

Awareness of the Disease and the Scope of Knowledge about Cataract Treatment among Patients Qualified for Phacoemulsification

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Summary:

Cataract is one of the main causes of reversible blindness worldwide, while phacoemulsification remains the gold-standard surgical treatment for it. Despite this procedure's availability and high safety profile, patients' understanding of the disease, the course of treatment, and the postoperative recovery period may still be insufficient. This study aims to assess the awareness and level of knowledge among patients who have qualified for cataract removal by phacoemulsification. Based on a questionnaire of 31 items, administered to 104 patients, it was found that only about 60% of their answers were correct, 14% were incorrect, and 26% were "I do not know." These findings indicate that even after multiple ophthalmic consultations and preoperative assessments, patients continue to have difficulty assimilating key information about the disease and its treatment. The data obtained highlights the need to introduce more effective, multi-stage, patient education methods to improve their understanding of cataract and increase engagement in their treatment.

Key words:

knowledge about cataract treatment.

1. Introduction

Cataract is defined as a clouding of the ocular lens, leading to gradual vision impairment and, in severe cases, blindness [1, 2]. Surgical intervention – most frequently phacoemulsification – is the only causal treatment. Although this operation is one of the most commonly performed, and safest, procedures in ophthalmic surgery, many patients still have insufficient knowledge regarding the nature of the disease, their prognosis, and the diagnostic-therapeutic process. Such knowledge gaps may lead to heightened anxiety prior to surgery and limit patients' compliance during recovery.

The aim of this study was to explore the awareness and level of understanding of cataract among patients qualified for phacoemulsification. This includes their comprehension of the surgical procedure itself, possible complications, and postoperative recommendations.

2. Material and methods

2.1 Participants and Study Design

1. The study involved 104 randomly selected patients who were scheduled for cataract extraction by phacoemulsification at the Ophthalmic University Hospital, Department of Ophthalmology, at the Medical University of Warsaw, Poland. All participants underwent at least 3–4 ophthalmic consultation

sessions and diagnostic tests, as well as qualification by an anesthesiologist.

2. Inclusion and exclusion criteria were determined (Tab. I).

2.2 Questionnaire

A custom, anonymous questionnaire was employed, consisting of a demographic section (data on age, sex, education, etc.) and 31 questions. The questionnaire covered basic information about cataract (causes, symptoms and consequences of untreated disease), the diagnostic and therapeutic processes, details regarding phacoemulsification (type of anesthesia, general and basic knowledge of operative technique), and postoperative recommendations, including physical activity and driving restrictions.

All patients completed the anonymous, written questionnaire on the day of their surgery (after signing an informed consent form), which enabled us to evaluate their knowledge in real time shortly before the procedure. Responses were then transferred to an electronic database for statistical analysis.

2.3 Statistical Analysis

Overall, patients gave 3,154 answers out of a total of 3,224 questions (some respondents did not answer every question). Answers were classified as correct, incorrect, or "I do not know."

A general index was calculated for correct, incorrect, and "I do not know" responses in relation to the total number of answers. Descriptive statistics (frequencies and percentages) were used to present the results.

3. Results

3.1 Overall Level of Responses

The researchers analyzed all the answers provided by the patients. Out of 3,154 answers, 59.58% of responses were correct, 13.70% were incorrect, and 26.73% were "I do not know" (Fig. 1).

Inclusion criteria	Exclusion criteria
positive qualification for phacoemulsification	qualification for cataract removal using methods other than phacoemulsification
agreement to participate in the study	qualification for cataract removal with other simultaneous surgery (e.g., trabeculectomy)
	lack of agreement to participate in the study

Tab. I. Inclusion and exclusion criteria.

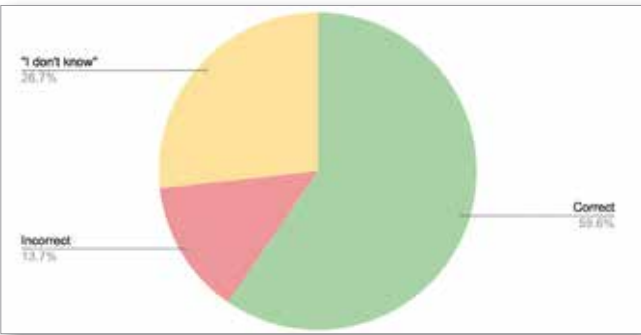


Fig. 1. Overall distribution of responses.

3.2 Demographic Factors

The authors analyzed the percentage of correct answers between various demographic groups. There was no statistically important difference between genders (56.87% of correct answers among males vs. 60.85% among females, $p\text{-value} > 0.05$), as well as place of residence. The number of correct answers among groups living in rural areas and cities of various populations was analyzed by calculating the coefficient. There is a very small positive relationship, meaning people from larger cities may have had slightly higher odds of providing correct answers, but this result was not statistically significant (coefficient of 0.0748, $p\text{-value} > 0.05$) (Fig. 2).



Fig. 2. Place of residence vs. distribution of answers.

Meanwhile, age and education had a greater impact on giving correct answers. When it came to education, the $p\text{-value}$ in the chi-square test was calculated to be statistically insignificant ($p\text{-value}$ of 0.396), which may be due to a small sample size. Therefore, a different method of statistical analysis was used. The authors calculated the education level coefficient of 0.5102, which suggests that as education level increases, the likelihood of selecting the correct response rises as well (Fig. 3).

Age does not appear to have a big impact on knowledge, except for patients over the age of 90 who provided fewer correct answers than any other age group, and seemed to be more doubtful than other age groups, with almost half of their answers being “I don’t know” (Fig. 4).

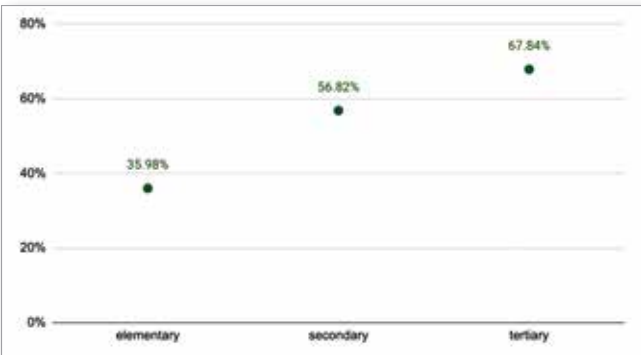


Fig. 3. Level of education vs. correct answers provided.

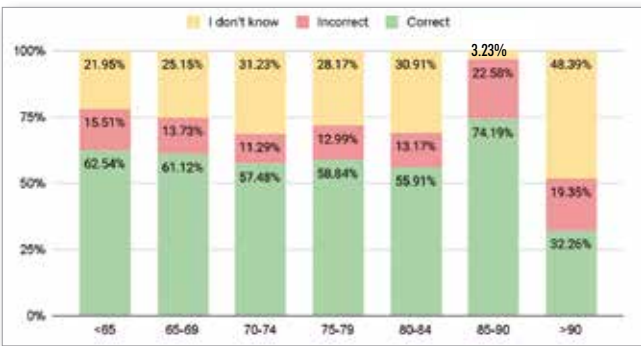


Fig. 4. Age vs. distribution of responses.

3.3 Easier vs More Challenging Questions

Statistically, the easiest questions were: whether cataract is an infectious disease, the role of aging in cataract development, the necessity of cataract screening amongst individuals over 40, the safety of cataract surgery, whether improving visual acuity is the goal of surgical treatment, and the inappropriateness of waiting until complete blindness to operate. Over 90% of respondents provided a correct answer for each of these items.

The most difficult questions included: the part of the eye affected by cataract, the basic concept behind the removal of cataract, whether the eyeball is removed during surgery, whether phacoemulsification surgery can change eye color, when one can safely resume driving after surgical treatment, and how long to limit strenuous physical activity in the post-operative period.

For instance, 40.2% of patients could not correctly define what cataract is – 6 out of 104 responders (5.9%) said that the cornea was the part of the eye affected by cataract, 1 out of 104 thought it was the iris, and another 34 replied “I do not know”. Furthermore, on the day of the surgery, 25.7% did not know precisely what phacoemulsification entails. Moreover, asked if cataract surgery may result in a change of eye color, only 55.3% of patients answered correctly, 41.7% did not know, and three responders (2.9%) said “yes, it may”, which further implies that the patients did not understand the pathology of cataract and the procedure of its removal.

3.4 Postoperative Beliefs

Regarding the perception of their ability to drive after the operation, 48% of patients answered “no,” 39% said “yes,” and 13% responded “I do not know.” This reveals a lack of clear knowledge that driving is usually permissible once visual acuity recovers sufficiently, which is typically a few days or weeks after surgery, according to the surgeon’s recommendations. Furthermore, removing cataracts improves patients’ driving performance [3], leading to increased road safety [4].

Moreover, 17.8% of participants were unsure whether the entire eyeball is removed and then returned during surgery. Although not a single patient outright answered “yes,” a considerable proportion of uncertain responses underscores a shortfall in the basic understanding of how the procedure is performed.

3.5 Knowledge after First Eye Surgery

The researchers distributed the survey among patients before their first or second eye surgery to find out whether having gone through the process once would increase their knowledge. The difference in correct answers was found to be statistically insignificant ($p\text{-value} > 0.05$). 59.01% of responses were correct among responders who were awaiting their first cataract surgery, while the level of correct answers improved only slightly to 60.64% in patients who had already had one eye operated on and were qualified for cataract removal in their other eye (Fig. 5).

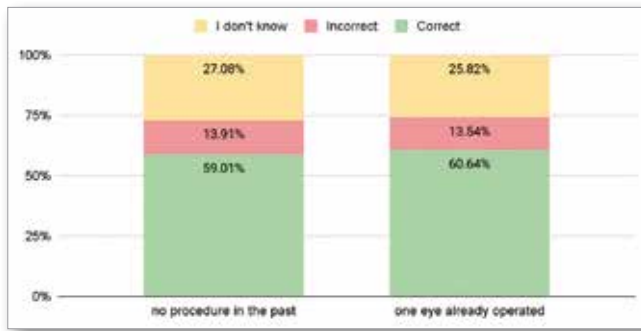


Fig. 5. Having undergone the procedure in the past vs distribution of responses.

4. Discussion

These findings suggest that even patients fully qualified for phacoemulsification may have incomplete knowledge about cataracts and the procedure's specifics.

Despite multiple medical consultations, some participants were still confused regarding key aspects of cataract or did not fully understand essential information regarding the safety and nature of the surgical procedure.

This result may be linked to a cognitive overload from the large volume of information received shortly before surgery, the use of overly specialized language that is not adapted to patients' comprehension levels, insufficient reinforcement of essential details via multiple, varied means (such as verbal instructions, written materials, multimedia tools), and psychological barriers, for example, patients' hesitancy to ask questions due to concerns about appearing uninformed or not realizing their lack of knowledge (Tab. II).

Potential reasons for a low level of knowledge among the patients	
on the doctors' side	on the patients' side
inadequate language (e.g., using complicated medical terms)	not listening to the provided information
not enough time devoted to explaining the procedure	lack of interest in their health
omitting facts that seem obvious to healthcare professionals	being afraid to ask questions
lack of visual aids	hearing difficulties related to old age
	being afraid of not understanding

Tab. II. Potential reasons for a low level of knowledge among the patients.

Literature lacks studies related strictly to cataract surgery. Nevertheless, works from other authors across various surgical fields of medicine highlight that comprehensive, multi-stage patient education before any planned surgery reduces anxiety and increases postoperative satisfaction [5]. For instance, a multimedia-based information program provided in advance can help patients assimilate information at their own pace, thereby improving their knowledge retention and serving as a valuable tool to obtain informed consent [6].

5. Conclusions

This study highlights the persistent knowledge gaps among patients qualified for cataract surgery, despite undergoing multiple ophthalmic consultations. A correct response rate of approximate-

ly 60% on key questions just before surgery underscores the need for improvement in patient education. Given that a significant portion of respondents still displayed uncertainty or misconceptions regarding the disease, surgical procedure, and postoperative care, this level of awareness should not be deemed sufficient for informed decision-making and optimal postoperative outcomes.

To bridge this gap, additional educational interventions should be implemented at earlier diagnostic stages and during the treatment qualification process. Evidence from other surgical fields suggests that multi-stage educational approaches, such as written brochures, video demonstrations, and structured educational sessions, enhance patient comprehension and engagement. These strategies could significantly improve knowledge retention and set realistic expectations regarding surgery and recovery [7].

Furthermore, ensuring that medical communication is accessible and patient-friendly is crucial. Avoiding an overuse of specialized terminology and fostering an environment where patients feel comfortable asking questions can facilitate better understanding. By implementing these strategies, healthcare professionals can help reduce preoperative anxiety, improve patient compliance with postoperative guidelines, and ultimately enhance surgical outcomes and patient satisfaction.

Disclosure

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