

Awareness regarding eye donation among medical students: Plan to educate early

Soham S Pal^{1*}, Zaid Nafe², Veerendra B Atnoor³, Supriya V Chitupe⁴

^{1,3,4}Department of Ophthalmology, ²Department of Community Medicine, DR. VM Government of Medical College, Solapur, Maharashtra.

Email: sohampal4@gmail.com

Abstract

Background: According to WHO estimates India has 10 million blind populations. Corneal problems cause a significant proportion of blindness in India. Although effective strategies to prevent corneal blindness are likely to be more cost effective, visual rehabilitation by corneal transplantation remains the major treatment for restoring sight in those who already have corneal blindness. The requirement of donor corneas per year is at least 20 times the current procurement. Medical students can be involved in the motivation of patients and relatives to pledge their eyes and to do grief counselling for donating eyes **Objective:** To assess the knowledge and attitude of under graduate medical students regarding eye donation and their willingness to pledge eyes for donation. **Methodology:** A Cross sectional descriptive study was conducted among 400 medical students of a tertiary care hospital in Solapur. The study tool was pre tested semi structured self administered questionnaire. **Results:** The majority (99.4%) of students knew that eyes can be donated after death but only 41.1% knew that the ideal time of donation was within six hours of death. Most participants (87.2%) were willing to donate eyes. Nobility in the act of eye donation was the main motivational force for eye donation according to 85.5% of students. Mass media such as television, newspapers, magazines and posters were important sources of information on eye donation. **Conclusion:** The findings of the study showed that overall knowledge about eye donation among students was good, however the attitude and practice showed mixed responses.

Key Word: corneal blindness, eye donation, medical students

*Address for Correspondence:

Dr. Soham S Pal, Department of Ophthalmology, DR. VM Government of Medical College, Solapur, Maharashtra, INDIA.

Email: sohampal4@gmail.com

Received Date: 18/01/2019 Revised Date: 13/02/2019 Accepted Date: 01/03/2019

DOI: <https://doi.org/10.26611/10099238>

Access this article online

Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 25 March 2019

INTRODUCTION

Vision is the most important sense because it allows interacting freely with the environment and enjoying the beauty of life. Eye is sometimes called the “mirror of soul”. It twinkles with humor, sparkles with joy, softens with worry, hardens with anger, and clouds when things go wrong or one loses hope. The eye often reflects physical health. Once vision becomes significantly limited, it influences the activities of daily living. Even simple tasks

become difficult to perform. So eye care is very important to maintain the eye health¹. The World Health Organization (WHO) estimates that for every 5 seconds someone goes blind. Corneal diseases constitute a significant cause of visual impairment and blindness in the developing world. With 7.8 million blind people in India, the country accounts for 20% of the 39 million blind population across the globe, of which 1% is on account of corneal blindness². In spite of establishment of the hospital cornea recovery programme and modern eye banking models in India, the current cornea procurement rate in India is a dismal 22,000 per year. The annual requirement of corneas being 100,000 and utilization being only 40% (8800)³. 85 domestic eye banks of the United States reported that there were 110,600 corneal donations and 59,271 corneal grafts. In Europe, approximately 20,000 corneal transplantation procedures are performed among 35,000 procured corneas per year. In the United Kingdom, corneal transplantation is performed for more than 3500 people per year⁴. Sri Lanka and USA are major donors of

cornea for many countries including India because procurement of local corneas is low⁵.

AIM

the aim of the study was to assess the awareness regarding eye donation among medical the students.

MATERIAL AND METHODS

It is a descriptive cross-sectional study, and conducted in undergraduate medical students of DR. V. M. Government Medical College, Solapur, during period from November

2018 to February 2019. The data were collected via a structured questionnaire in English language. Socio-demographic information (age, gender, education) were taken with 21 questions about awareness regarding eye donation. We assess the level of awareness for each participant by scoring those 21 questions by giving 1 score point to each question, so the total points were 21 points. The participant were divided into 3 groups which were poor (0-11 points), satisfactory (12-16 points) and good (17-21 points). The participants were interviewed with the questionnaire after informed consent was taken.

RESULTS

Table 1: Distribution of study population according to socio-demographic characteristics.

Variables	Males (%)	Females (%)	Total
Age(in years)			
15-20	98 (52.69%)	96 (44.86%)	194 (48.50%)
21-25	88 (47.31%)	118 (55.14%)	206 (51.50%)
Education			
First Year	56 (30.10%)	44 (20.56%)	100 (25.00%)
Second	42 (22.58%)	58 (27.10%)	100 (25.00%)
Third	48 (25.81%)	52 (24.30%)	100 (25.00%)
Fourth	40 (21.51%)	60 (28.04%)	100 (25.00%)
Socio- economic status			
Upper (I)	105 (56.45%)	122 (57.01%)	227 (56.75%)
Upper middle (II)	52 (27.96%)	68 (31.78%)	120 (30.00%)
Lower middle (III)	29 (15.59%)	24 (11.21%)	53 (13.25%)
Upper lower (IV)	00	00	00
Lower (V)	00	00	00
Type of family			
Nuclear	82 (44.09%)	90 (42.06%)	172 (43.00%)
Joint	57 (30.64%)	68 (31.78%)	125 (31.25%)
Three Generation	47 (25.27%)	56 (26.16%)	103 (25.75%)
Religion			
Hindu	152 (81.72%)	174 (81.31%)	326 (81.50%)
Muslim	30 (16.13%)	36 (16.82%)	66 (16.50%)
Christian	03 (01.61%)	03 (01.40%)	06 (01.50%)
Others	01 (00.54%)	01 (00.47%)	02 (00.50%)

It was seen from Table 1 that total 400 MBBS students participated in the study, out of which 186 (46.50%) were males and 214 (53.50%) female students. 206 (51.50%) students belonged to age group 21-25 years and 194 (48.50%) belonged to age group 15-20 years. Majority of the students belonged to upper class 227 (56.75%) followed by upper middle class with 120 (30.00%) students and 53 (13.25%) students belonged to lower middle class. There were no students who belonged to lower socio-economic status. Most of the students were from nuclear families 172 (43.00%) followed by 125 (31.25%) from joint families and 103 (25.75%) were from three generation families. Majority of the students were Hindus 326 (81.50%) followed by 66 (16.50%) were Muslims and 06 (01.50%) were Christians.

Table 2: Distribution according to AWARENESS regarding eye donation among medical students

Variables	Males (%)	Females (%)	Total	p-value
1. Do you know eyes can be donated after death?				The p-value is
Yes	178 (95.70%)	207 (96.73%)	385 (96.25%)	0.7817.
No	08 (04.30%)	07 (03.27%)	15 (03.75%)	
2. Source of information about eye donation?				
a. Newspaper	18 (09.67%)	25 (11.68%)	43 (10.75%)	

b. Television	21 (11.29%)	27 (12.62%)	48 (12.00%)	The p-value is 0.74317.
c. Radio	12 (06.45%)	17 (07.94%)	29 (07.25%)	
d. Internet	52 (27.96%)	67 (31.31%)	119 (29.75%)	
e. Public hoardings	27 (14.51%)	23 (10.74%)	50 (12.50%)	
f. Friends & Relatives	25 (13.44%)	21 (09.81%)	46 (11.50%)	
g. Doctors & Hospital staff	31 (16.68%)	34 (15.90%)	65 (16.25%)	
3. Do you think eye donation will be a service to mankind?				
Yes	174 (93.55%)	208 (97.20%)	382 (95.50%)	
No	12 (06.45%)	06 (02.80%)	18 (04.50%)	
4. Is eye donation against your religious belief?				The p-value is 0.912001.
Yes	22 (11.83%)	25 (11.68%)	47 (11.75%)	
No	164 (88.17%)	189 (88.32%)	353 (88.25%)	
5. Whether eyes can be donated only after death?				The p-value is 0.803011.
Yes	75 (40.32%)	90 (42.06%)	165 (41.25%)	
No	111 (59.68%)	124 (57.94%)	235 (58.75%)	
6. Do you know about any eye banks in Solapur?				The p-value is 0.831385.
Yes	181 (97.31%)	210 (98.13%)	391 (97.75%)	
No	05 (02.69%)	04 (01.87%)	09 (02.25%)	
7. Are you aware of the ideal time to retrieve eyes after death?				The p-value is 0.2275
a. within 6 hours	142 (76.34%)	172 (80.37%)	314 (78.50%)	
b. 7-12 hours	09 (04.83%)	15 (07.01%)	24 (06.00%)	
c. 13-18 hours	05 (02.69%)	08 (03.74%)	13 (03.25%)	
d. 19-24 hours	12 (06.45%)	07 (03.27%)	19 (04.75%)	
e. 25-36 hours	18 (09.69%)	12 (05.61%)	30 (07.50%)	
8. During transplantation which part of the donated eye is used for transplantation?				The p-value is 0.3985.
a. Only cornea	158 (84.95%)	189 (88.32%)	347 (86.75%)	
b. whole eyeball	28 (15.05%)	25 (11.68%)	53 (13.25%)	
9. Does Eye donation cause disfigurement of face of the donor?				The p-value is 0.576494.
Yes	05 (02.69%)	03 (01.40%)	08 (02.00%)	
No	181 (97.31%)	211 (98.60%)	392 (98.00%)	
10. Can a person with communicable disease donate his/her eyes?				The p-value is 0.704767.
Yes	25 (13.44%)	25 (11.68%)	50 (12.50%)	
No	161 (86.56%)	189 (88.32%)	350 (87.50%)	
11. The eyes can be removed at donor's house itself?				The p-value is 0.398778.
Yes	123 (66.12%)	151 (70.56%)	274 (68.50%)	
No	63 (33.88%)	63 (29.44%)	126 (31.50%)	
12. Family is charged for donating organs, tissues and eyes				The p-value is 0.758004.
Yes	05 (02.69%)	08 (03.74%)	13 (03.25%)	
No	181 (97.31%)	206 (96.26%)	387 (96.75%)	
13. Is history of medical illness is contraindication for eye donation?				
Yes				
No	140 (75.27%)	155 (72.43%)	295 (73.75%)	

	46 (24.73%)	59 (27.57%)	105 (26.25%)	The p-value is 0.596308.
14. Is there age limit for eye donation?				
Yes	20 (10.75%)	28 (13.08%)	48 (12.00%)	The p-value is
No	166 (89.25%)	186 (86.92%)	352 (88.00%)	0.574495.
15. Can patients using spectacles donate eyes?				
Yes	179 (96.24%)	211 (98.60%)	390 (97.50%)	The p-value is
No	07 (03.76%)	03 (01.40%)	10 (02.50%)	0.234888.
16. Is prior permission required for eye donation?				
Yes	157 (84.41%)	198 (92.52%)	355 (88.75%)	The p-value is
No	29 (15.59%)	16 (07.48%)	45 (11.25%)	0.016253.
17. Do you think that "CONSENT" for donating eyes should be:				
a. Mandatory and willed before death by the donor	12 (06.45%)	18 (08.41%)	30 (07.50%)	
b. Mandatory but after death by an adult family member	152 (81.72%)	178 (83.18%)	330 (82.50%)	The p-value is
c. Optional at the discretion of donor alone	15 (08.06%)	16 (07.48%)	31 (07.75%)	0.2488
d. Optional at the discretion of an adult family member	07 (03.77%)	02 (00.93%)	09 (02.25%)	
18. Do you think that eye donation can be facilitated if someone from an eye donation centre comes and asks for eye donation upon death of a person?				
Yes	183 (98.39%)	212 (99.07%)	395 (98.75%)	The p-value is
No	03 (01.61%)	02 (00.93%)	05 (01.25%)	0.5424
19. Can donor's eyes be stored in an eye bank?				
Yes	165 (88.71%)	192 (89.71%)	357 (89.25%)	The p-value is
No	21 (11.29%)	22 (10.29%)	43 (10.75%)	0.7447
20. Do you believe in myths like we will be born blind in the next life after eye donation?				
Yes	16 (08.60%)	12 (05.61%)	28 (07.00%)	The p-value is
No	170 (91.40%)	202 (94.39%)	372 (93.00%)	0.2416

Table 3: Distribution according to ATTITUDE regarding eye donation among medical students

Variables	Males (%)	Females (%)	Total	p-value
21. Are you willing to donate/pledge your eyes?				
Yes	138 (74.19%)	157 (73.36%)	295 (73.75%)	The p-value is
No	48 (25.81%)	57 (26.64%)	105 (26.25%)	0.8515
If yes, Reasons for donating eyes.				
Noble cause	84 (60.88%)	110 (70.06%)	194 (65.77%)	
Pleasure to help the blind inspired by article/magazine/lecture	23 (16.67%)	22 (14.01%)	45 (15.25%)	
Influenced by knowledge in academics	18 (13.04%)	15 (09.55%)	33 (11.18%)	
	11 (07.97%)	07 (04.46%)	18 (06.11%)	The p-value is

friend/relative received cornea	01 (00.72%)	03 (01.91%)	04 (01.35%)	0.3979
friend/relative donated cornea	01 (00.72%)	00	01 (00.34%)	
Reasons for not donating the eyes.				
objection by family members	12 (25.00%)	18 (31.59%)	30 (28.57%)	The p-value is 0.598493.
feels that body is ill-treated by organ transplant	03 (06.25%)	01 (01.75%)	04 (03.81%)	
not eligible due to health problems	04 (08.33%)	03 (05.26%)	07 (06.67%)	
religious reasons of removing eyes after death	22 (45.84%)	32 (56.14%)	54 (51.43%)	
Not sure of correct use of cornea after extraction	01 (2.08%)	00	01 (00.95%)	
signing eye donation card is like signing death certificate	06 (12.50%)	03 (05.26%)	09 (08.57%)	

Table 4: Level of awareness by scoring system.

Category point (N=21)	Frequency
Poor (0-11)	25 (06.25%)
Satisfactory (12-16)	242 (60.50%)
Good (17-21)	133 (33.25%)

Table 5:

Variables	Present study (n=400)	Ahirwar RK et al ⁶ (n=467)	Bharti MK et al ⁷ (n=103)	Singh MM et al ⁸ (n=180)
Do you know eyes can be donated after death?	385 (96.25%)	380 (81.4)	344 (86%)	179 (99.4%)
Source of information about eye donation?	119 (29.75%) Internet	179 (38.3) Television	73 (71%). mass media/ TV/ radio/ movies	-----
Whether eyes can be donated only after death?	165 (41.25%)	-----	34(33%)	179 (99.4)
Do you know about any eye banks in Solapur?	391 (97.75%)	300 (64.23%)	98(95.1%)	16(32.6)
Ideal time to retrieve eyes after death?	314 (78.50%) within 6 hours	143 (30.62%) within 6 hours	39 (37.86%) don't know 32 (31.06%) Hour/few hours	74 (41.1%)
Cornea is used for transplantation	347 (86.75%)	229 (49.03%)	32(31.1%)	155 (86.1%)
Are you willing to donate/pledge your eyes?	295 (73.75%)	107 (22.91%)	34 (33%)	157 (87.2%)
If yes, Reasons for donating eyes	194 (65.77%) Noble cause	251 (86.8%) Noble cause	-----	154 (85.5%) Noble cause
Reasons for not donating the eyes.	54 (51.43%) religious reasons	86 (48.3%) objection by family members	-----	59 (32.7) Lack of awareness

DISCUSSION

Medical students are the potential part of the community who shall be the role models for the general population. The level of knowledge of medical students is important in promoting eye donations as they are the future potential doctors. Public awareness about eye donation is facing precisely the same challenges and obstacles as kidney donation did a couple of decades ago. Present study found that level of awareness regarding eye donation was satisfactory 242 i.e. 60.50% followed by good 133 i.e. 33.25% in medical students which was contrast to Bugis A et al⁹. As they found that most have poor level of awareness regarding eye donation in a sample of local people in Saudi Arabia.

CONCLUSION

The present study concluded that the knowledge regarding eye donation among medical students was good but still few didn't know about the details related to the eye donation. So continuous awareness programmes and camps should be held and should include not only the community population but also for the undergraduate medical students. The present study revealed that most of the students were aware regarding eye donation and most of them were willing to donate their eyes. Those who were not willing to donate their eyes have reasons of religious belief and myths which can be changed with health education among medical students and their families and general community.

REFERENCES

1. Tiwari R, Singh A R, Jain V, Goyal M, Mahore R, Tiwari S, A study to assess awareness regarding eye donation among post graduate medical students admitted through NEET pre PG 2014 of Gajra Raja medical college Gwalior, M.P., India, International Journal of Research in Medical Sciences | April 2015 | Vol 3 | Issue 4 Page 871.
2. Sushma H, Warad VG, Kshetrapal M. Knowledge, attitude and practice about eye donation among medical and paramedical students in tertiary eye care hospital. Kerala Journal of Ophthalmology. 2016 Apr 1;28(2):112.
3. Magdum R, Arun S, Mushtaq I, Sharma N. To study awareness and willingness of eye donation among paramedical workers. Journal of Clinical Ophthalmology and Research. 2015 May 1;3(2):95.
4. Hussien MS, Belete GT. Knowledge and attitude toward eye donation among adults, Northwest Ethiopia: A community-based, cross-sectional study. Middle East African Journal of Ophthalmology. 2018 Jan 7;25(3):126.
5. Kumar S, Shukla US, Agarwal P. Awareness and knowledge on eye donation among students at Bhopal. Natl J Community Med. 2012;3(4):685-89.
6. Ahirwar RK, Shidhaye PR, Ekka IJ, Saxena DM. Study of knowledge and willingness regarding eye donation among medical students of a tertiary care teaching hospital of central India. International Journal Of Community Medicine And Public Health. 2016 Dec 24;3(9):2363-8.
7. Bharti MK, Reddy SC, Tajunisah I, Ali NA. Awareness and knowledge on eye donation among university students. Med J Malaysia. 2009 Mar;64(1):41-5.
8. Singh MM, Rahi M, Pagare D, Ingle GK. Medical students' perception on eye donation in Delhi. Indian journal of ophthalmology. 2007 Jan 1;55(1):49.
9. Bugis A, Ali A, Almaghribi A, Alharbi A, Fatani Y, Alem S, Siddiqui M. Knowledge and attitudes regarding eye donation and corneal transplants in Saudi Arabia: A cross-sectional study. Age. 2018;20(70):18-7.

Source of Support: None Declared
Conflict of Interest: None Declared