

# VISUAL OUTCOME AND SELF-SATISFACTION AFTER CATARACT SURGERY IN PATIENTS ATTENDING SHAHEED DR. ASO HOSPITAL, SULAIMANIYAH CITY, IRAQ



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## ABSTRACT

### *Background*

Cataract is a natural lens opacification and the leading cause of reversible blindness. Globally, it causes 50-90% of all blindness in developing countries. However, there are no available methods to prevent or treat cataracts rather than surgery; thus, greater attention is needed to guarantee the adequate performance of the surgery.

### *Objectives*

To detect the cataract surgery visual outcome and the patient's satisfaction in Sulaimaniyah city, regardless of induced changes in corneal curvatures, size of the pupil, depth of the anterior chamber, and intraocular lens properties.

### *Patients and Methods*

This cross-sectional study was conducted on 160 patients who attended Shaheed Dr. Aso hospital after cataract surgery. We interviewed the patients and obtained their clinical information at least three months postoperatively. Patient satisfaction was measured as unfair, fair, reasonable, and sound. In addition, with clinical data from our questionnaire, we assessed factors associated with poor outcomes. Then, visual acuity (VA) was measured and announced as borderline, exemplary, or excellent.

### *Results*

The mean age of participants who underwent cataract surgery was  $63.74 \pm 11.2$  years, of which 63.7% were female. We found that the postoperative mean VA gradually decreased with age. We also compared the obtained data with vision satisfaction. Consequently, we found that patient satisfaction was significantly correlated with the visual outcome.

### *Conclusion*

The visual outcome was excellent in younger patients, those done in private sectors, and patients with no ocular comorbidities. Patient satisfaction was strongly related to their graphic work.

**Keywords:** *Cataract, Phacoemulsification, Visual outcome, Patient satisfaction.*

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## INTRODUCTION

The crystalline lens is a light-sensitive, transparent, biconvex elastic tissue at the back of the eye that comprises 1/3 of the eye's total optical influence and emphasizes light into an image on the retina. It functions in a parallel manner to the lens of a camera <sup>(1)</sup>.

A cataract is a blurry region in the eye's lens that is directly related to the aging of the crystalline lens. It is most prevalent among populations with low socioeconomic conditions, especially in developing countries <sup>(2)</sup>. In 2015, cataracts affected 24.4 million individuals in the United States of America <sup>(3)</sup>. The Centers for Disease Control and Prevention (CDC) estimates that this number is expected to rise to almost 40 million by 2025. Age-related cataracts are presumed to have the most significant socioeconomic impact because of their high prevalence <sup>(4)</sup>. Based on a meta-analysis study and systematic review, the highest prevalence of blindness (41.7-42.0%) in Asian countries is caused by cataracts, with the highest rate in Iran <sup>(5)</sup>.

The unique therapy for cataracts is removing the lens and replacing it with a permanent artificial intraocular lens (IOL) in a successful surgery that recovers global vision and quality of life <sup>(6)</sup>. In developed countries, phacoemulsification is considered the gold standard for cataract treatment, while in low/middle-income countries, manual minor incision cataract surgery (MSICS) using self-sealing and suture more minor incisions is common. Both techniques could gain excellent visual results; in 2013, approximately >13 million cataract surgeries were conducted worldwide <sup>(7)</sup>.

The utilization of patient-reported outcome measures (PROMs) is enhanced in several health care centers, including ophthalmology. Indeed, measuring VA as a clinical outcome measure (COM) post-cataract correction is beneficial, while VA alone is not successful in impacting the patient's apparent visual performance <sup>(8)</sup>.

Generally, surgical involvement in correcting visual damage or blindness results in cataracts <sup>(9)</sup>. The outcome can be determined by measuring postoperative VA, ability to function, quality of life, and economic rehabilitation. Visual satisfaction of the patient with the capacity to perform daily activities relied on the visual outcome. The World Health Organization (WHO) acclaims that poor visual outcomes about best-corrected visual acuity (BCVA) of <6/60 and borderline

(BCVA) of <6/18 after cataract surgery should not be >10% to 20% <sup>(10)</sup>.

Patient satisfaction is a very particular perception that is challenging to assess. Measuring the involvement and patient's view provides valuable data. Attainment of facility establishment is a worthy display for patient satisfaction <sup>(11)</sup>. Thus, we aimed to detect the visual outcome of cataract surgery and the patient's satisfaction in Sulaimaniyah city. Also, we provide baseline information for the clinicians/researchers, especially in the locality, to redesign a standardized novel protocol to enhance surgical visual outcomes.

## PATIENTS AND METHODS

This cross-sectional study was done on 160 patients who had undergone a unilateral or bilateral cataract surgery at Shaheed Dr. Aso hospital and the researcher's clinic. The data of this study was collected from 1st September 2019 till 15th February 2020, when our hospital was emptied of COVID-19 patients, and the eye department stopped receiving patients. Most of the cataract surgeries performed in our area were phacoemulsification, with extracapsular cataract extraction (ECCE) and minor incision cataract surgery (SICS). All types were conducted with IOL insertion.

### Study setting and data collection

We collected patients' clinical information using a self-prepared well-designed questionnaire through an intensive interview, including the entire history, performing a detailed ophthalmic examination such as VA, BCVA, autorefractometry, IOP slit lamp, and indirect ophthalmoscopy using a +78 lens.

Additionally, sociodemographic data such as age, gender, residency, and occupation, as well as clinical variables such as VA before surgery, operation date, previous ocular surgery, visual comorbidity (such as macular degeneration, diabetic retinopathy, glaucoma), surgical technique, and the patient has followed up mode.

### Study protocol

We grouped the patient's VA as poor, borderline, and reasonable based on the WHO classification of VA. Consequently, patients' satisfaction with cataract surgery was reported and scored as unfair, fair, exemplary, or excellent. Finally, we assessed factors associated with poor outcomes concerning the collected patient's clinical data.

**Inclusion criteria**

Patients underwent cataract correction surgically, regardless of age and gender.

**Exclusion criteria**

Patients with complicated cataract surgery were excluded from this study.

**Ethical approval**

This study protocol is approved by the Ethical Committee of the College of Medicine, the University of Sulaimani, with no. 189 on 9th January 2022.

**Statistical analysis**

Obtained data were analyzed using SPSS software (version 25). Results were presented as frequencies and percentages, and  $P < 0.05$  was considered significant.

**RESULTS**

The patients were aged 35-90 years with a mean of  $63.74 \pm 11.2$  years. Of 160 cases, 102 (63.8%) were

females, and 58 (36.3%) were males. On the other hand, most of the patients (50; 31.3%) were aged 60-69 years; followed by 50-59 and 70-79 (38; 23.8%), while the lowest rate (15; 9.4%) was seen in >79-year age group. Additionally, majority of patients were from urban area (94; 58.8%), from intermediate income family (73; 45.6%), and housewives (83; 51.9%) (Table 1). Furthermore, the postoperative mean VA gradually decreases with age (Figure 1).

Moreover, most of the patients (108) had a good VA, 34 had an excellent VA, while the lowest numbers (18) were in the borderline group. Regarding the patient's satisfaction score, the majority (41.9%) had a good score, followed by very good (38.1), fair (16.3%), and then unfair (3.8%). While comparing the VA and patient satisfaction, we found a significant correlation between them ( $P < 0.001$ ). Concerning the factors related to poor outcomes of cataract surgery, we found a sensitivity of 91.4%, specificity of 21.9%, and accuracy of 77.5%, Table 2.

**Table 1. Data of the sociodemographic characteristics.**

Sociodemographic characteristic		Frequency	%
<b>Gender</b>	Male	58	36.3
	Female	102	63.8
<b>Age (Years)</b>	<50	19	11.9
	50-59	38	23.8
	60-69	50	31.3
	70-79	38	23.8
	>79	15	9.4
<b>Residency</b>	Urban	94	58.8
	Semi-urban	52	32.5
	Rural	14	8.8
<b>Socioeconomic status</b>	Poor	72	45.0
	Intermediate	73	45.6
	Good	15	9.4
<b>Occupation</b>	Employed	47	29.4
	Housewife	83	51.9
	Retired	30	18.8
<b>Total</b>		<b>160</b>	<b>100.0</b>

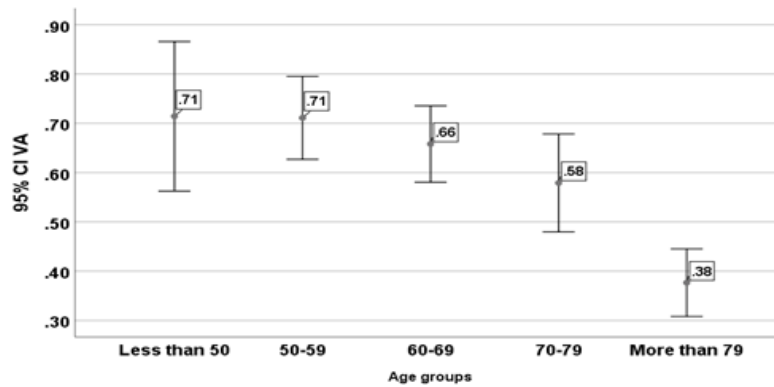


Figure 1. Mean visual acuity (VA) in the age groups.

Table 2. Association between patient satisfaction with visual acuity.

Variable	Visual acuity (no.; %)			Total	P-value	
	Borderline	Good	Very good			
Patient's satisfaction score	Unfair	2 (11.1%)	3 (2.8%)	1 (2.9%)	6 (3.8%)	
	Fair	5 (27.8%)	17 (15.7%)	4 (11.8%)	26 (16.3%)	
	Good	5 (27.8%)	56 (51.9%)	6 (17.6%)	67 (41.9%)	< 0.001
	Very good	6 (33.3%)	32 (29.6%)	23 (67.6%)	61 (38.1%)	
<b>Total</b>	<b>18 (100%)</b>	<b>108 (100%)</b>	<b>34 (100%)</b>	<b>160 (100%)</b>		
<b>Factors associated with poor outcome</b>						
Sensitivity				91.4%		
Specificity				21.9%		
Positive Predictive Value				82.4%		
Negative Predictive Value				38.9%		
Accuracy				77.5%		

## DISCUSSION

The era of recent cataract surgery is drawing back to 1967 when Kelman first designated phacoemulsification. Previous to this advance, the goal of intracapsular and extracapsular cataract removal was to recover the best improved VA with little anticipation of eminence uncorrected visual outcomes <sup>(12)</sup>.

The expected and actual performance differences mediate patient satisfaction with cataract surgery. In this study, the age group of patients showed that the majority were between 60-69 years, which conforms with that seen in Ibadan University College Hospital, Nigeria <sup>(13)</sup>.

This study achieved perfect VA in the younger age group

(50-69 years) than in the older age group. This conforms with a study done in America, Canada, Denmark, and Spain in 1998 by Jens Christian Norregaard et al. They found that older age had a significant predictor of worse visual outcomes and inversely related that might be due to poorer general health status, lower preoperative VA or a noticeable drop in retinal neural function <sup>(14)</sup>.

In this study, females achieved better visual outcomes than males, which is in contrast to a study done in the UK, 2005 in which men were more satisfied than women, as older females had been associated with less satisfactory visual outcomes that could be due to the higher proportion of female participants <sup>(15)</sup>.

In the present study, a better visual outcome was

achieved in patients with no ocular comorbidities, which conforms with a survey done in Trinidad and Tobago by Sonoran et al., 2015 who stated that ocular comorbidity raises the probability of a poor outcome by two times <sup>(16)</sup>.

Although there is a correlation between ocular comorbidity and cataract surgery, it is not avoidance of cataract surgery. Analysis of systemic comorbidities such as hypertension (HT), diabetic Mellitus type 2 (DMT2), and others revealed no association with poor satisfaction. Several studies identified DMT2 as a risk factor for most cases of cataracts, especially in the elderly <sup>(17)</sup>.

In this study, DMT2 and HT were not significantly associated with poor outcomes statistically not significant (chi-square 0.888), which is supported by a retrospective study conducted in Trinidad and Tobago from 2009 to 2014 401 eyes by Sonoran et al., 2015 <sup>(16)</sup>.

Overall patient satisfaction in the study was 41.9%, with good VA (51.9%), which is lower than the patient satisfaction found in Egypt (85%) Wasfi et al., 2008, in a retrospective study on 150 patients <sup>(18)</sup>.

In conclusion, our visual outcome and patient satisfaction are at a perfect level. Statistically, no considerable difference between private and public hospitals among the study population has been detected, unrelated to gender, laterality, or address. Visual acuity outcome decreases with the increase in age. The patient's satisfaction is strongly related to observable effects. It is also expected that changes in ocular tests impact the eye's optical features.

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#### **Conflict of interest**

The author declares there is no conflict of interest for this study.

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