



KNOWLEDGE AND ATTITUDE OF ORGAN DONATION AMONG MEDICAL STUDENTS: A CROSS SECTIONAL STUDY

Community Medicine

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ABSTRACT

Introduction: In India 9.5 million deaths occur annually. Nearly 10,0000 deaths are mainly due to organ failure. Organ transplantation is one of the most brilliant developments in the field of medicine during twentieth century. Knowledge and attitude of healthcare professionals towards organ donation play a major role in promoting the concept among general population and as future doctors, medical students should have adequate awareness regarding this important issue in our society that affects millions of lives. With this aim the present cross-sectional study is undertaken to assess the knowledge and attitude about organ donation among first year undergraduate students of government medical college, Miraj. **Results:** 75.4% students knew where can we register for organ donation. 40.9% have heard of organ donation card. 22.4 % students knew we can register as donor at NOTTO. Only 13.1% students knew the importance of organ registry. Participants response towards organs donation in case of live donor included kidney 146(79.7 %), followed by liver 70(40.9%), bone marrow 45(24.5%), skin 32(17.4%). **Conclusion:** Exploring the knowledge and attitude of medical students toward organ donation is a vital step toward improving organ donation rates and patient care.

KEYWORDS

brain death, knowledge, Organ donation, medical students, dead donor, live donor

INTRODUCTION:

Organ donation is the donation of biological tissue or an organ of the human body from a living or dead person to a living recipient in need of transplantation.^[1]

Organ transplantation is one of the most brilliant developments in the field of medicine during twentieth century.^[2] Organ transplantation is the only treatment for the patient with end-stage organ failure.^[1] In case of end-stage organ disease and organ failures, the best treatment option is Organ transplantation wherein the organ is replaced by a healthy one from a donor, either living or dead.^[3] It provides a better quality of life and long-term survival to recipients.^[5,6]

In India 9.5 million deaths occur annually, nearly 100000 deaths are mainly due to organ failure.^[1]

At least seven lives can be saved if one person donates all his organs after death but unfortunately, lakhs of people die waiting for an organ in our country.^[4] However, the shortage of organs and donors is the main hurdle in transplantation. India, in particular, has a huge shortage of organs and donors.^[5] Due to the shortage many needy people die while waiting for that "Gift of Life."^[3]

Organ transplantation is the only viable treatment for patients with end-stage organ failure, yet India faces a significant organ donor shortage, with a donation rate of 0.26 per million, compared to 26 per million in the U.S. and 36.5 per million in Croatia.^[4] In addition, organ donation following brainstem death is infrequent in India. The Transplantation of Human Organs Act (1994) defines brainstem death as 'the stage at which all functions of the brainstem have permanently and irreversibly ceased'. However, the vital organs such as heart, lungs, liver, pancreas and kidneys can be kept viable for few days if supported by artificial or mechanical support. It is during this time; the family members can humanly opt for donating the vital organs of brainstem dead person to an end stage patient who is waiting for a second chance at life.^[6]

Knowledge and attitude of healthcare professionals towards organ donation play a major role in promoting the concept among general population and as future doctors, medical students should have adequate awareness regarding this important issue in our society that affects millions of lives.^[2,5] The best way to impart this knowledge is through doctors. First-year medical students are at the beginning of their medical journey and are in the process of forming foundational attitudes and beliefs. Their education at this stage sets the tone for their approach to healthcare topics, including organ donation, for the rest of their careers. Unlike senior medical students who may already be

influenced by clinical exposure and external opinions, first-year students typically enter medical school with limited prior knowledge or preconceptions about organ donation. This makes them an ideal group for assessing baseline knowledge and attitudes. With this aim the present study is conducted to assess the knowledge and attitude of organ donation among first year undergraduate students.

Method:

A cross sectional study was conducted in government medical college, Miraj from march to may, 2024. For Sample selection, the study population were first year MBBS students enrolled at government medical college, Miraj. Both male and female students were considered for the study. First-year MBBS students enrolled in Government Medical College, Miraj were included. Students who provided informed consent for participation and who were available during the data collection period (March to May 2024) were included.

Students who were absent during the data collection period and those who did not provide informed consent for participation were excluded. Students who submitted incomplete responses to the questionnaire were excluded.

The study used convenience sampling as its sampling technique. All 200 first-year MBBS students at the institution were approached for participation. Out of the total population, 183 students provided complete responses and were included in the study. Data collection was conducted using a semi-structured questionnaire administered through Google Forms, ensuring ease of access and confidentiality.

Ethical clearance was obtained from institutional ethical committee. Ethical guidelines were followed and participants were recruited after getting informed consent. Data entered in MS Excel and analyzed.

RESULTS:

Table 1: Demographic Characteristics Of Study Population

Demographic characteristics	Respondents	Percentage
Age (years).	18 -20	139
	21-22	40
	>23	04
Sex	Male	104
	Female	79
Place of residence	Rural	64
	Urban	119
Type of Family	Nuclear	20
	Joint	163

The table 1 shows demographic details of 183 participants. 139 (75%)

study subject belongs to 18 to 20 years of age groups, 40 (21%) in 21 to 22 and only 4 (02%) belongs to above 23 years of age groups. 104 (56%) were males while 79 (43%) were females. 119 (65%) were from urban area and 64 (35%) were from rural place. 163 (89%) and 20 (11%) participants belonged to joint and nuclear families respectively.

Table 2: Assessment Of Knowledge About Organ Donation Amongst Study Population

Question	No. of Respondents	Percent age
When can you do organ donation?		
Live	55	30.0
After Death	101	55.0
Brain death	27	15.0
Have you heard of organ donation card		
Yes	75	40.9
No	108	59.1
Can people suffering from chronic illness like AIDS, cancer donate their organs?		
Yes	05	02.7
No	178	97.3
Can a living person donate organs?		
Yes	181	98.9
No	02	01.1
When can we register as donor		
Above 18 years	160	87.4
No Age Limit	23	12.6
Where can we register as donor?		
NOTTO	41	22.4
Online Hospital register	02	01.1
Medical college	02	01.1
All of the above	138	75.4
Importance of organ registry		
Correct answer	24	13.1
Incorrect answer	159	86.9
Who should we contact for organ donation		
NGO	68	37.2
Medical College	97	054
Nearby doctor	14	07.7
All of the above	02	01.1
Will my family have to pay for organ donation		
Yes	21	11.4
No	162	88.6
Within How many hours eyes can be donated		
1-6hrs	112	61.2
6-8hrs	57	31.1
8-12hrs	14	07.7
Within How many hours body can be donated		
1-6hrs	91	49.7
8-12hrs	92	50.3
Do you know someone who has donated organs?		
Yes	162	33.8
No	12	66.2
Do you know someone who has received organs		
Yes	07	04
No	180	96

The table 2 shows, 55(30%) students were aware of live organ donation and 27(15%) were aware of organ donation following Brain Death. 75(40.9%) students knew about organ donation card. 178(97.3) students knew people suffering from chronic illness like cancer, AIDS etc. can't donate organs. 138(75.4%) students knew where we can register for organ donation. Only 23(12.6%) students had knowledge there is no age limit for organ donation and only 24(13.1%) students knew the importance of organ registry while 162(88.6%) students did know their family do not have to pay for organ donation.

Only 57(31.1%) participants knew eyes can be donated within 6-8 hours and 91(49.7%) students knew body can be donated within 6 hours. 62(33.8%) respondents knew who has donated organ and 7(04%) participants knew who has received organs.

Table 3 depicts that, 156(85.2 %) study participants knew appropriate meaning about brain death, 163(89%) students knew how brain death

is declared, 167(91.2%) students knew a committee of doctors comprising of neurophysician, neurosurgeon and general physician is required to declare Brain death. 153(83.6%) said doctors explain to family about Brain Death, whereas in the hospital, outside the ICU or in a separate room the hospital counsellor speaks to the family about brain death and clarifies their doubts.

Table 3: Assessment Of Knowledge Towards Brain Death (N=183)

Questions	Respondents	Percentage
Do you know the meaning of brain death		
Yes	156	85.2
No	27	14.8
When do we declare Brain Death		
Correct response	163	089
Incorrect response	20	011
Which doctors are required for Brain Death declaration		
Any doctor	14	07.7
Committee	167	91.2
Others	02	01.1
Who explains to family about Brain Death		
Doctor	153	83.6
Counsellors	28	15.3
Nurses	02	01.1

Table 4: Attitude Wise Distribution About Organ Donation In Study Subjects (n=183)

Attitude in study subject	Response	Percentage
Organs donated in case of live donor		
Kidney	146	79.7
Liver	75	40.9
Bone Marrow	45	24.5
Skin	32	17.4
Eye	28	15.3
lung	04	02.1
No idea	06	03.2
Organs donated in case of brain death donor		
Heart	70	38.2
Lungs	11	06
Liver	47	25.6
Brain	11	06
Eyes	51	27.8
Skin	47	25.6
Bones	02	01.1
No idea	06	03.3
Would you like to donate your organ		
Yes	98	53.5
No	85	46.5
If you need organ, who will be your donor?		
First degree relatives	138	75.4
Close friend	02	01
Organ donor	32	17.5
none	11	06.1
Have you told anyone about organ donation registration		
Yes	18	09.8
No	165	90.2
Would you like to donate your body		
Yes	73	40
No	110	60

Table 4 shows, Knowledge about organs donated in case of live donor included kidney 146(79.7 %), followed by liver 70(40.9%), bone marrow 45(24.5%), skin 32(17.4%) and rest others.

Knowledge about organs donated in case of brain death donor majorly responded heart 70(38.2%), liver 47(25.6%), eyes 51 (27.8) and skin 47(25.6%).

98(53.5%) participants were willing to donate organs. 138(75.4%) responded about if they need organ, their first-degree relatives i.e. parents, sibling and children, considered to be their donor. About 18(09.8%) students have made people aware about organ donations registration. 73(40%) students are willing to donate their body after

death still 110(60%) students do not want to donate their body after death.

DISCUSSION:

Organ transplantation is a life-saving medical procedure that relies on the generous act of organ donation. As medical professionals play a pivotal role in the organ donation process, understanding the knowledge and attitude of medical students toward organ donation becomes crucial.

This limited knowledge of medical students about organ donation is most likely a result of deficient teaching on the subject of organ donation in the first undergraduate medical curriculum.

Rapid advancement in research pertaining to transplantation of organs and tissues have however, failed to meet the increasing demand for donor organs resulting in severe shortage of donors.^[9]

Similarly, Bharambe VK^[7] revealed that 24.4% of the study subjects were aware of live organ donation and 14.6% were aware of organ donation following Brain Death.

In our study, 88.6% responded their family do not have to pay for organ donation, similar study by Adithyan et al^[10] done in medical students 61.3% students said family do not have to pay any charges and 31.4% did not know about it.

In our study 31.1 % and 49.7% participants knew correctly eye and body can be donated within 6 hours after death.

In a similar study done by Ali et al^[11] 43.7% students knew the time duration in which organ remains viable for transplant.

In our Study, awareness of donation of kidney and liver was highest about 79.7% and 40.9% respectively in case of live donor. Similar findings were seen in Shah R et al^[3] study about 79.5 % kidney and 57% liver.

In our study, awareness of organ donated in case of Brain dead donors included heart 38.2 %, lung 6%, eyes 27.8%, liver and skin about 25.6%, respectively.

In a similar study by Sindhu et al^[12], 60% knew lungs and heart valves can be donated after death.

In similar study by Alex P et al^[13] knowledge of kidney donation was highest (94%) followed by heart (82%), liver (78%), cornea (59%), lung (57%) and skin (34%).

Whereas in our study 98(53.5%) participants were willing to donate their organs Study done by Ali et al^[11] in medical students revealed that 44.9% participants were willing to donate their organs irrespective of circumstances respectively. Shireen et al^[4] in their study a large number of participants about 87.5% were willing to donate their organs, this large difference was because all years undergraduate students were included, their knowledge was more compared to recently admitted students of first year.

In a study done by H Sharma^[14] in Dental students, 65.5% students were willing for organ donation. In a study done by Ramadurg et al^[15] in medical students, 61.40% students had expressed their willingness to donate their organs.

As a first step, the medical curriculum should increase health care worker's awareness of the organ shortage problem and how it can be effectively addressed.^[16]

Organ donation is a community service, which saves lives, improves quality of life and has cost benefits for society. In recent years, the cost of transplantation is one of the most effective lifesaving procedures.^[10]

CONCLUSION

Exploring the knowledge and attitude of medical students toward organ donation is a vital step toward improving organ donation rates and patient care. By identifying their informational needs and cultivating positive attitudes, medical schools and healthcare institutions can contribute to a more informed and supportive healthcare community that advocates for and participates in organ

donation initiatives.

During our survey we gave them information about registration of organ donation, we motivated them to register and asked them to register. If they are motivated, they in turn can create awareness and motivate the general population and promote organ donation in the community, which is the need of the day.

Limitations

The study population represents only a small fraction of the medical community. So, the results available from this cannot be generalized for the whole community.

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Conflict Of Interest: None declared

Ethical Approval: The study was approved by the Institutional ethics Committee, IEC vide no. GMCH/IEC/C/70/2024.

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