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Research Article

Study of knowledge and willingness regarding eye donation among medical students of a tertiary care teaching hospital of central India

Rajesh Kumar Ahirwar*, Pallavi R. Shidhaye, Indu J. Ekka, D. M. Saxena

Department of Community Medicine, L. N. Medical College and Research Centre, Bhopal, Madhya Pradesh, India

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***Correspondence:**
Dr. Rajesh Kumar Ahirwar,
E-mail: dr.rajesh326@gmail.com

ABSTRACT

Background: Corneal diseases constitute a significant cause of visual impairment and blindness in the developing world. Corneal blindness constitutes 1% of total blindness. Corneal ulcers have also been recognised as a major cause of blindness in developing countries. One of the obstacles in eye donation is lack of awareness and a negative attitude among general population. The willingness about eye donation among medical fraternity definitely will affect the attitude among general population. The present study was conducted to assess the knowledge and willingness about eye donation among medical students of a tertiary care teaching hospital of central India.
Methods: A cross-sectional study was carried out in the tertiary care teaching hospital in Bhopal during the period of September 2013 to October 2013. A total of 467 students were selected by convenient sampling. Pre-designed and pre-structured questionnaire was used for data collection. Data were entered in MS Excel sheet and analyzed by STATA-11.
Results: A total of 467 students, out of which 263 (56%) were males and 204 (44%) female students and 380 (81.4%) were aware about eye donation. The knowledge regarding eye donation was found to be statistically significant with the gender of the participant ($p < 0.001$). 289 (61.9%) students were willing to donate eyes, out of which 161 (56%) were males and 128 (44%) were females ($p=0.73$). Among the participants, 97(37%) males and 70 (34%) females did not know about any existing eye bank in MP or India.
Conclusions: The present study revealed that most of the students were aware regarding eye donation and most of them were willing to donate their eyes. So continuous awareness programmes and camps should be held and should include not only the community population but also for the undergraduate medical students.

Keywords: Knowledge, Willingness, Eye donation, Medical students, Tertiary hospital

INTRODUCTION

Corneal diseases constitute a significant cause of visual impairment and blindness in the developing world.[1] Corneal blindness constitutes 1% of total blindness.[2] Corneal ulcers have also been recognised as a major cause of blindness in developing countries.[3] As per the National Program for Control of Blindness (NPCB), prevalence of blindness is 1% in India.[4] The Andhra Pradesh eye disease study (APEDS) reported the prevalence of corneal blindness at 0.13% constituting 9% of all blindness.[5] Eye donation is an act of donating one's eyes after his/her death. Only corneal blinds can be benefitted through this process not other blinds. It is an act of charity, purely for the benefit of the society and is totally voluntary.[6] Well informed medical students could be expected to influence the eye donation rates.[7] One of the obstacles in eye donation is lack of awareness and a negative attitude among general population. The willingness about eye donation among medical fraternity definitely will affect the attitude among general

population. There are many studies regarding awareness of eye donation among student groups like medical college students, nursing college students, etc. But still there is a huge demand supply gap regarding eye donation. There are many awareness programmes running in the country which shall definitely increase the willingness for eye donation. Keeping this in mind the present study was conducted to determine the awareness and associated demographic factors in relation to eye donation among medical students so that necessary intervention programmes can be executed during their academic sessions.

METHODS

A cross-sectional epidemiological study was carried out during the period of September 2013 to October 2013. The present study was conducted in the tertiary care teaching hospital in Bhopal, Central India. It has its own teaching institute catering to a population coming from all classes of society but predominantly from the middle and lower classes. Total 467 students from all the academic semesters of the medical college were selected for the study. All the students who gave consent were included in the study. Verbal consent was taken before including them in the study. Thus a total of 467 students were selected by convenient sampling. Pre-designed and pre-structured questionnaire was used to obtain basic socio-demographic information like age, gender, religion, education of the participants. Data collection was meticulously done by the post graduate student in the department of community medicine. Information related to awareness regarding eye donation, intention to donate eyes, reasons for donating or pledging and not, and sources of information was also collected. The students were explained about the scope of the study and later given the questionnaire after the teaching classes. Those who were willing to donate the eyes were informed about nearest eye bank. Information given by the participants and their identity were kept confidential. Data were judiciously entered in MS Excel sheet and analyzed by STATA 11. Tables, percentage and chi-square test was used for analysis of data.

RESULTS

It was seen from Table 1 that total 467 MBBS students participated in the study, out of which 263 (56%) were males and 204 (44%) female students. 253 (54.2%) students belonged to age group 21-25 years and 214 (45.8%) belonged to age group 15-20 years. Highest number who volunteered to participate in the study were third year students 151 (32.3%) followed by 129 (27.6%) final year students.

Table 1: Distribution of study population according to socio-demographic characteristics (n=467).

Variables	Males (n=263)		Females (n=204)		Total
	No.	%	No.	%	
Age (in years)					
15-20	119	45	95	47	214 (45.8)
21-25	144	55	109	53	253 (54.2)
Education					
First Year	42	16	51	25	93 (19.9)
Second	58	22	36	18	94 (20.1)
Third	87	33	64	31	151 (32.3)
Fourth	76	29	53	26	129 (27.6)
Socio- economic status					
Upper (I)	165	63	119	58	284 (60.8)
Upper middle (II)	63	24	57	28	120 (25.7)
Lower middle (III)	35	13	28	14	63 (13.5)
Upper lower (IV)	0	0	0	0	0
Lower (V)	0	0	0	0	0
Type of family					
Nuclear	126	48	87	43	213 (45.6)
Joint	94	36	85	42	179 (38.3)
Three Generation	43	16	32	15	75 (16.1)
Religion					
Hindu	198	75	147	72	345 (73.9)
Muslim	11	4	18	9	29 (6.3)
Christian	8	3	6	3	14 (2.9)
Others	46	17	33	16	79 (16.9)

Majority of the students belonged to upper class 284 (60.8%) followed by upper middle class with 120 (25.7%) students and 63 (13.5%) students belonged to lower middle class. There were no students who belonged to lower socio-economic status. Most of the students were from nuclear families 213 (45.6%) followed by 179 (38.3%) from joint families and 75 (16.1%) were from three generation families. Majority of the students were hindus 345 (73.9%) followed by students from other religion 79 (16.9%), 29 (6.3%) were muslims and 14 (2.9%) were christians.

Table 2: Distribution of study population according to knowledge and perceptions regarding eye donation among medical students (n=467)

Variables	Males		Females		Total	X^2- value P-value
	No.	%	No.	%		
1. Do you know about eye donation						
Yes	197	52	183	48	380 (81.4)	16.6
No	66	76	21	24	87 (18.6)	0.000
2. Source of information about swine flu?						
a. Newspaper	75	28	69	34	144 (30.8)	6.88
b. Television	96	36	83	41	179 (38.3)	0.33
c. Radio	25	9	14	7	39 (8.3)	
d. Internet	15	6	7	3	22 (4.7)	
e. Public hoardings	13	5	4	2	17 (3.6)	
f. Friends & Relatives	23	9	15	7	38 (8.1)	
g. Doctors & Hospital staff	16	6	12	6	28 (5.9)	
3. Are you willing to donate eyes?						
Yes	161	56	128	44	289 (61.9)	0.11
No	102	57	76	43	178 (38.1)	0.73
4. Are you willing to donate your close relative's eyes?						
Yes	183	57	137	43	320 (68.5)	0.31
No	80	54	67	46	147 (31.5)	0.57
5. If yes, Reasons for donating eyes. **Multiple responses	N= 161		N=128			
a. Noble cause	124	77	127	99	251 (86.8)	
b. Pleasure to help the blind	73	45	64	50	137 (47.4)	
c. inspired by article/magazine/lecture	47	29	52	41	99 (34.2)	
d. Influenced by knowledge in academics	151	93	98	76	249 (86.1)	---
e. friend/relative received cornea	7	4	8	6	15 (5.2)	
f. friend/relative donated cornea	2	1.2	3	2	5 (1.7)	
6. Reasons for not donating the eyes						
**Multiple responses	N=102		N=76		N=178	
a. objection by family members	51	50	35	46	86 (48.3)	
b. feels that body is ill-treated by organ transplant	37	36	23	30	60 (33.7)	
c. not eligible due to health problems	15	15	17	22	32 (18)	----
d. religious reasons of removing eyes after death	19	18	13	17	32 (18)	
e. Not sure of correct use of cornea after extraction	3	3	6	8	9 (5.1)	
f. signing eye donation card is like signing death certificate	9	8	5	6	14 (7.8)	

It is evident from Table 2, out of total 467 students, 380 (81.4%) were aware about eye donation. But still 87 (18.6%) were not aware of eye donation. Out of those who were aware, 197 (52%) were males and 183 (48%) were females. The knowledge regarding eye donation was found to be statistically significant with the gender of the participant ($p<0.001$). Maximum students, 179 (38.3) knew about eye donation through television followed by newspaper, radio or Internet. 17 (3.6%) students knew from public hoardings. Very few 28 (5.9%) came to know from doctors and hospital staff and academic classes. 289 (61.9%) students were willing to donate eyes, out of which 161 (56%) were males and 128 (44%)

were females (p=0.73). 320 (68.5%) students were willing to donate the eyes of close relatives (p=0.57). The students were asked about the various reasons for donating eyes. Out of 289 students who were willing to donate eyes, 251 (86.8%) students thought eye donation as a noble cause, 137 (47.4%) felt pleasure in helping the blind, 99 (34.2%) students were inspired by article/magazine/lecture. 249 (86.1%) students told they were influenced by the knowledge they received during their academic classes. 178(38.1%) students were not willing to donate the eyes. 86 (48.3%) students didn't wish to donate eyes as they had objection from family members. 60 (33.7%) students feel that body is ill-treated after death for eye donation. Very few students, 32 (18%) had valid medical reasons for not donating the eyes. 14 (7.8%) students felt that signing eye donation card was like signing death certificate.

Table 3: Distribution of study population according to knowledge regarding eye donation among medical students.

Variables	Males (n=263)		Females (n=204)		Total		X^2-value P-value
	No.	%	No.	%			
1. Ideal time for eye donation (Time after death)							
a.Within 2 hours	46	17	37	18	83		
b.Within 6 hrs	82	31	61	30	143		1.21
c.Within 1 day	57	22	52	25	109		0.75
d.anytime after death	78	30	54	27	132		
2. Donated eyes are used for							
a.Transplant full eyeball	34	13	53	26	87		
b.corneal transplant	148	56	81	40	229		19.69
c.lens transplant	57	22	41	20	98		0.000
d.don't know	24	9	29	14	53		
3. Have you already given your consent for eye donation and signed the eye donation card							
Yes	62	24	45	22	107		0.15
No	201	76	159	78	360		0.69
4. Even relatives can pledge for eye donation after one is dead							
Yes	84	32	73	36		157	0.76
No	179	68	131	64	310		0.38
5. Do you know whom to contact for eye donation							
Yes	98	37	85	42	183		0.93
No	165	63	119	58	284		0.33
6. Is there an eye shortage in India?							
Yes	235	89	193	95	428		4.14
No	28	11	11	5	39		0.04
7. Do you know any eye bank in MP/India							
Yes	166	63	134	66	300		0.33
No	97	37	70	34	167		0.56

It was observed from Table 3, only 82 (31%) males and 61 (30%) females knew that eyes can be removed within 6 hours of death for effective use. 148 (56%) males knew that cornea is used for grafting but among females only 81 (40%) showed any awareness about the topic. Only 62 (24%) males and 45 (22%) females had given consent for eye donation and signed the eye donation card.

179 (68%) males and 131 (64%) females did not know that even relatives can pledge for eye donation. 165 (63%) males and 119 (58%) females did not know whom to contact for eye donation. Majority 235 (89%) males and 193 (95%) females were aware about shortage of eye in India. Among the participants, 97 (37%) males and 70 (34%) females did not know about any existing eye bank in Madhya Pradesh or India.

DISCUSSION

Medical students are the potential part of the community who shall be the role models for the general population. There is a shortage of cornea among developing country

like India and imbalance between demand-supply of cornea for transplant. Reviews have revealed lack of knowledge and negative attitude regarding organ donation amongst health professionals.[8]

In this study, out of total 467 students, 380 (81.4%) were aware about eye donation. In a study by Priyadarshan B et al, among the south Indian population, 50.7% of participants were aware of eye donation.[9] Singh MM et al found that 87.8% of the medical students were willing to be eye donors.[10] Dhaliwal et al reported that 80% of the students were willing to donate eyes.[11] A similar study which was conducted in Bhopal city showed that 98% of the total students had heard about eye donation previously, only 46% of them were willing to pledge their eyes for donation, and merely 22% of them were willing to donate their relatives' eyes.[12] The present study showed that 179 (68%) males and 131 (64%) females did not know that even relatives can pledge for eye donation.

In this study, maximum students 179 (38.3) knew about eye donation through television followed by newspaper, radio or internet. Similar results were shown in the study done by Singh MM et al which showed 77.8% source by television.[10] Tondon R et al and Giri PA et al showed that information by mass media were the main reason of awareness in 61.3% and 58.2% of students respectively.[13,14]

Knowledge regarding the number of hours after death within which eye should be removed for donation was poor (39.7%) in study conducted by Kumar S et al as compared to college students at Hubli.[12,15] In our study, 97 (37%) males and 70 (34%) females did not know about any existing eye bank in MP or India. As against this, Nekar MS et al reported that 74% of the college students at Hubli knew about eye banks in their surroundings.[15]

In our study, we found that 289 (61.9%) were willing to donate the eyes. Only 82 (31%) males and 61 (30%) females knew that eyes can be removed within 6 hours of death for effective use. It is a matter of concern that only 50% of the persons interviewed had knowledge of eye donation, 20% knew about corneal transplantation and only 4.34% of them knew when to donate their eyes. Singh M et al found that 61% of students knew correct time of eye donation.[16]

Our study showed that majority 235 (89%) males and 193 (95%) females were aware about shortage of eye in India. Among the participants, 97 (37%) males and 70 (34%) females did not know about any existing eye bank in MP or India. 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.[10] 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 relatives can pledge for eye donation. 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.[12]

CONCLUSION

The present study concluded that the knowledge regarding eye donation among medical students was good but still few didn't know about the details related to the eye donation. So continuous awareness programmes and camps should be held and should include not only the community population but also for the undergraduate medical students. The present study revealed that most of the students were aware regarding eye donation and most of them were willing to donate their eyes. Those who were not willing to donate their eyes or their relatives eyes had very indifferent reasons which can be changed with health education regarding various myths and misconceptions among medical students and their families and general community.

National Blindness Control Programme is being implemented since many years but still medical students are unaware of the very basics of eye donation. It is thus to be seen that misconceptions persist not only in the general population but also among the medical students which can be easily dealt with during the course of medical education and rigorous health education. Studies are also required to identify existing barriers to eye donation. Medical students will act as role model in the noble cause of eye donation and thus shall help in reducing the demand supply gap for corneal transplants.

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