



STUDY OF RISK FACTORS ASSOCIATED WITH CATARACT PATIENTS IN RURAL AREA

Ophthalmology

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ABSTRACT

Introduction: Cataract is the leading cause of bilateral blindness in India, and over two-thirds of rural Indian adults with low vision, glaucoma, refractive error, and cataracts have never sought eye care. Thus, knowledge of the epidemiological factors and magnitude of the disease is critical to mobilize resources and healthcare managers. **Aim and Objectives:** The study's primary objective is to investigate the risk factors among cataract patients in Meerut city. The study also aims to determine the prevalence and type of cataract among the population. **Materials and Methods:** The study conducted a prospective pre-designed study at the OPD of upgraded Department of Ophthalmology at LLRM Medical College, Meerut. The sample size calculated was 378, and patients were randomly selected from the routine OPD and camps from June 2021 to June 2022. Observations: The study's data revealed that 158 patients had cataracts, with 86 (54.4%) females and 72 (45.6%) males. The highest number of patients (28.6%) were in the 51-60 age group. The percentage of females (55.5%) was higher than males (44.5%) in the age group of 51-60 years. Table 2 shows that out of 158 cataract patients, 28 (17.7%) were associated with diabetes, which is a significant risk factor for cataracts. **Conclusion:** The study provides insights into the risk factors and prevalence of cataracts among rural populations. The findings suggest that diabetes is a significant risk factor for cataracts, highlighting the need for better diabetes management programs to prevent cataract development. Furthermore, the study's results can help healthcare managers and practitioners develop targeted interventions to improve eye care in rural areas.

KEYWORDS

INTRODUCTION-

Elimination of avoidable blindness is the goal of Vision 2020. India is one of the signatory of Vision 2020. Cataract has been documented to be the most significant cause of bilateral blindness in India where vision <20/200 in the better eye on presentation is defined as blindness. Blindness, especially related to cataracts, poses a major challenge all over the developing world. India, as one of the biggest developing countries, has a large number of blind requiring sight restoring cataract surgery. In India, cataract has been reported to be responsible for 50-80% of the bilaterally blind in the country. The most recent estimates from World Health Organization (WHO) reveal that 47.8% of global blindness is due to cataract; and in south Asia region which includes India, 51% of blindness is due to cataract. In India, cataract is the principal cause of blindness accounting for 62.6% cases of blindness.¹ In India, according to a recent survey in the Rapid Assessment of Avoidable Blindness (RAAB) study, cataract was responsible for 77.5% of avoidable blindness. Considering current population (121 crore) of India as per census 2011, approximately 62%, that is, 72 lakhs (7.2million) are blind due to cataract. As per National Programme for Control of Blindness (NPCB), incidence of cataract is 0.4-0.5%; thus the number of new cases of cataract to be operated upon each year comes to 61.5 lakhs (6.15 million).² Since cataract is a major cause of avoidable blindness in the developing countries, the key to the success of the Global Vision 2020: The right to sight initiative is a special effort to tackle cataract blindness. One recent study found that over two-thirds of adults in a rural Indian population with low vision, cataracts, glaucoma, and refractive error had never sought eye care.³

To deal with such a vast problem of curable blindness it is necessary to know its magnitude especially in rural area where health resources are scarce in order to mobilize the resources. Equally important is knowledge of epidemiological factors associated with cataract. Knowledge regarding magnitude, associated sociodemographic factors will be helpful for healthcare managers and practitioners (physicians). Therefore, the present study was conducted among the patients in ophthalmology department of a tertiary health center in a rural area to study the prevalence and risk factors among cataract patients.

AIM AND OBJECTIVES

1. To study the risk factors among cataract patients in Meerut city.

MATERIAL AND METHODS

A pre- designed prospective study will be conducted at the OPD of upgraded Department of Ophthalmology at LLRM Medical College, Meerut. Patients will be randomly selected from the routine OPD and camps over the period of June 2021 to June 2022 who diagnosed as a case of cataract. for-its type, risk factors and prevalence in Meerut city.

SAMPLE SIZE

The population to be covered is estimated by taking anticipated prevalence of cataract 44.1%⁽¹⁹⁾ with 5% absolute precision and confidence interval being 95%, the following formula is used to calculate the sample size:

$$n = (1.96)^2 pq / d^2 \text{ where } n = \text{sample size } d = \text{relative precision}$$

$p = \text{prevalence}$

$$q = (1-p) n = (1.96)^2 p(1-p) / d^2$$

$$= 3.84 \times 0.441 \times (1-0.441) / (0.05)^2$$

$$= 378$$

Thus by using above formula the minimum sample size calculated is 378.

OBSERVATIONS

Table 1: Distribution of cataract in different age groups of each sex-

Age Group (In Years)	Female(%)	Male(%)	No/%
0-10	2 (66.6)	1 (33.4)	3 (1.8)
11-20	1 (50)	1 (50)	2 (1.3)
21-30	0 (0)	1 (100)	1 (0.6)
31-40	4 (57.2)	3 (42.8)	7 (4.4)
41-50	21 (56.7)	16 (43.3)	37 (23.4)
51-60	25 (55.5)	20 (44.5)	45 (28.6)
61-70	17 (53.2)	15 (46.8)	32 (20.3)
71-80	13 (52.0)	12 (48.0)	25 (15.8)
81-90	3 (60)	3 (40)	6 (3.8)
TOTAL	86 (54.4)	72 (45.6)	158 (100)

Table no.1 shows the Gender wise distribution of cataract among all the age group. It was seen that maximum number of patients (28.6%) were in 51-60 years of age group.

Percentage of female (55.5%) can be observed as compare to males (44.5%) in the age group of 51-60 years. Similar pattern can be seen for 41-50 years of age group.

Table 2: Cataract patients associated with diabetes - 28 Patients

Type of Cataract	Female	Male	Total
IMSCNSI	3	2	5
IMSCNSII	4	3	7
IMSCNS III	5	3	8
IMSCNS IV	1	1	2
IMSCNSV	1	0	1
MSC	2	1	3
HMSC	1	1	2
CONGENITAL	0	0	0
TRAUMATIC	0	0	0
Total	17	11	28

It was noticed that 17.7% of the patients were diabetic among all the cataract patients and IMSC NSIII type of cataract was most prevalent (28.6%) followed by IMSC NSII (25%).

Among all the diabetic patients higher percentage of females (60.7%) can be observed as compared to male (39.9%).

Table 3: Cataract patients associated with Smoking - 35 Patients

Type of Cataract	Female	Male	Total
IMSCNSI	0	0	0
IMSCNSII	0	3	3
IMSCNS III	3	10	13
IMSCNS IV	0	8	8
IMSCNSV	0	0	0
MSC	1	4	5
HMSC	1	5	6
CONGENITAL	0	0	0
TRAUMATIC	0	0	0
Total	5	30	35

The type of cataract which was more prevalent in all those who suffers more dehydration was IMSC NSIII type; 12 patients out of total 25 patients were of IMSC NSIII type: (30.0%).

DISCUSSION-

We found that 28 patients out of total 158 patients (17.7%) having diabetes. among them female are more diabetic; 17 out of total 86 patients (19.7%) while males are fewer; 11 out of 72 male patients (15.2%).

And the type of cataract which was more prevalent in all diabetics was IMSC NS III type; 8 patients out of total 28 diabetic patients (28.5%). This result can be supported by earlier studies; Li Li, Delcourt C et. al; they state that cataract is one of the most common complications of diabetes mellitus on the eye.

CONCLUSION-

We found that 28 patients out of total 158 patients having diabetes. Among them females (17) are more diabetic; while males (11) are fewer; and the type of cataract which was more prevalent in all diabetics was IMSCNS III type. We also found that 35 patients out of total 158 patients were smokers. Among them males (30) are more smokers; while females (05) are fewer; and the type of cataract which was more prevalent in all diabetics was IMSCNS III type.

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