

## Awareness of eye donation among medical students of tertiary care hospital, Bangalore

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### ABSTRACT

**Introduction:** Blindness is a worldwide problem. Corneal blindness accounts for 0.9% of blindness in India. Approximately 0.12 million people are corneal blind. Restoration of their vision is possible only through transplantation. Though 45000 eyes are collected every year, it does not meet half the requirement. Well informed medical students could be expected to enhance eye donation rates. **Objectives:** To assess the awareness regarding eye donation among pre final and final year medical students of a tertiary care hospital in Bangalore. **Methodology:** A Cross sectional descriptive study was conducted among 160 pre final and final year medical students of a tertiary care hospital in Bangalore during September to November 2013. The study tool was pre tested semi structured self administered questionnaire. **Results:** 99.3% of students are aware of eye donation out of which only 9% pledged for donation. Objection by the family members (30.6%) is the main reason for not pledging. Knowledge of the fact that eyes should be removed within 6 hours of death was found in 86.8%. A remarkable number of students (93%) were aware of shortage of donors in India. The main source of information is television among 41% of students. **Conclusion:** The results of the study indicate that although awareness regarding eye donation is high, there is lack of motivation related to eye donation.

**Keywords:** Eye donation, Medical students, corneal blindness.

### Introduction

Vision is the most important sense because it allows interacting freely with the environment and enjoying the beauty of life. The eye is the window to the world and it is a sensitive, highly specialized sense organ subject to various disorders many of which lead to impaired vision. The problem of blindness is as old as mankind itself. [1] Corneal diseases are a significant cause of visual impairment and blindness in the developing world. The major causes of corneal blindness include trachoma, corneal ulceration following xerophthalmia due to vitamin A deficiency, ophthalmia neonatorum, and the use of harmful traditional medicines, onchocerciasis, leprosy, and ocular trauma. [2] Corneal blindness accounts for 0.9% of the blindness in India. [3] The world health organization estimates that for every 5 seconds, someone goes blind. Globally 37 million people are blind. [1] In India, there are approximately 120 lakh blind in both eyes and 80 lakh blind in one eye, which is about one fourth of the total blind population of the

world. This means 14.9 out of every 1000 people in India are blind compared to just 3 per 1000 in the developed countries. [1] There are approximately 0.12 million corneal blind persons in the country and many other with visual impairment due to corneal diseases and about 20,000 new cases are added every year. [4] Corneal transplant is only possible through cornea donation. There is currently no substitute for human corneal tissue. [5] Although strategies to prevent corneal blindness are likely to be more cost-effective, visual rehabilitation by corneal transplantation remains a major treatment option for restoring sight in those who already have corneal blindness. [2] Currently, in India the collection is ~22 thousand eyes a year, which are negligible to the requirement. [5] According to the national program for control of blindness statistics report of India 2013-14 in Karnataka collection of donated eyes is 629, and required number is 5600. [6] Therefore there is an urgent need to create awareness among the general public about the preventive aspects of corneal blindness and to come forward to pledge their eyes for donation after the demise so that corneal blindness could be treated. [4] The students of medical stream were chosen because well informed medical students can certainly motivate and influence the masses as they are the future potential doctors. They can directly

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communicate and counsel larger sections of the society. It can give a push up to the eye donation movement in India which is sadly in a lethargic state.[7]

### Need for the study

Corneal transplantation offers the potential for sight restoration to those who are blind from corneal diseases. The number of patients waiting for corneal transplantation is growing due to insufficient number of eye donations in India. India is home to 23.5% of the world's blind population out of which 0.9% is due to corneal blindness.[3,5] There is a large gap between demand and supply because there is such a low awareness about how easy and noble eye donations are.[3] Majority of such blind persons are young and their sight could be restored only by a corneal transplantation.[4] Though there has been a progress in eye donation approximately about 45000 to 50000 eyes are collected every year with the sincere efforts of all eye banks working in government and nongovernmental sectors as against the requirement of 0.12 million implantable corneas.[4]. Hence this study was conducted to assess awareness among students.

### Objective

- To assess the awareness regarding eye donation among pre final and final year medical students of tertiary care hospital in Bangalore.

### Material and methods

A cross sectional descriptive study was conducted in a tertiary care hospital in Bangalore to assess the awareness of eye donation among medical students. The study subjects were pre final and final year undergraduate medical students of tertiary care hospital in Bangalore. Purposive sampling was used. The pre final and final year students were selected specifically as they are exposed to ophthalmology subject. The study was conducted during September to November

2013. A pre tested semi structured self administered questionnaire was given after obtaining informed consent from the students. The questionnaire contained general information like age, sex, year of students. It also includes questions about various aspects of eye donation. Sample size was calculated by considering the study done by Singh M et al [8] prevalence of students willing to donate eyes is 67% [5] by using formula  $4pq/L^2$  with an allowable error of 12% and alpha error of 5% the estimated sample size is 136. Complete enumeration of pre final and final year (Phase 3) medical students (144) was done. The data was collected and compiled in MS Excel and analyzed by using SPSS software version 20.0. Descriptive statistics was used as necessary, all qualitative variables were presented as frequency and percentages. All quantitative variables were presented as mean and standard deviation. Chi square test of significance was applied. Expected outcome was to bring out awareness among medical students.

### Results

Among the 144 students who participated 94 (65.27%) were females and 50 (34.73%) were males. Though 143 (99.3%) were aware that eyes can be donated (Table 1), only 83 (57.6%) of them knew where to donate eyes. Table 2 shows that Out of 144 students 29 (20.4) of them think there was synthetic cornea present for transplantation. In table 3 it is shown the awareness of students about eligible donors and 99 (68.8) students knew people with refractive errors can donate. 97.2% of the students knew there is shortage of donors in India but only 18.2% of them pledged for eye donation. 83 (91.2%) students from pre final year and 48 (90.6%) from final year pledged for eye donation and distribution of students who pledged among pre final year and final years is not statistically significant ( $\chi^2 = 0.017, df=1, p=0.89$ ) (Table 4). 82.7% of students are willing to pledge. Out of 131 students who have not pledged 51 (35.4%) students gave the reason that they were not aware where to donate eyes (Table 5). The main source of information was television for 41% of students.

**Table 1: Awareness About Eye donation (N=144)**

Sino	QUESTIONS	Responses N(%)	
		Yes	No
1	Eyes can be donated	143 (99.3)	1 (0.7)
2	There is age limit for eye donation	37 (25.7)	107 (74.3)
3	Eyes are removed from living people	8 (5.6)	136 (94.4)
4	Consent of family required for pledging	42 (29.2)	102 (70.8)
5	There is shortage of donors in India	140 (97.2)	4 (2.8)

**Table 2: Knowledge about eye donation (N=144)**

Sino	QUESTIONS	RESPONSES N (%)	
		YES	NO
1	Eyes should be removed within 6hours of death	125 (86.8)	19 (13.2)
2	Transplantation should be done within 2-3days of removal	64 (44.4)	80(55.5)
3	Synthetic substitutes for cornea are present	29(20.4)	115(79.9)
4	Knows where to donate eyes in Bangalore	61(42.4)	83(57.6)

**Table 3: Awareness (knowledge) of students about eligible donors (N=144)**

S.NO	Who can donate eyes	N(%)	
		Yes	No
1	Refractive errors	99(68.8)	27(18.8)
2	Hypertension, Diabetes	62(43.1)	70(48.6)
3	Cataract operated	71(49.3)	57(39.6)
4	AIDS,Hepatitis,Malignancy	12(8.3)	119(82.6)

**Table 4: Distribution of students who pledged**

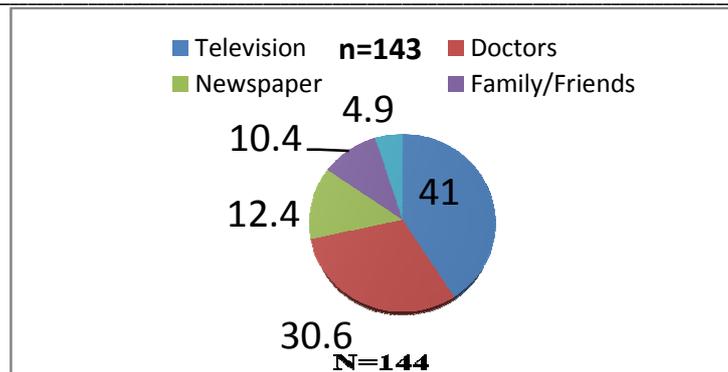
	PLEGGED FOR EYE DONATION		
	YES	NO	TOTAL
<b>PRE FINAL YEAR</b>	8(8.8)	83(91.2)	91(100)
<b>FINAL YEAR</b>	5(9.4)	48(90.6)	53(100)
<b>TOTAL</b>	13(9.02)	131(90.9)	144(100)

$X^2 = 0.017, df=1, p=0.89$

**Table 5: Reasons for not pledging n=131**

S.NO	Reasons*	N	%
1	Lack of awareness about where to donate	51	35.4%
2	Objection by the family	34	23.6%
3	Religious restrictions to separate eyes after death	11	07.6%
4	Afraid of disfigurement	4	2.8%
5	Not yet considered	44	30.6%

\*=Multiple Responses



**Fig 1: Source of information on eye donation**

## Discussion

The level of knowledge and attitude of medical students are important determinants in promoting eye donations as they are the future potential doctors. It is a matter of fact that health in a community or a society will surely improve when doctors play an active role in health education and become a good role model in the society. In many countries including India the decision to donate eyes ultimately lies with family members. Many potential donors may be missed if doctors fail to approach family members about the possibility of eye donation and if they lack sufficient knowledge about eye donation to answer questions or concerns of family members after death of the donors. In this study, it was tried to assess whether medical students are aware of eye donation. In the present study, 99.3% of the students were aware of eye donation, as compared to 96.6% in a study by Singh M et al among medical students in ambala.[9] Television was the important source of information for 41% of students followed by doctors for 30.6% of students and news papers for 12.4% of students when compared to a study done by sadha M et al among medical students in Tirupati where Newspapers (64.75%) are the important sources of information on eye donation for majority of the students followed by doctors for 60.7% of the students.[7] 86.8% of students in our study knew the ideal time for eye donation is within 6 hours of death compared to Only 32.1% students knew that the ideal time in a study done by Biswas J et al among secondary level students in Kolkata [10]. This difference can be attributed to the fact that this study was done among school whereas the present study was done among medical students who are likely to be better informed. In this study 82.7% were willing to donate eyes. Similar results were obtained in a study

done by Dhaliwal et al where 80% students were willing to donate their eyes.[11] These results are encouraging because students who are themselves motivated will be in a better position to encourage others to donate eyes. In this study 97.2% of the students are aware that there is shortage of donors in India. However in a nursing college 84.65% of the students knew about the correct time. This suggests that comparatively medical students are more aware than nursing students[2] A study conducted by Ashok Gawali et al among students in medical college of aurangabad 97% of them knew that people with HIV and AIDS cannot donate their eyes where as 82.6% of the students knew about this in present study.[12] Among the reasons for not pledging for eye donation 67.9% of them were afraid of disfigurement. In a study among nursing students where as in this study only 2.8% of students gave the same reason[12] The knowledge about ideal time for eye storage before transplantation (i.e Transplantation should be done within 2-3 days of removal) is known to 64 (44.4%) of the students in our study when compared to only 66 (33%) student in a study done on medical students in Aurangabad[12]

## Conclusion

The present study revealed that medical students were well aware about eye donation and most of them were inclined to pledge for eye donation. There were certain misconceptions and lacunae in their knowledge. There is a need to enhance their knowledge and motivate them so that they can act as counsellors for eye donation

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