

## **Epidemiological Study of Road Traffic Accident**

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### **Abstract**

**Background:** Worldwide, traumatic brain injury (TBI) is the single largest cause of death and disability following injury. Most TBI’s are due to road side accidents. According to WHO data, by the year 2020, head trauma will be third largest killer in the developing world.

**Methods:** The present study was conducted at Geetanjali Medical College & Hospital Udaipur. The study group consisted of a total of 100 patients presenting to the Trauma center.

**Results:** The incidence of injury with respect to the time of occurrence in a day has shown a maximum number of incidents occur between 6.00 pm and 12.00 midnight (40.00%), followed by 12 noon to 6 pm having (28.00%).

**Conclusion:** The lack of awareness among the pedestrians and disregard for traffic rules by the motorists were important reasons for most of the accidents.

**Keywords:** Neurosurgery, Trauma, Injury.

### **Introduction**

Road traffic injuries (RTIs) have become an important public health issue along with communicable and

noncommunicable diseases globally and in India. For instance, in India, in the year 2015, a total of 464,674 road traffic accidents were reported, leading to 482,389 injuries and 148,707 deaths.<sup>1</sup> An analysis of cause of death from 2002 to 2011 in a population  $\geq 15$  years of age at Ballabgarh showed that 14.4% of all deaths were due to external causes and RTIs consisted of almost one-third of all deaths due to external causes.<sup>2</sup> Similarly, in another study in 2005, out of the total number of unintentional injury deaths, 29% deaths were reported to be due to RTIs.<sup>3</sup>

To develop efficient road safety mechanisms and to effectively address prehospital care in RTIs, epidemiological data generated out of local studies with robust methodologies are extremely important. As per our knowledge, there are limited studies in India, especially from North India, about the role of the present day conflicts (bothered from traffic jam, quarrel, increased speed, competition with other vehicles, etc.) that culminate in accidents. There is still lesser count of literature about contextual conditions on the day of accident. This study was thus contemplated to throw some light on these less-studied factors in addition to the oft-studied ones, to fill the gap in our

knowledge regarding RTIs. Objectives of the present study were to study the epidemiological profile of road traffic injury victims attending an emergency department of a tertiary care trauma center attached to a medical college.

### Material and Methods

The present study was conducted at Geetanjali Medical College & Hospital Udaipur. The study group consisted of a total of 100 head injury patients presenting to the Trauma center.

### Inclusion and exclusion criteria

All patients of RTI attending the emergency of the tertiary care trauma center were included in the study. Patients brought dead were excluded from the study. The data were analyzed from the medical records. Unknown patients were excluded from the study.

Basic demographic characteristics- Age, sex, place of injury, time and date, mode of injury, the first aid providers, mode of transport to the hospital, alcoholic intoxication, Glasgow coma scale (GCS) score, severity of head injury (defined as mild [GCS - 13-15], moderate [GCS - 9-12] and severe [GCS - 3-8]), associated injuries, computed tomography results, type of management, surgical intervention or intensive care units care or conservative and Glasgow outcome scale score were recorded.

The collected data are analyzed using Microsoft excel and EPI-Info software.

### Results

Table 1: Age wise distribution of cases

Age group (Yrs)	No. of cases	Percentage
0-10	1	1.00
11-20	12	12.00
21-30	39	39.00
31-40	21	21.00

41-50	16	16.00
51-60	6	6.00
>61	5	5.00
TOTAL	100	100

Out of 100 cases maximum case(39.00%) were from 21-30 year age group and minimum case(1.00%) were from 0-10 year age group.

Table 2: Gender wise distribution of cases

Gender	No. of cases	Percentage
Male	81	81.00
Female	19	19.00
Total	100	100.00

Out of 100 cases 81.00% were male and 19% were female.

Table 3 : Distribution of cases according to education

Education	No. of cases	Percentage
Illiterate	11	11.00
Primary	28	28.00
Secondary	32	32.00
Graduate or more	29	29.00
Total	100	100.00

32.00% patients education level upto secondary class.

Table no. 4. Time of injury

Time of injury	No. of cases	Percentage
6.00-12.00	15	15.00
12.00-18.00	28	28.00
18.00-0.00	40	40.00
0.00-6.00	17	17.00
Total	100	100.00

The incidence of injury with respect to the time of occurrence in a day has shown a maximum number of incidents occur between 6.00 pm and 12.00 midnight (40.00%), followed by 12 noon to 6 pm having (28.00%).

## Discussion

Changing and evolving trend of socio-economic factors especially in developing countries like India has made the injuries no more a hidden epidemic, but a major epidemic in par with other communicable and non-communicable disease epidemics. The need to implementation of safety protocols and the future progression of the injury burden was emphasized by WHO way back in 1990's, stating trauma will ascend the top 10 causes of disease burden from the ninth position to third by 2020 globally.<sup>4</sup> With the implementation of the trauma protocols and safety measures lawfully, the epidemic wave has slowed in western developed countries, but the wave is exponentially growing in developing countries. Implementation of protocols in India, which were proven worth full in developed countries are necessary for decreasing the burden of injuries, is the main challenge for public health to execute. The WHO has taken initiative formulated - The Global Plan for the Decade of Action for Road Safety 2011-2020, for this decade ([http://www.who.int/roadsafety/decade\\_of\\_action/plan/en/](http://www.who.int/roadsafety/decade_of_action/plan/en/)).

In our study, 21-30 years age group (39.00%) are the major suffers which are similar to other studies.<sup>5-6</sup> This is also the same age group who are breadwinning and bread earning members of the family, mortality, and morbidity of the same drives the family deeper into financial crisis and psychological stress especially in families belonging to the lower middle class and below the poverty line. It also leads to economic loss to the country indirectly.

## Conclusion

The lack of awareness among the pedestrians and disregard for traffic rules by the motorists were important reasons for most of the accidents.

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