

Knowledge And Attitudes Toward Organ Donation Among Adults: A Community-Based Cross-Sectional Study In Western Maharashtra, India

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Abstract

Background: Rising rates of chronic and end-stage organ failure have increased the demand for transplantation, but the supply of donor organs continues to lag behind. Organ donation ultimately depends on the willingness of individuals and families to consent to donation, which is shaped by their knowledge and attitudes.

Objectives: To assess the level of knowledge and attitude regarding organ donation among adults in selected urban communities of Western Maharashtra, and to examine the association between knowledge and attitude and selected socio-demographic variables.

Methods: A descriptive cross-sectional survey was conducted among 409 adults aged 18 years and above, recruited through non-probability convenience sampling from selected urban communities of Western Maharashtra. Data were collected using a structured, validated questionnaire comprising a demographic proforma, a knowledge questionnaire, and a five-point Likert attitude scale. Data were analyzed using descriptive statistics and the chi-square/Fisher's exact test, with $p < 0.05$ considered significant.

Results: Most participants demonstrated moderate knowledge of organ donation (62.1%), while 37.9% demonstrated good knowledge (mean score 14.55 ± 1.72). Regarding attitude, 49.1% held a favorable attitude, 35.5% a neutral attitude, and 15.4% an unfavorable attitude (mean score 68.39 ± 12.96). A statistically significant association was found between knowledge and attitude ($\chi^2 = 17.80$, $p = 0.0001$). Education, occupation, monthly income, religion, and prior exposure to information were significantly associated with both knowledge and attitude ($p < 0.001$), while age and gender were significantly associated with attitude but not with knowledge.

Conclusion: Although most adults in this community had moderate-to-good knowledge of organ donation, this did not consistently translate into a favorable attitude. Targeted, demographically-informed community education and counseling strategies are needed to close the gap between knowledge and willingness to donate.

Keywords: Organ donation; transplantation; knowledge; attitude; community-based study; adults

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I. Introduction

Organ donation and transplantation represent one of the most significant achievements of modern medicine, offering a life-saving treatment option for patients with end-stage organ failure.[1,2] Advances in surgical technique, immunosuppression, and post-transplant care have made transplantation a viable treatment for conditions once considered incurable.[2] However, the global and national demand for organs continues to exceed the available supply. Worldwide, more than 150,000 transplants are performed annually, yet this meets only a fraction of overall need.[3] In India, an estimated 500,000 people die each year owing to non-availability of organs, and the national donation rate — approximately 0.5 to 1 donor per million population — remains far below that of countries with established donation systems, where rates exceed 30 donors per million.[4,5]

Organ donation is regulated in India under the Transplantation of Human Organs and Tissues Act (1994, amended 2011), and coordinated nationally by the National Organ and Tissue Transplant Organisation (NOTTO).[6] Despite this legal and institutional framework, donation rates remain low, largely attributable to limited public awareness, misconceptions about brain death, cultural and religious concerns, and mistrust regarding the fair allocation of organs.[7,8] Because the decision to donate — whether by a living donor or as next-of-kin consent for a deceased donor — ultimately rests with individuals and families in the community, understanding what the public knows and how they feel about organ donation is essential to designing effective awareness and educational interventions.[9,10]

Nurses and community health workers are well placed to influence this gap through education, counseling, and advocacy.[8] Prior studies among students and healthcare populations in India have generally found that awareness of organ donation exists but that detailed knowledge — of eligibility, procedures, and legal

aspects — remains limited, and that positive attitudes do not reliably translate into registration or willingness to donate.[11–14] However, community-based data from general adult populations, as opposed to student or healthcare-worker samples, remain comparatively limited. This study was undertaken to assess the level of knowledge and attitude toward organ donation among adults in selected urban communities of Western Maharashtra, and to examine how these outcomes vary across key socio-demographic characteristics.

Objectives

(1) To assess the level of knowledge of adults regarding organ donation and transplantation. (2) To determine the attitude of adults toward organ donation and transplantation. (3) To determine the association between knowledge and attitude regarding organ donation. (4) To determine the association between knowledge scores and selected socio-demographic variables. (5) To determine the association between attitude scores and selected socio-demographic variables.

II. Materials And Methods

Study Design and Setting

A descriptive cross-sectional design was used to assess knowledge and attitude toward organ donation among adults in selected urban communities of Western Maharashtra, India. Data were collected at a single point in time using a structured, self-report questionnaire.

Participants and Sampling

The target population comprised adults residing in Western Maharashtra; the accessible population comprised adults residing in the selected urban communities who met the eligibility criteria during the data collection period. A non-probability convenience sampling technique was used. Adults aged 18 years and above who had resided in the community for at least six months and who provided written informed consent were included. Healthcare professionals (doctors, nurses, and paramedical staff), critically ill adults, and adults with cognitive impairment precluding informed consent were excluded.

Sample size was calculated using the formula $n = 4pq/d^2$, assuming a prevalence (p) of 50% to maximize the required sample, an allowable error (d) of 5%, yielding a minimum of 400 participants. Accounting for an anticipated 2% non-response rate, the final target sample was 409 adults, all of whom were enrolled.

Instruments

Data were collected using a three-part structured tool: (I) a demographic proforma capturing age, gender, religion, education, occupation, monthly income, and prior exposure to information on organ donation; (II) a structured knowledge questionnaire covering the definition, types, eligibility, legal aspects, the concept of brain death, and the donor registration process; and (III) a five-point Likert attitude scale comprising positive and negative statements regarding organ donation and transplantation, with responses ranging from strongly agree to strongly disagree.

Content validity was established by a panel of experts in community health nursing, public health, and organ transplantation (content validity index = 0.89). Internal consistency, assessed during the pilot study using Cronbach's alpha, was 0.82 for the knowledge questionnaire and 0.79 for the attitude scale. The tool was translated into Hindi and back-translated into English to confirm semantic equivalence, and was pilot-tested among five adults from the target population to assess clarity and feasibility. Pilot participants were not included in the final study.

Data Collection and Analysis

Following institutional ethical clearance and administrative permissions, eligible adults were enrolled and data were collected using the structured questionnaire, with each participant assigned a unique code number to preserve confidentiality. Data were checked for completeness, coded, and entered into a master spreadsheet. Descriptive statistics (frequency, percentage, mean, standard deviation) were used to summarize demographic characteristics and knowledge/attitude scores. The chi-square test and Fisher's exact test, as appropriate to the data distribution, were used to examine associations between knowledge/attitude and demographic variables. A p-value <0.05 was considered statistically significant. Data were analyzed using SPSS software (version to be specified).

Ethical Considerations

Ethical clearance was obtained from the Institutional Ethics Committee, AFMC Pune (IEC/2026/075(n), dated 03 March 2026). Written informed consent was obtained from all participants after explaining the purpose and procedure of the study. Participation was voluntary, with freedom to withdraw at any stage, and confidentiality of participant information was maintained throughout.

III. Results

Socio-demographic Characteristics

A total of 409 adults participated in the study. The largest age group was 36–50 years (43.0%), followed by those aged >50 years (31.5%) and ≤35 years (25.4%). The majority of participants were female (86.1%). Regarding education, 33.7% were graduates, 29.6% had secondary education, 22.3% had higher secondary education, and 14.4% were postgraduates. Most participants were homemakers (38.1%), followed by government employees (32.0%), private-sector employees (23.0%), and self-employed individuals (6.9%). Household income was fairly evenly distributed across the lower-middle (29.1%), upper (21.5%), upper-middle (20.8%), lower (17.1%), and middle (11.5%) categories. Most participants identified as Hindu (44.0%), followed by Christian (21.0%), Muslim (20.8%), and other religions (14.2%). Prior exposure to information about organ donation was reported by 74.8% of participants, most commonly through a combination of television/radio, newspaper, social media, and health professionals.

Knowledge Regarding Organ Donation

Overall, 62.1% of participants demonstrated moderate knowledge and 37.9% demonstrated good knowledge regarding organ donation; no participant scored in the poor category. The mean knowledge score was 14.55 ± 1.72 .

Knowledge Category	Score Range	n	%
Good	16-20	155	37.9
Moderate	9-15	254	62.1
Poor	0-8	0	0.0

Attitude Toward Organ Donation

Regarding attitude, 49.1% of participants held a favorable attitude, 35.5% a neutral attitude, and 15.4% an unfavorable attitude toward organ donation. The mean attitude score was 68.39 ± 12.96 .

Attitude Category	n	%
Favorable	201	49.1
Neutral	145	35.5
Unfavorable	63	15.4

Association Between Knowledge and Attitude

A statistically significant association was found between knowledge level and attitude category ($\chi^2=17.796$, $df=2$, $p=0.000137$). Among participants with moderate knowledge, a larger proportion held a favorable attitude (145/254) compared with a neutral (79/254) or unfavorable (30/254) attitude, whereas among participants with good knowledge, attitudes were more evenly distributed across favorable (56/155), neutral (66/155), and unfavorable (33/155) categories. The null hypothesis of no association was therefore rejected.

Associations with Socio-demographic Variables

Knowledge scores were significantly associated with education, occupation, monthly income, religion, and prior exposure to information about organ donation (all $p<0.001$), but were not significantly associated with age ($p=0.140$) or gender ($p=0.999$). Attitude scores, by contrast, were significantly associated with all examined socio-demographic variables — age, gender, education, occupation, monthly income, religion, and prior exposure to information (all $p<0.001$).

Variable	Knowledge p-value	Attitude p-value
Age	0.140	<0.001
Gender	0.999	<0.001
Education	<0.001	<0.001
Occupation	<0.001	<0.001
Monthly income	<0.001	<0.001
Religion	<0.001	<0.001
Prior information	<0.001	<0.001

IV. Discussion

This community-based study found that while most adults had moderate-to-good knowledge of organ donation, favorable attitudes were less consistent, with over half of participants holding neutral or unfavorable views. This pattern — reasonable awareness without a corresponding shift to positive attitude — echoes findings from other Indian samples, in which moderate knowledge coexisted with limited willingness to donate, and mass media emerged as the dominant source of information.[11,13,14] The significant association observed here between knowledge and attitude ($p<0.05$) is likewise consistent with prior work suggesting that greater awareness is associated with more favorable perceptions of organ donation, even though awareness alone has repeatedly been shown to be insufficient to guarantee positive attitudes or actual donation behavior.[15]

The persistence of neutral or unfavorable attitudes despite reasonable knowledge in a sizable minority of participants suggests that cultural beliefs, misconceptions about brain death, and distrust in the fairness of organ allocation continue to act as barriers, a pattern also reported in other Indian community and student samples.[7,8,11] The significant associations found between attitude and education, occupation, income, religion, and prior information exposure — and, notably, between attitude and both age and gender, where knowledge showed no such association — suggest that attitudinal barriers may be shaped as much by social and cultural context as by factual understanding. This distinction has practical importance: interventions aimed only at improving knowledge (e.g., informational pamphlets) may be less effective than approaches that also address underlying beliefs, trust, and social norms, particularly among older adults and men, who in this sample showed comparatively less favorable attitudes.

These findings should be interpreted in light of several limitations. The sample was drawn from a specific set of urban communities using convenience sampling, which limits generalizability, and was heavily skewed toward female (86%) and homemaker (38%) participants, limiting inference to men and the broader working population. Data were self-reported and may be subject to social desirability or response bias. The study assessed knowledge and attitude only, not actual donation registration or behavior, and did not explore cultural or emotional determinants of decision-making in depth.

V. Conclusion

Adults in this community demonstrated moderate-to-good knowledge of organ donation, but this did not consistently translate into favorable attitudes, with a substantial proportion remaining neutral or unfavorable. Knowledge was significantly associated with attitude, and both were shaped by education, occupation, income, religion, and prior exposure to information; attitude, but not knowledge, additionally varied by age and gender. These findings support the development of targeted, community-based education and counseling programs — tailored to demographic subgroups and addressing underlying misconceptions rather than factual gaps alone — to help translate awareness of organ donation into willingness to donate.

Implications for Nursing

Nurses and community health workers are positioned to integrate organ donation education into routine community health contacts, address misconceptions directly, and advocate at the policy level for sustained public awareness campaigns. Incorporating organ donation content into nursing curricula and encouraging student involvement in community awareness initiatives may help build a workforce equipped to close the gap between public knowledge and willingness to donate.

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