

# A Retrospective Evaluation of Pattern of Injuries Sustained During Road Traffic Accident in a Tertiary Care Hospital

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## ABSTRACT

**Background:** Expansion in road network, motorization, and urbanization in the country has been accompanied by a rise in road accidents leading to road traffic accidents (RTAs). RTA is an issue of national concern, considering its magnitude and gravity and the consequent negative impacts on the economy, public health and the general welfare of the people. Road traffic injury (RTI) is major but neglected public health problem in both developing and developed countries. **Objective:** To study the factors involved in the Road Traffic Accidents and nature, type and mode of occurrence of Accidents. **Methodology:** The study is a retrospective analysis of cases of RTAs victims admitted in HIMS, Hassan (Karnataka) during the period between Jan 2016 and Dec 2016. The information about the patients admitted as cases of RTAs were ascertained from the hospital records. **Results:** From the Records a total of 559 cases of road traffic Accidents were analysed. In our study majority (47.4%) of the victims were in the middle age between the age group of 21-40 years. Around 63.1% of the accidents had occurred on state highways and 19.1 % in the cross road junctions. The intake of Alcohol by the persons who met with accident was found to be significantly associated with the age group of the study subjects and Gender. **Conclusion:** Road safety is a multifactorial public health issue with many factors involving in it. The impact of mortality and morbidity of Road traffic accident leads to great loss to the families and society. RTA has become an emerging problem in developing countries taking lives of the productive age group of the society

**Keywords:** Road Traffic Accidents, Retrospective, Injuries, Public Health

## INTRODUCTION

Expansion in road network, motorization, and urbanization in the country has been accompanied by a rise in road accidents leading to road traffic accidents (RTAs). RTA is an issue of national concern, considering its magnitude and gravity and the consequent negative impacts on the economy, public health and the general welfare of the people. Road traffic injury (RTI) is major but neglected public health problem in both developing and developed countries. World Health Statistics 2008 cited in Global Status Report on Road Safety states that RTIs in 2004 were the 9<sup>th</sup> leading cause of death and at current rates by 2030 are expected to be the

5<sup>th</sup> leading cause of death, overtaking diabetes and Human immunodeficiency virus infection/acquired immunodeficiency syndrome.

According to the National Crime Record Bureau (2010), the number of vehicular accidents was 430600 resulting in 133938 deaths and 470600 injuries, thereby accounting for 37.2% of all accidental deaths due to unnatural causes.<sup>1</sup>

Road traffic crashes are a major cause of misery, disability, and death globally, with a disproportionate number occurring in developing countries.<sup>2,3</sup> It has been predicted that by 2020, RTIs will rank as high as third among causes of disability adjusted life years lost.<sup>3,4,5.</sup>

Injuries related to RTAs contribute significantly to the number of trauma admissions at Tertiary Care Centre, taking out a significant number of lives and resources. We need to know more about the numbers and

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types of injuries and about the circumstances in which these injuries occur. This information will indicate just how serious the injury problem is and where, exactly, prevention measures are most urgently needed.

### OBJECTIVES

To study the factors involved in the Road Traffic Accidents and nature, type and mode of occurrence of Accidents

### MATERIALS AND METHOD

The study is a retrospective analysis of cases of RTAs victims admitted in HIMS, Hassan (Karnataka) during the period between Jan 2016 and Dec 2016. The

information about the patients admitted as cases of RTAs were ascertained from the hospital records. Case sheets of RTAs victims from the medical records sections were read and the necessary details were sought in terms of age, sex, residence, season of accidents, place, alcohol intake, type and site of injury. The cases with incomplete details were not taken into consideration.

**Inclusion Criteria:** All the RTA patients who got admitted to the HIMS, Hassan, and the data collected from the Accident Register maintained in the casualty and also the case sheets of the patients through Medical Records Department.

**Exclusion criteria:** Cases treated as OPD basis and Brought dead cases to the hospital.

### RESULTS

From the Records a total of 559 cases of road traffic Accidents were analysed.

**Table 1: Profile of Accidents in our study.**

Profile of accidents		Frequency	Percent
Age group	Less than 10 years	13	2.3
	11-20 Years	73	13.1
	21 - 30 Years	125	22.4
	31 - 40 Years	140	25.0
	41- 50 Years	97	17.4
	51 - 60 years	57	10.2
	> 60 years	54	9.7
sex	Male	446	79.8
	Female	113	20.2
Time of accident	6 AM to 12 PM	104	18.6
	12 PM to 6 PM	206	36.9
	6 PM to 12 AM	224	40.1
	12 AM to 6 AM	25	4.5
Place of accident	National Highway	70	12.5
	State Highway	353	63.1
	Cross Road	107	19.1
	Unknown	29	5.2

**Cont... Table 1: Profile of Accidents in our study.**

Type of vehicle	Two Wheelers	317	56.7
	Three Wheelers	61	10.9
	Four Wheelers	105	18.8
	Others	76	13.6
Alcohol intake	Yes	228	40.8
	No	331	59.2

In our study majority (47.4%) of the victims were in the middle age between the age group of 21-40 years. 2.3% of the study population aged less than 10 years and 9.7% were aged more than 60 years. Nearly 79.8% of the victims were males and 20.2% were female victims. Nearly 40.1% of the victims had met with accident between 6 PM to 12 AM and then followed by 12 PM to 6 PM. Around 63.1% of the accidents had occurred on

state highways and 19.1 % in the cross road junctions. Majority of the persons who met with an accident were on Two Wheelers followed by Four Wheelers. Nearly 40.8% of the subjects had history of Alcohol Consumption during the time of Accident. Head and Neck was the most common type of injury seen in our study followed by lower limb injuries.

**Table 2: Association of Alcohol with Various factors of accidents.**

	Alcohol				Chi square
	Yes		No		
	Frequency	%	Frequency	%	
Age group	Less than 10 years	0	0.0%	13	3.9%
	11-20 Years	27	11.8%	46	13.9%
	21 - 30 Years	62	27.2%	63	19.0%
	31 - 40 Years	61	26.8%	79	23.9%
	41- 50 Years	35	15.4%	62	18.7%
	51 - 60 years	23	10.1%	34	10.3%
	> 60 years	20	8.8%	34	10.3%
Sex	Male	204	89.5%	242	73.1%
	Female	24	10.5%	89	26.9%
Time	6 AM to 12 PM	23	10.1%	81	24.5%
	12 PM to 6 PM	67	29.4%	139	42.0%
	6 PM to 12 AM	125	54.8%	99	29.9%
	12 AM to 6 AM	13	5.7%	12	3.6%
place	National Highway	36	15.8%	34	10.3%
	State Highway	142	62.3%	211	63.7%
	Cross Road	36	15.8%	71	21.5%
	Unknown	14	6.1%	15	4.5%
Vehicles	Two Wheelers	149	65.4%	168	50.8%
	Three Wheelers	21	9.2%	40	12.1%
	Four Wheelers	29	12.7%	76	23.0%
	Others	29	12.7%	47	14.2%

The intake of Alcohol by the persons who met with accident was found to be significantly associated with the age group of the study subjects and Gender. The time of accident and the type of the vehicle and the consumption of Alcohol was found to be statistically very significant.

**Table 3: Outcome of the Patients**

		Frequency	Percent
Treatment	Conservative	402	71.9
	Surgical	157	28.1
Reference	Yes	63	11.3
	No	496	88.7
Death	No	496	88.7
	Not Know	63	11.3

Nearly 71.9% of the study subjects had underwent conservative type of treatment in the hospital and 28.1% needed surgical intervention in our hospital at any higher centre. Only 11.3% of the accident victims were required to refer to higher centre for further treatment. Nearly 63 (11.3%) of the cases we couldn't determine the outcome of the treatment.

## DISCUSSION

A total of 559 Cases were analysed from the records of the road Traffic accident which was maintained in the Department of Medical Records at Hassan Institute of Medical Sciences, Hassan.

The commonest age group involved in the accidents was from 21-40 years of age with more male predominance. This age group is the most active age group and working group in the society who are always in the hurry with respect to the job business or any kind of the work. the male population are the most common people who are using vehicle when compared to female population.

The findings of our study was found to be similar to the study findings of the Seth Sharad et al, Ganveer G B et al <sup>6</sup> and Chalya P et al <sup>7</sup>. This accident in these age group leading to the deva sting consequences on the family. Speed and reckless driving was one of the major reason for the accidents. Various factors like bad roads, inadequate lightings, badly maintained vehicles could also be the reasons for the accidents.

The most common time of accidents was seen in the evening between 6 PM to 12 Pm in our study. This is time of the day when the daylight diminishes and the visibility reduced significantly as times passes leading to the accidents. Further to this the consumption of Alcohol also increase significantly among the people and drive with the effect of the alcohol. Nearly 41% of the study subjects in our study had consumed alcohol. Seth Sharad et al <sup>8, D</sup> Souza C Rao et al <sup>9</sup> and Mohammad Zeisian et al <sup>10</sup> also found the time of accidents was more in the evening as its seen in our study. The percentage of alcohol consumption seen among the accident victims in our study was much higher when compared to the study findings of Aditya Madhab et al <sup>11</sup>, Sharma et ak <sup>12</sup> and Singh Y N et al<sup>13</sup>.

The site of injury in most of the victims was on the head and neck followed by the lower extremists. These injuries are the most common type of injuries sustained in road traffic accidents either by the pedestrians or the drivers. These findings in our study was similar to the study findings of Mohammad Zeeshan <sup>10</sup>, Jha N et al <sup>14</sup> and Ostrom M et al.<sup>15</sup>

The influence of alcohol among the study subjects was found to one the major factor responsible for the accident and it was found to statistically significant also. In the study done by Jani C B <sup>16</sup>, Rao Y <sup>17</sup> and Aditya et al.<sup>11</sup>

The association of mortality usually in the road traffic accidents will be due to the head injury and haemorrhagic shock due to excessive bleeding.

## CONCLUSION

Road safety is a multifactorial public health issue with many factors involving in it. The impact of mortality and morbidity of Road traffic accident leads to great loss to the families and society. RTA has become an emerging problem in developing countries taking lives of the productive age group of the society. Strict rules and regulations regarding the speed limit and maintenance of vehicles need to be implemented and followed strictly. A multi-Disciplinary Approach consisting of public education and standard operating procedure to be followed following Road Accidents in the treatment and also in the rehabilitation of such persons who met with an accident.

### Limitation of Study:

This is a retrospective study; hence data could be verified or collected from the individuals. The data need to be collected directly from the victims for the better understanding of the epidemiology of Road Traffic Accidents.

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