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Original Article

Knowledge and Awareness of Anaesthesia Options for Cataract Surgery Among the General Public

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ABSTRACT

Background: Cataract is the leading cause of reversible blindness worldwide and continues to be a major public health concern, particularly in developing countries. Cataract surgery is among the most commonly performed ophthalmic procedures and is associated with excellent surgical outcomes and rapid visual rehabilitation. Modern advances in surgical techniques and anaesthesia have greatly improved patient comfort and safety. However, despite the widespread availability and success of cataract surgery, misconceptions and fear regarding anaesthesia remain highly prevalent among the general public. Lack of awareness regarding different anaesthesia options may contribute to delayed surgical acceptance, increased anxiety, and poor patient cooperation.

Aim: The present study aimed to evaluate the knowledge and awareness regarding anaesthesia options used for cataract surgery among the general public and to identify factors associated with awareness levels.

Materials and Methods: A descriptive cross-sectional questionnaire-based study was conducted among 250 participants attending ophthalmology outpatient departments and between January 2025 and June 2025. A structured questionnaire was used to assess demographic characteristics, awareness regarding cataract surgery, knowledge of anaesthesia options, fear associated with surgery, and sources of information. Data were analyzed using descriptive statistics and chi-square tests.

Results: Among the 250 participants, only 38.4% were aware that cataract surgery can be performed under local anaesthesia, while 44.8% believed that general anaesthesia is routinely required. Approximately 62.0% of respondents expressed fear regarding pain during surgery, and 59.2% reported fear of injections around the eye. Participants with higher educational status showed significantly better awareness regarding anaesthesia techniques compared to illiterate participants ($p < 0.05$). Prior exposure to cataract surgery among family members was associated with improved knowledge and reduced fear.

Conclusion: The study demonstrated inadequate public awareness regarding anaesthesia options for cataract surgery. Misconceptions related to pain, blindness, and the requirement of general anaesthesia remain common among the general population. Community-based educational initiatives and effective preoperative counselling are essential to improve awareness and reduce anxiety related to cataract surgery.

Keywords*: Cataract surgery, anaesthesia awareness, local anaesthesia, ophthalmology, patient knowledge, public awareness.*

INTRODUCTION

Cataract is one of the leading causes of reversible blindness worldwide and continues to remain a major public health problem, especially in developing countries (World Health Organization, 2019). According to global estimates, cataract accounts for nearly half of all blindness cases and significantly affects the quality of life of elderly individuals (Murthy et al., 2005). Advances in ophthalmic surgery and anaesthesia have revolutionized cataract treatment, making surgery safer,

faster, and more effective than ever before (Lansingh et al., 2007). Modern cataract surgery is associated with excellent visual outcomes, minimal postoperative complications, and rapid recovery (Malik et al., 2020).

Anaesthesia is an essential component of cataract surgery as it provides analgesia, patient comfort, and optimal surgical conditions during the procedure. Several anaesthesia techniques are currently used during cataract surgery, including topical anaesthesia, peribulbar block, retrobulbar block, sub-Tenon block, and general anaesthesia in selected cases (Kumar & Dowd, 2006). Among these, local and topical anaesthesia are most commonly preferred because they are associated with shorter recovery time, fewer systemic complications, and greater patient safety (Eke & Thompson, 1999). General anaesthesia is generally reserved for pediatric patients, uncooperative individuals, and selected complicated cases (Riad & Akbar, 2012).

Despite the widespread success and safety of cataract surgery, fear and misconceptions regarding anaesthesia remain highly prevalent among the general public. Many individuals believe that cataract surgery is extremely painful or that complete unconsciousness is required during the procedure (Fayers & Dolin, 2011). Fear of injections around the eye, blindness, and anaesthesia-related complications may contribute to delayed treatment acceptance and increased perioperative anxiety (Nijkamp et al., 2004). Studies have shown that patient anxiety before cataract surgery may adversely affect cooperation during surgery and overall patient satisfaction (Lundström et al., 2001).

Awareness regarding anaesthesia options is important because informed patients are more likely to undergo surgery with confidence and reduced fear. Proper understanding of available anaesthesia techniques can improve patient cooperation, enhance surgical experience, and reduce psychological stress. However, awareness levels among the general population are often influenced by educational status, healthcare accessibility, socioeconomic background, and prior exposure to ophthalmic surgery (Gupta et al., 2017).

In developing countries such as India, misconceptions regarding cataract surgery are still common, particularly in rural populations (Saxena et al., 2013). Public understanding regarding local anaesthesia and modern surgical techniques remains inadequate in many communities. Family members, relatives, media, and healthcare workers often play a significant role in shaping perceptions regarding cataract surgery and anaesthesia (Khandekar & Al Raisi, 2011).

Although several studies have evaluated patient anxiety and satisfaction during cataract surgery, limited research has specifically focused on awareness regarding anaesthesia options among the general public. Understanding existing knowledge gaps and misconceptions can help healthcare professionals design effective educational strategies and counselling programs. Therefore, the present study was conducted to evaluate the knowledge and awareness regarding anaesthesia options for cataract surgery among the general public and to identify factors associated with awareness levels.

MATERIALS AND METHODS

Study Design

The present study was a descriptive cross-sectional questionnaire-based observational study conducted to evaluate awareness regarding anaesthesia options used in cataract surgery among the general public.

Study Setting

The study was conducted in the Department of Ophthalmology in collaboration with the Department of Anaesthesiology at a tertiary care teaching hospital and associated community eye screening camps.

Study Duration

The study was carried out over a period of Six months from January 2025 to June 2025.

Study Population

The study population consisted of members of the general public attending ophthalmology outpatient departments, patient attendants, and participants attending community eye health camps.

Sample Size

A total of 250 participants were included in the study.

Inclusion Criteria

- Individuals aged 18 years and above
- Participants willing to provide informed consent
- Members of the general public attending ophthalmology services or eye camps

Exclusion Criteria

- Healthcare professionals and medical students
- Individuals previously trained in healthcare-related fields

- Participants with severe cognitive impairment
- Individuals unwilling to participate in the study

Data Collection Tool

A structured questionnaire was developed after reviewing relevant literature and expert consultation. The questionnaire was prepared in simple and understandable language to facilitate easy comprehension among participants from different educational backgrounds.

The questionnaire consisted of two major sections:

Section A: Demographic Characteristics

This section included:

- Age
- Gender
- Educational status
- Occupation
- Area of residence (urban/rural)
- Previous history of eye disease or surgery

Section B: Awareness Regarding Cataract Surgery and Anaesthesia

This section assessed:

- Awareness regarding cataract disease
- Knowledge about cataract surgery
- Understanding of local and general anaesthesia
- Fear associated with anaesthesia
- Misconceptions regarding blindness and pain
- Source of information regarding cataract surgery
- Previous exposure to cataract surgery through family or friends

The questionnaire was administered through face-to-face interviews conducted by trained investigators.

Ethical Considerations

Institutional ethical committee approval was obtained prior to commencement of the study. Written informed consent was obtained from all participants after explaining the objectives of the study. Confidentiality and anonymity of participants were maintained throughout the study.

Statistical Analysis

Data collected from participants were entered into Microsoft Excel spreadsheets and analyzed using Statistical Package for Social Sciences (SPSS) software version 25. Descriptive statistics such as frequencies, percentages, mean, and standard deviation were used for data presentation. Chi-square tests were applied to determine associations between demographic variables and awareness levels. A p-value less than 0.05 was considered statistically significant.

RESULTS

Demographic Characteristics of Participants

A total of 250 participants were enrolled in the study. Among them, 138 (55.2%) were males and 112 (44.8%) were females. The majority of participants belonged to the age group of 41–60 years. Rural participants constituted 58.0% of the study population, while urban participants accounted for 42.0%.

Regarding educational status, 74.4% of participants were literate, while 25.6% were illiterate. Most participants belonged to lower and middle socioeconomic groups.

Table 1: Demographic Characteristics of Participants

Variable	Number (n=250)	Percentage
Male	138	55.2%
Female	112	44.8%
Urban	105	42.0%
Rural	145	58.0%
Literate	186	74.4%
Illiterate	64	25.6%

Awareness Regarding Cataract Surgery

The majority of participants had heard about cataract surgery; however, detailed understanding regarding surgical and anaesthetic procedures remained limited.

Approximately 71.2% of respondents knew that cataract surgery is used to restore vision, whereas 28.8% had inadequate understanding regarding the procedure. Many participants believed cataract surgery involves complete removal of the eye lens without awareness regarding intraocular lens implantation.

Awareness Regarding Anaesthesia Options

Only 96 participants (38.4%) were aware that cataract surgery can be performed under local anaesthesia. A substantial proportion of participants believed that general anaesthesia is mandatory during cataract surgery.

Approximately 44.8% believed that patients are rendered completely unconscious during surgery. Only 32.8% knew that patients usually remain awake and conscious during cataract procedures performed under local anaesthesia.

Table 2: Awareness Regarding Anaesthesia

Awareness Question	Yes	No
Aware of local anaesthesia	96 (38.4%)	154 (61.6%)
Believe general anaesthesia is necessary	112 (44.8%)	138 (55.2%)
Aware patients remain conscious during surgery	82 (32.8%)	168 (67.2%)

Fear and Anxiety Associated with Anaesthesia

Fear related to anaesthesia was highly prevalent among participants. Around 62.0% feared pain during surgery, while 59.2% expressed fear regarding injections around the eye. Approximately 40.8% feared permanent blindness following surgery.

Table 3: Fear Related to Anaesthesia and Surgery

Fear Factor	Number	Percentage
Fear of pain during surgery	155	62.0%
Fear of injection around eye	148	59.2%
Fear of blindness	102	40.8%
Fear of anaesthesia complications	96	38.4%

Source of Information Regarding Cataract Surgery

Family members and relatives constituted the most common source of information regarding cataract surgery. Television, internet sources, and healthcare workers also played important roles in disseminating information.

Table 4: Sources of Information

Source	Number	Percentage
Family/Friends	92	36.8%
Television/Internet	76	30.4%
Healthcare workers	58	23.2%
Newspapers/Other	24	9.6%

Association Between Educational Status and Awareness

Participants with higher educational qualifications demonstrated significantly better awareness regarding local anaesthesia and modern cataract surgery techniques compared to illiterate individuals ($p < 0.05$).

Urban participants also showed relatively greater awareness compared to rural participants. Previous family exposure to cataract surgery was associated with improved understanding and reduced fear.

DISCUSSION

The present study evaluated the knowledge and awareness regarding anaesthesia options used during cataract surgery among the general public. The findings demonstrated that awareness regarding modern ophthalmic anaesthesia techniques remains inadequate among a large proportion of the population. Cataract surgery has evolved considerably over recent decades and is now considered one of the safest and most successful surgical procedures worldwide (Malik et al., 2020). However, despite improvements in surgical techniques and patient safety, misconceptions regarding anaesthesia continue to persist among the general public.

In the current study, only 38.4% of participants were aware that cataract surgery can commonly be performed under local anaesthesia. Similar findings have been reported in previous studies where inadequate awareness regarding local anaesthesia was observed among ophthalmic patients and the general population (Khandekar & Al Raisi, 2011). Modern cataract surgery is generally performed under topical or regional anaesthesia because these techniques provide effective analgesia while maintaining patient cooperation and minimizing systemic complications (Eke & Thompson, 1999). Nevertheless, many individuals continue to associate surgery with complete unconsciousness and major operative procedures.

Approximately 44.8% of participants in the present study believed that general anaesthesia is routinely required for cataract surgery. This misconception may contribute to increased fear and reluctance toward surgery among elderly individuals. Previous studies have also reported that patients frequently assume that all surgical procedures require general anaesthesia (Fayers & Dolin, 2011). In reality, general anaesthesia is reserved only for selected cases such as pediatric patients, mentally challenged individuals, or uncooperative patients (Riad & Akbar, 2012).

Fear related to anaesthesia was highly prevalent in the present study. Around 62.0% of respondents expressed fear regarding pain during surgery, while 59.2% feared injections around the eye. Similar observations have been documented in earlier studies assessing anxiety before cataract surgery (Nijkamp et al., 2004). Fear of ocular injections is understandable because the eye is perceived as a delicate and highly sensitive organ. Anxiety before surgery may negatively influence blood pressure, heart rate, patient cooperation, and overall surgical experience (Lundström et al., 2001). Therefore, proper counselling and reassurance play a critical role in reducing patient anxiety.

Educational status significantly influenced awareness levels in the current study. Literate participants demonstrated better knowledge regarding local anaesthesia techniques compared to illiterate participants. Similar associations between literacy and healthcare awareness have been observed in several community-based studies (Gupta et al., 2017). Education improves an individual's ability to access healthcare information, understand medical counselling, and make informed healthcare decisions.

Urban participants also showed relatively better awareness regarding anaesthesia techniques compared to rural participants. This difference may be attributed to improved healthcare access, better exposure to health-related information, and greater interaction with healthcare facilities in urban areas (Saxena et al., 2013). Rural populations often depend on informal sources of information, which may contribute to the persistence of misconceptions regarding cataract surgery.

Family members and previously operated patients were important sources of information regarding cataract surgery in the present study. Positive experiences shared by relatives and friends can significantly influence treatment acceptance among potential patients. Television and internet-based media also contributed substantially to awareness levels, indicating the growing importance of digital platforms in healthcare education (Khandekar & Al Raisi, 2011). Healthcare professionals should utilize audiovisual aids, social media platforms, and community awareness campaigns to disseminate accurate information regarding cataract surgery and anaesthesia.

The findings of the present study emphasize the importance of effective patient counselling before cataract surgery. Proper preoperative counselling regarding anaesthesia techniques, surgical safety, and expected outcomes can significantly reduce fear and improve patient confidence. Ophthalmologists and anaesthesiologists should actively engage in educating patients and the general public through outreach programs, awareness camps, and educational materials.

One of the strengths of the present study was the inclusion of participants from diverse educational and residential backgrounds, providing broader insight into public awareness patterns. However, the study had certain limitations. The study was conducted in a single region with a relatively limited sample size, which may affect generalizability. Additionally, cultural beliefs and regional healthcare disparities may influence awareness levels differently in other populations.

Future multicentric studies involving larger populations are recommended to further evaluate public awareness regarding cataract surgery and ophthalmic anaesthesia. Studies assessing the effectiveness of targeted educational interventions may also help improve patient knowledge and reduce fear associated with cataract surgery.

CONCLUSION

The present study demonstrated inadequate public awareness regarding anaesthesia options for cataract surgery. A considerable proportion of participants believed that cataract surgery requires general anaesthesia and expressed significant fear regarding pain, injections, and blindness during surgery.

Educational status, urban residence, and previous family exposure to cataract surgery were associated with improved awareness levels. Misconceptions and anxiety related to cataract surgery remain major barriers to treatment acceptance among the general population.

Healthcare professionals should prioritize patient counselling and community-based educational programs to improve understanding regarding modern cataract surgery and safe anaesthesia practices. Enhanced awareness can contribute to reduced fear, improved patient cooperation, earlier treatment-seeking behavior, and better overall surgical outcomes.

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