

## Pattern of Ocular Injuries in a District Hospital of Bangladesh

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### Abstract

**Introduction:** Ocular injuries are one of the leading causes of visual morbidity in our country. Our present study aims to evaluate the pattern of ocular injuries in a District Hospital. **Materials and Methods:** This was a prospective observational study, conducted by ophthalmology department of Sherpur District sadar hospital, Bangladesh. The study was done from January 2023 to June 2023. **Results:** The sample size was 100. All age's group and both sexes were selected randomly in this study. The history of the patient regarding particulars of the patient, time of injury, place where it occurs, type of object, nature of injury and visual acuity at presentation was recorded. Most of the patients were 11-20 years age group (44 %). 82 % of the patients were male and 18 % were female. Patients were mostly from low socioeconomic group (65%). 35% patients attended hospital within 6 hours of injury. Type of the injury was accidental most commonly (88 %) and of them occupational was the majority (54 %), homicidal injuries were 12 %. Sharp objects causes 55 %, blunt trauma causes 35% of injuries. 65% of patients had open globe injury and 35 % had closed globe injuries. Most of the patients (62 %) had visual acuity 6/60 to PL at the time of admission.

**Conclusion:** Our study revealed that young males of low socioeconomic group affected more and with sharp objects and are mainly occupational in nature.

**Key words:** Ocular injury, occupational injury, visual acuity, open globe injury.

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### Introduction:

Ocular injuries are a major public health problem such that it is one of the leading causes of monocular vision loss in the world<sup>1</sup>. Visual impairment due to ocular injuries is one of the important causes of disability in our country. The global pattern of eye injuries and their consequences suggest that about 55 million eye injuries are restricting activities of people for more

than one day every year and 750,000 cases will require hospitalization each year including some 200,000 open globe injuries<sup>2</sup>. Blindness due to ocular injuries increases the health care cost. It also decreases the quality of life, social isolation and morbidity<sup>3</sup>. Severe ocular trauma can lead to permanent visual impairment, as well as corneal, lens, or retinal complications<sup>4</sup>. Previously, prevalence rates of ocular trauma ranged from 14.4% up to 21.1% in Western countries, and people living these area with young age, male sex, and lower socioeconomic status, poor education levels, or engaged in labor-intensive occupations mostly have a high risk of ocular trauma<sup>5-7</sup>. While in Asia, some population-based studies reported that the prevalence of ocular trauma was 4.4% in Singapore Chinese population, 3.6% in Chinese population in Beijing, and 2.1% in Handan, respectively, <sup>4,8,9</sup>. Among all cases of the ophthalmological emergency departments, occupational eye injury ranges from 30% to 70%, and adults are more frequently affected by trauma at occupation<sup>10, 11</sup>. Though ocular injuries are preventable with eye protective gears, it remains as the important cause of blindness around the world. It can be reduced by developing awareness and health education.

### Materials and Methods:

The study was an observational and prospective. It was done from January 2023 to June 2023. Cases were collected from patients attended with ocular injuries in District Sadar Hospital Sherpur. 100 patients were included in this study. Data collection sheet was to collect data. Detail history, time of injury, types of ocular, injuries to specific eye areas (e.g., the globe, cornea, retina, and orbit), injuries related to specific causes (e.g., fireworks, blasts,

sports, work related, motor vehicle related, war, natural disasters, and chemicals), or a specific mechanism of injury (e.g., penetrating, blunt, and burn) were examined. Visual acuity was measured after injury and before injury (from history) in all the patients. Pupillary light reaction and detailed anterior and posterior segment examination was done. Ocular examination was done with torch light, slit lamp biomicroscope, direct and indirect ophthalmoscope.

**Result:**

Our study population was 100. Age distribution of the population; 22% were 0-10 years, 44% were 11-20 years, 24% were 21-30 years, 06% were 31-40 years, 02 % were 41-50 years, 02 % were above 51 years (Table I). 82 % of the patients were male and 18 % of were female (Table II). 35% patients came to hospital within 6 hours of injury, 22% within 7-24 hours, 23% within 25-48 hours, 10% within 49-72 hours, 10% after 72. Regarding nature of the injury, 76% were accidental of which 54 % were occupational, 22 % were during playing, 12% were due to road traffic accident (RTA), and 12% were homicidal in nature (Table IV). As per the source of the injury sharp object causes 55 %, Blunt object 35%, chemicals 4% and projectile objects 6% of causes (Table V). The type of the injury was open globe in 65% and closed globe 35% of cases (Table VI). The visual acuity of the patients on admission was 6/6 to 6/9 in 10%, 6/12 to 6/18 in 10%, 6/6 to 24/36 in 12%, 6/60 to PL in 62 % and NPL in 6% (Table VII). The socioeconomic condition of the study group was low group 65%; middle group 30% and high income group 05% of patients (Table VIII).

**Table I: Age distribution**

Age	Number of patients	%
0 - 10	22	22
11-20	44	44
21-30	24	24
31-40	06	06
41-50	02	02
Above 51	02	02
<b>Total</b>	<b>100</b>	<b>100</b>

**Table II: Sex distribution of study population**

Sex	Number of patients	%
Male	82	82
Female	18	18
<b>Total</b>	<b>100</b>	<b>100</b>

**Table III: Time of attendance after injury**

Duration(hours)	Number of patients	%
0-6	35	35
7-24	22	22
25-48	23	23
49-72	10	10
After 72	10	10
<b>Total</b>	<b>100</b>	<b>100</b>

**Table IV: Nature of injury**

Nature	Number of patients	%	
Accidental	Occupatiional	54	54
	During playing	22	22
	RTA	12	12
Homicidal(assault)	12	12	
<b>Total</b>	<b>100</b>	<b>100</b>	

**Table V: Type of objects causing injury**

Objects	Number of patients	%
Sharp	55	55
Blunt	35	35
Projectile	06	06
Chemical	04	04
<b>Total</b>	<b>100</b>	<b>100</b>

**Table VI: Type of injury**

Type	Number of patients	%
Open globe	Open globe	65
Closed globe	Closed globe	35
<b>Total</b>	<b>Total</b>	<b>100</b>

**Table VII: Visual acuity on admission**

Visual acuity	Number of patients	%
6/6-6/9	10	10
6/12-6/18	10	10
6/24-6/36	12	12
6/60-PL	62	62
NPL	6	6
<b>Total</b>	<b>100</b>	<b>100</b>

**Table VIII: Socioeconomic condition of patients**

Income group	Number of patients	%
Low	65	65
Middle	30	30
High	5	5
<b>Total</b>	<b>100</b>	<b>100</b>

**Discussion:**

Our institution based study reveals the pattern of ocular injury in a district hospital of Bangladesh (Sherpur). In our study ocular trauma found most commonly (44 %) in younger age group (11-20years) and it is similar with study of Mohammad Shamsul Islam et al<sup>12</sup>. With regard to sex, there is a marked predominance of males 82 cases (82%) in all age groups. This is also found in the study of Cillino S et al<sup>13</sup> and also by Rao LG et al<sup>14</sup>. This may be due to more outdoor activities of males such as agricultural or domestic works in our district. In our study we found most of the patients (35%) attended with in 6 hours of injury.

Most of the injuries were occupational cases (76 %), which is similar with the study of Sehein et al. (48%)<sup>15</sup> and also by Janejit Choovuthayakon et al (59.8%)<sup>16</sup>. Most of the injuries were open globe type (65%) that was almost similar to the study of Mohammad Shamsul Islam et al<sup>12</sup>. Regarding visual acuity, 62 % cases were 6/60 to PL at the time of admission, which is almost same as the study of Quayum and Akanda<sup>17</sup>. The socioeconomic condition of most of the cases 65 % was low income group. This is also similar to the study of Quayum and Akanda<sup>15</sup>. The results of the present study also showed that the most common type of object was sharp object (55%), similar result was also found by of Mohammad Shamsul Islam et al<sup>12</sup>.

#### Conclusion:

The younger males suffer more and occupational and trauma with sharp object is most common. Most of the injuries can be prevented with appropriate measures. Further study is needed to find out build awareness to prevent this morbidity.

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