



# Perception related to Eye Donation in Science College Students of Himmatnagar City of Gujarat State

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## ABSTRACT

**Background:** Eye sight is very important for human life. The World Health Organization (WHO) estimates that every 5 seconds someone goes blind. Globally, 37 million people are blind, and of these nearly 10 lakh blind people are willing for corneal transplantation. Awareness and practice of eye donation should be encouraged in community to cop up with this huge demand.

**Aims:** The aim of the study was to assess the perception regarding eye donation among the science college students as proxy to general population.

**Materials and Methods:** This is cross sectional study. Data was collected from students of randomly selected science college at Himmatnagar city. Data collected from the participants were analysed using percentage and descriptive statistics.

**Results:** The participants were well aware of eye donation (93.4%) quoting media as a major source of information for their knowledge. Out of the 334 students, 73.9% were willing to pledge and 26.1% students did not believe in pledging their eyes.

**Conclusion:** The findings of the study showed that overall knowledge about eye donation among students was good, however relatively less number of students were ready to pledge for eye donation.

**Keywords:** Eye donation, Knowledge, Perception, Science College students

## INTRODUCTION

Blindness is major public health problem in developing countries. In India major reasons for blindness are cataract and corneal diseases.<sup>1</sup> It is estimated that there are approximately 6.8 million people who have vision less than 6/60 in at least one eye due to corneal diseases; of these, about a million have bilateral involvement.<sup>2,3</sup>

The most common reasons for corneal blindness are trachoma, corneal ulceration following xerophthalmia due to vitamin A deficiency, ophthalmia neonatorum, and the use of harmful traditional medicines, onchocerciasis, leprosy, and ocu-

lar trauma.<sup>4-7</sup> The Andhra Pradesh Eye disease study (APEDS) also suggested a significant burden of corneal blindness in the rural population of Andhra Pradesh, of which 95% was avoidable.<sup>4</sup> It is always cost-effective to prevent corneal blindness if causative factor is avoidable. Corneal transplantation is a major treatment option for restoring sight in those who already have corneal blindness.<sup>8</sup>

As awareness related to eye donation and cornea care after death is low in community, significant proportion of donor corneas are unsuitable for corneal transplantation.<sup>9</sup> Based upon our current ratio of available safe donor eyes, we would need 277,000 donor eyes to perform 100,000 corneal

transplants in a year in India.<sup>10</sup> Although there is approximately a 20-fold increase from the donor eyes available now. A shortage of transplantable corneas is common and has been the subject of much attention. To increase procurement of corneas, raising the level of public education on eye donation is an important first step

The late Dr. Muthiah started the very first eye bank in India and he successfully performed the first corneal transplant in 1948. Even after more than 50 years, patients waiting for corneal transplants constitute a considerable backlog, which continues to grow. The need, therefore, is to educate the masses about eye donation in an effort to increase the procurement of corneas. Although pledging for eye donation is prerequisite actually required action is soliciting for actual eye donation at the time of death.<sup>10</sup> Though the factors affecting procurement of corneas and the public attitude towards eye donation have recently received attention in the developed world, not much has been published from the developing world.

Studies aimed at communities at large should include stakeholders from different fields. Stakeholders potentially include but are not limited to donors, beneficiaries of corneal donation, surgeons, hospital staff, eye banking facilities staff and general population. However, most previous studies have focused on medical students<sup>11-15</sup> or nursing students.<sup>16</sup> There are many key players in the community who can create awareness and influence the attitude of the rest of the community towards better health practices. Science college students have scientific base and have an inherent inclination to serve mankind. With this background, they were admitted into this study with the objective of assessing their knowledge and attitude on eye donation. Well-informed science college students could be expected to influence eye donation rates in community. This study was designed to assess the perception of college students towards eye donation and their willingness to pledge eyes.

**Materials and Methods:** This cross sectional type of awareness study was conducted during the month of June in year 2018. In one study in Maharashtra awareness related to eye donation in general public was 74.16%.<sup>16</sup> This study is taken as reference study and conceding prevalence of eye donation at 74% and confidence level of 95% calculated sample size was 313 students. List of science colleges in Himmatnagar city was collected and randomly one college selected for study. The nature of the study was explained to each participant and they were asked to answer a pretested, semi-structured self-administered questionnaire for collecting the necessary information after obtaining informed consent. All students (334) present on the day of visit

to college agreed to participate in present study. They had given self-administered questionnaire for collecting the necessary information. The questionnaire contained questions on demographic details, awareness regarding eye donation, reasons for donating and not donating eyes, intention to donate eyes, and sources of information.

**Statistics:** The data were entered and analysed using the Epi-info software package. Data was expressed in proportion.

## RESULT

A total of 334 subjects were interviewed and the mean age was 19.6 years with a SD of  $\pm 1.1$  years. Out of 334 participants 54% were males and 84.4% were Hindu by religion. Twenty-two (6.6%) subjects reported they had never heard of eye donation earlier. The participants were well aware regarding eye donation (93.4%) quoting media as a major source (73.8%) of information for their knowledge. [Table 1].

**Table 1: Responses of participant related to source of information for eye donation (n=334)**

Response	Students
Heard about eye donation	312 (93.4)
<b>Source of information for eye donation*</b>	
TV, internet, newspaper or other mass media	261 (78.3)
Family member/relative/friend	60 (18)
Doctor	4 (1.2)
Family member/relative/friend needing it	1 (0.3)
Others	7 (2.1)

\* Multiple responses; Figure in parenthesis indicate percentage

**Table 2: Responses to the questionnaire on eye donation (n=312)**

Response	Students
Eyes can be donated after death	249(79.8)
Donated eyes can be used for corneal graft	163(52.2)
Ideal time for donating eyes is within 6 hr after death	88(28.2)
Donated eyes can give sight to a blind	257(82.4)
Knows someone who received a donated eye	0(0.0)
Knows contact place for eye donation	108(34.6)
Knows there is an eye shortage in India	256(82)

Figure in parenthesis indicate percentage

**Table 3: Responses of subjects indicating willingness to pledge eyes for donation (n=334)**

Response	Students (%)
I have already pledged to donate my eyes	1 (0.3)
Yes I am willing to donate eyes	246 (73.6)
I need more information to decide	53 (15.8)
No, I don't believe it will be useful	14 (4.2)
No, I will be born blind in the next birth	09 (2.7)
No, I am afraid of deformity of dead body	05 (1.5)
No, due to other reasons	06 (1.8)

**Table 4: Distribution of perceived reasons for donating eyes (n=247\*)**

Response	Students† (%)
Eye donation is a noble work	202 (81.8)
Eye donation can give vision to a person	163 (65.9)
Pleasure to help the blind	129 (52.4)
A friend or relative has donated an eye	26 (10.5)
Influenced by any lecture	19 (7.6)
Influenced after reading an article	18 (7.3)

\* Included students who have either pledged or are willing to donate eyes; † Multiple responses

Students were well aware that eyes could be donated only after death (79.8%), and that during transplantation only the front part of the eye or the cornea is used for replacing the recipients' cornea (52.2%). Majority were not aware of the ideal time to collect eyeballs (28.2%). In this study, only 108 (34.6%) out of 188 students knew about the appropriate place for an eye donation. [Table 2]

Of the 334 subjects, only 1 (0.3%) had pledged eye donation. 246 (73.6%) subjects were willing to pledge to donate their eyes. Among the subjects 53 (15.8%) willing to pledge their eyes for donation but they require more information to decide. Minority of students (10.2%) were not ready to pledge for eye donation due to one or another reason. The reasons cited in the study for eye donation was nobility in the work (81.8%), it gives site to the blind (65.9%) and pleasure to help the blind (52.4%). [Table 4]

## DISCUSSION

Our study reported awareness level among the stakeholders as high, 93.4% compared to previous studies where the reported levels in Singapore and Malaysian population was 69% and 86% respectively.<sup>15</sup> Similarly, studies conducted in India from Maharashtra (74.16%)<sup>16</sup>, Tamil Nadu (50.7%)<sup>17</sup>, Maharashtra (83%)<sup>18</sup> and rural Andhra Pradesh (32.9%)<sup>4</sup> were comparatively very low on opposite side one study on medical and para medical students reported high awareness level (99.2%).<sup>19</sup> Study done in Srikakulam district in South India by Ronanki *et al.* had awareness (93%) level in line with this study.<sup>20</sup> Differences can be attributed to different level of literacy in different groups. Major source of awareness information was received through mass media followed by from friends and family members.

Majority of students knew that eyes can be donated after death. Around half of students knew that the donated eye is used for corneal grafting and 28.2% knew that donated eyes the ideal time for donation. Study by Gupta A *et al.* reported that 74.4% knew that donated eye used for corneal

grafting and only 32.6% knew that ideal time for eye donation.<sup>21</sup> Although the majority of the students had awareness and willingness towards eye donation, 65.4 % of them were unaware of the contact place for eye donation. This could be a major barrier to donation in the community. In our study 82% of students agreed that there is shortage of eye donors in India. Study in nursing student by Gupta A *et al.* reported that 84.5% nurses agreed that there is a shortage of eye donors.<sup>21</sup>

In our study 73.9% students were either willing or had already pledged to donate their eyes. In study among nursing students 85.1% were either willing or had already pledged to donate their eyes.<sup>21</sup> In a study among medical students, 87.8% of the respondents were willing to be eye donors.<sup>22</sup> Another study in the urban population observed that 73.8% were aware of eye donations and only 44.9% were willing to pledge their eyes.<sup>9</sup> Willingness to donate eyes was less (41.5%) even among relatives of post-mortem cases who were aware of eye donation.<sup>23</sup>

The prime reason cited in the study for eye donation was nobility in the work by 81.8% of students. Other reasons for eye donation were it gives site to the blind (65.9%) and pleasure to help the blind (52.4%). Similar responses were reported from the previous studies conducted in Bangalore<sup>21</sup> and from Malaysia<sup>15</sup>. However, the result from the study done in Toronto reported the main reasons as personal experiences with cornea donation and transplants, and good results from corneal transplant operation.<sup>16</sup> Out of 87 students who were not ready to pledge for eye donation, 60.9% students answered that they require more information to pledge. Other reasons were they had doubt in its usefulness (16.1%), they may born blind in next birth (10.34%) and they afraid of body deformity (5.7%). Similar reasons were also reported in other studies.<sup>4, 12</sup>

## CONCLUSION

We found that awareness regarding eye donation among stakeholders was 93.4% and the willingness to donate eyes was 73.4%. This suggests that increased awareness or in fact increased knowledge may not necessarily translate into increased willingness and that perhaps other unmeasured factors may be coming into play. There is a need to conduct more research to understand how we can motivate individual in improving the eye donation activities. Further research is required to convert the high willingness to donate eyes to increase the actual eye donation among the communities

Ours is study that assessed the awareness level among the college students representing the same

community, and population based observational data collection is the advantage of this study. We interviewed only those who were available at the time of data collection and reported their individual perception. Although they are representative samples from the area, the opinions expressed are by individuals and cannot be extrapolated to the rest of the population.

## REFERENCES

- Garg P, Krishna PV, Stratis AK, Gopinathan U. The value of corneal transplantation in reducing blindness. *Eye (Lond)* 2005;19:1106-14.
- National Programme for Control of Blindness. Report of National Programme for Control of Blindness, India and World Health Organization; 1986-89.
- Dandona R, Dandona L. Corneal blindness in a southern Indian population: Need for health promotion strategies. *Br J Ophthalmol* 2003;87:133-41.
- Krishnaiah S, Kovai V, Nutheti R, Shamanna BR, Thomas R, Rao GN. Awareness of eye donation in the rural population of India. *Indian J Ophthalmol* 2004, 52(1):73-78.
- Dandona L, Dandona R, Naduvilath TJ, McCarty CA, Nanda A, Srinivas M, et al. Is current eye-care policy focus almost exclusively on cataract adequate to deal with blindness in India? *Lancet* 1998;351:1312-6.
- Rekhi GS, Kulshreshtha OP. Common causes of blindness: A pilot study in Jaipur, Rajasthan. *Indian J Ophthalmol* 1991;39:108-11.
- Dandona L, Dandona R, Srinivas M, Giridhar P, Vilas K, Prasad MN, et al. Blindness in Indian state of Andhra Pradesh. *Invest Ophthalmol Vis Sci* 2001;42:908-16.
- Kannan KA. Eye donation movement in India. *J Indian Med Assoc* 1999;97:318-320.
- Dandona R, Dandona L, Naduvilath TJ, McCarty CA, Rao GN. Awareness of eye donation in an urban population in India. *Aust N Z J Ophthalmol* 1999;27:166-9.
- Saini JS. Realistic Targets and Strategies in Eye Banking. *Indian J Ophthalmol* 1997;45:141-2.
- Diamond GA, Michael C, Mussoline JF, D'Amico RA. Obtaining consent for eye donation. *Am J Ophthalmol* 1987;103:198-203.
- Okoye OI, Maduka-Okafor FC, Eze BI: What does the medical student know about eye donation/corneal transplant? The University of Nigeria scenario. *West Indian Med J* 2010, 59(1):41 -44.
- Singh MM, Rahi M, Pagare D, Ingle GK: Medical students' perception one eye donation in Delhi. *Indian J Ophthalmol* 2007, 55(1):49-53.
- Bharti MK, Reddy SC, Tajunisah I, Ali NA: Awareness and knowledge on eye donation among university students. *Med J Malaysia* 2009, 64(1):41 -45.
- Bhandary S, Khanna R, Rao KA, Rao LG, Lingam KD, Binu V: Eye donation awareness and willingness among attendants of patients at various clinics in Melaka, Malaysia. *Indian J Ophthalmol* 2011, 59(1):41 -45
- Patil R, Gothankar J, Bhat P, Saluja J, Sane S. Eye donation: awareness and willingness among shopkeepers. *Int J Community Med Public Health* 2017;4:2056-9.
- Priyadarshini B, Srinivasan M, Padmavathi A, Selvam S, Saradha R, Nirmalan PK: Awareness of eye donation in an adult population of southern India. A pilot study. *Indian J Ophthalmol* 2003, 51 (1):101 -104.
- Magdum R, Arun S, Mushtaq I, Sharma N. To study awareness and willingness of eye donation among paramedical workers. *J Clin Ophthalmol Res* 2015;3:95-97.
- Sushma H, Warad VG, Kshetrapal M. Knowledge, attitude and practice about eye donation among medical and paramedical students in tertiary eye care hospital. *Kerala J Ophthalmol* 2016;28:112-5.
- Ronanki VR, Sheeladevi S, Ramchandran BP, Jalbert I. Awareness regarding eye donation among stakeholders in Srikakulam district in South India. *BMC Ophthalmology* 2014 14:25.
- 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(2):122-125.
- Dhaliwal U. Enhancing eye donation rates. Training students to be motivators. *Indian J Ophthalmol* 2002;50:209-12.
- Tandon R, Verma K, Vanathi M, Pandey RM, Vajpayee RB. Factors affecting eye donation from post-mortem cases in a tertiary care hospital. *Cornea* 2004;23:597-601.