

A Study Analyzing the Awareness and Willingness of Eye Donation among Undergraduate Medical Students

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Abstract

Aim: To assess and compare the awareness and willingness of eye donation among the medical students before and after exposure to the subject of Ophthalmology.

Methods: The study was a cross-sectional descriptive type of study conducted among medical students from first to final year MBBS of a tertiary care hospital and medical college, in the city of Pune. The study tool was a structured e-questionnaire and the data was analyzed statistically using SPSS Software Version 20.

Results: It was observed that majority of the students (99%) knew the fact that eyes can be donated. Students (85%) were well aware of the fact that eye donation must be done ideally within 6 hours of death. Also, only a few had pledged (12%) for eye donation, the main reason among the remaining study group was – not yet thought of. A remarkable number of them (89%) were aware of the fact that there is shortage of donors in India.

Conclusion: The study highlights the importance of education about eye donation and also emphasizes the need of motivation to increase the number of eye donations by empowering the medical students.

Keywords: Blindness, Transplantation, Eye Donation, Medical students, Awareness.

Abbreviations: HLA – Human Leucocyte Antigen

1. INTRODUCTION

Eyes are the window to the world. It is a highly specialized and sensitive organ and any dysfunction in this organ often leads to problems ranging from impairment of vision to blindness. According to the visual impairment study (2010) about 285 million people are visually impaired of which 39 million are blind [1]. Damage to cornea is the second most common cause of blindness worldwide, after cataract; and their number is increasing significantly every year [2].

India has the world's largest proportion of corneal blindness and so tackling the same is a global priority and India is the epicenter of this movement [3]. The number of corneal blinds in India awaiting transplantation is increasing considerably every year and so there is a need to increase the procurement of donated corneas as well [4]. According to the NPCB, the current cornea collection in India is 63,256 as in 2016-17 with a utilization rate ranging between 25% -

60% [5] only because a significant proportion of donated corneas are unsuitable for transplantation and hence often not used. Based on the data of available safe donors, it is estimated that India needs 2, 77,000 donor eyes to perform 1, 00,000 corneal transplantations in a year [6]. Therefore, there is an immense need to increase the awareness about eye donation among the people of India. The medical students are the immediate health care providers for the community and hence can form a major source for significantly increasing the rate of donation and cornea procurement. In view of the same, this study was conducted to analyze the awareness and willingness of eye donation among the medical students since, in the future they will be the first source of contact for patients.

2. MATERIALS AND METHODS

2.1. Ethical Approval

This study was conducted under the principles and guidelines and in accordance with the tenets as outlined in the Declaration of Helsinki (2008).

2.2. Study

This cross-sectional descriptive study was conducted over a period of one month in July 2019 at a tertiary care hospital and medical college. A total of 378 undergraduate medical students were included in the study, after obtaining a due written informed consent. Being an e-questionnaire study, those undergraduate medical students not possessing any electronic communication devices were excluded from the study. Basic demographic data including gender, age, professional academic year of MBBS and participant's residence was recorded. Participants were divided into two groups; Group I included students not exposed to the subject of Ophthalmology (students from academic professional year 1st and 2nd) and Group II included students already exposed to the knowledge and subject of Ophthalmology (students from academic professional year 3rd and 4th). The participants of the study were asked to respond to a close-ended e-questionnaire circulated to their electronic communication devices through an official channel. The participants were asked to select appropriate answers from the given options for each question in the structured e-questionnaire. An appropriate guideline for preparation of this e-questionnaire was obtained from various previously published reports for a study

population [7-12]. The e-questionnaire was designed to assess the basic knowledge, awareness and willingness of medical students about eye donation and the responses were recorded electronically and submitted online. The e-questionnaire had a total of 21 questions which aimed at assessing the awareness and knowledge regarding eye donation and also their willingness / unwillingness of the same.

2.3. Statistical Analysis

Data as obtained from the study population was subjected to analysis using SPSS (Statistical Package for Social Sciences) Version 20. Chi-square test was used to calculate p-value and compare the awareness and knowledge about eye donation between the two groups.

3. RESULTS

Out of the total 378 participants in the study, 174 (46%) were males and 204 (54%) were females. There were total of 224 students in group I (104 males and 120 females) and 154 students in group II (70 males and 84 females). All of the participants were aware of the fact that eye as an organ can be donated. Mass media was found to be the most common mode of awareness about eye donation in both the groups, 52.6% and 49.3% respectively; followed by organ donation campaigns as shown in Figure 1 and 2.

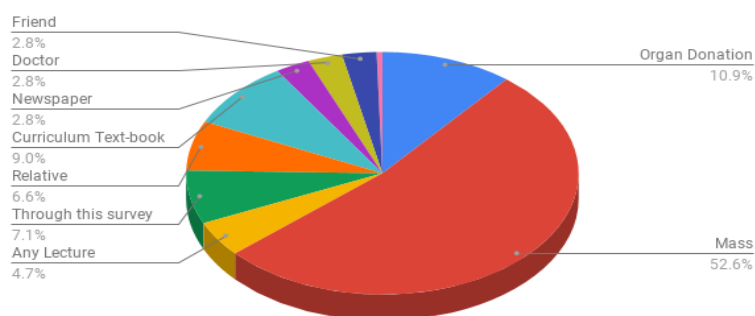


Figure1: Mode of awareness about eye donation in Group I

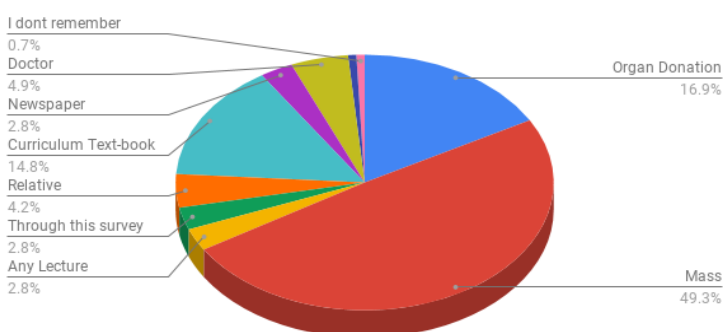


Figure2: Mode of awareness about eye donation in Group II

Both the groups had an equally appropriate knowledge and awareness about eye donation facts such as – there is no disfigurement of face following eye donation, the recipient’s and the donor’s names remain anonymous and that the next of kin can give consent for eye donation.

However, both the groups did not show sufficient amount of awareness about certain facts of eye donation. Table 1 highlights the percentage of students who rightly answered the facts:

Table1: Percentage of students aware of eye donation facts in both groups (not statistically significant)

Eye Donation Facts	Group I	Group II
Eyes can be removed at donor’s house	33.6%	43.1%
Ideal time interval between death and eye donation is ≤ 6 hours	60.2%	67.8%
After death, Eye bank needs to be contacted for eye donation	37.9%	54.4%
Corneal transplant does not need HLA matching	52.6%	58.1%
All donated eyes cannot be used for transplantation	57.8%	59.5%
Pseudophakic patients can donate eyes	31%	39%

However, the percentage of medical students aware of the facts are still considerably less with no statistically significant difference between the two groups ($p > .05$) with respect to the above-mentioned questions, as calculated by Chi-Square test.

The group II, being exposed to the subject of ophthalmology showed some significantly higher degree of knowledge ($p < .05$) than group I regarding eye donation as depicted in the table 2:

Table2: Percentage of students aware of eye donation facts in both groups (statistically significant)

Eye Donation Facts	Group I	Group II	p-value
After death, eye bank needs to be contacted for eye donation	37.9%	54.4%	.002
Any RMP trained in eye donation can collect eyes after death	64.5%	90.6%	<.001
People with refractive error can donate eyes	12%	67%	<.001
Patients with hypertension and/or diabetes can donate eyes	41%	65%	<.001

Both the groups knew well that there is no age limit for eye donation (63% in group I and 72.5% in group II) and also that one donor can provide vision to two blind people (85.8%). 87% of the students were aware that patients with HIV/Malignancy cannot donate eyes. Cornea is the most commonly used transplantable part of the eye was known to only 68% students in both the groups. They all were well aware (96.7%) that India is presently facing shortage of eye donors.

is highly dependent on people willing to pledge for eye donation and the relatives willing to honor that pledge after death of that person. So, there is an urgent and immense need of increasing the procurement rates and the number of eye donations, especially in India. The knowledge, attitude, awareness of medical students plays a crucial role in promoting eye donations as they are the future health care providers of our country. A well-informed medical professional who is often the immediate and the first point of contact for the patient and their relatives, with his knowledge and awareness can motivate the families towards eye donation. In the same regard, this study was undertaken to assess and analyze the awareness and willingness of eye donation among the undergraduate medical students.

On assessing the willingness of the participants, it was found that only 6.6% of the students in group I and 18.2% students in group II were registered eye donors. The main reason for not being a registered eye donor was stated as “Not yet thought of” followed by “Lack of awareness”. However, about 73% of the students in both the groups were willing to pledge for eye donation.

4. DISCUSSION

The statistics on eye donation in India are quite discouraging for people blind from corneal diseases as it indicates that there is a considerable and constantly growing backlog of corneal transplantation [13, 14]. Though the corneal transplantation offers a potential source of vision for people blind with corneal causes, it

In our study, all the participants (total 378) were well aware of the fact that eyes can be donated. In a study by Singh M et al carried out among the medical students at Ambala it was found that 96.6% of the students were aware that eyes can be donated [15] while in a study by M Vallinayagam et al 100% students were aware of the fact [16]. The most common mode of awareness about eye donation was mass media followed by organ donation campaigns, thereby emphasizing the power of media to reach

masses and create awareness about eye donation. Similar results were obtained in a study by M Vallinayagam at Puduchhery (2017) where television and advertisements in hospitals were the major source of awareness [17].

Both the groups had an equally appropriate knowledge and awareness about eye donation facts such as - there is no disfigurement of face following eye donation, the recipient's and the donor's name remain anonymous and that the next of kin can give consent for eye donation ($\approx 85\%$). Amongst a paramedical group in Maharashtra, it was found that 75% of them felt that the next of kin can give consent for donation [18].

Knowledge and awareness about the ideal time interval between death and eye donation being ≤ 6 hours was 60.2% and 67.8% in group I and II respectively. In a study by Biswa J et al, the awareness in the school students regarding the same was 32.1% [19]. This difference is attributed to the fact that medical students are more exposed to such knowledge than school children. Both the groups knew well that there is no age limit for eye donation (63% in group I and 72.5% in group II). In a study by Kumari done at Bengaluru revealed that 170 out of 200 life science students believed that there is no age limit for eye donation [20]. 85.8% of the students in our study knew that one donor can provide vision to two blinds, while in a study by Man has et al only 21% patients knew this fact [21].

Group II (65%) was better aware than group I (41%) about the fact that people with diabetes, hypertension can donate eyes while 86% of participants in both the groups were aware that patients with HIV/Malignancy cannot donate eyes. All deceased people can be considered as donors except when the cause of death or other factors might pose risk factors for the individuals performing the enucleation [22]. Suresh K et al in a study found that HIV (70.59%), cataract (14.59%), and diabetes (9.88%) are contraindications as perceived by participants [23] while other authors in their study found hematological malignancies, neurodegenerative conditions, non-haematological malignancies, chronic renal failure, corneal disease, ocular infections, ocular tumours, uveitis, glaucoma, HIV and Hepatitis-B infection as a contraindication for eye donation [24]

The group II (67%) was aware that patients with refractive error can also donate eyes. This

awareness was significantly less in group I where it was only 12%. In a study among prefinal and final year medical students by Vidusha et al, 68.8% of them were aware of this fact [25]. This can be attributed to the fact that the group II students and those included in study by Vidusha et al had better knowledge of ophthalmology.

5. CONCLUSION

The present study reveals that medical students are aware about eye donation and most of them are inclined to pledge for eye donation. Some differences in the knowledge among the two groups can be due to the lack of exposure to the subject of ophthalmology. There are certain misconceptions and lacunae in their knowledge about eye donation which needs to be addressed. The willingness for eye donation among the study participants is a positive ray of hope in tackling the problem of shortage of cornea in India.

There is a need to enhance the knowledge and motivate the medical students to make sure that they become counsellors for eye donation and a symbol of change in the near future.

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