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Original Article

Knowledge, Attitude and Willingness Towards Organ Donation among People Attending Out Patient Departments of a Tertiary Care Hospital, West Bengal: A Cross-sectional Study

Bobby Syiemlieh[1], Obangkokla O[1], Mousumi Khatun[1], Poonam Joshi[1], Latha T[1*], Jamuna R Rani[1], Ajay Mallick[2]

[1]College of Nursing, AIIMS Kalyani, West Bengal, India
[2]Department of Otorhinolaryngology, AIIMS Kalyani, West Bengal, India

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***Corresponding Author:**
Latha T,
Email: latharadhakrishna@gmail.com

Abstract

Introduction: Organ donation rate in India is lower compared to many developed countries. A shortage of organs for individuals in need persists, as people are hesitant to donate. The study aimed to assess knowledge, attitude and willingness toward organ donation among people attending outpatient department (OPD) of a tertiary care hospital.

Methods: A descriptive cross-sectional survey design was used and 350 adults attending OPDs were recruited by convenience sampling. The participants were interviewed using structured questionnaires on knowledge, attitude and willingness towards organ donation. Data were analyzed in terms of frequency and percentage, and association was established with Fisher's exact test.

Results: The mean (SD) age of participants was 38.56 (11.18) years. The majority of participants (98.3%) had heard about organ donation through mass media. Among them, 30.3% had good knowledge and 69.1% had average knowledge. Despite having positive attitude towards organ donation, only 33.1% were willing to donate. The main reasons to donate their organs were to save the life (35.3%) and to avoid unnecessary wastage (41.3%). However, 47% were undecided to donate organs. More than half of the participants (58%) were willing to donate their blood compared to other organs. There was a significant association between the participants' knowledge and their willingness to donate organs. A significant association was found between gender, religions, and education with willingness to donate organs.

Conclusion: The participants' willingness to donate organs was low, necessitating to organise impactful awareness programs on organ donation among general public.

Introduction

Organ donation is the gift of an organ to a person who needs a transplant. Some of the organs that can be donated are the liver, kidney, pancreas, heart, lung and the tissues including cornea, bone, skin, heart valve, etc.[1] There are two types of organ donation which includes living donor organ donation and deceased donor organ donation.[2]

The availability of organs in India is extremely scarce that it would not fulfill the demands of patients who need the desired organ. Many patients died because of various organ failures and it would be prevented if organs were available timely. As in the case of renal failure, around 1.8 lakh patients suffered from kidney disease and need a new kidney to survive but only around 6000 transplants could be carried out. Similarly, for patients who suffered from liver failure, two lakh patients died waiting for the new liver but only about 1500 transplants are being carried out.[3] A community-based cross-sectional study was conducted in urban Puducherry, where less than one-third of the adult population had adequate knowledge regarding organ donation, and only 2.3% had registered for organ donation.[4]

In this current scenario, it is very difficult to fulfill the organ requirement for those in need, as people are unwilling to donate their organs due to various possible reasons. Even among their family members, people hesitate to give their organs to their loved ones.

The novelty of this study is its focus on participants' willingness to donate organs. It also explores the specific organs they are willing to donate.

So our objective was to assess the people's knowledge, attitudes and willingness which would help us in the future to decide what action can be taken to promote organ donation in this region.

Materials and Methods

The descriptive cross-sectional survey design was used in this

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study. The study was conducted in outpatient department (OPD) of a tertiary care hospital, in eastern India. The hospital provides the health services to a large population in rural districts of West Bengal. It also meets the needs of the medical and nursing education with various super-specialty services. The participants attending different OPDs of a selected tertiary care hospital were recruited. Informed consent was obtained from the participants and data were collected by conducting interviews with each participant while maintaining anonymity and confidentiality, utilizing validated questionnaires.

The inclusion criteria for the study were (1) adults of both genders, aged 18 and above years, (2) able to understand Bengali/Hindi/English language and (3) mentally competent to give the factual information. The sample size was calculated based on the previous study[4] using the $n = Z^2P\ (1\text{-}P)/d^2$ formula. The calculated size was 310 and we recruited 350 participants by convenience sampling technique.

The demographic profile, knowledge questionnaire, attitude scale and willingness to donate organ questionnaire were developed by investigators and used to collect the data. The demographic profile included age, gender, occupation, etc. The structured knowledge questionnaire for measuring the knowledge level of people regarding organ donation consisted of 15 items with a score ranging from 0-15. The knowledge scores were arbitrarily categorized as good knowledge (score; > 10), average knowledge (score; 6-10) and below average (score; < 6). A structured attitude scale was constructed with a 5-point Likert scale consisting of 15 items ranging from strongly agree (0), agree (1), neutral (2), disagree (3) and strongly disagree (4). Willingness to donate organ questionnaire consisted of 10 items, which include a dichotomous answer and reported in terms of percentage.

All the questionnaires were validated by experts to ensure content validity, where subject experts reviewed the items for relevance, clarity and comprehensiveness. The reliability of the knowledge questionnaire and attitude scale was assessed on 20 participants using Pearson correlation coefficient and Cronbach's alpha which is 0.74 and 0.71, respectively and found to be acceptable.

The Institutional Research Committee and Ethical Committee approved the study (Ref. No. IEC/AIIMS/Kalyani/Meeting/2022/06).

The data were coded and entered in Statistical Package for the Social Sciences (SPSS) version 16. The data were analyzed based on the objectives using the same statistical package. The knowledge, attitude, and willingness were analyzed using frequency and percentage. Fisher's-exact test and chi-square test was computed to find the association between knowledge, willingness and selected demographic variables.

Results

The participants attending different OPDs of a selected tertiary care hospital were recruited and 350 participants were analyzed in the study.

The mean (SD) age of participants was 38.56 (11.18) years. Out of 350 participants, 53.1% participants were female, 76.3% were married and 81.7% had their education below undergraduate (Table 1). Only a small portion, 9.1% had been exposed to organ donation situations within family or friends. However, the majority (98.6%) had heard about organ donation through different mass media. i.e., television (54.2%), newspaper (23.2%), internet (17.1%) and others (5.5%).

Participants achieved a mean (SD) knowledge

Table 1. Demographic characteristics of participants (n = 350)

Demographic variables		No. (%)
Gender	Male	164 (46.9)
	Female	186 (53.1)
Marital status	Married	267 (76.3)
	Unmarried	73 (20.8)
	Others	10 (2.9)
Educational level	No formal education	9 (2.5)
	Below secondary	72 (20.6)
	Secondary	72 (20.6)
	Higher secondary	98 (28)
	Graduate and above	99 (28.3)
Religion	Hindu	332 (94.8)
	Muslim	14 (4)
	Others	4 (1.2)
Occupation	Self-employed	78 (22.2)
	Agriculture	15 (4.3)
	Govt. servant	34 (9.7)
	Private employee	44 (12.6)
	Unemployed	14 (4)
	Student	22 (6.3)
	Home maker	121 (34.6)
	Retired	22 (6.3)
Monthly family income (rupees)	>78,063	8 (2.3)
	39,033-78,062	25 (7.1)
	29,200-39,032	22 (6.3)
	19,516-29,199	84 (24)
	11,708-19,515	106 (30.3)
	3908-11,707	64 (18.3)
	<3907	41 (11.7)
Residence	Rural	199 (56.9)
	Urban	151 (43.1)
Heard about organ donation through mass media	Yes	345 (98.6)
	No	5 (1.4)
Anyone known to you who has donated an organ	Family members	8 (2.3)
	Colleagues	5 (1.4)
	Relatives	19 (5.4)
	None	318 (90.9)

score of 9.57 (1.89). Results showed 30.3% with good knowledge, 69.1% with average knowledge, and 0.6% with below-average knowledge, indicating varying levels of understanding among the participants in the study.

All participants expressed that they are comfortable in conversation about organ donation (Table 2) and agreed that organ donation saves the life of those who are in need. Nearly one third of the participants expressed that organ donation may disfigure them and their functional abilities would decline. Though the majority opined that organ donation is beneficial, only 33.1% were willing to donate their organs. Furthermore, of those who were willing, 99.7% had expressed to donate their organs only after their death and only 0.3% had expressed to donate when they are still alive as per the need of the family.

A total of 33.1% of participants were willing to donate their organs. The reason given for donation was to save a life (35.3%) and avoid wastage of their organs after death (41.3%). Almost half (47%) of the participants had not decided about donating their organs, the reasons for not donating the organs were fear (15%), no awareness (15.4%) and no family support (15.3%) (Figure 1).

In our study, we delved into individuals' inclinations toward organ donation. Thirty three percent of participants expressed a willingness to donate specific organs like the heart, bone marrow, liver, eyes, and kidneys. Even more remarkable was that an equivalent percentage was ready to donate all viable organs after their death. Beyond this, a majority, 58% showed an openness to donating blood.

Notably, the analysis uncovered compelling associations (Table 3): the level of knowledge significantly influenced the inclination to donate organs ($P=0.002$). Moreover, gender ($P=0.017$) and religion ($P=0.009$) exhibited distinct correlations with the willingness to donate organs, while education level showed connections with both participants' knowledge ($P=0.028$) and their willingness to donate organs ($P=0.001$) (Table 4). The previous exposure of participants to organ donation also has significant association with their willingness to donate organs ($P=0.001$).

Discussion

Organ donations are the last option for millions of patients whose organs have failed. Organ transplantation helps to improve the quality of life and saves many lives. The desire

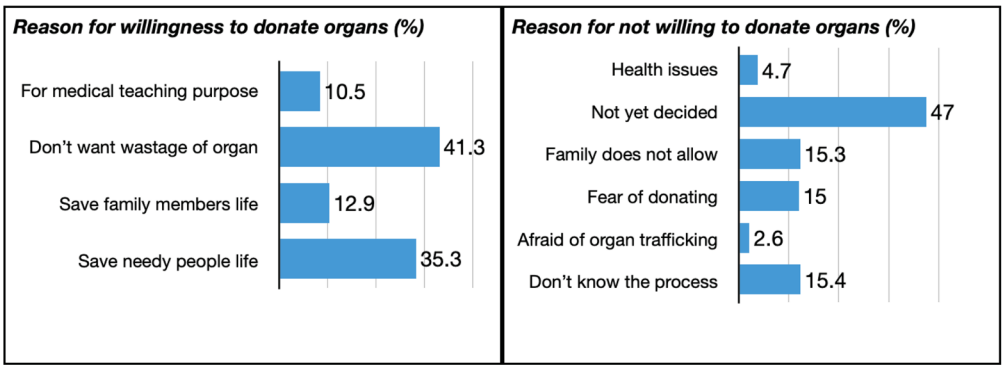

Figure 1. Reason for willingness to donate/not willing to donate organs

Table 2. Attitude of participants towards organ donation (n=350)

Items	No. (%)				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Comfortable talking about organ donation	141 (40.3)	209 (59.7)	0 (0)	0 (0)	0 (0)
Readiness to donate organ(s)	75 (21.4)	41 (11.7)	0 (0)	121 (34.6)	113 (32.3)
Organ donation can save other's life	192 (54.9)	158 (45.1)	0 (0)	0 (0)	0 (0)
Supports family member(s) for organ donor	105 (30)	152 (43.4)	2 (0.6)	67 (19.1)	24 (6.9)
Include awareness of organ donation in school education	182 (52)	168 (48)	0 (0)	0 (0)	0 (0)
Organ donation will help those in need	209 (59.7)	141 (40.3)	0 (0)	0 (0)	0 (0)
Organ donation is not beneficial	0 (0)	0 (0)	2 (0.6)	172 (49.1)	176 (50.3)
Willing to donate an organ to a different gender	145 (41.4)	192 (54.9)	1 (0.3)	11 (3.1)	1 (0.3)
My religion does not support organ donation	0 (0)	2 (0.6)	0 (0)	203 (58)	145 (41.4)
No funeral service after organ donation	0 (0)	2 (0.6)	0 (0)	203 (58)	145 (41.4)
Body will be disfigured after organ donation	7 (2)	71 (20.3)	0 (0)	170 (48.6)	102 (29.1)
Motivate others to donate organ(s)	186 (53.1)	160 (45.7)	0 (0)	3 (0.9)	1 (0.3)
Harmful effect is expected after donating organ(s)	12 (3.4)	69 (19.7)	1 (0.3)	170 (48.6)	98 (28)
Donating an organ will make me incomplete	15 (4.3)	72 (20.5)	1 (0.3)	171 (48.9)	91 (26)
Donating an organ can lead to lowered functioning abilities	27 (7.7)	92 (26.3)	0 (0)	151 (43.1)	80 (22.9)

of people to donate their organs is influenced by their understanding and attitude regarding organ donation. There is a global donor shortage in comparison to the number of patients awaiting transplantation. Developed countries like Spain and US have more transplant rate as compared to developing countries like India because of various factors.[5] The concept of organ donation is not well accepted in developing countries like India. In this present study, it was found that 98.6% of the participants had heard about organ donation, which is relatively high compared to the previous report of 70-80%.[6] The major source of information regarding organ donation was television (53.4%) in our study setting. Prior investigations also reported similar findings.[7,8]

We found that the majority (69.1%) of the participants had average knowledge of organ donation and 30.3% had good knowledge. In contrast, previous studies revealed lack of knowledge.[6,8,9] However, Vijayalakshmi et al demonstrated that the participants had good knowledge on organ donation.[10]

The frequency of each attitude item on a 5-point Likert scale was used to assess the subjects' attitudes. We noticed that all of the participants were comfortable talking about organ donation and believed that it can save lives. The majority (73.4%) supported their family members for organ donation. The participants proposed an awareness programme in school education. They believed that organ donation would benefit persons in need and dispelled the myth that organ donation is detrimental. The majority (96.3%) of participants were willing to donate organs to any gender. Almost all (99.4%) agreed that their religion allows organ donation and it has nothing to do with their funeral rituals. A few (22.3%) of the participants were concerned that their bodies would be disfigured after organ donation. However, 98.8% of them were willing to motivate others to donate organs. Another small portion (24.8%) opine that donating organs will make them incomplete and 34% of the participants agreed to the belief that donating an organ will weaken or lower their functional abilities. Overall, their attitude towards organ donation was positive which is supported by Paul et al,[6] Vijayalakshmi et al,[10] Khalid et al[11] and Dibaba et al.[12]

In the present study, majority (66.9%) of the participants were not willing to donate their organ and only 33.1% of them were willing to donate which is less compared to the findings of Vijayalakshmi et al[10] and Balajee et al.[13] On the other hand, among 33.1% of the participants, only one person (0.3%) had registered for organ donation. Probably, poor registration was due to inadequate facilities in the healthcare delivery system and lack of awareness among the participants.

A significant number of participants gave their willingness to donate organ because they did not want unnecessary wastage of organs (41.3%) and to save the lives of those in need (35.3%), which is less compared to the findings of Agrawal et al[7] and Balajee et al.[13] Almost half of the surveyed participants (47%) were undecided about donation. Another 15.3% of them stated that their families do not allow them to donate. The present study findings are in tune with the findings by Balajee et al.[13]

Table 3. Association between knowledge scores and willingness to donate organs (n = 350)

Level of knowledge	Willing	Not willing	Fisher's exact	*P* value
Good	48	57		
Average	67	176	11.148	0.002*
Below average	01	01		

*Significant association (*P* value ≤ 0.05).

Table 4. Association between selected demographic variables with knowledge and willingness to donate organs (n = 350)

Variables	Knowledge score			*P* value	Willingness		*P* value
	Good	Average	Below average		willing	Not willing	
Gender							
Male	57	107	0	0.082	65	99	0.017*
Female	49	135	2		51	135	
Educational status							
No formal education	0	9	0	0.028*	3	6	0.001*
Secondary and below	39	103	2		31	113	
Higher secondary	31	67	0		26	72	
Graduate and above	36	63	0		56	43	
Religion							
Hindu	100	230	2	0.224	115	217	0.009*
Muslim	3	11	0		0	14	
Other	3	1	0		1	3	
Previous exposure to organ donation in family or friends							
Yes	10	22	0	1.000	19	13	0.001*
No	96	220	2		97	221	

*Significant association (*P* value ≤ 0.05).

Also few (2.6%) were not willing thinking that the donated organ would be misused and this concept was higher in findings of Balwani et al.[14]

Different human organs such as blood, kidney, heart, liver, etc. can be donated. In our study, the highest willingness among the participants was for blood donation (58%). Still, it is lesser than the finding by Dibaba et al.[12] Some of the participants were willing to donate only their blood but not their other organs while some participants were willing to donate their organs but not their blood. Probably the participants felt that their blood concentration in the body is less making them unfit to donate. In this present study, there was an association between knowledge and willingness to donate organs which is in line with previous studies.[10,15] Even though the majority of the participants had above average knowledge score still the willingness to donate was very low.

In this present study, a significant association was found between willingness to donate organs and gender ($P=0.017$), consistent with the findings of Vijayalakshmi et al,[10] but contrasting Krupic et al[16] and Soqia et al[17] Similar associations were observed with education level ($P=0.001$) aligning with Chen et al[18] and Vijayalakshmi et al[10] while Soqia et al[17] reported no association. Additionally, a significant association was found between the willingness to donate organs with religion ($P=0.009$) contradicting Vijayalakshmi et al[10] and Krupic et al.[16]

The strength of the present study includes the statistically calculated sample size. The researcher tried to survey a very pertinent area and identify the knowledge and attitude and their willingness for organ donation among the people visiting AIIMS Kalyani OPD.

The present study has some limitations. The cross-sectional study design and convenient sampling technique restrict the generalizability of the study findings. The study population may not fully represent the entire population of the eastern India.

Conclusion

The majority of the participants had above average knowledge and a positive attitude towards organ donation but the willingness to donate their organ was low, necessitating to organize more awareness programs on organ donation among general public. The concerned authorities must sensitize and motivate the public residing in west Bengal to change the myths and encourage registration for organ donation, which is vital to save the life of others.

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Authors' Contribution

Conceptualization: Bobby Syiemlieh.
Data curation: Bobby Syiemlieh.
Formal analysis: Bobby Syiemlieh, Latha T.
Investigation: Bobby Syiemlieh, Obangkokla O, Mousumi Khatun.

Research Highlights

What is the current knowledge?

- Patients suffering from organ failure benefit from organ transplantation as it improves their quality of life.
- Despite a high demand for donated organs, supply remains limited globally.

What is new here?

- The knowledge and attitude toward organ donation are positive. Despite this, there is a low willingness to donate an organ.
- The reasons for not donating an organ are fear, a lack of awareness about the process, health concerns, and an afraid of organ trafficking.

Methodology: Bobby Syiemlieh, Latha T.
Project administration: Bobby Syiemlieh, Latha T, Poonam Joshi, Jamuna R Rani.
Resources: Bobby Syiemlieh, Obangkokla O, Mousumi Khatun, Latha T.
Software: Latha T.
Supervision: Latha T, Ajay Mallick.
Validation: Latha T.
Visualization: Bobby Syiemlieh.
Writing–original draft: Bobby Syiemlieh.
Writing–review & editing: Bobby Syiemlieh, Latha T, Poonam Joshi, Jamuna R Rani, Ajay Mallick.

Competing Interests

The authors report no actual or potential conflicts of interest.

Data Availability Statement

The datasets are available from the corresponding author on reasonable request.

Ethical Approval

The approval for our study was obtained from the Institutional Ethics Committee of AIIMS Kalyani (Ref. No. IEC/AIIMS/Kalyani/Meeting/2022/06). All participants signed the written informed consent forms.

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