

Original Paper

Assessment of Eye Care Knowledge among Patients Attending the Outpatient Department of Selected Eye Hospitals in Dhaka City

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Abstract

A descriptive type cross sectional study was designed to study knowledge on eye care among the patients attending outpatient department of selected eye hospital of Dhaka city with a sample size of 182. The study showed that 44%, 29.1% and 19.8% of the respondent were in the age group 30-39 years, 40-49 years and 20-29 years, respectively with the mean age of 36.18 ± 8.129 . The Study findings showed that 34.6% of the respondents were in service, 32.4% were in business, 22% of the respondents were day laborer & 11% were housewife. Study reveals that 56.6% of the respondents did not think vitamin deficiency cause's eye problem and rest of them (43.4%) were think vitamin deficiency causes eye problem. Study shows that 67% of the respondents were think aging cause's cataract and rest of them (33%) did not think aging causes cataract. Study explores that majority (83.5%) of the respondents were think ocular pressure causes glaucoma and rest of them (33%) did not think ocular pressure causes glaucoma. In study found that explore that majority (72.5%) said surgery was the treatment for the blindness. On the other hand, 16.5% answered that medication was the treatment for Cataract and lastly 11.0% didn't know anything about it. It reveals that 63.2% of the respondents had eye diseases on relatives, 23.1 % of the respondents were don't know about eye diseases on relatives & only 13.7% of the respondents had no eye diseases on their relatives. Eyes are one of the most important organ in the human body and vision is one of the most wonderful gift. But often many people neglect the importance of eye care and do not pay proper attention towards eye care. The prevalence is higher in community too along with urban areas and is increasing day by day. To address the issue proper policies and community-based awareness should be taken. Training & awareness program in the community can minimize it.

1. Introduction

The general health beliefs and behaviors of patients regarding seeking timely medical care are largely influenced by the knowledge they possess. Glaucoma, the leading cause of irreversible blindness, is usually asymptomatic in its early stages. As a result, many patients present late with advanced disease. Several studies have identified a lack of awareness and inadequate knowledge as major factors contributing to delayed treatment seeking.

Visual impairment has become a global public health challenge, particularly in developing countries. In 2010, the World Health Organization estimated that approximately 285 million people were living with visual impairment worldwide, and about 90% of them lived in low- and middle-income countries (Anderson, Heitger, & Macleod, 2006). Visual impairment is also one of the strongest risk factors for functional decline among community-dwelling individuals. People with visual impairments face significant difficulties in physical activities and social participation, which increases their risk of disability.

Several studies have reported that cataract, glaucoma, age-related macular degeneration (AMD), and corneal opacities are the main causes of visual impairment in Western and Asian countries. Visual impairment is also influenced by various socioeconomic factors, including age, gender, education level, and area of residence. For example, China, the most populous country in the world, has an estimated 84.6 million people living with different types of impairments or disabilities. Studies conducted in China have shown that the prevalence of visual impairment is associated with older age, female gender, lower educational status, and rural residence (Bangladesh Bureau of Statistics, 1998).

Ophthalmology is one of the most important specialties in healthcare services. However, ophthalmology has lagged behind in the field of quality-of-life assessment, even though vision plays a crucial role in an individual's overall well-being. Visual impairment affects daily functioning, independence, and psychological well-being. It may also influence whether individuals feel like a burden to their families or have difficulties performing routine daily activities (Cook et al., 2006).

Knowledge about eye diseases is essential because visual disorders can lead to significant morbidity and disability. These conditions can result in social embarrassment, occupational limitations, reduced productivity, and economic losses within the community. Increasing public awareness of eye diseases can help administrators and policymakers develop appropriate health strategies, especially in developing countries where poverty, ignorance, limited healthcare personnel, and inadequate health facilities are common.

Blinding eye diseases are more common among the elderly population. When seeking care, many patients become exposed to information regarding eye health and diseases. Therefore, generating evidence-based information from adult populations is important for planning effective health promotion strategies targeting vulnerable groups.

Bangladesh is one of the countries with a high burden of ocular morbidity. The prevalence of blindness in Bangladesh is estimated to be 1.53% among people aged 30 years and above, and the prevalence

increases significantly among those aged 50 years and older. Cataract is responsible for nearly 80% of blindness in the country, making it the leading cause of blindness. Each year, approximately 150,000 new cataract cases are added to the existing backlog. However, the current cataract surgery coverage meets only about one-third of the national need (Wu et al., 2001).

Blindness has a profound impact on individuals and their families. People who lose their vision may become unable to work, support themselves, or contribute economically to their households. Bangladesh, as a signatory to the global initiative Vision 2020: The Right to Sight, has committed to eliminating avoidable blindness. This initiative highlights the importance of developing national programs and strengthening eye care services across the country (Grace & Bussmann, 2006).

Bangladesh was also the first country in the WHO South-East Asia Region to develop a national plan for the prevention of blindness in 1980. The program was implemented under the Bangladesh National Council on Blindness (BNCB) with support from the Royal Commonwealth Society for the Blind, now known as Sightsavers International. Later, this initiative was incorporated into the Health, Nutrition and Population Sector Program (HNPS) 2003–2011 under the Ministry of Health and Family Welfare.

Therefore, the present study aims to explore the knowledge of eye care among patients attending the outpatient department (OPD) of selected eye hospitals in Dhaka city.

2. Literature Review

According to the World Health Organization, there are an estimated 45 million blind people worldwide, with an additional 135 million individuals living with visual impairment. Globally, cataract is recognized as the leading cause of blindness, affecting approximately 16–20 million people. In country-specific terms, India has the highest number of blind people (over 9 million), with unoperated cataract being the most prevalent cause of blindness and low vision, as indicated by several population-based studies conducted over the past two decades (Lin et al., 1999).

In the neighboring region, blindness prevalence surveys have been conducted nationally in Nepal and in one region of Pakistan, yielding all-age blindness prevalence rates of 0.8% and 1.0%, respectively. A subsequent survey conducted in two administrative regions of Nepal identified a blindness prevalence of 3.0% among people aged 45 years and older. Prior to the present study, no nationwide study had been conducted in Bangladesh—a country with over 160 million inhabitants—regarding the extent of blindness or the main causes of visual impairment. This lack of vital information is particularly concerning given the strategies identified in the WHO Global Initiative for the Elimination of Avoidable Blindness by 2020 (Vision, 2020). The absence of reliable population-based epidemiological data on blindness and low vision in Bangladesh is a major barrier to effective national planning of eye care programs (Tsai et al., 2005).

Glaucoma-related blindness affects more than 6.7 million people worldwide, ranking second only to cataract (19.3 million) as a cause of blindness. Because visual impairment caused by glaucoma is often irreversible, it presents a significant challenge for those involved in the prevention of blindness at both

international and local levels. Unless detected at an early stage, the prognosis for vision is poor. Even after detection, the effective delivery of care may be influenced by individual circumstances and social environments. The Indian subcontinent—including India, Pakistan, and Bangladesh—has a combined population of over 1.3 billion people (Wang et al., 1994).

The World Health Organization estimates that this region accounts for approximately 23.5% of all blind people worldwide, representing around 10.5 million individuals. A population-based study conducted in urban Hyderabad found that 30% of adult blindness was attributable to cataract, while glaucoma accounted for 12%. A similar study conducted in Nepal reported that only 1.7% of blindness cases were attributable to glaucoma. The national blindness prevalence survey in Bangladesh found that the overwhelming majority of blindness cases were caused by cataract (80%), while glaucoma accounted for 1.2% of the total (Saw et al., 2002).

Prevalence data for glaucoma in the Indian subcontinent remain relatively scarce. The Hyderabad study reported prevalence rates of primary open-angle glaucoma (POAG) and primary angle-closure glaucoma (PACG) of 1.6% and 0.7%, respectively. In neighboring Vellore, Tamil Nadu, the prevalence rates were 0.4% and 4.3%, respectively. Both studies included participants aged 30 years and older, although the Vellore study reported prevalence rates of POAG and PACG of 1.7% and 0.5%, respectively, among people aged 40 years and older. The corresponding figures from Hyderabad were 2.6% and 1.1%.

With a population of approximately 138 million, Bangladesh represents a significant proportion of the population of South Asia. Therefore, studies in this region are important for understanding the epidemiology of eye diseases. One such study aimed to determine the prevalence of glaucoma and suspected glaucoma among individuals aged 35 years and older in the Dhaka Division of Bangladesh (Rao et al., 2002).

A more recent study conducted in provincial Sumatra reported a prevalence of myopia (≥ 0.5 diopters) of 34.1% among individuals aged 40 years and older. This prevalence is higher than that reported in white populations, such as those in the Baltimore Eye Survey (24.1% among adults aged 40 years) and the Beaver Dam Eye Study (26.2% among adults aged 43-84 years) (Quigley, 1996).

However, in urbanized regions of Southeast Asia, the prevalence of myopia among adults is even higher. For example, 38.7% of Singaporean Chinese adults aged 40–81 years were reported to be myopic (≥ 0.5 diopters). A study conducted in both rural and urban areas of southern India reported a prevalence of 36.5% among adults aged 40 years and older (Dandona et al., 1998).

The pattern appears to differ among young adults in these regions. Lower rates of myopia have been reported in southern India (8.9% among individuals aged 16-39 years), whereas much higher rates (68.8%) have been reported among Indians living in Singapore aged 16-25 years. Similarly, the prevalence of myopia among young adults in provincial Sumatra (aged 21-29 years) and Malays in Singapore (men aged 16-25 years) has been reported as 61.6% and 65.0%, respectively. Among Chinese military recruits in Singapore (men aged 16-25 years), 82.2% were reported to be myopic. High

prevalence rates have also been observed among young Hong Kong Chinese (71% among those aged 19-39 years) and Taiwanese adolescents (84% among those aged 16-18 years).

In Bangladesh, one study found a higher prevalence of myopia (≥ 0.5 diopters) among individuals living in urban areas (19.5%) compared to those living in rural areas (16.9%), although the difference was not statistically significant ($P=0.11$) (Pokharel et al., 1998).

3. Research Methodology

Conceptual Framework:

Independent Variables Dependent Variable

Symptom related variables	Symptom of disease, eye pain, redness, lacrimation, itching, headachchae, light vision, blindness, nerve deafness
Perception and attitude related variables	Taken of medicine regularly, regular checkup, personal hygiene, decision maker, distance of hospital, transport available to go to hospital, cooperation of family members, preventive measures
Risk factors related variables	frequently of infection, environment, environment pollution, seasons, allergic condition
IEC Related Factor	Media, Newspaper, Poster, Banner, Group Discussion, Seminar, Hospital, Relative & Friends

Study Objectives and Methodology (Revised Version)

Study Objectives

General Objective

To assess the level of knowledge on eye care among patients attending the outpatient department (OPD) of selected eye hospitals in Dhaka city.

Specific Objectives

- To identify the socio-demographic characteristics of the respondents.
- To assess the symptom-related variables of the respondents.
- To determine the respondents' perceptions and attitudes regarding eye health.
- To identify risk factor-related variables among the respondents.
- To assess the information, education, and communication (IEC) related variables of the respondents.

- To explore the level of knowledge on eye care among the study respondents.

Study Design

A descriptive cross-sectional study design was used.

Study Population

Target Population

Patients attending the outpatient department (OPD) of the National Islamia Eye Hospital.

Sample Population

Patients who attended the OPD during the study period and provided informed consent to participate in the study were considered the sample population.

Study Site

The study was carried out at **Islamia Eye Hospital in Dhaka city, Bangladesh.**

Study Area

Islamia Eye Hospital

Islamia Eye Hospital is one of the leading ophthalmology institutes in Bangladesh. It was established in 1960 and expanded to a 250-bed hospital in 2006. The institute serves as an academic center for postgraduate ophthalmology education and as a tertiary-level hospital for the management of ocular diseases.

The institute has 10 subspecialty departments, including Cataract, Cornea, Glaucoma, Vitreoretina, Neuro-ophthalmology, Pediatric Ophthalmology, Community Ophthalmology, Oculoplastics, and Low Vision Services. These departments are equipped with modern investigative tools, advanced equipment, and trained human resources.

Islamia Eye Hospital serves as a center of excellence in eye care in Bangladesh and aims to become one of the leading eye care centers in the region in the near future. Through the national blindness prevention program, ophthalmologists from district hospitals receive training on Small Incision Cataract Surgery (SICS), pediatric eye care, and retinal diseases. Continuous training programs for nurses and Primary Eye Care (PEC) workers are also conducted. In addition, continuing medical education (CME) programs and regular outreach camps are organized to serve underserved and marginalized populations.

Study Period

The study was conducted over a period of four months, from January 2023 to April 2023.

Sample Size

The sample size was calculated using the following formula:

$$n = \frac{Z^2 pq}{d^2}$$

Where:

- **n** = Minimum desired sample size
- **Z** = Standard normal deviate (1.96 at 95% confidence level)
- **p** = 21.9% (0.219), based on the pattern of eye diseases in a tertiary hospital
- **q** = 1 – p = 0.781

- d = Degree of desired error (0.05)

Calculation:

$$n = \frac{(1.96)^2 \times 0.219 \times 0.781}{(0.05)^2} = \frac{(1.96)^2 \times 0.219 \times 0.781}{(0.05)^2} = 262.82 \approx 263$$

Therefore, the minimum desired sample size was **263**. However, due to time and resource constraints, 182 respondents were included in the study under the supervision of the research guide.

Inclusion and Exclusion Criteria

Inclusion Criteria

- Patients who attended the OPD during the study period.
- Patients who agreed to participate and provided informed consent.

Exclusion Criteria

- Patients who refused to provide informed consent.

Sampling Technique

A non-randomized purposive sampling technique was used for selecting the study participants.

Data Collection Tools

A modifiable, semi-structured, pre-tested, interviewer-administered questionnaire was used to collect the data.

Data Management and Analysis

The collected data were edited, checked, and rechecked for accuracy and completeness. Data analysis was performed using Statistical Package for Social Sciences (SPSS) version 20.0 (Chicago).

The analyzed data were presented according to the study variables using appropriate statistical methods. Frequencies, percentages, and cross-tabulations were used to describe the data. Associations between variables were determined using Pearson's Chi-square (χ^2) test.

Limitations of the Study

- The findings of the study may only be applicable to populations with similar characteristics in Bangladesh or neighboring countries.
- There is a possibility of information and selection bias.
- Due to time and resource constraints, the study area was limited.

Ethical Considerations

- Ethical approval was obtained from the Ethical Review Committee of Northern University Bangladesh.
- Written informed consent was obtained from each respondent before conducting the interview.
- The confidentiality of the respondents was strictly maintained.
- Respondents had the right to refuse participation or withdraw from the study at any time.

4. Results

The descriptive type of cross-sectional study was conducted to assess the knowledge about eye health among the patients attending selected eye hospital of Dhaka city with a sample size of 182. A pre tested, modified interviewer administrated and semi-structured questionnaires was used to collect the information. All the data were entered and analyzed by using statistical packages for social science (SPSS) software version 16.0 (Chicago).

Table 1. Distribution of the Respondents by Age (n=182)

Age	Frequency	Percent
20-29	36	19.8
30-39	80	44.0
40-49	53	29.1
50-59	13	7.1
Total	182	100.0
Mean \pm SD 36.18 \pm 8.129		

Table no. 1 shows that 44% and 29.1% of the respondents were respectively the in the age 30-39 years and 40-49 years, followed by 19.8% was in 20-29 years & 7.1% were in the 50-59 years with the mean age 36.18 \pm 8.129.

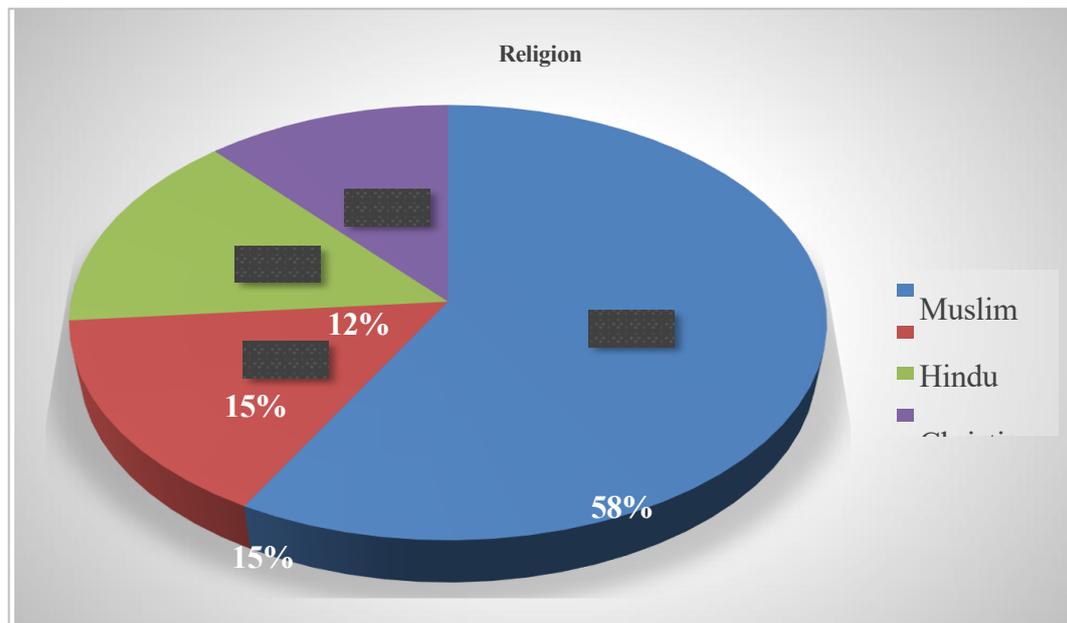


Figure 1. Distribution of the Respondents by Religion (n=182)

Figure no. 1 reveals that 58% of the respondents were Muslim, 15% were Hindu & Christian, and 12% were Buddhist.

Table 2. Distribution of the Respondents by Education (n=182)

Educational Qualification	Frequency	Percent
Illiterate	9	4.9
Primary	57	31.3
S.S.C	54	29.7
H.S.C	56	30.8
Graduate and Above	6	3.3
Total	182	100.0

Table no. 2 shows that 31.3% of the respondents were Primary, 30.8% had HSC followed by 29.7% had SSC, 4.9% were illiterate & 3.3% were graduate and above.

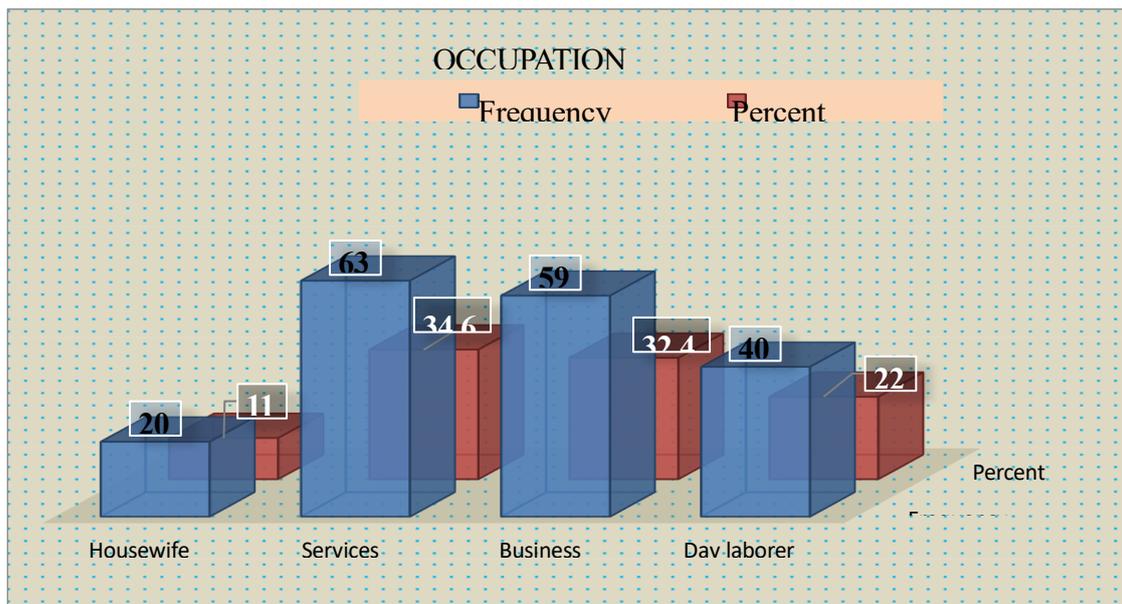


Figure 2. Distribution of the respondents by Occupation (n=182)

Figure no. 2 reveals that 34.6% of the respondents were in service, 32.4% were in business, 22% of the respondents were day laborer & 11% were housewife.

Table 3. Distribution of the Respondents by Monthly Income (n=182)

Income	Frequency	Percent
7000-14000	111	61.0
15000-22000	53	29.1
23000-30000	18	9.9
Total	182	100.0

Table no. 3 explore that 61.0% of the respondents had a monthly family income as 7000-14000 BDT, 29.1% had 15000-22000 BDT, 9.9% had 23000- 30000 BDT.

Table 4. Distribution of the Respondents by Number of Children (n=182)

Number of children	Frequency	Percent
1	32	17.6
2	79	43.4
3	31	17.0
4	36	19.8
5	4	2.2
Total	182	100.0

Table no. 4 shows that 43.8% of the respondent's number of children were two followed by 19.8% were four, 17.6% were one & 2.2% were five respectively.

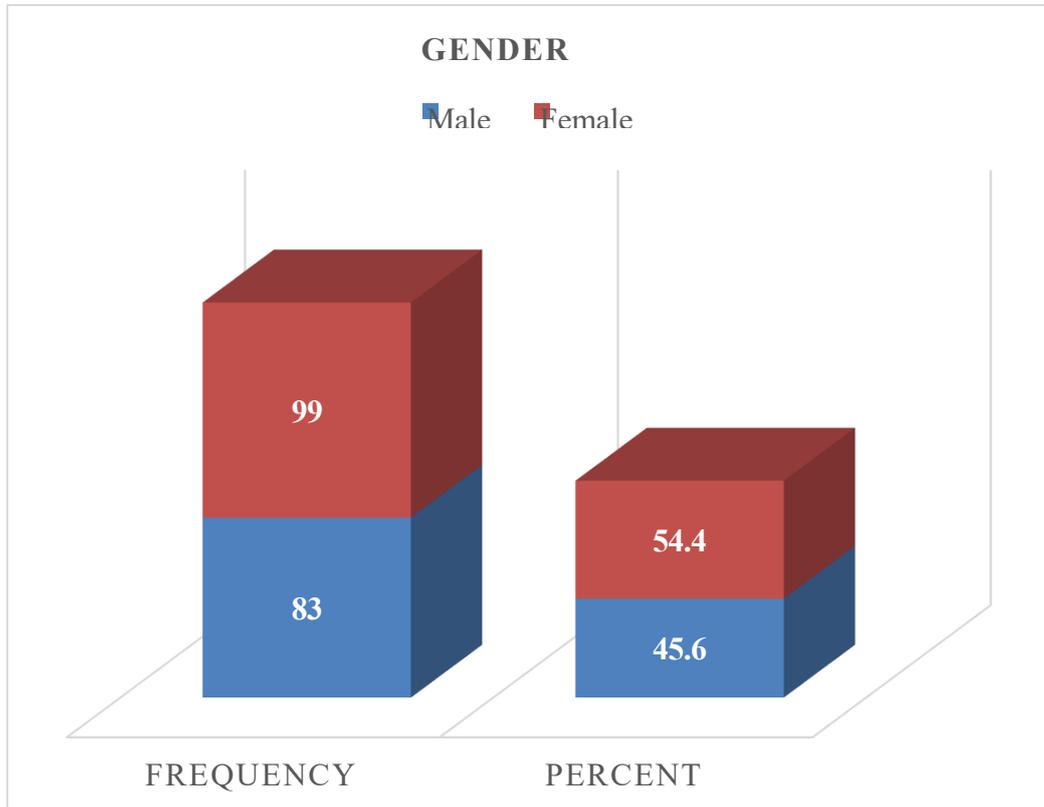


Figure 3. Distribution of the Respondents by Gender Head of Family (n=182)

Figure no. 3 shows that 54.4% of the respondent's gender head were female and 45.6% gender head were male.

Table 5. Distribution of the Respondents by Vitamin Causes Eye Disease (n=182)

Vitamin deficiency causes eye disease	Frequency	Percent
Yes	79	43.4
No	103	56.6
Total	182	100.0

Table no. 5 reveals that 56.6% of the respondents did not think vitamin deficiency cause's eye problem and rest of them (43.4%) were think vitamin deficiency causes eye problem.

Table 6. Distribution of the Respondents by Aging Causes Cataract (n=182)

Aging causes Cataract	Frequency	Percent
Yes	122	67.0
No	60	33.0
Total	182	100.0

Table no. 6 shows that 67% of the respondents were think aging cause's cataract and rest of them (33%) did not think aging causes cataract.

Table 7. Distribution of the Respondents by Ocular Pressure Causes Glaucoma (n=182)

Ocular pressure causes glaucoma	Frequency	Percent
Yes	152	83.5
No	30	16.5
Total	182	100.0

Table no. 7 explore that majority (83.5%) of the respondents were think ocular pressure causes glaucoma and rest of them (33%) did not think ocular pressure causes glaucoma.

Table 8. Distribution of the Respondents by Eye Allergy (n=182)

Cosmetics causes eye allergy	Frequency	Percent
Yes	97	53.3
No	85	46.7
Total	182	100.0

Table no. 8 reveals that 53.3% of the respondents were think cosmetics cause's eye allergy and rest of them (46.7%) did not think cosmetics causes eye allergy.

Table 9. Distribution of the Respondents by Retinoblastoma (n=182)

Retinoblastoma is a serious eye disease	Frequency	Percent
Yes	46	25.3
No	136	74.7
Total	182	100.0

Table no. 9 shows that 74.7% of the respondents were think retinoblastoma is a serious eye disease and rest of them (25.3%) were think retinoblastoma is not a serious eye problem.

Table 10. Distribution of the Respondents by Suspect of Glaucoma (n=182)

Follow up in case of glaucoma	Frequency	Percent
No	46	25.3
Yes	136	74.7
Total	182	100.0

Table no. 10 reveals that 74.7% of the respondents were think follow up is needed in case of glaucoma and rest of them (25.3%) were think follow up is not needed in glaucoma.

Table 11. Distribution of the Respondents by Ophthalmia Neonatorum (n=182)

Ophthalmia neonatorum by hygiene	Frequency	Percent
Yes	70	38.5
No	112	61.5
Total	182	100.0

Table no. 11 shows that 61.5% of the respondents were did not think due to bad hygiene ophthalmia neonatorum occurs and 38.5% were think due to bad hygiene practice ophthalmia neonatorum occurs.

Table 12. Distribution of the Respondents by Squint (n=182)

Squint is an eye disease	Frequency	Percent
Yes	95	52.2
No	87	47.8
Total	182	100.0

Table no. 12 explore that 52.2% of the respondents were think squint is an eye disease and 47.8% were think squint is not an eye disease at all.

Table 13. Distribution of the respondents by personal life problem (n=182)

Personal life problem effect on eye	Frequency	Percent
Yes	121	66.5
No	61	33.5
Total	182	100.0

Table no. 13 reveals that 66.5% of the respondents were think personal life problem influence on eye pressure & pain and 33.5% were think personal life problem did not influence on eye health.

Table 14. Distribution of the Respondents by Conjunctivitis (n=182)

Painful red eye in conjunctivitis	Frequency	Percent
Yes	136	74.7
No	46	25.3
Total	182	100.0

Table no. 14 shows that 74.7% of the respondents were think painful red eye in conjunctivitis will occur and 25.3% were think painful red eye didn't occur in conjunctivitis.

Table 15. Distribution of the Respondents by Prevention of Ophthalmia Neonatorum (n=182)

Ophthalmia neonatorum is preventable	Frequency	Percent
Yes	150	82.4
No	32	18.6
Total	182	100

Table no. 15 shows that majority (82.4%) of the respondents were give positive comment in prevention of Ophthalmia neonatorum and rest 18.6% were think Ophthalmia neonatorum is not a preventable eye disease.

5. Discussion

A descriptive cross-sectional study was conducted to assess the perceptions and attitudes regarding eye health among patients attending a selected eye hospital in Dhaka city. Data were collected using a semi-structured, pre-tested, and modified questionnaire, and entered into **SPSS** after proper verification.

The study found that 44% of respondents were aged 30–39 years, followed by 29.1% aged 40–49 years, 19.8% aged 20–29 years, and 7.1% aged 50–59 years, with a mean age of 36.18 ± 8.13 years. In terms of religion, 58% of respondents were Muslim, 15% were Hindu or Christian, and 12% were Buddhist. Regarding educational status, 31.3% had completed primary education, 30.8% had Higher Secondary Certificate (HSC), 29.7% had Secondary School Certificate (SSC), 4.9% were illiterate, and 3.3% were graduates or higher. Occupation-wise, 34.6% were employed in service, 32.4% were in business, 22% were day laborers, and 11% were housewives. These findings are comparable to a study conducted in Karachi, Pakistan in 2012.

Family-related data indicated that 43.8% of respondents had two children, followed by 19.8% with four children, 17.6% with one child, and 2.2% with five children. Gender distribution showed that 54.4% of household heads were female, and 45.6% were male.

Regarding eye health knowledge, 56.6% of respondents did not think vitamin deficiency causes eye problems, while 43.4% believed it does. This result differed from a 2013 study conducted in Brisbane, Australia.

The study further revealed that 67% of respondents believed aging causes cataract, while 33% did not. A majority of respondents (83.5%) believed that increased ocular pressure causes glaucoma, while 16.5% did not. Regarding eye allergies, 53.3% believed cosmetics could cause them, while 46.7% disagreed. About 74.7% considered retinoblastoma to be a serious eye disease, while 25.3% did not. Similarly, 74.7% believed follow-up is necessary in glaucoma cases, and 25.3% thought it was not needed.

In terms of hygiene-related eye conditions, 61.5% of respondents did not think that poor hygiene causes ophthalmia neonatorum, whereas 38.5% believed it does, a finding consistent with a study conducted in Delhi, India in 2015. Knowledge about squint was mixed, with 52.2% identifying it as an eye disease and 47.8% not recognizing it as such. Furthermore, 66.5% believed personal life problems influence eye pressure and pain, whereas 33.5% did not. Regarding conjunctivitis, 74.7% of respondents believed painful red eyes are a symptom, while 25.3% did not.

6. Conclusion

Eyes are one of the most important organs in the human body, and vision is among the most valuable human senses. Despite this, many people often neglect proper eye care. Refractive error, an intrinsic optic defect, prevents light from focusing on the retina, leading to reduced vision. Its diagnosis and treatment are relatively simple and represent one of the easiest ways to reduce visual impairment. Yet, in India, refractive error is the second most common reason patients consult ophthalmologists.

Based on the findings of this study, knowledge and awareness about cataract, glaucoma, and diabetic retinopathy are insufficient, even among younger generations. Limited exposure in the education system contributes to this lack of knowledge, which may result in preventable complications. The study underscores the need for promoting health awareness programs and other related interventions. Appropriate research can provide a foundation for developing effective policies and strategies to address ocular health in Bangladesh. These findings can guide policymakers, administrators, physicians, and community health workers to improve eye health awareness and care at the grassroots level. Further large-scale research is recommended to enhance understanding and awareness of eye diseases.

7. Recommendations

- 1) Provide targeted training for healthcare providers on effective ocular health interventions and techniques.
- 2) Encourage collaboration among ophthalmologists, general physicians, and non-governmental organizations to promote positive attitudes toward eye health.
- 3) Increase Information, Education, and Communication (IEC) activities to enhance public knowledge about good ocular health practices.

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