

National Board of Examinations - Journal of Medical Sciences Volume 3, Issue 6, Pages 662–673, June 2025 DOI 10.61770/NBEJMS.2025.v03.i06.005

ORIGINAL ARTICLE

A Study on Awareness and Willingness for Eye Donation Among Health Care Professionals in a Tertiary Care Teaching Hospital

Srinivasan Chinnasamy,¹ Sumathi Periasamy,² Vineetha Tupili^{3,*} and Sabana Fathima V A³ ¹Assistant Professor, Department of Ophthalmology, Chengalpattu Govt. Medical College and Hospital, Chengalpattu, TNMGRMU, Tamilnadu ²Head of the Department and Professor, Department of Ophthalmology, Chengalpattu Govt. Medical College and Hospital, Chengalpattu, TNMGRMU, Tamilnadu ³Post Graduate, Department of Ophthalmology, Chengalpattu Govt. Medical College and Hospital, Chengalpattu, TNMGRMU, Tamilnadu

Accepted: 03-May-2025 / Published Online: 9-June-2025

Abstract

Background: According to WHO Globally at least 2.2 billion people have a near or distant vision impairment. In at least 1 billion or almost half of these cases, vision impairment could have been prevented or has yet to be addressed. Corneal opacity is the major cause of vision loss and blindness after Cataract and glaucoma. By donating eyes after death, a corneal blind person can see again through Corneal transplantation. The objective of the study is to assess medical, paramedical and allied health science students' knowledge willingness and perceived obstacles regarding eye donation, aiming to raise awareness and underscore the significance of promoting the cause. Materials and Methods: This study is a cross sectional hospital based study conducted in Chengalpattu Medical college and hospital, Chengalpattu. The study population includes all the health care professionals. The total sample size calculated from the previous study was 400 based on a Venkatapathy Narendran et al. The study was conducted for a period of 6 months. A convenient sampling technique was used in our study. In this study we had included all the Doctors, Paramedical students, MBBS students, Post graduates, Nursing students in Chengalpattu medical college and hospital. Results: The majority of respondents (41.25%) are aged 20-30, with 65% being male. Students dominate the study (92%), mainly undergraduate medical (43.5%), while faculty represents only 8%. 73.75% knew eye donation is possible, and 77.5% were aware it occurs only after death. Consent awareness varied, with 87.25% believing friends could consent, while only 15.5% thought children could. Eligibility perceptions differed, with 60.5% considering diabetics eligible, 44.5% believing those with glasses could donate, and 72.5% recognizing the need for HIV/hepatitis screening. Conclusion: The study found that 56.75% were willing to donate eyes, 35.75% were not, and 7.5% had already pledged. While 84.9% knew corneas restore vision, 78.3% cited family objections as a major barrier.

Keywords: Eye Donation, corneas restore vision, Awareness

*Corresponding Author: Vineetha Tupili Email: vineethatupili@gmail.com





Introduction

Eye donation refers to the process of collecting, preparing, and distributing donated eyes for corneal transplants and research purposes. In underdeveloped nations like India, corneal illness is one of main causes blindness. the of Approximately one million Indians are bilaterally blind, while almost 6.8 million are blind in at least one eye. The only way to lessen corneal blindness is through The transplantation. corneal corneal transplant comes from a willing or driven member of the public. However, corneal donation is dependent on both the willingness of individuals to donate their eyes and the agreement of family members to do so [1]. In India, the annual corneal procurement rate is now a pitiful 22,000. India needs at least two lakh eye donations a year, compared to an average of 45,000. The government has launched a number of initiatives to raise public awareness of the value of eye donation and to promote pledges. One such effort is the Hospital Cornea Recovery effort (HCRP), which

aims to recover corneal tissues from voluntary and eligible donors after they pass away in a hospital [2]. Visual impairment or blindness, ranging from partial to total with different visual acuity, occurs from any decline in vision, which is the capacity to comprehend the environment utilising light in the visible spectrum reflected by the objects in the environment.

The World Health Organisation (WHO) estimates that one person becomes blind every five seconds, which is particularly concerning considering that 80% of known vision impairments are either avoidable or treatable. It is projected that 39 million of the 2.2 million visually impaired persons in the globe are classified as blind. Eighty percent of blind people worldwide live in developing nations [3]. It is estimated that the annual global expenses of lost productivity owing to visual impairment from untreated myopia and presbyopia alone are \$244 billion and \$25.4 billion, respectively. There is only one cornea available for every 70 corneal

recipients globally, according to a new global assessment on eye banking and corneal transplantation. This indicates that there is a significant mismatch between the availability and demand for donor corneas worldwide [4]. The most effective treatment for vision rehabilitation is still corneal transplantation. It is estimated that 2,70,000 donor eyes will be required to perform 1,00,000 corneal transplants annually in India, a fourfold increase over the existing supply of donor eyes, given the accessibility of donor eyes and their consumption rates [5]. A three-tiered community system called eye donation centres, eye banks, and eye bank training centres has been proposed for India in order to address the lack of eye donors. These institutions are in charge of gathering, processing, and distributing tissue, raising public awareness, and providing training and skill development for eye banking staff. EDC is in responsibility for raising professional and public awareness of eye banks. In order to encourage eye donation and harvest corneal tissues, it works with donor families and medical facilities. Additionally, it encourages safe procedures for eye transplants and draws blood for serology [6].

Numerous studies have already been conducted on the general public's knowledge of eve donation. The paramedical and allied health science students at a tertiary care teaching hospital are the subject of this study. They were selected because they are young, highly qualified professionals who have complete access to newspapers, digital media, and other literary sources. They should be more knowledgeable about eye donation than the general population as they will be working as healthcare professionals in the future. Through patient counselling, they will be a

viable source for boosting the number of eye donors among patients while they work towards their medical degrees. In order to raise awareness of the significance of supporting this endeavour, the study aims to assess the knowledge, willingness, and challenges surrounding eye donation among students studying paramedical and allied health sciences.

Aims and objective

The aim of the study is to assess medical, paramedical and allied health science students knowledge willingness and perceived obstacles regarding eye donation, aiming to raise awareness and underscore the significance of promoting the cause

Objectives

- To assess the awareness on eye donation
- To find out the willingness for eye donation
- To explore the factors responsible for unwillingness

Materials and Methods

This study is a cross sectional hospital based study conducted in Chengalpattu Medical college and hospital. Chengalpattu. The study population includes all the health care professionals including Doctors, MBBS students, Post graduates, allied health students and nursing students. The total sample size calculated from the previous study was 400. The study was conducted for a period of 6 months. A convenient sampling technique was used in our study. In this study we had included all the Doctors, Paramedical students, MBBS students, Post graduates, Nursing students in Chengalpattu medical college and hospital. Health care professionals who are not willing to participate in the study or give consent for the study were excluded from our study. Once the ethical approval obtained from the institutional ethical committee, a detailed self-directed questionnaire pertaining to eye donation was given to medical and paramedical students, post graduates and doctors and asked to mark the appropriate option. The Questionnaire will be made available in both google form or physical copy for convenience. All the data was entered in MS excel sheet and statical analysis will be done using SPSS. Multivariate logistic regression analysis was done.

Results

	No of participants	%		
Age				
Below 20	62	15.5		
20 - 30	165	41.25		
30-40	112	28		
40-50	30	7.5		
Above 50	31	7.75		
Total	400	100		
Sex				
Male	260	65		
Female	140	35		
Total	400	100		
Designation				
Faculty				
Professor	4	1		
Associate Professor	6	1.5		
Assistant Professor	10	2.5		
Senior residents	12	3		
Total	32	8		
Student- domain				
UG Medical- I/II/III/IV/CRMI	174	43.5		
PG Medical-I/II/III	28	7		
Allied Health Science- I/II/III	84	21		
Nursing-I/II/III	82	20.5		
Total	368	92		

Table 1. Distribution of study participants as per Demographic profile

The demographic information of 400 participants in the eye donation awareness research is shown in Table 1. According to the age distribution, 41.25% of respondents are between the ages of 20 and 30, followed by 28% who are between the ages of 30 and 40, and 7.75% who are over 50. In terms of gender, there is a greater representation of men in the study, with men making up 65% of the participants and women 35%. Faculty members make up a minor percentage (8%), with the following professional roles: professors (1%), associate professors (1.5%), assistant professors (2.5%), and senior residents (3%). On the other hand, the study is dominated by students (92%), with undergraduate medical students making up the biggest group (43.5%), followed by nursing (20.5%), allied health science (21%), and postgraduate medical students (7%).

S. No	Questions	Yes	%	No	%	total
1.	Is it possible to donate eyes?	295	73.75	105	26.25	400
2.	Eyes can be donated only after the donor's death?	310	77.5	90	22.5	400
3.	Does your hospital have an eye bank?	258	64.5	142	35.5	400
4.	Who has the right to give consent for eye donation?					
	Parents	253	63.25	147	36.75	400
	Spouse	242	60.5	158	39.5	400
	Children	62	15.5	338	84.5	400
	Relative	276	69	124	31	400
	Friend	349	87.25	51	12.75	400
5.	Who is eligible for eye donation?					
	Any age and sex are eligible for eye donation	228	57	172	43	400
	Only above 18 years of age are eligible for eye donation	175	43.75	225	56.25	400
	Can patients who have undergone cataract surgery or other eye surgeries donate eyes	189	47.25	211	52.75	400
	Can a person having diabetes/hypertension donate eyes	242	60.5	158	39.5	400
	Can a person wearing glasses/lens donate eyes	178	44.5	222	55.5	400
	Can a person with corneal diseases donate eyes	184	46	216	54	400
	Can a person with intraocular tumors donate eyes	256	64	144	36	400
	Can a person with glaucoma donate eyes	193	48.25	207	51.75	400

Table 2. Awareness of eye donation

6.	Is screening of donor blood for HIV and Hepatitis necessary for eye donation?	290	72.5	110	27.5	400
7.	Have you counselled anyone for eye donation?	125	31.25	275	68.75	400

The Table 2 shows awareness of eye donation, 73.75% of participants knew that eye donation is possible, and 77.5% were aware that it can only occur after the donor's death. About 64.5% knew that their hospital had an eye bank. In terms of consent for eye donation, 87.25% believed that a friend could give consent, while 69% identified a relative, 63.25% a parent, and 60.5% a spouse. However, only 15.5% believed that children could give consent. When asked about eligibility, 57% agreed that anyone of any age or sex could donate, whereas 43.75% believed only those above 18 years

could donate. Awareness about donation eligibility in certain conditions was varied: 47.25% thought patients who underwent eye surgery could donate, 60.5% believed diabetics and hypertensives were eligible, 44.5% thought individuals wearing glasses or lenses could donate, while 64% thought individuals with intraocular tumors were eligible. Furthermore, 72.5% of participants recognized the necessity of screening donor blood for HIV and hepatitis. However, only 31.25% had counseled someone regarding eye donation.

Knowledge regarding timeframe for Eyeball removal following death	Frequency	Percent
Don't know	60	15
Immediately after death	19	4.8
Within 2 days of death	18	4.5
Within 6 hours of death	303	75.8
Total	400	100

Table 3. Timeframe for Eyeball removal following death

Concerning the timeframe for eyeball removal post-death, 75.8% correctly identified that removal should occur within six hours, whereas 15% did not know the timeframe.

Knowledge regarding "eye bank"	Frequency	Percent
All of the above	200	50
Place where eyes are collected and stored	184	46
Place where eyes are pledged	12	3
Place where eyes are removed	4	1
Total	400	100

Table 4. H	Knowledge	regarding	Eye bank
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The Table 4 shows the awareness of eye banks was high, with 50% recognizing them as institutions that collect, store, and distribute donated eyes, and 46% identifying them as storage facilities. About 3% knows where eyes are pledged and 1% where eyes are removed.

Knowledge regarding eye transplantation	Frequency	Percent
I don't know	58	14.5
Only Sclera	18	4.5
Only the cornea (layer in front of black portion of eye) is used for transplantation	300	75
Whole eyeball is transplanted	24	6
Total	400	100

Table 5. Knowledge regarding Eye Transplantation

From Table 5, Knowledge of eye transplantation showed that 75% correctly stated that only the cornea is used for

transplantation, whereas 14.5% admitted to not knowing, and 6% mistakenly believed that the entire eyeball is transplanted.

Knowledgeregardingproblemsencounteredduringcounsellinganyone for eredencountered	Frequency	Percent
Disfigurement	115	28.8
Infections	35	8.8
Objections by family members	250	62.5
Total	400	100

Table 6. Knowledge regarding problems encountered during counselling anyone for eye donation

From Table 6 it had been found that the major barriers to counseling others for eye donation included objections from family members (62.5%), fear of disfigurement (28.8%), and concerns about infections (8.8%).

Source of awareness on eye	Frequency	Percent
Books	8	2
College	20	5
Family and Friends	96	24
Hospital	2	0.5
Internet	190	47.5
Knowledge acquired by education	7	1.75
Magazine	12	3
Medical student	3	0.75

Table 7. Source of awareness on eye

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My study	3	0.75
Newspaper	23	5.75
Ophthalmologist	2	0.5
Studies	4	1
Television	27	6.75
Textbook	3	0.75
Total	400	100

The Table 7 shows that awareness of eye donation primarily came from the internet (47.5%), followed by family and friends (24%), television (6.75%), and newspapers (5.75%), with minimal contribution from books, colleges, or ophthalmologists (Figure 1).



Figure 1. Willingness for eye donation

The findings reveal that 56.75% of respondents expressed willingness to donate their eyes, while 35.75% were not willing, and 7.5% had already pledged their eyes for donation. Regarding the utilization of donor corneas, a significant 84.9% were aware that corneas are primarily used for

optical purposes to restore vision, whereas 15.2% were unaware of this application. A key barrier to eye donation was objection from family members, reported by 78.3% of participants, while 21.8% did not face such objections. This highlights the crucial role of family attitudes in influencing

individuals' decisions to pledge for eye donation. Overall, the results indicate that while a majority are open to eye donation, awareness initiatives and family counselling could play an essential role in addressing concerns and increasing the actual rate of eye donation pledges.

The study investigated the participants' awareness and understanding of several facets of eye donation. Regarding the steps that must be taken before the eyeball is removed, 28% of respondents correctly indicated that the donor's eyelids must be closed, and 24% said that the donor's head must be flat. Furthermore, 21.75% of respondents said that calling the closest eye bank should come first, while 15.5% recommended using a cushion to elevate the donor's head a little and 10.75% thought that turning off the fan while using an air conditioner was an essential precaution. Participants' knowledge about National Eye Donation Fortnight varied. The majority of those surveyed (55.25%) accurately recognised that it is observed from August 25 to September 8. Though 17.75% of individuals thought it was celebrated from July 10 to July 24, 17% selected January 26 to February 9, and 10% selected October 22 to November 4, a sizable minority of participants were mistaken. This implies a lack of knowledge on national initiatives encouraging eye donation. About 48% of respondents knew that family members might give a deceased person's eyes without making a previous commitment, but 24.5% had the false belief that this was not permitted. Furthermore, 27.5% expressed uncertainty, suggesting that the public needs to be better informed on the moral and legal implications of eye donation.

Discussion

The study's findings shed light on the current state of awareness, attitudes, and practices regarding eye donation among healthcare professionals and students. A significant majority (73.75%) were aware that eye donation is possible, and 77.5% correctly understood that it can only occur posthumously. However, only 64.5% knew about the existence of an eye bank in their hospital. This suggests that while general awareness is relatively high, specific institutional knowledge may be lacking. Similarly, a study by Parija et al. [7]. reported a 95.6% awareness rate among participants, though only 51.5% had pledged to donate their eyes, indicating a gap between awareness and actionable commitment.

When considering consent for eye donation, 87.25% believed that a friend could provide consent, followed by relatives (69%), parents (63.25%), and spouses (60.5%). Only 15.5% thought children could give consent. This reflects some uncertainty about consent protocols, underscoring the need for clearer guidelines and education. Regarding donor eligibility, 57% agreed that individuals of any age or sex could donate, while 43.75% believed only those above 18 years were eligible. This misconception aligns with findings from a study done by Kacheri et al. [6] where 66.67% of students were unaware that there is no age limit restricting eye donation.

Knowledge about the utilization of donor corneas was high, with 84.9% aware that corneas are primarily used for optical purposes to restore vision. However, misconceptions persist, as evidenced by a study by Kacheri et al. [6] where 9% of students incorrectly believed that the entire eye was transplanted. Barriers to eye donation were predominantly due to objections from family members (62.5%), followed by fears of disfigurement (28.8%) and concerns about infections (8.8%). This is consistent with other study by Acharya et al. [8] highlighting that misinformation and concerns about proper utilization of donated tissue are significant impediments to eye donation.

Sources of awareness about eye donation were primarily the internet (47.5%), followed by family and friends (24%), television (6.75%), and newspapers (5.75%). This indicates a shift towards digital platforms as the main channels for disseminating information. Similarly, a study by Pooja et al. [9] found that media was the primary source of awareness among medical students.

Conclusion

While study participants the demonstrated a reasonable level of regarding awareness eye donation. and misconceptions significant gaps persist, particularly concerning consent procedures and donor eligibility criteria. Addressing these issues through targeted programs within medical educational curricula and public awareness campaigns is essential. Emphasizing the role of family discussions and consent, clarifying eligibility misconceptions, and promoting the importance of eye donation can collectively contribute to increased donation rates and help alleviate the burden of corneal blindness. The level of awareness regarding eye donation communicated by ophthalmologists and hospitals to healthcare professionals is below 1%, indicating a critical need for improvement.

Statements and Declarations Conflicts of interest

The authors declare that they do not have conflict of interest.

Funding

No funding was received for conducting this study.

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