

A cross sectional study on awareness about eye donation among the students of a selected degree college and their willingness to pledge eyes for donation.

Shwetha NC.^{1*}, Achappa S.², Deeksha BM.³

DOI: <https://doi.org/10.17511/jooo.2021.i01.02>


^{1*} Shwetha NC, Assistant Professor, Department of Ophthalmology, Dr Chandramma Dayananda Sagar Institute of Medical Education and Research, Ramanagara, Karnataka, India.

² Santosh Achappa, Associate Professor, Department of Community Medicine, Dr Chandramma Dayananda Sagar Institute of Medical Education and Research, Ramanagara, Karnataka, India.

³ Deeksha BM, MBBS.

Context: Corneal blindness is a major public health problem in India. Raising the level of awareness on eye donation is important to increase procurement of corneas as there is a significant mismatch between need and supply of corneal transplant. **Aim:** To assess the awareness and knowledge about eye donation among university students and to learn about their willingness to pledge eyes for donation. **Settings and Design:** A cross sectional study was conducted for a period of 6 months among the students of a degree college in an Indian urban city. **Methods and Material:** A pre tested & semi structured questionnaire was given to the students to assess their knowledge about eye donation and their willingness to pledge eyes for donation. **Statistical analysis used:** Non probability samples (convenience sample) of 211 students were selected for the study. **Results:** The mean age of the students was 19.35 ± 0.73 years. Out of 211 students, 198 (94%) had heard about eye donation. Ideal time to remove eyes after death is known to 71% of the students. Only 08% of the students knew a person with Diabetes or Hypertension can donate his/her eyes. On willingness to pledge eyes for donation, 59% of the participants were ready to pledge and 05% were not willing to donate eyes. **Conclusion:** Even though the students have heard about eye donation the knowledge was lacking on important aspects of eye donation. The Majority have not registered for eye donation however willingness to pledge the eyes for donation was present among most of the students.

Keywords: Corneal blindness, Eye donation, Pledge, Public health problem, Students, Willingness.

Corresponding Author	How to Cite this Article	To Browse
Shwetha NC, Assistant Professor, Department of Ophthalmology, Dr Chandramma Dayananda Sagar Institute of Medical Education and Research, Ramanagara, Karnataka, India. Email: dr.shwethanc@gmail.com	Shwetha NC, Achappa S, Deeksha BM. A cross sectional study on awareness about eye donation among the students of a selected degree college and their willingness to pledge eyes for donation. Trop J Ophthalmol Otolaryngol. 2021;6(1):07-12. Available From https://ophthalmology.medresearch.in/index.php/jooo/article/view/182	

Manuscript Received 2021-01-20	Review Round 1 2021-02-24	Review Round 2 2021-02-28	Review Round 3	Accepted 2021-03-01
Conflict of Interest No	Funding Nil	Ethical Approval Yes	Plagiarism X-checker 7%	Note



© 2021 by Shwetha NC, Santosh Achappa, Deeksha BM and Published by Siddharth Health Research and Social Welfare Society. This is an Open Access article licensed under a Creative Commons Attribution 4.0 International License <https://creativecommons.org/licenses/by/4.0/> unported [CC BY 4.0].



Introduction

Giving someone the gift of sight and letting them see the world through eye donation is truly a divine deed for a noble cause. Due to lack of awareness, eye donation has not got its due importance in our country [1]. According to World Health Organization (WHO), corneal diseases are among the major causes of vision loss and blindness [2]. Significant causes for corneal blindness are ocular trauma & corneal ulcerations. Corneal blindness is an important cause of blindness in India.

There are currently twelve lakh corneal blind persons in India, each year 25000 – 30000 people with corneal blindness are added [3]. The only currently available curative treatment for corneal blindness is the surgery. After death various organs can be donated & can be surgically transplanted to the patients who need them, one such organ is the eye [4]. By donating eyes after death through a surgical procedure known as corneal transplantation a corneal blind person can see again [5].

The number of people awaiting corneal transplant is out numbering the available donors. The annual requirement is about 75,000 to 1,00,000 corneas but the procurement rate is 22,000 corneas at present in India [6]. More than 90% of the corneal transplantation is carried out successfully & helps restore vision in people with corneal blindness [7]. But the access to this surgery is very difficult because of lack of donors [4].

India is lagging behind in eye donation due to false social taboos. National eye donation fortnight is observed in India every year from 25th August to 8th September. This campaign aims to create awareness about importance of eye donation and thereby motivate people to pledge their eyes for donation after death [8]. Raising the level of public awareness on eye donation is important to increase procurement of corneas [9].

Objectives

01. To assess the knowledge on eye donation among the students
02. To obtain the information on their willingness to donate eyes

Materials and methods

Type of study: A cross sectional study.

Study setting: A university degree college.

Study duration: Six months between July 2019 to December 2019.

Sampling methods: Non Probability sampling technique (convenience Sampling)

Sample size calculation: Complete enumeration of all the students studying in the degree college was done and the sample size of our study was 211.

Inclusion criteria: All the students present on the day of study in the class were included

Exclusion criteria: Students who refused to give consent were excluded from the study.

Data collection procedure: A predesigned semi structured questionnaire was used to collect information from the students. The questionnaire, in its first part included information on age, gender, study stream and semester. Remaining part of the questionnaire contained questions on knowledge about eye donation & their willingness to pledge eyes for donation. The questionnaire was distributed to the students and data was collected

Ethical consideration & permission: The study was conducted after obtaining the Institutional ethical committee clearance and an informed consent was taken from the students after explaining the purpose of the study.

Statistical Analysis: The data was compiled in MS Excel and analysed by using Statistical Package for Social Sciences (SPSS) Version 20.0. Descriptive statistics was presented in percentages and proportions.

Results

Out of 211 students, 198 (94%) had heard about eye donation. Among the 198 students, 56 (28%) were males and 142 (72%) were females. Age varied from 18 to 21 years. The mean age of the students was 19.35 ± 0.73 years.

The correct responses of the students on questions regarding eye donation is shown in Table 1.

With respect to study stream 143 (72%) students were from Bachelor of Commerce (B.COM), 46 (23%) from Bachelor of Computer Applications (BCA) and 9 (4.5%) students were from Bachelor of Business Administration (BBA).

Table-1: Showing correct responses of the students on questions regarding eye donation

NC Shwetha et al: A cross sectional study on awareness about eye

Sl no	Question	Response	Frequency	Percentage
1	What is the age limit for donating eyes?	Upto 18 years	9	5
		18 - 59 years	44	22
		60 years and above	10	05
		everyone	135	68
2	Can the eyes be removed from a living person for donation?	Yes, with consent of Donor	69	35
		No	110	55
		Don't Know	19	10
3	Within how much time after death should the eyes be removed?	1 - 2 days	6	3.0
		6 - 24hrs	41	21
		within 6 hrs	141	71
		Dont Know	10	05
4	Which part of the eye is taken from the Donor?	whole eye ball	42	21
		Black part of the eye	46	23
		white part of the eye	17	09
		Dont Know	93	47
5	Which part of the eye is transplanted?	whole eye ball	30	15
		Black part of the eye	111	56
		white part of the eye	3	02
		Dont Know	54	27
6	Eyes can be preserved in the eye bank	Yes	81	41
		No	68	34
		Don't Know	49	25
7	Can a person with Diabetes and Hypertension diseases donate his/her eyes?	Yes	15	08
		No	154	78
		Dont know	29	14
8	Can a person who has undergone cataract surgery donate his/her eyes?	Yes	24	12
		No	99	50.0
		Don't know	75	38
9	Does the donor/ donor's family receive money for donating eyes	Yes	60	30
		No	83	42
		Don't Know	55	28
10	Can eyes be removed at home?	Yes	83	42
		No	106	54
		Dont Know	9	04
11	Is it necessary to transport the donor to the hospital after death for donating eyes	Yes	66	33
		No	114	58
		Don't Know	18	09
12	Can they donate if not pledged	Yes	167	84
		No	23	12
		Don't Know	8	04

Table 2: Showing distribution of students based on their willingness to pledge eyes for donation

Question	Responses	Frequency	Percentage
Are you willing to pledge eyes for donation	Yes	116	58.6
	No	10	5.1
	Need time	44	22.2
	Consent of family is required	28	14.1
	Total	198	100.0

Among the students who had heard about eye donation, 135 (68%) participants responded that anyone can donate eyes irrespective of the age. When asked whether a living person can donate eyes, 69 (35%) of them answered yes with consent but majority rightly said no accounting for 110 (55%). Ideal time to remove eyes after death was within 6 hours, this was known to 141 (71%) students. On the question which part of the eye is taken from the donor, 42 (21%) students answered as whole eye is taken and 46 (23%) students said only black part of the eye (cornea) is taken.

Authors considered both as right answers. Regarding transplantation 111 (56%) participants correctly answered only cornea is transplanted. With respect to preserving the eye 81 (41%) respondents felt eyes should be preserved in the eye bank. For the question, "Can a person with Diabetes or Hypertension donate his/her eyes?", only 15 (08%) students answered correctly as yes. Twenty four (12%) students knew that a person who has undergone cataract surgery can still donate eyes. On asking if the eyes of the donor can be procured at home, 83 (42%) students rightly said yes but 66 (33%) students believed transporting the donor to the hospital after death is necessary for donating eyes.

On questioning about willingness to pledge eyes for donation, 116 (59%) students were ready to pledge, 44 (22%) needed time to decide, 28 (14%) needed consent from family and 10 (05%) students were not willing to donate eyes. Pleasure to help the blind was the primary reason for majority of the students who were ready to pledge eyes for donation accounting for 64%. Among the students (60%) who were not willing to pledge eyes for donation, disfigurement of face was the reason for their decision.

Discussion

In the present study, 94% of the students had heard about eye donation; similar to a study done by Bhole P et al., among the students of a nursing college in Gujarat [2020] [10], where 98% of the participants had heard about eye donation. Whereas in a study by Bhattacharya S et al., [2020] in an urban community of West Bengal, [11] 74% of the respondents had heard about eye donation. Compared to the students, awareness about eye donation was less in the community. In the present study, 68% of the students responded that anyone can donate eyes irrespective of the age;

Similar response was seen in a study by Nekar et al., [2012] among the college students of Hubli city. [12] In the present study 69% of the students opined that there is shortage of donors in India. In a study by Kumari R [2016] among the life sciences students [13] 85% of the students believed that there is a shortage of donors in India. When asked whether living person can donate eyes, 35% of study participants answered "yes with consent" but the majority rightly said no accounting for 55%.

Whereas in the study by Bhole P et al., [10] 61% responded that eyes can be donated before death. Ideal time to remove eyes after death is within six hours, which was known to 71% of the students in the present study. Similarly in the study by Bhole P. et al., [10] 75% students knew the ideal time for removal of eyes but in a study among nursing students by Gupta A et al., [14] only 38% of the participants were aware of the ideal time for procurement of eyes.

When participants were asked about the part of the eye that is taken from the donor in the present study, 21% of the participants believed whole eye is taken and 23% of the participants opined only black part of the eye (cornea) is taken. Both were considered as right answers. When participants were questioned about the part of the eye that is transplanted, 56% of the participants correctly answered only cornea is transplanted whereas in a study by Gupta A et al. [2009] among students of a nursing college in Bangalore [14] 74% of the students knew that donated eyes are used for corneal grafting but in a study by Nekar et al [12] 33% of the participants knew that cornea is used in transplantation and 62% thought whole eye is transplanted.

On asking about preserving the retrieved eyes, 41% of our participants felt eyes should be preserved in the eye bank. In a study from kommula et al. [2016] among the medical students [9], 59% of the students responded that eyes needs to be preserved in the eye bank. When asked if a person with Diabetes or Hypertension can donate his/her eyes, only fifteen study participants (08%) answered correctly as yes and 12% students knew that a person who has undergone cataract surgery can donate eyes. Regarding removal of the eyes of the donor at home, 42% of the participants were aware that the eyes can be removed at home but 33% said it is necessary to transport the donor to the hospital after death for donating eyes whereas in a study by Nekar et al [12]

74% of the respondents were of the opinion that eyes can be removed in the hospital only and about 18% said can be removed in any convenient place. In the present study 84% of the respondents had not registered for eye donation, similarly 93% of the respondents had not registered in the study by Bhole P et al. [10]

In the present study, we wanted to know the willingness of the students to pledge eyes for donation and the responses are tabulated in Table 2. Majority of the students of the students were ready to pledge (59%), 22% of the study participants needed time to decide, 14% needed consent from family and ten students (05%) were not willing to donate eyes and in a study by Nekar et.al [12] 78% of the respondents were willing to donate eyes after death and 22% were not willing to donate eyes. In a study by Bhattacharya S et al. [11] 78% of the study participants had a favourable perception towards eye donation of which, 41% of the respondents were willing to pledge for eye donation and 18% were unwilling to donate their eyes even though they had a favourable perception.

In the present study, pleasure to help the blind was the reason for the majority of the students to pledge eyes for donation, same reason was given by majority of the students in a study by Nekar et al. [12] Among the students who were not willing to donate eyes, disfigurement of the face and objection from family were the reasons for their decision whereas in a study by Nekar et al [12] lack of interest was the reason given by majority of the students for their decision.

Conclusion

Even though the students have heard about eye donation the knowledge was lacking among students on important aspects of eye donation. A majority of the students knew that there was no age limit for eye donation, and eyes cannot be removed from a living person and also the ideal time for removal of the eyes after death. However, a majority did not know which part of the eye is taken from the donor and were not aware about the preservation of retrieved eyes in the eye bank before transplantation.

A large number of students in the study falsely believed that a person with diabetes and hypertension and a person who has undergone cataract surgery cannot donate eyes.

Most of the study participants have not registered for eye donation; however willingness to pledge the eyes for donation was present among majority of the students. Pleasure to help blind was the main reason for their willingness to pledge eyes.

What does the study add to the existing knowledge?

Young university students are the rich resource of the country. Well informed or educated young minds on importance, need and facts about eye donation can go back to their families and community to motivate a larger group to pledge for eye donation, and thereby contribute towards reducing the burden of corneal blindness.

Recommendations

Along with studies on health care professionals and students, more studies need to be conducted among the students from non-medical background as well. Awareness programs are important in a society where taboos or religious beliefs can form a barrier for eye donation.

Author's contribution

Dr Shwetha NC: Concept, Manuscript preparation.

Dr Santosh Achappa: Study design, Data Analysis

Dr Deeksha BM: Data collection

Reference

01. Importance of Eye Donation - MyGov Blogs [Internet]. MyGov Blogs. 2020. Available from URL: <https://blog.mygov.in/importance-of-eye-donation/>. Accessed on 27 December 2020 [Crossref]
02. Vashist P, Gupta N, Tandon R, Gupta S, Sreenivas V. Burden of corneal blindness in India. *Indian Journal of Community Medicine*. 2013;38(4):198. DOI: 10.4103/0970-0218.120153 [Crossref]
03. National Eye Donation Fortnight 2020. National Health Portal Of India [Internet]. Nhp/gov/in. 2020 [cited 27 December 2020]. Available from URL: [Article] [Crossref]

04. National Eye Donation Fortnight 2019. National Health Portal Of India [Internet]. Nhp/gov/in. 2020 [cited 27 December 2020]. Available from URL: [Article] [Crossref]
05. Gupta N, Vashist P, Ganger A, Tandon R, Gupta S. Eye donation and eye banking in India. The National Medical Journal of India. 2018;31(5)283. DOI: 10.4103/0970-258x.261189 [Crossref]
06. Donate eyes, help someone see the world [Internet]. Deccan Herald. 2020. Available from: [Article] [Crossref]
07. vikaspedia Domains [Internet]. Vikaspedia/in. 2020. Available from: [Article] [Crossref]
08. Shob K. National Eye Donation Fortnight- The Pandemic Is Pushing India Towards 'Darkness' - Daily Rounds [Internet]. DailyRounds. 2020. Available from URL: [Article] [Crossref]
09. Kommula V, Jyothula N. Awareness and perception regarding eye donation among medical students. Nat J Med Dent Res. 2016;4(3)187-190. [Crossref]
10. Bhole P, Chaudhari B, Jadeja J, Parmar D, Patel P. Knowledge and awareness of eye donation among students of a nursing college in Gujarat. Delhi J Ophthalmol. 2020;31(1)53-56. doi: 10.7869/djo.569 [Crossref]
11. Gupta S, Kole S, Bhattacharya S, Guchhait D. Perception and Willingness towards Eye Donation in an urban community of West Bengal. Nepalese Journal of Ophthalmology. 2020;12(2)290-297. doi: 10.3126/nepjoph.v12i2.28426 [Crossref]
12. Nekar M, Lokare L, Gokhale S, Godbole M, Mulkipatil S, Venketesh M. Awareness of eye donation among college students of Hubli city, Karnataka. Int J Biomed Res. 2012;3(4). doi:: 10.7439/ijbr.v3i4.415 [Crossref]
13. Kumari R. Eye donation awareness among the students. Asian J Biomed Pharmaceut Sci. 2016;6(53)37-38. Available from URL: [Article] [Crossref]
14. Gupta A, Jain S, Jain T, Gupta K. Awareness and perception regarding eye donation in students of a nursing college in Bangalore. Indian J Community Med. 2009;34;122-5. [Crossref]