



## Ocular Morbidity from Trauma; A One Year Survey

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### Abstract

**Introduction:** Trauma is one of the leading cause of ocular morbidity worldwide. More common in young male. This study aims to outline the seriousness of the condition.

**Methods:** This cross sectional observational study was done from the imaging room (B Scan USG) of all the patients with ocular trauma that had been advised for a BScan USG. It was done from July 2019 up to June 2020. Age and sex was noted, causative agent was identified, BScan USG findings were noted.

**Results:** Out of 2653 patients, 82% were male. Mean age was  $29 \pm 10.4$  (06 - 72) years. 68% were open globe injury and 32% were closed globe. High speed projectile was the highest 30% followed by blunt trauma 20%, Sharp kitchen objects 18%, RTA 10%, toy 12%, Stationary 5%, Fight 3% and Vegetative trauma 2%. Traumatic cataract resulted in 42% followed by vitreous hemorrhage 38%, endophthalmitis 18%, retinal detachment and lens dislocation 12% and hyphema 10%.

**Conclusion:** A large number ocular trauma can be avoided if proper safety equipment is used and precautions taken. Large number of ocular morbidity occurs in young males every year resulting in socio-economic burden. We as clinicians should advocate strong legislation to prevent work related ocular injury.

**Keywords:** Ocular Trauma; B Scan USG; Work Related Ocular Injury

### Introduction

Ocular trauma accounts for one of the most common cause of unocular blindness [1-3]. The age distribution is bimodal where the maximum occurrence is in the young age group and a later peak in the elderly [4-6]. Studies conclude predominance in males

[7-9]. The males playing the active role in the society being a key factor. In the elderly, falling down plays a major role with little gender predisposition. Ocular trauma not only causes visual impairment, additionally it results in socio-economic burden. The developing and under developed countries taking the largest toll

[10-12]. The spectrum of injuries vary from very minor non sight threatening to serious potentially blinding condition. Not only the injury itself, but the complications following can lead to visual impairment. Complications may result from the initial injury itself, repair of injury or from delayed intervention. In the industrialized countries, work related ocular injury is more common. Vegetative injuries are noticed commonly in the rural setting during harvesting season. Apart from these, domestic violence, social and political unrest that leads to brawl can result in ocular injuries [13-16].

**Materials and Methods**

This cross sectional observational study was done from the imaging room (B Scan USG) of all the patients with ocular trauma that had been advised for a B Scan USG. Study was conducted from July 2019 up to June 2020. Age and sex was noted, causative agents were identified, B Scan USG findings were noted.

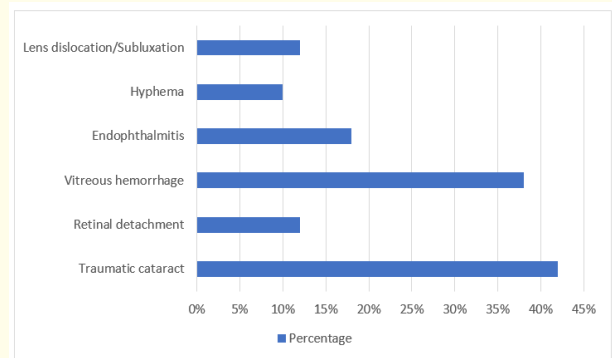
**Results and Discussion**

2653 patients were referred for B Scan USG within the study period. Out of which the majority, 82.02% were male. The rest 17.98% were female. Mean age was 29 ± 10.4 (06 - 72) years. The most affected age group was from 20 - 39 years, 37.01% as shown in table 1. 68% were open globe injury and 32% were closed globe. High speed projectile was the highest 30% followed by others as shown in table 2. Most of the trauma occurred at place of work, few at home and rest during movement. As shown in figure 1 the effects of trauma varied considerably. Traumatic cataract being the most prevalent in 42%.

The cause of injury varied from gunshot wounds to playing with toys. Work related injuries were more common. Domestic violence

Type of Injury	Percentage
Closed globe	68%
Open globe	32%
Causative factor	
High speed projectile (bullet/pillet)	30%
Blunt trauma (ball/fist)	20%
Sharp objects (kitchen knife/fork/toothpick)	18%
RTA	10%
Toy	12%
Stationary (pen/pencil/ruler/staple)	05%
Fight/brawl	03%
Vegetative trauma	02%

**Table 2:** Type of injury and factors in ocular injury.



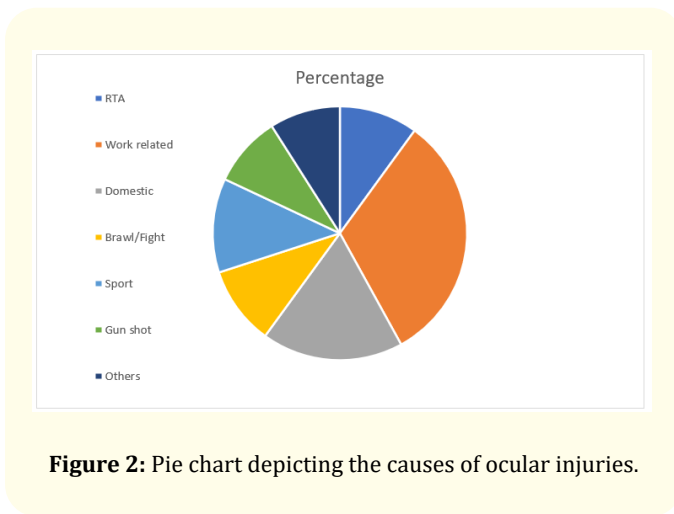
**Figure 1:** Effects of ocular trauma in the patients.

Gender	Male	82.02% (2176)
	Female	17.98% (477)
Age	6 - 19	22.01% (584)
	20 - 39	37.01% (982)
	40 - 59	28.01% (743)
	> 60	12.97% (344)
Education Status	Illiterate	42.03% (1115)
	School (Class eight)	39.95% (1060)
	Class eight and above	18.02% (478)

**Table 1:** Demographics.

and stationary objects were also significant. Unattended children playing with sharp objects, throwing toys, stones at each other caused a considerable amount of injury. Almost all of the work related injuries were due to not using protective wear.

Similar results were also observed in other studies. Younger, males were predominant in all the studies. It is due to the socio-economic nature of males being the major active work force. It is also found common in different studies that many of the work related injuries occurred due to not following protective wear protocol.



**Figure 2:** Pie chart depicting the causes of ocular injuries.

### Limitations

The study was conducted depending on a single imaging modality (B Scan USG). A good portion of patients that did not need the investigation, could not be included in the study. Detailed Ophthalmic examination was not done by the authors. Many of the cases were not taken into account as injury repair was completed more than one week ago. Management of cases were not taken into account i.e. conservative or intervention. Follow up was not possible in almost all of the cases.

### Conclusion

A large number ocular trauma can be avoided if proper safety equipment is used and precautions are taken. Large number of ocular morbidity occurs in young males every year resulting in socio-economic burden. We as clinicians should advocate for strong legislation to prevent work related ocular injury.

### Conflict of Interest

No financial interest or any conflict of interest to declare.

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