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# SOCIO-DEMOGRAPHIC PROFILE OF THE PATIENTS WITH OCULAR TRAUMA

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**Abstract**
**Background:** Ocular trauma is an important cause of preventable visual morbidity, particularly among younger age groups as shown by different studies worldwide. The impact of trauma on the human eyes may range from minute corneal abrasions/innocuous subconjunctival haemorrhage to a badly lacerated globe.
**Aim:** To study the Socio-demographical profile of the patients with ocular trauma
**Methods:** An observational study was carried out at the Department Of Ophthalmology, Burdwan Medical College and Hospital, a tertiary health care unit of West Bengal. The entire study was conducted after proper consultation and recommendations from the ethical committee. The research was carried out during a period of one year (01/03/2010 to 28/02/2011). A total of 120 patients were taken into consideration for the scope of the study.
**Results:** The patients were aged between 0-50 years were mostly suffered most ocular injuries. The research also showed that the majority of the affected patients were males, i.e. 75%. Furthermore, in the course of the study, the majority of the patients belonged to the rural population, i.e. 71.5%.
**Conclusion:** This study indicates that ocular trauma is a significant cause of monocular and sometimes binocular visual loss in all age groups. Many injuries and their visual outcome may be prevented through education and prompt, appropriate medical care.

## Introduction

Ocular trauma is an important cause of preventable visual morbidity, particularly among younger age groups as shown by different studies worldwide[1]. The impact of trauma on the human eyes may range from minute corneal abrasions/innocuous subconjunctival haemorrhage to a badly lacerated globe. The spectrum of injuries ranges from mild, non-sight threatening to extremely serious with potentially blinding consequences. Though eyes represent only 0.15% of total body surface area, their importance to society and individual is much higher.[2] Around the world, half a million blinding injuries occur every year. There are approximately 1.6 million people blind from eye injuries,2.3 million bilaterally visually impaired and 19 million with unilateral visual loss, this being the commonest cause of unilateral blindness today.[3]

OBT is the major cause of ocular trauma by the coup and contrecoup mechanism or by ocular compression. The concept of coup and contrecoup injury was first introduced to explain brain damage caused by blunt trauma to the head by Courville[4].

**Figure 1: Subconjunctival hemorrhage[5]**

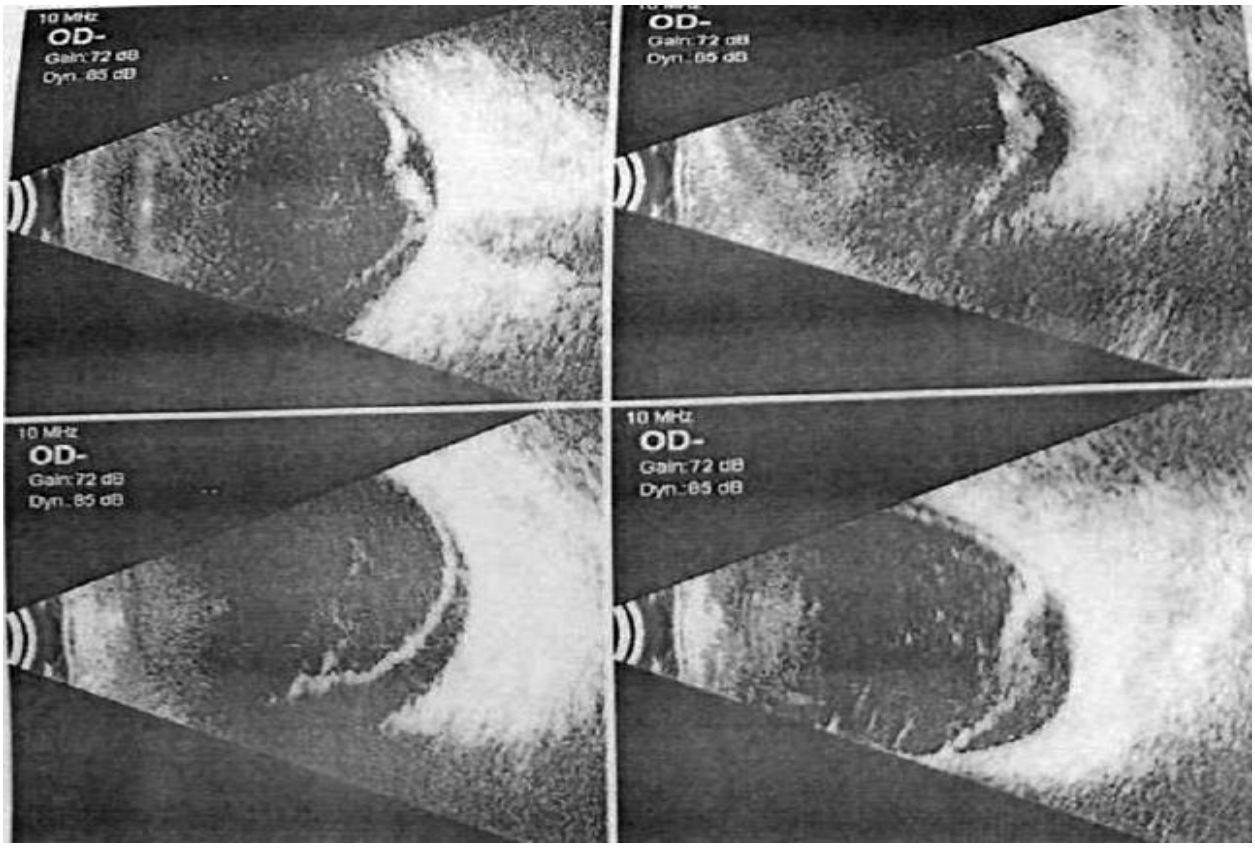


**Figure 2: Ultrasonography B-scan showing retinal detachment[6]**

Ocular trauma presents a significant number of new cases presenting to ophthalmic services to this part of India. Many of these are minor injuries and are treated either in accident and emergency departments or as outpatient cases. It has been noticed that the rural population is most affected by ocular injury [7, 8]. In addition, it is sent that the males of younger age are the most affected by it. Ocular trauma has been identified as an important cause of blindness and ocular morbidity. The major cause of death due to ocular trauma is illiteracy[9].

**Aim**

To analyze the socio-demographical profile of the patients with ocular trauma requiring tertiary care.

**Methods**

An observational study was carried out at the Department Of Ophthalmology, Burdwan Medical College and Hospital, a tertiary health care unit of West Bengal. The entire study was conducted after proper consultation and recommendations from the ethical committee. The research was carried out during a period of one year (01/03/2010 to 28/02/2011). A total of 120 patients were taken into consideration for the scope of the study. Along with the demographic data, the complete history of the mishap and other details of the details of the injury through which ocular trauma had occurred. Complete details of ophthalmic examination including initial best-corrected visual acuity, lid or facial injury, any pupillary defect, presence or absence of a foreign body, and corneal or scleral or corneoscleral perforation were noted. The presence or absence of vitreous haemorrhage, retinal breaks, retinal detachment and choroidal rupture, was noted. Direct ophthalmoscopy, indirect ophthalmoscopy, slit lamp examination, and ocular B-scan ultrasonography was used to examine the anterior and posterior segments and the orbits. Intraocular pressure was measured in all except in fresh open globe injuries.

**Results**

**Table 1:**

| | No of cases | Percentage (%) |
|---|---|---|
| **Mechanism of ocular injury** | | |
| Mechanical | 111 | 92.5 |
| Chemical/Thermal/Electrical/Fire Cracker Injury | 9 | 7.5 |
| **Age group** | | |
| 0-10 | 27 | 22.5 |
| 11-20 | 26 | 21.67 |
| 21-30 | 18 | 15 |
| 31-40 | 12 | 10 |
| 41-50 | 14 | 11.66 |
| 51-60 | 8 | 6.66 |
| 61-70 | 6 | 5 |
| 71-80 | 9 | 7.5 |
| **Sex** | | |
| Male | 91 | 75.83% |
| Female | 29 | 24.17% |
| **Residence** | | |
| Urban | 34 | 28.33 |
| Rural | 86 | 71.67 |
| **Education Status** | | |
| Illiterate | 50 | 41.67 |
| LNFE | 16 | 13.34 |
| Primary | 28 | 23.33 |
| Higher secondary | 26 | 21.66 |
| **Occupation** | | |
| Carpenter | 2 | 1.67 |
| Shop owner | 2 | 1.66 |
| Farmer | 13 | 10.83 |
| Factory worker | 6 | 5 |
| Housewife | 20 | 16.67 |
| Laborer | 27 | 22.5 |
| Student | 29 | 24.16 |
| Others | 21 | 17.5 |
| **Socio-Economic Status** | | |
| Lower | 39 | 32.5 |
| Upper lower | 26 | 21.67 |
| Lower middle | 36 | 30 |
| Upper middle | 17 | 14.16 |
| Upper | 2 | 1.67 |
| **Addiction of the patients** | | |
| No | 79 | 65.83 |
| Smoking | 22 | 18.34 |
| Smoking +drinking | 17 | 14.16 |
| Tobacco chewing | 2 | 1.67 |

In this study, the total numbers of patients were120. Out of which 92.5% (111) have mechanical injuries, and 7.5% (09) patients have Chemical/Thermal/Electrical/Fire Cracker injuries. Most ocular injuries (80.83%) occurred within the age group 0-50. Study shows the incidence of ocular injuries between age group 70-80 was 7.5%. Further, 91 patients (75.83%) were male, and 29 (24.17%) were female. As shown in the table, 34 (28.33%) patients reside in an urban area, while 86 (71.67%) patients reside in a rural area. Among 120 patients, 50 patients (41.67%) were illiterate, while 70 patients (58.33%) were literate. Among the injured patients, the common occupations were students (24.16%), labourers (22.75%), housewives (16.67%) and farmers (10.83%). Others constitute significant number 21 (17.5%) of patients. The above table shows the distribution of patients on the basis of socioeconomic status according to Dr.B.G.Prasad's scale. Maximum patients 39 (32.5%) are from the lower class, 26 (21.67%) patients are from upper lower while 36 (30%) patients are from the lower middle class. The upper middle class consists of 17 (14.16%) patients, while upper class consists of just 2 (1.67%) patients. Surprisingly in this study, the majority (65.85%) of patients having ocular trauma have no addiction; while 41(34.13%) patients have some addiction.

**Discussion**

Epidemiological studies of ocular trauma are done in several ways. The first is a hospital-based study of ocular injuries over specific time period[10]. The second way is a voluntary registry, such as Eye Injury Registry of Albama[11] and The National Eye Trauma System[12]and third is measuring the incidence of eye injuries in a defined population[13]. In the present study, the incidence of injuries is quite high among the illiterate, young and rural population. The number of patients between age groups 0-10yrs (22.5%) is most commonly affected closely followed by age group 10-20 yrs (21.67%). This is really a very high percentage in the group of ocular injuries, which most frequently caused permanent disability; predetermining further life destiny of these young people. Takvan J V et al[14] reported that the incidence of pediatric age group trauma is up to 14%. According to Sriwas S R[15], the incidence of child trauma is 22%, which is approximately equal to present study findings. Voon LW et al[16] found that most of the ocular injuries are male and below 40 years. In the present study population, males are predominantly affected. Males were 75.0%, and females are 25%. Soliman MM et al[17] observed that 80% of cases are males. Jovanovic Milos et al[18] stated that males are predominantly affected (83.56%). Further, 86 (71.67%) patients are rural, while 34 (28.33%) patients are urban. As Burdwan Medical College and Hospital is the main hospital in the surrounding area of Burdwan, Birbhum, Hoogly, Parganas and some area of Jharkhand ( which is the mainly rural area); the number of patients belonging to the rural area is higher. McCarty Cathy A et al[19], in a similar study in Australia, found that the incidence of ocular trauma is 42.1%.

In the present study, 92.5% of patients had mechanical injuries and rest 7.5% had chemical/thermal/firecracker injury. A study conducted in Split-Dalmatian County by Karaman et al[20] showed the incidence of mechanical injury and chemical/thermal injury are 86.4% and 13.6% respectively. In the present study, the incidence of mechanical injuries is slightly higher. Further, in the present study, 41.67% of patients were illiterate while 13.34% of patients were literate but having no formal education. Moreover, 23.33% of patients had primary education, while 21.66% of patients had higher secondary and further education. Specifically, in females, the rate of literacy was quite low (17.43%). This finding is not by chance as the majority of patients in the hospital were from rural areas. In the present study, the incidence of injuries is quite high among the illiterate and rural population. S Vats et al[21] also shared similar findings. Singh D V and other investigators[22] came at a similar conclusion in their study. In almost all models of studies, literacy offered significant protection against trauma. According to Glynn et al[23,] poor and less educated persons are more prone to risk-taking activities and thus to be injured. In their study, Karaman et al[20] found that farming is responsible for 13.8% of injuries, which is similar to the present finding. Finally, in the present study, the majority (65.83%) patients had no addiction. Smoking was the addiction for 18.34% of the patients, followed by combined smoking and drinking (14.16%). Wang J D[24] in Beijing found drinking alcohol as one of the most important risk factors associated with ocular trauma. Reporting

bias by the patients might be responsible for the present findings.

## Conclusion

This study indicates that ocular trauma is a significant cause of monocular and sometimes binocular visual loss in all age groups. Many injuries and their visual outcome may be prevented through education and prompt, appropriate medical care. The goal of data collection is to identify trends on the basis of which primary, secondary and tertiary prevention may be developed. For the prevention of serious eye injuries, health education and safety strategies should be applied both at home and the place of work, where blinding injuries most frequently occur. Open globe injuries in a rural environment are still a big therapeutic, social and economic problem. Occupational open globe injuries are usually severe and are associated with poor visual outcome. Mandatory use of protective eyewear and alcohol-free environment at the workplace is likely to reduce the incidence of severe occupational globe injuries.

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