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Obstacles Faced With High Cataract Surgery Rate In Rural Areas Of Barisal Division

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Abstract
Background: *Cataract is the leading cause of preventable blindness in the world. the most important component of Vision 2020 is to eliminate cataract-related blindness As a signatory of the Vision 2020 program the government of Bangladesh has taken many effective steps to increase the cataract surgery rate CSR through the national eye care operation plan but still, some obstacles desisted the rural people to undergo surgery for cataract*
Aim of the study: *The study aimed to comprehensively investigate and identify the obstacles and challenges encountered in addressing the high cataract surgery rate in the rural areas of Barisal Division.*
Methodology: *This cross-sectional study was conducted at the District Sadar Hospital, Jhalkathi from January 2016 to December 2016 Over 200 patients out of 500 cataract patients were selected for cataract surgery but did not under one of the procedures, not the medical grounds. The causes of unwillingness to undergo surgery were asked about by personal discussion through a structured questionnaire. All the relevant information was recorded in the data collection sheet and was analyzed and displayed for dissemination.*
Result: *Out of 200 patients 91 patients did not undergo surgery due to fear about the surgical procedure, followed by 43 patients who abstained from surgery due to fear of becoming blind after surgery, 41 patients did not undergo surgery for not to bear the relevant expenditure the other reasons are no caregiver for post-operative care and fear of complications (as experienced by persons, previously underwent surgery) which refrained 14 and 11 patients respectively from surgery.*
Conclusion: *To increase the cataract surgery rate (CSR) in rural areas among the underprivileged people to achieve the goal of VISION 2020, it is necessary to conduct an awareness program as well base hospitals should be equipped with effective instruments and skilled manpower.*

Keywords: *Cataract, Blindness, Surgery, Rural-Areas*

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I. INTRODUCTION

Cataracts, a leading cause of global blindness, continue to present significant challenges to healthcare systems worldwide.(1) According to a report by the World Health Organization (WHO), an estimated 94 million people globally suffer from blindness, and a majority of these cases are due to reversible factors like cataracts and uncorrected refractive errors.(2) This issue is particularly critical in regions such as Latin America and Asia, where cataract prevalence is high.(3) Increasing the cataract surgery rate (CSR) is a crucial component of addressing this public health problem. The VISION 2020 initiative, a global partnership led by the World Health Organization and the International Agency for the Prevention of Blindness, has played a pivotal role in tackling avoidable blindness worldwide.(4) However, despite substantial progress, cataracts continue to contribute significantly to visual impairment and blindness. In Latin America, cataracts account for a significant portion of blindness cases, ranging from 1.1% in Uruguay to 3.8% in Guatemala among individuals aged 50 and older.(5) Similarly, in Asia, cataracts are the leading cause of blindness, with an estimated 9 million people in India alone suffering from cataract-induced blindness.(6) Studies in India have reported an annual addition of approximately 1.8±3.8 million new cataract cases to the existing backlog.(7) The latest available survey indicates that there are 7.5 million blind individuals in Bangladesh, and 80% of them are affected by cataracts.(8) The continuous addition of new cataract cases each year further exacerbates this issue, especially as the life expectancy of Bangladeshi people increases. Earlier studies have identified poverty, lack of transportation, indifference toward the need for surgery, and gender-related factors as major barriers to cataract surgery.(9) Low literacy rates among females and poor

accessibility to surgical sites have been particularly problematic in rural areas. Factors such as awareness of treatment options, access to surgical facilities, and affordability have traditionally influenced the decision-making process among rural populations.(10) However, recent studies indicate a shift in the nature of these barriers. It appears that the challenges are now more closely related to case selection and the provision of services, rather than patients' awareness, attitudes, or ability to afford treatment. This shift necessitates a reevaluation of strategies to increase surgical uptake and reduce the cataract backlog in rural areas.(11) Understanding the obstacles faced by high cataract surgery rates in rural areas is crucial for developing effective interventions. Alternative strategies must be explored to improve coverage and accessibility to cataract surgery, ensuring that individuals in remote regions receive the care they need. Addressing socioeconomic factors, enhancing education and awareness, and implementing targeted interventions are essential steps toward overcoming these challenges. The study aimed to comprehensively investigate and identify the obstacles and challenges encountered in addressing the high cataract surgery rate in the rural areas. By examining the socioeconomic, geographical, and cultural factors that contribute to the persistently low cataract surgery rates, we can develop comprehensive solutions to reduce the burden of cataract blindness in rural communities.

II. METHODS

This cross-sectional study was conducted at the Department of Ophthalmology in District Sadar Hospital, Jhalkathi, Bangladesh from January 2016 to December 2016. The study population consisted of 200 patients with age-related cataracts who had declined to undergo surgery after being finally selected for the procedure at the hospital. A non-random purposive sampling technique was employed to select these patients. Data were collected through comprehensive history-taking, thorough clinical evaluations, and relevant investigations. A structured questionnaire was used to engage patients in informal discussions to ascertain the reasons behind their refusal of surgery. All pertinent findings were meticulously recorded using a pre-designed data collection sheet, and subsequent data analysis was performed, with results presented through appropriate figures and tables.

Inclusion criteria:

- All patients of age-related cataracts refused to undergo surgery after final selection.

Exclusion criteria:

- Patients suffering from another intraocular or ocular surface disease
- Patients suffering from uncontrolled diabetes or hypertension
- Patients having a history of ocular surgery or trauma in the previous six months.
- Patients unwilling to enroll in the study

III. RESULTS

Table-1: Distribution of the study subjects according to demographic variables(N=200)

Variable	**Frequency**	**Percentage**
Age group(years)		
45-50	23	11.5
50-55	61	30.5
55-60	82	41
60-65	27	13.5
>65	7	3.5
Mean Age	64.23±9.87(SD)	
Gender		
Male	107	53.50%
Female	93	46.50%
Total	200	100

Table 1 provides information about the demographic variables of the study subjects, with a total sample size of 200 individuals. The majority of participants fall in the 55-60 years age group, constituting 41% of the sample. The mean age of the subjects is 64.23 years, with a standard deviation (SD) of 9.87. Gender distribution is also noted, with 53.50% being male and 46.50% female.

Table-2: Distribution of presenting visual acuity among study subjects(N=200)

Visual acuity	No. of patients	Percentage (%)
Perception of Light	30	15
Hand movement	43	21.5
Counting finger	104	52
6/60 or better	23	11.5
Total	200	100

Table 2 focuses on the distribution of presenting visual acuity among the study subjects. The largest group of patients, at 52%, have a visual acuity of Counting fingers. Hand movement and Perception of Light account for 21.5% and 15% of the sample, respectively, while 11.5% have a visual acuity of 6/60 or better.

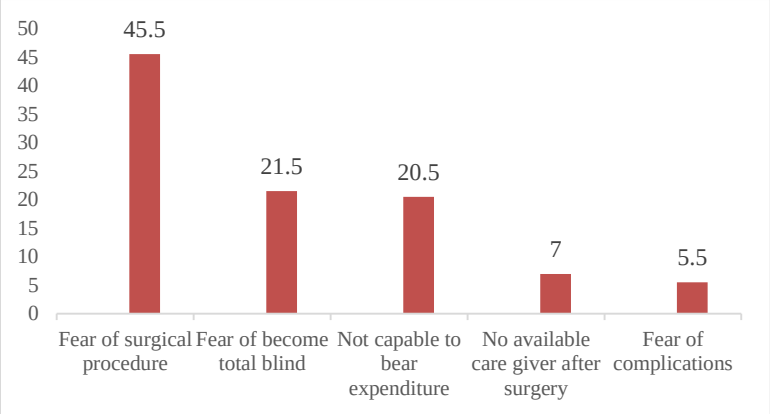

Figure-1: Bar diagram showing the distribution of reasons for not undergoing surgery among study subjects(N=200)

Among the cases, the most common reason for not undergoing surgery is the Fear of surgical procedure, with 45.5% of participants citing this as a barrier. The Fear of becoming totally blind is the second most prevalent reason at 21.5%. Other factors such as financial constraints (Not capable of bear expenditure), lack of available caregivers (No available caregiver after surgery), and concerns about surgical complications (Fear of complications) are also mentioned, with percentages ranging from 5% to 20.5%.

IV. DISCUSSION

Cataracts remain a significant public health concern in many regions worldwide, particularly in rural areas where access to healthcare resources may be limited. The study conducted in the Barisal Division sheds light on the demographic characteristics, visual acuity, and reasons for not undergoing cataract surgery among a sample of 200 individuals. In this discussion, we analyze the findings and compare them with existing literature to understand the obstacles contributing to the high cataract surgery rate in rural areas. The demographic profile of the study subjects reveals several noteworthy insights. The mean age of the participants was found to be 64.23 years with a standard deviation of 9.87. Similar study was found mean aged 64.89 ± 5.8.(12) Several studies found similar demographic findings, which has consistently identified aging as a significant risk factor for cataract.(13,14) The highest percentage of participants (41%) fell within the age group of 55-60 years, highlighting the increased susceptibility of individuals in this age range to cataracts. These findings align with global trends indicating that cataracts are predominantly an age-related condition. In terms of gender distribution, the study observed that 53.50% of the participants were male, while 46.50% were female. This gender imbalance has been a consistent finding in cataract-related studies worldwide. Several studies suggest that this disparity may be attributed to various factors, including differences in healthcare-seeking behavior, access to information, and socioeconomic factors. For instance, a study by Verma and Khan found a similar gender imbalance in cataract surgical coverage, with men having better access to cataract surgery services.(15,16) In this study provides crucial insights into the presenting visual acuity of the study subjects. Notably, 52% of participants had a visual acuity of Counting fingers. This indicates that a substantial proportion of the population had advanced cataracts, leading to severe vision impairment. These findings are consistent with a study conducted by Murthy and He.(17,18) The study underscores the urgent need for cataract intervention services in rural areas of Barisal Division to prevent further deterioration in visual health. In this study outlines the reasons for not undergoing cataract surgery among the study subjects. Fear of surgical procedure emerged as the most common barrier, with 45.5% of participants citing it as a reason for not seeking surgery. This finding resonates with research by Rajak and AGU,(19,20) which identified fear of surgery as a primary barrier to cataract surgical uptake. Similarly, Fear of becoming totally blind

was cited by 21.5% of participants, reflecting concerns about the outcome of the procedure. These fears align with the psychological barriers reported in various studies, emphasizing the importance of addressing patient apprehensions through education and counseling.(21,22) Another significant barrier identified in the study is the financial constraint, with 20.5% of participants stating that they were Not capable of bearing expenditure. This obstacle is consistent with studies conducted in other developing regions, where the cost of cataract surgery can be a substantial burden for rural populations. To mitigate this challenge, strategies such as government subsidies, community-based health insurance, or philanthropic initiatives have been implemented successfully in various settings.(23,24) Additionally,No available caregiver after surgery (7%) and Fear of complications (5%) were cited as reasons for not undergoing surgery. These barriers highlight the importance of comprehensive healthcare infrastructure and support systems in rural areas. Encouragingly, these barriers have been addressed through innovative approaches in some regions, such as the use of mobile eye clinics and community outreach programs.(25) In conclusion, the study's findings shed light on the obstacles contributing to the high cataract surgery rate in rural areas of the Barisal Division. These obstacles include advanced visual impairment, age-related vulnerability, gender disparities, fear of surgery, financial constraints, and concerns about postoperative care and complications. While these findings align with existing literature on cataract surgery barriers in rural settings globally, they emphasize the urgent need for targeted interventions to improve access to cataract services in the Barisal Division. Strategies such as community-based education, financial support, and enhanced healthcare infrastructure can play a pivotal role in overcoming these obstacles and reducing the burden of cataract-related visual impairment in rural communities.

Limitation of the Study

The study only included a sample of 200 individuals, which may not be representative of the entire population in the region

V. CONCLUSION

Barriers to increasing cataract surgery vary according to local conditions and customs. Conversations with patients, village leaders, and women's groups may confirm the existence of barriers. Program planning to increase cataract surgical rates will need to determine the barriers in each area, whether relating to costs, distance, cultural/social factors, anxiety/fear, or other barriers and find creative ways to overcome them.

VI. RECOMMENDATION

To improve access to cataract services in rural areas of the Barisal Division, it is recommended to implement targeted interventions. These interventions should address barriers such as fear of surgery, financial constraints, and limited postoperative care. Strategies like community-based education, financial support, and enhanced healthcare infrastructure can play a crucial role in reducing the burden of cataract-related visual impairment in rural communities.

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