
Original article

Knowledge and Attitude Regarding Organ Donation among Medical Students

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Abstract

Introduction. All over the world people on organ transplant waiting lists die due to shortage of donor organs. The success of organ donation program needs education of the population regarding organ donation for which healthcare professionals are most suitable. The present study was taken up to assess the knowledge and attitude of 1st, 2nd and 3rd year medical students about organ donation.

Methods. A specially designed self-administered questionnaire was distributed amongst all willing 1st, 2nd and 3rd year medical students at our Medical College and later analyzed statistically.

Results. A total of 157, 145 and 92 students from each year of medical education respectively gave their consent for participation in the study. Awareness regarding organ donation was found to be 98.7-100%, 69.4% claimed television as their source of information regarding organ donation and 46.7% stated that it is possible for patient to recover from brain death. The awareness regarding eye, liver, heart and kidney donations was found to be 92.4%, 87%, 87% and 97.8%, respectively. 87% of medical students were aware of need for legal supervision, and awareness regarding the existing laws was found to be 57.6%.

Conclusion. Medical students had a high level of awareness and a positive attitude towards organ donation. However, knowledge regarding "brain-death", organs and tissues donated, legislation and ethical issues was poor. A teaching intervention designed to specifically address these issues could help increase the confidence of the health-care professionals and may result finally in increased organ procurement rates.

Keywords: brain death, doctors, health-care professionals, organ donation

Introduction

Organ transplantation has been one of the greatest advances of modern science that has resulted in many pa-

tients getting a new lease of life. It is the most preferred treatment modality for end-stage organ disease and organ failures and is developing into a major treatment protocol all over the world [1]. However, implementation of organ donation program in India has been slow and there is an inadequate supply of donated organs.

While organs such as "part of liver" or "a kidney" can be donated by healthy living individuals, almost 30 or more organs can be donated by a person who is "brain dead". Fewer organs can be donated following cardiac death. There is awareness amongst the general public regarding eye and kidney donations. However, awareness regarding donation of liver, heart and many other transplantable organs and tissues is very low. While there is awareness regarding "live" organ donations and organ donation following "cardiac death", awareness regarding organ donation after "brain death" and its legality in India is very poor. Wig *et al.* stated that there is a need for education of people regarding various aspects of brain death and its immense importance for organ donation [2].

All over the world people on transplant waiting lists die due to shortage of donor organs. The success of organ donation program needs education of the population regarding organ donation. Healthcare professionals act as the critical link in the organ procurement process because they are the first individuals to establish relationship with the potential donors' family. Education of healthcare professionals in various aspects of organ donation is therefore a must as they in turn can propagate this knowledge at the community level [3].

Taimur *et al.* in 2009 carried out a knowledge, attitudes and practices survey on organ donation among urban population and stated that doctors can be used as efficient sources of information, to generate a favorable attitude towards organ donation amongst the population [4]. The medical students are the future doctors, and will one day take up the role of promoting organ donation. The present study was taken up to assess the knowledge and attitude of these future doctors i.e. 1st, 2nd and 3rd year medical students about organ donations i.e. at different stages in their undergraduate career.

Materials and methods

The study was undertaken to ascertain the knowledge and attitude of medical students in Pune about organ donation. It was conducted after approval of the Ethics Review Committee during 2013-2015. All willing 1st, 2nd and 3rd year medical students at our Medical College were involved in the study. The methodology was explained to them in detail. The respondents were assured that their confidentiality would be maintained and ethical principles would be followed. The inclusion criteria for the study population were students enrolled in 1st, 2nd and 3rd year of medical education and excluded were students who were not present or refused to give consent. Only those consenting to participate were involved in the study. A specially designed self-administered questionnaire covering demographic data, knowledge and attitude of medical students was prepared by the research team. It was a pilot testing of medical students who were given a time period of 15 minutes for completion of the questionnaire wherein the respondents would indicate their responses to the questions using the categories provided in the questionnaire in privacy without any discussion with peers. The questionnaire was thus tested for clarity of the questions as well as time period required for response. Suitable modifications were made in the questionnaire and time span provided. The first four items in the final questionnaire collected

demographic data, the item 5-16 focused on the knowledge and item 17-20 assessed the attitude of the medical students towards organ donation. Separate space was provided in the questionnaire for any comments by the respondents.

This final questionnaire was administered to the participating undergraduate medical students in paper format. All those students who filled in the questionnaire for the pilot testing were included in the study. The attitude of undergraduate medical students towards organ donation was studied by a 20-item questionnaire covering issues such as knowledge of possible donors, concept of brain death, the organs that can be donated, willingness to donate, religious beliefs and legislation related to organ donation and many others. The questions collected demographic data, assessed the knowledge as well as attitude of the medical students towards organ donation. The data collected was analyzed using descriptive statistics on Microsoft Excel.

Results

The demographic data of the respondents from 1st, 2nd and 3rd MBBS was as shown in Table 1. 90% of the respondents in all 3 years were followers of Hinduism, 3-5% followers of Christianity and Islam respectively and about 4% were followers of other religions. All the participating medical students were

Table 1. Demographic data

	1 st MBBS	2 nd MBBS	3 rd MBBS
Age	17-22	17-23	19-22
Mean age \pm SD	18.60 \pm 0.77	19.72 \pm 0.88	20.39 \pm 0.63
Number of respondents (n)	157	145	92
Number of female respondents	92(58.5%)	105(72.4%)	53(57.6%)
Number of male respondents	65(41.4%)	40(27.5%)	39(42.3%)

Table 2. Knowledge of organ donation and different categories of donors with specific knowledge of brain death

	Item studied	1 st MBBS	2 nd MBBS	3 rd MBBS
1	Awareness of organ donation	155(98.7%)	142(97.9%)	92(100.0%)
2	Awareness of need for donation of organs?	150(95.5%)	138(95.2%)	90(97.8%)
3	Source of awareness of organ donation:			
	Newspaper	87(55.4%)	77(53.1%)	47(51.1%)
	Television	109(69.4%)	91(62.8%)	53(57.6%)
	Internet	91(58.0%)	79(54.5%)	47(51.1%)
	Family members	42(26.8%)	19(13.1%)	8(8.7%)
	Discussed at Medical College	29(18.5%)	40(27.6%)	38(41.3%)
4	Awareness of possible donors			
	a) Living healthy person	78(49.7%)	75(51.7%)	41(44.6%)
	b) "Brain dead" person	52(33.1%)	63(43.4%)	45(48.9%)
	c) Naturally dead person	63(41.4%)	64(44.1%)	32(34.8%)
	d) Don't know	11(7.0%)	7(4.8%)	3(3.3%)
5	Awareness about aspects of brain death			
	a) Irreversible	36(22.9%)	36(24.8%)	24(26.1%)
	b) Loss of brain functioning	37(23.6%)	22(15.2%)	14(15.2%)
	c) Patient can recover from it	64(40.8%)	26(17.9%)	43(46.7%)
	d) Body may feel warm due to patient being on ventilator	18(11.5%)	22(15.2%)	19(20.7%)

Table 3. Knowledge about the different organs donated and contraindications to organ donation

Item studied	1 st MBBS	2 nd MBBS	3 rd MBBS
1 <i>Knowledge about when organ donation cannot be done:</i>			
a) If donor is HIV, Hepatitis B or Hepatitis C positive	141(89.8%)	125(86.2%)	83(90.2%)
b) If donor has active cancer	106(67.5%)	88(60.7%)	55(59.8%)
c) Organ to be donated is badly injured	115(73.2%)	97(66.9%)	52(56.5%)
d) There is an active legal case related to death of the donor	30(19.1%)	42(29.0%)	23(25.0%)
2 <i>Knowledge of organs that are donated</i>			
a) Eye tissue	132(84.1%)	130(89.7%)	85(92.4%)
b) Lungs	37(23.6%)	49(33.8%)	32(34.8%)
c) Liver	114(72.6%)	116(80.0%)	80(87.0%)
d) Intestine	16(10.2%)	24(16.6%)	10(10.9%)
e) Ligament	10(6.4%)	12(8.3%)	12(13.0%)
f) Heart	126(80.3%)	115(79.3%)	80(87.0%)
g) Kidney	152(96.8%)	143(98.6%)	90(97.8%)
h) Skin	63(40.1%)	73(50.3%)	38(41.3%)
i) Bone	29(18.5%)	45(31.0%)	15(16.3%)
j) Pancreas	19(12.1%)	23(15.9%)	16(17.4%)
3 <i>Knowledge that a single donor can donate to multiple recipients</i>			
a) True	111(70.7%)	123(84.8%)	77(83.7%)
b) False	75(28.7%)	61(10.3%)	34(13.0%)

Table 4. Knowledge of legalities related to organ donation

Item studied	1 st MBBS	2 nd MBBS	3 rd MBBS
1 <i>Is there need for laws to govern the process of organ donation?</i>			
Yes	114(72.6%)	129(89.0%)	80(87.0%)
No	12(7.6%)	9(6.2%)	5(5.4%)
Don't know	31(19.7%)	8(4.1%)	7(7.6%)
2 <i>Are there laws regarding organ donation activity presently?</i>			
Yes	73(46.5%)	80(55.2%)	53(57.6%)
No	8(5.1%)	6(4.1%)	8(8.7%)
Don't know	70(44.6%)	54(37.2%)	31(33.7%)
3 <i>Knowledge whether the family of a deceased person can pledge his organs even if the person had not signed a donor card during his lifetime</i>			
a) True	71(45.2%)	79(54.5%)	53(57.6%)
b) False	75(47.8%)	61(42.1%)	34(37.0%)
c) Don't know	12(7.6%)	6(4.1%)	5(5.4%)

from higher socio-economic strata. The results have been grouped into two subgroups which are knowledge (Table 2, 3, 4) and attitude (Table 5). The knowledge of the respondents regarding organ donation, organ donors and brain death is summarized in Table 2 along with the study of sources from where the knowledge of organ donation was obtained. Table 3 depicts the level of knowledge of respondents about the different organs that can be donated, the related contraindications and ability of one donor to donate to multiple recipients. Table 4 shows the respondent's knowledge of legalities of organ donation and whether the family of the deceased person could decide to donate organs in case the donor himself had not signed the donor card. The attitude of the respondents towards organ donation and aspects like willingness to be an organ donor and to motivate others for organ donation, who they were willing to donate to, and reasons for opting against

organ donation in case of those unwilling to donate are depicted in Table 5.

Awareness of organ donation was seen to increase from 98.7% to 100% from 1st MBBS to 3rd MBBS years of education. Television was found to be the most effective source of awareness of organ donation for respondents in all 3 years. Internet and newspapers were also found to be effective sources. Even in the 3rd year of medical education, higher percentage of respondents got information about organ donation from television, internet and newspapers i.e 57.6%, 51.1% and 51.1%, respectively compared to education by discussion at the Medical College itself (41.3%).

Knowledge regarding possible organ donors ranged between 33.1% to 49.7%. 46.7% of the final year medical students believed that a patient can recover from "brain death".

Table 5. Attitude towards organ donation, willingness to donate organs and to promote organ donation and reasons for unwillingness to be an Organ donor

	Item studied	1 st MBBS	2 nd MBBS	3 rd MBBS
1	<i>Would you like to be an organ donor?</i>			
	Yes	125(79.6%)	100(69.0%)	65(70.7%)
	No	21(13.4%)	12(8.3%)	11(12.0%)
	Don't know	27(17.2%)	34(23.4%)	14(15.2%)
2	<i>Whom would you like to donate to?</i>			
	Family member	128(81.5%)	113(77.9%)	70(76.1%)
	Friend	106(67.5%)	97(66.9%)	56(60.9%)
	Unknown individual	103(65.6%)	98(67.6%)	52(56.5%)
3	<i>What are your reasons for opting against organ donation?</i>			
	It is against your religious beliefs	2(1.3%)	3(2.1%)	
	I do not believe in organ donation	5(3.2%)	2(1.4%)	
	I do not wish to go through the disfigurement involved	4(2.5%)	5(3.4%)	4(4.3%)
	I do not believe in the ability of the system to support the donated organs till they reach a suitable donor	14(8.9%)	11(7.6%)	20(21.7%)
	I live very far away from closest center of organ donation	2(1.3%)	1(0.7%)	1(1.1%)
3	<i>Do you feel that organ donation is an individual's social commitment?</i>			
	Yes	118(75.2%)	90(62.1%)	60(65.2%)
	No	31(19.7%)	45(31.0%)	28(30.4%)
4	<i>Would you like to be part of Organ Donation Group in our city and motivate others for organ donation?</i>			
	Yes	133(84.7%)	115(79.3%)	74(80.4%)
	No	21(13.4%)	21(14.5%)	15(16.3%)

Discussion

Shortage of organs due to poor rate of organ donations is a major limiting factor in transplant programmes all over the world. The waiting list for transplantation is therefore very long in many countries around the world and many patients die while on the waiting list due to lack of availability of donor organs [5].

This is especially true in India where the organ donation rate is about 0.16 donor per million population whereas in some countries such as Spain the rate is much higher i.e about 35 donors per million population [6]. A major reason for lack of availability of organs for transplant is refusal by the families of the potential donor, when approached to donate. Ageing population and increasing incidence of type 2 diabetes in India will further reduce the donor pool [7]. A favorable attitude of healthcare professionals to organ donation can positively influence the decision of the families of potential donors and hence educating them early in their careers to the need to encourage organ donation is crucial [8]. This study investigated the attitude of medical students towards organ donation. Undergraduate students from all 3 years of medical education participated in this study. While those in 1st year of MBBS (duration-1 year) had just started their medical education, those in 2nd year of MBBS (duration-1.5 years) were undergraduate students with some knowledge of pharmacology, microbiology, pathology and forensic medicine. The 3rd year (duration-2 years) students were the final year medical students in the process of studying medicine, surgery and gynecology and obstetrics.

It was observed that the awareness regarding organ donation was 98.7% in the 1st year increasing to 100% by the 3rd year. This is similar to the findings of 97% and 97.5% reported by Bapat *et al.* and Ali *et al.* in studies carried out at Medical College Hospitals in South India and Karachi, Pakistan, respectively [1,9]. Thus, it appears that medical students have high levels of awareness regarding organ donation.

69.4% of the 1st year students reported television, while 58% and 55.4% reported internet and newspaper as the sources of their knowledge regarding organ donation activity (Table 2). In a study carried out by Bapat *et al.* television, newspaper, radio and magazines were responsible for 61%, 60%, 31% and 51%, respectively of knowledge promotion regarding this issue [1]. The respondents in a similar study carried out by Bilgel *et al.* reported media and medical education as sources of knowledge in 72.1% and 22.7%, respectively [10]. Thus, it appears that television and newspaper are the most effective for knowledge promotion regarding organ donation. In the present study 18.5% of the 1st year students reported "discussion at medical college" as the source of their knowledge, and this percentage increased to 41.3% in case of final year students. Thus, knowledge of organ donation is being enhanced at the Medical College but it did not reach 100% of the students. 44.6% to 51.7% of medical students were aware of live organ donors and 34.8% to 44.1% were aware of organ donation after cardiac death (Table 2). 33.1% of the 1st year students were aware of organ donation following "brain-death". This percentage increased to 48.9% in case of the final year students. The primary sources of donor organs are patients who have been declared as

"brain-dead" i.e. have suffered from an irreversible loss of brain function but are being maintained temporarily on ventilators [11]. In the present study, though there is a rise in percentage of students having knowledge of "brain-death"-related organ donations, 51.1% still remain unaware of the important category of organ donors i.e. the "brain-dead" donor or "deceased organ donor". Furthermore, study of the knowledge regarding "brain death" revealed that 46.7% of the final year students believed that a person can recover from brain death. This is similar to findings reported by Bardell *et al.* in a study conducted in Canada, where 36% of the medical students did not know that "brain-death" is different from coma [12]. Chung *et al.* stated that insufficient knowledge and failure to identify possible donors are important contributing factors responsible for the shortage of available organs [13]. A future healthcare professional, who believes that it is possible for a patient to recover from "brain-death" would never discuss donation of organs with the relatives of the potential donor. Thus, inadequate knowledge of the concept of "brain-death" may lead to inability to identify the patient as a possible donor. Bapat *et al.* and Palanivelu *et al.* also reported a lack of adequate knowledge regarding "deceased organ donors" amongst medical students [1,14]. 3.3% to 7% of the respondents did not know anything about the different categories of possible organ donors.

The awareness regarding eye, liver, heart and kidney donations amongst the final year medical students was found to be 92.4%, 87%, 87% and 97.8%, respectively having consistently increased from the awareness levels reported by the 1st year medical students (Table 3). The awareness reported by the final year medical students regarding donation of other organs and tissues such as lungs, intestines, ligaments, skin, bones and pancreas was found to be in the range between 10.9% to 34.8% with a minimal rise in awareness levels over the years of medical education. These findings are similar to those reported by Ali *et al.* in a study carried out to assess the awareness levels of medical students in Karachi-Pakistan [9]. In our study high levels of awareness were also observed regarding donation of heart, kidneys, liver, cornea, but lower levels of awareness regarding all other organ and tissue donations. Study carried out by Edwin and Raja reported awareness regarding donation of eye to be 88%, of kidney 33% and of liver 27% amongst the study group [15]. This observation is similar to that reported by Annadurai *et al.* who studied the knowledge of college non-medical students regarding organs that can be donated and found that above 80% were aware of eye and kidney donations, and below 15% had knowledge regarding any other organ or tissue donations [16]. Thus, there are high levels of awareness regarding donation of eyes, kidney, heart and liver among medical students, and knowledge regarding donation of other organs and tissues is low. Also, it appears that medical students participating in the present study

are not very much knowledgeable regarding organs that can be donated, compared to the non-medical students. A similar finding was reported by Bardell *et al.* where medical students were not shown to have any more knowledge of organ donation than their non-medical undergraduate counterparts [12].

While 72.6% of the 1st year medical students were aware of the need for legal supervision to govern organ donation activity, this percentage increased to 87% by the final year (Table 4). However, awareness regarding the existing laws related to organ donation was found to be between 46.5% and 57.6%. Only 25% of the final year medical students were aware that organ donation cannot be carried out if there is an active legal case regarding death of the donor. Tontus *et al.* state that probably the most important factor contributing to the shortage of donor organs today is the lack of information regarding the legal and procedural details among health care professionals themselves [17].

The Transplantation of Human Organs Act in India states that grandparents, mother, father, brothers, sisters, son, daughter, and spouse can be live donors without any legal formalities after providing proof of their relationship by genetic testing and/or by legal documents [18]. In case of any other live donor, the recipient and donor must seek special permission from the government appointed authorization committee to prove that the motive of donation is purely altruism or affection for the recipient. In case of "brain-death" if there is no reason to believe that the potential donor did not want to donate his/her organ(s) after his/her death, then a registered medical practitioner should make the patient's relatives aware of the option to authorize the donation of organs or tissues or both.

Many of the potential donors are cases that fall within the medicolegal case category. The act prohibits the recovery of organs in cases where inquest has to be conducted. In such a case the organ donation can be carried out by making a request to the SHO of the area to agree for recovery of organs from the donor. It has to be ensured that, by retrieving organs, the determination of the cause of death is not jeopardized. Dogra *et al.* have discussed certain guidelines to carry out organ recovery in medicolegal cases after observing the procedure prescribed under the law without interfering with the functioning of the investigating agencies, autopsy surgeons, the courts of law and serving the objective of Transplantation of human organs act [19].

Only 57.6% of the final year medical students were aware that close family members of the deceased person can pledge the donor's organs even if he/she died without signing the donor card. As most of the organ donations take place following sudden injury to the donor resulting in "brain-death", it occurs very often that the family members take the decision of organ donation on behalf of the donor. Awareness of this issue and the legalities involved is essential for all health care professionals if

they are to effectively promote organ donation following "brain-death" of patients.

70.7% to 79.6% of medical students were willing to be organ donors themselves. Table 6 illustrates the percentage of medical students willing to donate organs in the present study compared to reports by other authors. In a survey carried out by Tontus *et al.* in Turkey, 85.3% of medical students believed that organ donation is important and honorable for humanity [17]. In the present study 80.4% to 84.7% of the respondents were willing to participate in any organ donation promotional activity. Thus, above-mentioned observations suggest that medical students have a positive attitude towards organ donation. In the present study, the highest percentage of medical students (76.1%-81.5%) were willing to donate organs to family members, lower to friends (60.9% to 67.5%) and lowest percentage to unknown individuals (56.5% to 65.6%).

Table 6. Percentage of medical students willing to donate organs in the present study compared to reports by other authors.

	Percentage of medical students willing to donate organs
Present study	70.7%-79.6%
Bapat <i>et al.</i> (1)	89%
Bilgel <i>et al.</i> (10)	58.4%
Figueroa <i>et al.</i> (20)	80%
Burra P <i>et al.</i> (8)	88%

While 71-85% females showed willingness to donate organs, only 60-61% male respondents were willing to donate. Thus, in the present study higher percentage of female medical students showed willingness to donate organs compared to their male counterparts. This correlation was consistent throughout the 3 years of medical education. This finding is similar to that reported by Bilgel *et al.* [10].

Percentage of medical students unwilling to donate organs for religious sentiments, non-belief in organ donation or fear of disfigurement was observed to be less than 5%. However, 21.7% of the final year medical students stated that they were opting against organ donation as they did not believe in the ability of the medical infrastructure to take care of the donated organs till they reach a suitable donor. A study by Chung *et al.* found that traditional cultural beliefs like the importance of preserving an intact body after death, unease thinking or talking about organ donation after death and objections from family members were factors significantly associated with "negative" attitudes of Chinese medical students towards organ donation [13]. 42.7% of respondents in a similar study by Tontus *et al.* stated that their religion restricts organ donation [17]. In the present study 90% of the respondents in all 3 years were followers of Hinduism, 3-5% were followers of Christianity and Islam, respectively and about 4% were followers of other

faiths and less than 3% of all respondents stated religious beliefs as the reason for declining to donate organs. The present study did not enquire about the area of residence of the respondents and hence was unable to correlate the willingness to donate organs with the area of residence of the respondent. This could be a limitation of the present study. Studies taken up henceforth should enquire specifically into this aspect and its effect on organ donation activity.

A study carried out by Schaeffner *et al.* found that only 8% of the medical students felt sufficiently prepared to approach relatives of potential organ donors [3]. In a study carried out by Chung *et al.* only 23% of the medical students in the 5th year felt confident in organ donation counselling. Most students felt that medical curriculum was inadequate in providing transplant-related knowledge [13]. Physicians can play a very important role in solving the problem of shortage of organ donors but may miss opportunities because of lack of knowledge about organ donation [12]. The authors believe that a healthcare professional will only approach a family member of the potential donor if he/she is having adequate prior knowledge regarding organ donation, concept of brain death, related legalities and various organs that can be donated. Schaeffner found that knowledge about and attitude of the healthcare professional towards organ donation were highly associated with increasing levels of education [3].

Sawhney *et al.* state that good communication between the clinician and the family members of the potential donors is essential to improve number of organ donations [21]. In a study by Edwin and Raja the medical students who formed the study group themselves were of the opinion that the best persons to counsel the family of potential donors are the attending doctors [15].

Rykhoff *et al.* carried out a study that consisted of assessing the knowledge, attitude and beliefs of health sciences students towards organ donation before and after a related educational session. It was found that 86% were more aware of organ donation and the number of respondents willing to be organ donors themselves also increased [22]. Educational sessions in health sciences curriculum can increase awareness of organ and tissue donation and lead to better procurement rates for donor organs [12].

Although medical students are of the opinion that the best persons to counsel the family of potential donors are the attending doctors themselves, however most of them feel that medical curriculum is inadequate in providing transplant-related knowledge and very few feel sufficiently prepared to approach relatives of potential organ donors. Increasing levels of education have been proved to be associated with a positive attitude of the healthcare professional towards organ donation. Educational sessions in health sciences curriculum can increase awareness of organ and tissue donation. Thus, it appears that educational sessions on organ donation

can raise the knowledge and awareness levels of the medical professionals and make them confident in approaching the family members of potential donors to raise the topic of organ donation. With this view in mind the medical curriculum does have hours specified for these educational sessions.

However, the present study has found that the present curriculum, knowledge of organ donation and related issues do not reach all medical students. It appears that while almost all medical students have high levels of awareness about organ donation, their level of knowledge regarding concepts of "brain-death" and other aspects such as legalities of organ donation is inadequate. Also, most medical students had good knowledge of transplantable organs such as eye, kidney, liver or heart, but there is a lack in knowledge of other transplantable tissues and organs. The fact that as high as 80% of students showed willingness to be organ donors themselves has to be appreciated and it speaks of their positive attitude towards organ donation.

Conclusion

A teaching intervention designed to specifically target certain topics such as anatomy and physiology of organ donation and transplant in the 1st year of medical education, its related pathology, immunology and pharmacology in the 2nd year and the relevant medical and surgical details and the social and ethical aspects of it in the final year along with separate sessions on related legalities may be beneficial. Also, a separate training on how and when to approach the family members of the potential donor (maybe in a form of problem-based learning) could help increase confidence of the health-care professionals in this very delicate matter. Such teaching sessions could be the strategy needed to increase the organ procurement rates and resolve the problem of chronic shortage of donor organs for organ transplantation.

Conflict of interest statement. None declared.

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