

## To Evaluate the Outcome of Cataract Surgery in the Population of Dhaka, Bangladesh.

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**Background:** Globally, cataract is the leading cause of blindness which accounts for 51% of 39 million blind people. The visual rehabilitation is made through sight-restoring surgery. The patients' postoperative visual satisfaction, vision related quality of life, ability to function in daily activities and their overall productivity mainly depend on the visual outcome. Nearly 99% of cataract operated eyes had poor vision preoperatively (<6/60). After the surgery has been done, 26.6% of operated eyes had achieved good visual acuity, 28.9% of eyes had borderline visual acuity, and the remaining of 44.5% of cataract-operated eyes were remained as poor visual acuity. **Aim:** To evaluate the outcome of cataract surgery in the population of Bangladesh. **Methods:** Cross sectional study; Interview technique. Senile cataract cases were in Dr. Sirajul Islam Medical College and Hospital Ltd, Dhaka, Bangladesh. There was 51 senile cataract and pseudophakic cases. Data was entered in MS Excel and Statistical analysis was done using SPSS trial version 22. Data were collected by Dr. Sirajul Islam Medical College and Hospital Ltd, Dhaka, Bangladesh, a cross sectional, nationally representative sample of the population aged >30 years. An interview recorded socioeconomic data. Each subject was tested for log MAR visual acuity (VA) of each eye and then underwent optic disc examination. Those with <6/12 VA on presentation in either eye were retested with their refractive correction, dilated, and examined for anterior and posterior segment disease. In phakic and pseudophakic subjects the date, location and operating conditions (eye hospital), and type of operation(s) were recorded. **Results:** In table-I shows age distribution of the patients where most of the patients 26(50.98%) belong to >60 years age group. In Figure-I shows prevalence of cataract on literacy and sex distribution of the patients where most of the patients 30(58.13%) belong to female of sex group and most of the patients 27(52.94%) belongs to Illiterates on literacy. In Table-II shows clinical characteristics patients where most of the patients 32(62.76%) belong to Mixed type of cataract, most of the patients 47(92.15%) belongs to type of surgery and most of the patients 33(64.70%) belongs to 1-2 month Follow-up visit. In Figure-II shows outcome of cataract surgery in the study population where minority of the patients 2(3.92%) belong to post-operative visual acuity. The following table and figure are given below in detail. **Conclusion:** This evaluative research study into cataract surgery outcomes in Bangladesh highlights the need for an improvement in quality and increased quantity of surgery with a more balanced distribution of services.

**Keywords:** Knowledge, Attitude, Practices, Cataract Surgery Senile Cataracts.

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### I. Introduction

The National Blindness and Low Vision Survey of Bangladesh (1999–2000) is the first nationally representative population based survey to take place in this country. It resulted from an urgent need for detailed information on the prevalence and causes of low vision and blindness, in order to plan eye care services. The main results have been published elsewhere.<sup>1</sup> The survey also aimed to establish the outcomes of cataract surgery, which forms the basis for this report. Bangladesh is part of the South East Asia region of the World Health Organization, which comprises a quarter of the world's population, but is estimated to comprise a third of the world's 45 million blind.<sup>2</sup> Cataract is responsible for 50–80% of blindness in this region. Low cataract surgical output (in some countries), combined with a rapid expansion of the population, particularly of the elderly, and has led to an ever increasing cataract backlog. The recent prevalence survey attributed 79.6% of bilateral blindness to cataract. Within the adult population more than 30 years of age (approximately 44 million

people), it is estimated that there are approximately 650 000 adults (95% CI = 552 175 to 740 736) blind due to cataract in Bangladesh at present. Assuming the incidence of blinding cataract cases to be one fifth of those already existing, a further 130 000 new cases are thought to develop annually.<sup>3</sup> Similarly, by extrapolation, there are an estimated 6.65 million (95% CI 6.94 to 7.23) adults with <6/12 vision in either or both eyes. Growing concern exists over the outcomes of cataract surgery in the developing world. Recent population based surveys have found that 40–75% of postoperative eyes have a presenting visual acuity of worse than 6/18, with as many as 50% worse than 6/60.4–7 Fewer surveys have measured outcomes based on best corrected visual acuity; however, several have reported up to 20% of eyes with corrected VA of <6/60.4–6 Eye care services in Bangladesh are provided by the government, local and international non-governmental organisations (NGO), and charitable organisations. The NGO sector has important funding, collaborative, and logistical roles with Bangladesh service providers. The several trained, qualified ophthalmologists of Bangladeshi work in either the government or the private sector.

## II. Methodology

The study design used for this study is cross sectional study and the study period is from May 2019 to April 2020. The study was done Dr. Sirajul Islam Medical College and Hospital Ltd, Dhaka, Bangladesh and done by the Department of Ophthalmology. The sampling technique used is systematic random sampling. However, those patients who had ocular comorbidity such as glaucoma, age-related macular degeneration, corneal opacity, intra- or postoperative complications, previous history of ocular trauma, and systemic health problems as in diabetes mellitus and hypertension were excluded from the study. Data was entered in MS Excel and Statistical analysis was done using SPSS trial version 22. Institutional Ethical committee clearance obtained.

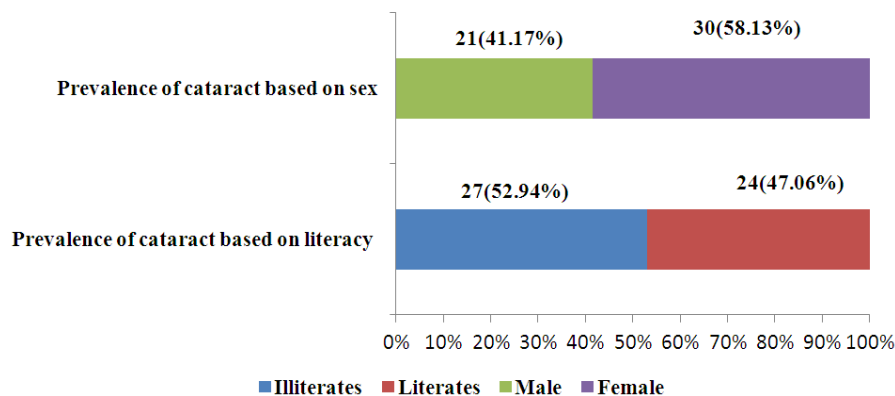
## III. Results

The total study population was 51 Patients aged <49 years to >69 years, 5(9.80%) were <49 years, 6(11.77%) were 50 years to 59 years, 14(27.45%) were 60 years to 69 years and 26(50.98%) were >69years. Table I demonstrated the Distribution of study patients according to age. The total study population was 51 Patients aged <49 years to >69 years, 21(41.17%) were male and 30(58.13%) female according to sex. 27(52.94%) were illiterates and 24(47.06%) were literate on according to literacy. Figure I demonstrated the prevalence of cataract based on literacy and sex. The total study population was 51 Patients 12(23.52%) were Cortical+PSC, 7(13.72%) were Nuclere+PSC, 32(62.76) were Mixed according to type of cataract. 47(92.15%) were SICS+PC IOL and 4(7.85%) were Phaco+PC IOL on according to type of surgery and 33(64.70%) were 1 to 2 month, 12(23.52%) were 2 to 4 months and 6(11.76%) were .5 months according to Follow-up Visit. Table II demonstrated Clinical Characteristics of the study. The following Figure II shows the outcome of cataract surgery in the study population the hundred percentage patients had Discharge with good recovery, 49(96.08%) patients had Pre-Operative visual acuity, and 2(3.92%) patients had post-operative visual acuity.

**Table I:** Prevalence of cataract among different age groups

Age group	n=51	%
<49 years	5	9.80
50 to 59 years	6	11.77
60 to 69 years	14	27.45
>69 years	26	50.98
Total	51	100.0

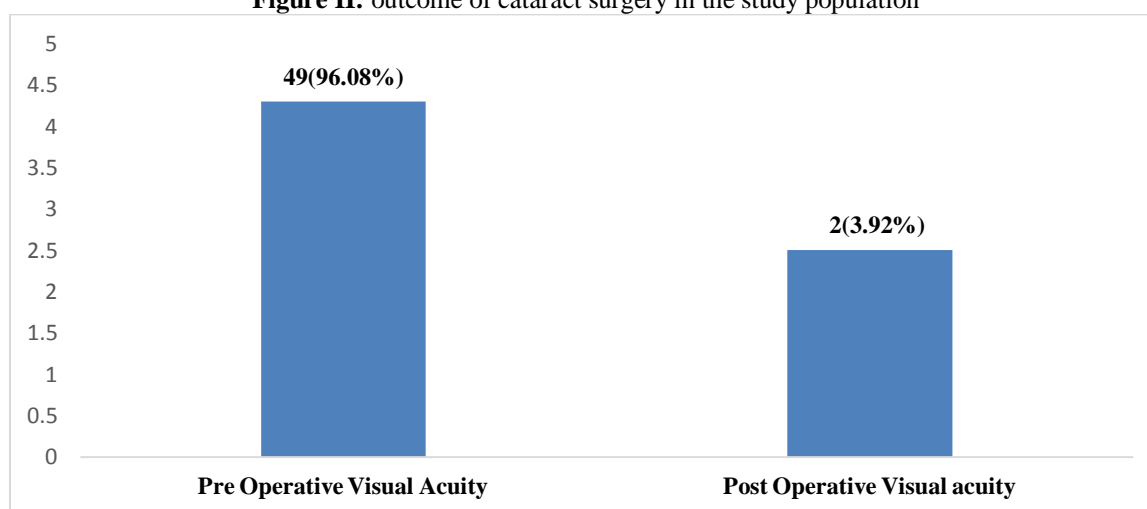
**Figure I:** Prevalence of cataract based on literacy and Sex



**Table II:** Clinical Characteristics of the study

Variable	n=51	%
<b>Type of cataract</b>		
Cortical+PSC	12	23.52
Nuclear+PSC	7	13.72
Mixed	32	62.76
<b>Type of surgery</b>		
SICS+PC IOL	47	92.15
Phaco+PC IOL	4	7.85
<b>Follow-up visit (Month)</b>		
1-2	33	64.70
2-4	12	23.52
>5	6	11.76

**Figure II:** outcome of cataract surgery in the study population



#### IV. Discussion

It is frequently reported that cataract surgery is a high-volume operation because of high prevalence of cataract and limited alternatives for interventions. Cataract surgery is the only option to restore and rehabilitate visual acuity. However, several studies reported that there are multiple factors that affect the desired surgical outcome. This is another clinical challenge besides the psycho-socioeconomic burden of the study participants had follow-up visit of 1–4 weeks. This might be the possible reason for the observed difference. Overall, the level of postoperative visual acuity in this study is significantly lower. This indicates that a large number of individuals had highly compromised vision-related quality of life and loss of productivity postoperatively. Furthermore, it was also attempted to test the association between the level of postoperative visual acuity and some sociodemographic variables and clinical characteristics of study participants. Only postoperative follow-up time duration has shown an association with the level of postoperative visual acuity. A similar result was reported from the studies conducted in Jos, Nigeria, South Ghana, and Adelaide, Australia, in which greater amount of visual acuity change has been recognized in different consecutive weeks.<sup>13, 18, 19</sup> This indicates that as the time increase after operation, all acute postoperative complications as in disturbances of aqueous humor, change in pupillary size, regularity, and other ocular parameter changes will be stabilized. This results in stabilization of the visual acuity. On the other hand, the major factors like ocular comorbidity (glaucoma, corneal opacity), systemic health problems (diabetes mellitus, hypertension), and postoperative complications stated by other studies have been fixed for all cases so that the possible reason for this poor visual outcome might be related to surgically induced corneal astigmatism and other ocular parameter changes as in pupil size, pupil regularity, anterior chamber depth, and intraocular lens position.<sup>20,21</sup> Previous studies have shown that surgically induced uncorrected refractive error was the most common cause of poor visual outcome after operation.<sup>20</sup> Overall, this study implicates that greater effort should be exerted to identify the main cause of visual impairment after operation and to devise strategies so as to maximize the level of visual outcome. Even if this study was the first in kind for the area and conducted with large sample size, it was a retrospective study. And it was difficult to observe every postoperative visual progression. Thus, it would be plausible to conduct prospective follow-up study that incorporated associated factors to make it more informative and suitable for interventions.

## V. Conclusion & Recommendations

Cataract surgery is the principal refractive surgical procedure performed in older adults. Technological advances have allowed for improved surgery through smaller incisions, resulting in better outcomes. Improvements in lens implants provide better visual outcomes than were previously possible.

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