

Vision Related Quality of Life in Patients After Corneal Transplantation

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ABSTRACT

Aims: The aim of this study was to assess the vision-related quality of life and satisfaction of patients who underwent corneal transplantation and to evaluate the effects of corneal transplantation on the health related quality of life of patient's.

Method: A descriptive study conducted to determine the vision-related quality of life among corneal transplanted patients. The information collected by telephonic interview and direct interview method with patients (n = 30) undergoing routine follow-up examinations at least 6 month after corneal transplantation. NEI VFQ 25 instrument was completed for each participant. Association between clinical and questionnaire outcomes were evaluated using analysis of frequency percentage and chi square test.

Results: Corneal transplant recipients had an increased vision-related quality of life as demonstrated by the NEI VFQ-25 and there was an association existed between employment and vision related quality of life. Also an association with various sub scales of the questionnaire which demonstrated the positive vision related quality of life.

Keywords: *Vision Related Quality of Life, Corneal transplantation, NEI VFQ-2*

INTRODUCTION

“The face is a picture of the mind with the eyes are its interpreter”

It is well known that eyes are the important organs of vision and is the most precious sense of our body. Loss of vision is a serious complaint that requires immediate attention and if it is untreated, permanently it changes the patient's life significantly.

Cornea is as smooth and clear as glass but is strong and durable; it helps the eye in two ways: It helps to shield the rest of the eye from germs, dust, and other harmful matter. The cornea shares this protective task with the eyelids, the eye socket, tears, and the sclera, or white part of the eye. The cornea acts as the eye's outermost lens. It functions like a window that controls and focuses the entry of light into the eye. The cornea contributes between 65-75 percent of the eye's total focusing power. The cornea is one of a few relatively immunologically privileged sites within the human body. In terms of solid tissue allograft in humans, the cornea appears to be very successful with an overall

first year survival rate as high as 90%. Unfortunately, the long term reality is that the overall success rate diminishes to 74% at 5 years and 62% at 10 years. In those eyes considered to be “high risk”, especially those with corneal neovascularisation or ongoing ocular inflammation, the long term 10 year survival rate is less than 35%. Of greater concern is that these survival rates have not improved over the past 10 years.³⁵

Success rates are also affected by the problem that needed to be fixed with the transplant. For example, research has found that the new cornea lasts for at least 10 years in 89% of people with keratoconus, 73% of people with Fuchs' dystrophy 60% to 70% of people with corneal scarring. The eye donation scene in India is very grim. If statistics are to be believed, of the 45 million blind people across the world, 15 million live in India. The sad fact is that 75% of these cases are of preventable blindness, but thanks to the nation's acute shortage of donors, most of the cases either go untreated or inadequately treated. A meager 25000 corneas are collected for transplants against the annual demand of 2, 50,000.

Earlier studies provide evidence that when the best corrected visual acuity of the both eye was evaluated there was a positive association of visual acuity with VF14 score. The findings demonstrate a high degree of criterion validity in using the VF-14 instrument to assess the outcome of corneal transplantation. This is important as rates of corneal donation are much lower than those for solid organs, suggesting there is something different about corneal donation. Although willingness, attitudes and beliefs surrounding solid-organ donation have been extensively investigated, much less is known about corneal donation success rates of cornea transplants. Experts know more about the long-term success rates of penetrating cornea transplants, which use all the layers of the cornea.

To understand the patients' situation and need, it was also important to evaluate their vision-related quality of life in addition to standard clinical variables. A number of self-reported questionnaires had been designed to address this issue, one of which is the National Eye Institute Visual Function Questionnaire-25 (NEI VFQ-25). The NEI VFQ-25 is a questionnaire that was developed to evaluate the vision-related quality of life of patients with ocular diseases, and to test the psychometric properties of diseases that cause vision loss. It has been widely used to study the quality of life in patients with various ocular diseases, including cataract, glaucoma, age-related macular degeneration, and diabetic retinopathy, central or branch retinal vein occlusion retinal detachment, and Graves' ophthalmopathy.

This study aimed to assess the vision-related quality of life in corneal transplant recipients using the NEI VFQ-25. It also aimed to identify the socio-demographic factors that associate with the patients' self-assessment of perceived visual function.⁴⁰

MATERIALS AND METHOD

The main purpose of the study was to assess the vision related quality of life in patient after corneal transplantation. Hence quantitative non experimental descriptive approach is used for the the study. The setting was Ophthalmology OPD in Amrita Institute of Medical Science , Kochi. Non probability purposive sampling technique was used based on inclusion criteria. 1. All patients underwent corneal transplantation 2. Patients who are able to understand Malayalam or English.

The original English version of the NEI VFQ-25 consists of 1 general health rating question and 11 vision-related domains, namely general vision, ocular pain, near vision, distance vision, social functioning,

mental health, role difficulties, dependency, driving difficulties, colour vision, and peripheral vision. Patients who have completed the NEI VFQ 25 were considered for evaluation. The analysis of the NEI VFQ25 was done in SPSS software. Result of descriptive analysis are expressed as frequency, percentage, chi square test was used to compare demographic variables in eligible interviewed patients. Thirty subjects were considered to eligible among 98 patients who underwent corneal transplantation during study period. Among the remaining eligible 68 patients, 45 did not attended the phone call, two were expired others patients did not answer for other personal reasons.

The 25-item NEI-VFQ, is a non-disease-specific (i.e, generic) instrument designed to measure the impact of Corneal transplantation on vision related quality of life. A 14-item appendix was also administered to all subjects to enhance the reliability of various sub scales of the 25 item NEI-VFQ. Thus, the NEI-VFQ used in the study contained 39 items and 12 domains, or sub scales. The 12 domains were as follows: (1) general health, (2) general vision, (3) ocular pain, (4) difficulty with short distance vision activities, (5) difficulty with long distance vision activities, (6) vision related limitations in social functioning, (7) mental health symptoms related to vision, (8) vision related role difficulties,(9) vision related dependency, (10) vision related driving difficulties,11) limitations with color vision, and (12) with peripheral vision.

RESULTS

The study showed that graft improved patient vision related quality of life. Out of 30 patients 23 patient's vision was good and remaining seven with poor vision. In our 30 sample 11 females and 19 males present. In their 8 female patients with good vision and 3 females has poor vision. In male 15 people have good vision and 4 people with poor vision. Year of the surgery have no any significant role in this study. Employment and unemployment is one of the important variable which shows an association with overall vision.

Subjects were divided into two groups according to their systemic health status. The scores of patients with vs. without systemic diseases were compared. In this study around 17 (56.7%) people with no any systemic illness and about 13(43.3%) having systemic illness. The difference in the scores for employment status was also determined .The data were entered onto a Microsoft Excel spread sheet , Socio-demographic data, including age, sex, systemic health status, and employment status before and after corneal transplant operation were

collected. rating question, and addresses a number of vision related sub scales, including general vision, difficulty with near and distance activities, limitations with peripheral and colour vision, ocular pain, social

functioning, role limitations, dependency, and mental health. Subjects were asked to rate the level of severity of their difficulties in daily activities. Table (1)

Table 1: Distribution of Samples Based on Demographic Data

Sl	Demographic	Category Data	Frequency	Percentage
1	Age	Below 50 Years	5	16.5
		Above 50years	25	83.5
2	Sex	Male	19	63.3
		Female	11	36.7
3	Year of Surgery	2012	8	26.7
		2013	8	26.7
		2014	12	40
		2015	2	6.7
4	Job Status	Employed	23	76.7
		Un Employed	7	23.3
5	Systemic Illness	Present	17	56.7
		Absent	13	43.3

Table 1 shows that among 30 samples, 83.5% were above 50 years and 63.3 % were males. Regarding current job status, majority (76.7%) were working and 56.7 % had systemic illness. 40% of them undergone surgery in the year 2014.

Table 2: Association Of Eye Sight Withsubscale

Items	Classification	Vision- Eyesight				Chi Square Value	P Value
		Good		Bad			
		F	%	F	%		
Small Print Reading	No Difficulty	17	56.6	0	0	11.94	0.01
	Difficulty	6	20	7	23.3		
Figure Out Billing	No Difficulty	21	70	0	0	21.3	0
	Difficulty	2	6.6	7	23.3		
Shaving Styling	No Difficulty	20	66.6	2	6.6	9.35	0.007
	Difficulty	3	10	5	16.6		
Recognizig	No Difficulty	21	70	2	6.6	11.8	0.03
People	Difficulty	2	6.6	5	16.6		
Taking Parts In Sports	No Difficulty	20	66.6	1	3.3	13.49	0.01
	Difficulty	3	10	6	20		
Seeing Tv	No Difficulty	21	70	1	3.3	16.27	0
	Difficulty	2	6.6	6	20		
Entertaining Friends	No Difficulty	21	70	1	3.3	11.8	0.003
	Difficulty	2	6.6	6	20		
Do You Have More Help	Yes	2	6.6	5	16.6	11.8	0.003
	No	21	70	2	6.6		
Are You Limited	Yes	0	0	6	20	24.64	0
	No	23	76.6	1	3.3		
Currently Driving	Yes	8	26.6	0	0	3.32	0.143
	No	15	50	7	23.3		

Table 2 shows that the association between each sub scales of t he questionnaire with good and bad eyesight groups as computed Chi square value of variable at level of significance P= 0.05 are more than table value. So there was an association identified between these subscalesand sample groups.

Table 3: Association of pain and discomfort with demographic variable

Variables		Pain or Discomfort				Chi Square Value	P Value
		Yes		No			
		F	%	F	%		
Year Of Surgery	2012	0	0	8	26.6	6.989	.72
	2013	2	6.6	6	20		
	2014	6	20	6	2		
	2015	0	0	2	6.6		
Job Status	Unemployed	3	10	5	16.6	1.224	0.345
	Employed	5	16.6	18	60		
Systemic Illness	Disease	2	6.6	6	20	4.45	0.49
	No Disease	15	50	7	23.3		

P < 0.05 Statistically significant

There is no significant association between pain and discomfort with demographic variables. The study showed that graft improved patient’s vision related quality of life. Majority of the patients (76.7%) vision was good and the remaining patients (23.3%) reported that they have poor vision. Among the samples, (36.7%)

females and 63.3% males were involved. Among females, 78.95 had good vision and rest of them had (27.3%) of them found that they had poor vision. Year of surgery have no significant association with variables.

Table 4: Chi-square association of eye sight with demographic variable

Variables	Category	Total	Eye Sight				Chi Square Value	P Value
			Good		Poor			
			F	%	F	%		
Sex	Male	11	72.2	8	27.3	3	0.151	1
	Female	19	78.9	15	21.1	4		
Year of Surgery	2012	8	87.5	7	12.5	1	3.913	0.27
	2013	8	87.5	7	12.5	1		
	2014	12	58.3	7	41.5	5		
	2015	2	100	2	0	0		
Systemic Illness	No Disease	17	88.2	15	11.2	2	2.935	0.19
	Diseased	13	61.5	8	38.5	5		
Job Status	Unemployed	7	42.9	3	57.1	4	5.83	0.33
	Employed	23	87	20	13	3		

.P < 0.05 Statistically significant

The study showed that in the year 2014 have most of the transplantation occur compare to other years such as, 40% in 2012, 26.7% in 2013.

In addition, employment status also had a significant association with the eye sight. For both visual functioning, socioeconomical status, patients whose employment status remained unchanged after corneal transplantation were significantly more able when compared with those who were unemployed or retired after their operation.

Patients were divided into two groups according to their systemic health status. The scores of patients with vs. without systemic diseases were compared. In this study, 56.7% subjects with no any systemic illness and 43.3% had systemic illness. The difference in the scores for employment status was also determined. The data were entered onto a Microsoft Excel spread sheet, Socio-demographic data, including age, sex, systemic health status, and employment status before and after corneal transplant operation were collected. rating question, and addresses a number of vision related sub scales,

including general vision, difficulty with near and distance activities, limitations with peripheral and color vision, ocular pain, social functioning, role limitations, dependency, and mental health. Subjects were asked to rate the level of severity of their difficulties in daily activities.

DISCUSSION

The study was designed with following objectives; Identify the vision related quality of life corneal transplantation by using National Eye Institute Visual Functioning Questionnaire, Associate the vision related quality of life with selected variable and Identify the post transplant complication in corneal transplantation patients.

In this study, it is found that cornea transplanted recipients had good quality of life whereas another study conducted in 2012 reported that quality of life decreased. This may be due to the influence of confounding variables such as co-morbidities, other illness etc. Demographic variables like age, sex, systemic illness have no significance but there was an association found between employment status (0.033) and eyesight of the patients in both studies and the relationship is directional. Hence the results are more or less consistent in nature.

Unlike other studies, the investigator selected two subgroup people, first with good eye sight, who put rate above seven and second with poor eye sight who put rate below six. These division supported the analysis, that cornea recipients had an increased vision related quality of life and associated each group with sub scale of the Questionnaire, so the P value shows the positive significant association, with systemic diseases on the NEIVFQ-25 scores might be one of the reasons in the variations in the results of both studies.

Overall, Corneal transplant recipients had a increased vision-related quality of life as demonstrated by the NEI VFQ-25. Studies had shown that depression was common among adults with visual impairment. This is of particular relevance to corneal graft recipients. Although most patients with cataract or age-related macular degeneration are the elderly, many corneal graft

recipients are young, fit adults who require corneal transplantation for indications, such as trauma, keratinize, or keratoconus. However, in this study also, more than half (56.7%) of the subjects had systemic illness. Hence the findings are more consistent with the previous study findings.

CONCLUSION

The restoration of sight is the most important purpose of corneal grafting. However, successful Corneal transplantation improves both health and lifestyle of the patients. The current study revealed that, those who had undergone corneal transplantation had a better quality of life and less incidence of post transplant complications.

Ethical Clearance: Obtained from Institutional Ethics Committee, AIMS, Kochi

Source of Funding: Self

Conflicts of Interests: Nil

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Construct Validity and Reliability of Jefferson Scale of Empathy-health Care Provider (Student version) among Final Year, Interns and Post-graduate Students of a Dental College in India

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ABSTRACT

Background: Empathy is a much talked about but ignored characteristic in India. Doctor-patients relationship goes a long way and invariably has a profound effect on the treatment outcomes. This study makes an attempt to determine the level of empathy among clinical students in the specialty of dentistry in Indian scenario.

Aim: To determine the construct validity and reliability of the Jefferson Scale of Empathy-Health Care Provider Student version (JSE-HPS) with the secondary aim of assessing empathy levels with respect to age, gender and year of study.

Settings and design: A cross-sectional observational study was conducted among clinical students of a dental institute in South India.

Method and material: The JSE-HPS was administered to 150 students from final year, interns and post-graduate students. Descriptive and inferential statistics with Principal Component Analysis was performed to determine the construct validity. The reliability measured using Cronbach's Alpha. Differences of empathy scores with respect to age and gender assessed using independent t test. One way ANOVA with Tukey's post hoc test was used for empathy scores across year of study, with level of significance at $p < 0.05$.

Results: The JSE-HPS demonstrated good internal consistency (Cronbach's Alpha - 0.7). A four factor solution was found taking into consideration "understanding patients' feelings" as the principal component, followed by a relatively new "sense of confusion" and factor three and four corresponding to "ignoring the emotional component", each corresponding to 20.5 percent, 15.6 percent, 14 percent and 8.7 percent of the item variance respectively. The total mean empathy scores were found to be 93.2 ± 15.6 . Overall females were more empathic (90.03 ± 13.186) than males (86.98 ± 9.946) ($p > 0.05$). Age had no significant effect on empathy scores. Within group comparison using one way ANOVA revealed significant differences for scores among interns and postgraduates ($p < 0.05$).

Conclusion: This study confirms the construct validity and internal consistency of JSE-HPS for measuring the empathy in an Indian study setting. Post-graduates scored higher than the Compulsory Rotatory Resident Internship [CRRI] and final year students. Age and gender had no effect on empathy scores when compared to year of study.

Keywords: Empathy, Dentist-Patient Relation, Social Skills, Empathy Scales

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INTRODUCTION

Empathy was derived from two Greek terms, "em" and "pathos", meaning 'feeling into' and has its origin from the German word "Einfühlung"¹. In terms of patient care, empathy is defined as a cognitive attribute that