

Knowledge and Beliefs about Organ Donation among Under-Graduate Medical Students at a Teaching Institute of New Delhi

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Abstract:

Introduction: Organ shortage is a global issue. As future doctors, role of medical students becomes important in promoting organ donation. **Objectives:** 1. To study the knowledge of medical students regarding organ donation 2. To study the beliefs of medical students regarding various aspects of organ donation 3. To study their perceptions about the need to have a training on this topic. **Method:** The study design was cross sectional involving undergraduate medical students from a teaching institute of Delhi. Sample size of 296 was calculated and 60 students were randomly recruited from each year by using random number tables. Data collection was done by using a pre designed pre tested semi structured questionnaire. Data entry and analysis was done by using Microsoft Excel and SPSS version 20 software. **Results:** A large proportion of 95.3% (286) had heard of 'organ donation' but correct knowledge regarding ideal age for donation and brain dead people for donation was very poor. It was significantly poorer in males and those studying in earlier years of graduation ($p < 0.05$). A very small proportion (14.7%) had actually pledged for donation. A large proportion of students were in favour of providing health insurance and financial compensation for live organ donors. Only 27% perceived to have adequate knowledge and 58% felt confident in counselling potential donors for organ donation. Females and senior students were significantly better in this aspect. ($p < 0.05$). Majority of them (90.3%) felt the need for training. **Conclusion:** Knowledge and some of the beliefs of medical students regarding organ donation were not found to be appropriate and training about it was desired by them.


Keywords: Beliefs, Knowledge, Medical Students, Organ Donation, Training

Introduction:

Organ shortage is a global issue and there has been a huge gap between the demand and supply of organs for transplantation. Many countries are now focusing on increasing the number of organ donors as a part of their health policy agenda so that this shortage can be addressed. The magnitude of this

problem is huge in India. It is estimated that in India, every year nearly 5 lakh people die because of the non-availability of organs. This shows the urgent need to focus on this issue.^[1]

As future doctors, role of medical students becomes important in promoting organ donation. But it is seen that many of them lack the basic

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knowledge about the subject and are influenced by their personal attitudes and other biases held by the general public. Inadequate knowledge and competence to identify possible donors and counsel them for donation are important contributing factors which may be responsible for shortage of available organs. Previous research has shown various factors which prevent potential donors in becoming actual donors. Some of these include lack of awareness, religious and cultural beliefs and other misconceptions. The responsible factors should be found out and addressed in medical students so that they are in a better position to take a lead and motivate others for the same.^[2-4]

The role of undergraduate medical curriculum is important in providing students with basic knowledge about procedures and ethical issues concerning organ transplantation and donation, which will help them in becoming informed advocates of organ donation.^[5,6]

Objectives:

1. To study the knowledge of medical students regarding organ donation
2. To study the beliefs of medical students regarding various aspects of organ donation
3. To study their perceptions about the need to have a training on this topic.

Method:

The study design was cross sectional and study subjects included undergraduate medical students from a tertiary care teaching institute of Delhi.

For sample size calculation, estimated prevalence of knowledge about the concept of organ donation was taken as 74% from a similar previously done study on medical students.^[7] Sample size was calculated by using the formula for single population proportion by assuming 95% confidence interval, sample error of 5% and prevalence of 74%. Sample size came out to be 296. It was decided to take equal number of students from each year (60/year) so that

there is a proper representation from all the batches. The participants were randomly selected from each year by using random number tables.

Data collection was done by using a pre designed pre tested semi structured questionnaire containing questions about socio demographic characteristics of study subjects, various aspects of knowledge regarding organ donation and their beliefs regarding the same. Questions were also asked about their opinion about the need for training about this topic. Data entry and analysis was done by using Microsoft Excel and SPSS version 20 software. Quantitative data were expressed in means and standard deviations. For qualitative data, frequency and proportions were calculated. To test the association between different variables, chi square test was used. A p value of <0.05 was considered significant.

Ethical considerations

Permission to conduct the study was obtained from Institutional Ethics Committee. The participants were explained about the purpose of study at the time of enrolment and their written informed consent to participate was taken. All the data were kept anonymous and confidential.

Results:

The authors received a 100% response rate and all 300 participants were included in the final data analysis. The mean age of the participants was 19.3 years \pm 1.39 (range 17 to 24). The proportion of males was 63.7% and 60 (20%) participants each were enrolled from all the five years of MBBS.

Table 1 shows the knowledge of respondents about organ donation. Seven questions about knowledge were asked. A large proportion of 95.3% (286) had heard of 'organ donation' and out of those, 87.1% knew the actual meaning of it. A significantly large proportions of students from later years of course understood the meaning of the term as compared to those in earlier years ($p < 0.05$). Among all, 81.7% correctly knew the time duration for

Table 1: Knowledge about organ donation according to gender and year of study

Correct knowledge about organ donation	Total (%) (n=286)	Gender			Year of MBBS					
		Male (n=183)	Female (n=103)	p value	I st year (n=58)	II nd year (n=58)	III rd year (n=56)	IV th year (n=56)	V th year (n=58)	p value
Know the meaning of "organ donation"	249 (87.1)	164 (89.6)	85 (82.5)	0.145	42 (72.4)	48 (82.8)	50 (89.3)	50 (89.3)	54 (93.1)	0.001
Time duration for viability of organs	245 (85.7)	152 (83.1)	93 (90.3)	0.216	47 (81.0)	53 (91.4)	45 (80.3)	49 (87.5)	51 (87.9)	0.394
Ideal age for organ donation	80 (28.0)	41 (22.4)	39 (37.9)	0.007	09 (15.5)	14 (24.1)	14 (25.0)	20 (35.7)	23 (39.7)	0.034
Brain dead person is ideal for organ donation	110 (38.5%)	59 (32.2)	51 (49.5)	0.005	14 (24.1)	20 (34.5)	21 (37.5)	26 (46.4)	28 (48.3)	0.068
Authority to give consent for organ donation	194 (67.8)	123 (67.2)	71 (68.9)	0.824	32 (55.2)	38 (65.5)	41 (73.2)	40 (71.4)	43 (74.1)	0.127
Aware of Transplantation of Human organs Act	90 (31.5)	57 (31.1)	33 (32.0)	0.930	09 (15.5)	17 (29.3)	18 (32.1)	22 (39.3)	24 (41.4)	0.018

viability of organs. A slightly more than one fourth (28%) and one third (38.5%) participants correctly knew that people of all age groups and those who are brain dead are ideal for organ donation respectively. This knowledge was significantly higher in females ($p < 0.05$). Almost two third (67.8%) subjects knew that only donor is the authority to give consent for organ donation while only 31.5% were aware of Transplantation of Human organs Act, the level of awareness being significantly higher in those studying in later years of MBBS.

Respondents were also asked regarding their beliefs about organ donation. Almost 40% (122) felt that live donors should be compensated. A significantly larger proportion of students from later years of MBBS were in favour of compensation as compared to those in earlier years ($p > 0.05$). Out of

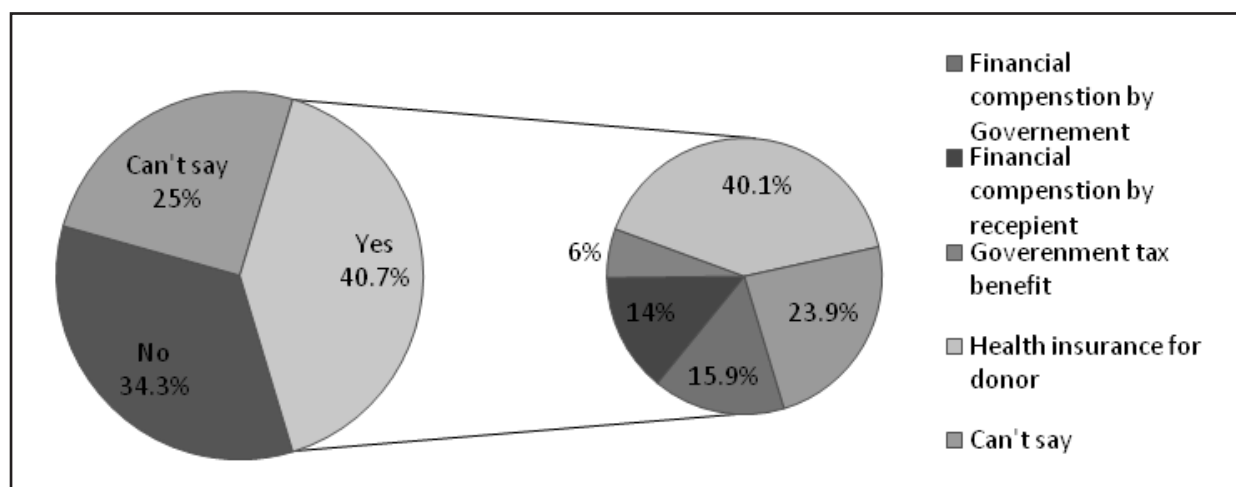
these 122, 40% were in favour of provision of health insurance to the donor. Almost one third believed that donor should be financially compensated, by Government (14%) or by recipient (15.9%). A small proportion (6%) believed that donors should get some tax benefit from the Government. (Figure 1)

A large majority (89.7%) believed that organ donation is a noble act which is useful for society. Only 16% believed that religion is against organ donation. Although a majority of them (88.3%) were in favour of organ donation but only 14.7% had actually pledged for it. In all these aspects, the responses from female students were more favourable than males and this difference was found to be statistically significant ($p < 0.05$). No significant difference regarding these was observed among students from different years of study.

Table 2: Belief and practices of respondents about organ donation

Belief / Practices	Total (%) (n=300)	Gender			Year of MBBS					
		Male (n=191)	Female (n=109)	p value	I st year (n=60)	II nd year (n=60)	III rd year (n=60)	IV th year (n=60)	V th year (n=60)	p value
Donor should be compensated	122 (40.7)	82 (42.9)	40 (36.7)	0.415	17 (28.3)	18 (30.0)	25 (41.7)	25 (41.7)	37 (61.7)	0.007
Organ donation is noble act and useful for society	269 (89.7)	166 (86.9)	103 (94.5)	0.038	54 (90.0)	50 (83.3)	56 (93.3)	55 (91.7)	54 (90.0)	0.781
Religion is against organ donation	48 (16.0)	37 (19.4)	11 (10.1)	0.034	08 (13.3)	09 (15.0)	11 (18.3)	11 (18.3)	09 (15.0)	0.452
In favour of organ donation	265 (88.3)	168 (87.9)	103 (94.5)	0.012	51 (85.0)	57 (95.0)	50 (83.3)	56 (93.3)	51 (85.0)	0.249
Taken pledge for organ donation	44 (14.7)	18 (9.4)	26 (23.9)	0.001	13 (21.7)	09 (15.0)	09 (15.0)	07 (11.7)	06 (10.0)	0.429

Figure 1: Respondents' opinion about compensation for live organ donors and type of compensation



Only 27% respondents opined that they have adequate knowledge to educate people about organ donation while 58% felt confident in counselling people about this issue. Although there was no significant difference in knowledge among both genders but a significantly larger proportion of females reported to have confidence in counselling

patients ($p < 0.05$). Students from later years of MBBS were better than those from earlier years with regard to both these aspects ($p < 0.05$). A large proportion (70%) perceived that MBBS curriculum is an important source of information about organ donation with a significantly better response from females ($p < 0.05$). A majority of them (90.3%) felt

Table 3: Opinion of respondents on issues related to training on organ donation

Opinion	Total (%) (n=300)	Gender			Year of MBBS					
		Male (n=191)	Female (n=109)	p value	I st year (n=60)	II nd year (n=60)	III rd year (n=60)	IV th year (n=60)	V th year (n=60)	p value
Have adequate knowledge to educate others about organ donation	81 (27.0)	53 (27.7)	28 (25.7)	>0.05	09 (15.0)	13 (21.7)	17 (28.3)	19 (31.7)	23 (38.3)	<0.05
Have confidence in counselling patients for organ donation	174 (58.0%)	99 (51.8)	75 (68.8)	<0.05	25 (41.7)	28 (46.7)	32 (53.3)	39 (65.0)	50 (83.3)	<0.05
Perceive MBBS curriculum as an important source of information about organ donation	210 (70.0)	117 (61.3)	83 (76.1)	<0.05	39 (65.0)	43 (71.7)	41 (68.3)	41 (68.3)	46 (76.7)	>0.05
Feel the need for training on organ donation	271 (90.3)	175 (91.6)	96 (88.1)	>0.05	56 (93.3)	53 (88.3)	55 (91.7)	53 (88.3)	54 (90.0)	>0.05

that they need training on this topic. There was no statistically significant difference among both genders and different years of study. (Table 3)

Discussion:

The present study shows that the overall knowledge about organ donation was poor among medical students. Although 95.3% had heard of 'organ donation' but out of these, 83% knew the actual meaning of it. A study by Dibaba FK on medical students in Ethiopia also shows that 97% had heard the term but 74% knew the meaning of organ donation.^[7] In this study, only 36.7% knew that brain dead persons are ideal for organ donation. This proportion was higher in similar studies on medical students in India where it was found to be between 50% to 92%.^[8,9] Gupta RK et al have shown that 97% participants knew that donor has the authority to

give consent for organ donation.^[4] Knowledge regarding this aspect was found to be poorer in the present study (64.7%). The proportion of students who were aware of Transplantation of Human organs Act was only 30% as compared to 42% reported by similar study done by Jose A et al and 81% reported by Gupta RK et al.^[4,8] It was found that in certain aspects, knowledge was significantly higher in females and those studying in later years of medical course. These findings are in accordance with other similar studies.^[2,4,10-12]

In this study, 40% respondents were in favour of compensation for the donor, which mainly includes tax benefits and financial benefit from Government or recipient. This shows that they believed that donors should be acknowledged for their kind act. Jose A et al also reported that 46% students were in

favour of monetary compensation for the organ donor.^[8] A large proportion of subjects (84%) believed that religion is in favour of organ donation. These results are similar to other studies.^[7] Although a majority of them (88.3%) were in support of organ donation but only 14.7% had actually pledged for it. This reflects a major gap in attitude and practices of study subjects. Other authors have also reported that most of subjects support donation but a small proportion have actually pledged.^[2-6,12-15] Studies conducted by Alex P et al as well as by Darlington D et al have shown that female students were significantly more supportive for organ donation.^[10,11] This is in accordance with findings of present study. Another study from Ethiopian medical students shows a more positive attitude of males towards organ donation.^[7] Results of a study by Demirag S shows that students from senior years of graduation were more in favour of organ donation.^[15]

A very large proportion of study subjects (73%) felt that they don't have adequate knowledge to educate people while 42% were not confident in counselling people about organ donation. Chung CKY et al have reported that almost 30% students felt confidence in counselling about this topic and students from senior batches were more confident.^[2] Other authors have reported that almost 80% students felt comfortable to talk to others about organ donation.^[6,7] In this study, 70% study subjects perceived medical curriculum as an important source of information about organ donation. Other studies have shown that only 16% students considered the adequacy of medical curriculum in educating about this issue.^[2] A majority of study subjects from all the years and both sexes felt the need for training. Similar finding have been shown by many other authors.^[2,4,6,9,12,16] Some other studies have also reported that students feel that formal education about organ donation should be a part of medical curriculum.^[5,6] Thus, there should be more emphasis on this aspect in medical curriculum which can sensitize medical students who will become future doctors. Research has shown that exposure to an elective course on organ donation among medical students resulted in a favourable change in their knowledge and attitude

about the same.^[17,18] Hence, a similar sensitization during MBBS course may improve awareness, attitudes and competence of medical students which is well desired and felt by students also.

Conclusion:

A large proportion of 95.3% (286) had heard of 'organ donation' but out of those, 87.1% knew the actual meaning of it. correct knowledge regarding ideal age for donation and ideal candidates for organ donation was very poor. It was significantly poorer in males and those studying in earlier years of graduation ($p < 0.05$). A majority of subjects believed that organ donation is a noble act and were in favour of it, but only a very small proportion (14.7%) had actually pledged for it. A large proportion of students were in favour of providing health insurance and financial compensation for live organ donors. Only a small proportion (27%) perceived to have adequate knowledge and only 58% felt confident in counselling potential donors for organ donation. Females and senior students were significantly better in this aspect. ($p < 0.05$). Majority of them (90.3%) felt the need for training.

Declaration:

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Conflict of Interest: Nil

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