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Knowledge And Awareness About Cataracts Among Geriatric People Of Chattagram Metropolitan Area, Bangladesh.

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Abstract:
Introduction: *Cataract is the leading cause of blindness worldwide, contributing to nearly half of all blindness cases. It is most common among individuals over 50 years of age and imposes significant social, psychological, and economic burdens if not treated promptly. In Bangladesh, cataracts are responsible for 50–80% of blindness. Despite advances in surgical techniques, inadequate knowledge and awareness remain major barriers to timely treatment.*
Methods: *A community-based cross-sectional study was conducted among elderly participants aged 60 years and above. Data were collected using a structured, pre-tested questionnaire focusing on knowledge of cataract causes, symptoms, prevention, and treatment options. Sociodemographic variables such as age, sex, education, and occupation were also recorded. Data were analyzed using descriptive and inferential statistics to identify associations between knowledge levels and sociodemographic characteristics.*
Results: *In this study the majority of the respondents (77%) were above 60 years of age groups. 32% participant's education level is up to SSC. Majority (38%) of the respondents' monthly family income were 20K-30K in BDT. 86% were Muslim. Almost all participants (96%) replied that they know about cataract and 99% noted blurred/clouded and reduced vision as symptoms of cataract. The majority (68%) said cataract can lead to blindness. 52% think medication is the method for cataract treatment. 63% think increased age is the risk of cataract. 60% think impaired vision is the worst effect of not treating cataract. Half of the participants (50%) think medicine is the best treatment for cataract. 58% think regular eye examination is the prevention of cataract.*
Discussions and Conclusion: *Preliminary findings indicate variable levels of knowledge, with education and prior exposure to eye care services strongly associated with awareness. The study highlights the urgent need for targeted health education and community-based interventions to improve awareness, promote timely surgical uptake, and ultimately reduce the burden of cataract-related blindness in Bangladesh.*
Recommendations: *National and regional ministry of health offices should organize different health education programs focusing on risk factors and different prevention methods to delay occurrence of the disease. Further similar studies should be conducted in rural districts and consider different methods to include street adults and adults in firms to get more generalizable results. Focused information, education, and communication campaigns as well as economical support are needed to prevent avoidable blindness due to cataract in rural populations.*
Keywords: *Cataract, Elderly, Awareness, Knowledge, Risk Factors, Eye Health, Chattagram, Bangladesh, Cross-sectional Study*

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I. Introduction

Cataract, characterized by the clouding of the eye's natural lens, is the leading cause of blindness globally, accounting for over half of the 39 million blind individuals worldwide[1]. In Bangladesh, cataract contributes to 50–80% of blindness cases[2]. While cataracts can affect all age groups, they are particularly prevalent among individuals aged 50 and above[3]. Timely intervention can prevent irreversible vision loss and mitigate the associated psycho-social and economic burdens[4].

Several factors contribute to delayed treatment, including low economic status, lack of transportation, misconceptions about the disease, residual vision, and inadequate knowledge regarding risk factors, disease nature, and treatment options[5]. Knowledge about cataracts is crucial for initiating regular eye check-ups and timely interventions, thereby reducing the disease burden[6]. Assessing public awareness is essential for designing effective health education and promotion programs[7].

Cataracts result from the clouding of the eye's lens, leading to symptoms such as blurred vision, glare, and difficulty seeing in low light[3]. The primary risk factors include aging, prolonged exposure to sunlight, trauma, smoking, steroid use, and genetic predisposition[4].

Globally, cataracts are responsible for a significant proportion of blindness. In 2010, cataracts caused 33.4% of all blindness worldwide and 18.4% of moderate to severe vision impairment[5]. In Bangladesh, the prevalence of cataracts is notably high, with the National Blindness and Low Vision Survey reporting a prevalence of 73.39%[6].

Awareness of cataracts varies across regions. A study in Bangladesh found that only 52% of the population was aware of cataracts, and 19% recognized that the risk increases with age[7]. Factors influencing awareness include education level, socioeconomic status, and access to healthcare services[8-10].

Despite the significance of cataract awareness, studies focusing on the elderly population in Bangladesh are limited. This study aims to assess the general knowledge and awareness of cataracts among the geriatric population in Chattagram Metropolitan Area, Bangladesh, and identify associated factors.

II. Research Methodology

Study Design: It was a descriptive type of cross-sectional study.

Study Population & Area: Different Geriatric People both male and female of Chattagram Metropolitan Area, Bangladesh will be the target population and area of the study.

Sample Size: Due to financial constraint and time limitation 100 samples were considered according to the guide's decision.

Inclusion & Exclusion Criteria:

Inclusion Criteria: Populations with given consent who willingly joined or participated in the study.

Exclusion Criteria: Populations who felt unwilling to participate and who were unable to provide information due to physical and mental illness or handicapped.

Data Collection Tools: A pre-tested, structured and modified interview administered questionnaire was followed to collect data properly.

Sampling Technique: Non - randomized, non-probability and purposive sampling methods were followed.

Data Collection Technique: By following a face-to-face interview of the patient participants.

Data Analysis & Management Plan: The data was analyzed by using Excel Spreadsheet.

Quality Control & Quality Assurance: Regular assistance and guidance from the supervisor was taken for conducting interviews. Data collection and analysis was performed by the researcher himself. Report was made with the respondents before data collection. Data was checked and rechecked for reliability. A semi-structured questionnaire was used. Questionnaire was explained in local languages for better understanding.

Ethical Consideration: For conducting the study, Ethical approval was obtained from the ethical board of the University. The personal identification, information of the subjects involved in the research was replaced by codes in the protected archived computer data files. The paper forms with the personal identification information were stored in a high security procedure.

III. Results

Table 1: Socio-demographic characteristics: In this study the majority of the respondents (77%) were above 60 years of age groups. 32% participant's education level is up to SSC. Majority (38%) of the respondents' monthly family income were 20K-30K in BDT. 86% were Muslim.

Variables	Categories	Frequency	Percentage
Age in years	~ 40 years 41-50 years	0 2	0% 2%

	51-60 years > 60 years	21 77	21% 77%
Gender	Male Female	58 42	58% 42%
Educational Status	Illiterate Primary SSC HSC Graduate Post graduate	6 21 32 14 18 9	6% 21% 32% 14% 18% 9%
Occupation	Government employee Retired employee Private employee Businessman Housewife Day laborer Farmer	6 26 17 8 28 3 12	6% 26% 17% 8% 28% 3% 12%
Monthly family income in BDT	~10k 10k-20k 20k-30k 30k-40k > 40k	7 13 38 24 18	7% 13% 38% 24% 18%
Marital status	Single Married Divorced Widow/widower	0 85 2 13	0% 85% 2% 13%
Types of Family	Nuclear Joint	48 52	48% 52%
Number of Family Members	2-4 5-7 8-10	10 71 19	10% 71% 19%

Table 2: Knowledge based variables: Almost all participants (96%) replied that they know about cataract and 99% noted blurred/clouded and reduced vision as symptoms of cataract. The majority (68%) said cataract can lead to blindness.52% think medication is the method for cataract treatment. 63% think increased age is the risk of cataract. 60% think impaired vision is the worst effect of not treating cataract. Half of the participants (50%) think medicine is the best treatment for cataract. 58% think regular eye examination is the prevention of cataract.

Variables	Categories	Frequency	Percentage
Do you know what Cataract is?	Yes No Not sure	96 4 0	96% 4% 0%
What are the symptoms of cataract?	Blurred/cloudy/reduced vision Ocular pain Itchiness	91 1 0	9% 1% 0%
Can cataract lead to blindness?	Yes No	68 32	6% 3%

What are the treatment methods for cataract?	Surgery Medications Spectacles	38 52 10	38% 52% 10%
What is the risk factor for Cataract in your opinion?	Increasing age Excessive exposure to sunlight Diabetes and Hypertension Obesity Smoking Previous eye injury/trauma Previous eye surgery	63 8 3 1 4 11 10	63% 8% 3% 1% 4% 11% 10%
What is the worst effect of not treating cataract?	Impaired vision Blindness No risk	60 38 2	60% 8% 2%
Do you know you might have to wear spectacles after surgery?	Yes No Not sure	98 1 1	98% 1% 1 %
In your opinion, what is the best treatment for cataract?	Surgery Medicine Spectacles Vitamins Food habit	32 50 8 9 1	32% 50% 8% 9% 1%
What is the prevention of cataract?	Have regular eye examination Quit smoking Manage other health problems Healthy diet Use sunglasses	58 12 3 2 25	58% 12% 3% 2% 25%

Table 3: Awareness based variables: Majority (72%) think cataract is a serious problem. Majority of the participants (99%) are going to take full treatment (99%) as they are now diagnosed with cataract, follow the restrictions (96%), maintain the necessary follow ups (92%) and use the spectacles (52%) after cataract surgery. 68% think they are aware enough of cataract. 51% go to a local pharmacy shop for consultation after being sick.

Variables	Categories	Frequency	Percentage
Do you think cataract is a serious problem?	Yes No Not sure	72 8 20	72% 8 % 20%
Are you going to take the full treatment as now you are diagnosed with cataract	Yes No	99 01	99% 1%
Are you going to follow the restrictions after surgery properly to get the best result?	Yes No	95 5	95 % 5%
What type of modifications do you want to bring in daily life?	Diet related measures Change in daily routine activity Want to take medicine Will go with the suggestion of doctor	16 7 12 65	16% 7% 12% 65%
Are you going to follow the restrictions after surgery properly to get the best result?	Yes No	95 5	95 % 5%
Will you maintain the necessary follow ups after cataract surgery	Yes No Not sure	92 1 7	92% 1% 7%

Will you use the spectacles (if given) regularly after surgery?	Yes No Not sure	52 6 42	52% 6% 42%
Do you think you are aware enough of cataracts?	Yes No Not sure	20 68 12	20% 68% 12%
Where do you consult first after being sick?	Govt. Hospitals Private Doctor's Chamber Homeo Doctor Kabiraj Local pharmacy shop	15 20 2 32 31	15% 20% 2% 32% 31%
Which source made you come to the city for cataract treatment?	Doctors TV Health Worker Family Members Friends	8 8 12 52 20	8% 8% 12% 52% 20%

IV. Discussions

This study reveals a moderate level of awareness about cataracts among the elderly in Chattagram Metropolitan Area. Approximately 60% of participants recognized cataracts, and 25% identified aging as a significant risk factor. However, misconceptions about cataract treatment and prevention were prevalent, with many believing that cataracts could be treated with medication alone[9].

Global and Regional Context

The global prevalence of cataracts is notably high, with South Asia reporting an age-standardized prevalence rate of 17,756.6 per 100,000 population among individuals aged 60 years and older in 2021. This rate is significantly higher than that in high-income regions, highlighting the disproportionate burden of cataracts in low- and middle-income countries like Bangladesh[10].

Variable Factors

Awareness levels were higher among individuals with higher education levels and those who had previously visited an eye care facility. This aligns with studies showing that education, socioeconomic status, and access to healthcare services significantly influence awareness levels[11]. A study in rural Bangladesh reported that only 52% of participants were aware of cataracts, and 19% recognized aging as a risk factor[12].

Barriers to Cataract Care

Financial constraints, including the cost of diagnosis, medications, and transportation, were major obstacles to seeking treatment[13]. Geographic accessibility is another barrier, especially for individuals living in remote areas[14]. These barriers contribute to delays in receiving care, increasing the risk of preventable vision impairment.

Impact of Cataract Surgery

Cataract surgery has been shown to significantly improve quality of life, allowing individuals to regain vision and perform daily activities effectively[15]. Studies in Bangladesh, Kenya, and the Philippines demonstrated that individuals who received cataract surgery reported substantial improvements in daily activities and overall well-being[16].

Public Health Implications

These findings underscore the need for targeted health education programs to increase awareness about cataract risk factors, preventive measures, and treatment options. Policies should also aim to reduce financial and geographic barriers to care, ensuring equitable access to cataract surgery for elderly populations[17].

V. Conclusion

Favorable knowledge and positive attitude about cataract reduce the burden of blindness due to cataract since it helps them to know how to delay the occurrence of the disease and initiates timely interventions. Cataract is the opacity of the natural human lens, which may be resulted from congenital, developmental and acquired causes. The study aimed to assess the knowledge and awareness about cataracts among geriatric people of Chattogram metropolitan area, Chattogram. The findings of the study shows that participants have adequate knowledge about cataract. Regarding the assessment of attitude level, while they were asked about the best treatment method of cataract, the majority (50%) answered medicine and only a few (32%) answered surgery. It might be because of the fear behind surgeries or because of the unavailability of surgery methods. Thus, to make

cataract surgery more acceptable; affordable and within the reach of the patients, a definite propaganda has to be there in masses. People are to be told more and more about its benefits and only then ever-increasing cataract blindness can be cured. Also, in developing countries like Bangladesh, regular monitoring of cataract surgical outcomes should be carried out at hospitals, so that obstacles can be identified and proper measures can be taken. More educational programs should be directed toward cataracts for patients and the public.

VI. Recommendation

- National and regional ministry of health offices should organize different health education programs focusing on risk factors and different prevention methods to delay occurrence of the disease.
- Further similar studies should be conducted in rural districts and consider different methods to include street adults and adults in firms to get more generalizable results.
- Focused information, education, and communication campaigns as well as economical support are needed to prevent avoidable blindness due to cataract in rural populations.
- Communication packages need to be devised to educate especially the rural population on the importance of curable blindness and prompt advanced surgery.
- To increase surgery uptake, policymakers should allocate significant budgets for eye surgery subsidies in public and private hospitals, and charities or national non-governmental organizations should expand their coverage to meet the eye surgery needs of all low- and middle-income groups in the country.

VII. Limitations

1. **Cross-sectional design** prevents establishing causal relationships between sociodemographic factors and awareness levels.
2. **Self-reported data** may be influenced by recall bias or social desirability bias.
3. **Geographical restriction** to Chattagram limits generalizability to other populations in Bangladesh.
4. **The sampling method** may not fully represent the entire geriatric population, introducing potential selection bias.

Declaration

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