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Evaluation and comparison of quality of life in different categories of low vision

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Abstract
Background: Low vision is problem in which it makes hard for the people to do everyday activities and this problem can't be fixed with glasses, contact lenses, medicines or surgery.
Aim: This study was conducted to assess the quality of life in patients with low vision.
Materials & Methods: In present study, there were 2 categories of 90 patients each who were joined in the outpatient department of Ophthalmology, Gandhi Medical College, Hyderabad, Telangana State. Category 1 consisted of 90 patients of low vision (Moderate visual impairment). Category 2 consisted of 90 patients of low vision (Severe visual impairment).
Results: The mean age was 60.22±10.52 and 60.66±8.96 years respectively. 36% were males and 64% were females in category 1 and 57% were males and 43% were females in category 2. Mean comparision of various questionnaires were found to be statistically significant between two categories. Category 2 people have more difficulty in reading ordinary newspaper, small print on telephone book, medicine bottle while wearing glasses and they need help from others due to their poor eye sight. Category 2 people recognise people with more difficulty even though they know the people across the room.
Conclusion: In patients of both categories, low vision affects quality of life. This study concluded that Category 2 people have poor quality of life in comparison to Category 1.

Keywords: low vision, quality of life

Introduction
Low vision and blindness are considered as visual impairment. Category 1 also known as moderate visual impairment is visual acuity between 6/24 to 6/60 in better eye [1]. Category 2 also known as severe visual impairment is visual acuity between 5/60 to 3/60 in better eye. Per 100 population, in India, visual impairment prevails in 4.6% and blindness prevails in 0.7% [2]. The number of people globally of all ages who are visually impaired are approximately 285 million, out of which, 40 million are blind. Uncorrected refractive errors and cataract account for major causes of visual impairment accounting to 43% and 33% respectively. Blindness is caused by mostly by cataract (51%). 80% of the burden is preventable causes globally. For the functional, social, physical and emotional wellbeing of an individual, normal vision is necessary [3]. People who are having low vision are at high risk of falls and road accidents [4]. Visually impaired people cannot do their work on their own and have to depend on others for their basic needs which leads to functional limitations. To measure the low vision effects and quality of life, there are many techniques. Questionnaire is the most widely used technique developed by American National Eye Institute. The version is NEI-VFQ-51. NEI-VFQ-25 is the shortest version which was made in 2000 and is known as National Eye Institute Visual Function Questionnaire and is mostly used to measure vision dependent functions such as general health, vision, ocular pain, near and distant activities, social and mental health, dependency, driving, color and peripheral vision. In India, cataract, refractive error, glaucoma, posterior segment disorder, surgical complication, corneal blindness and posterior capsular opacification are the most common causes of low vision [5]. Using the questionnaire, no study was conducted in Telangana State to evaluate the correlation of quality of life in patients with low vision. Hence, this study was conducted to assess the quality of life in patients with low vision.

Materials and Methods
In present study, there were 2 categories of 90 patients each who were joined in the outpatient department of Ophthalmology, Gandhi Medical College, Hyderabad, Telangana State. Category 1 consisted of 90 patients of low vision (Moderate visual impairment).

Category 2 consisted of 90 patients of low vision (Severe visual impairment). As measured by Snellen's chart, 90 patients who were admitted in department of ophthalmology has visual acuity between 6/24 to 6/60 in better eye with age of >22 years were included in category 1 . 90 patients who were admitted in department of ophthalmology has visual acuity between 5/60 to 3/60 in better eye with age of >22 years were included in category 2. From all patients, informed written consent was taken before the study. Using Snellen's chart, each patient was evaluated by placing 6 meters away in a well illuminated area. For illiterate patients, tumbling e-chart was used. Patients were interviewed for low vision by NEI-VFQ-25. The other tests like refraction, radioscopy, slit lamp examination, tonometry and fundoscopy were done.

Statistical Analysis

Microsoft excel spreadsheet was used for entering data. SPSS windows software version 21 was used for analyzing the collected data. The data was compared using Student t-test and frequencies were analyzed using chi square test. P values less than 0.05 were considered as significant.

Results

Table 1: Distribution based on age, gender.

Parameters	Category 1	Category 2
Mean Age (Years)	60.22±10.52	60.66±8.96
Gender (%)		
Males	36	57
Females	64	43

Table 1 shows that in category 1 and category 2 patients, the mean age was 60.22±10.52 and 60.66±8.96 years respectively. 36% were males and 64% were females in category 1 and 57% were males and 43% were females in category 2.

In category 1, most of the patients were housewives, 21% unemployed, 14% service class/retired persons, 15% were farmers. In category 2, maximum number of males were unemployed. In category 1, 78% & in category 2, 85% were found to be in good health. In category 1, 7% of patients in category 1 and 5% of patients in category 2 had diabetes mellitus. In both the categories, maximum number of patients were illiterate i.e. 58% and 48% respectively.

Table 2: Right and left eye examination results.

Uncorrected Vision	Category 1		Uncorrected Vision	Category 2	
	Right Eye	Left Eye		Right Eye	Left Eye
6/24	24%	33%	3/60	17%	19%
6/60	25%	18%	4/60	36%	34%
6/36	18%	21%	5/60	28%	35%

Table 2 shows that on right eye examination, category 1 patients had uncorrected vision 6/24, 6/60, 6/36 i.e. 24%, 25% and 18% respectively. In category 2, patients had vision of 3/60, 4/60, 5/60 i.e. 17%, 36% and 28% respectively. Similarly, on examination of left eye of Category 1 patients, maximum number of patients had vision 6/24, 6/36 and 6/60 i.e. 33%, 18% and 21%, respectively. Similarly, in Category 2, we observed majority of patients had vision 3/60, 4/60and 5/60 i.e. 19%, 34% and 35%, respectively.

A total of 2 patient each in Category 1 and 2 found to be PL negative in one eye. According to the best corrected visual acuity of right eye in Category 1 patients, maximum number of patients had corrected vision 6/9 i.e. 13% patients and in Category 2, 5% patients each had corrected vision 6/18 and 6/24. No improvement was seen in 60% patients in Category 1 and 88% patients in Category 2. Pl negative was reported in 1 eye of Category 1 and one in Category 2 in one eye. Regarding left eye examination of in Category 1 patients, maximum number of patients had corrected vision 6/9 i.e. (10%) patients and in Category 2, 5% patients with corrected vision 6/9. No improvement was seen in 66% patients of Category 1 and 86% in Category 2. PL negative was found in 1 patient of Category 1. In Category 1, mean IOP (left eye) was 14.75±4.69 and in Category 2, it was 14.40±10.20 (p >0.05). In Category 1, mean IOP (right eye) was 16.54±4.48 and in Category 2, it was 15.89±5.78 (p >0.05). It was observed that majority of patients had media hazy due to cataract in both the categories i.e. 67% and 65%, respectively followed by 23% patients in Category 1 and 35% in Category 2 within normal limits on fundus examination of right eye,. Near total optic atrophy were seen in 5% patients of Category 1 in 1 eye and 2% patient of Category 2. On fundus examination of left eye, media was hazy due to cataract in 67% patients of Category 1 and 66% of Category 2. Optic atrophy was seen in 5% patients of Category 1 and one in Category 2. In the present study, a total of 58 patients in Category 1 and 60 patients in Category 2 had cataract, 5% in Category 1 and 4% in Category 2 had corneal and lenticular opacities, 2% and 1% had corneal disorders in Category 1 and 2, respectively A study on the prevalence of HIV in Indian prisons revealed that 1.5% of male and 8.5% of female inmates were HIV positive. This is significantly higher than the national HIV prevalence of 0.32% in males and 0.22% in females.

Table 3: Comparison of mean scores of questionnaires among two categories

Questionnaires	Category 1 Mean ± SD	Category 2 Mean ± SD	Statistical analysis
Part 1 Q.1	37.16±12.58	41.22±10.24	0.409
Part 1 Q.2	34.11±11.00	38.22±24.34	0.110
Part 1 Q.3	40.2±32.44	41.7±21.18	0.788
Part 1 Q.4	85.16±25.12	81.35±26.27	0.278
Part 1 Q.5	61.18±27.41	35.33±28.74	<0.001 Sig.
Part 1 Q.6	44.23±29.99	44.74±21.49	0.849
Part 1 Q.7	42.00±21.48	42.19±24.29	0.743
Part 1 Q.8	47.11±32.18	43.59±24.31	0.621
Part 1 Q.9	41.31±22.59	38.34±21.76	0.711

Part 1 Q.10	55.85±31.12	52.98±24.28	0.699
Part 1 Q.11	81.44±26.89	63.69±31.86	<0.001 Sig.
Part 1 Q.12	61.54±32.56	60.88±24.29	0.855
Part 1 Q.13	59.52±28.36	55.11±31.28	0.328
Part 1 Q.14	28.77±31.29	42.88±26.28	0.147
Part 1 Q.15a	-	-	-
Part 1 Q.15b	-	-	-
Part 1 Q.15c	-	-	-
Part 1 Q.16	21.28±19.66	42.87±41.08	0.08
Part 1 Q.17	37.18±29.33	48±27.59	<0.01 Sig.
Part 1 Q.18	42±25.17	44.65±18.79	0.238
Part 1 Q.19	85±25.87	84±23.68	0.740
Part 1 Q.20	51.94±33.28	54.87±26.23	0.318
Part 1 Q.21	40±29.56	38±24.18	0.549
Part 1 Q.22	51.41±24.28	47±25.69	0.191
Part 1 Q.23	64.49±32.87	46±28.52	<0.001 Sig.
Part 1 Q.24	63.8±29.64	55.85±27.66	<0.05 Sig.
Part 1 Q.25	40.74±35.14	46.88±27.25	0.185

Table 4: Significant mean scores of questionnaires among two categories

Questionnaires	Category 1 Mean±SD	Category 2 Mean±SD	Statistical analysis
Part 1 Q.5	61.18±27.41	35.33±28.74	<0.001 Sig.
Part 1 Q.11	81.44±26.89	63.69±31.86	<0.001 Sig.
Part 1 Q.17	37.18±29.33	48±27.59	<0.01 Sig.
Part 1 Q.23	64.49±32.87	46±28.52	<0.001 Sig.
Part 1 Q.24	63.8±29.64	55.85±27.66	<0.05 Sig.

Discussion

During the study period, it was observed that mean comparision of various questionnaires of Part 1 Q5, part 1 Q11, part 1 Q17, part 1 Q23, part 1 Q24 found to be statistically significant between two categories. This comparision shows that category 2 people have more difficulty in reading ordinary newspaper, small print on telephone book, medicine bottle while wearing glasses and they need help from others due to their poor eye sight. Category 2 people recognise people with more difficulty even though they know the people across the room and they also face difficulty in playing active sports, outdoor activities and rest other activies were insignificant as per NEI-VFQ-25. In South India and outside India, many studies have been conducted for validity and reliability of NEI-VFQ-25. Lim *et al.* [6] study has observed results similar to the present study, and in Lim *et al.* [6] study, it was conducted on glaucoma patients and they included 5429 patients, It was concluded that glaucoma patients did not exhibit different scores from controls in VFQ-9 but they did have lower peripheral and distance vision subscale scores. Nutheti R *et al.* conducted a study on older population in Andhra Pradesh, South India. The population was aged 40 years or older and 3702 subjects were selected in the study. Nutheti R *et al.* [7] concluded that the main cause for QOL to decrease was associated with the presence of glaucoma or corneal disease independent of visual acuity and with cataract or retinal disease as a function of visual acuity. Visual impairment from uncorrected refractive errors was not associated with decreased QOL. Many studies have been conducted to standardise NEI-VFQ across various countries like Turkey [8], Italy [9], Japan [10], Greece [11] for improving quality of life in visually impaired subjects. Using different questionnaires, studies have also been conducted in Madurai [12] and Puducherry. The present study literature cannot be compared with other studies as it is conducted for the first time in Telangana State population.

Conclusion

Low vision was categorised into 2 groups, Category 1 had patients with uncorrected visual acuity between 6/24 to 6/60 in better eye and category 2 had patients with uncorrected visual acuity between 5/60 to 3/60 in the better eye called as moderate and severe visual impairment respectively. In patients of both categories, low vision affects quality of life. This study concluded that Category 2 people have poor quality of life in comparison to Category 1.

References

1. International statistical classification of diseases and related health problems.10th revision. 5th Ed 2011. Available from: http://who.int/iris/bitstream/10665/246208/1/9789241559165v1-eng.pdf.
2. Pascolini D, Maiotti SPM. Global estimates of visual impairment, 2010. Br J Ophthalmol 2012;96:614-8.
3. Adigun K, Oluleye TS, Ladipo MM, Olowookere SA. Quality of life in patients with visual impairment in Ibadan: a clinical study in primary care. J Multidiscip Healthc 2014;7:173-8.
4. Mueleners LB, Hendrie D, Lee AH, Ng JQ, Morlet N. The effectiveness of cataract surgery in reducing motor vehicle crashes: A whole population study using linked data. Ophthalmic Epidemiol 2012;19:23-8.
5. Mangione CM, Lee P, Gutierrez PR, Spritzer K, Berry S, Hays RD. Development of the 25-list-item National Eye Institute Visual Function Questionnaire. Arch Ophthalmol 2001;119:1050-8.
6. Lim AK, Shaikh Y, Yu F, Coleman AL. Quality of Life in Glaucoma as Measured by the Abbreviated National Eye Institute Visual Function Questionnaire. Invest Ophthalmol Vis Sci 2011, 52.
7. Nutheti R, Shamanna BR, Nirmalan PK, Keefe JE, Krishanaih S, Rao GN *et al.*, Impact of impaired vision and eye disease on quality of life in Andhra-pradesh. Invest Ophthalmol Vis Sci 2006;47:4742-8.
8. Toprak AB, Eser E, Guler C, Baser FE, Mayali H. Cross validation of the Turkish version of the 25-item National Eye Institute Visual Functioning

Questionnaire (NEI-VFQ25). Ophthalmic Epidemiol 2005;12:259-69.
9. Rossi P, Delcampe A, Gueudry J, Duncombe A, Gabison E, Doan S *et al.* Gas permeable sclera lens for management of severe kerato-conjunctivitis sicca secondary to chronic graft-versus-host disease. J Fr Ophthalmol 2015;38:793-9.
10. Suzukamo Y, Oshika T, Yuzawa M, Tokuda Y, Tomidokoro A, Oki K *et al.* Psychometric properties of the 25-item National Eye Institute Visual Functionning Questionnaire (NEI-VFQ 25), Japanese Version. Health Qual Life Outcomes 2005;3:65.
11. Labiris G, Katsanos A, Fanariotis M, Tsirouki T, Pefkianaki M, Chatzoulis D *et al.* Psychometric properties of the Greek version of the NEI-VFQ 25. BMC Ophthalmol 2008;8:4.
12. Fletcher AE, Ellwein LB, Selvaraj S, Vijaykumar V, Rahmathullah R, Thulasiraj RD. Measurements of vision function and quality of life in patients with cataracts in Southern India. Report of instrument development. Arch Ophthalmol 1997;115:767-74.