

ORIGINAL ARTICLE**AWARENESS ABOUT EYE BANK AND WILLINGNESS FOR EYE DONATION AMONG MEDICAL STUDENTS IN WESTERN INDIA –“TIME TO EDUCATE EARLY”****Aruna Gupta¹, Roopam Gupta²****Author's Affiliations:** ¹Assistant Professor; Department of Ophthalmology, ²Associate Professor, Department of Anatomy, C.U.Shah Medical College and Hospital, Surendranagar, Gujarat**Correspondence:** Dr. Aruna Gupta, Email: arunagupta.eye@gmail.com**ABSTRACT****Aim:** This study aimed to study the awareness about eyebank and willingness for eye donation among medical students.**Material and methods:** A total of 100 students of 6th semester participated in the study. They were interviewed regarding awareness about eyebank and their willingness to pledge eyes for donation.**Results:** The awareness about name of any eyebank in India was known to only 21 % whereas only 38% knew that the institute had its eyebank. In 72% student's lack of awareness was the most important reason for not pledging their eyes. Only 56% knew that cornea is the part of eye used for transplantation. Television was the most common source of information on eye donation. The ideal time for eye donation is within six hours of death was known to 56%. The majority 87% of students were willing to donate their eyes. 62% answered that donors' who have pledged before death can only donate while 88 % thought that for removal of eyes donors relative consent is necessary.**Conclusions:** Our study show that only a few subjects had pledged their eyes and time has come to educate them early about eye donation so that the procurement rate is increased.**Keywords:** Eyebank, Eye donation, Awareness, Pledge, Medical college students**INTRODUCTION**

Corneal diseases are a significant cause of visual impairment and blindness in the developing world. Donated corneas are the only source of tissue which can be used for keratoplasty, thus the requirement for eye donation and its awareness. Literatures are available on the awareness of eye donation in India in urban and rural populations among general population.^{1,2,3} Studies are also available about awareness in students in nursing colleges,⁴ in academic colleges⁵ and in medical colleges.^{6,7,8,9} The study conducted in nursing college⁴ revealed that nursing students were well aware of eye donation, most of them were inclined to pledge for eye donation and that the perceived reasons for not donating eyes need to be considered while creating awareness about eye donation in the community. Their study ⁵ also revealed that college students were well aware of eye donation and most of them were interested to donate their

eyes, but the knowledge regarding the place of eye donation, time limit to collect cornea and whom to contact and when to contact was still not known clearly. Among the students who were not willing to donate eyes the major reason was lack of interest and other reasons being weak eye sight, religious belief, and afraid of invasive process. Young children, if they are educated about eye donation, they can act as important present and future motivators.¹⁰ Our purpose was to study the awareness about eyebank and willingness for eye donation in our medical college students.

MATERIAL AND METHOD

6th semester students of C.U.Shah medical college and hospital, Surendranagar, Gujarat were included in the study. 100 students participated in the study. The study period was in November 2013. The students were asked to fill a preset questionnaire. Re-

sponses to the questionnaire were evaluated to understand their knowledge about eyebank and their ideas and attitudes towards eye donation and willingness to pledge. The ethical committee clearance was taken and written consent of the participants was obtained.

RESULTS

In the present study 100 students participated in the study. The perceived reasons about eyebank and awareness about eye donation of the students were analysed. The age distribution of the students was: 20 years (58%), 21 years (23%), and 22 years (19%) with a mean age of 21 years. Of these (56%) were males and (34%) were females. Responses to the awareness questionnaire are presented in the tables.

Table 2 shows the responses about awareness about eyebank. The awareness about name of any eyebank in India was known to only 21% whereas only 38% knew that the institute had its own eyebank. In our study when asked about their knowledge on eye bank 2% answered that eyebank is a place where eyes are removed, 63% as place where eyes are collected and stored, 13% as place where eyes are pledged, 18% answered all of the above and 0% none of the above and no reply was given by 4% students.

In our study it was noted that only 56% knew that cornea is the part of the eye which is used for transplantation, 32% had the idea that the whole eyeball was used for transplantation whereas retina by 5%. Any part of the eye can be used was answered by 6%.1% student did not know which part of the eye was used.

Our study shows that television was the most common source of information on eye donation in 45% students followed by banners 16%, known persons 4%, by medical college doctor or teacher 13%, by camps 14 % and 8% from newspapers.

It was observed that the ideal time for eye donation is within six hours of death was known to only 56% students, while 4% answered any time , 2 % answered don't know , 17% thought that eyes can be donated within 12 hrs while 21% thought it to be within 24 hours.

Table 3 shows the response of subjects about eye donation .42% answered that it is necessary to transport the donor to the hospital after death for donating eyes.18 % answered that eye donation does not disfigure the donor's face.28 % answered that there any delay in funeral arrangements.12 %

answered that eye be removed without consent from the relatives.14% students had counselled for eye donation. 66% knew that there is other use of corneas that are for some reason not utilised for surgery.

Table 1: Demographic characteristics of the subjects

AGE	Males (%)	Females (%)	Total (%)
20	17	13	30
21	26	16	42
22	19	09	28
Total	62	38	100

Table 2: Responses about awareness about eyebank

Questions	Yes (%)
Does your hospital have an eye bank?	38
Do you know about any eye bank?	21
What is an eye bank	Subjects
Place where eyes are removed	02
Place where eyes are collected and stored	63
Place where eyes are pledged	13
All of the above	18
Don't know	04

Table 3: Response of subjects about eye donation

Responses	Yes
Necessary to transport the donor to the hospital after death for donating eyes	42
Eye donation cause disfigurement of the donor's face	18
Delay in funeral arrangements	28
Consent of relatives required for removal of eyes	12
Counselled anyone for eye donation	14
Knows other use of corneas that are for some reason not utilised for surgery	17
Donor or recipient family told who donated or received the cornea	29
Awareness about removal of eyes out of living human beings	22
Awareness about selling and buying of donor eyes	16
Awareness about conditions that render the corneas unfit	22
Knows any person who has donated eyes	4
Knows any person who has received eyes	1
Awareness about deficiency of eyes	79
Religious authorities approve of donating one's eyes	62

It was observed that 29% answered that the donor or recipient family will be told who donated or received the cornea.22 % answered that eyes be

removed out of living human beings.16%thout that human eyes be bought or sold.78 % knew that cataract or any other ocular diseases or the use of spectacles does not render the corneas unfit.96% answered that they do not know any person who has donated eyes. Only 1 student knew a person who had received eyes. 79 % answered that there is deficiency of eyes.62% answered that religious authorities approve of donating one’s eyes. 42% answered that it was necessary to transport the donor to the hospital after death for donating eyes. As the study was done in medical college we asked if anyone had counselled for eye donation, we found that 86% had not counselled anyone. 71% knew that the donor or recipient family is not told who donated or received the cornea, 22 % perceived that eyes can be removed out of living human beings. 38% answered that religious authorities does not approve of donating one’s eyes.16 % thought that human eyes be bought or sold.22 % answered that cataract or any other ocular diseases or the use of spectacles render the corneas unfit. 10% knew person who has donated eyes and only 6% knew any person who had received eyes. We observed that 79 % knew that there is deficiency of eyes.

and in they will be born blind in next birth was the reason for not pledging their eyes.

DISCUSSION

The level of knowledge of medical students is important in promoting eye donations as they are the future potential doctors. If doctors approach and counsel the family members for donation then the possibility of eye donation is increased but if they lack sufficient knowledge about eye donation then many potential corneal donors may be lost.

It was observed that when asked about their knowledge on eye bank 63% answered that, it as a place where eyes are collected and stored and 13% as a place where eyes are pledged. The awareness about the name of any eyebank in India was known to only 21% out of which 18% knew the name of the eyebank which was located in their own home town. Similarly in the study by Sadana et al⁶ only 26% of the students knew about appropriate place for eye donation Similarly according to study conducted by Singh et al⁷ among medical students in Delhi the contact place for donation was known to only 27.2%. Similarly in another study conducted by Kumar et al,⁸ only 12% of the medical students knew about contact place for eye donation.

In our study 38% of students knew that the institute had its own eyebank. This less awareness about the presence of institute eyebank shows the lack of awareness activities conducted by our own institute. This low awareness about eyebank forces us to think that are we doing enough for the cause of eye donation.

The knowledge that cornea is the part of eye which is used for transplantation was known to only 56% students in our study. In study by Sadana et al cornea is removed separately and is used for grafting was known to 65.5% of the total students. According to study by Singh on medical students in Delhi a large number of students, 155 (86.1%) out of 180 knew that the donated eye is used for corneal grafting. Similarly according to Singh et al⁹ (Ambala) 90.6% knew that eye is used for corneal grafting. The medical students are from science stream during school; still only 56% of them knew that cornea is the part of the eye used for corneal transplantation which stress on the fact that teaching about organ donation should start in school itself.

Our study shows that television was the most common source of information on eye donation. Only 13 % answered that medical teacher or doc-

Table 4: Willingness for donation

Reasons	Yes (%)
Willingness to donate eyes	87
Already pledged their eyes	08
Reason for not pledging eyes for eye donation	Students (%)
Lack of awareness	72
Unacceptable idea of separating the eyes from the body	12
Objection by family members	08
Unsuitability to donate because of health problem	06
Will be born blind in next birth	02

It was observed that when asked that who can be an eye donor? While 37% answered that anyone can donate eyes, 62% answered that donors' who have pledged before death can only donate while 12% answered that for eye donation relatives consent is necessary.

Table 4 shows the willingness for eye donation. 87% were willing to donate their eyes but only 8% had pledged their eyes. In 72% student’s lack of awareness was the most important reason for not pledging their eyes [table - 4]. In 8% student’s objection by family members, in 12% unacceptable idea of separating the eyes from the body, unsuitability to donate because of health problem in 6%

tor was the source of information. 14% students knew about eyedonation from camps which they had attended which shows that students should be trained as volunteers for eye donation campaign which can increase their knowledge about eye donation. Similarly according to the study conducted by Singh et al among medical students in Delhi also shows that television was the most common source of information on eye donation in 77.8%, followed by newspaper 72.8% and magazines 54.4% students. Study by Singh et al among Ambala students also shows that television is the most common source of information in 54.6% and only 28% had received it through curriculum. We in our study did not ask if students had read about eye donation in curriculum. According to Sadana et al newspapers (64.75%) was the important sources of information on eye donation for majority of the students followed by doctors (60.75%) and television (51.25%).

In our study the ideal time for eye donation is within six hours of death was known to only 57% students. It was observed by Sadana et al that eye can be donated ideally within 6 hours of death was known to 67.5% of the students. According to study by Singh on medical students in Delhi⁷ less than 50% knew that the ideal time for donation is within six hours of death. According to study by Singh⁹ on medical students in Ambala 61% students were aware that eyes can be donated within 6 hours. According to study by Kumar et al 62.8%⁸ students were aware that eyes can be donated within 6 hours.

In our study 42% answered that is it necessary to transport the donor to the hospital after death for donating eyes. Maximum knew that eye donation does not cause disfigurement of the donor's. 28% answered that there is delay in funeral arrangements. 88% answered that the consent of the relatives was necessary before removal of eyes. As the study was done in medical college we asked if anyone had counselled anyone for eye donation, we found that 86% had not counselled anyone. Only 17 % knew that the corneas can be used for some other purpose if that for some reason is not utilised for surgery. Singh et al study found that 90.6% students knew about the surgical use of eye. 22 % perceived that eyes can be removed out of living human beings. Our study shows that 71% knew that the donor or recipient family is not told who donated or received the cornea but 16% thought that human eyes can be bought or sold. In study by Sadana et al⁶ around 22% of the students didn't know that donor eyes cannot be bought or sold. In a study conducted by Singh et al, among the medi-

cal students at Delhi 79% agreed to such an arrangement if needed. Hence as suggested by Sadana et al⁶ it is necessary to instil and promote human values in medical education to discourage such an illegal trade strongly, which exploits the poor. 22 % answered that cataract or any other ocular diseases or the use of spectacles render the corneas unfit for donation. Only 4% knew a person who had donated eyes and only 1% knew a person who had undergone corneal transplantation. We observed that maximum students 79% knew that there is deficiency of donor tissues and 38% answered that religious authorities does not approve of donating one's eyes. Our findings suggests that there is a great need to educate students in medical profession about eye donation and the misconceptions regarding eye donation should be removed. This will enable them to become better future motivators for enhancing eye donation rates.

In our study the response to who can be an eye donor, 62% answered that donors' who have pledged their eyes before death can only donate eyes whereas 28% answered that anyone can donate, whereas 9 % answered that the consent of the relatives was necessary for donating eyes. According to study conducted by Singh et al among medical students 'nearly 49.4% opined that donors' consent should be mandatory and it should be expressed before death, whereas according 15%, consent should be mandatory but may be given by another adult family member. According to 31.1%, consent is not necessary but can donate if the donor alone wishes and among 4.4%, consent is not necessary but can donate if the family members of the donors wish to do so. In study by Saldana et al only 28.2% out of 400 knew that consent of the family members is mandatory for eye donation after death of the person.

Our study shows that all students knew about eye donation. In study by Singh et al⁹ at Ambala 96.6% students had heard about eye donation. Similarly in the study by Singh on⁷ Delhi medical students 99.4% were aware that eyes could be donated after death. According to Sadana highest number of students 98% out of 400 knew that eyes could be donated after death.

In our study lack of awareness was the most important reason for not pledging their eyes. Though 87% showed their willingness to donate, only 12% of them had pledged their eyes. Similarly according to the study by Singh et al among medical students in Delhi lack of awareness was cited as an important reason for people not donating their eyes

among 32.7% of students. Similarly in study by Sadana et al lack of awareness was cited as an important reason in 48.9% students. 24.3% students cited that family member's objection was the reason for not donating their eyes. According to study conducted by Singh et al among medical students in Ambala, family member's objection was the main reason for not donating their eyes.

Similar to the study by Sadana et al where 84% of the students were willing to donate eyes after death, our study also shows that 87% of students were also willing to donate eyes after death which is an encouraging trend. The suggestion that there is a need to focus on the remaining 16% who are not willing to donate eyes is true. Misconceptions should be removed as medical students who are uncomfortable with the idea of such donation will obviously make poor spokespersons for eye banking. In a study by Singh et al among medical students, 87.8% of the respondents were willing to be eye donors.

In our country with so many cases of corneal blindness there is strong need for developing effective means of procuring corneas. Corneal donations could be higher than those at present. Our study shows that a significant number of students are willing to become eye donors but only a small percentage of the students had pledged their eyes. Knowledge about organ donation should be incorporated in the school curriculum so that awareness is created in early stage of life. Even in medical teaching colleges awareness about eye donation should be created early from first year itself. The students were of 6th semester that didn't have enough clinical exposure in their curriculum. There is a need to expose the medical students from 1st year itself about eye donation as they are the future health care providers. They should be trained to counsel and motivate the relatives of patients for eye donation.

CONCLUSION

The present study revealed that medical students were aware about eye donation and most of them were willing to donate their eyes. The major reasons for not donating eyes was lack of awareness which shows that our national programmes for elimination of corneal blindness and eye banking is not effective as it is not creating enough awareness. They had misconceptions in their knowledge about

eye donation. There is a need to educate the young adult's especially medical students from 1st semester so that they can in turn motivate others. Being medical students themselves they can more effectively counsel donors and their family members for eye donation, thus facilitating the availability of more donor corneas for corneal transplantation

ACKNOWLEDGEMENT

We thank HOD of Ophthalmology department for helping in successful completion of the research. We thank all the students who participated in the study.

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