

# Knowledge and Attitude towards Eye Donation among Undergraduate Medical Students

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**Abstract:** *Knowledge, awareness, and attitude towards eye donation among undergraduate students Aim & objectives: To evaluate eye donation knowledge, awareness and attitude among medical undergraduate students Materials and methods: Cross sectional survey was undertaken among 267 medical students. A pretested semi structured questionnaire on eye donation was given to students after getting informed consent. The data was entered in an excel sheet and analysed using SPSS software Results: 99.3% of the medical students surveyed were aware about eye donation. Awareness that any person irrespective of age can donate eyes was 43.4% only. 83.9% believed eye donation can cure all types of blindness. Only 79% were aware that cornea is the part of eye used for transplantation. 60.3% were willing to donate their eyes but only 30% knew where to apply Conclusion: The knowledge level regarding eye donation appeared to be unsatisfactory. More attempts to impart that knowledge to our future doctors need to be taken, to further spread awareness to general population and boost eye donation rates.*

**Keywords:** Attitude, Eye donation, Knowledge, Medical students, Transplantation

## 1. Introduction

Bilateral corneal blindness stands out as a prevalent cause of vision impairment, constituting 12% of global blindness cases and posing a significant worldwide threat. In India, the situation mirrors this trend, with 14% of the nation's total blind population falling within this category. The significant causes of corneal blindness encompass microbial keratitis, trachoma, vitamin A deficiency, ophthalmia neonatorum, harmful traditional medicines, onchocerciasis, leprosy, and ocular trauma. [1] Recognizing that primary prevention measures would offer a more cost-effective approach to addressing corneal blindness, the mainstay of treatment for individuals affected remains visual rehabilitation through corneal transplant. The Government of India, via the National Programme for Control of Blindness (NPCB), has endeavoured to alleviate the backlog of blindness by implementing comprehensive eye care services, including facilitating corneal transplantation. [2]

At present, the sole method for increasing the availability of corneas is to raise awareness about eye donation. The insufficiency of eye donations may not solely stem from a lack of awareness; various factors like physical, cultural, social, or psychological barriers may contribute to the reluctance in eye donation. The COVID-19 pandemic significantly impacted eye banking in India and globally, exacerbating the challenges faced in this critical aspect of healthcare. [3]

Having accurate knowledge enables medical professionals to influence the attitudes of patients they encounter daily, potentially leading to increased eye donation rates. [4] Hence, it is vital to assess the knowledge of our undergraduate medical students to know their ability to do the same.

## 2. Methods

This study was a cross-sectional and observational type of study. The study population included the undergraduate medical students from the 1st to the internship of SSMC. A predesigned, pretested, and a semi-structured questionnaire was given to the students for eliciting responses. The questionnaire consisted of 34 questions. The knowledge of all medical undergraduate students on eye donation was assessed using a 34 points scale. There were 16 multiple choices and yes/no questions carrying a total of 34 correct responses. Each correct response was given a score of 1 and a wrong response or no response was given a score of 0. The respondents were categorized as having good, satisfactory, or poor knowledge based on the score as following i) 20 - 34 good knowledge, ii) 10 - 19 satisfactory knowledge, iii) 0 - 9 poor knowledge.

### Data collection and statistical analysis

Data were collected for one month in January 2024. Statistical analyses were performed using Statistical Package for the Social Sciences (SPSS 16.0). Descriptive tabulations and chi-square tests were applied to generate descriptive information from qualitative data assuming normalcy. Responses were made anonymous, and participants were made aware of this fact before participation in the study. Written consent was obtained from each participant. The study followed the approval from the Institutional Review Committee.

## 3. Results

A total of 267 medical undergraduate students participated in the study. There were 93, 102, 53 and 10 participants from 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> year and internship respectively.

Heard about Eye Donation	No of Responses	%
Yes	265	99.3 %
No	2	0.7 %

Awareness of Eye Donation Origin	No of Responses	%
>5 yrs back	187	70.3%
In the last 1 - 5 yrs	60	22.56%
In the last 1 yr	17	6.39%
Never	2	0.7%

Awareness of eye donation - source	No of responses	%
Television	65	24.6%
Family member/ friend/ Relative	63	23.9%
Educational institution	52	19.7%
Social media	41	15.5%

Newspaper	20	7.6%
Health worker	11	4.2%
Other	11	4.2%
Radio	1	0.4%

Candidate for eye donation	No of responses	%
Anyone irrespective of age after death	116	43.4%
Those without any h/o chronic illness	77	28.8%
Do not know	37	13.9%
Those who have not undergone cataract surgery	20	7.5%
Others	7	2.6%
Those who don't wear spectacles	5	1.9%
Those below the age of 50 years	5	1.9%

Awareness regarding	Yes		No	
	Resp	%	Resp	%
A person wearing spectacles is eligible for eye donation	225	84.3	42	15.7
Eyes can be donated only after the donor's passing.	167	62.5	100	37.5
Eye donation can cure all types of blindness	35	13.1	232	86.9
A shortage of eye transplantation exists in India	211	79	56	21
Eye Donation Fortnight	195	73	72	27
Eye bank	204	76.4	63	23.6
A family member can donate a deceased persons eyes even in the absence of pledging	133	49.8	134	50.2

	Yes		No		Don't know	
	Resp	%	Resp	%	Resp	%
Eyes of children are eligible for donation	108	40.4	58	21.7	101	37.8
Sourcing or selling the cornea on social media platforms is possible	27	10.1	143	53.6	97	36.3
The eye bank is authorized to disclose donor and recipient details	53	19.9	156	58.4	58	21.7
Prior lifetime pledging is a requirement for eye donation	134	50.2	68	25.5	65	24.3
Enucleation can be done at home	64	24	167	62.5	36	13.5
Blood group mismatch prevents eye donation	63	23.6	130	48.7	74	27.7

1 pair of eyes can restore vision for	No of resp	%
1 person	61	22.8
2 - 4 people	119	44.6
6 - 8 people	21	7.9
Don't know	66	24.7

Part of eye used for transplantation	No of resp	%
Cornea	211	79
Entire eye	21	7.9
Lens	9	3.4
Don't know	26	9.7

After death eyes should be donated within	No of resp	%
0 - 6 hrs	151	56.6
6 - 24 hrs	70	26.2
Possible even >24hrs	7	2.6
Don't know	39	14.6

Preferred method of receiving additional information about eye donation	No of resp	%
Doctors	209	78.3
Social media	31	11.6
Friends/ family	9	3.4
Newspaper	9	3.4
Television	9	3.4

	Yes		No	
	Resp	%	Resp	%
Self - perceived awareness level about corneal donation adequate	50	18.7	217	81.3
Awareness of individuals who have donated eyes	121	45.3	146	54.7
Willingness to donate eyes	161	60.3	106	39.7
Awareness of the process for registering for corneal donation	80	30	187	70
Willingness to inform family regarding wish to donate eyes	231	86.5	36	13.5
Willingness to take up responsibility to generate eye donation awareness among public	206	77.2	61	22.8

Self - perceived barriers to eye donation	No of resp	%
Lack of awareness	121	45.3
Family objection	72	27
Don't know where to apply	24	9
Religious beliefs	14	5.2
It disfigures the donors face	13	4.9
Eye donation is a business	13	4.9
Corneal transplant yields poor results	9	3.4
NA	1	0.4

Self - perceived best way to promote eye donation	No of resp	%
Through internet	78	29.2
Through ads, television, radio	78	29.2
Self - realisation on the need of donor cornea	65	24.3
Through public meetings, newspaper	45	16.9
Social media	1	0.4

Willingness to donate deceased 1st degree relative's cornea	No of resp	%
Yes	95	35.6
No	63	23.6
Maybe	109	40.8

Factors driving your motivation to donate your corneas	No of resp	%
You want to do good	124	46.4
If you had further info about this issue	54	20.2
None	52	19.5
You know personally someone who is blind	26	9.7
If your family received financial compensation	11	4.1

If you think donating corneas is important and will serve humanity, tell us why?	No of resp	%
It helps restore others vision	223	83.5
It helps with research	34	12.7
You don't think donating corneas is important or serves humanity	10	3.7

#### 4. Discussion

The current study focused on evaluating the awareness and knowledge about eye donation among undergraduate medical students in South India. Considering the rising demand for eye donation, the study's findings hold significant value. Promoting awareness about eye donation among the population is crucial, as it encourages people to contribute to the cause significantly.

In our study, the knowledge - based questions found that knowledge was adequate about eye donation but could be improved in terms of details of procedures and rules to be followed for the same could be improved. In our study, the awareness regarding importance of eye donation were appropriate. The attitude in our study participants was an aspect which could be improved with more promotional programs to further boost the eye donation rates.

Kaiti et al, Bharti et al studies showed similar results in terms of awareness of eye donation. Our study showed better knowledge compared to kaiti et al about donating eyes within 6 hrs (56.6% vs 33.3%), donating eyes only after death (62.5 vs 45.6%) and steps to be taken after death (56.4% vs 30.7%) but showed similar knowledge about effect of comorbidities, and secrecy of donor and recipient details to be maintained by the eye bank.<sup>[5]</sup>

Chowdhury et al showed similar results about knowledge of eye donation (100% vs 99.3%), knowledge about eye donation fortnight (42% vs 73%), knowledge about ideal time for eye donation (69% vs 56.6%), knowledge about necessity of prior pledging for eye donation in lifetime (54% vs 50.2%), knowledge whether family member can donate eyes in absence of pledging (46% vs 49.8%), knowledge about scarcity of eye transplantation (89% vs 79%), knowledge about existence of eye bank (84% vs 76.4%) and willingness to donate eyes (88.4% vs 60.3%).<sup>[1]</sup>

Kacheri et al showed similar results in knowledge about eye donation (93.3% vs 99.3%), sources of knowledge being social media (46% vs 15.5%), health worker (3.3% vs 4.2%),

knowledge of eyes being donated only after death (53.3% vs 62.5%), anyone irrespective of age can donate eyes (33.3% vs 43.4%), optimal time for retrieval of eyes after death (54% vs 56.6%), knowledge of part of donated eye used (56% vs 79%), requirement of prior consent for eye donation (81% vs 50.2), whether a person with spectacles can donate eyes (48% vs 84.3%), whether eye donation can cure all types of blindness (44% vs 86.9%) and willingness to donate eyes was lesser (49% vs 60.3%)<sup>[6]</sup>

Bharti et al showed better knowledge levels regarding donating eyes within 6 hrs (74% vs 56.6%) and better willingness to donate eyes by participants (87.2% VS 60.3%).<sup>[7]</sup>

Our study showed better knowledge than Joshi et al in terms of knowledge about eye donation (99, 3% vs 57%), whether eyes should be donated before or after death (62.5% vs 29.7%), however willingness to donate eyes was lesser (60.3% vs 74.5%) and barriers to donating eyes were similar like lack of awareness (45.3% vs 29.7%), family objection (27% vs 12.8%), religious beliefs (5, 2% vs 21.3%), disfigures face (4.9% vs 21.3%), transplantation yields poor results (3.4% vs 2.1%)<sup>[3]</sup>

Our study conducted on medical students of one university, offers preliminary insights indicating that these students have incomplete knowledge regarding eye donation. Consequently, further multicentric studies with larger sample sizes are necessary to validate these findings in the future.

#### 5. Conclusion

Our research participants demonstrated a strong understanding of the problem, yet their attitudes require additional motivation and encouragement. Medical students are crucial contributors to the future of our healthcare system, serving as fundamental supporters that sustain it. Their profound expertise and awareness are essential for leading and promoting initiatives related to eye donation.

Regular eye donation awareness programs are essential not just within communities but also for medical students in hospitals and medical colleges. Such initiatives will significantly enhance the country's eye donation program, addressing the backlog in the long term.

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