

Cross-sectional survey of Awareness and Attitude towards Organ Donation and Transplantation among students of Punjab

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Abstract: Introduction: Thousand of lives every year are saved by organ donation, but the awareness is still lacking, even among students. This survey was carried out among medical and non medical students to assess their knowledge of the process and their willingness to donate organs. Methodology: The study was conducted on students of Punjab from various religious and educational backgrounds. 200 students from Punjab, aged above 18 years, were enrolled in the study. A self-administered questionnaire was prepared and sent online to the participants. Multivariate statistical analysis was carried out and Chi square test performed to check statistical significance. An online presentation to enhance their knowledge was also prepared and sent to the participants online after the survey. Results: A majority of students 192 (96.2%) had heard about organ donation but were unaware about the major details regarding the same. 86 (43%) of the participants had no idea about where to sign up for donation. Although majority of students (67%) have considered donating organs at some point in their life, only 18% of the students, 20% from medical 16% from non-medical, have actually granted permission to donate their organs. Their willingness to donate was based on many factors including awareness about the process, involvement of a closed ones in receiving/donating organs and family's attitude. Positive feedback regarding the survey and power point presentation sent to educate them was received, as the participants claimed to gain more knowledge and were determined to find out more about the topic. Conclusion: Knowledge regarding organ donation in both the medical and non-medical students is minuscule. Awareness among medical students regarding the details was comparatively higher. Hence the knowledge about Organ donation should be added in the curriculum may be as an elective to deal with lack of awareness and information. [Kaur RNatl J Integr Res Med, 2019; 10(4):59-65]

Key Words: Awareness; Organ donation; Transplantation; Medical students; Non medical students

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Introduction: The perspective and understanding of our society towards organ donation and transplantation is inadequate with major concerns being lack of awareness, correct knowledge among public, myths and misconception surrounding organ donation due to religious and cultural barriers leading to hesitant behaviour in organ donation¹. There are thousands of people waiting for organ transplantation and not enough donors are signing up to donate. In fact, donation by one person can save as many as fifty lives. Surveys carried out in the past on health care professionals emphasize that more information is required regarding organ donation and transplantation^{2,3}.

A survey on university students in Turkey was done to find the gaps in the knowledge about organ donation and transplantation and this information was used to find out the factors that limit organ donation⁴. Another study concluded that even though there was awareness and willingness among medical students to donate organs for transplantation, yet very few registered for donation. The study advised a campaign at all platforms to educate the public

about organ donation⁵. A study in Pakistan suggested effective measures to educate people with active involvement of media, doctors and religious scholars to translate their increased knowledge into organ donation⁶. There is a need to motivate people by creating public awareness by a hospital initiative on organ donation and transplantation⁷. Despite endeavours by the government and non-government organizations, awareness about organ donation is still abysmal. The present study is being undertaken to find the awareness and attitude of students from different sections of the society on organ donation and transplantation by a self-administered structured and unstructured questionnaire. This study will help understand the reservations of the public, as well as means to educate them and motivate them for organ donation.

Material and Methods : Population and Ethical considerations: The study was conducted on students of Punjab from various religious, cultural and educational backgrounds - particularly medical and non-medical students. The study was conducted after approval from the Institutional Ethical Committee. The reason of the survey was

informed to the participants. Anonymity and confidentiality of respondents were maintained and participation was voluntary. The sample size of the population was estimated to be 200 assuming organ donation awareness of 80% among people, relative precision 6%, confidence interval 95% and 10% non-response rate.

Procedure: This prospective cross-sectional questionnaire-based study was designed to evaluate and compare the knowledge and attitude among medical and non-medical students in Punjab. The questionnaire was prepared after thorough literature survey and conducting unstructured interviews on few medical and non-medical students.

Study Population: 200 students, aged above 18 years, 100 from medical colleges and 100 from engineering colleges from Punjab were enrolled in the study.

Time of Study: The study was conducted from May 2018 to October 2018.

Questionnaire: An 18-item self-administered Performa was designed on Google forms and validated by discussion with various faculty members in the medical institute and pretesting on a control group of 10 participants. The form was then sent online to the participants and the completed surveys were considered for the study. There were both structured questions designed on a five point likert scale as well as unstructured open ended questions.

The first section of the questionnaire gathered the sociodemographic details from the students such as name, age, gender, education stream, qualifications and religion. Questions related to personal details, religious and cultural background were optional. The next section assessed the levels of knowledge, positive attitude and practice habits regarding organ donation.

A few of the participants did not replay to repeated online requests, some returned incomplete forms, so we enrolled more students to be part of our study.

After submission of the Performa's we realized that adequate knowledge regarding organ donation among the participants is quite low. Hence we designed an online presentation to

impart basic information about organ donation to the participants of the study. It also provided information like where to register for organ donation and how to register. The presentation was sent online to the participants. They were also encouraged to find out more about organ donation through various other sources. The participants were motivated to register themselves as organ donors as well as educate and motivate their relatives and friends about the same.

Statistical Analysis: Multivariate statistical analysis were carried out. The data was analysed using SPSS 21 software version. Chi square test performed to compare the awareness and attitude of participants and a p-value of less than 0.05 was considered statistically significant. The subjective questions were manually bucketed into custom categories and then analysed. For example, the responses of the questions like "Which organs/tissues can be donated?" and "Where can you register for organs/tissues donation?" were manually assessed.

Results: Of the 200 people we surveyed, 100 were from medical background and 100 from engineering background. 53% were males and 47% were females. 48% of the participants were Sikhs, 33% were Hindus 2% were Muslims and 17% preferred not to answer about religion. The students were in the age group 18-28 years with mean and median age of the participants being 23.03 and 23 years respectively.

Awareness: A majority of the students (96.2%) had heard that they could donate their organs/tissues to save someone's life. Only 8 of the participants responded with a no to this question. The pie chart below shows mediums by which students became aware of organ donation. (Fig 1).

Only 33% of the participants knew someone close who has donated their organs and 25% had someone close who was a recipient of organ donation. The knowledge of participants was assessed further in terms of where and what organs can be donated. It was found that 43% of the total participants had no idea where can they register for donating organs while other common responses were nearby hospitals (22%), NGOs and other organ donation organizations (8%) and internet (6%). Significant difference ($X^2=9.1$ and $p=0.002$) was observed between medical (58%)

and non-medical students (28%) who did not know about where they can sign up as a donor. The most common organs that participants were

aware that can be donated are shown in Table no. 1 below:

Figure 1: Major mediums of awareness for organ donation

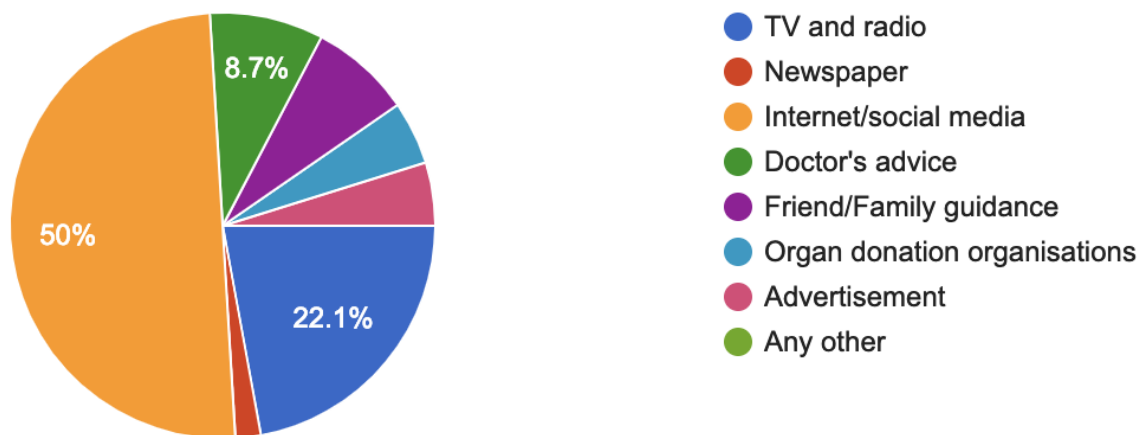


Table1: Comparison of awareness of organs that can be donated among medical and non-medical (Engineering) students

Organ	Medical (%)	Non Medical (%)
Eyes	54.0	68.0
Liver	68.0	24.0
Heart	64.0	28.0
Kidney	80.0	54.0
Cornea	34.0	0.0
Blood	14.0	0.0
Bone marrow	12.0	12.0
Skin	14.0	2.0
Lungs	24.0	6.0
Pancreas	2.0	4.0

We see that while non-medical students have knowledge about some organs: eyes, kidney, heart, liver, very few of them had knowledge about other organs that can be donated as compared to medical students. Only 40% students, 42% from medical and 38% from non medical students knew how frequently a human can donate blood. To the question “When can a person donate organs?”, 2% responded with “Only during lifetime”, 16% percent participants responded with “After death”, 3% responded

with “Brain dead” and 78% responded with “All of the above” as shown in Table no. 2.

Attitude: Regarding the attitude towards donation, all the participants were either neutral or supported organ donation. In particular, 48% of the students strongly agreed for organ donation, 30% supported organ donation and 22% were neutral about it. Although majority of students (67%) have considered donating organs at some point in their life, only 18% of the students, 20% from medical 16% from non-medical, have actually granted permission to donate their organs. It was observed with statistical significance ($p = 0.017$, $X^2 = 5.704$) that more number of medical students (76%) have considered donating organs at least once in their life than non-medical students (58%). When asked about the reasons for not signing up as a donor, 20% of the total students haven’t thought about this question, 7% aren’t willing due to lack of knowledge about the process and proper facilities and 10% due to family and cultural reasons. On the other hand, if the students were to sign up as a donor, 66.5% of the total students mentioned that it would be for humanitarian and social reasons.

The attitude towards donation was also found to be impacted by that of participants’ family and close relatives. It was found that (with $p=0.01$, $X^2=6.4$) participants whose close relative have donated organs, were more willing to donate organs. Particularly 91.1% participants whose close relatives have donated organs were more

willing to donate organs as compared to 68% of those whose close relatives did not donate any organs. Correlation between discussion with family and organ donation was also found to be statistically significant among the participants. 70% ($\chi^2=9.7$, $p=0.001$) of students who have granted permission to donate organs have actually discussed the issue of organ donation with their families and 67% of the students, who haven't discussed this topic with their families, have not granted permission for organ donation.

We assessed the factors that could bring a change in the participants' attitude towards organ donation. It was found that financial incentives for participants or their families did

not motivate a majority of them (78%) to donate their organs after death, although 22% participants agreed that incentives might encourage them to donate organs. Among other factors, 5% of participants felt that support by their family could bring a change in their attitude, 8% felt that meeting the recipients personally could influence their attitude towards organ donation. 7% of the participants felt that they would be more encouraged if there was more awareness about the topic. (Table 3).

Finally, 76% of the students felt that they were more aware about organ donation after taking the survey.

Table2: Comparison of organ donation awareness among medical and non-medical students

Question		Medical	Non medical	p value	Significance
Do you support Organ donation?				0	Highly significant
	Strongly Agree	62%	34%		
	Agree	22%	40%		
	Neutral	16%	26%		
	Disagree	0%	0%		
	Strongly Disagree	0%	0%		
How often do you think you can donate blood?					
	Once in 3 months	52%	41%		
	Once in 6 months	24%	22%		
	Once a year	2%	3%		
	Whenever required	2%	14%		
	No idea	20%	20%		
When can a person donate organs/tissues?				0.122	Not significant
	During life	2%	2%		
	After death	10%	22%		
	Brain dead	4%	2%		
	All of the above	84%	74%		
Which source of information will create better awareness?				0.219	Not significant
	Media	30%	20%		
	Internet	48%	50%		
	Doctor's Advice	10%	8%		
	Family/Friends	6%	8%		
	Organ donation organisations	6%	14%		

P < 0.05 = significant

Discussion :The aim of this study was to evaluate awareness and attitude about organ donation among students in Punjab and compare the same among the medical and non-medical students.

Majority of the participants had heard about organ donation. The most common medium of information according to the participants was found out to be internet and social media which was similar to the findings of earlier studies done in Bengaluru⁸ and Kerala⁹.

Table 3: Comparison of awareness of organs that can be donated among medical and non-medical students

Question	Medical		Non Medical		p value	significance
	Yes	No	Yes	No		
Do you have the knowledge that you can donate organs/tissues?	98%	2%	94%	6%	0.149	Not significant
Have you ever thought of donating any of your organs/tissues?	74%	26%	58%	42%	0.017	Significant
Have you granted permission for organ donation/tissues?	20%	80%	16%	84%	0.462	not significant
Has anyone close to you donated any organs/tissues?	44%	56%	24%	76%	0.003	Highly significant
Has anyone close to you received any organs/tissues?	32%	68%	14%	86%	0.002	Highly significant
Have you ever donated blood?	40%	60%	60%	40%	0.005	Highly significant
Have you ever discussed organ donation with your family?	48%	52%	38%	62%	0.153	Not significant
Would you be willing to donate organs/tissues of your next close relatives upon his/her desire?	90%	10%	90%	10%	1	Not significant
Will financial incentives on donation affect your decision?	24%	76%	20%	80%	0.495	Not significant
Will you help create awareness about organ donation?	90%	10%	86%	14%	0.384	Not significant
Are you better aware about organ donation after this survey?	80%	20%	76%	24%	0.495	Not significant

P < 0.05 = significant

Our study shows that only a 5% students have actually heard about it directly from organ donation organizations or the content hosted by them online which suggests that these organ donation organisations and NGOs, especially the local ones, need to adapt to modern methods which will help them spreading better awareness. Hosting content on today's social media platforms can help them connect with the youth. Also, our study shows that, though high level awareness is similar among students in medical and non-medical stream, medical students have better knowledge about the details of organ donation, like where to donate organs and what organs can be donated, than non-medical students. This can be attributed to the medical college environment and curriculum as compared to that of non-medical institutions. Thus, inculcating subjects like organ donation in not just medical but also in the curriculum of non medical institutions can help improve the awareness. The need for change of curriculum was also stated by the authors of the study¹⁰ as per majority participants' response, all of whom were medical students. Other studies expressed same concerns^{11,12}. The change in attitude

towards organ donation by a lecture was substantiated by a study in Germany^{10,13}. Hence the revision of curriculum of students especially non medical can go a long way in changing attitude and awareness of students towards organ donation.

Though awareness regarding organ donation among participants is satisfactory, there is a gap between the same and willingness of participants to donate organs. Our study found that 96.2% of the participants are aware while only 67% are willing to donate. Similar observation was also observed in a previous study.

Hence there is a need to inculcate concrete donor card programs that will help improve this status. When comparing medical and non-medical participants, it was found that more number of medical students have considered donating their organs at least once in life than non medical students, though both the streams have equal distribution when it comes to actually granting permission for donating organs. Hence we conclude that the attitude towards organ

donation is similar among both the education streams.

We tried to establish the reason behind participants' non willingness to donate and found that lack of awareness and lack of proper health care facilities are the major concerns. This observation is in line with earlier studies^{14,8}, where participants felt that they do not possess donor card because of lack of knowledge. 10% of the total participants have listed religious beliefs as their reason for not willing to donate. Religious and cultural reasons have been cited by a majority of earlier studies^{15, 16} and is a concern that should be tackled. It is worth noting that there is no religion that prohibits donation or receipt of organs from living or deceased organ donors except for Jehovah's Witness¹⁷. Family reasons were stated by 5% of the participants for not donating organs. Earlier studies have found it to be one of the most common reasons that prevents participants from donation organs¹⁸ though in our case it was the lack of awareness and attitude.

The correlation between families' and relatives' attitude towards organ donation and that of students was also found to be strong according to our study. We found that students who have experienced organ donation closely i.e. if their close ones have donated or received organs, are better aware and are more inclined towards organ donation that those who haven't experienced. Approximately 91% of participants with personal experience in organ donation are willing for the same. 70% students who have granted permission have actually discussed the issue with their families. Earlier study also found that a significant proportion of participants with strong willingness have discussed their wish to donate organs after death¹⁰. Role of personal experience and family have been emphasized in earlier studies as well^{19, 20, 21}. Family awareness towards organ donation therefore indicates a strong potential in solving the dearth of organs for transplantation and hence should be pursued by government and other organisations significantly and efficiently.

Majority of the participants believe that financial incentives do not influence their decision of organ donation and were driven by humanitarian reasons the nobility of the cause. Such an attitude should be promoted in the society and similar studies also have found the majority of

the participants were aware that organ donation could be done only for humanitarian reasons and not for monetary benefits²².

Participants also indicated that they were better aware about the topic after taking the survey. In addition, we designed a PowerPoint presentation to increase awareness among participants regarding organ donation. It was sent online to the participants. We received a positive feedback for the same from majority of the participants though the impact can't be quantified since the feedback of the presentation was not compulsory. Some participants mentioned that they were not aware of the organ donation process, especially how to sign up for a donor card and that after going through the presentation they were well aware. Hence, we believe that through our study, we not only evaluated the awareness and attitude of students in Punjab towards organ donation but also encouraged them to find out more about the same.

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References

1. Sucharitha ST, Siriki R, Dugyala RR, Mullai, Priyadarshini, Kaavya, et al. Organ donation: Awareness, attitudes and beliefs among undergraduate medical students in South India. *Natl J Res Community Med* 2013; 2:79-148.
2. Dutra MMD, Bonfim TAS, Pereira IS, Figueiredo IC, Dutra AMD, Lopes AA. Knowledge about transplantation and attitudes toward organ donation: a survey among medical students in Northeast Brazil. *Transplantation Proceedings*; 2009;36(4):818-20.
3. Mekhali D, Liutkus A, Fargue S, Ranchin B, Cochat P. Survey of first year medical students to assess their knowledge and attitudes towards organ transplantation and donation. *Transplantation Proceedings*.2009;41(2):634-8.
4. Akgun S, Tokalak I, Erdal R. Attitudes and behavior related to organ donation and transplantation: a survey of university students. *Translation proceedings*.2002; 34(6):2009-11.

5. Annadurai K, Mani K, Ramasamy J. A study on knowledge attitude and practices about organ donation among college students in Chennai, Tamil Nadu. *Prog Health Sci* 2013;3(2):59-65.
6. Saleem T, Ishaque S, Habib N, Hussain SS, Jawed A, Khan AA, Ahmad MI, Iftikhar MO, Mughal HP, Jehan I. Knowledge, attitudes and practices survey on organ donation among a selected adult population of Pakistan. *BMC Med Ethics*. 2009 Jun; 17; 10:5.
7. Kumar M, Vij A. Hospital initiatives towards public awareness and education on deceased organ donation and transplantation. *Ind J Transplantation*. 2016;10(4):105.
8. Bapat U, Kedlaya PG, Gokulnath. Organ donation, awareness, attitudes and beliefs among post graduate medical students. *Saudi J Kidney Dis Transpl*. 2010;21:174–80.
9. Manojan K, Raja RA, Nelson V, Beevi N, Jose R. Knowledge and attitude towards organ donation in rural Kerala. *Acad Med J India*. 2014;11:25–7.
10. Adithyan G S, Mariappan M, Nayana K B. A study on knowledge and attitude about organ donation among medical students in Kerala. *Indian Journal of Transplantation*. 2017;11:133-137.
11. Agarwal S. Are medical students having enough knowledge about organ donation. *IOSR J Dent Med Sci* 2015;4:29-34.
12. Sahana BN, Sangeeta M. Knowledge, attitude and practices of medical students regarding organ donation. *Int J Curr Res Rev* 2015;7:74.
13. Radunz S, Juntermanns B, Heuer M, Frühauf NR, Paul A, Kaiser GM, *et al*. The effect of education on the attitude of medical students towards organ donation. *Ann Transplant* 2012;17:140-4.
14. Mithra P, Ravindra P, Unnikrishnan B, Rekha T, Kanchan T, Kumar N, *et al*. Perceptions and attitudes towards organ donation among people seeking healthcare in tertiary care centers of coastal south India. *Indian J Palliat Care* 2013;19:83 10.4103/0973-1075.116701.
15. Bapat U, Kedlaya PG, Gokulnath. Organ donation, awareness, attitudes and beliefs among post graduate medical students. *Saudi J Kidney Dis Transpl*. 2010;21:174–80.
16. Wig N, Aggarwal P, Kailash S, Handa R, Wali JP. Awareness of brain death and organ transplantation among office-goers in New Delhi. *Natl Med J India*. 1997;10:303–4.
17. Hamed H, Awad ME, Youssef KN, Fouda B, Nakeeb AE, *et al*. (2016) Knowledge and Attitudes about Organ Donation among Medical Students in Egypt: A Questionnaire. *J Transplant Technol Res* 6: 155. doi: 10.4172/2161-0991.1000155.
18. Balajee KL, Ramachandran N, Subitha L. Awareness and Attitudes toward Organ Donation in Rural Puducherry, India. *Ann Med Health Sci Res*. 2016;6(5):286-290.
19. Morgan SE, Miller JK. Beyond the organ donor card: The effect of knowledge, attitudes, and values on willingness to communicate about organ donation to family members. *Health Commun* 2002;14:121-34
20. Lange SS. Psychosocial, legal, ethical, and cultural aspects of organ donation and transplantation. *Crit Care Nurs Clin North Am* 1992;4:25-42.
21. Morgan SE, Stephenson MT, Harrison TR, Afifi WA, Long SD. Facts versus 'Feelings': How rational is the decision to become an organ donor? *J Health Psychol* 2008; 13: 644-58.
22. Balajee KL, Ramachandran N, Subitha L. Awareness and Attitudes toward Organ Donation in Rural Puducherry, India. *Ann Med Health Sci Res*. 2016 Sep-Oct; 6(5): 286–290.

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