

Awareness and perception regarding eye donation among under graduate medical College Student in South Western Bihar

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Abstract

Introduction : The statistics on eye donation in India shows that there is a considerable and constantly growing backlog of corneal transplantation. A large proportion of corneal blindness is curable. Well informed medical students could be expected to influence the eye donation rates. 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. **Aim and Objectives**: The study aims to assess the awareness and perception of the undergraduate medical students regarding eye donation. **Methodology** : The present cross sectional study was carried out in the Narayan medical college, Sasaram, Bihar, among the medical students. A pre tested, self administered questionnaire was used to collect data on the background information, awareness and perception regarding eye donation. Self-administered questionnaire included: Socio-demographic data (age, gender, medical specialty, and name of university), characteristics of the eye donation, knowledge of eye donation, and corneal transplantation. **Results** : 61.9% students were willing to promote eye donation in society in future but they lack some basic knowledge on this issue. 68.32% did not know that eye donation is possible only after death. 47.28% did not know that eye donation can still be carried out even if deceased person had not pledged for eye donation. 45.66% and 61.2% students responded that cataract and optic atrophy respectively are contraindication for eye donation. **Conclusion**: Medical students are enthusiastic to promote noble cause of eye donation but they lack some basic knowledge on this issue. Specific efforts are needed to fill these lacunae in their knowledge. This will help us in long term for sensitization of people in society on eye donation

Keywords: Socio-demographic, data, corneal transplantation.

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Introduction

The human body has five organs of the senses, of which the eyes are known as the most essential sensory organs since the eyes provide vision and the ability to see. The eyes are sensitive and highly developed sensory organs that are exposed to numerous diseases, many of which cause vision impairment. The transparent protective coating that covers the anterior part of the eye is the Cornea; it is also a concentrated part of the eye. If it becomes dark, the vision is drastically impaired or lost. This loss of eyesight is known as "corneal blindness"[1]

The National Blindness Control Program (NPCB) has reported that there are currently 120,000 corneal blind people in India, and 25,000-30,000 cases of corneal blindness are added per year. Corneal transplantation, which can only be done by corneal donation, is a major treatment choice for the restoration of vision in those with corneal blindness. The donor eye collection currently in India is about 22,000 eyes per year which is negligible with regard to the donor eye collection[2]

The corneal transplant waiting list is massive. Therefore, the need for an hour in India is to raise awareness of eye donation for the procurement of donor corneas. The first successful corneal transplantation took place in India in 1948. The available treatment option for the corneal blind from corneal diseases is corneal

transplantation for sight restoration. The success rate of corneal transplants has been increased by advanced surgical technology to around 95 percent. Eye donation statistics in India show that there is a large and continuously increasing backlog of corneal transplants. A substantial proportion of corneal blindness may be treated. [3]

It may be predicted that well-informed medical students would impact eye donation rates. A lack of awareness and a negative attitude among the general population are one of the barriers to eye donation. The ability of the medical fraternity to donate eyes would undoubtedly influence the mindset of the general public. Among student groups such as medical college students, nursing college students, etc, there are several studies on understanding of eye donation. But there is still a significant supply gap in demand with respect to eye donation. There are several awareness campaigns operating throughout the nation that will undoubtedly increase the ability to donate eyes. The current study is designed to evaluate the understanding and perception of eye donation among medical students in order to carry out the required intervention programmes during their academic sessions.[4]

Aim and Objective

To assess the awareness and perception of the undergraduate medical students regarding eye donation

Materials and methods

Study Design: An observational study was conducted in Ophthalmology department in Narayan Medical College and Hospital, Jamuhar.

Sample Size: Sample size is calculated depending upon the Awareness of medical students about eye donation. It was found in

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the previous study that awareness about eye donation among medical student was 98.2%(As per study by Patil RK et al⁽⁵⁾) To assess the knowledge of the undergraduate medical students regarding eye donation. the maximum error in the estimate we were willing to tolerate, say ± 5%, at 2-sided test with 95% confidence level ($\alpha=5\%$) and design effect =1, expected sample size is 29 subjects . total 110 subjects will be taken to increase power of the study.

Formulas

Following formulas is used to compute sample size

$$n = deff * Npq / (d^2 / z^2 * (N-1) + pq)$$

where

n is sample size deff is design effect

N is population size

P is estimated prevalence

q= 1-p

d = absolute level of precision

Duration of Study: 6 months.

Nature of Study: Observational study.

Inclusion Criteria

All the roll numbers of the students in a particular batch was imputed and using the random number generator by computer software.

Exclusion Criteria

Students who were absent on the day of study were not taken.

Methods

The current cross-sectional research was carried out among medical students at Narayan Medical College, Jamuhar, Sasaram, Bihar, India. The analysis was carried out in the month of November 2020. Prior to the start of the research, To collect data on the context information, knowledge and perception about eye donation, a pre-tested, semi-structured self-administered questionnaire was used. Self-administered questionnaire included: Socio-demographic data (age, gender, medical specialty, and name of university), characteristics of the eye donation, knowledge of eye donation, and corneal transplantation. Questions were included to calculate awareness and perception about eye donation among medical students

The data were analyzed via Microsoft Excel and SPSS ver20 software. Mean, median, mode, range and standard deviation of individual, and total score of knowledge factors were calculated. Z-scores, mean ± standard deviation and Chi-square test was used. The statistical significance was set at 0.05.

Result

It was seen from Table 1 that total 110 MBBS students participated in the study, out of which 64 (58.18%) were males and 46 (41.82%) female students. 56 (50.9%) students belonged to age group 21-25 years and 54 (49.1%) belonged to age group 17-20 years.

Table 1: Distribution of study population according to socio-demographic characteristics (n=110)

	Males (n=64)		Females (n=46)		Total
	No.	%	No.	%	
Age (in years)					
17-20	31	28.18	23	20.91	54(49.09)
21-25	33	30	23	20.91	56(50.91)
Socio- economic status					
Upper (I)	48	64	27	36	75 (68.18)
Upper middle (II)	16	45.71	19	54.29	35 (31.82)
Lower middle (III)	0	0	0	0	0
Upper lower (IV)	0	0	0	0	0
Lower (V)	0	0	0	0	0
Type of family					
Nuclear	30	46.87	19	41.30	49 (44.54)
Joint	23	35.93	19	41.30	42 (38.18)
Three Generation	11	17.20	8	17.40	19 (17.27)
Religion					
Hindu	52	45.45	36	32.73	88(80)
Muslim	7	6.36	6	5.45	13 (11.82)
Christian	5	4.54	4	3.64	9 (8.18)

The majority of the students were 75 (68.18 percent) in the upper class, followed by 35 (31.82 percent) in the upper middle class and no students belonging to the lower middle lower socio-economic status. The majority of the students were 49 (44.54 percent) from nuclear families, 42 (38.18 percent) from joint families, and 19 (17.27 percent) from three-generation families. 88 (80 percent) were Hindus, followed by Muslim students (11.82 percent) and Christian students (8.18 percent).

Table 2: Distribution of study population according to knowledge and perceptions regarding eye donation among medical students

Variables	Males		Females		Total
	No.	%	No.	%	
1. Do you know about eye donation					
Yes	46	51.68	43	48.32	89 (80.90)
No	16	76.19	5	23.81	21 (19.1)

2. Source of information about eye donation?					
a. Newspaper	14	12.73	21	19.09	35 (32)
b. Television	18	16.36	23	20.91	41 (37)
c. Radio	5	4.54	4	3.64	9 (8.2)
d. Internet	3	2.73	2	1.82	5 (4.54)
e. Public hoardings	3	2.73	1	0.9	4 (3.64)
f. Friends & Relatives	5	4.54	3	2.73	8 (7.27)
g. Doctors & Hospital staff	4	3.64	2	1.82	6 (5.45)
3. Are you willing to donate eyes? Yes					
No	36	32.73	32	29.09	68 (61.9)
	28	54.76	24	45.24	42 (38.1)
4. Are you willing to donate your close relative's eyes?					
Yes	42	56	33	44	75 (68.18)
No	22	62.86	13	37.14	35 (31.82)
5. Is eye donation is possible only after death					
Yes	48	64	27	36	75(68.32)
No	16	45.71	19	54.29	35(31.68)
6. eye donation can still be carried out even If deceased person had not pledged for eye donation					
Yes	34	58.62	24	41.38	58 (52.72)
No	30	57.69	22	42.31	52(47.28)
5. If yes, Reasons for donating eyes.	N= 42		N=33		N= 75
**Multiple responses					
a. Noble cause	33	78.57	31	93.94	64 (85.3)
b. Pleasure to help the blind	19	45.24	17	51.51	36 (48)
c. inspired by article/magazine/lecture	13	30.95	13	39.39	26 (34.67)
d. Influenced by knowledge in academics	23	54.76	21	63.64	44 (58.66)
e. friend/relative received cornea	3	7.14	2	6.06	5 (6.67)
f. friend/relative donated cornea	2	4.76	1	3.03	3 (4)

It is evident from Table 2, that 89 (80.90 percent) out of a total of 110 students were conscious of eye donation. But 21 (19.1 percent) were still not conscious of eye donation. 46 (51.68 percent) were males and 43 (48.32 percent) were females out of those who were conscious. With regard to the gender of the participant, experience of eye donation was found to be statistically relevant (p<0.001). Maximum students, 41 (37) were aware of eye donation via TV followed by newspaper, radio or Internet. Four (3.64%) students were aware of public hoardings. From doctors and medical personnel and academic schools, very few 2 (1.82 percent) came to know. Sixty-eight (61.8%) students were eager to donate eyes, of which 36 (32.73%) were males and 32 (29.09%) were females. 75 students were able to donate the eyes of close relatives (68.18 percent). The students were asked about the different reasons for eye donation. 64 (85.3 percent) of the 68 students who were willing to donate eyes agreed that eye donation was a worthy cause. 36 (48%) were delighted to assist the blind, 26 (34.67%) were encouraged by the article/magazine/lecture. 44 (58.66%) students told they were influenced by the knowledge they received during their academic classes.

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

Variables	Males (n=64)		Females (n=46)		Total
	No.	%	No.	%	
1. Ideal time for eye donation (Time after death)					
a. Within 2 hours	11	17.19	8	17.39	19
b. Within 6 hrs	20	31.25	14	30.43	34
c. Within 1 day	14	21.87	11	23.91	25
d. anytime after death	19	29.69	13	28.26	32
2. Donated eyes are used for					
a. Transplant full eyeball	8	12.5	11	23.91	19
b. corneal transplant	35	54.69	17	36.96	52
c. lens transplant	14	21.87	9	19.56	23
d. don't know	7	10.93	9	19.56	16
3. Are you willing to promote eye donation in society					

a. yes	61	58.65	43	41.35	104(94.6)
b. No	3	50	3	50	6 (5.4)
3. Have you already given your consent for eye donation and signed the eye donation card					
Yes	13	20.31	10	21.74	23
No	51	79.69	36	78.26	87
4. Do you know whom to contact for eye donation					
Yes	23	35.94	19	41.30	42
No	41	64.06	27	58.70	68
5. Is there an eye shortage in India?					
Yes	56	87.5	42	91.3	98
No	8	12.5	4	8.7	12
6. Contraindication for eye donation					
Cataract	31	62	19	38	50(45.66)
Optic atrophy	44	65.67	23	34.33	67(61.2)
Others	32	57.14	24	42.86	56(50.91)
7. Do you know any eye bank in Bihar /India					
Yes	40	62.5	30	65.22	70
No	24	37.5	16	34.78	40

Just 20 (31.25 per cent) males and 14 (30.43 per cent) females learned from Table 3 that eyes could be removed for successful use within 6 hours of death. 35 (54.69 percent) males knew that the cornea was used for grafting, but only 17 (36.96 percent) among females showed any knowledge of the issue. Just 13 (20.31%) males and 10 (21.74%) females had given eye donation consent and signed the eye donation card. For eye donation, 41 (64.06 percent) men and 27 (58.70 percent) women did not know who to whom to contact. Among the participants, 24 (37.5%) males and 16 (34.78%) females did not know about any existing eye bank in Bihar or India.

Discussion

The future aspect of the culture that would be role models for the general public is medical students. Among developing countries such as India, there is a lack of cornea and an imbalance between the availability of cornea for transplant demand. Reviews have shown a lack of awareness and a negative attitude among health professionals about organ donation.[6]

In this research, 89 (80.90 percent) out of a total of 110 students were conscious of eye donation. But 21 (19.1 percent) were still not conscious of eye donation. 46 (51.68 percent) were males and 43 (48.32 percent) were females out of those who were conscious. In a study by Priyadarshan B et al, 50.7 percent of participants were aware of eye donation among the South Indian population. 7 Singh MM et al found that 87.8 percent of medical students were willing to be eye donors.[8] Dhaliwal et al recorded that 80% of the students were willing to donate eyes[9] A similar study conducted in Bhopal City showed that 98% of the total students had previously heard of eye donation, only 46% were willing to pledge their eyes for donation, and only 22% were willing to donate the eyes of their relatives.[10]

In this study, 41 (37) Maximum students were aware of eye donation via TV followed by newspaper, radio or Internet. Four (3.64%) students were aware of public hoardings. Very few (1.82%) came to know about it from doctors and medical personnel and academic classes. Similar findings were seen in the study conducted by Singh MM et al, which showed 77.8 percent TV source.8 Tondon R et al and Giri PA et al showed that 61.3 percent and 58.2 percent of

students were the key reason for knowledge via mass media information.[11,12]

In our study, we found that 68 (61.82%) were willing to donate the eyes. Just 20 (31.25 per cent) males and 14 (30.43 per cent) females know that eyes could be removed for successful use within 6 hours of death. It is a matter of concern because only 50% of the people interviewed were aware of eye donation, 20% were aware of corneal transplantation, and only 4.34% knew when to donate their eyes. Singh M et al found that 61 percent of students knew the right donation period for the eye.[13]

Among the participants, 24 (37.5%) males and 16 (34.78%) females did not know about any existing eye bank in Bihar 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.[8]

Conclusion

The present study concluded that the awareness of eye donation among medical students was strong, but few were still unaware of the eye donation information. Continuous awareness activities and camps should also be held and should include not just the community population, but also medical students from undergraduate schools. The present study showed that most students were aware of eye donation and were willing to donate their eyes to most of them. 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.

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