

How to Cite:

Desai, J. N., Vadhel, C. R., Patel, N. M., & Patel, B. G. (2022). A questionnaire-based study evaluating awareness for organ and body donation and cadaveric dissection among the general population attending mid Gujarat region. *International Journal of Health Sciences*, 6(S2), 3156–3165. <https://doi.org/10.53730/ijhs.v6nS2.5762>

A questionnaire-based study evaluating awareness for organ and body donation and cadaveric dissection among the general population attending mid Gujarat region

Jalpa N. Desai

Assistant Professor Dept. of Anatomy, GCS Medical College, Hospital and Research centre. Ahmedabad, Gujarat

Chirag R. Vadhel

Assistant Professor Dept. of Anatomy, GCS Medical College, Hospital and Research centre. Ahmedabad, Gujarat
Email: dr.vadhel@gmail.com

Nirav M. Patel

Tutor, Dept. of Anatomy, GCS Medical College, Hospital and Research centre. Ahmedabad, Gujarat

Bharat G. Patel

Professor & Head, Dept. of Anatomy, GCS Medical College, Hospital and Research centre. Ahmedabad, Gujarat

Abstract---Introduction: Organ transplantation provides benefits to society as a whole as well as to the individuals who receive transplants. However, the success of transplantation for end-stage organ failure is limited due to the availability of suitable organs for transplant. Public awareness is critical for the development of donation program. Methods: Total 200 adult participants were included in the studies from outpatient department by consecutive sampling method. A self-administered semi structured questionnaire was filled by participants in the presence of researchers. Results: Awareness of organ donation (67.5%) was higher than awareness of body donation (34.5%) and cadaveric dissection (32.5%). About 28% and 24% participants were aware of live organ donation and brain death. Willingness for organ donation was observed 21.5% participants, unwillingness in 51.5% of participants and 27.0% in undecided state of mind. Conclusion: Knowledge level regarding organ donation was found sufficient but same did not reflect in their

attitude and practice towards organ donation. Educational session of health care professional through internet and television can play critical role in rising up positive attitude towards organ donation. Fear of misuse of donated organ is the most common reason for unwillingness to be a donor.

Keywords---attitude, cadaveric dissection, knowledge, organ donation, willingness.

Introduction

Human anatomy is a fundamental subject for medical student and it is based on cadaveric dissection¹. Body donation is an act of bestowing one's body after death to medical college for research and education. In order to have a healthy and positive approach to the donation process, it is important to have a 'gift of life and sacrifice' viewpoint^{2,3}, as human cadavers are invaluable resource for teaching and research in anatomy. It gives students hands-on experience with complicated anatomical structures in three dimensions. The need for cadavers has risen dramatically as the number of medical colleges and students in medical institutions has increased but still there is scarcity of cadavers in India ⁴. Body donation needs to be made more widely known among the general public in order to meet the ever-increasing demands of medical colleges ⁵. The first step in this direction can be taken by spreading the awareness among the patients attending medical colleges.

Organ transplantation is beneficial to both society as a whole and the people who receive transplants⁶. India is ranked second in the world for live organ transplant surgery, but its annual deceased organ donation rate is a pitiful 0.08 million per years⁷. However, the success of transplantation for end-stage organ failure is limited due to the availability of suitable organs for transplant. Despite the fact that organ transplantation is saving the lives of many people, there is a rising discrepancy between the number of possible donors and recipients ⁶.

Public awareness is critical for the development of donation program. The unmet need for transplants has resulted in many systematic approaches to increase donor rates⁸. It is required to operate at two levels to meet demand of organ donation: the general population and healthcare workers ^{9,10}. The attitude of health care workers towards organ donation is critical to the success and long-term viability of transplant programme ¹¹. This is because the medical profession plays a central role in raising public awareness of both living and post-mortem organ donation. Healthcare professionals are the critical link in augmenting public awareness about organ donation ¹⁰. Majority of the studies based on awareness among health care professionals, very few surveys have been carried out among general population. This study was carried out to assess the awareness among general population regarding body donation and cadaveric dissection and their willingness to donate body.

Methods

This cross sectional study was carried out during October to December 2021 in a tertiary care hospital, Ahmedabad. Total 200 adult participants were included in the studies from outpatient department by consecutive sampling method after obtaining written informed consent. A self-administered semi structured questionnaire in vernacular language was created which included socio demographic details and multiple choice questions regarding knowledge and willingness towards body/organ donation. It was filled by participants in the presence of researchers and they were asked to clarify doubts if any, prior to filling the questionnaire. Medical students and doctors were excluded from the study. Any inquiries about organ and body donation were answered. Information sheets with essential information on organ donation were provided to respondents. Data was entered in MS excel and analysed. Quantitative data was presented with mean and Standard deviation (SD). Qualitative data was presented with frequencies and percentages.

Results

Total 200 participants filled up the questionnaire. Mean age of the study participants was 48.2 ± 12.3 years. Of them, 111 (55.5%) were male. Majority of the participants (123, 61.5%) were Hindu followed by Muslim (47, 23.5%). Out of 200 participants, 84 (42.0%) were illiterate and 46 (23.0%) were educated up to primary (Table 1).

Table 1: Socio demographic profile of the participants

Characteristics	Frequency	Percentage (%)
Age (Mean $\pm$ SD, years)	48.2 ± 12.3	
Gender		
– Male	111	55.5
– Female	89	44.5
Religion		
– Hindu	123	61.5
– Muslim	47	23.5
– Christian	6	3
– Others	24	12
Education		
– Illiterate	84	42
– Primary	46	23
– Secondary	30	15
– Higher secondary	26	13
– Graduate	8	4
– Post Graduate	6	3

Awareness regarding organ donation was observed in 135 participants (67.5%), awareness for body donation among 69 participants (34.5%), and

awareness regarding cadaveric dissection among 65 participants (32.5%). Out of 200 participants, 55 participants (27.5%) were aware about donated cadaveric organ were used for medical study and transplantation. For 79 participants (39.5%), ideal person for organ donation is sibling, while 32 participants (16.0%) told that any boy could donate organ. Only 24 participants (12%) correctly answered that brain dead patients could donate organs. Healthy living donor was selected as ideal for organ donation by 56 participants (28.0%) followed by cadaver (66, 33.0%). Only 18 patients (36.0%) heard about transplantation of human organ act. Total 112 participants (56.0%) responded that only donor could give consent for organ donation while 76 participants (38%) told that donor's family could also give consent. Total 127 patients (63.5%) had belief that donated organ or body are disrespected during dissection. About 142 patients thought that dissected parts were sold for monetary gain

Table 2: Knowledge of organ donation among participants

	Frequency	Percentage (%)
Awareness among participants		
– Organ donation	135	67.5
– Body donation	69	34.5
– Cadaveric dissection	65	32.5
Do you know the purpose of cadaveric organ donation?		
– Study and research purpose	19	9.5
– Transplantation	75	37.5
– Both	55	27.5
– Don't know	51	25.5
Ideal person for organ donation		
– Siblings	79	39.5
– Anybody	32	16
– Parents	24	12
– Children	7	3.5
– Don't know	58	29
Ideal for organ donation		
– Brain dead	24	12
– Health living donor	56	28
– Cadaver	66	33
– Not answered	64	32
Have you heard or read Transplantation of Human Organ Act?		
– Yes	36	18
– No	164	82
Who should be authority to give consent for body		

donation		
– Donor's only	112	56
– Donor's family	76	38
– Doctor	15	7.5
– Don't know	34	17

Table 3: Attitude regarding organ donation among participants

	Frequency	Percentage (%)
Do you think donated bodies are disrespected during and after dissection		
– Never	35	17.5
– Sometime	41	20.5
– Often	64	32
– Always	22	11
– Don't know	36	18
Donated bodies/ dissected parts sold for monetary gain		
– Never	24	12
– Sometime	78	39
– Often	50	25
– Always	14	7
– Don't know	34	17
Attitude regarding for organ/body donation		
– Strongly positive without any hesitation	43	21.5
– Positive but need persuasion	54	27
– Absolutely negative	103	51.5
Will take pledge to donate		
– Yes without hesitation	43	21.5
– Want to donate but will not take pledge	54	27
– No	103	51.5

More than half of the participants (103, 51.5%) were not willing to donate organ or body. Various reasons for unwillingness are shown in table 4. Of them, most common cited reason for unwillingness for organ/body donation was misbelief regarding miss-use of organ or body (40, 38.8%) followed by psychological anxiety (36, 35.0%), fear of cutting body into pieces (18, 17.5%), and religious barrier (4, 3.9%). Total 54 participants (27.0%) want to donate organ/body but did not fill up pledge form. They are potential donors if proper counselling is received. Many of them (13, 24.1%) did not decide yet, 19 patients (35.2%) would do later after obtaining more information. Five patients (9.3%) were not aware about procedure.

Willingness to donate organ or body was found among 43 participants (21.5%) and they have taken pledge. Of them, most people motivated about organ

donation through media (newspapers, television, internet etc. 33, 76.7%) followed by medical person (10, 23.3%), from voluntary organisation (5, 11.6% and friends/family members (2, 4.7%). Out of 43 participants, 27 participants (62.8%) believed that organ donation was noble work to save of other's life (27, 62.8%), 14 participants (32.6%) wanted to avoid un necessary wastage of organ, five participants (11.6%) wanted to help in facilitating medical teaching, Majority of the participants took pledge for donation of cornea (35, 81.4%), followed by the kidney (30, 69.8%), and the heart (27, 62.8%).

Table 4: Reasons of positive or negative attitude regarding organ donation among participants

Reasons for unwilling ness regarding body /organ donation (n-103)		
– Organ/ Body could be miss used	40	38.8
– Psychological anxiety	36	35.0
– Prevented by family members	20	19.4
– Don't want to cut body into pieces	18	17.5
– No reasons	8	7.8
– Religious barrier	4	3.9
Reasons behind willingness to donate body / organ but not filled up pledge from till now (n-54)		
– Will do later	19	35.2
– Want to know much more	18	33.3
– Not decided yet	13	24.1
– Don't know about procedure	5	9.3
– Family not agreed	5	9.3
– Religious barrier	2	3.7
What is your opinion regarding positive attitude of body/ Organ donation (n-43)		
– To save other needy people's live	27	62.8
– To avoid unnecessary wastage of body by cremation	14	32.6
– To facilitate medical teaching process	5	11.6
– To be live by other peoples life	3	7.0
From where you are motivated for donation (n-43)		
– Media	33	76.7
– Medical person	10	23.3
– Family members / Friends	2	4.7
– Voluntary organization	5	11.6
Which organ will you pledge? (multiple response) (n=43)		
– Eye	35	81.4
– Kidney	30	69.8
– Heart	27	62.8
– Body	12	27.9

–	Liver	9	20.9
---	-------	---	------

Discussion

The demand for cadavers and organ transplants significantly outnumbers than availability. Transplant technology and surgical practises are increasing the chances of survival and improving the recipient's quality of life. The success of a donor programme in any region is determined by the residents' understanding and attitude toward organ donation¹². More awareness activities should be performed to inspire persons to join in body donation and organ donation programmes in order to overcome this dilemma

In present study, awareness of organ donation (67.5%) was higher than awareness of body donation (34.5%) and cadaveric dissection (32.5%). Parmar KM et al.¹ reported that awareness of organ donation, body donation and cadaver dissection was observed among 45.4%, 36.1% and 51.5% participants respectively. In the study by Charmode SH et al.⁴ overall awareness about organ donation and body donation was 63.4 % and 70.1 %, respectively.

In the present study, 28% and 24% participants were aware of live organ donation and brain death. However, 33% responded that organs were transplanted only after death. Only eyes, skin and other tissues can be donated after cardiac death today in India. According to Bharambe V et al.¹² awareness of live organ donation and brain death among 24.4% and 39% participants respectively. Wig et al.¹³ observed that that the communication process gets considerably more difficult if the relative is unfamiliar with the concept of organ donation after brain death. Awareness among relatives about the process of brain death and related organ donation and transplantation will ease the way for the discussion process.

In the present study, willingness for organ donation was observed 21.5% participants, unwillingness in 51.5% of participants and 27.0% in undecided state of mind. Bharambe V et al.¹² observed that 24.4% were willing to be organs donor, 4.9% respondents were unwilling and rest of 24.4% needed more information before making choice. In the study of Annadurai et al.¹⁴ 12.5% were willing to be donors, 19.8% would only donate under special circumstances, 43% wanted to think about it and 16.8% would never even consider doing organ donation.

In the present study, saving other's life (62.8%), avoidance of unnecessary wastage of organ (32.6%), facilitating medical teaching (11.6%) were main driving force for organ donation. Similarly, ability to live even after one's death and give someone immense happiness were most cited motivators for organ donation in the study of Bharambe V et al.¹² In the present study, more than 2/3rd participants who are willing to donate were motivated through media (76.7%). Bharambe V et al.¹² and Bapat et al.¹⁰ also reported media as prime source of information among 73.1% and 60% participants respectively. Discussion within family has an additional benefit of dissemination of knowledge to all family members. In the present study, many participants (23.3%) were motivated through health care professionals. Health care professionals are the key links in the organ procurement process because

they are the first contact individuals with the potential donors' family. Education of health-care professionals in various aspects of organ donation is therefore a must as they in turn can propagate this knowledge at the community level.¹⁵

In the present study, half of the participants (51.5%) were not willing for organ donation. Most common cited reason for unwillingness was misbelief regarding miss-use of organ (38.8%), followed by psychological anxiety (35.0%), fear of cutting body into pieces (17.5%), and religious barrier (3.9%). Similarly, Bharambe V et al.¹² observed that fear of misuse of organs was the reason cited by 50% of those respondents who were unwilling to be donors. Khan et al.¹⁶ also observed that people who could be donors, are hesitant to donate due to lack of understanding and fear of the organ being exploited. Adequate awareness programme with a multi-sectoral approach using electronic media, print media, doctors, teachers and religious scholars could aid in awareness and remove this fear of potential donors. Morgan et al.¹⁷ stated that medical mistrust is the most frequently cited reason for not wanting to be a donor. Medical mistrust included fear that doctors might declare death prematurely to procure organs and doubts regarding equity in organ allocation system.

In India, the majority of people follow their religious practises at funerals. Therefore, religious rites and beliefs is one of the reasons for not donating the bodies¹⁸. A study conducted by Ballala et al on medical professionals shows that 85% were not willing for donation, due to fear on misusing of donated bodies¹⁹. In the present study, 27.0 % participants interested for organ donation but did not fill up pledge form. They are potential donors if proper counselling is received. Lack of awareness about organ donation process is the cause of shortage of organ or cadaveric donor's despite of so much population.

Conclusion

Knowledge level regarding organ donation was found sufficient but same did not reflect in their attitude and practice towards organ donation. Educational session of health care professional through internet and television can play critical role in raising up positive attitude towards organ donation. Fear of misuse of donated organ is the most common reason for unwillingness to be a donor. Stringent laws and open organ allotment system could remove this fear to further increase rate of organ donation. Proper counselling to potential donors and their families and addressing their anxieties may help them in convincing to be donor.

Acknowledgment

I express my sincere gratitude to Dr. Bharat G. Patel, Professor & Head Dept. Of Anatomy of GCS Medical college, Hospital and Research Centre Ahmedabad, for him suggestions. I want to thank to participants without whom this study would not have been completed

References

1. Agaba, E. I., Ocheke, I. E., Agaba, P. A., Idoko, O. T., Ugoya, S. O., Yerima, Y., & Iroezindu, M. (2008). Willingness of Nigerian healthcare workers to donate kidneys. *The International Journal of Artificial Organs*, 31(4), 329-332.
2. Annadurai, K., Mani, K., & Ramasamy, J. (2013). A study on knowledge, attitude and practices about organ donation among college students in Chennai, Tamil Nadu-2012. *Progress in Health Sciences*, 3(2), 59.
3. Ballala, K., Shetty, A., & Malpe, S. B. (2011). Knowledge, attitude, and practices regarding whole body donation among medical professionals in a hospital in India. *Anatomical Sciences Education*, 4(3), 142-150.
4. Bapat, U., & Kedlaya, P. G. (2010). Organ donation, awareness, attitudes and beliefs among post graduate medical students. *Saudi Journal of Kidney Diseases and Transplantation*, 21(1), 174.
5. Bharambe, V. K., Rathod, H., Paranjape, V. M., Kanaskar, N., Shevade, S., Survase, K., ... & Feroz, A. (2015). Awareness regarding body and organ donation amongst the population of an urban city in India. *Journal of Health and Allied Sciences NU*, 5(04), 051-057.
6. Charmode SH, et al. (2018). A Study of Sexual Dimorphism and Age Related Differences in Awareness and Willingness regarding Organ and Body Donation. *Indian Journal of Anatomy.*, 7(6), 605-609.
7. Conesa, C., Ríos Zambudio, A., Ramírez, P., Canteras, M., del Mar Rodríguez, M., & Parrilla, P. (2004). Socio-personal profile of teenagers opposed to organ donation. *Nephrology Dialysis Transplantation*, 19(5), 1269-1275.
8. Dope, S. A., Bhusari, P. A., Kulkarni, P. R., & Diwan, C. V. (2015). Body donation-the life after death. *MedPulse*, 2(4), 216-.
9. Gerbi, A., Bekele, M., Tesfaye, S., Chane, G., & Markos, Y. (2020). Knowledge, attitude, and willingness towards cadaveric organ donation among Jimma University medical centre health care professionals. *Translational Research in Anatomy*, 18, 100056.
10. Kent, B. (2007). Tissue donation and the attitudes of health care professionals. *Organ and Tissue Donation*, 102-121.
11. Khan, N., Masood, Z., & Zahra, S. (2011). Knowledge and attitude of people towards organ donation. *Journal of University Medical & Dental College*, 2(2), 15-21.
12. Khanna, U. (2009). The economics of dialysis in India. *Indian Journal of Nephrology*, 19(1), 1.
13. Morgan, S. E., Harrison, T. R., Afifi, W. A., Long, S. D., & Stephenson, M. T. (2008). In their own words: the reasons why people will (not) sign an organ donor card. *Health Communication*, 23(1), 23-33.
14. Parmar, K. M., Vaisnani, H., Chavda, N., Sharma, P., & Jethava, K. (2021). A Questionnaire Based Study Evaluating Awareness for Organ and Body Donation and Cadaveric Dissection among the General Population Attending Medical and Dental Hospital. *Prof. (Dr) RK Sharma*, 21(1), 835.
15. Rokade, S. A., & Bahetee, B. H. (2013). Body donation in India: a review. *J Res Med Sci*. 2013;1(3):173-7.
16. Rokade, S. A., & Gaikawad, A. P. (2012). Body donation in India: Social awareness, willingness, and associated factors. *Anatomical Sciences Education*, 5(2), 83-89.

17. Schaeffner, E. S., Windisch, W., Freidel, K., Breitenfeldt, K., & Winkelmayr, W. C. (2004). Knowledge and attitude regarding organ donation among medical students and physicians. *Transplantation*, 77(11), 1714-1718.
18. Shepherd, L., O'Carroll, R. E., & Ferguson, E. (2014). An international comparison of deceased and living organ donation/transplant rates in opt-in and opt-out systems: a panel study. *BMC Medicine*, 12(1), 1-14.
19. Wig, N., Gupta, P., & Kailash, S. (2003). Awareness of brain death and organ transplantation among select Indian population. *The Journal of the Association of Physicians of India*, 51, 455-458.