## **Original Research Article**

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# Knowledge and attitude regarding organ donation among undergraduate medical students in a tertiary healthcare centre

### Gopal Kumar\*, Ramesh Verma, Ginni Agrawal, Aman Sachdeva

Department of Community Medicine, PGIMS, Rohtak, Haryana, India

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# \*Correspondence: Dr. Gopal Kumar,

E-mail: gopalkumarsingh05@gmail.com

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#### **ABSTRACT**

**Background:** In India the rate of organ donation is less than 1 per million population. The need for organ transplantation is more than 5 lakhs per year. There is a wide discrepancy between demand and donation. Health care professionals can play a vital role in creating awareness in the society and encouraging the people to donate organs and thus help in filling the gap between the demand and donation. Aim of the study was to assess the knowledge and attitude regarding organ donation among medical students.

**Methods:** A 24 item semi structured and self-administered questionnaire was used to assess the knowledge and attitude regarding organ donation from 300 undergraduate medical students in PGIMS, Rohtak. Data was collected, compiled and analyzed using SPSS.

**Results:** The awareness regarding different organ donation was found to be kidney (79%), liver (70.7%), heart (61%), intestine (3.7%), and lung (10.3%). 28% participants were knowing about NOTTO (National organ and tissue transplant organization). 85% participants were willing to donate their organs.

**Conclusions:** There is good knowledge and positive attitude towards organ donation among undergraduate medical students. But their attitude is not being transformed into organ donation. Separate chapters on organ donation and its need in our country should be included in the school curriculum, interactive sessions should be held in medical colleges and opportunities should be given to them during their college life to voluntarily donate their organs, only then we can cultivate their positive attitude and knowledge.

Keywords: Awareness, Haryana, Knowledge, Medical students, Organ donation

#### **INTRODUCTION**

Organ transplantation is one of the greatest medical marvels of the twentieth century. It has prolonged and improved the lives of hundreds of thousands of patients, worldwide. The acts of generosity by organ donors and their families have made transplantation not only a life-saving treatment but also a shining symbol of human solidarity. India is struggling with acute shortage of organs for transplantation. It is estimated that more than a million people suffer with end stage organ failure, but only a

handful of transplants are performed annually. At least 20 patients die every day waiting for organs and every 10 minutes a new name is added to this waiting list.<sup>2</sup> Undoubtedly, the demand far outstrips the availability of organs. And no one can escape the harsh reality.

The disparity between the huge demand for organs and their poor supply is the main issue of concern. Organ shortage is a global issue and deceased organ donation is the major sustainable solution. The deceased donor donation rate in India stands at around 0.34 per million,

which is abysmally low when compared to the organ donation rate prevalent in other developed countries. In the Indian scenario, many cultural and religious beliefs influence the decision making regarding deceased organ donation. There is a lack of awareness about these issues even among the medical professionals.<sup>3</sup>

#### **METHODS**

A descriptive type of cross sectional study was conducted in a tertiary healthcare setup in Haryana, India among Undergraduate medical students studying in 2nd and 3rd Profession year. Study period was from December 2018 to January 2018. The sample size was calculated using the formula 4PQ/L². Taking P as prevalence of good knowledge regarding organ donation as 22.4% from previous study. Q as 1-P. L is allowable error, taken as 5% of absolute error. Minimum sample size required was calculated to be 278. Hence a total of 300 study participants were enrolled in the study.

Universal sampling technique was used to enroll the required sample of study participants. The data was collected using a 24-item pre-tested, semi-structured and self-administered questionnaire.

#### Inclusion criteria

Those students who gave consent for participation in the study and students studying in 2nd or 3rd professional year of MBBS studies were included in the study.

#### Exclusion criteria

Those students who were absent on the day of visit for data collection were excluded from the study.

#### Data analysis

The data thus collected was then entered in MS-Excel Sheet and then analyzed using SPSS v20.0. The frequency tables were then formed to assess the knowledge and attitude of the study participants towards organ donation.

The ethical approval was taken from the institutional ethics committee before the commencement of stud.

#### **RESULTS**

A total of 300 undergraduate students were included in the study. Out of 300 participants, majority were females (58.33%) and remaining 41.67% were males. Most of them were in the age group 18-20 years i.e. 87% and 13% were in the age group 21-23 years. 69.3% of the participants were residing in urban area and 30.7% participants belonged to rural area. Almost all the participants supported the view on organ donation. 85% subjects were willing to donate their own organs. 31% participants were in favour of mandatory organ donation system. 28%

participants had heard about NOTTO as described in Table 1

Table 1: Socio-demographic profile and attitude of the study participants regarding organ donation.

Socio-demographic variable	Frequency (%)	
Gender	Frequency (70)	
Male	125 (41.67)	
Female	175 (58.33)	
Age in years	170 (00.00)	
18-20	261 (87)	
21-23	39 (13)	
Residence		
Urban	208 (69.3)	
Rural	92 (30.7)	
Views on organ donation	,	
Support	297(99)	
Don't support	3(1)	
Willing to donate own organs		
Willing to donate	255(85)	
Not willing to donate	45(15)	
Comfortable in receiving other's organ		
Yes	277(92.3)	
No	23(7.7)	
In favor of mandatory organ donation system		
Yes	93(31)	
No	205(68.3)	
Have you heard about NOTTO		
Yes	84(28)	
No	216(72)	

Most of the participants were comfortable in donating their organs to different religions Only 30% participants were willing to donate their organs to the same religion only as described in Table 2.

Table 2: Distribution of study participants on basis to whom they would like to donate their organ.

Variable	Response (%)
On basis of religion	•
Person belonging to same religion	30
Person belonging to different religion	70
On basis of physical disability	
Physically disabled	18
Not physically disabled	82
On basis of relationship	•
Relatives	60
Friend	25
Can be anyone	15

In the study it was observed that majority (70%) of study participants were willing to donate their organ to person of different religion while 30% wanted to donate to the person belonging to same religion. Regarding organ donation to physically disabled persons. Majority of the subjects were

willing to donate their organs to persons who were not physically disabled. Only 18% were willing to donate to physically disabled. It was also observed that 60% participants were willing to donate their organs to family members followed by friends (25%) and 15% were willing to donate to anyone.

Regarding the knowledge of participants about different organs that can be donated. 79% participants were aware that kidneys can be donated. About liver, 70.7% participants were aware that it can be donated. 61% participants knew that heart can be donated. Only 10.3% subjects knew that lungs can also be donated. 3.7% subjects were aware that intestines can be donated. And very few participants had knowledge about pancreas and uterus, only 0.7% knew that pancreas and uterus can also be donated. Regarding knowledge of the study subjects about different tissues that can be donated. Approximately half of the participants (50.7%) were knowing that cornea can be donated. Majority of them had no knowledge regarding tissues like blood vessels (82.3%), ligaments (83.7%), bone (90%) and tendons (93.3%) that these can be donated. as described in Table 3. Above findings have been depicted diagrammatically in Figure 1.

Table 3: Distribution of study participants regarding Knowledge about organs and tissues that can be donated.

, w	Frequency (%)	
Organ/tissue	Yes	No
Kidney	237 (79)	63 (21)
Liver	212 (70.7)	88 (29.3)
Heart	183 (61)	117 (39)
Lung	31 (10.3)	269 (89.7)
Intestine	11 (3.7)	289 (96.3)
Pancreas	2 (0.7)	298 (99.3)
Uterus	2 (0.7)	298 (99.3)
cornea	152 (50.7)	148 (49.3)
Blood Vessel	53 (17.7)	247 (82.3)
Ligaments	49 (16.3)	251 (83.7)
Bone	30 (10)	270 (90)
Tendons	20 (6.7)	280 (93.3)
Pancreas	2 (0.7)	298 (99.3)
Uterus	2 (0.7)	298 (99.3)

Table 4: Source of knowledge regarding organ donation.

Source	Frequency (%)
Media	52
Medical professionals	20
Internet	10
Relatives and friends	18

The study observed that most of the participants came to know about organ donation through media (52%), followed by medical professionals (20%), through

relatives and friends (18%) and 10% through internet as described in Table 4.

#### **DISCUSSION**

This was a cross-sectional descriptive study that was done to assess the knowledge and attitudes of the undergraduate medical students in a tertiary health care institution. The attitude of medical students can have far-reaching effects on increasing organ donation and transplantation, as they make a unique link between lay public and qualified professionals. The present study shows that the undergraduate students had adequate knowledge and positive attitudes towards organ donation.

In our study, 58.33% participants were females and remaining 41.67% were males. 87% subjects were in the age group 18-20 years and 13% were in the age group 21-23 years. 69.3% of the participants were residing in urban area and 30.7% participants belonged to rural area.

Almost all the participants supported the view on organ donation. 85% subjects were willing to donate their own organs. 31% participants were in favour of mandatory organ donation system. 28% participants had heard about NOTTO similar to our study, a study by Bapat et al in Bangalore shows that, a large majority (89.0 %) were willing to donate their organs and a small percentage of the respondents were not willing.4 In another study by Bharambe et al in Maharashtra, almost 56.3% of the participant HCPs were willing to be donors and 18.8% wanted to discuss with their families.<sup>5</sup> Alolod also reported that most HCPs participating in their study were positive toward organ donation.<sup>6</sup> In a study by Sam et al, about 70.4% of the study population were willing to be a donor, and their preferences of the recipient were 32.7% for family members, 23.7% for friends, and 43.6% for unknown individuals.7

In our study highest percentage of awareness was about kidney donation (79%) followed by liver (70.7%) and heart (61%). Bharambe et al pointed that highest percentage of the HCPs was aware about eye donation (87.5%), while awareness regarding liver (78.1%) and kidney (65.6%) donation was also found to be high. In a study conducted by Ali et al in Pakistan, highest awareness was reported regarding kidney donation, followed by other tissues and organs.<sup>8</sup>

In our study, most of the participants came to know about organ donation through media (52%), followed by medical professionals (20%), through relatives and friends (18%) and 10% through internet. Similar to our study, Ali et al reported that the HCPs participating in their study had obtained knowledge regarding organ donation from the media (64.6%), family (50%), newspaper (42.4%), and health-care providers (27.8%). Almohsen et al stated that 61.5% of the participants in their study reported that the primary source of their knowledge about organ donation was television. <sup>9</sup> Equal number (34.4%) claimed newspaper

and internet as their sources of knowledge. Nearly 28.1% stated that they obtained the knowledge from their medical college. Majeed reported that 50.8% of the HCPs they studied reported that their source of knowledge on the subject of organ donation was their medical college.<sup>10</sup>

#### Limitations

The study included only medical students as study participants hence study findings cannot be generalized to the community. Only 2nd and 3rd professional year students were involved in the study.

#### **CONCLUSION**

There is good knowledge and positive attitude towards organ donation among undergraduate medical students. But their attitude is not being transformed into organ donation. Separate chapters on organ donation and its need in our country should be included in the school curriculum, interactive sessions should be held in medical colleges and opportunities should be given to them during their college life to voluntarily donate their organs, only then we can cultivate their positive attitude and knowledge.

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