



# IMPACT OF CATARACT SURGERY ON QUALITY OF LIFE IN PEOPLE AGED 50 YEARS AND ABOVE IN A TERTIARY CARE HOSPITAL IN ODISHA, EAST INDIA

Dhananjaya Sharma<sup>1</sup>, Satyajit Pattnaik<sup>2</sup>, Kumaresan Kuppusamy<sup>3</sup>, Ashok Bhoorsamy<sup>4</sup>, Om Prakash Panigrahi<sup>5</sup>

**Financial Support:** None declared  
**Conflict of interest:** None declared  
**Copy right:** The Journal retains the copyrights of this article. However, reproduction of this article in the part or total in any form is permissible with due acknowledgement of the source.

**How to cite this article:**

Sharma D, Pattnaik S, Kuppusamy K, Bhoorsamy A, Panigrahi OP. Impact of Cataract Surgery on Quality of Life in People Aged 50 Years and Above in a Tertiary Care Hospital in Odisha, East India. *Natl J Community Med.* 2015; 6(1):41-4.

**Author's Affiliation:**

<sup>1</sup>Asso. Prof, Dept. of Community Med, MAIMS&R, Melmaruvathur; <sup>2</sup>Asst. Professor, Dept. of Community Med, Meenakshi MC&RI, Kanchipuram; <sup>3</sup>Asst. Prof, Dept. of Community Med, Sri Muthukumar MC&RI, Chennai; <sup>4</sup>Statistician Cum Asst. Prof, Dept. of Community Med, MAIMS&R, Melmaruvathur; <sup>5</sup>Professor, Dept. of Community Med, Kalinga Institute Of MS&R, Bhubaneswar

**Correspondence:**

Dr. Dhanjay Sharma  
Email: docdhana94370@gmail.com

**Date of Submission:** 13-10-14

**Date of Acceptance:** 02-03-15

**Date of Publication:** 31-03-15

## ABSTRACT

**Introduction:** Cataract surgeries have brought about a significant improvement in visual acuity in the patients. This study tried to find the improvement in the general and visual quality of life after cataract surgery apart from the improvement in visual impairment.

**Method:** In this prospective study, 231 patients above the age of 50 years who underwent cataract surgery between February 2008 and January 2009 were followed up after six month of surgery. Both vision related quality of life and generic health related quality of life was assessed using WHO/PBD VF 20 and EuroQol (EQ-5D) questionnaire respectively.

**Results:** Out of 231 participants, 204 could be followed up at six months. The proportion of people with a visual acuity of > 6/60 increased from 10.8% to 85.8%. Overall vision related quality of life improved significantly ( $p < 0.001$ ). There was significant improvement in general quality of life over all five domains of mobility, self-care, usual activity, pain and anxiety/depression ( $p < 0.001$ ).

**Conclusion:** This study findings indicate that cataract surgery in people above 50 years not only restore their vision but also brought about a positive improvement in their vision related and general health related quality of life.

**Keywords:** Visual acuity, VRQoL, WHO/PBD VF 20, HRQoL, EuroQol (EQ-5D)

## INTRODUCTION

The National Survey on Blindness 2006-07 showed that the principal cause of blindness in

India is cataract accounting for 62.6% of all cases.<sup>1</sup> Blindness leads to poverty due to reduced productive capacity.<sup>2,3</sup> Visual impairment leads to reduced quality of life<sup>4,5</sup> and increased mortal-

ity<sup>6,7</sup> Vision restoration through cataract surgery, has been demonstrated to enhance quality of life and participation in daily living and also improve household economic status.<sup>2</sup> Cataract surgery rates have hugely increased in India but the quality provided is not always optimal.<sup>8</sup> Studies on quality of life after cataract surgery are scarce in this part of India and it will be inappropriate if the outcome of cataract surgery is measured only by changes in visual acuity without its effect on improvement on quality of life. So with this background, the present study was conducted to assess the impact of cataract surgery on quality of life among persons aged 50 years and above in a tertiary care hospital.

**METHODS**

The present study was a prospective study, consisting of 231 persons aged 50 years and above, who were operated for cataract in the Department of Ophthalmology, of a tertiary care hospital in Odisha from Feb 2008 to Jan 2009, a period of one year. Consecutive patients admitted for surgery and fulfilling the study criteria were selected. A validated, pre-tested semi-structured questionnaire was used for data collection. Visual acuity was measured by LogMAR method.<sup>9</sup> LogMAR score decreases as visual acuity improves.<sup>9</sup> Vision related quality of life (VRQoL) was assessed by WHO/PBD VF 20 questionnaire, a vision specific instrument proposed by the WHO as a cross cultural tool for assessing VRQoL in low-income settings.<sup>10</sup> Generic health related quality of life (HRQoL) was measured using EuroQol (EQ - 5D), an instrument developed by a network of European researchers to assess generic HRQoL.<sup>11</sup> Baseline data was collected before cataract surgery in the hospital and follow up was done after 6 months of cataract surgery. Ethical approval was granted by institutional ethics committee. Informed written consent was obtained from all study participants before the study process.

The data was analyzed using SPSS (Version 16.0). Descriptive analyses were performed for various variables. Paired 't' test and Wilcoxon signed rank test were used to test the association and P < 0.05 was considered as significant.

**RESULTS**

Of the 231 patients initially recruited for the study, 27 (11.7%) were lost to follow up at six months after cataract surgery and complete data

was available for 204 (88.3%) patients for analysis. The lost to follow up patients were excluded from all analysis.

**Table 1: Socio-demographic characteristics of the study participants**

Socio Demographic characteristics	Number (%)
<b>Age group (in years)</b>	
50 - 59	43 (21.08)
60 - 69	96 (47.05)
70 - 79	43 (21.08)
> 80	22 (10.78)
<b>Sex</b>	
Male	130 (63.7)
Female	74 (36.3)
<b>Residence</b>	
Rural	165 (80.88)
Urban	39 (19.12)
<b>Education</b>	
Illiterate / No formal education	84 (41.17)
Primary	62 (30.39)
Secondary	37 (18.13)
Higher education	21 (10.29)
<b>Type of family</b>	
Nuclear	87 (42.65)
Non-nuclear	117 (57.35)
<b>Occupation</b>	
Agriculture	83 (35.47)
Daily wage laborer	28 (11.96)
Business	46 (19.65)
Service	36 (15.38)
Not employed	43 (18.37)
<b>Social class</b>	
Upper class	21 (10.29)
Middle class	48 (23.52)
Lower class	135 (66.17)
<b>Type of cataract surgery</b>	
SICS - PCIOL*	159 (77.94)
ECCE - PCIOL**	45 (22.06)

\* Small incision cataract surgery and posterior chamber intra ocular lens implantation

\*\* Extra capsular cataract extraction and posterior chamber intra ocular lens implantation

**Table 2: Visual acuity of study participants- Baseline and follow up**

Visual acuity	Baseline (%)	Six month Follow up (%)
6/6 - 6/18	-	175 (85.8)
< 6/18 - 6/60	22 (10.8)	26 (12.7)
< 6/60 - 3/60	139 (68.2)	3 (1.5)
< 3/60	43 (21.0)	-
LogMAR score (Mean + SD)	2.10(0.56)	0.40(0.16)

Socio-demography and other characteristics: Out of 204 subjects, majority 96 (47.5%) were in 60 - 69 year age group. The mean age was **66.4 +**

years. Most of them 130 (63.7%) were males. Majority, 165 (80.8%) were from rural area. Among the study participants, 84 (41.1%) had no formal education. Most common occupation was agriculture 83 (35.4%). Most of the participants, 135 (66.2%) belong to lower SES as shown in given table 1. Small incision cataract surgery and posterior chamber intra ocular lens implantation [SICS, PCIOL] was done in 159 (77.95%) of subjects and in remaining, extra capsular cataract extraction and posterior chamber intra ocular lens implantation [ECCE - PCIOL] was performed. The most commonly observed comorbidity was ocular morbidity, 38 (30.4%) as shown in table 1.

Visual acuity: At baseline, before the cataract surgery, only 22 (10.8%) had visual acuity > 6/60. This proportion became 175 (85.8%) with substantially improvement in visual acuity of more than 6/18. The visual acuity, before and six months after cataract surgery as shown in table 2.

Vision related quality of life: (WHO/PBD VFQ 20)<sup>10</sup> The vision related quality of life improved from a mean of 79.09 to 32.58 for overall eyesight, from 69.80 to 29.19 for general functioning and 61.19 to 62.39 for psychosocial well being.

Higher scores denote poor quality of life as per this scale. All these differences were found to be statistically significant (p< 0.05) as summarized in table 3.

Health related quality of life: (EQ - 5D)<sup>11</sup> There is a marked improvement in self care activity as people with no problem regarding mobility increased from 12.2% to 77.4% after surgery. While 28% had no problem in self care before surgery, a significantly high proportion of 88% reported the same after surgery. Compared to 21% who had extreme pain before surgery, there was a significant drop in those patients to 6% at the time of follow-up. At baseline, moderate or extreme anxiety and depression was found in 86.27% patients. During follow up, that proportion has reduced to 45.10%. The mean self rated health score before surgery was 42.51 + 1.68 and after surgery, the perception of better health increased to 64.90 + 3.03. All the domains in the health related quality of life showed a significant improvement during six month follow up as compared to the baseline. This difference was found to be highly statistically significant (p< 0.05) as shown in table 4.

**Table 3: Baseline and follow up vision related quality of life (WHO/PBD VF 20)<sup>2</sup>**

Vision related quality of life*	Baseline Mean [95% CI]	Follow up Mean [95% CI]	p value
Overall eyesight	79.09 (77.08-79.11)	32.58 (31.10-34.06)	<0.001
General functioning	69.80 (68.94 - 70.65)	29.19 (27.16 - 30.88)	<0.001
Psychosocial	61.19 (60.00 - 62.39)	25.78 (23.33 - 28.33)	<0.001

\*Higher scores denotes poor quality of life

**Table 4: Distribution of subjects according to health related quality of life (EQ - 5D)<sup>3</sup>**

EQ - 5D Domain	Baseline	Follow up	p value
<b>Mobility</b>			
No problem	25 (12.25)	153 (75.00)	<0.001
Some problem/confined to bed	179(87.75)	51 (25.00)	
<b>Self care</b>			
No problem	58 (28.43)	178 (87.25)	<0.001
Some problem/ unable to wash or dress	146 (71.57)	26 (12.75)	
<b>Usual activity</b>			
No problem	54 (26.5)	172 (84.31)	<0.001
Some problem/unable to perform	150 (73.50)	32 (15.69)	
<b>Pain</b>			
No pain / discomfort	22 (10.78)	94 (46.07)	<0.001
Moderately or Extremely pain / discomfort	182 (89.22)	110 (53.93)	
<b>Anxiety / Depression</b>			
Not anxious / not depressed	28 (13.73)	112 (54.90)	<0.001
Moderately or Extremely anxious / depressed	176 (86.27)	92 (45.10)	
<b>Self rated health score* Mean [95% CI]</b>	<b>42.51 [42.28 - 42.74]</b>	<b>64.90 [64.49 - 65.32]</b>	<b>&lt;0.001</b>

\* Higher scores denotes better self rated health

## DISCUSSION

The impact of cataract surgery is now being measured in terms of improvement in quality of life, related to vision and general health. Our study included 204 visually impaired subjects to assess the impact of cataract surgery on quality of life. Very few studies assessed the quality of life after cataract surgery in India. Majority of our participants were in 60–69 year age group which may be due to their ageing and disease process or due to late presentation for intervention. Over 40% had no formal education, which might have accounted for their delay in seeking treatment. Majority (85%) of the study subjects who underwent successful cataract surgery reported a good visual outcome (>6/18) at the six month follow up period. This result is similar to the findings from previous studies<sup>12,13</sup> but higher than reported in some other studies.<sup>14,15</sup> Most patients (88%) showed improvement in visual function, indicated by a visual acuity of more than 6/60. This figure is higher than that reported in similar studies.<sup>12,16,17</sup> Consistent with previous research,<sup>12,14,16,17</sup> the vision related quality of life showed a significant improvement after the cataract surgery. As observed from the study, intervention in terms of surgery definitely brings about an increment in the capacity among patients for taking self care which is also reported in another study.<sup>12</sup> There was a marked increase in people who can perform their usual activities after the surgery which is consistent with findings of other study.<sup>12</sup> So all domains and the sub domains related to generic health related QOL, like mobility, self care, anxiety also showed a significant improvement among the study subjects. Similar findings related to health related QOL was also reported in previous studies.<sup>12,13,14</sup>

## CONCLUSION

The present study had highlighted the benefits of cataract surgery in ageing population and found major improvements in quality of life, related to vision and generic health after cataract surgery. So this type of quality of life measures can be used as an instrument in making early decisions for therapeutic purposes which would go a long way in protecting the rights to sight of cataract affected and also improve the social and health dimensions of those individuals.

## REFERENCES

1. Govt.of India. Annual report 2011-12. Ministry of Health & Family Welfare, New Delhi.2012.

2. Kuper H, Polack S, Eusebio C, Mathenge W, Wadud Z, et al. (2008) A case control study to assess the relationship between poverty and visual impairment from cataract in Kenya, the Philippines, and Bangladesh. *PLoS Med* 5: e244.
3. Gilbert CE, Shah SP, Jadoon MZ, Bourne R, Dineen B, et al. Poverty and blindness in Pakistan: results from the Pakistan national blindness and visual impairment survey. *BMJ* 2008; 336: 29–32.
4. Polack S, Eusebio C, Fletcher A, Foster A, Kuper H. Visual impairment from cataract and health related quality of life: results from a case-control study in the Philippines. *Ophthalmic Epidemiol* 2010; 17: 152–159.
5. Finger RP, Kupitz DG, Holz FG, Balasubramaniam B, Ramani RV, et al The impact of the severity of vision loss on vision-related quality of life in India: an evaluation of the IND-VFQ-33. *Investigative Ophthalmology and Visual Science* 2011; 52: 6081–6088.
6. Sengupta M, Agree EM. Gender and Disability Among Older Adults in North and South India: Differences Associated with Coresidence and Marriage. *Journal of Cross-Cultural Gerontology* 2002;17: 313–336.
7. Foley D, Chowdhury J. Poverty, Social Exclusion and the Politics of Disability: Care as a Social Good and the Expenditure of Social Capital in Chudanga, Bangladesh. *Social Policy & Administration* 2007;41: 372–385.
8. Dandona L, Dandona R, Anand R, Srinivas M, Rajashekar V. Outcome and number of cataract surgeries in India: policy issues for blindness control. *Clinical and Experimental Ophthalmology* 2003; 31: 23–31.
9. Carlson, Kurtis, Nancy, Daniel. *Clinical Procedure of Ocular examination*. USA. McGraw Hill. 2004.p10.
10. WHO. Consultation on development of standards for characterization of vision loss and visual functioning. Geneva: World Health Organization, 2003.
11. Rabin R, de Charro F. EQ-5D: a measure of health status from the EuroQol Group. *Ann Med* 2001;33(5):337–43.
12. Praveen R. Mamidipudi, Abhay R. Vasavada, Suchi V. Merchant, Vishnu N. Namboodiri, Thulasiraj D. Ravilla. Quality of life and visual function assessment after phacoemulsification in an urban Indian population, *Journal Cataract Refractive Surgery* 2003; 29: 1143 – 1151.
13. S. Polack, H. Kuper, Z. Wadud, A Fletcher, A. Folster: Quality of life and Visual impairment from cataract in Satkhira district, Bangladesh. *British Journal of Ophthalmol* 2008; 92: 1026 – 1030.
14. Odugbo OP, Babolola OE, Morgan RE. Impact of cataract surgery on the quality of life in Plateau State, Nigeria. *Nig J Ophthalmol* 2009;17(1):5-10.
15. Joseph lau, John J Michon, Wing-Shing Chan, Leon B Ellwein. Visual acuity and quality of life outcomes in cataract surgery patients in Hong Kong. *Br J Ophthalmol* 2002; 86: 12–17.
16. Seang-Mei Saw, Peter Tseng, Wing-Kwong chain, Tat-Keong Chan, Sze-Guanong, Donlad Tan. Visual function and outcome after cataract surgery in a Singapore population. *Journal Cataract Refract Surg*. 2002; 28: 445 – 453.
17. Finger RP, Kupitz DG, Fenwick E, Balasubramaniam B, Ramani RV, et al. (2012) The Impact of successful cataract surgery on Quality of Life, household income and social status in South India. *PLoS ONE* 7(8): e44268. doi:10.1371/journal.pone.0044268.