) opposed the free donation protocol.

Related factors of the willingness of cornea donation

The results of regression model analysis showed that the responses' group ($OR=4.43$, 95%CI: 3.53-5.55, $P<0.001$), age ($OR=1.42$, 95%CI: 1.14-1.77, $P=0.002$), gender ($OR=1.27$, 95%CI: 1.07-1.51, $P=0.006$), occupation (Contribution-test as a whole: $\chi^2=27.54$, $P<0.001$), education level ($OR=1.18$, 95%CI: 1.03-1.36, $P=0.020$) were significantly related to the willingness to donate corneas (Table 3), while political status and religion did not enter the final multiple logistic regression model ($P>0.05$) and showed no significant relevance. Among the identified related factors, the population group was the most relevant one, showing that registered tissue donors were more willing to donate corneas than residents.

Table 3. Related factors of the willingness to donate corneas

Demographic factors	Number	Willing [n (%)]	Univariate logistic regression		Multiple logistic regression	
			OR (95%CI)	P	OR (95%CI)	P
Groups						
Residents	1697	766 (45.1%)	Ref.		Ref.	
Registered tissue donors	1867	1535 (82.2%)	5.62 (4.83-6.54)	<0.001	4.43 (3.53-5.55)	<0.001
Age (years)						
≤58	1837	976 (53.1%)	Ref.		Ref.	
>58	1661	1281 (77.1%)	2.97 (2.57-3.44)	<0.001	1.42 (1.14-1.77)	0.002
Gender						
Male	1509	966 (64.0%)	Ref.		Ref.	
Female	1896	1238 (65.3%)	1.06 (0.92-1.22)	0.438	1.27 (1.07-1.51)	0.006
Occupation						
White-collars	579	490 (84.6%)	Ref.		Ref.	
Worker	961	668 (69.5%)	-0.88 (-1.15--0.62)	<0.001	0.74 (0.53-1.02)	0.067
Farmer	237	149 (62.9%)	-1.18 (-1.53--0.83)	<0.001	1.07 (0.68-1.69)	0.767
Student	906	339 (37.4%)	-2.22 (-2.48--1.96)	<0.001	0.42 (0.29-0.61)	<0.001
Others	498	366 (73.5%)	-0.69 (-0.99--0.38)	<0.001	0.83 (0.58-1.19)	0.306
Education level			0.77 (0.71-0.82)	<0.001	1.18 (1.03-1.36)	0.020
Illiteracy-primary school	398	244 (61.3%)				
Junior middle school	722	509 (70.5%)				
High school-junior college	1082	851 (78.7%)				
University	1125	530 (47.1%)				
Master or doctor	23	19 (82.61%)				
Political status						
Others	1088	686 (63.1%)	Ref.			
Party members	1541	865 (56.1%)	0.75 (0.64-0.88)	<0.001		
Religion						
Specific religions	297	165 (55.6%)	Ref.			
Others	1799	935 (52.0%)	0.87 (0.68-1.11)	0.252		

Ref.: reference.

Related factors of becoming a tissue donor

The factors related to becoming a tissue donor in the final multiple logistic regression analysis were age (> 58 years old compared with ≤ 58 years old, $OR=1.31$, $95\%CI$: 1.02-1.69, $P=0.034$), gender ($OR=0.49$, $95\%CI$: 0.38-0.62, $P<0.001$), occupation [worker compared with white-collars (include white-collar, civil servant, teacher, soldier, lawyer, salesman, and healthcare provider), $OR=0.25$, $95\%CI$: 0.17-0.36, $P<0.001$; farmer compared with white-collars, $OR=0.09$, $95\%CI$: 0.05-0.16, $P<0.001$; student compared with white-collars, $OR=0.001$, $95\%CI$: 0.0004-0.002, $P<0.001$; others compared with white-collars, $OR=0.49$, $95\%CI$: 0.32-0.73, $P<0.001$], education level (respondents with higher education level compared with those with lower education level, $OR=1.80$, $95\%CI$: 1.53-2.11, $P<0.001$), political status [party members (including Chinese Communist Party members, democratic party members, and the Communist Youth League members) compared with non-party members, $OR=1.55$, $95\%CI$: 1.19-2.02, $P<0.001$] (Table 4). Respondents being older, male, white-collars, better educated, and party members were more likely to be tissue donors.

DISCUSSION

Corneas donated by tissue donors are the main source of corneas for transplantation in the Red Cross Eye Bank in Nanjing. According to the results of the present study, compared with the control residents, the tissue donors registered in the Red Cross Eye Bank demonstrated better understanding of the knowledge about cornea donation including the cornea transplantation, and of the procedures to become a cornea donor. It may be explained as that they have paid more attention to tissue (including cornea) donation than their control counterparts, or have been informed of related knowledge, regulations, and laws in detail when they completed the tissue donation formalities. Tissue donors also showed a more positive attitude towards cornea donation, and more approval of the legislation and free donation protocol. 82.2% of them were willing to donate corneas after death, significantly higher than the proportion in residents (45.1%, $P<0.001$). Since all the tissue donors had filled out the volunteer cards to indicate their willingness to donate their body tissues (including corneas) after death, it could be assumed that they are open-minded about the issue of life and death, and unselfish to help others.

Table 4. Related factors of becoming a tissue donor

Demographic factors [<i>n</i> (%)]	Residents (<i>n</i> =1697)	Registered tissue donors (<i>n</i> =1867)	Univariate logistic regression		Multiple logistic regression	
			<i>OR</i> (95% <i>CI</i>)	<i>P</i>	<i>OR</i> (95% <i>CI</i>)	<i>P</i>
Age(years)						
≤58	1242 (67.6%)	595 (32.4%)	Ref.		Ref.	
>58	445 (26.8%)	1216 (73.2%)	5.70 (4.93-6.60)	<0.001	1.31 (1.02-1.69)	0.034
Gender						
Male	637 (42.2%)	872 (57.8%)	Ref.		Ref.	
Female	1006 (53.1%)	890 (46.9%)	0.65 (0.56-0.74)	<0.001	0.49 (0.38-0.62)	<0.001
Occupation						
White-collars	59 (10.2%)	520 (89.8%)	Ref.		Ref.	
Worker	358 (37.3%)	603 (62.7%)	0.19 (0.14-0.26)	<0.001	0.25 (0.17-0.36)	<0.001
Farmer	190 (80.2%)	47 (19.8%)	0.03 (0.02-0.04)	<0.001	0.09 (0.05-0.16)	<0.001
Student	890 (98.2%)	16 (1.8%)	0.002 (0.001-0.004)*	<0.001	0.001 (0.0004-0.002)*	<0.001
others	148 (29.8%)	350 (70.3%)	0.27 (0.19-0.37)	<0.001	0.49 (0.32-0.73)	<0.001
Education level			0.73 (0.68-0.78)	<0.001	1.80 (1.53-2.11)	<0.001
Illiteracy-primary school	267 (67.1%)	131 (32.9%)				
Junior middle school	286 (39.6%)	436 (60.4%)				
High school-junior college	218 (20.1%)	864 (79.9%)				
University	908 (80.7%)	217 (19.3%)				
Master or doctor	5 (21.7%)	18 (78.3%)				
Political status						
Others	631 (58.0%)	457 (42.0%)	Ref.		Ref.	
Party members	1028 (66.7%)	513 (33.3%)	0.69 (0.59-0.81)	<0.001	1.55 (1.19-2.02)	<0.001
Religion						
Specific religions	208 (70.0%)	89 (30.0%)	Ref.			
Others	1414 (78.6%)	385 (21.4%)	0.64 (0.49-0.84)	0.001		

*Accurate to more decimal places for better description of the results.

This study showed that the elderly, males, white-collars (covering white-collar, civil servant, teacher, soldier, lawyer, salesman, and healthcare provider), better educated people, and party members were more likely to be tissue donors. Some general population studies showed that people of higher education and healthcare providers were more willing to donate corneas, but those studies showed strong willingness in younger people.⁸⁻¹⁰ The researchers of those studies stated that the younger population might be more open-minded and able to accept new phenomena such as cornea donation. The difference in age-related results may be because the study population of this study (52±22 years) is generally older than those of the previous studies. A study with general population detected significant association of religion to the willingness of cornea donation,¹¹ while no such relevance was found in this study. It may be due to the fact that 44.9% of the participants in Yew et al's study¹¹ were Buddhists or Taoists, different from the religious status of the population in the present study. The study populations from different regions are different in both cultural and socioeconomical background, thus affecting the results.

This study also showed that not all tissue donors were willing to donate corneas, though tissue donation after death means to donate every tissue including corneas. Therefore, besides expanding the team of tissue donors, it is also important to encourage the registered tissue donors to donate corneas.

Some tissue donors did not have clear understanding of the progress and value of cornea donation. It will have negative effects on cornea donation. Government and related institutions need to make great efforts to promote the knowledge and regulations of cornea donation in the public, such as by playing relative video clips or distributing handbooks.¹² The research team of this study plans to perform a controlled study in the future, taking the cornea donation publicity as an intervention, in order to better understand the importance of knowledge propaganda for cornea donation.

Some tissue donors (16.0%) in this study had not discussed with their families about donation. It can be imagined that once being opposed by their families, they may either ignore the objections or follow their families' opinion to give up cornea donation. Neither of the two cases are good for cornea donation, because as long as there is a family member objecting cornea donation, the corneas of the dead would not be acquired at last. Therefore, understanding and approval from the families are important in promoting cornea donation as well as the strong will of the tissue donors themselves, in which the

help of a good coordinator may be efficient.¹³⁻¹⁶ In addition, good communication between tissue donors and their families might also drive their relatives to become tissue donors, thus promoting the cornea donation program.

In the group surveyed in this study, most tissue donors advocated legislation of cornea donation and free donation. In many countries where related legislations were established, beneficial effect to cornea donation has been noticed.¹⁷ However, except for some interim regulations, no related legislation has been promulgated in China. Nowadays, it is widely accepted around the globe that cornea donation should be voluntary and gratis. It not only shows the unselfishness of the donors, but also prevents seeking profit from corneal transplantation. In this study, some tissue donors (14.3%) claimed that incentive measures could be useful. For example, the donors' family members could have a priority when they need a keratoplasty. Considering the situation in China, an effective and feasible legislation to regulate tissue and cornea donation will help enhancing the willingness of cornea donation, as well as expanding the team of tissue donors.

It is hoped that this study could help the government to formulate more targeted policies and take more effective measures to promote cornea donation and resolve the imbalance between cornea supply and demand.

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