Knowledge and Awareness Regarding Keratoplasty and Eye Donation in High Risk Occupations

Tahir Shaukat[1], Abdul Basit Iqbal[2], Arslan Ashraf[3], Irfana Asad[4], Rashida Riaz[5],
University of Lahore, Lahore.[1-4]
DHQ Hospital, Qasoor. [5]

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ABSTRACT

Purpose: To determine the attitude regarding corneal transplantation or eye donation among high-risk occupations.

Methodology: Descriptive cross sectional design was used in this study. Non- probability purposive sampling technique was used. People with age group between 25 to 60 years of either gender were included. Mechanics, Auto Drivers, Tailor, and Welders were included. Age below 25 and above 60 years was excluded. After informed consent, Self-design questionnaire was used to collect data. Data was entered and analyzed in SPSS 25. Mann Whitney-U test was applied to find the significance of data. P-value < 0.05 was considered as significant.

Results: 64 participants (50.8%) heard about corneal transplantation or eye donation while 62 (49.2%) participants didn't hear about eye donation. Forty one (41) participants (11.1%) said that only those people can donate who haven't undergone cataract surgery. Eighty one (81) participants (64.3%) said that only more than 18 years old individuals can donate eyes. Forty Four (44) participants (34.9%) thought that blood group is a hurdle for donation of eye. P-value was 0.034 that is significant.

Conclusion: This study concluded that a large proportion of the population do not have proper knowledge regarding corneal transplantation and eye donation. The study reveals that high-risk occupation workers have low level of awareness and knowledge regarding corneal transplantation and eye donation.

Keywords: Cataract Surgery, Keratoplasty, Corneal Transplant, Cornea

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INTRODUCTION

Sight is the capability to see the clearly by utilizing visible light reflected by objects in the environment. It is estimated that untreated myopia and presbyopia alone cost the world 24.4 billion dollars and 25.5 billion dollars in productivity losses each year.[1,2] One of the main reasons of blindness for which eye donation

Correspondence: Tahir Shaukat
University of Lahore, Lahore.
Email: ranaat6255@gmail.com

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might restore vision is corneal disorders. Around 37 million visually impaired people in the whole world are willing candidates for corneal transplantation.[3,4]

One human cornea donated at death by someone who leaves a living legacy is the only thing that can replace a diseased human cornea.[5] Corneal ulceration, Trachoma, xerophthalmia brought on by deficiency of vitamin A, the utilization of risky conventional medications, leprosy, ophthalmia neonatorum, onchocerciasis, and any ocular trauma are the main causes of corneal blindness.[6]

The most common reason for childhood blindness in developing nations is corneal scarring, which can be brought on by both infectious and non-infectious agents, including trachoma, xerophthalmia, dangerous traditional medicines, trauma and, leprosy, and Approximately 8 million people worldwide have corneal blindness as of right now.[7]

Even though more than half of the billion people with corneal blindness require corneal surgeries, Ethiopia only collects between 130 and 150 corneas annually.[8,9] The ability to perform corneal transplants depends heavily on the availability of potential donors. This in turn depends on the willingness of close family members to donate pledged eyes and the attitude of various stakeholders.[10,11] The pressing reason why higher education was firmly linked with good responses of donation of eye was participants with high education may have high awareness about donation of organs and subject matters, which may lead to a more positive attitude towards it.[12,13]

In general, a much higher percentage of respondents expressed favorable attitudes toward donation of cornea and agreed to donate their own corneas than the percentage of individuals that had already considered to donate their eyes, indicating an unexpected rise.[14]

A corneal transplant is a productive procedure for curing a variety of corneal conditions and has the potential to significantly enhance visual acuity.[15] The lack of donors, which results in a shortage of tissues and organs relative to the quantity of possible receivers, is the most critical issue in transplant that needs to be resolved.[16] A recent international survey of eye banking and transplantation of cornea has revealed the stark disparity between the transfer and command of donor corneas, with 70 patients needing one acquired cornea.[17]

In medicine, most commonly transplanted tissue is the cornea. Allograft rejection is known as main reason behind corneal graft failure. The incidence of graft failure depends on the appearance of high-risk characteristics, most commonly corneal neovascularization. Corneal grafting is recorded successful in the absence of these risk factors.

METHODOLOGY

Descriptive cross sectional study design was used in this study. Non- probability purposive sampling technique was used. People with age group between 25 to 60 years of either gender were included. Mechanics, Auto Drivers, Tailor, and Welders were included. Age below 25 and above 60 years was excluded. After informed consent, Self-design questionnaire was used to collect data. Data was entered and analyzed in SPSS 25. Mann Whitney-U test was applied to find the significance of data. P-value < 0.05 was considered as significant.

RESULTS

Out of 126 participants, 64 participants (50.8%) heard about corneal transplantation or eye donation while 62 (49.2%) participants didn't hear about eye donation. Overall, out of 100%, only 67% participants heard about corneal transplant. About 43 individuals (34.1%) had heard it from health care workers while 16 individuals (12.7%) responded that they have heard about corneal transplantation and eye donation from educational institutions. Internet or newspaper was source of awareness for 50 individuals (39.7%) while 17 individuals (13.5%) had heard about eye donation and corneal transplantation from family members and friends. Mann Whitney-U test was applied to find the significance (P-value=0.034) of data. P-value < 0.05 was considered as significant.

Table -1: Distribution According to Occupation

Occupation	Frequency	Percent
Auto Driver	25	19.8
Mechanic	23	18.3
Welder	23	18.3
Tailor	25	19.8
Carpenter	30	23.8
Total	126	100.0

Table -2: Knowledge About Keratoplasty

Knowledge about Cornel Donation	Frequency	Percentage	P-value (Mann-Whitney U test)
Yes	64	50.8	0.034
No	62	49.2	
Total	126	100.0	

DISCUSSION

According to Jena P et al, a study on knowledge regarding eye donation among first year nursing students of a nursing school and college of Berhampur in Odhisia, there was 100% positive result as compared to this present study. The lower percentage of knowledge in this study might be due to lack of education. More than half of a selected individuals were uneducated.[18]

The present study results revealed a relatively low level of knowledge and awareness on eye donation among the high-risk occupations. The prevalence of knowledge was greater among auto drivers in comparison to other students. Only the one-fifth of the studied individuals were ready to donate their own eyes or their close family member's eyes. The knowledge on eye donation and the willingness to become eye donors appears to be much better than reported in previous studies. The prevalence of awareness of eye donation has gotten 50% positive response. According to Gawali et al, majority of first year medical students knew that eye can be removed by an eye specialist which found to be only 49% in this study. It was also found that 61% of the high-risk occupations did not know that eye can be donated after death. However, this study shows complete lack of education in this regard.[19,20]

In most countries, especially in the developing ones, the number of corneas available are much less than the number of patients who needs cornea. In some under developing countries, there is no locally available and accessible corneal transplant service and no operational eye bank. Lack of enough knowledge may be a possible reason behind a smaller number of donors and it is important to identify the cause and do efforts to eliminate those existing misconceptions.[21]

Individuals with high-risk occupations needs to be educated about corneal transplants. Results of present study shows that they don't want to donate their eyes. Lack of donors is the major issue in society leading to increase in blindness rate. These individuals with high-risk occupations such as carpenters, auto drivers, mechanics and tailors are more susceptible to eye injuries. They should have basic knowledge of eye donation and eye banks. Knowledge regarding the time for donation of eyes after death was poor (21%) as compared to 67.5% of study among undergraduate medical students. This is all because of lack of education.[22]

The present study revealed that individuals with high-risk occupations don't know about corneal transplantation. There is a huge misconception about corneal transplantation, how much time is required for donation, person with cataract surgery can donate or not. Individuals who think that person with cataract surgery cannot donate cornea. They need to be educated about corneal transplantation. Lack of eye banks and awareness regarding eye banks should be kept under consideration. This is also supporting lack of donors. Eye banks should be organized and promoted.

The present study is limited to individuals with only high-risk occupations. The present study was conducted at a specific place within a limited time.

CONCLUSION

This study concluded that a large proportion of the population do not have proper knowledge regarding corneal transplantation and eye donation. The study reveals that high-risk occupation workers have low level of awareness and knowledge regarding corneal transplantation and eye donation.

Conflict of Interest: None to Declare

Ethical Approval: The study was approved by the Institutional Review Baord / Ethical Review Board No. REC UOL 192.01.2024

Author Contributions: Tahir Shaukat: Concept, Design, Data Collection.

Abdul Basit Iqbal: Data Collection, Literature Review.

Arslan Ashraf: Data Collection and Analysis.

Irfana Asad: Data Collection

Rashida Riaz: Data Collection, Critical Review.

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