

Doctors in the Making: How Aware are They About Eye Donation

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ABSTRACT

Introduction: A significant cause of visual impairment in the developing world is corneal blindness which may be reversed successfully by transplantation. The availability of corneas transplantation however, is way less than the actual requirement in India.

Aim: To assess the knowledge of medical students regarding the eye donation.

Settings and Design: Questionnaire based cross-sectional study

Materials and Methods: One hundred and twenty six newly enrolled medical students in age group 17-23 years were made to answer a pre tested semi-structured questionnaire

on eye donation. Questions were based on testing their knowledge as well as their views towards eye donation.

Statistical Analysis was done using SPSS 22

Results: It was observed that a majority (70.63%) of the students, though willing to pledge their eyes, were unaware of the technicalities and held a lot of misconceptions. Mass media was revealed to be the main informant. Many, however did not wish to pledge their eyes due to religious and social beliefs.

Conclusion: Even though medical students were aware about eye donation and corneal transplantation, there were many lacunae and misconceptions which need to be refined and cleared to enhance their knowledge and hence increase the number of eye donations in our country.

Keywords: Awareness, Corneal blindness, Corneal transplantation, Keratoplasty, knowledge, Visual impairment

INTRODUCTION

WHO estimates that around 285 million people in the world are visually impaired, of whom 90.5 million are from the South-East Asia Region. Of the estimated 39 million blind people in the world, 90% are in developing countries; 22% in India [1] alone. Therefore, the burden of blindness is largely in developing countries where 9 out of 10 of the world's blind live. In India it's been estimated that there are 18.7 million cases of blindness and among these blinds, 1, 90,000 are blind due to bilateral corneal disease [2]. Each year about 20,000 new Cases of corneal blindness are added to the existing list [3].

Diseases affecting the cornea, are a significant cause of visual impairment and blindness in the developing world, the major causes being conditions like trachoma, corneal ulcers following xerophthalmia due to vitamin A deficiency, ophthalmia neonatorum, and the use of harmful traditional medicines, onchocerciasis, leprosy, and ocular trauma [4-6]. A significant proportion of these affected persons may regain their sight

with corneal transplant. The number of corneal transplants done is far less than the actual requirement in India.

The number of eye donations in a population, is proportional to people willing to pledge their eyes for donation and also on their relatives to who must honour that pledge following the death of the person. Raising the level of understanding about eye donation among the public through health education is an important step to achieve more eye donations.

Medical students, who constitute the future of the country's healthcare system, could help awaken public awareness, inspire, educate and convince patients and their relatives/friends to pledge their eyes, when they serve as doctors. It therefore becomes imperative, to assess their knowledge of the subject, and by extension, the general public's [7]. This study aimed at determining the knowledge on eye donation/corneal transplant among first year MBBS students studying at a Medical College.

MATERIALS AND METHODS

This one time, questionnaire based, cross sectional study was undertaken in 2011 among 126 newly enrolled first year medical students of A.J. Institute of Medical Sciences, Mangalore. All willing students in the batch were included in the study. Students from other courses were excluded. Anyone who had participated in a similar study in the past was excluded. The students were informed about the purpose of the study, assured complete confidentiality and invited to participate. A pre-tested semi-structured questionnaire was used for collecting the necessary data, after getting verbal informed consent. The questionnaire contained questions on demographic details, awareness on eye donation, reasons for donating and not donating eyes by people as perceived by them, their intention to donate eyes and sources of information.

Ethics: the study was done in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) and with the Helsinki Declaration of 1975 (revised in 2000)

STATISTICAL ANALYSIS

SPSS Version 22 was used for detailed descriptive statistical analysis of the data.

RESULTS

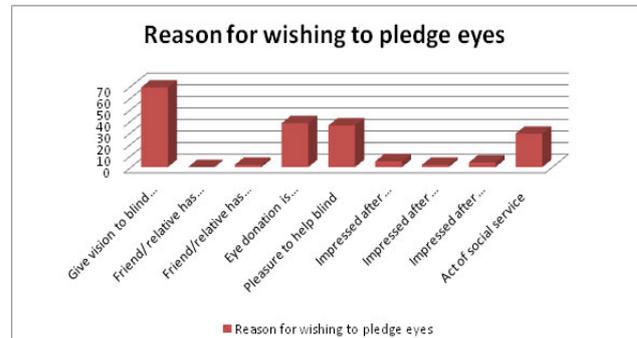
All 126 students participated in the study, the age group being, 17yrs to 23yrs, with a mean age of 18.39±0.82SD years. Males and females were almost equally represented at 60(47.62%) and 66(52.38%) respectively. The group consisted of 100 Hindus (79.37%), 10 (7.94%) Muslims, 15(11.90%) Christians and 1 (0.79%) Sikh.

Most students had heard about eye donation from sources of mass media, as shown in [Table/Fig-1]. There however was no statistically significant relationship between source of information and willingness to pledge, with a p value of 0.067.

Of all the students enrolled in the study, 89(70.63%) were keen to pledge their eyes, out of whom, 83(93.26%) wished

to donate to someone needy, while 3(3.37%) students were keen on donating their eyes for the benefit of family members and 3(3.37%) for friends.

A total of 64(50.79%) students held the belief that the donor can choose the recipients. [Table/Fig-2] offers a description about the various reasons given by students which affected their willingness to pledge their eyes. [Table/Fig-3] gives a brief description of the students' understanding about eye donation.



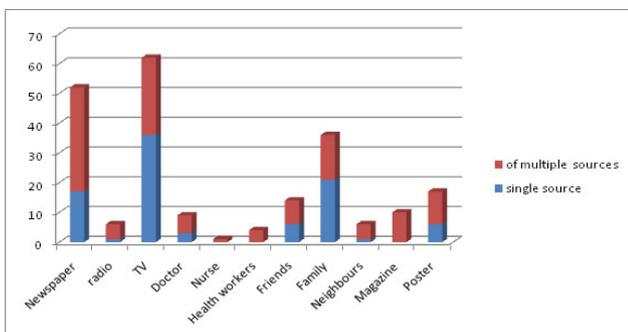
[Table/Fig-2]: Reasons for wishing to donate

VIEWS	NUMBER	PERCENTAGE
Whole eye is replaced	27	21.428%
Cornea is replaced	57	45.238%
Lens is replaced	30	23.809%
Retina and nerve replaced	12	9.523%

[Table/Fig-3]: What eye donation means to them

Reason for not wanting to donate eyes	No. of students with only one reason	No. of students with multiple reasons
Lack of awareness	1	6
Family objection	3	11
Consider donation ill treatment to the body	Zero	1
Dislike separating eye from the body	8	17
Feel it is unsuitable because of age	3	8
Feel it is unsuitable because of health problems	3	6
Fell eye donation will delay funeral	2	4
Consider it antireligious	Zero	2
Consider it to be like signing a death certificate	Zero	3
Feel corneal transplantation yields poor results	Zero	1
Religious views	Zero	8

[Table/Fig-4]: Reasons for not wishing to pledge eyes



[Table/Fig-1]: Main source of information

	YES	PERCENTAGE	NO	PERCENTAGE
Know someone who has donated eyes	29	23.015%	97	76.984%
Know someone who has received a donated eye	18	14.285%	108	85.714%
Know where to contact for eye donation*	19	15.079%	107	84.920%
Know that donor eyes can be preserved in eye banks	83	65.873%	43	34.126%
Think there is shortage of eye donors in India	114	90.476%	12	9.523%
Aware of buying and selling of donor eyes	35	27.778%	91	72.22%
Agree donor eyes should be sold	19	15.079%	107	84.920%
Feel eye donation will be facilitated if the MSW comes and asks for eye donation upon death of a person	76	60.317%	50	39.682%

[Table/Fig-5]: General knowledge on eye donation
 *2 of these believed they need to contact the Rotary club, and 17 would contact an Eye Hospital to enquire about eye donation

TIME w.r.t* DEATH	NO. OF STUDENTS	PERCENTAGE
Just before death	3	2.380%
Within 6 hours of death	89	70.634%
Between 9-12 hours	25	19.84%
Between 13-24 hours	7	5.556%
Between 1-2 days	2	1.587%
Between 2-4 days	Zero	Zero

[Table/Fig-6]: Belief regarding time for eye donation
 *W.R.T. with respect to

Of those who didn't wish to pledge their eyes, most quoted social, religious and medical reasons, which are described in [Table/Fig-4]. [Table/Fig-5] gives a clear idea about the gross knowledge that the students had regarding the practical aspects of eye donation

The students' beliefs with regard to timing are explained in [Table/Fig-6].

The students who were of the opinion that eyes can be removed at the hospital only constituted 93(73.81%), 1(0.79%) knew that it could be done at home, and 32(25.40%) were aware that enucleation can be done anywhere.

Only 83(65.87%) students were aware that the donor eyes can be preserved in eye banks, and 114(90.48%) felt that there is a shortage of donor eyes in India. As many as 35(27.78%)

students were aware of eye trafficking, and 19(15.08%) felt that eyes should be available for sale.

Of all the students, 76(60.32%) felt that someone from an eye Donation centre coming to a deceased person's home on death would facilitate eye donations.

Regarding consent for eye donations, 60(47.62%) felt that it should be mandatory and willed before death, 14(11.11%) Thought it must be given after death by an adult family member, who is next of kin, 37(29.37%) were of the opinion that it should be done at the discretion of the donor alone, and 15(11.90%) felt that consent should be optional at the discretion of an adult family member.

DISCUSSION

The very first eye bank in India was started by the Late Dr RES Muthiah, and the first corneal transplantation was done successfully by him in India in 1948 [4]. From then on a movement started for donation of eyes [8]. Even after more than 6.5 decades, India still has a shortage of corneas. Young medical students, who are the future of the medical profession, can play a very important role for the eye donation movement in any country. It is therefore very important to educate them regarding the same, so that they can advocate it to persons coming in contact with them professionally as well as on the personal front.

Our study group consisted of young adults between 17-23 years of age, with a mean age of 18.39yrs±0.82 SD, with a slightly larger female population of 66(52.38%).

In a study conducted in Malaysia 76.7% of the 1st year medical students were aware of eye donation [9], while in our study all 126(100%) students knew about donation of eyes. In another study done in Hubli by Nekar et al., [10] 96% students aware about eye donation. We found that only 57(45.24%) students were aware of the fact that only the cornea is transplanted, and 89(70.63%) students were aware that eyes, for the purpose of donation should be removed within 6 hours of death. This was in contrast to the study conducted in Maulana Azad Medical College, New Delhi, where a larger number of students, 155 (86.1%) of 180 were aware that donated eyes are used for corneal grafting however, less than 50% knew that the ideal time for donation is within first six hours after death [11]. In another study conducted by Kannan et al., on medical and non medical students, 63.3% of the students knew that the eyes should be removed within 6 hours [8]. Comparing this data with the awareness level among the general population in a study at Andhra Pradesh showed that only 11.5% subjects had knowledge and only 32.9% subjects were willing to pledge their eyes. This suggests that level of education plays an important role in the beliefs and practices of people [4]. Another study done on nursing students revealed that only

38.2% knew the exact time for donation, showing that medical students are comparatively more aware [12].

In the study conducted by Singh et al., at Maulana Azad Medical College, 157 (87.2%) of 180 were willing to pledge their eyes [11]. In another study group consisting of optometry students, 64.5% of the respondents were willing for eye donation [2]. Another study done on final year medical students, showed that a high percentage of medical students i.e. 83.7% were willing to pledge their eyes [8]. In our study a total of 89(70.63%) students were keen on pledging their eyes. Of them, 83(93.26%) were willing to donate to an unknown person in need.

Information by mass media was the main reason in 61.3% of students for the high level of awareness in the study done on Medical students in Hubli [10] while in another study conducted by Singh M et al., [13], television (54.6%) and newspaper (29%) were the main informants [13]. Similarly in the study in Delhi by Singh et al., television was the source of information for 77.8% students [11]. In the current study also, mass media played an important role, with 62(49.21%) students, having heard about eye donation from TV, followed by the newspaper 52(41.27%) among others.

Giving vision to a blind person was the motivational force behind eye donation for 69(54.76%), nobility of the act for 38(30.16%) and it being a pleasure to help the blind, for 36(28.57%) in our study. Similar results were found in the study by Nekar et al., [10], Singh M et al.,[13] and MM Singh et al., [11].

We found that of those who didn't wish to pledge their eyes, dislike for separating the eyes from the body, 17(45.95%) and family objection 11(29.73%), were reasons for a majority. Other reasons for not donating eyes included objection by family members, dislike of disfiguring the body, delaying of religious rites and religious restrictions. Similar reasons were also reported in other studies [11,14,15]. In the study by Nekar et al., [10] 60% students refused to pledge their eyes due to lack of interest, and others stated reasons of religion and fear of undergoing invasive procedure. Similar reasons were reported in other studies.

We found in our study that only 19(15.08%) out of 126 students knew whom to contact for eye donation purposes, this could be an important reason for less number of people pledging their eyes.

Mandatory consent for donation expressed before the death of the donor should ideally form the basis for eye donation. However, in the case of unavailability of such consent, consent from adult family members of the deceased donor should be obtained for eye donation. The same pattern was seen in the viewpoints of our study subjects.

In order to increase eye donation, it is important to dispel misconceptions regarding the same, among the youth, who constitute the future of the country. It is important for them to understand that eyes are too precious to be burnt or buried, and to convince people to leave a vision behind.

CONCLUSION

Our study was done in 2011, when most similar studies hadn't been published, and data regarding this study group was not available. Also it is the first study in our geographical location, testing the knowledge of our students, and understanding how their knowledge can be improved by changing the pattern of education, laying stress on the social importance. Medical students form the future of the health sector of a country. It would therefore be helpful to increase awareness regarding corneal blindness, eye donation and corneal transplantation among them. They can be actively involved as volunteers in eye donation awareness campaigns and can contribute by motivating and counselling people. A major limitation of this study was that it was done only among medical students; hence, a comparison among different educational backgrounds could not be made. At the end we would like to conclude by saying that though novice medical students were aware about eye donation and corneal transplantation, there are many lacunae and misconceptions which need to be refined and cleared to enhance their knowledge.

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