

## AN EPIDEMIOLOGICAL STUDY OF ESTIMATION OF BURDEN OF CATARACT AMONG GERIATRIC AGE GROUP

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### ABSTRACT

**Background:** Cataract can be present among any age group and has vast etiology and represents the major burden of blindness and poor vision worldwide. In a previous study it was estimated that approximately 60 million people are suffering from elderly onset cataract in the world. Some studies among developing world also reported that higher burden of age related cataract in comparison to the developed countries. **Material & Methods:** The present prospective study was conducted at department of ophthalmology of our tertiary care hospital. The study duration was of one year. A sample size of 100 was calculated by the software epi info v.7 at 95% confidence interval at 10% acceptable margin of error. Patients who were aged more than 60 years were enrolled from outdoor and from ward by simple random sampling. **Results:** We found that out of total study participants 78% patients had cataract and 22% of total study participants had found negative for cataract on the examination. 72% belong to age group of 60 to 69 years among them 52% patients had cataract and 20% found negative for cataract. 19% study participants belong to age group of 70 to 79 years among them 17% patients had cataract and 2% found negative for cataract. 9% study participants belong to age group of above 80 years and all of them had cataract. This difference was statistically significant ( $p$  value  $< 0.05$ ). Out of total study participants 51% were male and among them 38% patients had cataract and 13% found negative for cataract. 49% study participants were females and among them 40% patients had cataract and 9% found negative for cataract. This difference was statistically non-significant ( $p$  value  $> 0.05$ ). **Conclusion:** We concluded from the present study that the higher prevalence of cataract was reported among patients of geriatric age group. We found statistically association of senile cataract with increasing age, living area as urban and rural and employment status. However, results were found statistically non-significant with gender of patient and type of family.

**Key words:** senile cataract, geriatric, elderly population.

### INTRODUCTION:

Cataract can be present among any age group and has vast etiology and represents the major burden of blindness and poor vision worldwide. In a previous study it was estimated that approximately 60 million people are suffering from elderly onset cataract in the world. Some studies among developing world also reported that higher burden of age related cataract in comparison to the developed countries(1). Cataract is

among the most common ocular morbidity seen among elderly patients, its incidence is related to the aging process (2). In a study it was reported that, the annual burden of age related cataract in India was around 4 million (3). It is an ocular morbidity and results in decreased eyesight. Incidence of cataract related to aging process is generally seen in patients who are aged above 45 years of age. In previous researches it

was estimated that approximately seventy five percent of general population above the 70years of age has reported to suffer from lensopacity or cataract(4).

Therefore, it has been established that cataracts are responsible for huge burden on health care related to ocular morbidity and to combat the disease burden and to achieve health goals, various health programs were initiated for cataract surgeries to improve quality of life among elderly population and to prevent disabilities(5). Along with the health programs directed towards cataract surgeries and secondary preventions it is also important to direct health programs towards etiology of cataract, so that we can prevent the occurrence of disease, so the outcome can be improved and out of pocket expenditure is reduced(6). In previous researches various etiologies were reported for the pathogenesis of age-related cataract some of them are, oxidative stress, osmotic graduation, phase separation, protein aggregates and post translational protein changes, however the etiopathogenesis is still a subject for research. Some studies also proposed the numerous risk factors contributing in its etiopathogenesis such as UV light exposure, some metabolic disorders, nutrition status, lens metabolism disorder, cationic pump malfunction and quality of life(7). Hence, we conducted present study to assess the burden of cataract among geriatric age group.

## **MATERIALS & METHODS**

The present prospective study was conducted at department of ophthalmology of our tertiary care hospital. The study duration was of one year. A sample size of 100 was calculated by the software epi info v.7 at 95% confidence interval at 10% acceptable margin of error. Patients who were aged more than 60 years were enrolled from outdoor and from ward by simple random sampling. Clearance from Institutional Ethics Committee was taken before start of study. Written informed consent was taken from each study participant.

The data were collected by detailed history, general physical and clinical examination from each patient after taking the written consent. Patients who had corneal opacities, patients with chronic diseases such as hypertension and diabetes and renal diseases were excluded from the study. Detailed ophthalmic

examination was done among all the study participants, including slit-lamp and fundus examination. For the grading of cataract LOCS III classification was used. Data analysis was carried out using SPSS v22. All tests were done at alpha (level significance) of 5%; means a significant association present if p value was less than 0.05.

## **RESULTS**

In the present study, we enrolled 100 patients of aged above 60 years. Detailed ophthalmic examination was done among all the study participants, including slit-lamp and fundus examination. For the grading of cataract LOCS III classification was used for diagnosis. We found that out of total study participants 78% patients had cataract and 22% of total study participants had found negative for cataract on the examination. In the present study, out of total study participants 72% belong to age group of 60 to 69 years among them 52% patients had cataract and 20% found negative for cataract. 19% study participants belong to age group of 70 to 79 years among them 17% patients had cataract and 2% found negative for cataract. 9% study participants belong to age group of above 80 years and all of them had cataract. This difference was statistically significant (p value < 0.05). Out of total study participants 51% were male and among them 38% patients had cataract and 13% found negative for cataract. 49% study participants were females and among them 40% patients had cataract and 9% found negative for cataract. This difference was statistically non-significant (p value > 0.05). Out of total study participants 47% were lived in nuclear family among them 35% patients had cataract and 12% found negative for cataract. 53% study participants lived in joint family among them 43% patients had cataract and 10% found negative for cataract. This difference was statistically non-significant (p value > 0.05). Out of total study participants 61% were lived in rural areas among them 47% patients had cataract and 14% found negative for cataract. 39% study participants lived in urban areas among them 31% patients had cataract and 8% found negative for cataract. This difference was statistically significant (p value < 0.05). Out of total study participants 24% were employed in various works among them 21% patients had cataract and 4% found negative for cataract. 79% study

participants were unemployed and among them 57% patients had cataract and 18% found negative for cataract. This difference was statistically significant (p value < 0.05). (Table-1).

**Table 1:** Distribution of study participants on the basis of sociodemographic data.

Sociodemographic variables		Cataract present (%)	Cataract absent	P value
Age (years)	60-69	52%	20%	< 0.05
	70-79	17%	2%	
	>80	9%	0%	
Sex	Male	38%	13%	>0.05
	Female	40%	9%	
Family type	Nuclear	35%	12%	>0.05
	Joint	43%	10%	
Residence	Rural	47%	14%	< 0.05
	Urban	31%	8%	
Vocation	Employed	21%	4%	< 0.05
	Unemployed	57%	18%	

## DISCUSSION

In the present study, we enrolled 100 patients of aged above 60 years. Detailed ophthalmic examination was done among all the study participants, including slit-lamp and fundus examination. For the grading of cataract LOCS III classification was used for diagnosis. We found that out of total study participants 78% patients had cataract and 22% of total study participants had found negative for cataract on the examination. Similar results were obtained in a study conducted by Schoenfeld E among patients of senile cataract and found that the higher prevalence of cataract among study participants. However, their results were statistically non-significant (P value >0.05)(8). Similar results were obtained in a study conducted by Javanbakht M among patients of senile cataract and found that the statistically higher prevalence of cataract among study participants. Most of characteristics of their study were similar to present study(9).

In the present study, out of total study participants 72% belong to age group of 60 to 69 years among them 52% patients had cataract and 20% found

negative for cataract. 19% study participants belong to age group of 70 to 79 years among them 17% patients had cataract and 2% found negative for cataract. 9% study participants belong to age group of above 80 years and all of them had cataract. This difference was statistically significant (p value < 0.05). Out of total study participants 51% were male and among them 38% patients had cataract and 13% found negative for cataract. 49% study participants were females and among them 40% patients had cataract and 9% found negative for cataract. This difference was statistically non-significant (p value > 0.05).

Similar results were obtained in a study conducted by Shoepheld-E among patients of senile cataract and found that the higher prevalence of cataract among male gender compared to females. They reported that statistically significant association between increasing age and cataract (10). Similar results were obtained in a study conducted by Clayton among patients of senile cataract and found that the higher prevalence of senile cataract with the increasing age and found statistically significant association (11).

In the present study, out of total study participants 47% were lived in nuclear family among them 35% patients had cataract and 12% found negative for cataract. 53% study participants lived in joint family among them 43% patients had cataract and 10% found negative for cataract. This difference was statistically non-significant (p value > 0.05). Out of total study participants 61% were lived in rural areas among them 47% patients had cataract and 14% found negative for cataract. 39% study participants lived in urban areas among them 31% patients had cataract and 8% found negative for cataract. This difference was statistically significant (p value < 0.05). Out of total study participants 24% were employed in various works among them 21% patients had cataract and 4% found negative for cataract. 79% study participants were unemployed and among them 57% patients had cataract and 18% found negative for cataract. This difference was statistically significant (p value < 0.05). Similar results were obtained in a study conducted by Kaur J among patients of senile cataract and found that the statistically significant characteristics similar to present study and concluded that age was not only risk factor for the senile cataract (12). Similar results were obtained in a study

conducted by Ross M among patients of senile cataract and found that the higher prevalence of raised serum sodium levels in patients of senile cataract. They reported that statistically significant characteristics similar to present study and concluded that age was not only risk factor for the senile cataract (13).

## CONCLUSION

We concluded from the present study that the higher prevalence of cataract was reported among patients of geriatric age group. We found statistically association of senile cataract with increasing age, living area as urban and rural and employment status. However, results were found statistically non-significant with gender of patient and type of family.

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