Original Article

Assessment of knowledge, attitude and self-reported practice of organ donation among healthcare workers in a tertiary care hospital

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Abstract

Background and Objectives: India ranks second globally in liver donor transplants. However, deceased organ donation remains critically low at 0.26 per million population, contributing to approximately 50,000 deaths annually due to organ shortages. Healthcare workers play a pivotal role in organ donation processes, making it essential to enhance their awareness and engagement, as well as to motivate the public. Such insights not only highlight existing gaps but also help in designing targeted educational interventions and policy strategies.

Materials and Methods: A cross-sectional descriptive study was conducted among healthcare workers at INHS Asvini in South Mumbai, Maharashtra using a self- administered, structured, close-ended questionnaire. A total of 420 healthcare workers were selected through simple random sampling. The collected data were analyzed by using descriptive and inferential statistics

Results: Among 420 healthcare workers, 54.04% demonstrated average knowledge and only 7.85% showed excellent knowledge of organ donation. Attitudes were largely positive, with 73.80% reporting positive or strongly positive attitudes. However, practice levels were low, with only 10.00% demonstrating excellent practice and 42.14% reporting fair practice. Sex was the only demographic variable significantly associated with attitude (p= 0.02).

Conclusion: From this study, we have concluded that the despite positive attitudes, healthcare workers showed limited engagement in organ donation practices, particularly registration. These findings underscore the need for targeted educational interventions and institutional support to strengthen healthcare workers' participation and advocacy in organ donation.

Key Words: organ donation, knowledge, attitude, self-reported practice, healthcare workers

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Introduction

Organ donation is a process by which a person voluntarily allows his or her healthy organ or tissue to be removed and transplanted into another person who is suffering from organ failure. In India, the situation is more concerning. The organ donation rate is about 0.34 per million populations [4], which is extremely low compared to countries like Spain (35 per million). [5] As per the National Organ and Tissue Transplant Organization (NOTTO), lakhs of people need kidney, liver, and heart transplants, but only a fraction receives them due to lack of donors. Lack of awareness, cultural myths, religious beliefs, and fear of misuse contribute to this wide gap. [6] Organ donations are associated with multiple ethical and legal concerns. [7] Issues such as informed consent, brain death certification, equitable allocation of organs, and prevention of commercial organ trade are important considerations. The Human Organ Transplantation Act, 1994 in India provides guidelines to regulate organ donation and transplantation. Organ donation is not only a medical issue but also a social and ethical responsibility. [8] Increasing the organ donation rate requires collective efforts from healthcare institutions, policymakers, and the community. Understanding the barriers and enablers of donation will provide insights for developing effective strategies, policies, and awareness campaigns. It addresses the growing burden of chronic diseases such as diabetes and hypertension that lead to kidney failure, as well as road traffic accidents that cause brain death. [9] Increasing organ donation rates can reduce morbidity, mortality, and the economic burden on families and the healthcare system. Research can provide valuable insights into developing community-based interventions that

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enhance awareness and willingness to donate. [10] It will also determine the association between the selected demographic factors and the attitude towards organ donation among healthcare workers.

Materials and Methods

This cross-sectional descriptive study was conducted among healthcare workers in a tertiary care hospital in Mumbai using an online Google Form. A cross-sectional design is employed to assess the knowledge, attitude, and self-reported practices regarding organ donation among health care workers at INHS Asvini in South Mumbai of Maharashtra in the year 2026. A self-developed structured questionnaire consisting of yes/no questions was prepared to assess the knowledge, attitude, and practice regarding organ donation. The questionnaire was administered through Google Forms.

Sample size calculation

Sample size determination was based on Cochran's formula for estimating proportions, with acceptable precision. As per the cross-sectional study was conducted by Krishna et al (2024) in Delhi NCR, India has found that 90% of healthcare workers supported awareness campaigns. Assume ~50% positive attitude (maximizing variability), Confidence level: 95%. Margin of error =5%, $N = Z^2 \times p(1-p) / d^2 = (1.96^2 \times 0.5 \times 0.5) / 0.05^2 \approx 384$. Hence, the minimum calculated sample size was 384 health care workers. Add 10% for non-response ≈ 420 healthcare workers

Sampling Technique: Simple random sampling technique was used for the study.

Ethical Considerations and Statement: Ethical clearance and formal permission to conduct the study were obtained from the Institutional Ethical Committee dated 11 August 2025. IEC No. 104/2025. Informed consent was taken from the study healthcare workers ensuring voluntary participation. The purpose of the study was explained to the participants and confidentiality was assured.

Data Management and Statistical Analysis: The data were organized, tabulated, analyzed, and interpreted using descriptive and inferential statistics. The findings were organized and presented in five parts with tables and figures. Results were computed by using Microsoft Excel 2010 and IBM SPSS 27.0 version, based on the objectives of the study.

The demographic data was analyzed in frequency and percentage. Each subscale under section was analyzed out of corresponding frequency, mean and standard deviation using descriptive statistics. The association of demographic variables with was done using inferential statistics Chi-Square test.

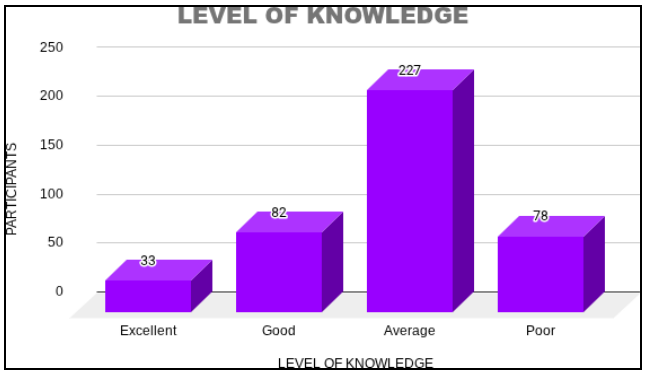
Results

In this study comprised 420 healthcare workers of INHS Asvini. Data analysis included inferential and differential statistics. Differential statistics were used to find association between variables under inferential statistics. Differential statistics was used to obtain information from healthcare workers regarding socio-demographic data and level of knowledge and practice of organ donation. Frequency along with numbers is presented in the following **Table-1** and **Figure – 1.**

Table–1 Distribution of socio-demographic variables among health care workers (N = 420)

Socio-Demographic Variables	No. of healthcare workers	Percentage
Gender		
Male	337	80.2%
Female	83	19.8%
Age (in years)		
<=30	389	92.6%
30+1 day -45	28	6.7%
45+1day -60	03	0.7%
Professional Category		
Doctor	04	0.9%
Nurse	99	23.6%
Medical assistant	317	75.5%
Religion		
Hindu	386	91.9%
Muslims	18	4.3%
Christian	11	2.6%
Others	05	1.2%
Educational Level		
Higher secondary	286	68.1%
UG degree	123	29.3%
PG degree and above	11	2.6%
Years of Work Experiences		
<10	397	94.5%
10+1day-20	16	3.8%
>20	07	1.7%

Figure-1 Distribution of level of knowledge regarding organ donation among Health Care Workers (N = 420)



Socio-demographic characteristics are presented as gender, age, educational level, professional category (doctor, nurse, allied health worker), religion, and years of work experience of the healthcare worker for organ donation as shown in **Table-1**.

Among 420 health care workers 227 (54.04%) had average knowledge about organ donation, 82 (19.52%) had good knowledge, 78 (18.57%) had poor knowledge, and 33 (7.85%) had excellent knowledge as shown in **Figure–1.**. The mean knowledge score of healthcare workers was 5.34 ±2.06

The pie chart indicate that 42 (9.00%) had excellent practice about organ donation, 112 (23%) had good practice, 177 (37%) had fair practice and 19% (89) had poor practice towards organ donation as shown in **Figure–2.** The mean attitude score of healthcare workers was 5.49 ± 2.36.

Figure-2 Distribution of self-reported practice regarding organ donation among Health Care Workers (N = 420)

More than one fourth of the participants 129 (30.70%) had a strongly positive attitude towards organ donation, 181 (43.10%) had a positive attitude, 89 (21.20%) had a neutral attitude, and 21 (5.00%) had a negative attitude towards organ donation as shown in **Table - 2.** The mean attitude score of healthcare workers was 7.27±1.96.

Table-2 Distribution of level of attitude regarding organ donation (N = 420)

S. No	Attitude Score	Level of Attitude	No. of healthcare workers	Percentage
1	0 – 3	Negative attitude	21	5.00%
2	4 – 6	Neutral attitude	89	21.20%
3	7 – 8	Positive attitude	181	43.10%
4	9 – 10	Strongly positive attitude	129	30.70%

The positive attitude observed in the present study is an important finding. In total, 181 (43.10%) healthcare workers demonstrated a positive attitude and 129 (30.70%) demonstrated a strongly positive attitude, giving a combined proportion of 73.80% with positive or strongly positive attitudes. The mean attitude score was 7.27 ± 1.96. This finding indicates that a considerable proportion of healthcare workers are receptive to the concept of organ donation, providing a favorable foundation for future educational and institutional initiatives.

The self-reported practice findings in the present study further emphasize this knowledge–attitude–practice gap. Among the 420 healthcare workers, 42 (10.00%) demonstrated excellent practice, 112 (26.67%) demonstrated good practice, 177 (42.14%) demonstrated fair practice, and 89 (21.19%) demonstrated poor practice. Thus, nearly two-thirds of participants were categorized as having either fair or poor practice. This finding is particularly important because healthcare workers occupy a strategic position in identifying potential donors, communicating with families, addressing misconceptions, and facilitating the organ donation process. Therefore, improving knowledge and attitudes should ideally be accompanied by opportunities for practical exposure, communication training, and simplified mechanisms for donor registration.

The present study also examined the association between selected socio-demographic variables and attitude toward organ donation. Sex was the only demographic variable that demonstrated a statistically significant association with attitude ($p = 0.02$), whereas age, religion, educational qualification, professional category, and years of work experience did not demonstrate statistically significant associations. These findings should be interpreted cautiously because the study was conducted in a single tertiary care institution and the sample was predominantly male and relatively young. Therefore, the observed association with sex may not necessarily be generalizable to healthcare workers in other settings.

The findings of the present study have important implications for healthcare institutions. The predominance of average knowledge, together with favourable attitudes but comparatively limited practice, indicates a need to move beyond general awareness campaigns toward structured and competency-oriented education. Educational programmes should specifically address brain death, legal and ethical aspects of organ donation, donor registration procedures, family communication, and the role of healthcare professionals in the organ donation pathway. The findings of Mahajan et al. provide additional support for such interventions, as their structured educational module produced improvements in knowledge, attitude, and the willingness of healthcare professionals to promote organ donation.

Discussion

The present study assessed the knowledge, attitude, and self-reported practices (KAP) regarding organ donation among 420 healthcare workers at INHS Asvini, Mumbai. The findings demonstrate a noteworthy gap between knowledge, attitude, and actual practice. Although a substantial proportion of healthcare

workers demonstrated a positive attitude toward organ donation, their level of knowledge was predominantly average and their self-reported participation in organ donation-related practices was comparatively limited. This finding suggests that a favorable attitude alone may not necessarily translate into active participation or registration as an organ donor.

The knowledge levels indicate that although healthcare workers may have basic awareness regarding organ donation, important gaps in comprehensive knowledge may persist. The findings are comparable with those reported by Mahajan et al. [11] in 2021 in a tertiary care public hospital in North India. Their interventional study among 242 nurses and 87 resident doctors at PGIMER, Chandigarh, demonstrated that healthcare professionals had important gaps in knowledge regarding the clinical criteria for brain death and legal aspects of organ donation before the educational intervention. Following a structured educational module consisting of audiovisual lectures and information booklets, significant improvement was observed in knowledge and attitude in both nurses and resident doctors. The intervention also improved their willingness to promote organ donation, pledge their organs, and counsel patients and their attendants. These findings support the importance of structured educational programmes for healthcare professionals rather than relying solely on routine exposure to information.

The importance of educational intervention is further supported by the 2025 study by Durga et al. [12] in 2025 among first-year B.Sc. Nursing students at the College of Nursing, PGIMS, Rohtak. The study evaluated a nurse-led intervention and reported improvement in knowledge and attitude following the intervention. This finding is relevant to the present study because it indicates that structured, professionally delivered educational interventions may be useful in addressing knowledge gaps and strengthening positive attitudes toward organ donation among nursing learners.

The study by Shrivastav et al. [13] also highlights the importance of addressing family-related concerns and misconceptions, while the findings of Gao et al. [14] emphasize the potential importance of previous communication or persuasive experience in shaping knowledge and attitudes. Therefore, future institutional programmes may benefit from incorporating not only didactic teaching but also case-based discussions, simulation or role-play for family counselling, information regarding brain-death determination, and practical guidance on donor registration.

Overall, the findings of the present study indicate that healthcare workers at INHS Asvini demonstrated a generally favourable attitude toward organ donation; however, the predominance of average knowledge and fair or poor self-reported practice suggests that further educational and institutional support is required. The findings are broadly consistent with recent studies demonstrating that awareness or positive attitudes do not necessarily result in donor registration or active participation. A comprehensive approach combining continuing education, practical training, communication skills, institutional facilitation, and opportunities for donor registration may therefore help bridge the gap between knowledge, attitude, and practice among healthcare professionals.

Conclusion

Healthcare workers need strong support in their role as organ donation advocates. Continuous education on organ donation laws and procedures is essential to ensure that healthcare professionals remain informed and confident in addressing organ donation–related issues. Authorities should foster a supportive and well-informed environment within healthcare institutions to encourage open discussions on ethical, legal, and procedural aspects of donation. Regular training programs can strengthen advocacy efforts and promote a culture of voluntary organ donations among both healthcare providers and the public. Collaborative initiatives between healthcare bodies, government agencies, and non-governmental organizations such as the MOHAN Foundation can further enhance awareness and facilitate organ donation drives. Integrating organ donation education into nursing and medical curricula will help develop a generation of professionals who are both knowledgeable and empathetic toward this organ donation initiative.

Limitations of the Study

1. The study was conducted at a single healthcare center.
2. The study was limited to healthcare staff, nurses, and allied health professionals and excluded administrative, clerical, and non-clinical support staff.
3. Cross-sectional design (single point in time) rather than using a longitudinal design.

Conflict of Interest: None

Sources of Information: None

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Authors' Contributions

RG, AS, MR, JS: study design, data collection and data analysis; **KM, KP, JS:** Manuscript writing and analysis. **RG, AS, KM, KP:** Critical revision of the manuscript for important intellectual content. All authors approved the final version to be submitted.

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