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Functional Outcomes in Cataract Eyes in Iraq for 120 Patients

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Abstract: It has been found that vision impairment enhances physical disability, decreases movement, and even has a correlation with greater mortality. Our study evaluates functions of vision outcomes at Iraqi patients after cataract eyes in comparison with pre-surgery. This study recorded the functional and demographic data of 112 cataract patients from the Iraqi population who were willing to participate in this study during the period between February 2023 - March 2024. We evaluated visual functions after cataract surgery in comparison to before surgery. The current findings found that 41.96% of patients had been affected by the left eye. 33.93% of patients had affected by the right Eye, and 24.11% of patients affect with both eyes. The most frequent symptoms got blurry vision with 34 cases and difficulty with night vision with 24 cases. In the study, 112 patients were included, and the results indicated that 72 patients (64.29%) had visual acuity below 0.1, suggesting poor vision, while 13 patients (11.61%) had vision above 0.5, indicating excellent vision before surgery. Following surgery, 11 patients (9.82%) had visual acuity below 0.1, while 84 patients (75%) had vision above 0.5, indicating excellent vision. This finding underscores the efficacy of SICS in achieving optimal visual outcomes for the majority of its patients. In summary, cataracts significantly impair the visual function of the eye. Cataract surgery improves visual performance in patients with poor BCVA.

Keywords: Cataract Eyes Surgery; Visual Function; Visual Acuity Assessment (BCVA); and General Health Quality - Life Questionnaire.

INTRODUCTION

Cataract surgery is the most common surgical intervention ever. Around 900,000 procedures of this kind are performed in the world every year [American Academy of Ophthalmology Preferred Practice Pattern, 1989; Lee, P. P. *et al*., 1993; Lundstrom, M. *et al*., 2006; Wright, C. J. *et al*., 2002]. The expectations of patients are high - and right. [Quintana, J. M. *et al*., 2010; Applegate, R. A. *et al*., 2003; Lombardo, M. *et al*., 2010; Perez, G. M. *et al*., 2009]

The procedure does not take long - barely 15 minutes with a complication-free course and in the hands of an experienced surgeon [Kamiya, K. *et al*., 2014]. The functional result is usually very good [Artal, P. *et al*., 2011]. The lens, which is typically clouded due to age (in rarer cases, the cataract can also be caused by a trauma or a metabolic disease), is removed, and an intraocular lens is implanted in its place, which is selected according to the individual wishes of the patient and the medical or visual requirements. [Lyall, D. A. *et al*., 2013; Salmon, T. O. *et al*., 2006; Hartwig, A. *et al*., 2012; Norregaard, J. C. *et al*., 1998; Michael, R. *et al*., 2009]

In addition to monofocal IOLs, which enable clear vision in the distance, there are a number of other optical designs, such as multifocal and accommodative IOLs, which also allow focusing on near and intermediate distance, or toric IOLs, which compensate for a pre-existing corneal curvature (astigmatism) [Little, J. A. *et al*., 2014; Yazar, S. *et al*., 2014]. For many patients, "Visual 1.0'. 100% visual acuity of the operated eye is a realistic end result today. [Wan, X. H. *et al*., 2014; Wang, L. *et al*., 2003; Levy, Y. *et al*., 2005]

PATIENTS AND METHODS

I. Data Collection

We conducted a cross-sectional study of 112 cataract patients aged 30-60 years during the period from February 2023 to March 2024. All patients underwent small incision cataract surgery (SICS) in different hospitals in Iraq. We recorded demographic parameters, including age, gender, body mass index, smoking, comorbidities, marital status, and educational status.

II. Inclusion and exclusion criteria

For inclusion and exclusion data, this study included:

1) Patients aged 30-60 years.
2) Normal and obese patients.
3) Patients with hypertension, obesity, anemia, heart disease, thyroid disease, and other diseases.

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4) Smokers.
5) Patients who only underwent small incision cataract surgery (SICS).

Exclusion criteria included:
1) Patients aged <30 or >60 years.
2) Pregnant patients.
3) Patients who consume alcohol.
4) Patients with glaucoma.
5) Patients who have undergone previous eye surgeries.

IV. Surgical technique

After performing a superior conjunctival peritomy to reveal the bare sclera, a 6.8-millimeter frown partial thickness scleral incision was made about 2 mm posteriorly to the limbus. A crescent blade was used to carry a partial thickness scleral tunnel anteriorly into the clear cornea, widening the tunnel anteriorly. An ophthalmic viscosurgical device was used to fill the anterior chamber, and a 2.75 mm keratome was utilized for entering the anterior chamber, that is the center of the corneoscleral tunnel.

Using a cystotome, a constant curvilinear capsulorhexis measuring roughly 6.5 mm was started, and forceps were used to finish it. An iris sweep was used to move the cataractous lens through the capsular bag and onto the anterior chamber. Irrigating Vectis was used to remove the nucleus from the anterior chamber and expand the internal aperture of the scleral tunnel. The removal of cortical remains was carried out by bimanual irrigation and aspiration. The capsular bag was filled with a three-piece acrylic intraocular lens. The three-piece lenses were positioned within the ciliary sulcus in situations when there was an anterior capsular rupture or insufficient zonular support. Interrupted 10–0 nylon sutures were used to seal the incision if the scleral tunnel was not waterproof.

III. Visual function measures:

This study conducted a questionnaire to measure the quality of visual acuity of patients with cataracts, where they were divided into three categories:

- Level 1: Good vision, which includes visual acuity scores higher than 0.5 (>20/40).
- Level 2: Average vision, which includes visual acuity scores between 0.2 and 0.5 (20/100) and (20/40).
- Level 3: Poor vision, which includes visual acuity scores less than 0.1 (20/200).

We conducted BCVA measurements to measure visual acuity before and after cataract surgery.

A questionnaire was conducted to evaluate the general health quality of patients, which is determined between 0 - 100, where 0 represents the poorest quality and higher scores represent the highest quality.

RESULTS

Table 1: Demographic features of patients with cataract eyes

Variables	Number of patients [N = 112]	Percentage, %
Age, [Y]		
30 – 40	28	25.00%
41 – 50	38	33.93%
51 – 60	46	41.07%
Gender		
Men	73	65.18%
Women	39	34.82%
Body Mass Index, [Kg/m2]		
Underweight	12	10.71%
Normal weight	25	22.32%
Overweight	33	29.46%
Obesity	42	37.5%
Smoking		
Yes	52	46.43%
No	60	53.57%
Comorbidities		
No	37	33.04%
Hypertension	33	29.46%
Diabetes	24	21.43%

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Anemia	7	6.25%
Heart diseases	6	5.36%
Thyroid gland	3	2.68%
Others	2	1.79%
Marital status		
Married	87	77.68%
Unmarried	25	22.32%
Economic status, $		
< 400	39	34.82%
400 – 650	46	41.07%
> 650	27	24.11%

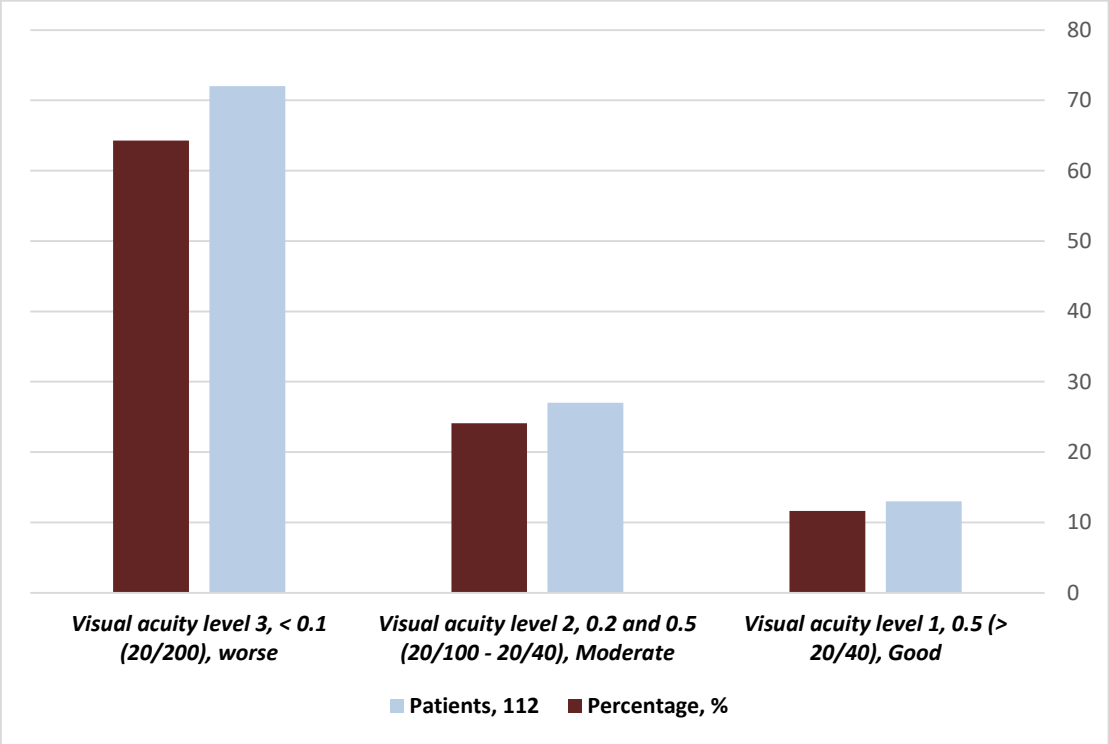

Figure 1: Classification of visual acuity on patients during pre-surgery

Table 2: Enrolling examination data of cataract eyes during preoperative.

Variables	No of Patients, {n = 112}	Percentage, %
Affected side		
Left Eye	47	41.96%
Right Eye	38	33.93%
Both Eyes	27	24.11%
Symptoms		
Blurry Vision	34	30.36%
Difficulty with Night Vision	24	21.43%
Glare and Halos	18	16.07%
Fading Colors	20	17.86%
Double Vision in One Eye	16	14.29%
Causes		
Aging	50	44.64%
UV Radiation	74	66.07%
Diabetes	24	21.43%
Smoking	52	46.43%
Trauma	37	33.04%

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Certain Medications	29	25.89%
Genetics	15	13.39%
Follow-up duration (months)	4.8 ± 3.6	

Table 3: Enroll visual acuity outcomes of patients after cataract eye surgery.

Postoperative visual acuity	Number of patients {n = 112]	%
Visual acuity level 1, 0.5 (> 20/40), Good	84	75.0%
Visual acuity level 2, 0.2 and 0.5 (20/100 - 20/40), Moderate	17	15.18%
Visual acuity level 3, < 0.1 (20/200), worse	11	9.82%

Table 4: Postoperative complications

Variables	Number of patients {n = 112]	%
Transient increased intraocular pressure	3	2.68%
Hypotony	1	0.89%
Hyphema	1	0.89%
Corneal decompensation	1	0.89%
Posterior capsular rent with successful IOL implantation	2	1.79%
Posterior capsular rent with aphakia	3	2.68%
Endophthalmitis	1	0.89%
Choroidal detachment	1	0.89%
Surgically induced astigmatism	2	1.79%
Total	15	13.39%

Table 5: A conducting of general health quality of life questionnaire into patients with cataract eyes in preoperative and postoperative

Items	Mean ± SD, Quality of life
Physical function	75.26 ± 7.44
Psychological function	82.14 ± 5.90
Social and Emotional functions	73.78 ± 6.38
Treatment function	80.60 ± 5.89

DISCUSSION

For cataract surgery, visual acuity is typically regarded as the key factor. This splitting line is often established at BCVA<20/40 in France [Porter, J. *et al*., 2001]. However, because of visual abnormalities caused by cataracts, many people who have excellent visual acuity still have trouble performing everyday tasks. As a result, visual acuity by alone may not be enough to determine when cataract surgery is appropriate for these individuals. [Villegas, E. A. *et al*., 2008]

We evaluated the objective functional visual results of cataract surgery for people with preoperative BCVA≥20/40 in the current research. We discovered that these patients prior to surgery wavefront variables were usually subpar, and that cataract surgery greatly enhanced their visual acuity and quality. This indicated that cataract surgery is an option for these patients after a thorough evaluation of their visual function.

Particularly in nations having limited resources, small-incision cataract surgery can be a promising and reasonably priced method of treating cataracts. The objective of this study was to evaluate the technique's optical results as well as any postoperative problems.

Out of 112, 72 patients (64.29%) had visual acuity < 0.1, indicating poor vision, and 13 patients (11.61%) had vision above 0.5 as excellent vision before to surgery. Following surgery, 11 patients (9.82%) had visual acuity < 0.1, to 84 patients (75%) had vision > 0.5 for excellent vision. This demonstrates that SICS can provide almost all of its patient's excellent vision.

Following cataract surgery, 89.3% of patients exhibited visual acuity among 6/6 and 6/18, according to the Netherlands research [Mathur, A. *et al*., 2012; Rekas, M. *et al*., 2009; Fujikado, T. *et al*., 2004; Atchison, D. A. *et al*., 2008]. In our investigation, we found which the most common surgical result was temporary elevated intraocular pressure. One (0.89%) episode of hypotony with insufficient wound closure was reported. One instance (0.89%) had hyphema, which was brought through the individual's own hand, causing direct harm. [Namba, H. *et al*., 2014; deCastro, L. E. *et*

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al., 2007; Philip, K. *et al*., 2012] But after five days, it became evident, and the patient's optical results were favorable. Three (2.68%) of the patients in our research had posterior capsular rent accompanied by aphakia, which was brought on by incorrect IOL implantation in the bag. [Sachdev, N. *et al*., 2004; Cabot, F. *et al*., 2013; McAlinden, C. *et al*., 2010] The optic component of the IOL, however, stayed within the field of vision; hence, it had no effect on the final visual result.

CONCLUSIONS

From couching in the middle - ages to modern procedures that have fewer difficulties and provide excellent results, cataract surgery has undergone significant changes. SICS is an affordable procedure that can be carried out in busy clinics without the need for pricey equipment and produces positive visual results post-operation.

REFERENCES

1. American Academy of Ophthalmology Preferred Practice Pattern. The Academy, San Francisco, (1989).
2. Lee, P. P. & Hilborne, L. H. (Eds.). "Cataract surgery: A literature review and ratings of appropriateness and cruciality." RAND, (1993).
3. Lundstrom, M., Albrecht, S., Hakansson, I., Lorefors, R., Ohlsson, S. & Polland, W, *et al*. "NIKE: A new clinical tool for establishing levels of indications for cataract surgery." *Acta Ophthalmologica Scandinavica*, 84.4 (2006): 495–501.
4. Wright, C. J., Chambers, G. K. & Robens-Paradise, Y. "Evaluation of indications for and outcomes of elective surgery." *CMAJ*, 167.5 (2002): 461–466.
5. Quintana, J. M., Arostegui, I., Alberdi, T., Escobar, A., Perea, E. & Navarro, G, *et al*. "Decision trees for indication of cataract surgery based on changes in visual acuity." *Ophthalmology*, 117.8 (2010): 1471–1478.e1–3.
6. Applegate, R. A., Marsack, J. D., Ramos, R. & Sarver, E. J. "Interaction between aberrations to improve or reduce visual performance." *Journal of Cataract & Refractive Surgery*, 29.8 (2003): 1487–1495.
7. Lombardo, M. & Lombardo, G. "Wave aberration of human eyes and new descriptors of image optical quality and visual performance." *Journal of Cataract & Refractive Surgery*, 36.2 (2010): 313–331.
8. Perez, G. M., Manzanera, S. & Artal, P. "Impact of scattering and spherical aberration in contrast sensitivity." *Journal of Vision*, 9 (2009): 1–10.
9. Kamiya, K., Shimizu, K., Iijima, A. & Kobashi, H. "Factors influencing contrast sensitivity function in myopic eyes." *PLoS One*, 9.11 (2014): e113562.
10. Artal, P., Benito, A., Perez, G. M., Alcon, E., De Casas, A. & Pujul, J, *et al*. "An objective scatter index based on double-pass retinal images of a point source to classify cataracts." *PLoS One*, 6.2 (2011): e16823.
11. Lyall, D. A., Srinivasan, S. & Gray, L. S. "Changes in ocular monochromatic higher-order aberrations in the aging eye." *Optometry and Vision Science*, 90.9 (2013): 996–1003.
12. Salmon, T. O. & van de Pol, C. "Normal-eye Zernike coefficients and root-mean-square wavefront errors." *Journal of Cataract & Refractive Surgery*, 32.12 (2006): 2064–2074.
13. Hartwig, A. & Atchison, D. A. "Analysis of higher-order aberrations in a large clinical population." *Investigative Ophthalmology & Visual Science*, 53.12 (2012): 7862–7870.
14. Norregaard, J. C., Bernth-Petersen, P., Alonso, J., Dunn, E., Black, C., Andersen, T. F, *et al*. "Variation in indications for cataract surgery in the United States, Denmark, Canada, and Spain: Results from the International Cataract Surgery Outcomes Study." *British Journal of Ophthalmology*, 82.10 (1998): 1107–1111.
15. Michael, R., van Rijn, L. J., van den Berg, T. J., Barraquer, R. I., Grabner, G., Wilhelm, H, *et al*. "Association of lens opacities, intraocular straylight, contrast sensitivity, and visual acuity in European drivers." *Acta Ophthalmologica*, 87.6 (2009): 666–671.
16. Little, J. A., McCullough, S. J., Breslin, K. M. & Saunders, K. J. "Higher order ocular aberrations and their relation to refractive error and ocular biometry in children." *Investigative Ophthalmology & Visual Science*, 55.8 (2014): 4791–4800.
17. Yazar, S., Hewitt, A. W., Forward, H., McKnight, C. M., Tan, A., Mountain, J. A, *et al*. "Comparison of monochromatic aberrations in young adults with different visual acuity and refractive errors." *Journal of Cataract & Refractive Surgery*, 40.3 (2014): 441–449.
18. Wan, X. H., Li, S. M., Xiong, Y., Liang, Y. B., Li, J., Wang, F. H, *et al*. "Ocular monochromatic aberrations in a rural Chinese adult population." *Optometry and Vision Science*, 91.1 (2014): 68–75.

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19. Wang, L. & Koch, D. D. "Ocular higher-order aberrations in individuals screened for refractive surgery." *Journal of Cataract & Refractive Surgery*, 29.10 (2003): 1896–1903.
20. Levy, Y., Segal, O., Avni, I. & Zadok, D. "Ocular higher-order aberrations in eyes with supernormal vision." *American Journal of Ophthalmology*, 139.2 (2005): 225–228.
21. Porter, J., Guirao, A., Cox, I. G. & Williams, D. R. "Monochromatic aberrations of the human eye in a large population." *Journal of the Optical Society of America A: Optics, Image Science, and Vision*, 18.8 (2001): 1793–1803.
22. Villegas, E. A., Alcon, E. & Artal, P. "Optical quality of the eye in subjects with normal and excellent visual acuity." *Investigative Ophthalmology & Visual Science*, 49.10 (2008): 4688–4696.
23. Mathur, A., Atchison, D. A. & Tabernero, J. "Effect of age on components of peripheral ocular aberrations." *Optometry and Vision Science*, 89.7 (2012): E967–E976.
24. Rekas, M., Krix-Jachym, K., Zelichowska, B., Ferrer-Blasco, T. & Montés-Micó, R. "Optical quality in eyes with aspheric intraocular lenses and in younger and older adult phakic eyes: Comparative study." *Journal of Cataract & Refractive Surgery*, 35.2 (2009): 297–302.
25. Fujikado, T., Kuroda, T., Ninomiya, S., Maeda, N., Tano, Y. & Oshika, T, *et al*. "Age-related changes in ocular and corneal aberrations." *American Journal of Ophthalmology*, 138.1 (2004): 143–146.
26. Atchison, D. A. & Markwell, E. L. "Aberrations of emmetropic subjects at different ages." *Vision Research*, 48.21 (2008): 2224–2231.
27. Namba, H., Hawasaki, R., Narumi, M., Sugano, A., Homma, K. & Mishi, K, *et al*. "Ocular higher-order wavefront aberrations in the Japanese adult population: The Yamagata Study (Funagata)." *Investigative Ophthalmology & Visual Science*, 56.1 (2014): 90–97.
28. deCastro, L. E., Sandoval, H. P., Bartholomew, L. R., Vroman, D. T. & Solomon, K. D. "High-order aberrations and preoperative associated factors." *Acta Ophthalmologica Scandinavica*, 85 (2007): 106–110.
29. Philip, K., Martinez, A., Ho, A., Conrad, F., Ale, J., Mitchell, P, *et al*. "Total ocular, anterior corneal, and lenticular higher order aberrations in hyperopic, myopic, and emmetropic eyes." *Vision Research*, 52 (2012): 31–37.
30. Sachdev, N., Ormonde, S. E., Sherwin, T. & McGhee, C. N. "Higher-order aberrations of lenticular opacities." *Journal of Cataract & Refractive Surgery*, 30.8 (2004): 1642–1648.
31. Cabot, F., Saad, A., McAlinden, C., Haddad, N. M., Grise-Dulac, A. & Gatinel, D. "Objective assessment of crystalline lens opacity level by measuring ocular light scattering with a double-pass system." *American Journal of Ophthalmology*, 155.4 (2013): 629–635.
32. McAlinden, C., Pesudovs, K. & Moore, J. E. "The development of an instrument to measure the quality of vision: The Quality of Vision (QoV) questionnaire." *Investigative Ophthalmology & Visual Science*, 51.11 (2010): 5537–5545.

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