

Awareness, Beliefs, and Attitudes Toward Organ Donation in the Indian Population: An Observational Study

Prof. Dr. Shreeya Vinay Kulkarni¹, Dr. Aishwarya Vinay Kulkarni²,
Dr. Ojas Vinay Kulkarni³, Mr. Onkar Hole⁴,
Mr. Abhishek Gunaji Gochade⁵

¹Professor and Head, Ear Nose Throat, Dr Vasantao Pawar Medical College Hospital and Research Center, Nashik

²Assistant Professor, Dentistry, Government Medical College, Nashik

³Junior Resident, Ear Nose Throat, Government Medical College, Chhatrapati Sambhaji Nagar

^{4,5}Undergraduate student, Ear Nose Throat, Dr Vasantao Pawar Medical College Hospital and Research Center, Nashik

Abstract

Background: Organ donation is a vital, life-saving medical intervention with the potential to transform countless lives. In India, however, its widespread acceptance faces challenges due to various social, cultural, and psychological factors. Public awareness, attitudes, and beliefs play a crucial role in shaping the willingness to donate. Gaining a deeper understanding of these factors can support the development of targeted educational initiatives and impactful awareness campaigns. This study explores these factors through a cross-sectional approach, aiming to identify ways to strengthen organ donation efforts across India.

Method: A validated, self-designed questionnaire-based study was carried out between August 2024 and March 2025. The 32-item questionnaire included sections on demographic information, factual awareness, and attitudes & beliefs related to organ donation. Completion of the questionnaire was considered as implied consent for participation.

Results: A total of 1,040 individuals participated—55% from medical or healthcare-related professions and 45% from non-medical backgrounds. While 90% supported organ donation and 74.1% were willing to donate by choice, notable knowledge gaps were observed. For instance, only 269 healthcare professionals correctly identified the time frame for eye and skin donation post-death, and just 250 non-medical participants accurately understood that brain death is different from coma. Despite strong support, these findings reveal a need to strengthen factual awareness.

Conclusion: Although attitude toward organ donation is largely positive, persistent gaps in knowledge remain a barrier. Cultural and religious beliefs further shape perceptions. Addressing these through targeted educational initiatives is essential to improve understanding and boost donation rates in India.

INTRODUCTION

Organ donation refers to the legal process by which a person permits the removal of their organs, either

during their lifetime with informed consent or after death with the approval of their next of kin. There are three kinds of organ donors: Live donors, Cadaveric or brain death donors and Natural death donor ¹. Commonly transplanted organs and tissues include the kidneys, heart, liver, pancreas, intestines, lungs, bones, bone marrow, skin, and corneas. While certain organs—such as a kidney or portions of the liver, pancreas, lungs, or intestines—can be donated by living individuals, the majority of donations take place after the donor has passed away ².

Studies have shown that humans can donate up to 25 different organs and tissues, provided the donor meets the necessary medical and psychiatric fitness criteria ³. According to the Organ Procurement and Transplantation Network (OPTN, 2015), a single donor has the potential to save up to eight lives through organ donation ⁴.

India performs approximately 17,000 to 18,000 solid organ transplants annually, ranking third globally after the United States and China ⁵. However, the country still lags behind many high-income nations in terms of transplant rates per million population, with a rate of just 0.34 ⁶. For instance, the kidney is the most commonly transplanted organ in India; however, the current number of transplants (11,243 annually) falls significantly short of meeting the estimated demand generated by around 200,000 cases of renal failure each year. The rate of organ transplantation has increased gradually in the last two decades and has given outstanding results in children and young adults, but is challenged by the increasing population of elderly transplant patients with co-morbidity ⁷ attributed to the country's high prevalence of chronic conditions such as diabetes and hypertension ⁵.

This discrepancy between the demand for organ transplants and the available donations highlights the need for a structured and transparent system to promote organ donation in India ⁵. To streamline the process and establish clear legal and ethical guidelines, the Transplantation of Human Organs Act (THOA) was enacted in 1994 and later amended in 2014. The Act permits organ and tissue donation from both living and deceased donors, legalizes the concept of brain death, and strictly prohibits the commercialization of organs. It also established regulatory bodies such as the Advisory Committee, Authorisation Committee, and Appropriate Authority to oversee and ensure ethical and efficient implementation of the transplantation process across the country ⁸.

Recognizing the need of time, this study aims to explore the current levels of awareness, attitudes, and beliefs related to organ donation in India.

MATERIAL AND METHODS

This community-based cross-sectional study aimed to assess awareness, attitudes, and beliefs regarding organ donation among the Indian population. Conducted across diverse regions of India, the study included individuals aged 18 years and above who were willing and able to complete an online questionnaire. Participants of all religions, educational levels, and backgrounds were eligible. Data collection occurred over eight months, from August 2024 to March 2025.

A validated, self-designed Google Form was used to collect data, distributed via social media platforms including WhatsApp, Instagram, and Facebook to reach a broader and more random population. The questionnaire comprised of three sections: demographics, factual awareness, and attitudes & beliefs. Knowledge was assessed through questions on the meaning of organ donation, current statistics, donation by living and deceased individuals, and the distinction between brain death and coma etc. Attitudes and beliefs were measured through questions on willingness to donate, the role of religion, importance of OD

and conversations about OD with family etc. Online submitted forms were analysed and participation was considered as implied consent.

RESULT

A total of 1,040 individuals participated in the questionnaire-based study. Among them, 573 (55%) were male and 467 (45%) were female. The majority of participants 632 (61%) were young adults aged between 18 and 30 years, while 257 (24%) were aged between 41 and 60 years. Demographically, 368 (35%) participants were from Nashik city, 377 (36%) from other parts of Maharashtra, and the remaining 295 (28%) from various other states across India. Notably, 574 (55%) participants were from medical or healthcare-related professions, while 466 (45%) were from non-healthcare backgrounds. (reference- table 1)

Table 1- Socio-Demographic Characteristics of Participants Who Provided Consent and Completed the Questionnaire

No.	Socio-demographic variable	Frequency (n=1040)	Percentage (%)
1.	Sex		
	Male	573	55%
	Female	467	45%
2.	Age (years)		
	18-20	330	32%
	21-30	302	29%
	31-40	77	7%
	41-50	117	11%
	51-60	140	13%
	61-70	63	6%
	71-80	9	1%
81 above	2	0%	
3.	Place of residence		
	Nashik	368	35%
	Rest of Maharashtra	377	36%
	Rest of India	295	28%
4.	Profession		
	Medico/ Health care	574	55%
	Non-Medico	466	45%

It was observed that a strong majority of 84% (870) participants had heard about organ donation or transplantation, indicating widespread awareness. However, 13% (131) were unfamiliar with the concept, and 4% (39) were unsure. Encouragingly, 90% (931) respondents expressed support for organ donation, with only 6% (65) opposing it and remaining 4% (44) were uncertain. Out of 574 healthcare professionals, 70% (404) but out of 466 non-medicos 54% (250) correctly answered that brain death and coma are not same. (reference- table 2)

Regarding requirement of blood group matching for eye and skin transplants, 472 (45%) participants correctly stated that it is not required, while 35% (363) believed it was necessary, and 20% (205) were uncertain. In the past five years, 28% (295) respondents reported knowing someone who had donated an organ, while 59% (611) had not, and 13% (134) were unsure. (reference- table 2)

Table 2- Summary of Yes/ No/ Maybe responses (n=1040) in the questionnaire for questions on general awareness (existing knowledge without any intervention) and Attitude about organ donation

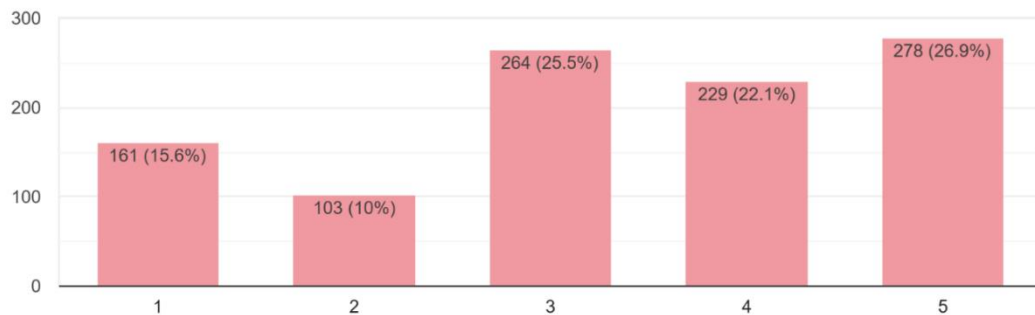
No	Question	Yes		No		Maybe	
		Number	Percentage	Number	Percentage	Number	Percentage
1	Have you heard about organ donation or organ transplantation?	870	84%	131	13%	39	4%
2	Do brain death and coma mean the same?	237	23%	654	63%	149	14%
3	Is blood group matching required for eye and skin donation?	363	35%	472	45%	205	20%
4	Do you support organ donation?	931	90%	65	6%	44	4%
5	Has anyone in your family or close friends donated any organ in last 5 years?	295	28%	611	59%	134	13%
6	Have you donated blood?	548	53%	492	47%		
7	Do you know about ZTCC?	341	33%	699	67%		
8	Have you considered donating any organ?	771	74%	269	26%		

33% (341) respondents were aware of ZTCCs (Zonal Transplant coordination Centers), while 67% (699) had no knowledge of them. A promising 74% (771) participants expressed willingness to donate their organs, while 26% (269) were unwilling. When asked about the blood donation history it was noted that slightly more than half, that is 53% (548) of the participants had previously donated blood. (reference-table 2).

While 49% (514) participants correctly identified 18 years as the minimum age for self-consented organ donation, a considerable 51% (526) had no clarity about it. Understanding of the timeframe for organ harvesting varied, with 39% (408) selected the correct 6-hour window, while others chose 2 hours 26% (276), 4 hours 26% (273), or 8 hours 8% (83).

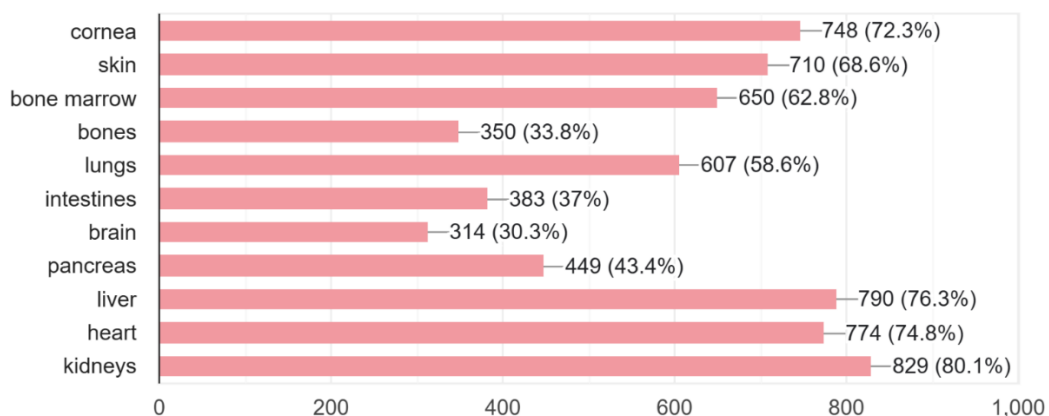
Among 1040 participants, 72% (751) correctly identified that all major organs (lungs, liver, kidneys, and heart) can be donated after brain death, a small percentage of 28% (289) believed only individual organs could be donated. 29% (165 out of 574) medicos knew the correct organ donation rate in India which is 0.34 per million population.

Chart 1: Question- On a scale of 1 (no influence) to 5 (very strong influence), how much do you believe religious beliefs impact organ donation?



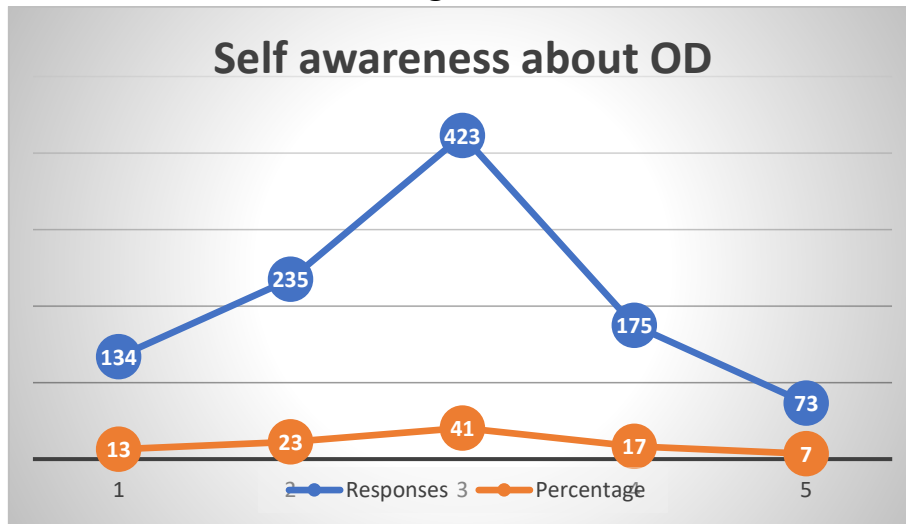
Many participants acknowledged the existence of misconceptions surrounding organ donation, with religious and cultural beliefs playing a significant role (Chart 1). Question on The Transplantation of Human Organs Act, was correctly answered by 52% (541) that the act was first passed in 1994, with others selecting incorrect years. While 59% (616) correctly identified the kidney as the first organ transplanted in India in 1971, others selected incorrect options such as heart (21%), bone marrow (11%), or liver (8%).

Chart 2: Question- which of the following organs can be donated ?



When asked about officially registering for organ or body donation, 397 participants expressed willingness for organ donation, 99 for body donation, and 236 for both. However, 260 respondents outright declined.

Chart 3: Question- On a scale of 1 (don't know) to 5 (know everything) self-assess your knowledge about organ donation.



A significant 66% (690) respondents rated organ donation as highly important for saving lives, while others rated it with varying degrees of importance. Participants expressed mixed opinions on the influence of cultural and religious beliefs on organ donation, with responses distributed across different levels. Encouragingly, 694 respondents reported having conversations about organ donation with their family and friends. However, 230 had never discussed it.

DISCUSSION

Organ donation and transplantation represent critical treatment options for various end-stage organ diseases. Unfortunately, a significant number of patients lose their lives while awaiting a transplant. One of the primary reasons for this shortfall is the widespread lack of awareness and understanding within the general population about the procedure and laws, compounded by persistent myths and cultural beliefs surrounding organ donation ⁹.

In this study, participants shared a range of thoughts regarding misconceptions about organ donation. The most common themes included concerns about the soul of the deceased not attaining peace or spiritual liberation. Another frequently mentioned concern was that living donors may become more susceptible to illnesses after donation or may not be able to lead a healthy, complete life thereafter. A fear of disfigurement of the body after organ donation, particularly in the case of deceased donors was mentioned by a significant number of respondents followed by concerns related to religious rituals, believing that organ donation might interfere with traditional rites or affect the soul's journey after death.

Similar findings were observed in an article by Bedanta Sharma et al (2019) that the low rate of deceased organ donation in India is attributed to multiple factors, with poor public awareness being the most significant. Despite awareness programs in some states, they often fail to reach the broader population. Challenges include the reluctance of families to accept brain death, lack of prior discussion and emotional preparedness, and insufficient training of transplant coordinators, who play a vital role in the donation process. Cultural and religious beliefs, along with superstitions ¹⁰⁻¹², also discourage cadaveric donation.

On the other hand, a study conducted in Kozhikode, Kerala, mentioned that religious beliefs played a minor role in the unwillingness to donate organs⁹. This observation was similar to a study conducted in rural Puducherry, which also revealed that religious beliefs did not significantly influence individuals' willingness to donate organs. However, opposition from family members emerged as the most common barrier to organ donation. This highlights the critical need to involve families in the decision-making process and foster open discussions about organ donation within households¹³. In the current study, 694 participants reported having open discussions about organ donation with their family members or friends, while 320 participants had not had such discussions. These responses indicate lack of public awareness and education. Religious and cultural beliefs, along with emotional resistance from family members are some of the most recorded responses. Overall, the responses reflect a need for better communication and education.

Although the above-mentioned concerns exist, the study revealed a majorly positive attitude towards organ donation similar to many other studies¹³⁻¹⁵. 84% (870) participants had heard about organ donation, indicating widespread awareness. 90% (931) of the respondents expressed support for organ donation. A promising 74.1% (771) participants expressed willingness to donate organs. Encouraging informed decision-making through awareness initiatives could help increase the number of potential donors. A significant 66% (690) respondents rated organ donation as highly important for saving lives. This widespread recognition of its value suggests that awareness efforts are having a positive impact. Even studies conducted in different countries like Saudi Arabia, Italy, Jordan also revealed generally positive beliefs toward organ donation, both deceased and living.¹⁶⁻¹⁸

The National Organ and Tissue Transplant Organization (NOTTO), established under the Transplantation of Human Organs and Tissues Act of 1994, serves as India's central registry for organ donation and transplantation. With the country's deceased-donor organ donation rate currently below 1 per million population, NOTTO aims to increase donations through nationwide, year-round awareness activities in collaboration with Regional (ROTTOS), State (SOTTOs), and non-governmental organizations¹⁹. Awareness about information on Zonal Transplant Co-ordination Center (ZTCCs), correct time period for donating organs after death, no requirement of blood group matching for skin and eye transplants, brain death vs coma, the transplantation of human organs act, age for organ donation- was generally found to be low. Willingness to donate body, organ or both was shown by considerable number of people although 269 (26 %) participants stated that they were unwilling to donate, indicating a gap between conceptual support and actual commitment.

Participants unanimously agreed that the government plays a crucial role in addressing the issue. They recommended the implementation of awareness campaigns through advertisements, as well as the organization of seminars in schools, colleges, workplaces, and elder care facilities. The general consensus strongly supported a proactive and multi-faceted role for the government in promoting organ donation awareness. Several states, including Tamil Nadu²⁰, Kerala²¹, Andhra Pradesh²², and Maharashtra²³, have issued government orders mandating the declaration of brain death in all hospitals—an important step toward increasing organ donation¹⁹. Additionally, the term "potential donors" is being promoted to ensure that patients with a high likelihood of progressing to brain death are appropriately identified and considered for donation.

With the rapid expansion of social media and the growing ease of online access, it is crucial to monitor the accuracy of the information being disseminated. The spread of misinformation must be actively controlled. A study among Omani university students found that an overwhelming majority of students

(84.13% from 2125 total) primarily depended on online platforms and social media for information regarding organ donation. In comparison, traditional sources such as radio, television, family and friends, awareness campaigns, healthcare facilities, and other mediums played a considerably smaller role²⁴. A study conducted in Haryana also revealed the major source of information as media¹¹.

Major confusion and lack of understanding the concept of brain-death is standing in the way of potential donors. Many physicians lack practical training in implementing organ donation laws, despite having theoretical knowledge. This gap, largely due to the absence of formal education on the topic in medical curricula²⁵, leads to hesitation in addressing brain death with families. To improve donor conversion rates and acceptance of brain death declarations, training is being provided to intensivists and anaesthetists on the medical and legal aspects of brain death²⁶. The 2011 amendment to the Transplantation of Human Organs Act (THOA) mandates informing families about the option to donate organs as part of ICU care²⁷. However, organ donation rates remain low due to various challenges, including the limited practice of brain death declaration and minimal adoption of donation after cardiac death¹⁹. Infrastructure challenges, such as inadequate ICU facilities and ventilator availability, also contribute to the loss of potential organ donors in India¹⁰.

CONCLUSION

The discussion highlights that while there is growing support for organ donation, significant barriers persist, including misinformation, cultural beliefs, streamlining of legal process, and inadequate infrastructure. Additionally, gaps in medical training, inadequate infrastructure, and limited public engagement further hinder progress. To overcome these obstacles, a multi-pronged approach is essential—one that includes integrating organ donation education into medical curricula, improving hospital readiness, strengthening legal frameworks, and launching widespread, culturally sensitive awareness campaigns. With sustained efforts, India can bridge the gap between intention and action, ultimately increasing organ donation rates and saving more lives.

REFERENCES

1. Mohan L, Panneer Selvam TT. Perspective on organ donation in India: A comprehensive review. *J Community Health Manag.* 2020 Oct 28;7(3):73–6.
2. Tamuli R, Sarmah S, Saikia B. Organ donation – “attitude and awareness among undergraduates and postgraduates of North-East India.” *J Fam Med Prim Care.* 2019;8(1):130.
3. (PDF) Organ donation and transplantation: An updated overview. ResearchGate [Internet]. 2024 Oct 22 [cited 2025 Apr 16]; Available from: https://www.researchgate.net/publication/291949391_Organ_donation_and_transplantation_An_updated_overview
4. Job K, Antony A, Job K, Antony A. Organ Donation and Transplantation: “Life after Death.” In: *Organ Donation and Transplantation - Current Status and Future Challenges* [Internet]. IntechOpen; 2018 [cited 2025 Apr 16]. Available from: <https://www.intechopen.com/chapters/62192>
5. The Lancet Regional Health – Southeast Asia. Organ transplantation in India: needs a bigger push. *Lancet Reg Health - Southeast Asia.* 2024 Feb;21:100366.
6. Organ Donation and the COVID pandemic [Internet]. Mediawire. [cited 2025 Apr 22]. Available from: <https://www.mediawire.in//press-releases/pharmaceuticals/organ-donation-and-the-covid-pandemic-45291400.html>

7. (PDF) International practices of organ donation [Internet]. [cited 2025 Apr 16]. Available from: https://www.researchgate.net/publication/51954127_International_practices_of_organ_donation
8. [transplantation_of_human_organ_and_tissues_act_1994.pdf](https://www.indiacode.nic.in/bitstream/123456789/15433/1/transplantation_of_human_organ_and_tissues_act_1994.pdf) [Internet]. [cited 2025 Apr 16]. Available from: https://www.indiacode.nic.in/bitstream/123456789/15433/1/transplantation_of_human_organ_and_tissues_act_1994.pdf
9. Associate Professor, Department of Pathology, KMCT Medical College, Manassery, Kozhikode, Kerala, India, Paul DrB, Zameel DA, Assistant Professor, Department of Community Medicine, KMCT Medical College, Manassery, Kozhikode, Kerala, India, Aisabi DrKA, Professor & Head, Department of Pathology, KMCT Medical College, Manassery, Kozhikode, Kerala, India, et al. Knowledge and attitude towards organ donation among people seeking health care in Kozhikode, Kerala, India. *Trop J Pathol Microbiol.* 2019 Oct 31;5(10):777–83.
10. Sarma B, Dash SK, Ghormade PS, Kumar DAV. Cadaveric organ donation: Indian perspective. *Indian J Forensic Community Med.* 2024 Jul 28;11(2):44–8.
11. Varshney S, Kansra P, Perumallapalli A, Garg A. Awareness, Attitude, and Perception toward Organ Donation in General Population of Haryana, India. *Indian J Transplant.* 2022 Apr;16(2):158–60.
12. Saxena D, Trivedi P, Bhavsar P, Memon F, Thaker A, Chaudhary C, et al. Challenges and Motivators to Organ Donation: A Qualitative Exploratory Study in Gujarat, India. *Int J Gen Med.* 2023 Jan;Volume 16:151–9.
13. Balajee K, Ramachandran N, Subitha L. Awareness and attitudes toward organ donation in rural Puducherry, India. *Ann Med Health Sci Res.* 2016;6(5):286.
14. Balwani MR, Gumber MR, Shah PR, Kute VB, Patel HV, Engineer DP, et al. Attitude and awareness towards organ donation in western India. *Ren Fail.* 2015 Apr 21;37(4):582–8.
15. Nayak VC, Nayak S. An empirical investigation on the impact of attitudes towards organ donation in India. *F1000Research.* 2023 Jun 5;12:463.
16. Alghamdi A, Alsaleh A, Alfozan O, Qutob R, Alaryni A, Bukhari A, et al. Awareness, Attitude, and Beliefs Regarding Organ Donation Among the General Public in Saudi Arabia. *Int J Gen Med.* 2023 Oct;Volume 16:4973–89.
17. Burra P, De Bona M, Canova D, D'Aloiso MC, Germani G, Rumiati R, et al. Changing Attitude to Organ Donation and Transplantation in University Students During the Years of Medical School in Italy. *Transplant Proc.* 2005 Mar;37(2):547–50.
18. Al-Salhi A, Othman EH. Public knowledge about and attitudes toward organ donation, and public barriers to donate in Jordan: A cross-sectional study. *World J Transplant.* 2024 Dec 18;14(4):95419.
19. Kute V, Ramesh V, Shroff S, Guleria S, Prakash J. Deceased-Donor Organ Transplantation in India: Current Status, Challenges, and Solutions. *Exp Clin Transplant.* 2020 Jul;18(Suppl2):31–42.
20. Government of Tamil Nadu. Brain Death – Declaration of Brain Death Made Mandatory in Government Medical College Hospitals in Chennai – Procedure for Declaration of Brain Death – Orders Issued [Internet]. G.O. (Ms) No. 75 Mar 3, 2008. Available from: https://www.mohanfoundation.org/government-orders/hfw_e_75_2008.pdf
21. Health and Family Welfare Department, Kerala. Government of Kerala: Mandatory Declaration of Brain Death in Hospitals [Internet]. Transplantation of Human Organs Act, 1994 (THOA) and Rules, 1995. Sect. Brain death declaration procedures, G.O. (MS) No. 36/2012/H&FWD Apr 2, 2012 p. Full order. Available from: https://www.knos.org.in/pdf/go_ms_36_2012.pdf

22. Health, Medical & Family Welfare (M1) Department, Andhra Pradesh. Government of Andhra Pradesh: Jeevandan Cadaver Transplantation Scheme [Internet]. Andhra Pradesh Transplantation of Human Organs Act, 1995 and Rules, 1995. Sect. Multiple (General Policy), Bill No: G.O. MS No. 184 Aug 16, 2010 p. Entire document. Available from: <https://jeevandan.gov.in/PDF's/GOMS184.pdf>
23. Public Health Department, Government of Maharashtra. Government of Maharashtra: Mandatory Declaration of Brain Death in Hospitals [Internet]. Transplantation of Human Organs Act, 1994. Sect. Brain Death Declaration, Government Resolution No. ORG-2010/C.R.142/Arogya-5 Apr 30, 2012 p. Full Resolution. Available from: <https://www.mohanfoundation.org/government-orders/Maharashtra-GOs-Brain-Death-Declaration.pdf>
24. Alwahaibi N, Al Wahaibi A, Al Abri M. Knowledge and attitude about organ donation and transplantation among Omani university students. *Front Public Health*. 2023 May 25;11:1115531.
25. Hamed H, Elhosseny Awad M. Knowledge and Attitudes about Organ Donation among Medical Students in Egypt: A Questionnaire. *J Transplant Technol Res* [Internet]. 2015 [cited 2025 Apr 10];06(01). Available from: <https://www.omicsonline.org/open-access/knowledge-and-attitudes-about-organ-donation-among-medical-studentsin-egypt-a-questionnaire-2161-0991-1000155.php?aid=67935>
26. Seddiq M, Uddin RH, Mohammed M, Khalaf I, Mohammed A, Akbar M, et al. Knowledge, Attitudes, and Willingness regarding Organ Donation in a Muslim Country: A Report from the United Arab Emirates. *Saudi J Kidney Dis Transplant*. 2023 Dec;34(6):482.
27. Government of India. The Transplantation of Human Organs (Amendment) Bill, 2011 [Internet]. Transplantation of Human Organs Act, 1994. Sect. Full Amendment Act, Bill No. 136-F of 2009 Aug 26, 2011 p. Entire Document. Available from: <https://jeevandan.gov.in/Acts/AMENDMENT%20Bill%202011.pdf>