

Original Research Article

Knowledge and attitude of educated people towards Organ and Body donation: A Cross-Sectional study in Southern Odisha

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Abstract: Acquired or developmental damage of any organ due to any reason leaves the victim crippled. In such circumstances to overcome the problems organ transplant becomes an essential mode of treatment whereas whole body donation helps the medical students to become a skilled doctor with innovative insights by dissecting different parts of the body and for preparing museum specimens for future study and references. The attitude of health care workers can play a vital role in educating the general public regarding organ and body donation. With this view, the present work was carried out to access the knowledge and attitude of the people towards the organ/body donation among medical, nursing students and science students of a general public school. A pre validated questionnaire was used as instrument. The students were distributed with the questionnaire and the collected data were analyzed. In our study population, 63.7% participants had idea about organ donation and 64.9% opined that body donation should be for the purpose of dissection as well as organ transplantation purpose. 19.5% of all had the attitude of unwillingness towards organ and body donation. As per the opinion of 28.9% participants, the family members prevent them from organ and body donation. From the media or TV news program they got motivated. Positive attitude towards body donation was shown in 22.8% of population only. Again, 62.8 % suggested for public awareness, 58.4 % suggested for formation of NGO that would be better for improving attitude and 46.4 % of all suggested for mobilization of the government machinery for body and organ donation. 68.9 % suggested for establishing embalming units and organ specific bank system for betterment of the society. In conclusion, more number of awareness programs is needed on regular basis for improving the knowledge and attitude towards organ and body donation.

Keywords: Body and organ donation, Cross-sectional, Medical students, Nursing students, NGO, Willingness.

INTRODUCTION:

Birth defects, non-communicable and autoimmune diseases may cause the physical and physiological loss of important organs of body. In such situations, where medical treatment fails, organ donation is the treatment of choice. However this can be only possible if someone donates his organ or tissue before or after death.

Organ donation is the donation of biological living tissue or an organ from a living / dead body to a living recipient for the purpose of transplantation. The organ or tissue donation can be classified as.

1. Live tissue donation. Ex – Blood (Common), Bone marrow, Live etc.
2. Live organ donation. Ex- Kidney.
3. Organ donation at Brain death. Ex- kidney, heart, skin, cornea, and heart valves etc.
4. After complete death. Ex- whole body.

Donated organ/ tissue can be used for transplantation to save the life of a diseased person whereas donated whole body is used for teaching and research purpose.

In India dissection of human cadaver started by Sushruta at 500 BC as per the ancient history [1] and

saint Dadhichi donated his own skeleton for the purpose of weapon Vajra, to kill the demon Vritra. India has legalized the organ donation under transplantation of organ Act, 1994 [2-4]. India has a great shortage of organ as per need for transplantation. This shortage is due to lack of awareness [5, 6] misconception towards organ donation and myth due to religious and cultural barrier leading to hesitancy.

Countries around the world have reported that attitude of people towards Organ donation is influenced by factors such as lack of knowledge, education and religion [7]. In Japan it is practiced to handover the dissected cadaver of the donated body to their relative to complete their rituals [8] by which the mind set up of Japanese towards body/ organ donation has changed and now-a-days they agree to donate the body / organ for medical education or transplantation.

Little is known about the attitude and beliefs about the organ donation among the health personals and educated students. The health care providers should have a key role on educating the public and should act as a link to engage the people in spreading the awareness in the community. In India consent of the next of kin is mandatory before organ can be recovered from a deceased donor. The attitude of health related personnel who closely interact with the family of the deceased can influence their decision [9]. Again the low conversion of potential donor to real donor is perhaps due to indifferent attitude of medical staff and students to motivate the society. Therefore, it becomes paramount to access the knowledge and attitude of health personnel and science students towards organ donation.

Teaching anatomy to the medical students is a difficult task within a stipulated period of time. Again learning the practical knowledge of human structure is not possible unless one dissects a cadaver [10]. Though there are some alternatives available like plasticine model, artificial specimen, virtual

dissections etc. dissection of human cadaver has no parallel.

In the present scenario of growing population, more number of medical graduates is required to fulfill the target of, 'Health for all'. More number of medical colleges to be established to procure the required number of doctors for which more number of cadavers is essential for dissection and teaching. Though our country is thickly populated still there is a scarcity of cadavers for our medical colleges for teaching. This scarcity is due to a complex socio-cultural, medico-legal and organization factors involved in it, organ and tissue donation has become a challenging task [11-14]. To bridge the gap between the demand and supply organ donation has become an important public health concern in India. Professionals and science students have a unique position to foster organ and body donation. Now time is changing and we have to come forward to motivate our people to donate the organ/ body to benefit the society for treatment and research purpose.

MATERIALS AND METHOD:

This cross-sectional, questionnaire based survey was conducted from the month of December 2016 to April 2017 using a pre-tested questionnaire (collected from published literatures) containing 13 questions [15-17]. The approval from the Institutional Ethics Committee was obtained prior to the study. Undergraduate students of M.K.C.G. Medical College, nursing students and students of local science institutions were included in the present study. The included participants were of age 18 years or more [18]. Prior consent from the Participants was obtained. The questionnaires were given to the participants. The collected information was entered in MS Excel 2010. Descriptive statistics and chi-square analysis of the data were done by using Graph pad Prism (version 7.0) statistical software. $P < 0.05$ was considered as minimum level of significance. In this study, anonymity and confidentiality was well maintained [19].

RESULTS AND DISCUSSION:

Table –I: Opinions of the participants about organ donation

| Opinion regarding organ donation | Total respondent (342) | | Female 178 (52%) | | Male-164 (48%) | |
|---|------------------------|--------------|------------------|--------------|----------------|--------------|
| | Number | Percentage % | Number | Percentage % | Number | Percentage % |
| Organ donation from living donor only | 218 | 63.7 | 128 | 71.91 | 90 | 30.83 |
| Organ donation from cadaver only | 1 | 0.3 | 1 | 0.56 | 0 | 0 |
| Organ donation from living and cadaver both | 14 | 4.0 | 11 | 6.18 | 3 | 1.03 |
| no idea | 109 | 31.9 | 3 | 28.35 | 71 | 24.32 |

Maximum respondents 63.7% have idea about organ donation from living donor only. Chi-square analysis showed that the idea regarding organ

donation among male and female participants differ significantly $p < 0.0001$.

Table – II: Opinion about body donation

| Purpose of body donation | Total respondent (342) | | Female-178 (52%) | | Male-164 (48%) | |
|--------------------------|------------------------|-------|------------------|-------|----------------|-------|
| | Number | % | Number | % | Number | % |
| Dissection | 25 | 7.3 | 8 | 4.49 | 17 | 10.37 |
| organ transplantation | 58 | 16.95 | 37 | 20.79 | 21 | 12.80 |
| Both | 222 | 64.9 | 105 | 58.99 | 117 | 71.34 |
| No idea | 37 | 10.8 | 28 | 15.73 | 9 | 5.49 |

Maximum respondents 64.9% opined that body donation should be for both dissection and organ transplantation purpose. Among all females 38.99 %

have less idea in comparison to those of males 71.34% which is a significant difference ($p < 0.0006$).

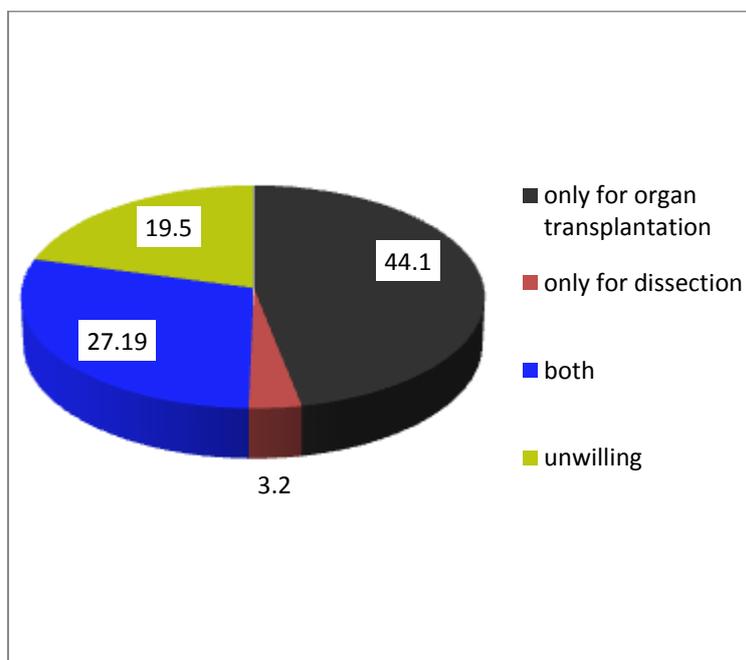


Fig 1: Various opinions given by respondents regarding organ/body donation

Figure –I shows the various opinion given by the respondents regarding organ/ body donation. 44.1% of respondents opined that the organ donation should be for transplantation purpose only. 27.19%

suggested that it should be for both dissection and organ transplantation purpose. Among all 19.5% showed unwillingness to organ / body donation.

Table –III: Opinion regarding the reasons behind unwillingness for Body/ Organ donation

| Opinions | Total respondent (342) | | Female 178 (52%) | | Male-164 (48%) | |
|--------------------------------------|------------------------|--------------|------------------|--------------|----------------|--------------|
| | Number | Percentage % | Number | Percentage % | Number | Percentage % |
| Organ could be wasted | 8 | 2.3 | 5 | 2.81 | 3 | 1.83 |
| Don't want to cut body into pieces | 15 | 4.38 | 8 | 4.49 | 7 | 4.27 |
| Organ/ body could be Misused /abused | 35 | 10.2 | 15 | 8.43 | 20 | 12.20 |
| Religious barrier | 19 | 5.5 | 13 | 7.30 | 6 | 3.66 |
| Prevented by family members | 99 | 28.9 | 49 | 27.53 | 50 | 30.49 |
| Psychological anxiety | 7 | 2.0 | 3 | 1.69 | 4 | 2.44 |
| No reason | 5 | 30.7 | 59 | 33.15 | 46 | 28.05 |
| No knowledge about this | 42 | 12.2 | 27 | 20.79 | 15 | 9.15 |
| Any other reasons | 12 | 3.5 | 0 | 0 | 12 | 7.32 |

Data depicted in table III showed that 30.7 % of all participants gave opinion of no reason for unwillingness. 28.9% opined that they are prevented

by family members. Again all the opinion among male and female participants differ significantly (P < 0.01).

Table –IV: Sources of Motivation for body/organ donation

| Source of motivation | Total respondent (342) | | Female 178 (52%) | | Male-164 (48%) | |
|---|------------------------|--------------|------------------|--------------|----------------|--------------|
| | Number | Percentage % | Number | Percentage % | Number | Percentage % |
| By medical person/ doctor | 105 | 30.70 | 63 | 35.39 | 42 | 25.61 |
| Media (TV, Radio, Newspaper, Internet etc.) | 135 | 39.47 | 65 | 36.52 | 70 | 42.68 |
| By family members | 128 | 37.42 | 36 | 20.22 | 92 | 56.10 |
| Volunteer organizations | 44 | 12.86 | 14 | 7.87 | 30 | 18.28 |

Maximum of 39.47 % participants opined that they got motivated for Organ / body donation from media sources like TV, Radio, newspaper, internet etc. and 37.42% were motivated by their family

members. Again these opinions regarding male and female respondent differ significantly P < 0.001. 89.4% opined that they have not filled up any pledge on organ/ body donation form.

Table –V: Reasons behind willingness to donate body/organ but not filling of pledge form

| Cause of not filling pledge form | Total respondent (342) | | Female 178 (52%) | | Male-164 (48%) | |
|----------------------------------|------------------------|------|------------------|-------|----------------|-------|
| | Number | % | Number | % | Number | % |
| Not decided | 65 | 19.0 | 26 | 14.61 | 39 | 23.78 |
| Will do later | 64 | 18.7 | 31 | 17.42 | 33 | 20.12 |
| Want to know much more | 84 | 24.5 | 46 | 25.84 | 38 | 23.17 |
| No idea about procedure | 78 | 22.8 | 37 | 20.79 | 41 | 25.00 |
| Religious barrier | 10 | 2.9 | 7 | 3.93 | 3 | 1.83 |
| No | 41 | 11.9 | 31 | 17.42 | 10 | 6.71 |

24.5% of the population under study wanted to know much more and 22.8% have no idea about the procedure for organ/ body donation. Again these

opinions regarding reason for unwillingness among female and male participants differ to a significant extent $P < 0.05$.

Table VI: Opinion regarding positive attitude towards body/organ donation

| Causes of positive attitude | Total respondent (342) | |
|--|------------------------|--------------|
| | Number | Percentage % |
| To be lived by other peoples' life | 47 | 13.7 |
| To avoid unnecessary wastage of body by cremation | 11 | 3.2 |
| To save other needy peoples' live | 115 | 33.6 |
| To facilitate medical teaching process more | 16 | 4.67 |
| To save economy by avoiding cremation in poor people | 16 | 4.67 |
| All of the above | 137 | 40.05 |

Data in this table emanated that 40.05 % of all participant opined that all the above factors contribute for positive attitude and 36.6% for positive attitude towards body/organ donation to save the life of other needy people. Again, 62.8 % suggested for public awareness, 58.4 % suggested for formation of NGO would be better for improving attitude and 46.4 % of all suggested for mobilization of the government machinery regarding body/organ donation. 68.9 % suggested for establishing embalming units and organ specific bank system for betterment of the society. Organ donation is also referred to the removal of tissue of human body from a person who has recently died, or from a living donor for the purpose of the transplantation. People of all ages may be organ or tissue donor [15]. Even 22 years after introduction of The Human Organ Transplantation Act in India organ as well as tissue donation and transplantation is still in its infancy. A wide gap between demand and supply of organ donation has brought an important public health problem globally including India [17]. One of the main reasons behind this is the lack of knowledge and many myths and beliefs held by the people [20]. Healthcare personnel can play a vital role in educating the general public and improve their attitude for organ/body donation. Following motivation, the positive attitude of the general public towards organ /body donation and organ procurement has been reported to improve as evidenced in many previous studies [15, 19]. Therefore the present study was undertaken to access the knowledge and attitude towards organ/body donation among educated people.

In the present study, the female participants outnumbered males. Maximum respondents (63.7 %) of our study group have idea about organ donation from living donor. 64.9 % opined that the purpose of body donation should be both for dissection and organ transplantation. Our observation is in accordance to that of Deepthi K *et al.*; in 2015 and T Sree *et al.*; in 2013 [21, 22]. This knowledge among female participants were significantly better and positive than that of males.(Table-I,II) In contrast, in the study of Chkrahdar K *et al.*; males had significantly higher positive attitude score than that of females with respect to organ donation [19]. In our study, most of the participants opined that organ donation should be for transplantation purpose and 19.5% showed unwillingness towards organ/body donation. (Fig-1) Majority participants mentioned no reason of unwillingness but about one third of them opined that they were prevented by family members. (Table-III)

Most of our study participants got motivated from media sources like TV and newspaper and 37.42% opined that they were motivated by family members. (Table-IV) In this respect male participants were significantly more aware than females. Regarding reasons behind willingness for organ donation, 24.5% opined that they wanted to know much more.(Table-V) And in this context response of females were more than males which is in contrast to the observations of P Vijayalaxmi *et al.*; in 2016, and others [18, 4, 23] Regarding positive attitude towards organ/body donation, variable responses were given by all. (Table-VI) Many studies have reported the varying responses of people regarding

the knowledge and attitude towards organ/body donation [20, 24, 25].

CONCLUSION:

Our study revealed that there is a lack of knowledge regarding organ/body donation in our educated study population which includes medical and nursing students as well. This observation addresses the urgent need of awareness programs to improve the knowledge and attitude which can fill the demand of organ donation for treatment as well as body donation for medical teaching. Especially healthcare personnel are to be educated and motivated in this context, so that they can motivate public for organ/body donation to meet the demand.

REFERENCES:

1. Available at http://www.ganadarpanindia.org/article_1.html
2. Available from: <http://www.timesofindia.indiatimes.com/aboutorgandonation.cms>.
3. 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 medical ethics. 2009 Jun 17; 10(1):5.
4. Annadurai K, Mani K, Ramasamy J. A study on knowledge, attitude and practices about organ donation among college students in Chennai, Tamil Nadu-2012. Progress in Health Sciences. 2013 Jul 1; 3(2):59.
5. Tokalak I, Kut A, Moray G, Emiroglu R, Erdal R, Karakayali H, Haberal M. Knowledge and attitudes of high school students related to organ donation and transplantation: a cross-sectional survey in Turkey. Saudi Journal of Kidney Diseases and Transplantation. 2006 Oct 1; 17(4):491.
6. Siminoff LA, Gordon N, Hewlett J, Arnold RM. Factors influencing families' consent for donation of solid organs for transplantation. Jama. 2001 Jul 4;286(1):71-7.
7. Akgün HS, Bilgin N, Tokalak I, Kut A, Haberal M. Organ donation: a cross-sectional survey of the knowledge and personal views of Turkish health care professionals. In Transplantation proceedings 2003 Jun 30 (Vol. 35, No. 4, pp. 1273-1275). Elsevier.
8. Sakai T. Body donation: An act of love supporting anatomy education. Japan Medical Association Journal. 2008; 51(1):39.
9. Bernal CC, Zambudio AR, Romero PR, Martínez MR, Jordana MC, Paricio PP. Importancia de los profesionales de atención primaria en la educación sanitaria de la donación de órganos. Atención primaria. 2004 Jan 1; 34(10):528-35.
10. S A Rokade, B H Bahetee. Body donation review. Medical journal of western India. Feb. 2013; 41(1): 36-41
11. Edwards TM, Essman C, Thornton JD. Assessing racial and ethnic differences in medical student knowledge, attitudes and behaviors regarding organ donation. Journal of the National Medical Association. 2007 Feb; 99(2):131.
12. Ghods AJ. Ethical issues and living unrelated donor kidney transplantation. Iranian journal of kidney diseases. 2009 Oct 1; 3(4).
13. Edwards AG, Newman A, Morgan JD. Exposure to the field of renal transplantation during undergraduate medical education in the UK. BMC medical education. 2005 Sep 14; 5(1):32.
14. Edwards AG, Weale AR, Morgan JD. A survey of medical students to assess their exposure to and knowledge of renal transplantation. BMC medical education. 2004 Dec 23; 4(1):32.
15. Sambhus Dilip P 1, Thorat Sukdeo Lingaji. Knowledge and attitude of Medical Students and nurses towards Organ Donation. J Cont Med A Dent. 2016; 4 (1): 58-61
16. Saha A, Sarkar A, Mandal S. Body donation after death: the mental setup of educated people. Journal of clinical and diagnostic research: JCDR. 2015 Jun; 9(6):AC05.
17. Uplap PA, Singh R. Exploring scope for improvement in knowledge attitude and practices about organ, tissue donation and transplantation among postgraduate medical students in Mumbai, India. International Journal of Community Medicine and Public Health. 2016 Dec 21; 4(1):229-34.
18. Vijayalakshmi P, Sunitha TS, Gandhi S, Thimmaiah R, Math SB. Knowledge, attitude and behaviour of the general population towards organ donation: An Indian perspective. The National medical journal of India. 2016 Sep 1; 29(5):257.
19. Chakradhar K, Doshi D, Reddy BS, Kulkarni S, Reddy MP, Reddy SS. Knowledge, attitude and practice regarding organ donation among Indian dental students. International journal of organ transplantation medicine. 2016; 7(1):28.

20. Patthi B, Jain S, Singla A, Singh S, Kundu H, Singh K. Beliefs and barriers for organ donation and influence of educational intervention on dental students: A questionnaire study. *Journal of Indian Association of Public Health Dentistry*. 2015 Jan 1; 13(1):58.
21. Karini D, Madhavi D. Perceptions Of Medical Students In A Government Medical College Towards Organ Donation. 2015 Oct 29(93574).
22. Sucharitha ST, Siriki R, Dugyala RR, Mullai, Priyadarshini, Kaavya, Roshini. Organ donation: Awareness, attitudes and beliefs among undergraduate medical students in South India. *National Journal of Research in Community Medicine*. 2013 Jul; 2(2):079-148.
23. Güngörmüş Z, Dayapoğlu N. The knowledge, attitude and behaviour of individuals regarding organ donations. *TAF Preventive Medicine Bulletin*. 2014; 13(2):133-40.
24. Pouraghaei M, Tagizadieh M, Tagizadieh A, Moharamzadeh P, Esfahanian S, Nia KS. Knowledge and attitude regarding organ donation among relatives of patients referred to the emergency department. *Emergency*. 2015; 3(1):33.
25. Galić BS, Drvendžija Z, Štrkalj G. Attitudes of medical and allied medical students from Serbia toward whole body donation. *Bioscience Journal*; 32(5).