

## Original Research Article

# A study on victims of road traffic accidents attending casualty in a tertiary care hospital, Khammam

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## ABSTRACT

**Background:** As per global status report on road safety 2015, 1.25 million road traffic deaths occurred every year. Most common cause of death among those aged 15-29 years was road traffic accidents. The objectives of the study were to study the socio-demographic profile of the victims of road traffic accidents, to identify the risk factors responsible for road traffic accidents and to identify the various presenting injuries of road traffic accident victims.

**Methods:** It was a Hospital based cross sectional study. Victims of road traffic accidents attending casualty during July 2011 – June 2012 were studied. A pretested semi structured questionnaire was administered. A total of 280 road traffic accident victims were interviewed during the study period. Data was entered in Microsoft excel sheet and analyzed using Statistical Package for Social Sciences (SPSS) version 20. Results were expressed as proportions for different study variables.

**Results:** Out of the 280 victims, majority 206 (73.57%) of study participants were males. The highest numbers of victims (34.20%) were between 21-30 years of age group. 40.71% were using two wheelers. Most of the accidents took place in the evening (6 pm to 12 am) i.e. 39.10%. Most common site of presenting injury was lower limb (40.71%). In this study 22.5% were under influence of alcohol while driving.

**Conclusions:** Road traffic accidents were more in young age groups and in males. Road safety education should be promoted.

**Keywords:** Casualty, Road traffic accidents, Victims, Alcohol

## INTRODUCTION

As per Global status report on road safety 2015, 1.25 million road traffic deaths occurred every year. Most common cause of death among those aged 15-29 years was road traffic accidents. Three out of four deaths due to road traffic accidents were among men. 49% of all road traffic deaths were among pedestrians, cyclists and motorcycles. Urgent action is needed to achieve the ambitious target for road safety reflected in the newly adopted 2030 Agenda for Sustainable Development, halving the global number of deaths and injuries from road traffic crashes by 2020.<sup>1</sup>

A report on road accidents in India 2016, published by transport research wing under ministry of road transport & highways, government of India, has revealed that 4,80,652 accidents had occurred in 2016 leading to 1,50,785 deaths. Everyday 413 people were dying in road accidents and every hour 17 deaths were taking place.<sup>2</sup> In Telangana 21,252 cases, 22,948 injuries and 7110 fatalities occurred due to road traffic accidents.<sup>3</sup>

With this back ground the present study was undertaken to document the socio-demographic profile of the victims of road traffic accidents, to identify the risk factors responsible for road traffic accidents and to identify the

various presenting injuries of road traffic accident victims attending casualty department in a tertiary care hospital, khammam.

### Objectives

1. To study the socio-demographic profile of the victims of road traffic accidents.
2. To identify the risk factors responsible for road traffic accidents.
3. To identify the various presenting injuries of road traffic accident victims.

## METHODS

### Study design

It was a Hospital based cross sectional study.

### Study setting

Department of casualty in Mamata general hospital, Khammam.

### Study period

July 2011 – June 2012.

### Study population

All road traffic accident victims seeking care at casualty, Mamata General Hospital not brought dead and immediately referred elsewhere. Cases were interviewed on all days including on Sundays and holidays.

### Operational definition

Road traffic accident: For the purpose of study, a road traffic accident has been defined as accident which took place on the road between two or more objects, one of which must be any kind of a moving vehicle.<sup>4</sup>

### Inclusion criteria

Inclusion criteria were all road traffic accident victims seeking care at casualty department in Mamata general hospital; victims who gave informed consent; victims who were conscious and able to give reply.

### Exclusion criteria

Exclusion criteria were victims who were brought dead; victims who didn't give the informed consent; victims who were immediately referred to higher centers.

### Sample size

A total of 280 road traffic accident victims were interviewed during the study period.

### Study variables

A pretested semi structured questionnaire consisting of socio demographic details like age, gender, religion, socioeconomic status, marital status, type of vehicle user, presenting injuries, time of accident and factors responsible for road traffic accidents was used for collection of information.

### Ethical consideration

Prior permission was obtained from institutional ethics committee and informed consent was taken from all the study participants. When the condition of the victims did not permit the interview, their parents or relatives or attendants were interviewed.

The medico-legal records and case sheets were referred for collecting additional information and where ever necessary for cross checking.

### Data analysis

Data was entered in Microsoft excel and analyzed using Statistical Package for Social Sciences (SPSS) version 20. Results were expressed as proportions for different study variables.

## RESULTS

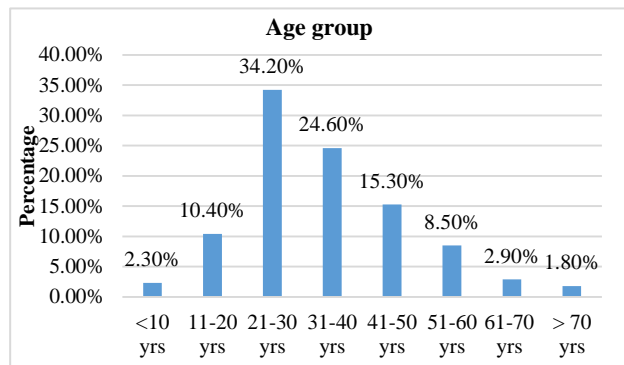
A total of 280 road traffic accident victims were interviewed during the study period.

**Table 1: Distribution of study participants based on socio demographic profile.**

Variables	Sub category	Frequency (n)	%
<b>Gender</b>	Male	206	73.57
	Female	74	26.43
<b>Religion</b>	Hindu	187	66.78
	Muslim	38	13.57
	Christian	55	19.65
<b>Marital status</b>	Married	107	38.21
	Unmarried	173	61.79
<b>Socioeconomic status (Based on B.G Prasad's social classification<sup>5</sup>)</b>	Class V (lower)	57	20.35
	Class IV (upper lower)	94	33.57
	Class III (lower middle)	61	21.78
	Class II (upper middle)	39	13.94
	Class I (upper class)	29	10.36

Out of the 280 victims, Majority 206 (73.57%) was males. Majority (66.78%) were Hindus by religion. 61.79% of victims were unmarried. People from upper

middle and middle socioeconomic class were affected more i.e. 94 (33.57%) and 61 (21.78%) respectively.



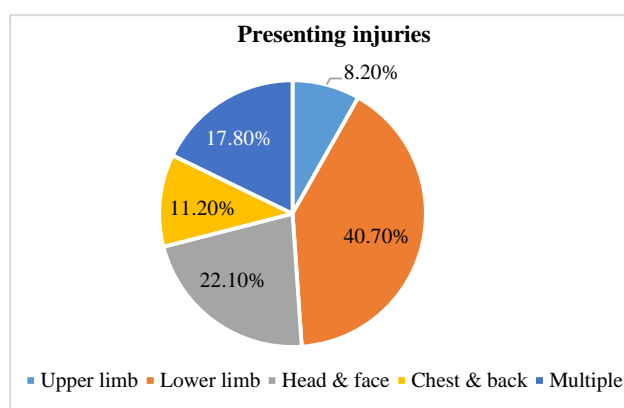
**Figure 1: Distribution of study participants based on the age group.**

In this study, majority of the victims (34.20%) were between 21-30 years of age followed by 31-40 years (24.60%) and 41-50 years age group (15.30%).

**Table 2: Distribution of road traffic accidents based on type of road user.**

Type of road user	Total cases (%)
Two wheeler	114 (40.71)
Pedestrians	51 (18.22)
Four wheeler	45 (16.07)
Bus	29 (10.36)
Auto	26 (9.28)
Bicycles	15 (5.36)

In the present study 40.71% of victims were using two wheelers, 16.7% of cases were using four wheelers and 18.22% were pedestrians.



**Figure 2: Distribution of study participants based on presenting injuries.**

In our study 40.7% of cases had injuries of lower limbs followed by 22.10% of cases who had injuries on head and face and 17.80% of cases had multiple injuries.

**Table 3: Factors responsible for accidents.**

Factor	Frequency (%)
Mobile usage	31 (11.07)
Influence of alcohol	63 (22.5)
Stress	16 (5.71)
Over speed	172 (61.42)
Animals on the road	27 (9.64)

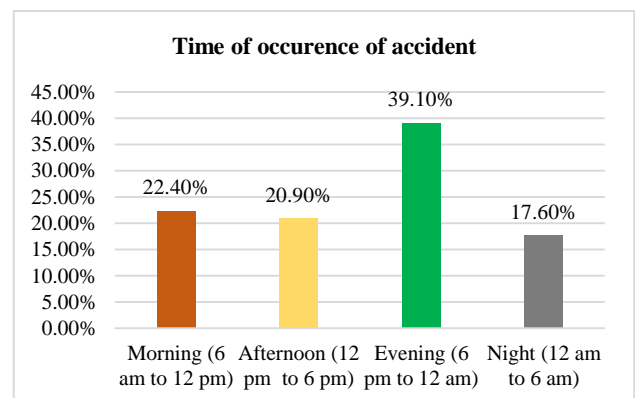
\*Multiple responses were included.

In our study the most common precipitating factors for occurrence of accidents was over speed (61.72%), followed by 63 (22.5%) who were under influence of alcohol and 31 (11.07%) who were using mobile phone while driving.

**Table 4: Distribution of study participants based on usage of protective measures.**

Protective measures	Number	Frequency (%)
Helmet usage among two wheeler drivers (n=84)	22	26.19
Seat belt usage among four wheeler drivers (n= 11)	2	18.18

Among 114 victims involved in accident while on two wheelers, 84 were riding the vehicle and among 45 people involved in four wheeler accident 11 were driving the vehicle. 26.19% of victims reported usage of helmet while driving two wheelers and only 18.18% of victims used seat belt while driving four wheelers.



**Figure 3: Distribution of study participants based on time of occurrence of accident.**

Most of the accidents took place in the evening (6 PM to 12 AM) i.e. 39.10% followed by morning hours (22.40%), afternoon (20.9%) and night (17.6%).

## DISCUSSION

A total of 280 road traffic accident victims were studied who attended the department of casualty in a tertiary care hospital, Khammam.

Out of 280 victims, 206 (73.57%) were males and 74 (26.43%) were females. Similar findings were seen in a studies done by Misra et al and Pathak et al where majority of the study participants were males.<sup>6,7</sup> The findings from our study are in agreement with other studies where majority of the RTA victims were males.<sup>8-14</sup> The difference may probably be due to the reason that males tend to travel more for work related and other purposes.

The most common age group affected in our study was 21 to 30 years i.e., 34.2% as the younger generation often have risk taking behavior and also more vehicle usage among them. Similar findings were observed in a study done by Aditya et al in Vadodara who found that most common age group affected was 20- 30 years (34.91%).<sup>15</sup> This shows that the people of the most active and productive age group are involved in RTAs which adds to serious economic loss to the community.

Majority of study participants were Hindu by religion (66.78%). This is similar to study done by Mishra et al who found that 60% of study participants were Hindus.<sup>9</sup>

People from upper middle and middle socioeconomic class were affected more i.e. 94 (33.57%) and 61 (21.78%) respectively in our study whereas the study done by Mishra et al concluded that majority of victims belonged to middle & low socioeconomic status.<sup>9</sup>

In the present study majority (40.7%) were injured by two wheelers. This finding was similar to study done by Shah et al in Ahmedabad who found that 56% were injured by two wheelers.<sup>16</sup> Our finding was higher when compared to study done by Jha et al in Pondicherry who observed that 24.4% were injured by two wheelers.<sup>17</sup> It reflects that it is most common mode of transport in India.

In our study 40.7% of cases had injury of lower limb and it is the most common site of injury. Our findings were contrary to the study conducted by RaviKiran et al in Mangalore who observed that most common site of injury was abdomen (49%).<sup>18</sup> Similar findings were reported by Al-Thaifani et al who reported that most common site of injury was lower limb (42.18%).<sup>19</sup> The findings from our study are in agreement with other studies where the most common site for injury was lower limb.<sup>20-21</sup>

In the present study 22.5% were under the influence of alcohol during the accident. This is in higher proportion when compared to study done by Kiran et al in Mangalore who found that 13% were under influence of alcohol during the accident.<sup>18</sup> Our findings were low compared to study done by Baburao et al who reported that 62% had consumed alcohol while driving.<sup>14</sup>

Most of the accidents took place in the evening (6 PM to 12 AM) i.e. 39.10%. These hours are busiest as commuters go to and return from the schools, offices,

factories and business. This finding was contrast to study by Shah et al in which majority of accidents occurred in the morning (6 AM to 12 PM).<sup>16</sup>

In our study, 26.19% of victims reported usage of helmet while driving two wheelers and 18.18% of victims used seat belt while driving four wheelers. In a study done by Baburao et al it was found that only 3% of victims used car seat belts and 8% of victims wore helmets.<sup>4</sup>

In spite of an existing legislation on compulsory use of helmets and seat belts, very few of the two wheeler and four wheeler users complied with the legislation. Thus there is a need to focus on safety education and strict enforcement of the existing legislations as an immediate measure.

## CONCLUSION

This study showed that Road traffic accidents were more in young age groups where there is tendency to show less attention to traffic rules & regulations and use of safety devices and it is more among males because of outdoor activity. Majority of road users were two wheelers and the most common site of injury was lower limb.

## Recommendations

There is need for road safety education which should be directed towards road users via mass media and campaigns. Road safety education should be incorporated at school level with practical demonstrations. Breath testing for analyzing alcohol levels among drivers should be done. Strict enforcement of the existing legislations regarding usage of helmets, seatbelts as well as driving under the influence of alcohol and cell phone driving is the need of the hour.

## Limitations of the Study

1. As it is a hospital based study it is not representative of the exact burden of road traffic accidents.
2. Problem of recall bias.

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*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

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