

# Survey on Knowledge and Attitude about Eye Donation among Caregivers of Admitted Patients at Tertiary Care Hospital, Karad

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**Abstract:** Background: One out of every three blind people in the world lives in India. There are 12 million people blind in India. On an average, the country needs 200, 000 corneas in a year, and only 44, 806 are collected. Objective: To assess the existing level of knowledge and attitude about eye donation among caregivers of admitted patients. Methodology: A cross sectional study design found to be appropriate and 524 of care givers of admitted patients selected using simple random sampling technique over the period of 3 months. A pretested Marathi structured self administered questionnaire were given for collecting the necessary information. Result: The study findings revealed a relatively average level of knowledge and awareness on eye donation among patients care givers at tertiary care hospital, Karad. Conclusion: The study revealed that participants heard about eye donation but knew less about the details of eye donation like eligibility for donation, time of collection, procedure, storage of donated eye. This study also recommended that we need to work with the Ministry of Health, related government agencies, and local tertiary institutions to deliver specific and tailored programs to increase the youth's knowledge and awareness of corneal donation and thereby increase local donor rates.

**Keywords:** Knowledge; Attitude; Eye donation, care givers, admitted Patients

## 1. Introduction

“Of all the senses, sight must be the most delightful”

-Helen Keller

Every fifth blind person in the world is an Indian. Of the 15 million blind people in India <sup>1</sup> there are approximately 120 lakh blind in both eyes and 80 lakh blind in one eye, which is about one fourth of 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 <sup>(2)</sup>. One out of every three blind people in the world lives in India. There are 12 million people blind in India. 7.4 million i.e. 62% have cataract related blindness. 19.7 million are blind due to refractive error. 3.6 million people become blind every year. 3.2 million children are blind under the age of 16 yrs., hardly 5% of them receive any education. 80% of blindness is avoidable i.e. readily treatable and preventable. Incidences of blindness are significantly higher in rural areas, 72% population lives in 6.38 Lakh villages <sup>(3)</sup>

On an average, the country needs 200, 000 corneas in a year, and only 44, 806 are collected. Out of these, only 46% (20, 632 eyes) are utilized for sight restoration as the other 54% do not meet the standards for transplantation. Furthermore, the cost of cornea transplant in addition to unavailability for corneas makes it practically impossible for underprivileged people to access these medical remedies. Therefore, creating awareness amongst the masses and encouraging them to pledge their eyes for donation is critical <sup>(4)</sup>. The barriers to corneal donation reported include religious and cultural beliefs (e.g. significance of eyes), objection from the

family members, associated health problem affecting the eye donation, and concerns about disfigurement and mutilation <sup>(5)</sup>

In developing countries like India, alternatives to corneal transplantation are being sought due to a lack of adequate donor corneas. In size, India is much bigger country than its neighbor Sri Lanka. In economy too, India is much ahead. But when it comes to gifting sights to the blind people, the vision of the neighboring island located off the southern coast of India is comparatively much bigger and clear.

Sri Lanka has made eye donation after death compulsory, a move which has been welcomed across the board. <sup>(6)</sup>

There are wide spread social awareness programs and activities conducted across the country to impart the significance of eye donation and its usefulness to the visually impaired people. Till date, medical researchers and scientists are working on developing artificial cornea, but till that time, donating the eyes would be the best gift ever for a blind person suffering from corneal blindness. Voluntary eye donation depends on the awareness levels of people in the community. <sup>(7)</sup> This study aimed to assess knowledge and attitude about eye donation among caregivers of admitted patients at tertiary care Hospital, Karad

## 2. Research Methodology

### Research approach and design

A cross sectional study design found to be appropriate and selected for the study to explore Knowledge and Attitude about eye donation among caregivers of admitted patients

over the period of 3 months from November 2017 to January 2018

#### Target Population

Target population comprises of all care givers of admitted patients at tertiary care hospital, Karad

#### Sample and Sampling Technique

The sample consisted of 524 of care givers of admitted patients at tertiary care hospital, Karad. The subjects were selected using simple random sampling technique.

#### Description of Tool

A pretested Marathi structured self administered questionnaire were given for collecting the necessary information. It comprises of three sections.

#### Section A: Demographic sheet

It has 5 items pertaining to demographic information of patients caregivers including age, gender, occupation, religion, educational qualification etc.

#### Section- B: Questionnaires on knowledge regarding eye donation.

It has 15 structured knowledge questionnaire items about various aspects of eye donation mainly awareness regarding eye donation were included. For the Right answer was given score '1' and wrong '0'. So the total score of knowledge regarding eye donation ranged between 0 – 15

#### Section C: Questionnaires on attitude regarding eye donation

It has 15 items in which questions measures attitude towards eye donation such as intention to donate eyes, reasons for donating or pledging and not to donate were included. Right answer was given score '1' and wrong '0'. So the total score of attitude on eye donation ranged between 0 – 15

### 3. Method of Data Collection

The institution ethical committee of Krishna institute of medical sciences deemed to be university granted the ethical approval for conducting this study. The methods and aim of the study were explained to subjects and ensured them that the individual information will be kept confidential after they signed consent forms. Pilot studies of 20 samples were conducted to modify the questionnaire. These participants were not involved in the original survey. A pretested Marathi questionnaire were filled by caregivers found in waiting areas of ICUs, Casualty, OPDs and wards of tertiary care hospital, Karad after obtaining informed consent. The questionnaire contained questions on demographic details, awareness regarding eye donation, intention to donate eyes, reasons for donating or pledging and not to donate eyes.

**Inclusion criteria:** Those who are willing to participate in the study.

### 4. Statistical Analysis

Data was compiled, checked and rechecked for its completeness and missing item, coded and recoded before entering in the computer. Data was entered in to the computer based software SPSS-20 and analyzed in the same applying appropriate statistical tools. Data was interpreted in tabular, graphical and narrative form as per necessary. To find out the level of knowledge and attitude all the knowledge and attitude related question were compiled with considering the score of correct answer as 1 and wrong answer as 0. The level of knowledge and attitude scores were grouped as good, average and poor as stated below:  $> \text{Mean} + \text{SD}$  = good,  $\text{Mean} \pm \text{SD}$  = average,  $< \text{Mean} - \text{SD}$  = poor

### 5. Result

#### Section I

**Table 1:** Socio Demographic Profile of Participants (N=524)

Demographic Variables	Frequency (N)	Percentage (%)
<b>Age Group</b>		
< 25	136	25.9
26-35	201	38.3
36-45	85	16.2
> 46	102	19.4
<b>Gender</b>		
F	245	46.7
M	279	53.2
<b>Religion</b>		
Hindu	459	87.5
Other	65	12.4
<b>Education</b>		
< 10TH std.	219	41.7
HSC	120	22.9
Graduate	125	23.8
Other	60	11.4
<b>Occupation</b>		
Housewife	179	34.1
Job	116	22.1
Farmer	88	16.7
Business	72	13.7
Other	69	13.1

The socio demographic profile of the study participants were described in table 1. Out of 534 participants, age of participants ranged from < 25 to > 46 with majority of participants 201 (38.3%) were 26-35 years old, 279 (53.2%) were female, 459 (87.5%) of them were Hindu religion. Maximum participants 219 (41.7%) were having educational qualification of 10<sup>th</sup> pass and most of females 79 (34.1%) were housewives.

#### Section –II

**Knowledge and attitude about eye donation:** This section deals with assessment of existing level of knowledge and attitude of eye donation among care givers of admitted patients at tertiary care hospital, Karad.

**Table 2: Knowledge Regarding Eye Donation**

Questionnaires	Right answer	Wrong answer
Heard about the term eye donation	475 (90.6%)	49 (9.3%)
Aware of eye donation is done give the vision of blind person	469 (89.5%)	55 (10.4%)
Know someone who has donated eyes	206 (39.3%)	318 (60.6%)
Aware of eyes can be donated after death	378 (72.1%)	146 (27.8%)
Aware of one eyed donation benefits two blind	406 (77.4%)	118 (22.5%)
Know ideal time for collection is within 6 hours of death	400 (76.3%)	124 (23.6%)
Aware of only cornea and sclera is transplanted	400 (76.3%)	124 (23.6%)
Know any person above one year of age can donate eyes	290 (55.3%)	234 (44.6%)
Afraid that eye donation disfigures the face of donor	306 (58.3%)	218 (41.6%)
Aware of shortage of eye donation in India	371 (70.8%)	153 (29.1%)
Is 48 hrs is the maximum allowed time for storage of donor eye	207 (39.5%)	317 (60.4%)
Is the person wearing spectacles or glasses can donate eye	307 (58.5%)	217 (41.4%)
Person with HIV cannot donate eyes	281 (53.6%)	243 (46.3%)
Is blood group a barrier to eye donation	197 (37.5%)	327 (62.4%)
Is consent of family required for pledging on eye donation card	371 (70.8%)	153 (29%)

Table 2. shows that out of 524, responses of participants to the questionnaire regarding awareness about eye donation indicate that majorities 475 (90.6%) heard about eye donation and 469 (89.5%) were aware of eye donation is done to give the vision of blind person. 406 (77.4%) of the participants were aware that one eye donation benefits two blinds and 400 (76.3%) were knew that ideal time for donating eyes is within 6 hours of death. 400 (76.3%) about cornea and sclera is transplanted whereas 290 (55.3%) of the

participants were only aware that any person above one year of age can donate eyes. However 197 (37.5%) of participants knew that blood group is not a barrier to eye donation and 307 (58.5%) were aware that person wearing spectacles or glasses can also donate eyes. 371 (70.8%) regarding shortage of eye donation in India and 371 (70.8%) were about consent of family is not required for pledging on eye donation card.

**Table 3: Attitude Regarding Eye Donation**

Questionnaires	Positive attitude	Negative attitude
Aware of eye donation	463 (88.3%)	61 (11.6%)
Support eye donation	461(87.9 %)	63(12%)
Know where to contact for eye donation	256 (48.8%)	268 (51.1%)
Aware of any eye bank in Maharashtra	235 (44.8%)	289 (55.1%)
Pledged /signed to donate any organ	137 (26.1 %)	387 (73.8%)
Have an organ donor card	99 (18.8 %)	425 (81.1%)
Any religious restriction to separate eye after death	419 (79.9%)	105 (20%)
Belief that relatives should keep eyes of the dead closed after death	329 (62.7 %)	195 (37.2%)
Believe that body will –ill treated by eye donation	429 (81.8%)	95 (18.1%)
Believe that registration for eye donation brings bad luck	421 (80.3 %)	103 (19.6%)
Believe that signing eye donation card is like signing death certificate	410 (78.2%)	114 (21.7%)
Willingness to donate eyes	371 (70.8%)	153 (29.1%)
Willingness to donate eyes to needy	414 (79%)	110 (20.9 %)
Willingness to donate close relatives eyes	414 (79%)	110 (20.9 %)
Suggest others to donate their eyes after death	414 (79%)	110 (20.9%)

Table 3 displayed the attitude of care givers of admitted patients about eye donation. Among 524 participants, 463 (88.3%) were aware of eye donation and 461 (87.9 %) were support eye donation. However only 235 (44.8%) aware of any eye bank in Maharashtra and 256 (48.8%) about contact for eye donation. Religion is not the matter when considering eye donation for 419 (79.9%) of the participant. further it was observed that 137 (26.1 %) Pledged /signed to donate any organ and only 99 (18.8 %) have an organ donor card.

421 (80.3%) and 410 (78.2%) respectively believes that registration for eye donation didn't bring bad luck and it's not like signing death certificate. Interestingly 371 (70.8%) participants were willing to donate their eyes whereas 414 (79%) were willing to donate their close relatives eyes after death and also support to donate them to whoever needs. Majority 414 (79%) of participants were suggest others to donate their eyes after death and all this indicate overall, al participant have positive attitude towards eye donation.

**Table 4: Scores of Patient's Care Givers Regarding Knowledge and Attitude on Eye Donation**

Scores of knowledge				Scores of attitude			
Scores	N	%	P-value	Scores	N	5	P value
Good (≥ 12)	100	19.	0.00097	Good (≥ 12)	86	16.4	0.00097
Average (9-11)	274	52.2		Average (8-11)	322	61.4	
Poor (≤ 8)	150	28.6		Poor (≤ 7)	116	22.1	

Chi-square test was used to check the knowledge and attitude of patient's care givers about the eye donation

For the 524 participants who answered the survey, the mean score was 9.54 with the highest score being  $\geq 12$  and the lowest score being  $\leq 8$ . From table 4, it is observed that majority of subjects 274 (52.2%) have average range of knowledge regarding eye donation, followed by 150 (28.6%) of subjects have poor knowledge regarding eye donation and minority subjects 100 (19%) have good knowledge about eye donation with chi-square 9.27 with p-value 0.00097

It is also revealed that, in the total of 524, majority of the subjects 322 (61.4%) have neutral attitude with score of being 8-11, followed by 116 (22.1%) having poor attitude about eye donation with score of being  $\geq 7$  and minority of the subjects 86 (16.4%) have positive attitude with score of being  $\leq 12$ . the mean attitude score was 9.27 with standard deviation of 2.4

### Section III:

**Table 5:** Association Of Demographic Variables with Knowledge and Attitude Regarding Eye Donation among Patient's Care Givers

	Demographic variables	Readings	Total	Good	Average	Poor	chi-square	p value
Knowledge	Gender	Female	245	33	129	83	14.16	0.0008
		Male	279	70	144	65		
	Education	Below 10th Std.	219	63	111	79	14.72	0.024
		HSC	120	19	74	27		
		Graduate	125	31	64	30		
		Other	60	20	26	14		
	Occupation	Housewife	179	22	94	63	15.86	0.045
		Job	116	26	67	23		
		Farmer	88	23	45	20		
		Business	72	15	35	22		
		Other	69	14	33	22		
Attitude	Education	Below 10th Std.	219	23	131	65	24.7	0.0004
		HSC	120	19	78	23		
		Graduate	125	31	70	24		
		Other	60	14	41	5		
	Occupation	Housewife	179	21	111	46	28.21	0.0004
		Job	116	31	72	13		
		Farmer	88	20	52	16		
		Business	72	5	45	22		
		Other	69	9	40	20		

Chi Square test was used to compare categorical variables. The analysis revealed that there is significant association was found knowledge with Gender, Education and occupation ( $p < 0.05$ ) and no significance association with age and religion.. Hence we conclude that there is significant association between the knowledge scores of patient's care givers with demographic variables and in Attitude, significant association was found only with education and occupation ( $P < 0.05$ ) hence we conclude that there is no significant association between the attitude scores of eye donation with demographic variables.

## 6. Discussion

In India, 4.6 million people are estimated with corneal blindness, which are curable only through corneal transplantation that is made possible via eye donation program (8) This, however, is dependent on people willing to pledge their eyes for donation, and Caregivers willing to honor that pledge upon the death of the person (9). The study findings revealed a relatively average level of knowledge and awareness on eye donation among patients care givers at tertiary care hospital, Karad.

### Section I: Findings in relation to the demographic variable:

Out of 524 Participants, 201 (38.3%) were 26-35 years old, 279 (53.2%) were female, 459 (87.5%) of them are Hindu in religion, 219 (41.7%) were having educational qualification of 10<sup>th</sup> pass and 179 (34.1%) female were housewives.

### Section II – Findings in relation to knowledge about the eye donation.

In the present study, among 524 participants majority 475 (90.6%) heard about eye donation and 469 (89.5%) were aware about eye donation is done for giving vision of blind person. In a study conducted among Undergraduate Nursing Students of Belgravia city, out of 400 students, 100% of them aware of eye donation and 95% of the students thought that eye donation is done to give vision. <sup>(10)</sup> The higher percentage of awareness in this study might be due to the fact that all students joined nursing course after passing +2 Science and so had a scientific background <sup>(11)</sup>

Another study conducted by Parsuram J et al found that out of 140, 15% of them knew the actual which eyes can be donated and only 10% of nursing students knew that only cornea can be donated <sup>(10)</sup> as compared to present study

higher percentage of awareness was found 76.3% were knew that ideal time for collection is within 6 hours of death and 76.3%) knew that only cornea and sclera is transplanted. Both the study conducted in the early professional years of nursing students and nonmedical professional which might be the reason behind such low knowledge regarding timing of eye donation and the part of eye that can be donated.

Subodh K.Y et al conducted study Belagavi city among undergraduate nursing students and observed that out of 400, 46.5% of the participants replied eye donation is done by all age group people<sup>(12)</sup> A study conducted in Hubli, Karnataka, 69% of the participants believed that there was no age limit for eye donation<sup>(13)</sup> and in present study (55.3%) of the participants were only aware that any person above one year of age can donate eyes.

Anita Gupta et al conducted study at Bangalore showed that 159 (84.5%) of 188 participants agreed that there is a shortage of eye donors and 160 (85.1%) out of 188 were either willing or had already pledged to donate their eye<sup>(11)</sup>. These finding support present study where 371 (70.8%) of participants were aware of shortage of eye donation in India and Interestingly 371 (70.8%) participants were willing to donate their eyes.

The present study revealed that 281 (53.6%) knew that HIV is contraindication to eye donation However 197 (37.5%) of participants knew that blood group is not a barrier to eye donation and 307 (58.5%) were aware that person wearing spectacles or glasses can also donate eyes. Heyke M. C et al conducted study among adolescents found that out of Hundred, Sixty two (14.59%) people had misconception that diabetes mellitus as contraindication to eye donation<sup>(13)</sup>. Jena P et al. conducted study among first year nursing students found that more than half (55%) of the students knew that HIV is a contraindication for eye donation whereas awareness regarding Hepatitis, Rabies and Other infections as contraindications were known to 40%, 20% and 35% of students respectively.<sup>(3)</sup> All these studies suggest that awareness about eye donation was quite high, yet certain misconceptions needs to be clarified.

Similarly Kumar S et al found that majority of the students (68%) feel that consent of the family members is necessary before pledging eyes in Bhopal<sup>(17)</sup> comparing findings with current study found higher awareness in present study where 371 (70.8%) were knew that consent of family is not required for pledging on eye donation card.

### **Section III – Findings in relation to attitude about the eye donation**

Vijayamahantesh. M et al conducted study in tertiary care hospital shows that Although majority were willing to pledge their eyes (888 subjects-80.7%), only 406 subjects (36.9%) were willing to donate eyes of their relatives who might be seriously ill<sup>(9)</sup>.

Another study by Dandona R et al on urban population, were 73.8% aware of eye donations and only 44.9% were willing to pledge their eyes<sup>(21)</sup> Tandon R et al found that Willingness to donate eyes was less (41.5%) even among relatives of

post-mortem cases who were in spite of being aware of eye donation.<sup>(22)</sup>

In the present study, observes that only 95 (18.1%) believe that body will –ill treated by eye donation and 114 (21.7%) believe that signing eye donation card is like signing death certificate comparing this result with similar study conducted by Rajesh K.A et al on medical students whereas 60 (33.7%) students feel that body is ill-treated after death if donated and 14 (7.8%) students felt that signing eye donation card was like signing death certificate<sup>(14)</sup>. These findings suggesting Misconceptions should be removed as medical students who are uncomfortable with the idea of such donation will obviously make poor spokespersons for eye banking<sup>(16)</sup>

Rajesh K.A et al conducted study in medical Students at ventral India found among the participants, 97 (37%) males and 70 (34%) females did not know about any existing eye bank in MP or India<sup>(14)</sup> Singh MM et al in their study at Delhi showed that, only 49 (27.2%) out of 180 students knew about appropriate place for eye donation<sup>(15)</sup> A study done on final year Medical students in adult population of Southern India showed that 67.4% students could name a few eye banks. 179 (68%) males and 131 (64%) females did not know that even caregivers can pledge for eye donation.<sup>(16)</sup> comparing these studies with present study it is observed that however only 235 (44.8%) aware of any eye bank in Maharashtra and 256 (48.8%) knew that where to contact for eye donation. The place to approach potential donors and how to enroll them as donors remained a major challenge<sup>(18)</sup>

**Section IV – Findings in relation to Association of demographic variables with knowledge and attitude** regarding eye donation among patient's care givers. In this study showed there is significant association between knowledge score with demographic variables such as gender, education, designation and occupation ( $p < 0.05$ ) and no significant association with regarding attitude where  $p > 0.05$

## **7. Conclusion**

The objective of the present study was to determine the level of knowledge and their attitude towards eye donation among care givers of admitted patient's. Majority of participants 274 (52.2%) have average range of knowledge, followed by 150 (28.6%) have poor knowledge and minority 100 (19%) have good knowledge regarding eye donation. It is also revealed that majority of the subjects 322 (61.4%) have neutral attitude, followed by 116 (22.1%) having poor attitude and minority of the subjects 86 (16.4%) have positive attitude towards organ donation. Better knowledge may ultimately translate into the act of donation. Study suggest that awareness about eye donation was high, yet certain misconceptions needs to be clarified The present study also revealed that participants heard about eye donation but knew less about the details of eye donation like eligibility for donation, time of collection, procedure, storage of donated eye<sup>(6)</sup> We need to work with the Ministry of Health, related government agencies, and local tertiary institutions to deliver specific and tailored programs to

increase the youth's knowledge and awareness of corneal donation and thereby increase local donor rates of eye donation to contribute to her blind society

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**Conflict of Interest:** None

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