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ORIGINAL RESEARCH ARTICLE



Awareness and practice regarding organ and tissue donation among rural community of Maharashtra state in India

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Abstract

INTRODUCTION : Organ and tissue donation is a voluntary act of giving organ tissue either during life or after death for transplantation into another person lack of awareness myths religious beliefs prevent family to donate organ one organ donor can save 8 lives there is a wide gap between demand for an availability of donors awareness programmes by NOTTO and campaign such as organ india working to increase donation.

AIMS AND OBJECTIVES: Present study was carried out to access knowledge evaluate participants and attitude and evaluate and create awareness about organ and tissue donation among rural community of Maharashtra State in India.

MATERIAL AND METHODS RESULTS:

The present study was conducted in an adopted village over a period of 1 month in July 2025. Data was collected by house to house survey by interview method. One member above 18 years of age was included in the study. **RESULTS:** Total 358 participants above the age of 18 years included in the study among which 174 (48.9%) were males and 182 (51.1%) were females. Majority of participants where educated upto high-school. 305 (85.7%) were aware about organ donation. TV and newspaper was the main source of information 249 and 170 participants where aware about eligibility for organ donation awareness about eye, kidney, liver, heart and blood donation is more compare to pancreas. Very few (7.2%) participants were aware about the criteria and procedure, place of organ donation.

CONCLUSION: Majority of participants (85.7%) were aware of organ donation, there existed significant gaps in knowledge regarding procedures, legal aspects, and religious/cultural acceptance. Positive attitude was observed by people towards organ donation, but misconceptions and lack of proper information remain major barriers.

Key words: Organ donation, tissue donation, blood, brain death, social media

1 | INTRODUCTION:

Organ and tissue donation is a voluntary act of giving organs or tissues, either during life or after death, for transplantation into another person. Organs commonly donated are kidney, liver, heart, lungs, pancreas, and intestines. Tissues commonly donated are cornea, skin, bone,

tendons, heart valves, cartilage, and blood vessels. Donation may be: Living donation—a healthy person donates one kidney, part of liver, or bone marrow. Deceased (cadaveric) donation—after brain death or cardiac death, organs and tissues are retrieved with family consent. One organ can save upto 8 lives, while a tissue donor can improve the lives of more than 50 people. (1) Deceased Donation rate in India

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is only 0.05-0.08 per million population, compared to more than 20 million in countries such as Spain, United States . (2) (4) In India ,the Transplantation of Human Organs and Tissues Act (THOTA), 1994 regulates organ and tissue donation. (3) Awareness programs by NOTTO (National Organ and Tissue Transplant Organization), NGOs like MOHAN Foundation, and campaigns such as Organ India aim to increase donations. There is a wide gap between the demand for and availability of donor organs in India, with awareness and practice of organ donation being particularly low in rural communities. Lack of awareness, myths, religious beliefs, and fear prevent families from agreeing to donation. (4) Present study aimed to assess current awareness, attitudes, and practices , there by guiding targeted educational interventions to improve organ donation rate

2 | MATERIAL AND METHODS:

The present cross sectional study was conducted at Kumbephal village, Chh.Sambhajinagar over a period of three months from August 2025 to October 2025 among individuals aged 18 yrs and above who had been residing in the area for more than 1 year and who gave informed consent. A total of 358 participants were selected by convenience sampling method. Ethical Permission was obtained prior to the study conduction from Institutional Ethics Committee. A pilot study was conducted. A pretested, semi structured, validated questionnaire was used to collect data by face to face interview method.The ques-

shows the percentage of participants having knowledge aboutAbout Organ and Tissue Donation According to Gender 307 participants had heard the term organ donation out of which 156 (50.8%) were males and 151 (49.2%) were females

Figure 2 shows that majority participants (327) knew that Eyes were the organs that could be donated, followed by kidney (290), Blood and Plasma (248),

tionnaire included sections of socio-demographic data, awareness and practice about organ and tissue donation. Data collection was done by trained team members who identified the eligible participants, obtained informed consent from them, conducted face to face interviews. Questionnaires were collected and verified for completion. Data were entered in excel sheet. Scoring for awareness was done as adequate if participants answered at least 5 options correctly for questions regarding what is organ/tissue donation in their own words, which organs/tissues that can be donated, who is eligible for donation, and whom to contact for donation. If less than five answers given, their awareness was considered inadequate. Variables were compared and Chi-Square test was applied to find out statistically significant difference.

3 | RESULTS:

Table 1 shows the sociodemographic characteristics of the study participants

A total of 358 participants responded in our study. Out of this 183 (51.1%)were females while 175(48.9%) were males. Majority of the participants 253 (70.6%) belonged to 18-45 years of age. Majority of the participants i.e. 102 (28.5%) obtained education upto High School. And most of the participants 141 (39.4%) were found to be homemakers. Maximum participants 319 (89.1%) were Hindu by religion.

Figure 1 shows that maximum number of participants i.e. 249 came to know about Organ and Tissue Donation from TV, 170 from Newspaper , 108 from Movies, 49 and 48 from Instagram and Facebook respectively. Only 6 came to know from awareness programmes

Liver(152), heart (150). But only 18 participants knew about Islet of Pancrease as an organ that could be donate

Table 1. Socio-demographic Characteristics of Study Participants (N = 358)

Variable	Category	Frequency (n)	Percentage (%)
Age Group (years)	18–45	253	70.6
	45–60	60	16.8
	>60	45	12.6
Gender	Male	175	48.9
	Female	183	51.1
Education	Illiterate	62	17.3
	Primary school	47	13.1
	Middle school	84	23.5
	High school	102	28.5
	Diploma	19	5.3
	Graduate	35	9.8
	Professional degree	9	2.5
Occupation	Clerks	5	1.4
	Craft workers	5	1.4
	Elementary occupations	17	4.7
	Managers	2	0.6
	Machine operators	15	4.2
	Professionals	6	1.7
	Agricultural workers	66	18.4
	Sales workers	60	16.8
	Technicians	19	5.3
	Homemakers	141	39.4
	Unemployed	21	5.9
Religion	Hindu	319	89.1
	Christian	20	5.7
	Buddhist	18	5.0
	Muslim	1	0.3

Table 2. Gender-wise distribution of participants based on Knowledge About Organ and Tissue Donation

		Gender		Total
Awareness about Organ/Tissue donation	Yes	Male	Female	
	No	156 (89.1 %)	151 (82.5 %)	307
	Total	19 (10.9 %)	32 (17.5 %)	51
		175	183	358

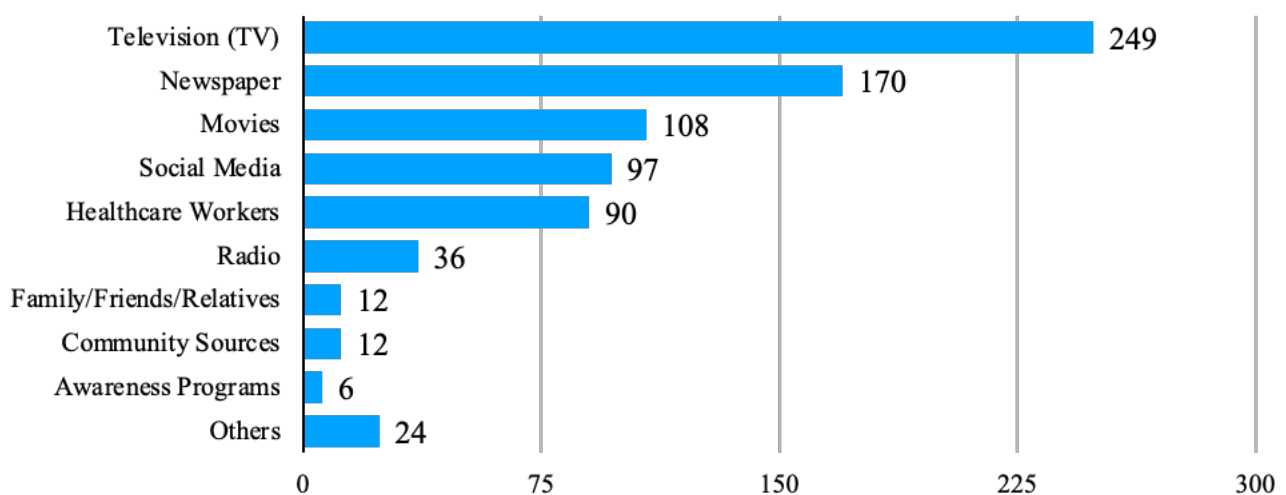


Fig. 1: Distribution of participant based of Source of knowledge of Organ and Tissue Donation

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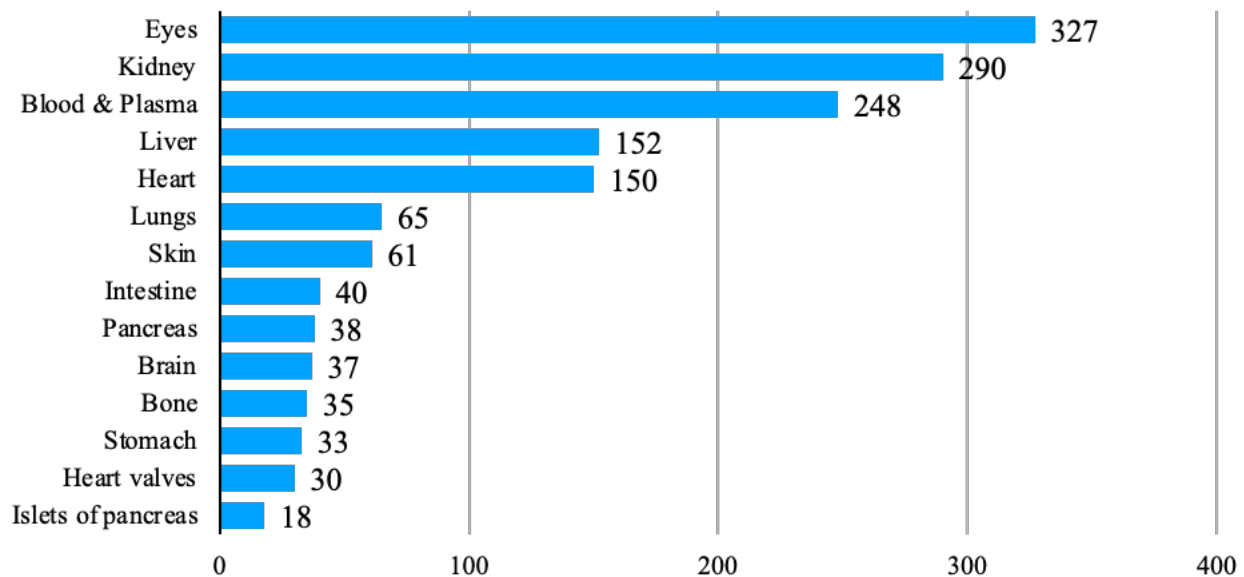


Fig. 2: Distribution of participants according to their Knowledge about which organs / tissue can be donated

Table 3. Association Between Awareness Level and Socio-demographic Variables (N = 358)

Variable	Category	Adequate n (%)	Inadequate n (%)	Total	χ^2	p-value
Gender	Male	23 (13.1)	152 (86.9)	175	0.026	0.871
	Female	23 (12.6)	160 (87.4)	183		
Age Group	18–45	38 (15.0)	215 (85.0)	253	5.678	0.058
	45–60	7 (11.7)	53 (88.3)	60		
	>60	1 (2.2)	44 (97.8)	45		
Education	Illiterate	3 (4.8)	59 (95.2)	62	9.639	0.002*
	Primary	5 (10.6)	42 (89.4)	47		
	Middle	7 (8.3)	77 (91.7)	84		
	High school	18 (17.6)	84 (82.4)	102		
	Diploma	3 (15.8)	16 (84.2)	19		
	Graduate	9 (25.7)	26 (74.3)	35		
	Professional	1 (11.1)	8 (88.9)	9		

shows that adequacy of awareness of organ donation was in very less among the participants. The difference of adequacy of awareness about organ donation gender or age group-wise was not found to be

statistically significant. But a significant difference between level of education and adequacy of awareness was noted. (P value 0.002, less than 0.05)

shows that positive attitude was observed among 44% of participants. The difference of attitude about organ donation among males and females was found to be statistically significant.(P value 0.048, less

than 0.05) But no significant difference between age group or level of education and attitude toward organ donation was observed.

Table 4. Association Between Attitude and Socio-demographic Variables (N = 358)

Variable	Category	Positive n (%)	Negative n (%)	Total	χ^2	p-value
Gender	Male	87 (49.7)	88 (50.3)	175	3.897	0.048*
	Female	72 (39.3)	111 (60.7)	183		
Age Group	18–45	109 (43.1)	144 (56.9)	253	0.647	0.723
	45–60	29 (48.3)	31 (51.7)	60		
	>60	21 (46.7)	24 (53.3)	45		
Education	Illiterate	28 (45.2)	34 (54.8)	62	2.330	0.887
	Primary	23 (48.9)	24 (51.1)	47		
	Middle	33 (39.3)	51 (60.7)	84		
	High school	47 (46.1)	55 (53.9)	102		
	Diploma	7 (36.8)	12 (63.2)	19		
	Graduate	16 (45.7)	19 (54.3)	35		
	Professional	5 (55.6)	4 (44.4)	9		

Table 5. Various Practices related to Organ / Tissue Donation Among Participants According to Gender

	Registration Status	Male	Female	Total
Registration Status	Yes	2 (1.1 %)	2 (1.1%)	4 (1.1 %)
	No	173 (98.9 %)	181 (98.9 %)	354 (98.9 %)
Visit to Organ Donation site	Yes	4 (2.3 %)	2 (1.1 %)	6 (1.7 %)
	No	171 (97.7 %)	181 (98.9 %)	352 (98.3 %)
Enquiry About Procedure of Organ Donation at a Hospital	Yes	4 (2.3 %)	6 (3.3 %)	10 (2.8 %)
	No	171 (97.7 %)	177 (96.7 %)	348 (97.2 %)
Discussion About Organ Donation with Relatives/Acquaintances	Yes	23 (13.1 %)	14 (7.7 %)	37 (10.3 %)
	No	152 (86.9 %)	169 (92.3 %)	321 (89.7 %)
	Total	175 (100 %)	183 (100 %)	358 (100 %)

Willingness of Participants to Donate Organs

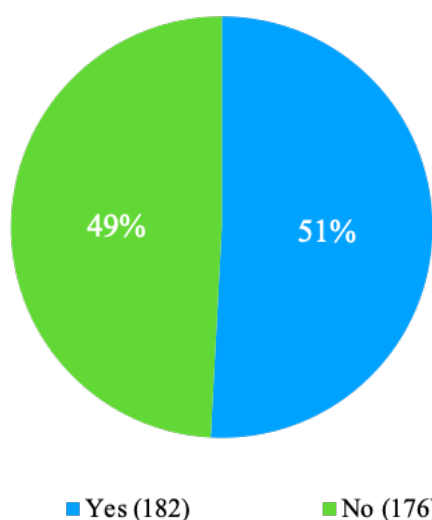
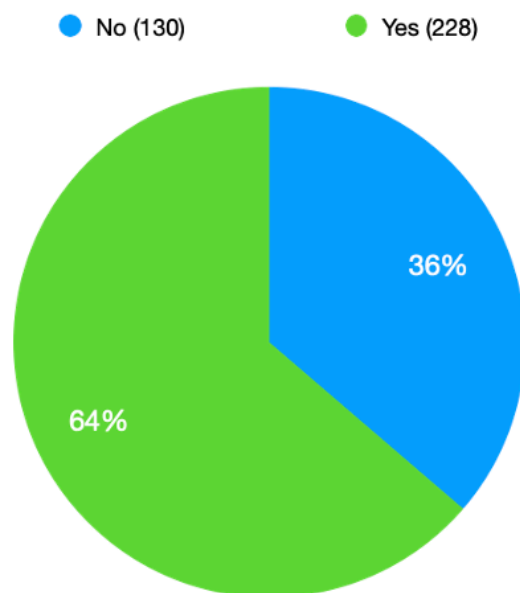


Fig. 3: Willingness of Participants to Donate own Organs/tissues Shows that 51% (182) of participants were willing for own organ/tissue donation while 49% (176) were never willing.

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shows Practices Practices related to Organ / Tissue Donation Among Participants According to Gender. Registration status remains very low (1.1%) with equal number among females and males (2 each) Visit to Organ Donation site was done by only 6 participants (1.7%). 10 (2.8%) participants enquired about Procedure of Organ Donation at a Hospital. 37 (10.3%) participants Discussed About Organ Donation with Relatives/Acquaintances



Willingness to Donate Organ of a Close Relative in Case of Brain Death/Fatal Accident

Fig. 4: Willingness to Donate Organ of a Close Relative in Case of Brain Death/Fatal Accident Shows that 64% (228) of participants were willing for relatives' organ/tissue donation spot brain death / fatal accident while 36% (130) were not willing for the same

4 | DISCUSSION

The results of our study showed that 85.8% participants were aware about organ donation which is similar to findings of study of Gurkan G et al , Vijayalakshmi S et al, Saxena D et al, Bharambe V et al (6,7,8,12) while it is less compare to 95 % in study of Piya et al (5) in urban IPD of medical in south India

and 100% in study Saxena D et al (8) in rural adults (MH) .This may be due to different study settings.

In our study most common source of information about organ donation was TV 69.6%, newspaper 47.5%, movie 30.2%, doctor 25.1, social media 27.1% which is similar to findings of Bharambe et al (12) who observed top sources to be Television (55.2%) and newspaper (45.8%)

In our study more than 80% participants said that male and female can donate organs. Only 8.9 % people thought sick person can donate the organ, 42.2% thought alive, 52.6 % thought dead, 64.2% thought healthy, 43.9% thought young, 45.8% thought old, 42.2% thought rich, 39.9 % thought poor can donate organs. About 56.2% and 32.8% believed that a healthy person and a cardiac dead

person can be donors, respectively. Nearly 29.4% believed that a brain-dead person can be a

donor and 22.4% clearly stated as to be having no idea regarding the health status of a donor.(Bha-12)

In our study only 12.8 % participants had adequate knowledge which was in contrast to study 1(70%) and also less than study 4(29%) and study 2(34%). In our study we found that there was no significant difference in knowledge score of males and females. In contrast to study 4 in which female had good knowledge than male and study 6 in which male had more knowledge than female. Knowledge score in age group 18 to 45 yrs was more compared to other group similar to study 4 and 2. We found that education was significantly associated with knowledge score similar to study 1 and 2. Those with high education were having adequate knowledge compared to those with lower education.

When asked about which organs can be donated, eye 91.3% , kidney 81%, blood 69.3%, liver 42,.5% heart 41.9% , lungs while in study 5,3,2 , 91.3% believed that eyes and 81% believed that kidney can be donated. This was similar to study 5 and study 2 . heart 42% which was in study 2 heart 71%. Awareness about lungs, pancreas and intestine can be donated was seen among 8.2%, 11.2% and 10.6% participants which was nearly same to study 5. Highest awareness was observed regarding eye donation (92%) by bharamie et al, Manojan et al (12) (13) bharambe et al observed High awareness regarding heart, kidney, and liver donations, that is,

71.1%, 61.2%, and 54.2% respectively while Awareness regarding donation of other tissues and organs like pancreas, heart valves was poor which was similar to our findings(12)

53.6% believed that organ can be donated after death while 42.4% said that it could be donated only by alive person. 64.2% said only dead person can donate. 42.2% said only alive can donate which was contrast to study 8, ³/₄ thought that organ donation can be done only alive. Only 46.8% Said that the family of the deceased person can give consent for organ donation (12)

50.8 % participants were willing to donate their organs which was similar to study conducted in tertiary care hospital in south India 51% and 54.5% in study 6 in rural Maharashtra in 2022 by Neha Jo et al. (14) In our study 49.2% participants were not willing to donate organs which was less compared to study by Vijaylakshmi et al conducted in rural area of Tamil Nadu (8) and study 8 in which 70% in 2021 by S.S Lokesh Kumar et al (15) while this is very high compared to 11 % as in study 4 conducted in urban area of Tamil Nadu in 2019 by Sarvanam D et al (16). This may be due to geographical difference in the study area.

44.2 % had positive attitude which was less than study 4(63%) and more than study 2(29.1%). Gender was significantly associated with positive attitude of the participants towards organ donation. Male participants were having more positive attitude than female participants similar to study by Saxena D et al regarding organ donations.(9)

Age and education were not significantly associated with attitude.

98.9% participants told that they would not like to register for organ donation which is similar to study by Gurkan G et al (6) conducted in general population. preraulsalm in which only 5% has signed up to donate and study by Saxena D in which only 2% registered for organ donation in contrast to study of Bharambe in which 2/3rd willing to sign Organ donation card. (9, 12)

Our study shows that only 1.7% participants told that they have visited organ donation sites.

Only 2.8% participants have enquired about organ donation procedure at a hospital and 10.3% had discussed about organ donation with relatives.

63.7% participants showed their willingness to donate organ to close relative in case of brain death or fatal accident which is similar to study by Piya N et al in which 54% which is less than study by Bharambe in which 78%. (5, 12)

Most of the participants told they would most likely to donate organs to family members similar to study by Gurkan et al (47.5%) and contrast to Vijaylakshmi et al (72.4%) willing to donate to anyone and study 6 only 15.7% willing to donate top family. (6) (8)

5 | CONCLUSION:

The present survey highlights the level of awareness, attitudes, and practices regarding organ donation among the study population. Although the majority of participants were aware of organ donation, there existed significant gaps in knowledge regarding procedures, legal aspects, and religious/cultural acceptance. Positive attitude was observed by people towards organ donation, but misconceptions and lack of proper information remain major barriers. This suggests that while the willingness exists, awareness and motivation need to be strengthened through continuous education and counselling.

RECOMMENDATIONS:

We recommend that strengthened IEC (Information, Education & Communication) activities in schools, colleges, workplaces, and communities regarding organ and tissue donation. Integration of the said topic in academic curriculum, increased use of social media, newspaper, TV advertisement to increase awareness while also emphasising including topics of organ donation and transplantation in health education programs. Opportunistic IEC to accompanying persons with patient. Provision of Organ and tissue donation desk at Health Centres and Tertiary care Hospitals. Collaboration with community leaders to overcome cultural barriers. Simplification of the process of donor registration and promote the use of organ donor cards is also recommended.

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