

## Study of Awareness of Organ Donation in Medico and Non Medico Students

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### Abstract

Though all of us agree that organ donation is the need of the hour, myths and misconceptions regarding it abounds accompanied with very poor knowledge and attitude towards this noble act. The rate of organ donation in India is low and research on organ donation among the general population is limited. Lack of knowledge and understanding about organ donations, religious attitudes, and superstitious beliefs have generated fear and mistrust in the minds of the common man and, especially, the terminally ill patients [1,2]. There is an inadequate supply of cadaver organs commensurate with need. Health-care professionals are the critical link in augmenting public awareness about organ donation. Their knowledge and beliefs can influence the public opinion. This descriptive cross sectional study aims at understanding the perception, knowledge and awareness among the medical graduate students and students from police training as constables. A total 200 students participated in the study. A specially de-signed questionnaire was used in assessment.

**Keywords:** Awareness of Organ Donation; Perception; Knowledge.

### Introduction

“Human organ” means any part of a human body consisting of a structured arrangement of tissues which, if wholly removed, cannot be replicated by the body.

Organ donation is when a person allows to be removed, legally, either by consent while the donor is alive or after death with the assent of the next of kin. Organs can be donated by three types of donors viz., living, brain-dead and dead donors. Experts say that the organs from one donor can save or help as many as 50 people [3]. Common transplantations include: kidneys, heart, liver, pancreas, intestines, lungs, bones, bone-marrow, skin, and corneas. Some

organs and tissues can be donated by living donors, such as a kidney or part of the liver, but most donations occur after the donor has died i.e. cadaver donation.

Although, organ donation is a personal issue, the process has medical, legal, ethical, organizational and social implications [4]. Organ donation following brainstem dead is not so common but still a new concept of general population. India has a fairly well developed corneal donation programme; however, donation after brain death has been relatively slow to take off. To curb organ commerce and promote donation after brain death the government enacted a law called “The Transplantation of Human Organs Act” in 1994 that brought about a significant change in the organ donation and transplantation scene in India in a legalized way [5]. Yet the rate of organ donation in India is poor (0.34 per 100 000 population) compared to developed countries [6].

Every year, close to six lakh people die due to organ failure [7]. Organ transplantation is the most preferred treatment modality for end-stage organ disease and organ failures [1]. However, the need for the transplants is high and the gap between organs available for transplantation and the number of

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patients waiting for a transplant is widening globally.

The wide spread awareness regarding the concept of organ donation, the knowledge of existing laws, inherent importance attached to it of saving others life clubbed with the willingness to be a part of the mission and promote it by propagation would only fill the gap of shortage of organs. However, there are a lack of studies done on the terminally ill patients and the general public with regards to their perceptions and attitudes about organ donation [8]. Since organ transplantation cannot succeed without the majority participation and support of the community, these urban legends are dangerous. With this backdrop a study was planned and implemented with the objectives of ascertaining the knowledge, perception and willingness of the medical and police training students regarding organ donation.

**Materials and Methods**

Questionnaire has been given to all the participants’ i.e. second M.B.B.S and police trainee 100 students respectively. All the technical words in the questionnaire have been explained to them in detail.

*Inclusion Criterion*

All the students in both the groups are in age range of 19-21 years and from different parts of Maharashtra.

*Exclusion Criterion*

The students from outside Maharashtra and not in the age range of 19-21 years.

Age range and study area is to maintained

uniformity. Medical students and police trainee students both have been taught legalities of organ donation during their curriculum. Hence these two groups were taken.

The questionnaires’ contained 15 questions with answers varying from Agree, Disagree, Yes, No and Not sure. The questionnaire was designed to know awareness, perception, knowledge related to organ donation and willingness and promotion to donate organs.

*Study Design*

Cross sectional study.

*Study Size:* 200 students.

*Study Population*

Medical students of Dr. V.M. Government Medical College, Solapur, and Students taking training of police constables.

*Statistical Methods:* Frequency and median score of each question. Based on the responses the data was tabulated, statistically scrutinized and critically analysed.

*Ethical Issue:* No invasive or non invasive test has been done. Only cognitive domain and perceptions have been tested without revealing the identity of any student hence no need of ethical committee clearance.

**Observation and Results**

Based on the responses given by Medical students and Students taking training of police constables following observations have been deduced and based on observations the conclusions have been drawn.

As per question number 1, although 89% of the students believed that they were aware of Human

**Appendix 1.** Questionnaire regarding Perception and willingness

Sr. No.	Question
1	Are you aware of Human Organ donation?
2	Organ donation is against my religious belief.
3	Whether living person can donate his kidney?
4	Any person can sell his own organs.
5	A living person can donate his organs to any unknown person during his/her life.
6	I fear that the organ donated by me will be misused for commercial gain
7	I will encourage my family and friends to donate organs
8	Organ donation is good and should be encouraged.

**Table 1:** Response of the students as regards to perception and willingness towards organ donation. (correct alternative has been kept bold)

Question	Response	Police trainee	Medical students	Total	%
1.	<b>Yes</b>	<b>88</b>	<b>90</b>	<b>178</b>	<b>89</b>
	No	03	02	5	2.5
	Not sure	09	08	17	8.5
2	Agree	10	01	11	5.5
	<b>Disagree</b>	<b>70</b>	<b>92</b>	<b>160</b>	<b>80</b>
	Not sure	20	07	27	13.5
3	<b>Yes</b>	<b>81</b>	<b>99</b>	<b>180</b>	<b>90</b>
	No	05	00	5	2.5
	Not sure	14	01	15	7.5
4	Agree	20	28	48	24
	<b>Disagree</b>	<b>47</b>	<b>61</b>	<b>108</b>	<b>54</b>
	Not sure	33	11	44	22
5	Agree	78	80	158	79
	<b>Disagree</b>	<b>13</b>	<b>11</b>	<b>24</b>	<b>12</b>
	Not sure	09	09	18	9
6.	Agree	74	46	120	60
	<b>Disagree</b>	<b>08</b>	<b>29</b>	<b>37</b>	<b>18.5</b>
	Not sure	18	25	43	21.5
7	<b>Yes</b>	<b>84</b>	<b>96</b>	<b>180</b>	<b>90</b>
	No	09	00	9	4.5
	Not sure	07	04	11	5.5
8	<b>Agree</b>	<b>95</b>	<b>99</b>	<b>194</b>	<b>97</b>
	Disagree	01	00	1	0.5
	Not sure	04	01	5	2.5

organ donation but as evaluated from their awareness through question number 3,4,5,6 on an average only 43.62% knows the correct alternative.

Their willingness and attitude is evaluated through question number 2, 7, 8 and it was found a positive attitude i.e. 89% of the studied population is having positive attitude towards organ donation.

As regard to religious sentiments attached to the organ donation medical students have more rational and scientific approach (92% disagree) as compared to police trainee (70%), but in not sure group or in a group of dilemma there are 20% police trainees.

99% of the medical students aware of the fact that

kidneys could be donated during life in contrast to police trainees (81%).

24% of the students still unaware of the fact that commercial dealings in the organs has been curbed late back.

79% of the studied group still believe that a person can donate his organs to anyone irrespective of blood relations or special affinity.

74% of the police trainees have an inherent fear that the organs donated by them might be used for commercial gain. In this regard 56% of medical students have the similar opinion.

Although no major difference but medical students

#### Appendix 2: Questionnaire to test legal knowledge and procedures.

Sr. No.	Question
1	Blood donation came under the purview of Human Organ Transplantation Act.
2	In medico-legal cases, organ donation can be done with the consent of donor or legal heirs without the consent of police
3	Can next of kin donate organs of dead without his/her prior will during life?
4	To retrieve cornea enucleation is done
5	Sperm donation and oocyte donation is part of organ donation.
6	As per HOTA Act in every Medico-legal case the person going to conduct autopsy has to certify that the organ to be retrieved is not related to cause of death.
7	As per HOTA Act, surgeon from team of organ transplantation should be a part of brain death declaration team.

**Table 2:** Response of the students as regard to their knowledge regarding legalities related to organ donation. (correct alternative has been kept bold)

Question	Response	Police trainee	Medical students	Total	%
1	Agree	41	31	72	36
	<b>Disagree</b>	<b>10</b>	<b>48</b>	<b>58</b>	<b>29</b>
	Not sure	49	21	70	35
2	Agree	17	33	50	25
	<b>Disagree</b>	<b>57</b>	<b>48</b>	<b>105</b>	<b>52.5</b>
	Not sure	26	19	45	22.5
3	<b>Yes</b>	<b>54</b>	<b>51</b>	<b>105</b>	<b>52.5</b>
	No	22	32	54	27
	Not sure	24	17	41	20.5
4	<b>Agree</b>	<b>48</b>	<b>28</b>	<b>76</b>	<b>38</b>
	Disagree	08	22	30	15
	Not sure	44	50	94	47
5	Agree	34	16	50	25
	<b>Disagree</b>	<b>08</b>	<b>63</b>	<b>71</b>	<b>35.5</b>
	Not sure	58	21	79	39.5
6	<b>Agree</b>	<b>82</b>	<b>78</b>	<b>160</b>	<b>80</b>
	Disagree	04	07	11	5.5
	Not sure	14	15	29	14.5
7	Agree	29	48	77	38.5
	<b>Disagree</b>	<b>07</b>	<b>29</b>	<b>36</b>	<b>18</b>
	Not sure	64	23	84	42

were more proactive towards organ donation and its promotion as compared to police trainees as seen from question 7 and 8.

The overall combined awareness of legal knowledge regarding organ donation in studied population is 43.64%. However the simple basic things regarding exclusion of blood, sperm and oocyte donation from organ donation act as revealed from question 1 and 5 only 32.25% awareness is present. As far as medico-legal issues regarding organ donation are concerned 66.25% studied group are well aware. As regard to general provisions of HOTA as revealed through question 3 and 7 only 35.25% of population are well acquainted.

The most common organ to retrieve after death is cornea but only 38% of studied population are aware regarding the enucleation procedure required to retrieve cornea.

Regarding tissue and body fluids to be donated there is a wide gap in the knowledge of medical students and police trainee. Only 10% of police trainee as compared to 48% medical students and 8% as compared to 63% are well aware regarding blood and oocyte, sperm donations exclusion from respectively HOTA. Surprisingly regarding the procedure of enucleation police trainee (48%) are more aware as compared to medical students (28%).

And as regard to the provision of debarring the

doctor of transplantation team from brain death declaration panel medical students are more aware (29%) as compared to police trainee (7%).

### Discussion

We aimed to assess knowledge, perception and willingness of the police trainee personal and medical students towards organ donation. These two groups have been deliberately selected as in future as a RMP, medical students have to propagate this noble cause in the community and as a non medicos police personal have to deal with legalities of organ donation, curbing the commercial dealings in this aspect and to deal with the medico-legal cases pledging their organs for donation.

Notification of Health and family welfare [9], 27<sup>th</sup> March, 2014 section 3 authorizes a living person to give authority of removal his/her organs during life or after death. Section 5 (sub section 1. a), deals with authorisation by a person by a person during life and subsection 1. b deals with the procedure if such authorization was not given during life and still if the relatives had wish to donate the organs the requisite procedure to be followed. Subsection 1.b also deals with the procedure of authorization in case of unknown/unclaimed bodies wherein the authority has been given to the authorities in law

full possession of the dead body.

Section 5, subsection 4. (c) and section 18 subsection (7), debarred a person from the part of brain death declaration team if such RMP is the part of transplantation team.

Section 6 deals with the procedure to be followed for donation of organs or tissue in medico-legal cases. As per subsection 4 of this section wherever possible the designated post-mortem RMP should be present during retrieval so that he should incorporate the findings related to the retrieved organs in the post-mortem memorandum. Otherwise after informing the inquest conducting police authority and no objection from them the retrieval team should proceed with organ retrieval and send the detailed note regarding the condition of the organ retrieved with all other relevant findings along with inquest to the autopsy surgeon.

The Transplantation of Human Organs (Amendment) [10] Act 2011 section 5 subsection (oa) defines tissue as group of cells performing a particular function in human body, hence except blood and other body fluids. Subsection (0b) excludes blood bank from the purview of "tissue bank"

Section 9 of the principal act has been amended by incorporating section 7 with all its subsections from a to c wherein donation to non related persons have been meticulously checked and such donations have been passed through a series of verification to rule out any commercial dealing. Swapping is allowed in exceptional case, otherwise all the donated organs after death have been transplanted to the needy as per the waiting list available with state authority authorized in this regard.

Section 18 of the act as inserted after section 19 of the principal act deals with punishment for illegal dealings in human tissue.

In the backdrop of this intelligentsia the Perception of participants towards general concept of organ donation has been tested through the questionnaire as provided in appendix 1 and as revealed through Table 1.

The majority (89%) of participants in our study were claimed that they are aware of organ donation and these findings are similar to those of previous studies [6,11,12].

Kidney and part of the liver are the organs a person can donate before death during life. 90% of them are aware that any living person can donate their kidneys during life, but medicos (99%) are more enlightened in this aspect as compared to non medicos group of police trainee (81%).

Regarding the aspect of curbing of commercial dealings in human organs by the act and the pre-requisite blood relations or the relation of special affinity, love required between the recipient and donor there is widespread ignorance in both the groups and overall awareness regarding these common issues was only 43.62%.

Majority of the participants (89%) have shown the inherent desire and willingness towards organ donation over and above the religious sentiments and also in favour of the promotion of donation among their relatives and friends and in community at a large. This aspect of their willingness is more important in the veil of their ignorance regarding commercial dealings, in spite of the fear of being misused of the organs they have being donated 60% have shown positive attitude towards this noble cause.

Maximum 80% of them showed religious beliefs against organ donation which coincide with study of Alashek WA et al [13]. This study also coincides with to a study (86%) done in Faisalabad [14] and slightly better than a study (78%) done among adults of Kakati Village [15] in South India.

However, illegal organ donation and misuse of organs are the main reasons for the low rate of organ donation in India [7]. Similar to previous studies, 74% of individuals opined that organs for transplant can be bought and sold in India and this can be a major barrier to organ donation [16]. Illegal organ donation and misuse of organ is a major problem in India for low organ donation rate in public [7] this fact was reflected even in the current study as 60% of the subjects reported misuse of organ as barrier to organ donation.

Concerning about willingness and promotion of Organ Donation, 89% of participants feel that organ donation and transplantation is good and should be encouraged, which can be termed as overwhelmingly positive.

In our study, 43.64% of participants had adequate knowledge about Acts and rules of organ donation. These findings were comparable to a previous study that showed 41.5% of participants had knowledge about organ donation [17].

This study does not coincide with Manojan KK et al [12] where only 3% of participants knew about the proper Legislation associated with the process of organ donation. This might be due to low literacy rate in the studied population encompassed with rural background wherein promotion and propaganda of such laws is very less.

Knowledge regarding who can give consent for donation while alive and after death is far less (52.5% in studied population) than the results found in studies in Karachi [18] and Chennai [19].

Traditionally in India, the family takes care of its members even when they are sick. Hence, the consent of the next of kin is mandatory for organ donation from a deceased donor [20]. Further, 54.9% of participants felt that after their death it is important to know their family's wishes. In a recent study, 83% of people thought that family/spouse should have the right to make a decision for organ donation [19]. Thus, a positive attitude towards organ donation is necessary among family members. Maintaining body integrity even after death seems to be the most common reason for unwillingness to donate organs.

Blood and other body fluids don't come under the purview of organ donation but as observed there is 32.25% awareness in this regard and a severe ignorance in the non medicos group 41% and 34% regarding blood and sperm donation respectively.

To a reason unknown surprisingly the legal knowledge regarding provisions of THOA in medico-legal cases 66.25% of studied population is well aware. Only 18% of studied population are aware regarding the non inclusion of member from transplant team into the team constituted to declare brain death.

Evidence in the literature indicates that personal experience about organ donation contributes to the knowledge of individuals and subsequently organ donation rates.

Organ donation can be considered as a humanitarian project. It is clearly an act for welfare of mankind and should be considered as a holy task for needful. There are millions of people out there in need of Organs to live a normal life, and there are more than millions out there who can provide them with the same opportunity as of others in their life.

In India, there still a taboo and social stigma on organ donation. With combined approach and educating the masses and encouraging people, the overall goal can be achieved and it can help prevent many severe disabilities and disorders in individuals who rely upon.

Knowledge level is an important determinant for willingness to donate organ which is in line with the reports of other studies [18]. Hence continuous emotional appeal through various mass media, propagation and promotion of organ donation laws and prudential through various mass campaigning would only fetch the striving of enormous demand of the organs in the community.

## Conclusion

Better knowledge and awareness will help in promoting organ donation. Effective campaign needs to be driven to educate people with relevant information with the involvement of media, doctors and religious scholars. Our study advocates for public education programmes to increase awareness among the general population about the legislation related to organ donation.

The majority of participants were unaware of the legislation and the process of organ donation. Our study showed the ignorance in masses hence stressed the importance of the media in creating awareness about organ donation among the general population. Mass awareness campaigns to promote organ donation activities and the fact that organ donation can bring smile to the faces of many should be percolated and imparted at both individual and community level.

We suggest that the government should also strengthen the infrastructure of hospitals to maintain potential brainstem dead donors.

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