

Awareness of eye donation among medical and nursing students: A comparative study

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Purpose: Cognizant and well aware medical and nursing students are expected to influence and positively mold the eye donation rates in India. Keeping this in view, this study was designed to assess and compare eye donation awareness among medical and nursing students. **Methods:** A cross-sectional and comparative study undertaken on the occasion of eye donation fortnight among 112 medical and 115 nursing students. A pretested semi-structured questionnaire on eye donation was given to each student after getting informed consent. The software used for analysis of data was SPSS version 22.0. **Results:** All the medical students and 91.3% of nursing students ($P < 0.0016$) had heard about eye donation. Eye donation fortnight is celebrated every year to create awareness was known to 42% of medical students and 29.5% of nursing students ($P < 0.05$). Television, newspaper, magazines, and posters were found to be important sources of information in both groups. Eye donation can give vision to the blind was the primary motivational force both among medical and nursing students ($P < 0.001$). The ideal time of eye donation is within 6 h of death was known to 69% of medical students and 60.9% nursing students. Lack of awareness and objection of family members are the two significant perceived responses to non-donation in both groups. 88.4% of medical students and 79.1% of nursing students are willing to donate their eyes in future. **Conclusion:** The awareness of eye donation among medical students is better than nursing students. However, the willingness to pledge their eyes is almost equal in both groups.

Key words: Eye donation, medical students, nursing students

Bilateral corneal blindness is one of the most common causes of blindness, accounting for 12% of the world's blind, making it a global peril. In India, the scenario is quite similar, as 14% of its total blind population comes under the same category.^[1,2] The list of significant causes includes microbial keratitis, trachoma, vitamin A deficiency, ophthalmia neonatorum, harmful traditional medicines, onchocerciasis, leprosy and ocular trauma.^[3-6] Approximately 90% of the global cases of ocular trauma and corneal ulceration leading to corneal blindness are reported from developing countries.^[7] Approximately 1.9 million corneal blind patients are already there across India, 20000 being added each year.^[8,9] This amounts to a requirement of 2.77 lakh corneas annually to combat corneal blindness, but to our disquiet, the annual procurement of corneas is mere 63,256 in 2016–2017.^[10] This explains the present state of dismay in the scenario of cornea transplantation in a developing country like India. The factors affecting the procurement of corneas and the public attitude towards eye donation have recently received significant heed in the developed world. Still, not much has been brought out from the developing world.^[11]

Since the present medical and nursing students are the evolving health-care providers for the community, cognizant and well aware medical and nursing students of the hospitals

are expected to influence and positively mold the eye-donation rates. Hence, this study was designed to assess medical and nursing students' awareness and attitude towards eye donation and their willingness to pledge their eyes.

Methods

A cross-sectional and comparative study was carried out in a tertiary health care center on the first day of celebration of eye donation fortnight in 2018. Fourth-year medical students and final year nursing students were chosen as the participants because ophthalmology was a subject in their curriculum. The content and the purpose of the study were explained to them and consent was obtained. They were asked to answer a pretested, close-ended, semi-structured questionnaire in English consisting of 21 questions, including the participants' demographic profile, awareness and sources of information about eye donation, motivational force, the reason for non-donation, pledging and their willingness towards eye donation. All the questions were validated by their curriculum content and verified by a teaching faculty. The total time allotted to complete the questionnaires was 45 minutes. Utmost

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care was taken to avoid any discussion among the participants. The responses of 112 medical students and 115 nursing students who completed more than 50% of the questionnaires were considered for further analysis. The software SPSS version 22 was used for data entry and analysis. Fisher's exact test, a variant of the Chi-square test, was done to compare their test performance. The value of $P < 0.05\%$ was taken as statistically significant. The non-responded questions by the students were taken as a negative response for analysis purposes.

Results

Of 227 respondents, 100% medical students and 91.3% of nursing students ($P < 0.0016$) were well apprised of eye donation. Awareness about eye donation fortnight was noted in 42% of medical students and 29.5% of nursing students ($P < 0.0546$). 69% of medical students and 60.9% of nursing students ($P < 0.266$) knew that the ideal time for eye donation is within 4–6 h of death. 88.4% of medical students and 79.1% nursing students ($P < 0.07$) were found to be enthusiastic about donating eyes [Table 1].

Of all responses, as mentioned in Table 2 'Donation can give vision to blind' was the primary motivational force for eye donation in 91% of medical and 78.2% of nursing students ($P < 0.009$). 81.8% of medical students and 60% of nursing students ($P < 0.0001$) thought eye donation is a noble work. 25.8% medical and 5.2% nursing students ($P < 0.0001$) had mentioned that they had been influenced by reading articles whereas 10.7% medical students and 12.1% nursing students ($P < 0.08357$) were motivated by lectures. 12.5% medical and 11.3% nursing students ($P < 0.08392$) have confirmed that any friend/relative has donated or received a donated eye [Table 2].

Approximately 54% of medical and 38.2% of nursing students ($P < 0.0238$) had knowledge that prior pledging is mandatory before eye donation. Surprisingly, a higher number of nursing students that is 55.6% in comparison to 46% of medical students ($P < 0.1450$) knew that a family member can donate the eyes of a deceased in the absence of prior pledging. 89% of medical and 63.4% of nursing students ($P < 0.0001$) had an insight about the scarcity of eye transplantation. More nursing students that are 72.1% compared to 60% of medical students ($P < 0.0515$) had an idea about the organ donation act. 84% of medical

students and 64.3% of nursing students ($P < 0.0009$) were well informed about eye banks [Table 3].

Lack of awareness (among 87.5% medical and 76.5% nursing students with $P < 0.0384$) & objection of family members (among 61.6% medical and 36.5% of nursing students with $P < 0.0002$) were cited as the two most common perceived reasons of non-donation. 32.1% of medical students and 26% nursing students ($P < 0.3806$) who did not want to pledge to donate eyes had religious restrictions. 30.3% of medical students and 20% of nursing students ($P < 0.092$) disliked the idea of separating their eyes from their body [Fig. 1].

Television & newspapers were found to be the two most common sources of information regarding eye donation in both Groups [Fig. 2]. Fig. 2 depicts the various sources of information about eye donation in both medical and nursing students.

The male to female ratio among medical and nursing students was 1.3:1 and 1:10.5 respectively in the present study.

Approximately 22.3% of medical students and 15.6% of nursing students ($P < 0.236$) did not respond to questions on awareness of eye donation fortnight. The question on knowledge about the donor's ideal time of eye collection was not answered by 6.2% of medical students and 3.4% of nursing students ($P < 0.370$) [Table 4]. Other non-responded questions were depicted in Table 4.

Discussion

The discussion on the comparative analysis of the awareness regarding eye donation between medical and nursing students has been done in a tabulated way with the previous studies [Table 5].

The concept of the eye donation, which is performed after the death of a deceased, was known more to medical students (100%) than nursing students (91.3%) with a value of $P < 0.05\%$ in our study. However, Jayshree MP *et al.* in 2017 has found that the knowledge of the eye donation concept is equal in both medical and nursing students.^[12] Probably the educational background of medical students is more responsible for this figure.

Table 1: Awareness & Willingness for eye donation

Parameter	Medical students (n=112)	Nursing students (n=115)	P
Know about eye donation	100% (112)	91.3% (105)	$P=0.0016$
Know about eye donation fortnight	42% (47)	29.5% (34)	$P=0.0546$
Ideal time of eye collection is 4-6 h of death.	69% (77)	60.9% (70)	$P=0.2663$
Willingness to donate eyes	88.4% (99)	79.1% (91)	$P=0.0724$

Table 2: Motivational force for eye donation

Responses	Medical students (n=112)	Nursing students (n=115)	P
Eye donation is noble work	81.8% (97)	60% (69)	$P < 0.0001$
Pleasure to help blind	75.8% (85)	65.2% (75)	$P=0.0829$
Influenced by reading an article	25.8% (29)	5.2% (6)	$P < 0.0001$
A Friend or relative has donated/received a donated eye.	12.5% (14)	11.3% (13)	$P=0.8392$
Influenced by lecture	10.7% (12)	12.1% (14)	$P=0.8357$
Donation can give vision to the blind.	91% (102)	78.2% (90)	$P=0.0096$

Approximately 69% of our medical students knew that eye should be collected within 4–6 h of death, which is relatively lower than other studies.^[12,13] This necessitates the inclusion of topics like eye donation as a particular chapter in the MBBS curriculum. However, the nursing student’s knowledge in this regard in our study is relatively high compared to Gupta A et al.^[14]

The students’ main motivational drive for eye donation in this study was the belief that eye donation can give vision to the blind. But in the study by Gupta et al. in 2009, the majority

of the students thought that eye donation is a noble work that acted as a significant drive for them. This difference could be due to a change in perception and knowledge during the span of almost a decade.

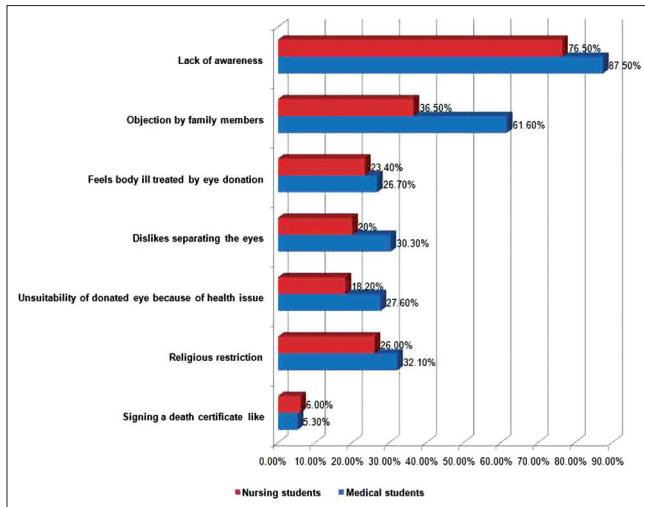


Figure 1: The perceived reason for non-donation

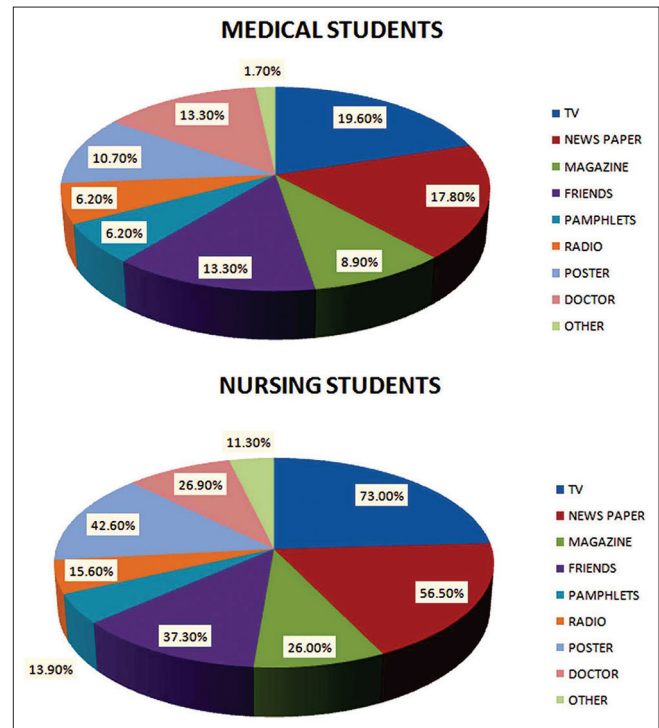


Figure 2: Sources of information

Table 3: Pledging & Technical aspect of eye donation

Response	Medical students	Nursing students	P
Prior pledging is mandatory before eye donation	54% (60)	38.2% (44)	P=0.0238
A family member can donate eyes of a deceased person even in the absence of pledging.	46% (51)	55.6% (64)	P=0.1450
Know about scarcity of eye transplantation	89% (100)	63.4% (73)	P<0.0001
Idea about organ donation act	60% (67)	72.1% (83)	P=0.0515
Heard about eye bank	84% (94)	64.3 (74)	P=0.0009

Table 4: Non-Response rate of the questionnaires

Questionnaires not responded	Medical students (n=112)	Nursing Students (n=115)	P
Have you heard about eye donation?	0% (0)	1.7% (2)	P=0.4979
Do you know about eye donation fortnight?	22.3% (25)	15.6% (18)	P=0.2367
Ideal time for eye collection from a donor?	6.2% (7)	3.4% (4)	P=0.3705
Are you willing to donate your eyes?	3.5% (4)	5.2% (6)	P=0.7485
Motivational force for eye donation?	1.7% (2)	1.7% (2)	P=1.0000
Prior pledging during lifetime is mandatory for eye donation?	7.1% (8)	6.9% (8)	P=1.0000
A family member can donate a deceased person’s eyes even in the absence pledging of the person?	5.3% (6)	3.4% (4)	P=0.5351
Do you know there is a scarcity of eye transplantation in India?	1.7% (2)	1.7% (2)	P=1.0000
Do you know about eye bank?	1.7% (2)	1.7% (2)	P=1.0000
Do you know about the organ donation act?	2.6% (3)	2.6% (3)	P=1.0000
What is the perceived reason for the non-donation of eyes?	3.5% (4)	3.4% (4)	P=1.0000
What is the source of information for eye donation?	1.7% (2)	1.7% (2)	P=1.0000

Table 5: Comparative analysis between various studies with the present study

Study	Know about eye donation		Know about the ideal time of eye collection (4-6 h)		Motivational force for eye donation		A family member can also donate an eye in the absence of pledging		Perceived reason for non-donation of eye		Sources of information		Willingness to donate eye	
	*M	†N	M	N	M	N	M	N	M	N	M	N	M	N
Present study	100%	91.3%	69%	60.9%	Donation can give vision to blind		46%	55.6%	-Lack of Awareness -Objection by Family member.		‡TV §N.P	TV N.P	88.4%	79.1%
Jayshree MP et al. (2017)	93%	93%	93%	83%	-				Disfigurement of a dead body		TV N.P	'Doc	82%	81%
Vidusha et al. (2015)	99.3%		86.8%		-		29.2%		Objection by family members		TV N.P		82.7%	
Anita Gupta et al. (2009)		96.8%		38.2%	Eye donation is a noble work.		8.5%		Disfigurement of dead body			TV N.P		57.4%

*Medical students; †Nursing students; ‡Television; §newspaper; †Doctor

Despite the measures taken to create awareness among the public to improve the eye donation, the gap between demand and supply of cornea in our country is overwhelming. Pledging is a public awareness campaign to enhance eye donation rates in India. So far, the concept regarding pledging is concerned; medical students were more aware than nursing students in our study. But to our surprise, it was observed that nursing students had more idea that a family member can also donate an eye in the absence of pledging. Further, the knowledge regarding pledging is much higher in our medical and nursing students in comparison to previous studies.^[13,14] There is a scarcity of eye transplantation in India, and eye bank establishment is necessary to combat this problem. This information was known more to our medical students than nursing students. But a law like an organ donation act exists to monitor eye collection was known more to the nursing students than medical students.

Every year eye donation fortnight is celebrated in India from 25th august to the 8th of September since 1986 following the pledging of eyes by the late Prime Minister of India, Shri Rajiv Gandhi, on his birthday, i.e., on 25th August.^[15] The celebration of eye donation fortnight is a type of innovative idea to create awareness of eye donation. We took advantage of this occasion and conducted this study.

Lack of awareness and objection by family members were found to be the most perceived reasons for non-donation among medical and nursing students. But in previous studies, a dead body's disfigurement was found to be a significant perceived cause.^[12,14] It shows that the myth regarding eye donation influences little in this part of the world, but the family members need to be more aware and convinced of eye donation after death.

TV was the strongest and the most common source of information for eye donation in both the groups, which is consistent with previous studies.^[12-14,16] In the present day scenario, apart from media, other social networking sites can also play a significant role in creating awareness of eye donation. This fact should be taken into consideration in the present era.

Approximately 88.4% and 79.1% of medical and nursing students respectively were willing to enroll their names for eye donation in the future, which was quite heartening. This is consistent with other studies.^[12,14,17]

During the questionnaires' preparation, the chance of non-response should be kept in mind. In our study, we got the maximum number of non-response questions on knowledge about eye donation fortnight. This may be due to hesitance to show their ignorance. Therefore the questions should be framed in such a way that one gets the maximum response to make the study a significant one.

Conclusion

We found that the awareness of various parameters is higher among medical students compared to nursing students. Nursing students of any hospital are the spine of the health care system and can play a significant role in motivating patients and their next of kin towards eye donation. There is a need for regular eye donation awareness programs not only in the community but even for the medical and nursing students in hospitals and medical colleges. This will ultimately intensify

the country's eye donation program to help cope with the backlog in the long term. In an eye donation campaign, the nursing students could be actively involved as volunteers and after proper training in counseling techniques; they can also act as counselors for eye donation. To increase eye donation, it is essential to enhance awareness among potential donors and dispel their misconceptions. Hospital deaths are a good source of fresh tissue for treating corneal blindness, but hospitals fail to exploit this resource adequately. Hence, cognizant and well aware medical and nursing staff can play a vital role in influencing the patient party and persuade them for this noble cause.

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Conflicts of interest

There are no conflicts of interest.

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