



Quality of Visual Acuity on Post Cataract Surgery Patient in Waled Hospital 2022

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KEYWORDS

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ABSTRACT

Cataracts are a clouding of the lens caused by lens hydration and protein denaturation. The World Health Organization (WHO) estimates that 18 million people have cataracts in both eyes, accounting for 47% of global blindness. According to the Ministry of Health (KEMENKES) 2017 report, cataracts cause 81.2% of blindness in Indonesia. Data from the Rapid Assessment of Avoidable Blindness (RAAB) 2013–2017 in West Java show that 71.7% of blindness in individuals aged over 50 years results from cataracts. This study aims to determine the quality of visual acuity in patients after cataract surgery at Waled Hospital in 2022. A retrospective descriptive observational design was used, based on patient medical records. Univariate analysis described the distribution by sex, age, number of eyes operated on, and vision quality one month after surgery. A total of 475 eyes (from 453 patients) underwent cataract surgery: 7 patients (1.5%) were aged 25–35 years, 31 (6.8%) aged 36–45 years, 123 (27.2%) aged 46–55 years, 132 (29.1%) aged 56–65 years, and 160 (35.3%) aged over 65 years. Male patients comprised 40.4% (183), and females 59.6% (270). One eye was operated on in 431 patients (90.7%), while both eyes were operated on in 44 (9.2%). Visual acuity outcomes one-month post-surgery were: good (6/6–6/18) in 318 patients (66.9%), moderate (<6/18–6/60) in 119 (25.1%), and poor (<6/60) in 38 (8.0%). The quality of visual acuity after cataract surgery at Waled Hospital in 2022 was predominantly good.

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INTRODUCTION

Cataracts are a cloudiness of the lens within the lens capsule due to lens hydration and denaturation of lens proteins. This cloudiness may result from disorders of lens metabolism that can arise at various ages. The World Health Organization (WHO) estimates that approximately 18 million people have cataracts in both eyes, making the condition responsible for 47% of worldwide blindness cases. According to the Ministry of Health (KEMENKES) in 2017, blindness due to cataracts accounts for 81.2%. Furthermore, national data from the Rapid Assessment of Avoidable Blindness (RAAB) between 2013 and 2017, based on a survey in West Java, found that around 71.7% of blindness in people aged 50 years or older was due to cataracts.

Cataracts may occur due to several causative factors, including age ≥ 40 years, exposure to ultraviolet rays—often related to occupational activities—metabolic diseases, and eye trauma. A randomized controlled study found that 50% of cataract patients are aged between 65 and 74 years, with the prevalence rising to 70% among individuals older than 75 years. Globally, the International Agency for the Prevention of Blindness (IAPB), in collaboration with WHO, introduced the Vision 2020: The Right to Sight program, which seeks to address

vision impairment and blindness worldwide. Indonesia has set a target to reduce the prevalence of blindness by 25% of the RAAB prevalence recorded between 2014-2017 by Rahmani & Ratnaningsih, (2023) the year 2030. Cataract Surgical Coverage (CSC) in West Java was reported to be 49.7% among cataract patients with visual acuity less than 3/60.

The primary management for cataracts today is surgery, aiming to improve visual acuity (Budiono et al., 2013; Khurana, 2015). Surgical techniques include Small Incision Cataract Surgery (SICS) and Phacoemulsification, chosen according to patient needs. One of the indicators for evaluating cataract surgery outcomes is the assessment of visual acuity before and after surgery. According to the National Health Service, the optimal quality of visual acuity (6/6) is usually achieved one month postoperatively. The time needed to reach the target visual sharpness after cataract surgery varies due to factors such as surgical technique, pre-existing conditions, biometric measurement accuracy, postoperative complications, and initial prognosis.

Research conducted by Nurhayati, Arifin Z, Hapipah, Ariyanti M. in 2020 showed an increase in visual acuity following surgery using the phacoemulsification method, with 85.8% of right eyes and 90.3% of left eyes achieving 6/18 acuity at three months postoperative. A separate study by Kurniasih U, Wahyuni N. T, Lestari S, et al. in 2021 found that visual sharpness after cataract surgery exhibited better acuity compared to preoperative levels.

Visual acuity measures the quality of eye function. It is determined by the formation of the smallest image on the retina, measured using the smallest object visible at a specific distance (Husna, 2023). Instruments for assessing visual acuity include printed chart cards such as Snellen charts. The WHO, (2021) provides a classification for postoperative visual acuity results: good (6/6–6/18), moderate (<6/18–6/60), and poor (<6/60).

Delivering excellent eye care, especially in cataract services, is a key starting point for increasing cataract surgery coverage. Patient satisfaction significantly affects hospital performance, with factors such as the doctor-patient approach, relationship, diagnostic accuracy, diagnostic availability, and the degree of integration among health workers influencing the quality of cataract surgery.

Previous studies have provided meaningful insights into postoperative visual acuity after cataract surgery but have left notable gaps in understanding patient outcomes in specific regional contexts. For example, Nurhayati et al. (2020) reported that patients receiving phacoemulsification achieved 85.8% (right eye) and 90.3% (left eye) visual acuity of 6/18 by the third postoperative month, demonstrating the technique's efficacy but not assessing outcomes at earlier intervals or across different hospital settings. Similarly, Kurniasih et al. (2021) documented significant improvements in visual acuity after cataract surgery compared with preoperative measurements, yet their investigation did not explore patient outcomes in referral hospitals serving semi-urban populations, nor did it evaluate visual quality within one month after surgery. These gaps highlight the need to evaluate short-term postoperative visual quality and patient outcomes in local healthcare settings such as Waled Regional General Hospital, a referral center in Cirebon Regency.

This study aims to assess the quality of visual acuity on post cataract surgery patient in Waled Hospital 2022. Waled Hospital serves as one of the referral hospitals for eye diseases in the Cirebon Regency area. Accordingly, choosing Waled Hospital as the study location makes it easier for researchers to recruit an adequate number of respondents. The purpose of this research is to describe postoperative visual acuity at one month, and its contributions include

providing scientific evidence for ophthalmology, guiding hospital quality improvement, and raising public awareness about cataract management.

RESEARCH METHOD

This research covers the science of ophthalmology. It has been conducted in the medical record room using the medical records of the Poly Mata at Waled Hospital, Cirebon Regency, for the period of January - December 2022 and this research was carried out in May - June 2024 at Waled Hospital, Cirebon Regency after obtaining ethical clearance.

This study uses an observational design, which is retrospective descriptive, to determine the quality of sharp vision in post-cataract surgery patients. The target population of this study is cataract patients at Waled Hospital, Cirebon Regency in 2022. The affordable population in this study is patients who were diagnosed with cataracts and had cataract surgery at the Eye Polyclinic of Waled Hospital, Cirebon Regency in 2022.

Inclusion Criteria

- 1) Eye diagnosed with cataract, and cataract surgery was performed at the Eye Poly of Waled Hospital, Cirebon Regency in 2022.
- 2) Eyes that were examined for sharp vision 1 month after cataract surgery at the Eye Poly of Waled Hospital, Cirebon Regency in 2022.

Exclusion Criteria

- 1) Eyes with complicating conditions (Trauma of the eyeball, diabetic retinopathy, anterior uveitis, glaucoma) pre-cataract surgery at the Eye Poly of Waled Hospital, Cirebon Regency in 2022.
- 2) Eyes with complications (endophthalmitis, retinal ablation, cystoid macular edema, astigmatism) after cataract surgery at the Poly Eye of Waled Hospital, Cirebon Regency in 2022.
- 3) There are no surgical report sheets in the medical record.

Operational Definition

Table 1. Operational Definition

No	Variable	Operational Definition	Measuring Instruments	Measurement results	Scale of Measurement
1.	Sharp quality of vision after cataract surgery	The determination of the quality of cataract surgery is seen from the best visual acuity measurement 1 month after cataract surgery with correction.	Medical records	According to WHO (2021) 1) Good (6/6-6/18) or (1-0.3) 2) Medium (<6/18-6/60) or (<0.3-0.1) 3) Poor (<6/60) or (<0.1). ⁽⁹⁾	Ordinal

Research Procedure

The stages of this research include:

- a) The research design is submitted to the health research ethics committee (ethical clearance).
- b) Search for medical record data of patients with cataract diagnosis in 2022 that meet the inclusion and exclusion criteria. This data is used as a sample framework.

c) Data that falls under the inclusion criteria, and subsequent exclusion will be analyzed by data

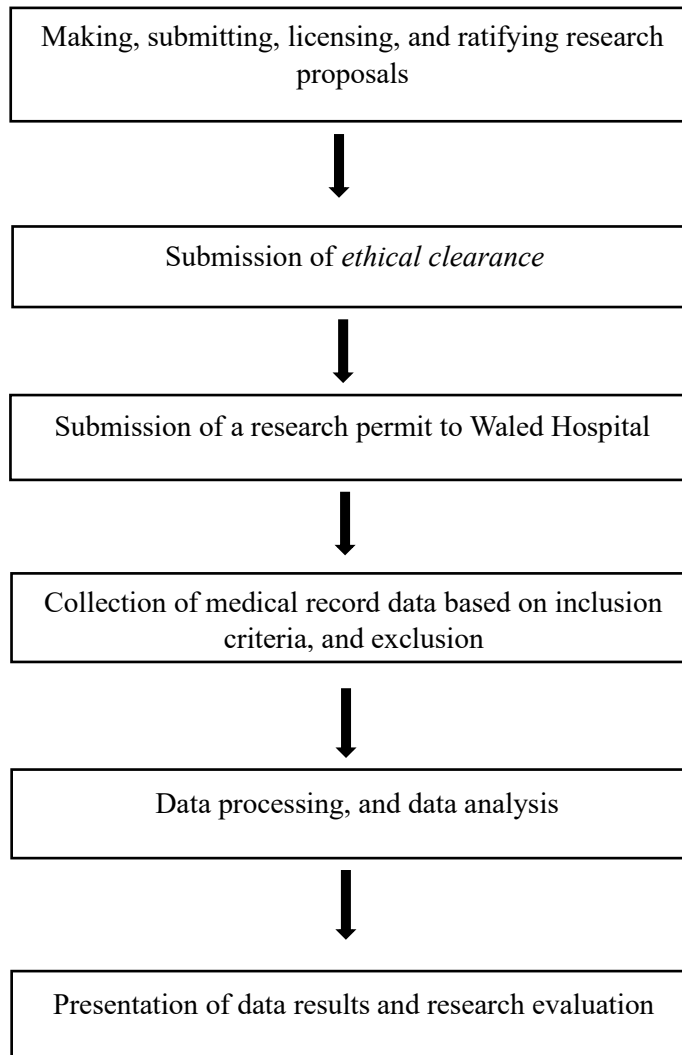


Figure 1. Research flow

Data Analysis

Data Processing

The stages of data processing in this study are:

- 1) Editing (data editing) is directly carried out at the data collection place in the field, so that if an error occurs, editing efforts can be carried out immediately.
- 2) Coding (data coding) is coding every data obtained from the patient's medical records so that it is easier to analyze the data.
- 3) Processing, which is grouping data according to the variables being researched to facilitate data analysis.
- 4) Tabulating (grouping) is grouping data according to the variables being studied to facilitate data analysis.
- 5) Entry (data input) is the activity of entering the results of the answers in the data processing program.

6) Cleaning (double-checking) is double-checking whether there are data errors so that the data is really ready for analysis.

Univariate Analysis

Univariate analysis is performed to describe the frequency distribution in a study. This study was used to determine the quality of sharp vision in patients after cataract surgery at Waled Hospital in 2022.

Research Ethics

The results of this research are with the permission of the Dean of the Faculty of Medicine, Swadaya Gunung Jati University No.94.06/FK/V/2024 and through a Research Certificate by the National and Political Unity Agency (KESBANGPOL) of Cirebon Regency No.000.9.2/938/Wadnas and PK. Then contacted the Ethics Commission of Waled Hospital, and received a Letter of Recommendation for Ethics Approval No. 000.9.2/037/KEPK/V/2024. Next, contact the Education and Training department of Waled Hospital, get the Hospital Director's License No. 800.2.2.1/1297-DIKLIT/2024. Through the Waled Hospital Training ransom letter, the researcher contacted the medical records of Waled Hospital to obtain research permits and collect the medical record data needed in the research.

RESULTS AND DISCUSSION

This study was conducted to assess the quality of sharp vision in patients after cataract surgery at Waled Hospital Affordable Population (574 eyes out of 544 patients) 31, 2022 using a retrospective descriptive approach. This with *total sampling techniques*. There was an affordable population of 574 eyes out of 544 cataract patients who underwent cataract surgery with details of 514 patients who had surgery on one eye, and 30 patients who had surgery on both eyes. There were 546 eyes out of 518 patients who met the inclusion criteria. Then 71 eyes were excluded from 65 patients due to complicating conditions such as glaucoma and diabetic retinopathy, a sample of 475 eyes was obtained from 453 patients with details of 431 patients who had surgery on one eye, and 22 patients who had surgery on both eyes. The results of the study describe the distribution of samples based on age, gender, number of eyes, and a sharp picture of the quality of vision 1 month after cataract surgery at Waled Hospital in 2022.

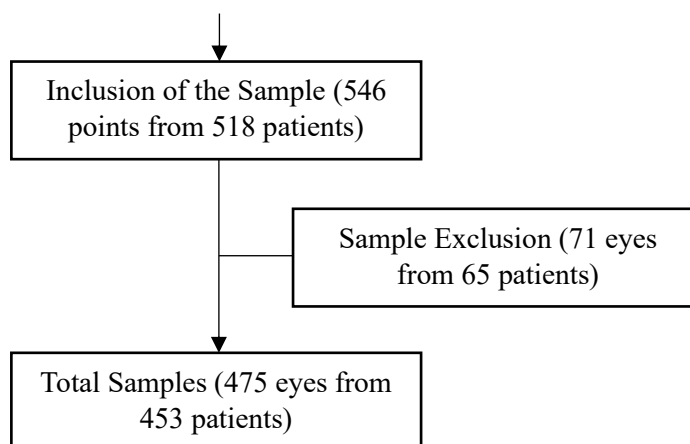


Figure 2. Sampling Flow

Distribution of Samples by Age

From the results of the study, the distribution of samples based on age was obtained in the following table:

Table 2. Distribution of samples by age

Age	Frequency (n)	Present (%)
25–35 Years	7	1,5%
36 – 45 Years	31	6,8%
46 – 55 Years	123	27,2%
56 – 65 Years Old	132	29,1%
> 65 years old	160	35,3%
Total	453	100%

In table 2, the distribution of samples based on age is obtained, namely at the age of 25–35 years there are 7 samples (1.5%), at the age of 36–45 years there are 31 samples (6.8%), at the age of 46-55 years there are 123 samples (27.2%), at the age of 56-65 years there are 132 samples (29.1%), and at the age of >65 years there are 160 samples (35.3%). The results of this study were most at the age of >65 years 160 samples (35.3%).

Distribution of Samples by Gender

From the results of the study, the distribution of samples by gender was obtained in the following table:

Table 3. Distribution of samples by gender

Gender	Frequency (n)	Present (%)
Man	183	40,4%
Woman	270	59,6%
Total	453	100%

In table 3, the distribution of samples by gender is obtained, namely in men there are 183 samples (40.4%), in women there are 270 samples (59.6%). The results of this study were most in women 270 samples (59.6%).

Number of Eyes Operated on for Cataracts at Waled Hospital in 2022.

From the results of the study, the number of cataract operated eyes at Waled Hospital in 2022 was obtained in the following table:

Table 4. Number of Eyes Operated on for Cataracts at Waled Hospital Tahun 2022

Number of Operated Eyes	Frequency (n)	Present (%)
1 eye operated on	431	90,7%
2 eye operated on	44	9,2%
Total	475	100%

In table 4, the number of eyes operated on cataracts at Waled Hospital in 2022 is 431 samples (90.7%) for 1 eye operated on, for 2 operated eyes there are 44 samples (9.2%). The results of this study showed that at most in 1 eye that was operated on there were 431 samples (90.74%).

Description of Visual Quality in Patients 1 Month Postgraduate Cataract Surgery at Waled Hospital in 2022

From the results of the study, a sharp picture of the quality of vision in patients 1 month after cataract surgery at Waled Hospital in 2022 was obtained in the following table:

Table 5. Overview of the quality of sharp vision in patients 1 Month after cataract surgery at Waled Hospital in 2022

Sharp Quality of Vision 1 month in postoperative cataract patients	Frequency (n)	Present (%)
Good (6/6 - 6/18) or (1-0.3)	318	66,9%
Medium (<6/18 - 6/60) or (<0.3-0.1)	119	25,1%
Poor (<6/60) or (<0.1)	38	8,0%
Total	475	100%

In table 5, it is found that the picture of the quality of sharp vision in patients 1 month after cataract surgery at Waled Hospital in 2022, in the good category (6/6-6/18) or (1-0.3) there were 318 samples (66.9%), medium category (<6/18-6/60) or (<0.3-0.1) there were 119 samples (25.1%), bad category (<6/60) or (<0.1) there were 38 samples (8.0%). The results of this study show that the quality of sharp vision in patients 1 month after cataract surgery at Waled Hospital in 2022 was the most in the good category (6/6-6/18) there were 301 samples (66.4%).

Distribution of Samples by Age

In this study, it was found that the most occurred in the age range of >65 years, there were 160 samples (35.3%). The results of this study are in accordance with the research of Hanis *et al* 2021 with a descriptive observational method, using 193 medical record data, the age of most cataract patients who underwent surgery occurred in the age range of 60-69 years of 87 (45.08%), this is due to the nature of the lens that changes with age, the lens will become cloudy, and its elasticity decreases. Epithelial fibers will continue to be produced causing the fibers to accumulate in the center of the lens resulting in reduced lens turbidity and elasticity resulting in decreased eye accommodation. Research by Putri *et al* 2024 retrospective descriptive method with 48 samples, found that the age group that underwent cataract surgery was at the age of ≥ 65 years there were 21 (43.8%) this is because the degenerative process will induce denaturation and coagulation of lens proteins which causes a sharp decrease in vision and cataract formation.

Supported by the research of Annisa *et al* 2022 with a retrospective descriptive method using medical record data of 41 samples who had undergone cataract surgery, it was found that as many as 19 (46%) were in the age range of 60-69 years.⁽¹³⁾ Adiputra *et al* stated that using 178 samples, it was found that most cataract patients who underwent cataract surgery were in the age range of ≥ 65 years, there were 41%. The same results were also obtained in the study by Manggala *et al.* (2021) that the age range of the most cataract patients undergoing cataract surgery was at the age of 60-69 years with a percentage of 44% of the total 609. In this age range, the risk factor for cataracts can increase because as we age, this is caused by degenerative processes in the elderly (Manggala *et al.*, 2021).

Distribution of samples by gender

The results of this study were most in women, there were 270 samples (59.6%), this is in line with the results of research conducted by Nurhayati *et al* in 2020 explaining that it was more in women 54.3% while in men it was 45.7%.⁽⁵⁾ This is also evidenced by the research of Kamajaya *et al* 2020 with a descriptive method using 96 evidence samples showing that the largest population is 56.9% of women while men are 43.1%. Supported by this study obtained in a *systematic review* by Prasad *et al* 2023 using 22 *studies*, it shows that the odds ratio of cataract incidence that undergoes surgery occurs in women is 35% greater than in men.

Ovarian hormones are associated with radiation-induced cataracts. The estrogenic hormone, β -estradiol has mitogenic properties and as an anti-oxidative in women's physiological conditions. Estrogen hormone supplements are responsible for lowering the

incidence of cataracts, so if a woman goes through menopause, the chances of developing cataracts are higher (Damayanti & Christina, 2023). This is in accordance with the results of this study which was found that it was most common in the female sex with 270 samples (59.6%).

Number of Eyes Operated on for Cataract at Waled Hospital in 2022.

The number of eyes operated on cataracts at Waled Hospital in 2022 was the most in 1 eye operated on there were 431 samples (90.7%). These results are likely to be influenced by several factors, including considerations of clinical conditions, patient eye conditions, and ophthalmologist recommendations. Many patients with bilateral cataracts prefer to have surgery on one eye first to assess the improvement in vision before proceeding to the second eye (Smith & Lee, 2020).

Research conducted by Johnson *et al* in 2021 found that more than 75% of patients who underwent surgery on one eye reported a significant improvement in their quality of life, and felt quite satisfied with those results in terms of their vision.

Patients who undergo surgery on both eyes reported better benefits in terms of visual stabilization. Research conducted by Zhang *et al* 2022 reported that patients who had surgery on both eyes had fewer difficulties in daily activities that required both eye vision such as driving, and reading but due to the risk of complications, and patient satisfaction after the first surgery, many chose to delay or even not proceed with surgery on the second eye.

Cataract surgery in both eyes offers better visual outcomes overall, preference for surgery on one eye is more prevalent in clinical practice, this decision is often influenced by the patient's specific clinical condition, and other limitations such as cost, and accessibility of the second surgery (Patel & Gupta, 2023).

Overview of Visual Acuity Quality in 1-Month Patients Post-Cataract Surgery at Waled Hospital in 2022

The quality of sharp vision in patients 1 month after cataract surgery at Waled Hospital in 2022 was the most in the category of either (6/6-6/18) or (1-0.3) there were 318 samples (66.9%). This result is in accordance with the research conducted by Putri *et al* 2024 using a descriptive method with a sample of 48 used, the results were obtained that postoperative vision >28 days was the most good category (95.8%), and the rest were moderate vision (4.2%). In the study, Putri *et al* also explained that the observed improvement in vision results is related to the process of re-epithelialization of the cornea of the eye where there is a return to optimal structural integrity and function of the cornea, namely at 4-6 weeks postoperatively. This study is supported by research conducted by Zalukhu *et al* 2023 with a *descriptive method* using 108 samples, the results were obtained that the results of the vision in the 4th week after surgery were obtained with the most vision in the good category (52.8%).

This study is also in line with the research conducted by Capelo *et al* in 2020 with results showing that 1 month postoperative vision results obtained a good vision result of 86.4%. From several studies that have been carried out, there is an explanation that the optimal quality of vision after surgery can be influenced by several factors, one of which is surgical technique. This is evidenced by a study conducted by Pramita *et al* in 2021 which obtained the results that the visus was good at 6 weeks postoperative (71.1%) using the phacoemulsification surgical technique. The selection of the type of surgical technique is very important because it is a factor in the success of an operation, this is explained by Kamajaya *et al* 2020 descriptive method using 96 samples, the results obtained that there are satisfactory results for cataract patients who undergo surgery using phacoemulsification surgery techniques to get visus with a good category (6/6-6/7.5) as much as 15.85% compared to *the SICS* technique. The visibility of the good category (6/6-6/7.5) was only 5.79%.

Another study conducted by Yong *et al* 2022 explained that the visual results of surgery were influenced by the type of cataract surgery, the type of ocular lens, and the type of anesthesia, the results of the study were obtained that cataract surgery with local (topical) anesthesia achieved *the Best Corrected Visual Acuity (BCVA)* after surgery was better (93.3%) compared to using general anesthesia (6.3%). According to a survey conducted by members of the *American Society of Cataract and Refractive Surgery (ASCRS)*, it was found that the use of general anesthesia or retrobulbar blocks is largely replaced by local anesthesia such as peribulbar, sub-tenon, and topical anesthesia, this is done because it is more effective and safe in reducing adverse risks such as retrobulbar bleeding, and perforation of the eyeball (Yong *et al.*, 2022).

In this study, samples were used without preoperative complicating conditions, without postoperative complications, and sharply measured vision 1 month after cataract surgery, a sharp picture of the quality of vision after cataract surgery was obtained, the majority of them experienced improvements in their visual acuity by entering the category of either (6/6-6/18) or (1-0.3) as many as 318 samples (66.9%) this shows that the surgeries performed by medical personnel at Waled Hospital have reached Good quality because it can be seen from the best quality of vision after cataract surgery.

Limitations

Thus, this research has been completed, but when taking data, the researcher has limitations, namely:

- 1) The study used secondary data in the form of patient medical records, where the researcher used medical record data in 2022 at that time Waled Hospital did not use digital medical records so that the collection, and search for medical record data took a long time with the number of cataract cases, and cataract surgery patients were very numerous.
- 2) 2. This study is limited to a descriptive discussion of the distribution of samples based on age, sex, number of eyes operated on cataract, and a picture of the quality of sharp vision in patients 1 month postoperatively. This study does not discuss the factors that affect the sharp results of vision after cataract surgery and whether there is a relationship between the sharp results of vision after cataract surgery and the selection of surgical techniques.

CONCLUSION

Based on medical record analysis of cataract patients who underwent surgery at Waled Hospital in 2022, most patients (66.9%) achieved good visual acuity (6/6–6/18) one month after surgery, indicating generally successful postoperative outcomes. It is recommended that Waled Regional General Hospital strengthen its one-month postoperative monitoring system to ensure optimal recovery and timely interventions for patients showing less favorable vision results. Future research should explore factors influencing postoperative visual quality, such as surgical techniques, comorbidities, and patient adherence to postoperative care, to further improve visual outcomes.

REFERENCES

- Adiputra, K. P., Putri, A. A. A., Kartiningsih, I. A. P., Dwipayani, N. M., & Prahesthy, H. P. (2020). Characteristic of Cataract Patients in Wangaya Hospital Bali Year 2019: A Descriptive Study. *European Journal of Medical and Health Sciences*, 2(2).
- Annisha, A. D. (2022). Profile of Post-Cataract Surgery Patients at the Eye Polyclinic of the Hospital PKU Muhammadiyah Rogojampi. *Community Medicine and Public Health of Indonesia Journal*.

- Asmara, D., Amri, M. F., Pramudito, N. B., Syahir, R., & Fithri, N. K. (2023). Description of the incidence of cataracts in workers with exposure to UV radiation in the work environment. *Tambusai Health Journal*.
- Budiono, S., Saleh, T. T., Moestidjab, & Eddyanto. (2013). *Health Sciences Textbook Eye*. Surabaya: Airlangga University Press (AUP).
- Capelo, L. A. R., Perez, J. L. G., Otero, J. G., Moran, A., Jose, M., Pina, S., & Contreras, I. (2020). Visual and Refractive Outcomes Of Cataract Surgeries Performed in One Year in a Private Practice Setting: Review 2714 Procedures. *Journal of Ophthalmology*.
- Damayanti, A. E., & Christina, Y. (2023). The Relationship of Age and Sex with the Incidence of Cataracts at Camatha Sahidya Hospital. *Medical Zone*, 13(2).
- Hanis, N. F. H. A., Mayani, G., & Hanina. (2023). Overview of Visus Repair and Intraoperative or postoperative complications in cataract surgery patients Released at H. Abdul Manap Hospital, Jambi City for the period of January 2021–December 2021. *JOMS*.
- Husna, H. N. (2023). Sharp Vision Check: Card Comparison Conventional and Application Examination. *Forikes Voice Health*.
- Johnson, T., Harris, A., & Wu, P. (2021). Patient satisfaction and visual outcomes after unilateral cataract surgery: A multicenter survey. *Journal of Cataract and Refractive Surgery*.
- Kamajaya, I. G. N. A. T., Yuliawati, P., & Handayani, A. T. (2020). Proportion of Patients Cataracts at Bali Mandara Eye Hospital in 2015. *Jurnal Udayana Medicine*, 9(8).
- Khurana, A. K. (2015). *Comprehensive Ophthalmology* (6th ed.). New Delhi: The Health Sciences Publisher.
- Kurniasih, U., Wahyuni, N. T., Lestari, S., Hikmah, R., Sutarna, A., Ali, M., & Mahalini, D. (2021). The Relationship between Cataract Incision Type and Dry Eye Syndrome In Post-Cataract Surgery Patients at Majalengka Eye Clinic Regency Majalengka. *Journal of Education and Counseling*.
- Nurhayati, Arifin, Z., Hapipah, & Ariyanti, M. (2020). The Relationship of Complicating Factors On Postoperative Vision Acuity with the SICS Method on Cataract Patients. *Jurnal Mutiara*.
- Patel, N., & Gupta, S. (2023). Bilateral Cataract Surgery: Current Practices and patient outcomes. *Clinical Ophthalmology*.
- Pramita, R. D., & Sunarsih, N. N. (2021). Visual Outcomes After Phacoemulsification in Sanjiwani Hospital Gianyar. *European Journal of Medical and Health Sciences*.
- Prasad, M., Malhotra, S., Kalaivani, M., Vashist, P., & Gupta, S. K. (2020). Cataract Surgical Coverage in India: a Systematic Review Meta-analysis. *British Journal of Ophthalmology*.
- Putri, M. S. D., Kurniawan, M. I., Datu, H. H. R., Kusumawardhani, S. I., & Anoez, A. (2024). Overview of Postoperative Cataract Patients in Hospital Bhayangkara, September 2019 – January 2022. *FAKUMI Medical Journal*, 4(1).
- Rahmani, S., & Ratnaningsih, N. (2023). Strategy for Managing Cataract Blindness in Garut Regency. *Faculty of Medicine, University of Padjadjaran*.
- Smith, R., & Lee, J. (2020). Single-eye cataract surgery outcomes in patients with bilateral cataract: A clinical assessment. *Ophthalmology*.
-

- Tanjung, R. (2022). Effect of Cataract Surgery on Visual Acuity. *Cerdika: Indonesian Scientific Journal*.
- World Health Organization. (2021). *Blindness and vision impairment*. Geneva: WHO.
- Yong, G. Y., Noor, J. M., Salowi, M. A., Adnan, T. H., & Zahari, M. (2022). Risk Factors Affecting Cataract Surgery Outcome: The Malaysia Cataract Surgery Registry. *PLoS ONE*, 17(9), e0274939.
- Zalukhu, E. (2023). Overview of Postoperative Cataract Patients with Phacoemulsification Technique at Panti Waluyu Purworejo Hospital.
- Zhang, Y., Lin, W., & Xu, H. (2022). Comparison of binocular visual function in patients undergoing unilateral versus bilateral cataract surgery. *British Journal of Ophthalmology*.