



## Original Research Article

## Organ donation: Perception among medical students

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## ABSTRACT

**Introduction:** Lack of human organ for transplantation is a worldwide issue as the need of transplants is higher than the availability. People often do not have all the information they need to decide on donating an organ nor do they have a clear understanding of the donation process. Lack of information and religious beliefs are the major causes of opposing organ donation. There are certain misconceptions and lack of knowledge in people for organ donation which must be addressed properly by government and healthcare professionals. Health care providers play a key role in educating the public and act as critical link to engage the community members in spreading the awareness of organ donation to the public.

**Objectives:** The purpose of this study was to understand the awareness, attitude and knowledge about organ donation among medical students.

**Materials and Methods:** A cross sectional study was conducted among 600 undergraduate medical students of Hind Institute of Medical Sciences, Barabanki, Uttar Pradesh, India. A structured questionnaire was used to assess perception towards organ donation. A convenient sampling method was employed and all students who consented orally and were willing to participate by filling the questionnaire were enrolled into the study.

**Result:** About 99% of the students were aware of organ donation out of which 77.5% were willing to donate their organs. We found that most of the students 93.5% had perception that organ donation save someone's life. In the study about 81% of the students said that their religion allows for organ donation whereas the remaining of the students had no idea regarding religious view about organ donation.

**Conclusion:** The awareness on organ donation among an undergraduate medical student is high. Few students are unwilling to donate their organs because of psychological anxiety. Educational institute are most effective in providing knowledge of organ donation to the medical students.

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## 1. Introduction

The organ donation is described as the removal of tissues from the human body from a living or dead person for the purpose of transplantation as a treatment. Transplantation is the transfer of human cells, tissues or organs from a donor to recipient with an aim of restoring function in the body.<sup>1</sup> Organ transplantation is the most preferred treatment modality for end-stage organ disease and organ failures.<sup>2</sup> As medicine advances, many organs

are commonly transplanted such as heart, kidney, liver, cornea and other vital organs.<sup>3</sup> Organ transplantations have become the only hope to save and extend the life of recipient patients.

The idea of transplantation dates back many centuries. The first successful transplantation in human was done on 7th December 1905.<sup>4</sup> Organ donation (OD) and transplantation got legalized in India, under the “Transplantation of Organ Act, 1994”.<sup>5</sup> In India, well documented organ transplantations started with kidneys in early 1970s at CMC Vellore. Liver and cornea transplant began lowly in the 1990s and is now being done at many

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hospitals in various metropolitan cities of India.<sup>6</sup> According to a 2009 study, India ranked second in the world in live related kidney transplants.<sup>7</sup>

Statistics show that Australia has 11 organ donors per million, Britain has 27, Canada has 14, Spain has 35.1 donors, USA has 26 donors per million whereas India has only 0.08 donors per million population.<sup>8</sup> In India, a nual deaths are approximately 500,000 because of non-availability of organs of whom 200,000 people die of liver disease, 50,000 people die from heart disease.<sup>8</sup> Almost 1,000,000 lakh people suffer from corneal blindness and await a transplant.<sup>8</sup> At least 150,000 people await a kidney transplant but only 5,000 get organs.<sup>8</sup> In India, due to the imbalance between availability and demand, kidneys were harvested from the poor Indians by exploiting their poverty. To ban this illegal sale of organs, in the year 1994, the Government of India passed “the transplantation of human organs act.”<sup>9</sup> Under this act, donation of organs by deceased persons was made legal, and the transplantation between unrelated live individuals was made illegal.<sup>10</sup>

In India, there is a great need for human organs as there are critical shortages of the human organs for transplantation. The shortage in organ supply is due to lack of awareness and correct knowledge among public, myths, and misconceptions about organ donation due to religious and cultural barriers leading to hesitancy in donation of human organs.<sup>11</sup> There is a significant relation between public attitude towards OD and availability of such organs. Evaluation of public knowledge and attitude towards OD is of vital importance to evaluate and develop educational programs to raise the public commitment to OD. The role of healthcare professionals is important because they are the first link between the patients and the donors, or the donor’s family. There are evidence suggesting that healthcare professionals’ attitude can play an imperative role in rates of organ donations, promotion of organ donation campaigns, and its successes.<sup>12</sup> Medical students as future physicians will take up the role of promoting organ donation. Hence; the present study was designed to assess the beliefs, knowledge, and actions on organ donation among undergraduate medical students.

## 2. Materials and Methods

A cross sectional questionnaire, based study was conducted among 600 undergraduate medical students. A structured questionnaire was used to assess the beliefs, knowledge, and actions towards organ donation. Students were selected randomly. The questionnaires were distributed to those students who were willing to participate in this study by filling the questionnaires. These questionnaires were pretested on 15 individuals to find out any opacity in the questions and get comments from the responders then finalized. Those questionnaires were not mentioned in the final analysis.

Most of the questionnaires were distributed to the students after lecture hours in the classroom. The students were instructed not to discuss the questions among themselves. Some of the questionnaires were distributed to the study participants during their leisure time in hostels, canteens, hospital and were filled on the spot.

The questionnaires included were demographic profile, knowledge of organ donation, beliefs & actions towards organ donation, causes of unwillingness and reasons behind being unwilling to donate the organ.

Statistical Analysis Data gathered through the questionnaires were entered into microsoft excel sheet. The data were statistically analysed.

## 3. Observations & Results

Questionnaires were answered by all the 600 students. Out of 600 students, 195(32.5%) were male and 405(67.5%) were female. The mean age of the students was 20.73 years (range from 18 to 27 years). The standard deviation (SD) was 1.7605. Source of information about organ donation for students have described in Figure 1.

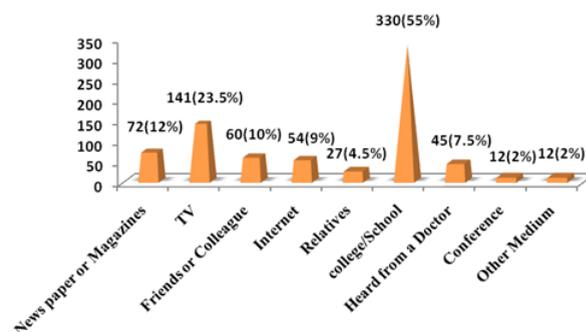


Fig. 1: Source of information about organ donation.

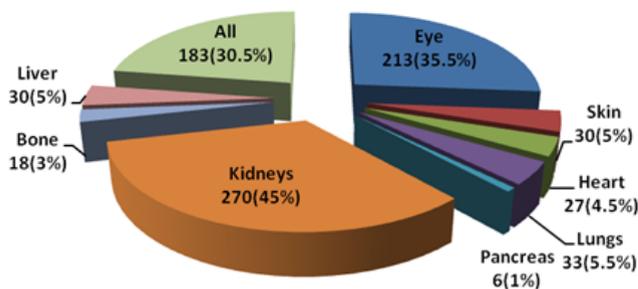
Note: Many students claimed more than one source of information.

Maximum students 330(55%) have come to know about organ donation in school and college, 141(23.5%) students by TV, 72(12%) students by news paper or magazines, 60(10%) students by friends or colleague, 54(9%) students by an internet, 45(7.5%) students from a Doctor, 27(4.5%) students from relatives, 12(2%) students by a conference and 12(2%) students by other medium.

Out of 600 students, 270(45%) students know that kidney can be donated, 213(35.5%) students were aware that eyes can be donated, 183(30.5%) students knew about all the organs given in Figure 1 can be donated, 33(5.5%) students had knowledge of lungs can be donated, 30(5%) students have knowledge of liver can be donated, 30(5%) students have knowledge of skin can be donated, 27(4.5%) students have knowledge of heart can be donated, 18(3%) students have knowledge of bone can be donated but only 6(1%) students were aware about a pancreas can be donated.

**Table 1:** Showing the awareness of Organ Donation in students.

S.N.	Particulars	Characteristics	No. of students	Percentage
1.	Do you know about organ donation?	Yes	594	99
		No	6	1
2.	Do you know that body donation and organ donation are different?	Yes	546	91
		No	54	9
		Not mentioned	12	2
3.	Does your religion allow organ donation?	Yes	486	81
		No	36	6
		Don't know	66	11
4.	Are you aware that organs can be donated to save a life of another person?	Yes	594	99
		No	6	1

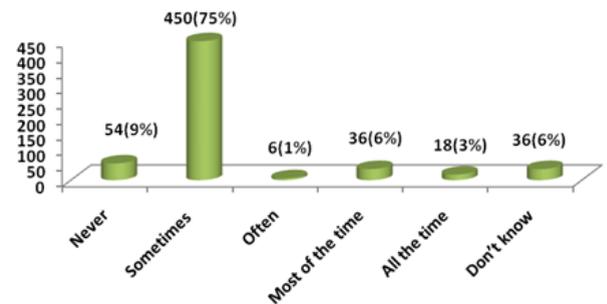


**Fig. 2:** Showing the knowledge of the students regarding organs that can be donated.

Out of 600 students, 594(99%) students were aware about organ donation but only 6(1%) students were unaware. 546(91%) students know that body donation and organ donation are different but 54(9%) students feel that both are same. 486(81%) students responded that their religion allow organ donation, 66(11%) students expressed that they are unaware about their religion allowing organ donation, 36(6%) students feel that their religion not allow organ donation, 12(2%) students responded that not mentioned in their religion for organ donation. Maximum students 594(99%) were aware that organs can be donated to save a life of another person but only 6(1%) students were unaware.

450(75%) students believed that donated organ could be misused, abused or sometimes misappropriated but only 6(1%) students believed that donated organ could be misused, abused or often misappropriated.

Out of 600 students, 465(77.5%) students were willing to donate their rgans and 135(22.5%) students were not willing to donate their organs. 81(13.5%) students having psychological anxiety as a reason behind unwillingness regarding organ donation, 51(8.5%) having prevented by family members but only 12(2%) students having religious barrier. 237(39.5%) students were willing to save other needy people's life as a reason behind willingness regarding



**Fig. 3:** Showing beliefs of students regarding donated organ could be misused, abused or misappropriated:

organ donation. 105(17.5%) students were agreed with all the parameters of reason behind willingness regarding organ donation, 75(12.5%) students were willing to make people healthy again. 558(93%) students were in favour to promote their family members, relatives, colleagues, and friend for organ donation but only 42(7%) students were not in favour.

Maximum students 561(93.5%) had perception of organ donation to save someone's life but only 6(1%) students had perception of organ donation for money. 126(21%) students were agreed to free health treatment for donor family measures taken by government would be more effective in promoting organ donation.

#### 4. Discussion

In this study, 600 students of medical background were selected. Out of these 600 students, 67.5% were female and 32.5% were male. These findings were relatively similar to the results of the study done by Abdulrahman et al.,<sup>13</sup> in which majority of the students were female i.e., 74% and minority of the students were male i.e., 26%. In present study, the mean age of the participants was 20.73 years. About 99% of the students were aware of organ donation out of which 77.5% students were willing to donate their organs. The study conducted by Sandeep et al., found that only 24.5% of the participants would like to donate their organs.<sup>14</sup> We found that most of the students (93.5%)

**Table 2:** Showing opinion of willingness of organ donation in Students.

S.No.	Particulars	Characteristics	No. of students	Percentage
1.	Are you willing to donate your organs?	Yes	465	77.5
		No	135	22.5
		I don't want my body cut up or disfigured	21	3.5
2.	If no, reason behind unwillingness regarding organ donation.	Organ could be wasted.	30	5
		Religious barrier	12	2
		Prevented by family members.	51	8.5
		My relatives don't accept it.	24	4
		Psychological anxiety.	81	13.5
3.	Would you like to promote your family members, relatives, colleagues, and friend for organ donation?	Yes	558	93
		No	42	7

**Table 3:** Showing opinion of students regarding usefulness of Organ Donation.

S.No.	Particulars	Characteristics	No. of students	Percentage
1.	What is your perception of organ donation?	To save someone's life	561	93.5
		Out of compassion/sympathy	12	2
		For money	6	1
		As a responsibility	21	3.5
2.	Which of the following measures taken by government according to you would be more effective in promoting organ donation?	Monetary benefit to donor family.	36	6
		Giving awards	6	1
		Free health treatment for donor family.	126	21
		All of above	432	72

had perception that organ donation save someone's life. This finding was relatively similar to the results of studies conducted by Abdulrahman et al., in 2015.<sup>13</sup> Students have suggested that some steps should be taken by government in promoting organ donation. These measures include monetary benefit to donor family, giving awards and free health treatment for donor family. In the study, about 81% of the students said that their religion allows for organ donation whereas the remaining of the students had no idea regarding religious view about organ donation. In present study, few students also believed that sometimes donated organ could be misused, abused or misappropriated. Almost all the students, were aware that organ can be donated to save a life of another person but only 1% was unaware.

In present study, students were willing to promote their family members, relatives, colleagues, and friends for organ donation whereas 7% of the students were unwilling. There are several reasons behind unwillingness towards organ donation. These reasons include a religious barrier, prevented by family members and psychological anxiety. On the other side, there were different reasons behind willingness towards organ donation. Their reasons were living after death in an other person's body, to make people healthy again, to save other needy people's life and to be an example to other people.

Education programs have recently been suggested as a new approach in solving the organ shortage.<sup>15</sup> The public and the students need to be educated about transplantation, and the need to accept the commitment to donate organs. The undergraduate medical and dental curriculum should provide students with basic information on procedures and ethical issues concerning organ transplantation and donation, so that future doctors can become informed advocates.

## 5. Conclusion

This study shows that awareness on organ donation among an undergraduate medical student is high. As per the study: college, school, and television are most effective in providing knowledge of organ donation to the undergraduate medical students. Students are also aware of body donation & organ donations are different. There is a high level of knowledge about a kidney and eye donations but knowledge of pancreas is very poor. Most of the students are willing to donate their organs to save the life of needy people. Few students are unwilling to donate their organs because of psychological anxiety. Some students also believe that donated organ could be misuse, abused or misappropriated. Students like to promote their family members, relatives, colleagues and friends for organ

**Table 4:** Comparison of present study with previous study.

Questionnaires	Options	Study conducted			
		Bharambe et al. (2015) <sup>15</sup> (%)	Balwani et al.(2015) <sup>16</sup> (%)	Agrawal et al. (2017) <sup>13</sup> (%)	Present study (%)
How did you become aware about organ donation?	News paper or Magazines	32	7.07	33.33	12
	TV	24	9.09	70.0	23.5
	Friend or colleague	-	31.31	39.64	10
	Internet	9	4.04	42.60	9
	Relatives	-	-	-	4.5
	College/school	-	-	-	55
	Heard from a doctor	-	47	-	7.5
	Conference	-	-	-	2
	Other medium	20	-	-	2

**Table 5:** Comparison of present study with previous study.

Questionnaires	Options	Study conducted			
		Agrawal et al. (2017) <sup>13</sup> (%)	Soubhanneyaz. et al. (2015) <sup>12</sup> (%)	Alex et al. (2017) <sup>5</sup> (%)	Present study (%)
Which organs can be donated?	Eye	44.69	41.4	59	35.5
	Skin	37.62	29.3	34	5
	Heart	51.26	54.6	82	4.5
	Lungs	43.68	48.5	57	5.5
	Pancreas	-	-	-	1
	Kidneys	95.20	95.5	94	45
	Bone	44.69	57.5	-	3
	Liver	90.95	71.4	78	5
	all	30.55	-	-	30.5

donation. Students believe that the measures like monetary benefit, giving awards & free health treatment for donor family by government would be more effective in promoting organ donation.

### 5.1. Author's contributions

SPS and KB concept, designed and interpretation of the data of the study. SA developed the model, collected the data and contributor in writing the manuscript. KB guided the project. All authors read and approved the final manuscript.

### 5.2. Acknowledgements

Not Applicable

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None.

## 7. Competing interests

The authors declare that they have no competing interests.

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