

## A Study on Prevalence of Cataract and Importance of Cataract Surgery at Tertiary Care Hospital in Bangladesh

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### Abstract

### Original Research Article

Cataract is the leading cause of visual impairment and blindness worldwide, accounting for more than 50% of the blindness cases. The major barriers to cataract surgery include cost, lack of knowledge about cataract, lack of transport and/or felt need. Outcomes of cataract surgery are generally good and improvement in vision after cataract surgery is a rule in most case. Investigate the prevalence and vision-related outcomes of cataract surgery in a private medical college hospital. 51 patients were subjected to a cross sectional study by systematic random sampling with the participants of study being patients with cataract coming to the ophthalmology OPD. The prevalence of cataract among the patients attending ophthalmology OPD is 19.87%. In Table I: shows distribution of the study patients according to age group of the clinical presentation of Prevalence of cataract where most of the cases 26(50.98%) were >69 years. In Figure-I shows distribution of the study patients according to Literacy and sex of the clinical presentation of Prevalence of cataract where most of the cases 27(52.94%) were Illiterates and 30(58.13) were Female. In Table II: shows distribution of the study patients according to age locality of the clinical presentation of Prevalence of cataract where most of the cases 37(72.55%) were Rural. In Figure III shows distribution of the study patients according to diabetes in patients with cataract of the clinical presentation of Prevalence of cataract where most of the cases 5(9.8%) had diabetes in patients. The following tables and figures are given below in detail. The age based study shows that the prevalence of cataract increases with age. It is clear from the study that the visual acuity improves greatly with the cataract surgery. The most common post-operative complications being astigmatism and posterior capsular opacification.

**Keywords:** Cataract, prevalence, vision.

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## INTRODUCTION

Cataract is the leading cause of visual impairment and blindness worldwide, accounting for more than 50% of the blindness cases [1]. Population based surveys among older populations have shown that cataract is the predominant cause of severe visual impairment/blindness in Bangladesh [2]. In response to this cataract blindness burden. The annual number of cataract surgeries in Bangladesh increased from 1.2 million in 1990 to 4.8 million in 2006 [2]. The major barriers to cataract surgery include cost, lack of knowledge about cataract, lack of transport and/or felt need [1]. Cataract is likely to burden health care systems as the world's population ages due to increasing life expectancy [1]. Cataract is caused by the degeneration and opacification of the lens fibers already

formed the formation of aberrant lens fibers or deposition of other material in their place [4]. Epidemiological studies have established certain risk factors for cataract formation, particularly age, exposure to UV-B radiation, cigarette smoking, diabetes, severe diarrhoea and malnutrition, lower socioeconomic status, lower education, and occupation [1]. Outcomes of cataract surgery are generally good and improvement in vision after cataract surgery is a rule in most case.

## OBJECTIVE

### a) General objective

- To find the prevalence of cataract on the basis of various aspects such as age group, sex and literacy.

### b) Specific objectives

- To prove cataract surgery improves the vision in

patients.

- To detect the prevalence of post-operative complications during follow up after the surgery.

**METHODOLOGY**

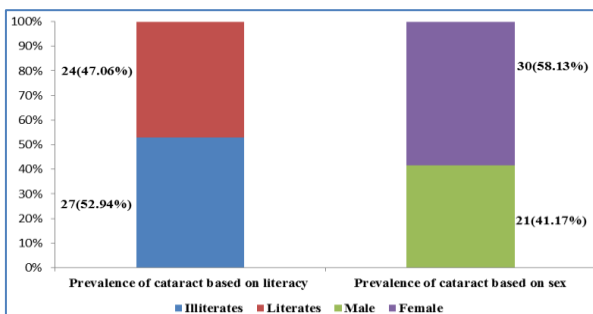
The study design used for this study is cross sectional study and the study period is from May 2019 to April 2020. The study was done Dr. Sirajul Islam Medical College and Hospital Ltd, Dhaka, Bangladesh and done by the Department of Ophthalmology. The sampling technique used is systematic random sampling. Inclusion criteria: Patients with cataract coming to the ophthalmology OPD. Exclusion criteria: Patients not willing for study and patients with causes of blindness other than cataract. Sample size:  $4PQ/d^2=51$  [1]. Data was entered in MS Excel and Statistical analysis was done using SPSS trial version 22. Institutional Ethical committee clearance obtained.

**RESULTS**

The total study population was 51 patients aged <49 years to >69 years, 5 (9.80%) were <49 years patients, 6(11.77%) were 50 to 59 years patients, 14(27.45%) were 60 to 69 years patients, and 26 (50.98%) were >69 years. Table I: demonstrated the distribution of the studied population according to age group. The total study population was 51 patients aged <49 years to >69 years, 24(47.06%) were Literates patients, 27(52.94%) were Illiterates patients, 30(58.13%) were Female patients, and 21 (41.17%) were male patients. Figure I: demonstrated the distribution of the studied population according to literacy and sex. The total study population was 51 patients aged <49 years to >69 years, 14(27.45%) were Urban patients and 37 (72.55%) were Rural patients. Table II: demonstrated the distribution of the studied population according to literacy and sex. The total study population was 51 patients aged <49 years to >69 years, 5(9.8%) had Diabetes in patients Figure II: demonstrated the distribution of the studied population according to Diabetes in patients with cataract.

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

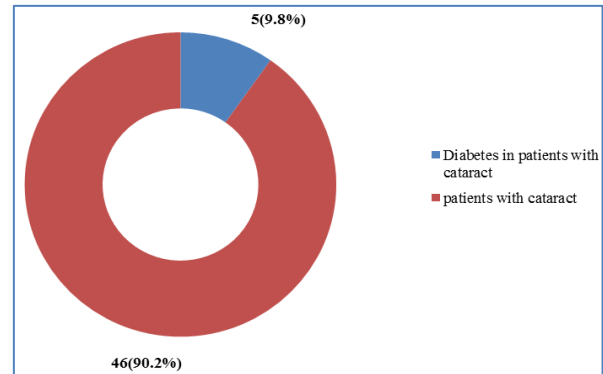
Age group	N=51	%
<49 years	5	9.80
50 to 59 years	6	11.77
60 to 69 years	14	27.45
>69 years	26	50.98



**Fig-I: Prevalence of cataract based on literacy and Sex**

**Table-II: Prevalence of cataract based on locality**

Locality	N=51	%
Urban	14	27.45
Rural	37	72.55



**Fig-II: Diabetes in patients with cataract**

**Table-II: Distribution of Pre OP and Post OP**

	Pre OP	Post OP
6/6 - 6/18	0	83.07
6/18 - 6/60	3.77	13.7
6/60 - 3/60	11.07	1.6
3/60 - NLP	85.14	1.64

**DISCUSSION**

The prevalence of cataract among the study group is 19.8% which is comparably similar to the prevalence rates of the GVS Bourne et al. [2] (17.6%) and Eye disease research group study (17.2%). The prevalence of cataract according to this study is more among females with 58.13% among the patients with cataract were females while 41.4% were males, its 55.87% of females and 44.13% males in GVS Bourne et al. [2] and 56.61% of females and 43.29% males in Sobti et al. [8]. The percentage of patients with cataract increases with increase in age group with 10.4% are less than 49 years of age while its 12.2%,28.56%,49.13% in the age groups of 50-59yrs,60-69yrs and >70yrs respectively. 50.2 The rates in GVS Bourne et al. [2] is 21.5%, 6.5%, 22.5%,50.2% in the age groups <49 yrs,50-59yrs,60-69yrs and >70yrs respectively, rates in Sobti et al. [8] is 8.08%, 22.05%, 25.73%, 44.1% in the age groups <49 yrs,50-59yrs,60-69yrs and >70yrs respectively The study also shows that the rates are higher among the illiterates than the literates its 52.7% among the illiterates and 47.3% among the literates the rates in Sobti et al. [8] shows that its 65.44% among the illiterates and 34.56% among the literates.

Among the different types of cataract the common in this study in nuclear cataract (46.67%) and prevalence cortical cataract is 5%, mixed type is 29.3% and the rest is posterior sub capsular cataract. In the SEE project [6] the rates are 46%, 6.6%, 36.4% and 12.7% for nuclear cataract cortical cataract, mixed type and posterior sub capsular cataract respectively. Prevalence of diabetes among those with cataract is

8.44%. Its 7.2% and 4.4% in the studies Bharath *et al.* [7] and Kapoor *et al.* [9] respectively. And about 22.73% of those with cataracts are hypertensive and the rates are 21.9% and 24.26% in the studies Bharath *et al.* [7] and Kapoor *et al.* [9] respectively. Visual Acuity after the surgery is improved much as which is in comparison with Kapoor *et al.* [9].

Current Study	Pre OP	Post OP
6/6 - 6/18	0	83.07
6/18 - 6/60	3.77	13.7
6/60 - 3/60	11.07	1.6
3/60 - NLP	85.14	1.64

Kapoor <i>et al.</i> [8]	Pre OP	Post OP
6/6 - 6/18	0	79.9
6/18 - 6/60	0.3	15.8
6/60 - 3/60	4.9	1.4
3/60 - NLP	94.8	2.9

The prevalence of complications following cataract surgery after 8 weeks follow up, The prevalence of posterior capsular cataract is 11.23% and its 9.3% in Kapoor *et al.* [9], and 7.9 in Gupta *et al.* [1]. And occurrence of corneal disease is 4.27% which is 7.2% in Kapoor *et al.* [8], and 3.9% in Gupta *et al.* [1]. The prevalence of astigmatism is 49.53% in our study while it is 46% in Kapoor *et al.* [8] and 45.5 in Bourne *et al.* [2]. The percentage of patients developing macular diseases post operatively is 3.3% in the current study while it is 0.5% in Kapoor *et al.* [8] and 3.0% in Gupta *et al.* [1]. The occurrence of glaucoma post operatively in the study is 2.97% which is 4.4% in Gupta *et al.* [1], and 4.3% in GVS Bourne *et al.* [2]. The prevalence of worsening of Diabetic Retinopathy following cataract surgery is 0.83% in this study while its 0.5% in Kapoor *et al.* [8], and 0.9% in Gupta *et al.* [1].

## CONCLUSION & RECOMMENDATIONS

From the study it is learnt that the prevalence of cataract is more in females than males and the prevalence increases as the age increases. The common type of cataract by the study is nuclear cataract. The common post OP complication is Astigmatism followed by posterior capsular opacification. Study involving multiple medical college hospitals should be conducted. Study should be conducted in general population.

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**Conflict of interest:** None declared

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