

Outcome of Involvement of MBBS Interns in Eye Donation in Hospital Cornea Retrieval Programme (HCRP)¹Dr. Kavitha C V, Professor and HOD, Department of Ophthalmology, HIMS, Hassan.²Dr Pavana Acharya, Assistant Professor, Department of Ophthalmology, HIMS, Hassan.³Dr Sahana K, Post Graduate Student, Department of Ophthalmology, HIMS, Hassan.⁴Dr Sandeep K, Associate Professor, Department of Ophthalmology, HIMS, Hassan.⁵Dr. Deepika Patil, Post graduate student, Department of Ophthalmology, HIMS, Hassan.⁶Dr. Shalini Mahadev, Post graduate student, Department of Ophthalmology, HIMS, Hassan.**Corresponding Author:** Dr Sahana K, Post Graduate Student, Department of Ophthalmology, HIMS, Hassan.**How to citation this article:** Dr. Kavitha C V, Dr Pavana Acharya, Dr Sahana K, Dr Sandeep K, Dr. Deepika Patil, Dr. Shalini Mahadev, “Outcome of Involvement of MBBS Interns in Eye Donation in Hospital Cornea Retrieval Programme (HCRP)”, IJMACR- April - 2025, Volume – 8, Issue - 2, P. No. 40 – 46.**Open Access Article:** © 2025 Dr Sahana K, et al. This is an open access journal and article distributed under the terms of the creative common's attribution license (<http://creativecommons.org/licenses/by/4.0>). Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.**Type of Publication:** Original Research Article**Conflicts of Interest:** Nil**Abstract****Purpose:** To compare Number of Eye Donation with and without involvement of Interns in Hospital Cornea Retrieval Programme (HCRP) and to compare the outcome in terms of Grade of Cornea, Utility, Death to Eye collection time.**Methodology:** It is a Retrospective study in which data collected from July 2021-June 2022 is compared between data collected from July 2022-June 2023. From July 2022 Interns were instructed to motivate for eye donation from at least 2 hospital deaths within the duration of their 15 days posting.**Results:** Total number of Eye Donation done between July 2021-June 2022 was 36, out of which 23 corneas(64%) were of Grade 1, 9 corneas(25%) were of Grade 2, 3 corneas(8%) were of Grade 3 and

1 cornea(3%) was Grade 4. Average time interval between death to eye collection was 2 hours. Out of total 36 Corneas, 11 corneas(31%) were utilized for Therapeutic Penetrating Keratoplasty (TPK), 9 corneas(25%) were utilized for Optical Penetrating Keratoplasty (OPK) and 16 corneas(44%) were used for Practice with Utility ratio being 56%. The Total number of Eye Donation between July 2022-June 2023 was 76. Out of which 43 corneas(56%) were of Grade 1, 25 corneas(33%) were of Grade 2, 6 corneas were of Grade 3(8%), 2 corneas(3%) were of grade 4. Average time interval between death to eye collection was 2 hours. Out of Total 76 corneas 27 corneas(36%) were utilized for TPK, 17 corneas(22%) were utilized for OPK and 32(42%) corneas were used for Practice with Utility ratio being 58%.

Conclusion: Involvement of interns in HCRP doubled the number of Eye collection. However, there is no significant difference in terms of Grade of Cornea, Utility, Death to Eye collection time. The inclusion of interns as active motivators in HCRP can serve as a sustainable and impactful strategy to bridge the existing gap between cornea demand and availability, ultimately helping to reduce the burden of corneal blindness in India.

Keywords: Eye Donation, HCRP, MBBS Interns.

Introduction

Globally, around 6 to 8 million people suffer from blindness due to corneal diseases.¹ In India, approximately 6.8 million individuals have vision poorer than 6/60 in at least one eye due to corneal conditions.^{2,3} Currently, 1,20,000 people are affected by corneal blindness, with an additional 25,000 to 30,000 new cases emerging each year.⁴ To combat this widespread issue, around 2,50,000 corneas are required annually. However, only about 25,000 corneas are donated each year, resulting in a significant shortfall of 2,25,000 corneas annually.⁵

The primary method for restoring vision and addressing the high prevalence of corneal blindness is corneal transplantation. This procedure largely relies on the voluntary willingness of eligible donors to contribute to eye donation.¹ Voluntary eye donation remains the primary method for cornea retrieval. Raising public awareness and encouraging eye donation are crucial strategies to boost the number of donors.

The eye donation rate in India remains low, at just 0.9% of the mortality rate. A significant push is needed to transform positive intentions into concrete actions.⁶ A well-structured strategy is urgently needed to tackle the critical shortage of corneas available for transplantation.

While awareness of eye donation varies from 28% to 35% among rural residents, it reaches 100% among medical students. Across 25 studies, the average willingness to donate stands at 59.6%.⁷

Approaching a grieving family to discuss eye donation is a challenging and sensitive task. Both the family and the counselling team are deeply affected by the mourning process, making the request for donation one of the most difficult aspects of the entire procedure.⁸ The Hospital Cornea Retrieval Programme (HCRP) has proven to be an effective approach in several secondary and tertiary hospitals, where trained counsellors work within the hospital setting to motivate families for eye donation.

HCRP aims at the retrieval of cornea from eligible donors after death in the hospital, which involves direct motivation of the family members of the deceased actively by Professionally-trained counsellor, called Eye Donation Counsellor (EDC). Eye Donation Counsellors are stationed at multi-specialty hospitals round the clock and approaches family members in the Hospital immediately after death of the deceased brief them about eye donation and then motivate them for giving consent for donation.

With proper and thorough counselling, these potential donors could form a substantial pool of eye donors.⁵ The Hospital Cornea Retrieval Programmes (HCRPs), which place professional grief counsellors in hospitals to encourage families to donate eyes, serve as a crucial catalyst for promoting eye donations.⁹ In absence of Grief counsellors, the Hospital personnels (Doctors, Nurses, Hospital social workers), especially in Intensive care unit, Trauma wards, where chances of death are high, can involve themselves in this noble work. Given their medical background and close interaction with patients, even MBBS interns can be involved in HCRP

which might significantly contribute to increasing corneal donations and addressing the shortfall.

This study aims to evaluate the impact of involving MBBS interns in eye donation efforts within the HCRP framework.

Objectives of the Study

1. To compare the Number of Eye Donation with and without active involvement of MBBS Interns in HCRP.
2. To compare outcomes of Eye donation in terms of Grade of Cornea, Utility ratio, Death to Eye collection time.

Materials and Methods

It is a Retrospective Comparative study carried out in tertiary care centre, HIMS Hassan in which data collected from 1st July 2021 to 30th June 2022 is compared between data collected from 1st July 2022 to 30th June 2023. Institutional ethical clearance was obtained. No financial support and conflicts of interest Eye Donation done in 2 years (July 2021 to June 2023) among Hospital Deaths were included

From July 2022 Interns who were posted in Ophthalmology were instructed to motivate for eye donation amongst attendants of critically ill and deceased patients and to do at least 2 eye donation from Hospital deaths during their 15 days postings.

The Comparison is done between 2 groups Group A and Group B

Group A-Eye Donation done between 1st July 2021 to 30th June 2022.

Group B –Eye Donation done between 1st July 2022 to 30th June 2023(With motivation by MBBS Interns).

Comparison is done between 2 groups in terms of

1. Number of Eye collection Done
2. Grade of Cornea

3. Utility of Cornea

4. Time interval between Death and Eye collection

Grades of Cornea¹⁰

Grade of Cornea	Features
1	No epithelial defects Crystal clear stroma No arcus senilis No folds in Descemet's membrane No defect in endothelium
2	Slight epithelial haze Clear stroma Very slight arcus Few light DM folds No defects in endothelium
3	Moderate epithelial defects Moderate arcus senilis Obvious DM folds
4	Obvious epithelial defects Moderate to heavy stromal cloudiness Heavy DM folds Heavy arcus senilis Moderate endothelial defects

Utility of the Cornea

Utilised for Either of three Purpose

1. Therapeutic Penetrating Keratoplasty
2. Optical Penetrating Keratoplasty
3. Research or Practice

Statistical Analysis

Categorical data will be represented in the form of frequency and percentage Association between variables will be assessed with Chi Square Test and Fisher's Exact

test if the cell values were small. Quantitative data will be represented as Mean & Sd. Comparison between groups will be done with Unpaired t test. A P value of <0.05 will be considered statistically significant

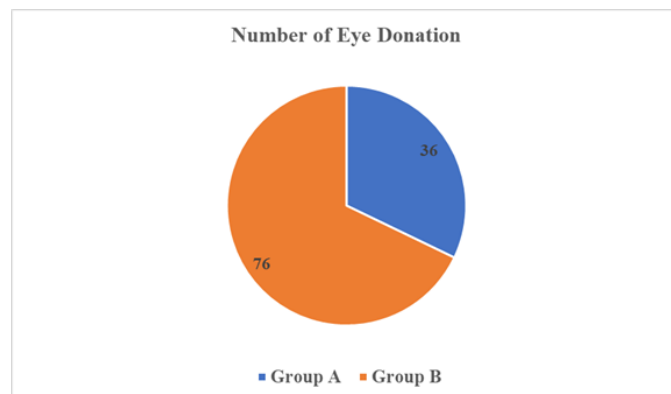
Results

The Total Number of Eye Donation done in Group A was 36 and in Group B was 76

Table 1: Comparison of number of Eye Donation between two groups

	Group A	Group B
Number of Eye Donation	36	76

Graph 1: Comparison of Number of Eye Donation between two groups



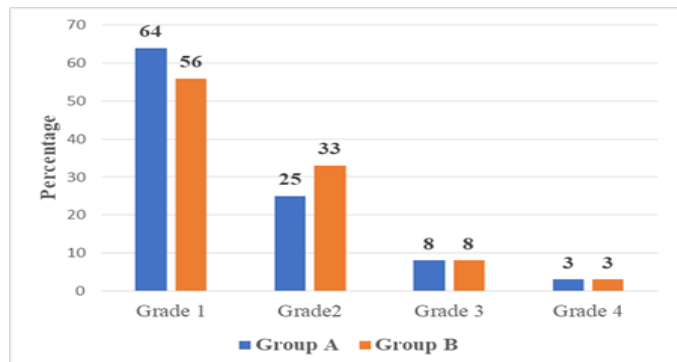
In Group A out of 36 Corneas, 23(64%)corneas were of Grade 1, 9 (25%) corneas were of Grade 2,3 (8%)corneas were of Grade3 and 1(3%)cornea was Grade 4.

In Group B Out of 76 Corneas 43 (56%) corneas were of Grade1, 25 (33%) corneas were of Grade2,6 (8%) corneas were of Grade3,2 (3%)corneas were of Grade 4.

Table 2: Comparison of Grade of Cornea Between two Groups

Grade of Cornea	Group-A		Group-B		Chi Square test	
	Number	%	Number	%	χ^2 Value	P Value
Grade 1	23	64	43	56	0.73	0.86
Grade 2	9	25	25	33		
Grade 3	3	8	6	8		
Grade 4	1	3	2	3		
Total	36	100	76	100		

Graph 2: Comparison of Grade of Cornea Between two groups



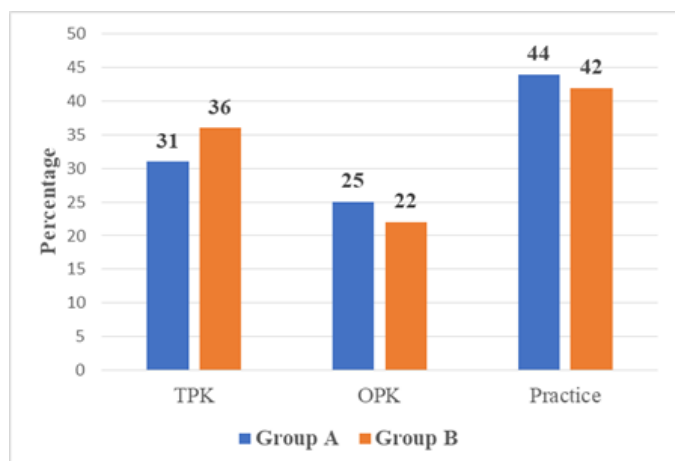
In Group A out of 36 Corneas 11(31%) corneas were utilized for TPK,9(25%) corneas were utilized for OPK and 16(44%) corneas were utilized for Practice with Utility ratio being -56%

In Group B out of 76 corneas 27(36%) corneas were utilized for TPK,17(22%) corneas were utilized for OPK and 32(42%) corneas were utilized for Practice with Utility ratio being 58%.

Table 3: Comparison of Utility of Corneas between two groups

Utility of Cornea	Group-A		Group-B		Chi Square test	
	Number	%	Number	%	χ^2 Value	P Value
TPK	11	31	27	36	0.28	0.87
OPK	9	25	17	22		
Practice	16	44	32	42		
Total	36	100	76	100		

Graph 3: Comparison of Utility of Corneas between two groups



Average Time interval between Deaths to Eye collection was 2 hours in both the groups.

Discussion

The findings of this study demonstrate a substantial increase in eye donations following the active involvement of MBBS interns in the Hospital Cornea Retrieval Programme (HCRP). Comparing the two timeframes—July 2021 to June 2022 (before interns involvement in HCRP) and July 2022 to June 2023 (after interns involvement in HCRP)—the number of eye donations doubled from 36 to 76. This surge highlights the potential of interns as key motivators in encouraging eye donation, particularly among the attendants of critically ill patients.

This findings was Similar to previously published studies by Sharma et al⁵ titled “Eye Donation

Awareness and Conversion Rate in HCRP in a Tertiary Hospital of Central India” – which found that thorough counselling of attendants of critically ill and deceased patients by grief counsellors doubled the conversion rate for Eye donation. The study conducted by Christy J et al⁹ on “Analysis of motivating factors for eye donation among families of eye donors in South India” concluded that HCRP and donations where the first Eye bank contact was made through hospital personnel had the greatest percentage of rapid enucleations. The study conducted by Tandon et al⁸ titled “Factors Affecting Eye Donation from Postmortem Cases in a Tertiary Care Hospital” concluded that concerted efforts of a motivated counselling team in approaching relatives in hospital mortuaries are effective in motivating families for eye donation independent of their socioeconomic background and level of prior knowledge of eye donation.

Despite the significant rise in eye donations, the qualitative aspects—such as the grade of corneas retrieved, utility ratio, and the time interval between death and collection—remained relatively stable. The proportion of high-quality corneas (Grade 1 and Grade 2) was similar across both timeframes, indicating that intern involvement did not compromise the quality of retrieved corneas. The average death-to-collection time also remained unchanged at approximately 2 hours, which is a crucial factor in preserving corneal integrity.

The utility ratio showed a slight improvement from 56% to 58%, suggesting that a larger donor pool contributed to a marginally higher proportion of corneas being used for therapeutic purposes, such as therapeutic penetrating keratoplasty (TPK) and optical penetrating keratoplasty (OPK). However, a significant portion of corneas continued to be used for practice purposes, indicating a need for further strategies to enhance corneal utility for transplantation.

MBBS interns are in a unique position to contribute to eye donation programs. As healthcare professionals in training, they are already integrated into the hospital system and have direct contact with patients and families. Their close interaction with patients, families, and healthcare professionals positions them as crucial participants in this vital process. Their involvement in eye donation efforts can not only increase the number of donations but also enhance the ethical and compassionate communication between medical staff and grieving families.

This study also highlights the importance of educational initiatives and training for medical interns, as well as other healthcare workers, to equip them with the necessary skills and knowledge to approach families sensitively and with respect. With proper counseling techniques, medical professionals can alleviate the family's grief while providing them with the information and support necessary to make the decision to donate.

Conclusion

The introduction of interns into the HCRP led to a twofold increase in eye donations, demonstrating their crucial role in eye banking initiatives. Involving MBBS interns in the Hospital Cornea Retrieval Programme significantly improves the number of eye donations

collected and contributes to addressing the shortage of corneas for transplantation.

However, this increase in eye donation did not significantly alter the grade distribution of corneas, utility rates, or the time interval between death and collection. These findings reinforce the importance of structured donor awareness and engagement strategies in hospitals. Future efforts should focus on sustaining this model, refining training programs for interns, and exploring additional strategies to further enhance donation rates and utilization efficiency.

References

1. WHO bulletin. [www.who.int/entity/bulletin/archives/79\(3\)itmb.pdf](http://www.who.int/entity/bulletin/archives/79(3)itmb.pdf)
2. National Programme for Control of Blindness. Report of National Programme for Control of Blindness, India and World Health Organization. 1986-89
3. Dandona R, Dandona L. Corneal blindness in a southern Indian population: Need for health promotion strategies. *Br J Ophthalmol*. 2003; 87: 133-41.
4. National Programme for Control of Blindness.
5. Sharma B, Shrivastava U, Kumar K, Baghel R, Khan F, Kulkarni S. Eye Donation Awareness and Conversion Rate in Hospital Cornea Retrieval Programme in a Tertiary Hospital of Central India. *J Clin Diagn Res*. 2017 Aug;11(8):NC12-NC15
6. Subburaman GB, Kempen JH, Durairaj S, Balakrishna V, Valaguru V, Namperumalsamy VP, et al. Making the decision to donate eyes: Perspectives from the families of deceased in Madurai, India. *Indian J Ophthalmol* 2020;68:2094-8

7. Williams AM, Muir KW. Awareness and attitudes toward corneal donation: Challenges and opportunities. Clin Ophthalmol 2018;12:1049-59
8. Tandon R, Verma K, Vanathi M, Pandey RM, Vajpayee RB. Factors affecting eye donation from postmortem cases in a tertiary care hospital. Cornea. 2004 Aug;23(6):597-601.
9. Christy JS, Ramulu PK, Priya TV, Nair M, Venkatesh R. Analysis of motivating factors for eye donation among families of eye donors in South India – A questionnaire-based study. Indian J Ophthalmol 2022;70:3284-8
10. N. H. Patel, Sahil Bajaj, Amandeep Chawla, Saurabh Bothra. “Cross-Sectional Study to Assess and Grade the Quality of Donor Corneal Material”. Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 101, December 17; Page: 16593 -16595,