

Assessing the motivation and barriers for Living and non-living organ donation among blood donors

Dr Nikita
DNB-BS Resident
Department of Transfusion Medicine (IHBT)
Tata Medical Center, Kolkata
West Bengal, India

Guide

Dr Suvro Sankha Datta
Senior Consultant, Transfusion Medicine
Tata Medical Center, Kolkata

Co-Guide

Dr Soumitra Shankar Datta
Senior Consultant, Palliative care and Psycho-oncology
Tata Medical Center, Kolkata

Abstract:

Background:

Organ donation is a critical component of modern healthcare, yet the gap between organ demand and availability persists globally especially in low-to-middle income countries. A study conducted in India, showed that merely 52.8 percent of the general population have adequate awareness on organ donation.^[1] In 2019, India had a donation rate of only 0.52 per million compared to 46.9 in Spain and 36.8 in the US.^[2] Numerous barriers contribute towards low rates of organ donation.^[3] Blood donors represent a unique population with demonstrated altruistic behaviour, making them potential advocates and participants in both living and non-living organ donation. Living organ donation involves the voluntary donation of stem cells, a kidney, or a portion of the liver from a healthy individual among family members, whereas non-living donation enables the transplantation of vital organs such as kidneys, liver, eyes, and heart from a donor after death.

Aims and objectives:

- **Aim:** To understand the intent of organ donation among blood donors.
- The **primary objective** is to assess the factors associated with motivation and barrier for living and non-living organ donation among blood donors.
- The **secondary objective** is to evaluate the level of awareness and knowledge regarding organ donation among blood donors.
- The **tertiary objective** is to establish a structured registry of blood donors for potential organ donation.

Materials and Methodology:

Study type: Mixed-method study with prospective collection of data

Duration: 18 months (June 2026 to November 2027)

Venue: Dept. Of Transfusion Medicine, Tata Medical Center, Kolkata

Study Population: Healthy Blood Donors

Sample size calculations

Sample Size calculation for the quantitative part of the study:

The sample size will be calculated by using the formula

$$n = \frac{(Z_{\alpha})^2 \times p \times q}{d^2}$$

Where n is the sample size and constant, Z_{α} is 1.96. The estimated prevalence, p is taken as 52.8 from a previous study done in India that showed 52.8 per cent of the participants had adequate knowledge about organ donation. ^[1] Subsequently, $q = (100 - p)$ is taken as 47.2 along with a desired level of precision (d) of 20 percent. Hence, the sample size is calculated to be 96, which are rounded off to 100. After allowing for 20 per cent of the interviews to be incomplete, the final sample size estimated to be 120.

Sample size calculation for the qualitative part of the study:

A proportion of those who participate in the quantitative part of the study will be interviewed using qualitative in-depth interviews. The sample size for the qualitative part of the study will be determined by data saturation. We expect to conduct around 30 interviews.

Inclusion Criteria:

- All eligible blood donors within 18-65 years of age

Exclusion Criteria:

- Individuals who are found unfit for donating blood during evaluation for medical reasons
- Not willing to give consent to undergo an interview for organ donation

Study tool:

- Quantitative data will be captured using a pre-validated structured questionnaire (Annexure 1) after obtaining an appropriate consent.
- Qualitative in-depth interviews with a purposive set of donors will be conducted after obtaining separate consent following the quantitative data collection. This will include a 30-45minute interview by a researcher. It will adhere to the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines.
- The interview stems during the qualitative interview that may be used to explore the barriers and the motivation behind organ donation are as follows: in the qualitative interview, include: 1) What motivated you to donate blood recently? 2) How do people in your social circle view blood donation? 3) Have you ever read about organ donation other than blood donation? Which organ? 4) Was there anyone in your family or close friend circle who needed an organ transplantation? 5) What do you think are the barriers to living organ donation? What do you think are the barriers to deceased organ donation? 6) How do you think people can be encouraged to donate organs after death? 7) Even if a person concerned makes a written declaration regarding his wish to donate an organ after death, the family may or may not be in a position to facilitate this. 8) How do you think this can be managed? 9) What are the reasons why patients donate organs while they are alive (e.g. kidney, liver, etc.)? 10) Do you have any other thoughts related to organ donation

Analysis plan for the data:**Analysis plan for quantitative data**

- Categorical variables will be compared between groups using the chi-square test.
- Continuous variables will be assessed using the student-*t* test.

- Cronbach's alpha(α) will be calculated to measure internal consistency or reliability of the interviewed items.
- Initially, individual factors will be analysed separately in univariable models to assess their association with the likelihood of organ donation.
- Finally, logistic regression will be used into a multivariable model to provide a more accurate analysis of factors associated with organ donation likelihood.
- Odd's ratio, 95% CI, and *P*-value will be calculated by applying appropriate statistical method where $p < 0.05$ will determine the statistical significance.

Analysis plan for qualitative data

The qualitative data will be analysed using the basis of content analysis as described by Braun and Clarke.^[4]

Consent:

Consent from each blood donor will be obtained during the donor evaluation for the quantitative questionnaire. Prior to the qualitative in-depth interview, a separate consent will be taken. The consent will be in 3 languages (English, Hindi, and Bengali).

References:

1. Vijayalakshmi P, Sunitha TS, Gandhi S, Thimmaiah R, Math SB. Knowledge, attitude and behaviour of the general population towards organ donation: An Indian perspective. *Natl Med J India*. 2016;29:257-61.
2. Joe N, Chakala ST, Fathima F, Shankar N. Awareness & perceptions about organ donation among patient attendants in a tertiary-care hospital in South India: An observational study. *Indian J Med Res*. 2024;160:552-559.
3. Sarkar Das T, Carter A, Singleton CMH, Nephew LD. Factors Associated With Willingness to Become a Living Organ Donor. *JAMA Netw Open*. 2025;8(8):e2527592.
4. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 2006; 3(2): 77-101.

