

# Correlation Between Cataract Severity and Quality of Life Among Elderly Patients Undergoing Cataract Surgery

Dr Sunil Kumar Mall<sup>1\*</sup> and Dr. Dilip Lalwani<sup>2</sup>

<sup>1.</sup> Assistant Professor, Department of Ophthalmology, Santosh Medical College & Hospital, Ghaziabad, India

<sup>2.</sup> Assistant Professor, Department of Ophthalmology, Saraswati Institute of Medical Sciences, Hapur, India

**\*Corresponding author:** Dr Sunil Kumar Mall, Assistant Professor, Department of Ophthalmology, Santosh Medical College & Hospital, Ghaziabad, India

---

## **Abstract**

### **Background**

Cataract remains the leading cause of reversible blindness worldwide and is particularly prevalent among the elderly population. Visual impairment resulting from cataract significantly affects daily activities, independence, social interaction, and overall quality of life (QoL). Understanding the relationship between cataract severity and quality of life is essential for planning timely surgical intervention and improving patient-centered outcomes.

### **Aim**

To evaluate the correlation between cataract severity and quality of life among elderly patients undergoing cataract surgery in a tertiary eye care center.

### **Materials and Methods**

A hospital-based cross-sectional study was conducted among 200 elderly patients aged 60 years and above scheduled for cataract surgery. Cataract severity was graded using the Lens Opacities Classification System III (LOCS III). Quality of life was assessed using the National Eye Institute Visual Function Questionnaire-25 (NEI VFQ-25). Visual acuity, demographic characteristics, comorbidities, and cataract grades were recorded. Correlation between cataract severity and quality of life scores was analyzed using Pearson's correlation coefficient.

### **Results**

Among 200 participants, the mean age was  $68.5 \pm 6.7$  years. Severe cataract was observed in 38% of patients. The mean QoL score decreased significantly with increasing cataract severity. Patients with severe cataracts had significantly lower scores in general vision, near activities, distance activities, social functioning, and mental health domains. A strong negative correlation was observed between cataract severity and overall QoL score ( $r = -0.68, p < 0.001$ ).

### **Conclusion**

Increasing cataract severity is associated with significant deterioration in quality of life among elderly patients. Early diagnosis and timely cataract surgery can substantially improve visual function and overall well-being.

**Keywords:** Cataract, Quality of Life, Elderly, Visual Acuity, Cataract Surgery, Visual Function

---

## **I. Introduction**

Cataract is defined as any opacity of the crystalline lens that interferes with the transmission of light and causes visual impairment. Age-related cataract is the most common type and accounts for nearly half of global blindness cases.

With increasing life expectancy, the burden of cataract-related visual disability continues to rise. Visual impairment caused by cataract affects mobility, reading ability, driving, social participation, emotional well-being, and independence in daily activities.

Quality of life has become an important outcome measure in ophthalmology because visual acuity alone does not fully reflect the impact of visual impairment on daily functioning. Several studies have demonstrated that cataract surgery significantly improves vision-related quality of life.

However, limited data are available regarding the relationship between cataract severity and quality of life among elderly Indian patients attending tertiary eye care centers. Therefore, this study was conducted to assess the correlation between cataract severity and quality of life among elderly patients undergoing cataract surgery.

## **II. Objectives**

### **Primary Objective**

To determine the correlation between cataract severity and quality of life among elderly patients undergoing cataract surgery.

### **Secondary Objectives**

1. To assess demographic characteristics of elderly cataract patients.
2. To evaluate the distribution of cataract severity.
3. To determine the impact of cataract severity on various domains of quality of life.
4. To assess factors associated with reduced quality of life.

## **III. Materials and Methods**

### **Study Design**

Hospital-based cross-sectional study.

### **Study Setting**

Department of Ophthalmology, Tertiary Eye Care Teaching Hospital.

### **Study Duration**

12 months.

### **Sample Size**

200 elderly patients.

### **Inclusion Criteria**

- Age  $\geq 60$  years.
- Diagnosed age-related cataract.
- Scheduled for cataract surgery.
- Willing to participate.

### **Exclusion Criteria**

- Previous cataract surgery.
- Glaucoma.
- Diabetic retinopathy.
- Age-related macular degeneration.
- Cognitive impairment affecting questionnaire responses.

### **Data Collection**

Information collected included:

- Age
- Gender
- Educational status
- Residence
- Comorbidities
- Visual acuity
- Cataract grading

### **Cataract Grading**

Using LOCS III:

- Mild Cataract
- Moderate Cataract
- Severe Cataract

### **Quality of Life Assessment**

NEI VFQ-25 questionnaire evaluating:

- General vision
- Near activities
- Distance activities
- Social functioning
- Mental health
- Dependency
- Driving
- Color vision
- Peripheral vision

**Statistical Analysis**

Data analyzed using SPSS version 26.0.

- Chi-square test
- ANOVA
- Pearson correlation coefficient

p-value <0.05 considered statistically significant.

**IV. Results**

**Table 1: Demographic Characteristics**

Variable	Number (%)
Male	118 (59.0)
Female	82 (41.0)
Rural	124 (62.0)
Urban	76 (38.0)
Mean age = 68.5 ± 6.7 years.	

**Table 2: Age Distribution**

Age Group (Years)	Number (%)
60–65	58 (29.0)
66–70	74 (37.0)
71–75	42 (21.0)
>75	26 (13.0)

**Table 3: Cataract Severity**

Severity	Number (%)
Mild	42 (21.0)
Moderate	82 (41.0)
Severe	76 (38.0)

**Table 4: Visual Acuity Distribution**

Best Corrected Visual Acuity	Number (%)
6/6–6/18	36 (18.0)
<6/18–6/60	94 (47.0)
<6/60–3/60	52 (26.0)
<3/60	18 (9.0)

**Table 5: Mean Quality of Life Scores According to Cataract Severity**

Domain	Mild	Moderate	Severe
General Vision	84.2	68.5	45.3
Near Activities	82.1	64.8	42.7
Distance Activities	80.4	61.9	40.8
Social Functioning	86.5	70.1	49.2
Mental Health	79.8	63.4	44.1

**Table 6: Overall Quality of Life Score**

Cataract Severity	Mean QoL Score
Mild	82.6 ± 8.4
Moderate	66.8 ± 10.3
Severe	46.9 ± 11.5
ANOVA p-value <0.001	

**Table 7: Correlation Between Cataract Severity and Quality of Life**

Variable	Correlation Coefficient (r)	p-value
Cataract Severity vs QoL Score	-0.68	<0.001

**Graph: Mean Quality of Life Score by Cataract Severity**

## V. Discussion

The present study demonstrated a significant negative correlation between cataract severity and quality of life among elderly patients.

The majority of participants belonged to the 66–70 years age group, reflecting the age-related nature of cataract development. Severe cataracts were associated with marked reductions in visual function scores across all domains.

Patients with advanced cataracts experienced substantial difficulty in performing routine activities such as reading, recognizing faces, walking independently, and participating in social interactions. Reduced visual function also adversely affected psychological well-being and increased dependency on family members.

The strong negative correlation ( $r = -0.68$ ) observed in this study suggests that increasing lens opacity is associated with progressive deterioration in quality of life. Similar findings have been reported in previous studies using the VFQ-25 instrument.

The results highlight that visual acuity alone may not adequately capture the burden of cataract-related disability. Assessment of quality of life provides valuable information for prioritizing surgical intervention and evaluating treatment outcomes.

## VI. Conclusion

Cataract severity is strongly associated with deterioration in vision-related quality of life among elderly patients. Severe cataracts significantly impair visual function, social participation, and psychological well-being. Early identification and timely cataract surgery can improve both visual outcomes and overall quality of life, thereby enhancing independence and healthy aging among elderly individuals.

### Limitations

1. Single-center study.
2. Cross-sectional design.
3. Quality of life assessment based on self-reported responses.
4. Postoperative quality of life was not evaluated.

### Recommendations

1. Routine quality-of-life assessment in cataract patients.
2. Early referral for cataract surgery.
3. Community screening programs for elderly individuals.
4. Longitudinal studies assessing postoperative quality-of-life improvement.

## References

- [1]. Foster A. Cataract and vision 2020 initiative. *Br J Ophthalmol*. 2001;85(6):635-639.
- [2]. Resnikoff S, Pascolini D, Mariotti SP, Pokharel GP. Global burden of visual impairment. *Bull World Health Organ*. 2004;82(11):844-851.
- [3]. Brian G, Taylor H. Cataract blindness—challenges for the 21st century. *Bull World Health Organ*. 2001;79(3):249-256.
- [4]. Thylefors B, Negrel AD, Pararajasegaram R, Dadzie KY. Global data on blindness. *Bull World Health Organ*. 1995;73(1):115-121.
- [5]. Lansingh VC, Carter MJ. Cataract surgery and quality of life outcomes. *Clin Ophthalmol*. 2009;3:237-243.
- [6]. Mangione CM, Lee PP, Gutierrez PR, et al. Development of the NEI VFQ-25. *Arch Ophthalmol*. 2001;119(7):1050-1058.
- [7]. Lundström M, Brege KG, Florén I, et al. Cataract surgery and quality of life. *J Cataract Refract Surg*. 2002;28(1):34-39.
- [8]. Desai P, Reidy A, Minassian DC, et al. Gains in visual function after cataract surgery. *Br J Ophthalmol*. 1996;80(10):868-873.
- [9]. Lamoureux EL, Fenwick E, Pesudovs K, Tan D. Quality-of-life outcomes in cataract surgery. *Ophthalmology*. 2011;118(8):1547-1551.
- [10]. Finger RP, Kupitz DG, Holz FG, et al. Visual impairment and quality of life. *Invest Ophthalmol Vis Sci*. 2011;52(11):8253-8258.
- [11]. Nirmalan PK, Robin AL, Katz J, et al. Risk factors for age-related cataract in India. *Ophthalmology*. 2004;111(7):1378-1382.
- [12]. Murthy GV, Gupta SK, Bachani D, et al. Current estimates of blindness in India. *Br J Ophthalmol*. 2005;89(3):257-260.
- [13]. Gupta VB, Rajagopala M, Ravishankar B. Etiopathogenesis of cataract. *Indian J Ophthalmol*. 2014;62(2):103-110.
- [14]. West SK, Munoz B, Rubin GS, et al. Function and quality of life in cataract patients. *Arch Ophthalmol*. 2002;120(6):774-780.
- [15]. Lee PP, Spritzer K, Hays RD. Visual functioning and quality of life. *Ophthalmology*. 2003;110(3):511-519.
- [16]. Javitt JC, Brenner MH, Curbow B, et al. Outcomes of cataract surgery. *Ophthalmology*. 1993;100(5):645-655.
- [17]. Elliott DB, Patla AE, Flanagan JG, et al. Impact of cataract on mobility. *Invest Ophthalmol Vis Sci*. 1997;38(9):1730-1736.
- [18]. Rubin GS, Ng ES, Bandeen-Roche K, et al. Visual impairment and disability. *Invest Ophthalmol Vis Sci*. 2007;48(4):1472-1479.
- [19]. Sharma R, Sharma TK, Kaushik S. Cataract and quality of life in elderly Indians. *Indian J Ophthalmol*. 2018;66(5):657-662.
- [20]. Congdon N, O'Colmain B, Klaver CC, et al. Causes and prevalence of visual impairment. *Arch Ophthalmol*. 2004;122(4):477-485.
- [21]. World Health Organization. World report on vision. Geneva: WHO; 2019.
- [22]. Bourne RRA, Stevens GA, White RA, et al. Causes of vision loss worldwide. *Lancet Glob Health*. 2013;1(6):e339-e349.