

An Assessment of Knowledge and Awareness regarding Organ Donation among Medical Students of AIIMS Bhopal

Dr. Moorat Singh Yadav¹, Dr. Ajeet Pratap Maurya², Dr. Bharati Pandya³,
Dr. Swagata Brahmachari⁴, Dr. Maheshkumar Jagatap⁵

¹Associate Professor, AIIMS Bhopal Department of General Surgery, 462020, India
Email: [moorat.surgery\[at\]aiimsbhopal.edu.in](mailto:moorat.surgery[at]aiimsbhopal.edu.in)

²Associate Professor, AIIMS Bhopal Department of General Surgery, 462020, India
Email: [ajeet.surgery\[at\]aiimsbhopal.edu.in](mailto:ajeet.surgery[at]aiimsbhopal.edu.in)

³Professor, AIIMS Bhopal, Department of General Surgery, 462020, India
Email: [bharati_pandya\[at\]rediffmail.com](mailto:bharati_pandya[at]rediffmail.com)

⁴Associate Professor, AIIMS Bhopal Department of General Surgery, 462020, India
Email: [swagata.surgery\[at\]aiimsbhopal.edu.in](mailto:swagata.surgery[at]aiimsbhopal.edu.in)

⁵Junior Resident Department of General Surgery, 462020, India
Corresponding Author Email: [maheshjagtap747\[at\]gmail.com](mailto:maheshjagtap747[at]gmail.com)

Abstract: ***Aim:** The study was done to assess the knowledge and awareness regarding organ donation among medical students of AIIMS Bhopal. **Methodology:** 370 undergraduate students of AIIMS Bhopal were assessed by questionnaire for their spontaneous organ donation knowledge and awareness by a cross sectional study from June 2020 to June 2021. **Results:** 90.54% of the participants professed that they found organ donation to be a meaningful act; however, only 1.89% of the participants had signed a pledge of donation at the time of the survey, and only 10.54% knew of someone who had signed a pledge of donation. The most common sources of information on organ donation, most participants indicated that media (including news and social media) (41.08%) and print publications (books/magazines) (35.68%). We did not find any significant difference in terms of either gender or religion for awareness. A word cloud analysis of the perceived barriers to organ donation revealed that socio-cultural and religious background acted as major barriers to organ donation. **Conclusion:** The findings of this study indicate that while medical students have heard of organ donation, their knowledge of the subject is inadequate and their willingness to donate organs is low.*

Keywords: Organ donation, Transplantation, medical students, Knowledge and Awareness

1. Introduction

Organ transplantation, one of the most important advances in medical science, has given countless patients a fresh start on life. It is the preferred treatment for care for terminal illness and organ failure, and it is growing rapidly to prominence globally. However, India's organ donation program has been implemented slowly, and the supply of donated organs is insufficient (1). The general public is aware of the importance of eye donation. However, there is a very low level of awareness regarding the donation of the heart, liver, and numerous other organs and tissues that are transplantable. While there is awareness of "live" and "cardiac death" organ donations, there is very little awareness of "brain death" organ donations and their legality in India (2).

The population must be educated about organ donation in order for the program to be successful. Healthcare professionals serve as the crucial link in the process of increasing awareness and acquiring organs, because they are the first to establish relationships with the families of potential donors. Therefore, it is without a doubt necessary to train medical professionals on many aspects of organ donation so that they may propagate this knowledge at the

local level (3). India, like many other parts of the world, does not have enough cadaveric organs for transplants, due to a lack of donor organs, more than 20% of transplant waiting list patients worldwide die. Medical students will advocate for organ donation as future physicians. However, many lack relevant fundamental knowledge and are influenced by the public's personal attitudes and biases, which have an impact on health care professionalism. Considered significant contributors to the shortage of available organs are inadequate knowledge, cultural beliefs, religious thoughts, misunderstanding and the failure to locate potential donors. Additionally, there is a disparity between attitudes and actions of medical students (4).

Even though the majority of medical professionals are in Favor of organ donation, only a small number of them have actually committed to doing so by signing an organ donation card or registering to donate organs. Previous research demonstrated that culture and religion were significant external influences on the decision-making process (5). Attitudes, knowledge, and actions are all interconnected. In order for future doctors to become well-informed advocates, the undergraduate medical curriculum ought to provide students with fundamental information regarding procedures and ethical issues pertaining to organ donation and transplantation (6).

Volume 12 Issue 12, December 2023

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

2. Materials and method

A cross-sectional questionnaire-based study was conducted among undergraduate medical students of All India Institute of Medical Sciences, Bhopal, India from June 2020 to June 2021. The study sample comprised 370 students of batch 2014, 2015, 2016, 2018, 2019. Anonymity and confidentiality of respondents were maintained and participation was voluntary. Ethical approval for this study was obtained from the Ethical Committee of the Institutional Review Board. An 18-item self-administered questionnaire was developed based on previous studies comprising of four sections and validated by authors. The first section of the questionnaire gathered the demographic details from the students, which included age, gender, year of study and religion. The second, third and fourth sections assessed the levels of knowledge, positive attitude and practice habits regarding organ donation, respectively. The responses were recorded on a dichotomous scale (Yes/No). For each "Yes" response it was scored '1' and for each "No" response '0.' The total scores obtained were summed up. The higher scores indicated better knowledge, more positive attitude and good practice habits regarding organ donation. The questionnaire was distributed to undergraduate medical students during lecture hours in the classroom. The participants were instructed not to discuss the questions among themselves. Only completed questionnaires were utilized for the study. Authors also interviewed (Eight) students to gain deeper understanding of their thoughts regarding organ donation on four themes, decided a priori. The interviews were conducted and typed out in English, and the transcriptions for the same were iteratively analysed to arrive at sub-themes pertinent to each of the four themes determined before the interviews.

3. Statistical Analysis

After collecting data on Google sheets, it was downloaded, cleaned and anonymised prior to analysis. Continuous data was described in means and standard deviations, while categorical data was described using proportions and percentages. For the semi-qualitative question eliciting perceived barriers to organ donation, we constructed a word cloud to tease out the predominant themes.

4. Result

We conducted our study from 2014 to 2019. In all, 370 students across five batches participated in the study. There was almost equal distribution of students across all batches – with the exception being 2014 batch (the one student was a repeater) (Table-1).

Table 1: Descriptive characteristics of Medical Students (n=370)

Characteristic	N = 370 ¹
Batch	
2014	1 (0.27 %)
2016	93 (25.14 %)
2017	95 (25.68 %)
2018	91 (24.59 %)
2019	90 (24.32 %)
Gender	
Female	97 (26.22 %)
Male	273 (73.78 %)
Religion	
Hindu	335 (90.54 %)
Muslim	31 (8.38 %)
Christian	3 (0.81 %)
Sikh	1 (0.27 %)

On assessment of knowledge, attitudes and practices surrounding organ donation, we observed that even amongst medical students, intent rarely translated into action. 90.54% of the participants professed that they found organ donation to be a meaningful act; however, only 1.89% of the participants had signed a pledge of donation at the time of the survey, and only 10.54% knew of someone who had signed a pledge of donation.

We also found that most medical students were aware of the gravity of organ donation and organ transplantation. 97.84% of the participants were aware that organ transplantation may be the last hope for survival in some patients, and 90.54% of participants knew that sometimes people died due to long waiting lists. Almost a third (34.32%) of participants were aware of someone who had died due to organ failure. However, only 3/4th (72.43%) of the participants were found to be willing to ever donate an organ, with 27.30% outright refusing to donate organ(s) (Table-2).

Table 2: Questions to assess knowledge, attitudes and practices with regards to organ donation

" Are you aware of organ donation ? "	368 (99.46 %)
" Are you aware that there are acts and rules governing organ donation India ? "	359 (97.03 %)
" Have you signed a pledge for organ donation ? "	7 (1.89 %)
" Do you know anyone who has signed a pledge for organ donation ? "	39 (10.54 %)
" Do you know anyone who has donated an organ "	13 (3.51 %)
" Are you aware of anyone who died due to organ failure ? "	127 (34.32 %)
" Do you know that organ transplantation may be the last hope for survival in some patients ? " 3	362 (97.84 %)
" Are you aware of the concept of brain death ? "	359 (97.03 %)
" Do you know that sometimes patients die due to long waiting lists ? "	335 (90.54 %)
" Do you think it is meaningful to donate organs ? "	335 (90.54 %)
" Do you support organ donation ? "	356 (96.22 %)
" Would you spread awareness regarding organ donation ? "	358 (96.76 %)
" Would you accept an organ (s) if required by you or your family ? "	357 (96.49 %)
" Would you ever donate an organ ? "	268 (72.43 %)
' n (%)	

On being asked about the most common sources of information on organ donation, most participants indicated that media (including news and social media) (41.08%) and print publications (books/magazines) (35.68%) were the most common source of information on the same, followed by schools and school teachers (33.51%). On the other hand, only 3.51% of the participants had received any information on the same from family and friends (Table-3).

Table 3: Source of information on organ donation for medical students

Source of information	N = 370
News media/ social media/ advertisements/ other media	152 (41.08%)
Books / magazines	132 (35.68%)
Medical organizations/ NGOs/ medical camps	67 (18.11%)
Hospitals / medical professionals / clinics	25 (6.76%)
Schools / school teachers	124 (33.51%)
Family and friends	13 (3.51%)
n (%)	

On univariate analysis, we did not find any significant difference in terms of either gender or religion (Table- 4).

Table 4: Univariate analysis of knowledge, attitudes, and practice regarding organ donation according to Gender and Religion

Items	By Gender			By Religion		
	F (N = 97)	M (N =273)	P value	Hindu (N= 335)	Non - Hindu (N = 35)	p value
" Are you aware of organ donation ? "	97 (100.00%)	271 (99.27 %)	> 0.9	333 (99.40 %)	35 (100,00 %)	> 0.9
" Are you aware that there are acts and rules governing organ donation in India ? "	94 (96.91 %)	265 (97.07 %)	> 0.9	325 (97.01 %)	34 (97.14 %)	> 0.9
" Have you signed a pledge for organ donation ? "	3 (3.09 %)	4 (1.47 %)	0.4	6 (1.79 %)	1 (2.86 %)	0.5
" Do you know anyone who has signed a pledge for organ donation ? "	12 (12.37 %)	27 (9.89 %)	0.5	33 (9.85 %)	6 (17.14 %)	0.2
" Do you know anyone who has donated an organ ? "	7 (7.22 %)	20 (7.33 %)	> 0.9	24 (7.16 %)	3 (8.57 %)	0.7
" Are you aware of anyone who died due to organ failure ? "	29 (29.90 %)	96 (35.16 %)	0.3	109 (32.54 %)	16 (45.71 %)	0.12
" Do you know that organ transplantation may be the last hope for survival in some patients ? "	96 (98.97 %)	267 (97.80 %)	0.7	328 (97.91 %)	35 (100,00 %)	> 0.9
" Are you aware of the concept of brain death ? "	97 (100.00 %)	266 (97.44 %)	0.2	328 (97.91 %)	35 (100,00 %)	> 0.9
" Do you know that sometimes patients die due to long waiting lists ? "	93 (95.88 %)	264 (96.70 %)	0.7	323 (96.42 %)	34 (97.14 %)	> 0.9
" Do you think it is meaningful to donate organs ? "	97 (100.00 %)	266 (97.44 %)	0.2	328 (97.91 %)	35 (100,00 %)	> 0.9
" Do you support organ donation ? "	(97.94 %)	(97.44 %)	> 0.9	(97.61 %)	34 (97.14 %)	0.6
" Would you spread awareness regarding organ donation ? "	96 (98,97 %)	266 (97.44 %)	0.7	327 (97.61 %)	35 (100,00 %)	> 0.9
" Would you accept an organ (s) if required by your or your family ? "	95 (97.94 %)	266 (97.44 %)	> 0.9	327 (97.61 %)	34 (97,14 %)	0.6
" Would you ever donate an organ ? "	93 (95.88 %)	260 (95.24 %)	> 0.9	320 (95.52 %)	33 (94.29 %)	0.7

The participant highlights the importance of organ donation as a vital service to mankind, even the dead. However, there are challenges such as stigma, religious compulsions, lack of knowledge, and myths surrounding organ donation. To overcome these barriers, the participant suggests spreading awareness, creating a single online portal, and addressing religious concerns and myths. They also emphasize the

morality and humaneness of organ donation, ethical treatment of the donor body, and the "serving human is serving god" concept. To promote organ donation, the participant suggests using grassroots campaigns, non-financial incentives, and influencers like social media influencers, religious influencers, and cinema stars (Table-5).

Table 5: Qualitative analysis of participant

Theme	View of the participant
Theme 1 : Meaningfulness of organ donation	Very meaningful , fighting chance of survival. Educational aids, can help understand anatomy Ultimate service to mankind Even the dead can be of service to mankind.
Theme 2 : Hurdles to organ donation	Stigma surrounding organ donation – Mutilation of the body not acceptable in certain cultures Religious compulsions may act as a barrier to organ donation Lack of knowledge regarding organ donation - awareness about the vital role of organ donation in saving lives, lack of knowledge on the know how needed to donate organs or pledge for donation , the onus of pledging for organ donation may appear to be non - reversible and pose as a challenge for many potential donors. Myths surrounding organ donation - organs may be sold on the black market , may be mismanaged by the authorities , organ trafficking , etc.
Theme 3 : Overcoming	Spreading awareness on organ donation increasing knowledge and combating myths surrounding organ

Patient Consent Declaration

The authors certify that they have obtained all appropriate patient consent.

Acknowledgment:

We appreciate the participation of all undergraduate students in the study.

References

- [1] Grinyó JM. Why Is Organ Transplantation Clinically Important? *Cold Spring Harb Perspect Med*. 2013 Jun;3(6):a014985.
- [2] Organ donation. In: Wikipedia [Internet]. 2023 [cited 2023 Jun 27]. Available from: https://en.wikipedia.org/w/index.php?title=Organ_donation&oldid=1153951263
- [3] Organ donation and transplantation: Awareness and roles of healthcare professionals—A systematic literature review - Jawoniyi - 2018 - *Journal of Clinical Nursing - Wiley Online Library* [Internet]. [cited 2023 Jun 27]. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/jocn.14154>
- [4] Chakradhar K, Doshi D, Srikanth Reddy B, Kulkarni S, Padma Reddy M, Sruthi Reddy S. Knowledge, Attitude and Practice Regarding Organ Donation among Indian Dental Students. *Int J Organ Transplant Med*. 2016;7(1):28–35.
- [5] Li MT, Hillyer GC, Husain SA, Mohan S. Cultural Barriers to Organ Donation among Chinese and Korean Individuals in the United States: A Systematic Review. *Transpl Int Off J Eur Soc Organ Transplant*. 2019 Oct;32(10):1001–18.
- [6] Dalal AR. Philosophy of organ donation: Review of ethical facets. *World J Transplant*. 2015 Jun 24;5(2):44–51.
- [7] Alnajjar HA, Alzahrani M, Alzahrani M, Banweer M, Alsolami E, Alsulami A. Awareness of brain death, organ donation, and transplantation among medical students at single academic institute. *Saudi J Anaesth*. 2020;14(3):329–34
- [8] Figueroa CA, Mesfum ET, Acton NT, Kunst AE. Medical students' knowledge and attitudes toward organ donation: results of a Dutch survey. *Transplant Proc*. 2013;45(6):2093–7.
- [9] Chung CKY, Ng CWK, Li JYC, Sum KCY, Man AHY, Chan SPC, et al. Attitudes, knowledge, and actions with regard to organ donation among Hong Kong medical students. *Hong Kong Med J Xianggang Yi Xue Za Zhi*. 2008 Aug;14(4):278–85.