

# A Study of Road Traffic Accident Cases Admitted in B.L.D.E.U's Shri B.M. Patil Medical College Hospital and Research Centre, Bijapur

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## ABSTRACT

Road traffic accidents are increasing at an alarming rate throughout the world. Rapid growth of transportation system, industrialisation, urbanisation and increase in population are responsible for this "veritable epidemic." Inadequate traffic planning and lack of traffic sense have worsened the situation particularly in the developing countries.

**Keywords:** Road traffic Accidents, Passenger, Vehicle.

## INTRODUCTION

Spectacular advances in health & health related sciences have paid dividends in bringing down the mortality and morbidity due to communicable diseases. This has resulted in longevity of the people. At the same time, Globalization has improved the socio economic status of the people resulting in changes in the life style of the people. The longevity of life and changes in the life style have brought the entire spectrum of non-communicable disease and accidents to the forefront of health care delivery system.

In India, every year RTA accounts for over 1,00,000 deaths, 2 million hospitalization, 7.7 million minor injuries and an estimated loss of 55,000 crores or nearly 3% of the GDP every year. If the present scenario is continued, it is projected that deaths due to RTAs will be 1,50,000 and 2.8 million victims will be hospitalized by 2010. 1,85,000 deaths and 3.6million victims will be hospitalized by 2015. The social and psychological suffering of the injured people is increased in their families. It is sad to note that life saved due to advancements in health and health related sector is now being wasted on the roads.<sup>1</sup>

The major causes for RTAs in our country are, rapid increase in personalized modes of transport, a mixture of slow and fast moving vehicles, lack of road discipline, drunken driving and use of mobile phones while driving.<sup>2</sup>

As most of these causes are preventable, and in order to create awareness, WHO's theme for 2004 was "ROAD SAFETY IS NO ACCIDENT". The timely quality care provided to the victims will definitely alleviate their pain and limit the disability associated with accident.<sup>3</sup>

Bijapur is one of the fast urbanizing cities of Karnataka State, Hence this study was undertaken to document the socio-demographic profile of the injured victims and the medical care provided to them.

## OBJECTIVES

To study the sociodemographic profile of road traffic accident victims.

To study the various aspects of health management.

## METHOD

Hospital based cross sectional study was done in B.L.D.E.U's Shri B.M.Patil Medical College, Bijapur. The study ground and comprising of all the patients admitted due to road traffic accidents, Data was collected by questionnaire method and analysis was accordingly done.

## Inclusion Criteria

All the patients due to road traffic accident were included in this study.

**Exclusion Criteria**

1. An injury on road without involvement of a vehicle. (E.g. Person slipping and falling on the road and sustaining the injury)
2. An injury involving a stationary vehicle. (E.g. Person getting injured while washing or loading a vehicle.
3. Deaths due to road traffic accidents were excluded from the study.

**METHODOLOGY**

Hospital was visited everyday between 5.30pm to 8.30pm including general holidays and Sundays. Prior permission was taken from the Superintendent of the hospital to go through the MLC case register. The

patients admitted on that particular day were approached and explained the purpose of study in their language After taking permission, they were interviewed and data was entered. Information of unconscious patients was collected from their relatives or parents. After regaining the consciousness the patient was approached and reinterviewed. The medico-legal records and health records of the victims were referred for collecting additional information and for cross checking. A total of 540 road traffic accident victims were interviewed by the end of study period.

**Definition of "Accident"**

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

**RESULTS AND DISCUSSION**

**Table 1. Age/Sex wise distribution of Accident Cases**

Age group in Years	Males		Females		Total	
	No.	%	No.	%	No.	%
0-9	12	3.1	08	5.4	20	3.7
10-19	61	15.6	29	19.6	90	16.6
20-29	124	31.6	43	29.1	167	30.9
30-39	87	22.1	24	16.2	111	20.5
40-49	61	15.5	18	12.1	79	14.6
50-59	28	7.1	13	8.7	41	7.5
60-69	09	2.2	07	4.7	16	2.9
>70	10	2.5	06	4.4	16	2.9
<b>Total</b>	<b>392</b>	<b>100</b>	<b>148</b>	<b>100</b>	<b>540</b>	<b>100</b>

Gender distribution of accident cases showed male preponderance, accounting for 72.5% of cases.

The maximum no. of victims 30.9% were of age group 20-29 years, both males and females. Age group 20-39 years accounted for 50% of cases, while age group 20-49 years accounted for 2/3<sup>rd</sup> of the cases. The lowest no. of victims were seen in age group more than 60 years and less than 10 years accounting for 6.34% and 4.16% respectively.

According to a study conducted at Government Medical College and Hospital, Chandigarh, 270 (33.96%) cases were major victims of age group 21-30 years followed, by age group 31-40 years were 163(20.50%).Majority of victims involved were males 643(80.88%) as compared to females 152(19.12%).it is clear from above study that males in the group 20-39 years are more vulnerable for accidents as they are most active group.<sup>5</sup>

**Table 2. Education Status of Accident Cases**

Education	Males		Females		Total	
	No.	%	No.	%	No.	%
Illiterate	81	20.6	25	16.8	106	19.6
Primary	96	24.5	33	22.3	129	23.8
Secondary	130	33.7	60	40.5	190	35.2
College	59	15.1	23	15.5	82	15.2
Graduate	20	5.1	04	2.7	24	4.5
Not Applicable <5 years of age	06	1.5	03	2.1	09	1.6
<b>Total</b>	<b>392</b>	<b>100</b>	<b>148</b>	<b>100</b>	<b>540</b>	<b>100</b>

In the present study, Maximum no. of victims 190 (35.2%) were of the education status of secondary, followed by primary 129 (23.8%), graduates and above had an accident rate accounting for only 7.22% cases.

In a study conducted at JIPMER Hospital, Pondichery, it was found that 107 (21.4%) had education up to 5<sup>th</sup> class, 95 (19.3%) had education up to 8<sup>th</sup> class, while 82 (16.6%) were illiterate and victims with higher education were fewer in proportion.<sup>5</sup>

**Table 3. Table showing habits of the victims.**

Habits	No. of Cases	%
Alcohol	156	28.8
Smoking	138	25.5
Chewing	123	22.7
Snuff	58	10.7
Drugs	00	00
None	300	55.5

\* Some had multiple habits

In the present study, among the accident victims, most of them told that they had habit of drinking alcohol as well as smoking which accounted for 156 (28.8%) and 138 (25.5%), whereas 123 (22.7%) told that they had habit of chewing tobacco and where 58 (10.7%) told that they had habit of using snuff and none of them gave history of taking drugs and 300 (55.5%) told that they were not having any habits.

**Table 4. Types of Vehicles involved in Accidents.**

Types of Vehicle	No. of Vehicles	%
Bicyclist	57	16.1
2-wheeler	144	40.6
3-wheeler	29	8.2
4-wheeler	43	12.1
Pick up truck	16	4.5
Bus	46	12.9
Heavy vehicle/truck	10	2.8
Tractor	06	1.6
Bullock Cart	03	0.8
<b>Total</b>	<b>354</b>	<b>100</b>

In our study, a total of 354 vehicles were involved, Out of which maximum were two wheelers accounting for 144 (40.6%) whereas least number of vehicles were bullock carts.

Study conducted at JIPMER Hospital, Pondichery, it was found that a total of 685 different types of vehicles were involved, out of them 133(19.4%) were bicycles, 115(16.8%) were trucks, 102(14.9%) were buses and (22.8%) were two wheelers respectively.<sup>5</sup>

**Table 5. Place of Accidents**

Place	No.	%
Within City Limits	378	70
Outside City	162	30
Total	540	100

In our study, total of 540 victims were injured due to road traffic accident, Out of which 378 (70%) accidents occurred within the city limits, whereas 162 (30%) occurred outside the city limits.

Study conducted at Nairobi Hospital, Nairobi, it was found that major city roads were the commonest place of injury accounting for 38.3%.<sup>6</sup>

**Table 6. Distribution of Accident cases by Day of the Week**

Day	No. of Cases	%
Monday	92	17
Tuesday	48	8.8
Wednesday	70	12.9
Thursday	43	7.9
Friday	64	11.8
Saturday	90	16.6
Sunday	135	25
<b>Total</b>	<b>540</b>	<b>100</b>

$\chi^2=74.47$   $P<0.001$

Maximum number of accidents occurred on Sunday 135 (25%), weekend. Accidents accounted for more than 37%, which is statistically significant, whereas least no. of cases occurred on Thursday 43 (7.9%).

Study conducted at JIPMER, Pondichery, the highest number of RTAs (17.1%) took place on Sundays, followed by Tuesday (15.9%) and Thursday (15.8%) and least number of cases on Mondays (12.3%).<sup>5</sup>

**Table 7. Distribution of RTA victims according to time of accident.**

Time	No. of Cases	%
5am – 7am	13	2.4
7am – 10 am	59	10.9
10 am – 2 pm	122	22.5
2 pm – 5 pm	62	11.4
5 pm – 8 pm	163	30.2
8 pm – 10 pm	38	7.1
10 pm – 5 am	81	15
<b>Total</b>	<b>540</b>	<b>100</b>

$\chi^2=202.9$   $p<0.001$

Maximum number of accidents 163(30.2%) occurred between 5pm – 8pm, and 122(22.5%) cases occurred

between 10am to 2pm, accounting for more than half the number of cases. Least number of accidents 13(2.4%) of cases occurred in early morning 5am to 7am. The number of accidents is significantly more during 10am –2pm and 5pm –8pm compared to other times. This is statistically significant.

In a study conducted at MCD, Delhi, it was found

that most of the accidents occurred between 3pm-6pm (146), followed by 12 noon to 3pm (123).<sup>7</sup>

In another study conducted at JIPMER, Hospital, Pondicherry the highest number of RTAs occurred from 4 pm to 5pm (8.9%) and from 6 pm to 7pm (7.3%) respectively.<sup>5</sup>

**Table 8. History of associated conditions of the victims.**

Associated Conditions	Males		Females		Total	
	No.	%	No.	%	No.	%
Hypertension	35	8.9	15	10.1	50	9.2
Blackouts	00	00	00	00	00	00
DM	32	8.2	20	13.5	52	9.6
Visual Disability	55	14.1	26	17.6	81	15
Auditory Disability	02	0.5	00	00	02	0.3
Specific	02	0.6	00	00	02	0.3
None	286	72.9	100	67.6	386	71.4

\* Some had multiple conditions.

In the present study, maximum number of accident cases had visual disability accounting for 81 (15%) followed by hypertension and diabetes. 386 (71.41%) had no history of associated conditions.

Visual disability is an important factor in the causation of accidents. It increases the risk in both the drivers and pedestrians as it comes in the way of judgment & perception.

**Table 9. Presence of Driving License among Drivers**

Driving License	No. of Cases	%
Yes	89	53.9
No	30	18.1
Not required	46	28.0
<b>Total</b>	<b>165</b>	<b>100</b>

In the present study, Out of 165 drivers, there were 34 bicyclists, 11 moped drivers, 1 driving bullock cart who did not require any type of driving license and of the remaining 119, 89(53.9%) had driving license and 30 (18.1%) had no driving license.

**Table 10. State of Patient when brought to Hospital**

State	Males		Females		Total	
	No.	%	No.	%	No.	%
Conscious	334	85.2	119	80.4	453	83.8
Unconscious	058	14.8	029	19.6	087	16.2
<b>Total</b>	<b>392</b>	<b>100%</b>	<b>148</b>	<b>100%</b>	<b>540</b>	<b>100%</b>

In the present study, 453 (83.8%) accident cases were conscious and 87 (16.2%) were unconscious when brought to hospital.

Study conducted in MCD, Delhi, it was found that 152(22.35%) were unconsciousness when brought to the hospital.<sup>7</sup>

**Table 11: Distribution of victims according to nature of injuries. n = 540**

Nature	No. of cases	Percentage
Simple injuries	360	67
Grievous	180	33
<b>Total</b>	<b>540</b>	<b>100</b>

In our study, Out of 540 accident victims, 360(67%) victims had simple injuries and 180 (33%) had grievous injury.<sup>8</sup>

**Table 12. Table showing distribution of cases according to the type of treatment received.**

Type of treatment	No. of cases	Percentage
Conservative	212	39
Orthopedic	180	33
Surgical	148	28
Total	540	100

Above table shows 212(39%) received conservative line of treatment followed by 180(33%), 148(28%) received Orthopedic and Surgical management.

### SUMMARY

Hospital based study was undertaken to find out the socio-demographic profile and various aspects of health management in road traffic accident victims admitted in B.L.D.E.U'S Shri B.M.Patil Medical college Hospital and Research centre.

- Out of 540 RTA victims studied, 31.6% were males and 29.1% were females respectively, more prone age is 20 to 29 years.
- Illiterates and low educated group (primary and secondary) constitute about 80% RTA victims. Graduates and above had an accident rate accounting for about 7%.
- Maximum number of accidents occurred on weekend days Saturday and Sunday's (nearly 42%).
- Good number of victims (70%) met the accidents within the city limits.
- A total of 9 different types of vehicles were involved. 40.6% from two wheelers and 0.7% from bullock cart.
- Passengers comprised 42.6% followed by pedestrians and drivers accounting for 26.8% and 30.5%.
- Maximum number of passengers injured was traveling in Bus, overloaded bus, breakless speed and ill maintained roads may be factors responsible.
- Two wheelers were the major culprit vehicles in injuring pedestrians (about 43%).
- 15% of the cases had visual disability..
- 18% of drivers did not have valid driving license.
- 67% had simple injuries. 54% injuries involving multiple body regions.
- About 84% of victims were conscious when brought

to hospital. Maximum number of conscious victims came to hospital within one hour while unconscious victims took more than one hour to reach the hospital.

- Maximum number of victims who had met with accident within the city limits reached the hospital within one hour.
- Only 23% of victims had received some kind of treatment before coming to hospital.
- Conscious victims were hospitalized for maximum number of 7 days while unconscious patients (60%) required hospitalization for more than 8 days.

### CONCLUSION

Road traffic accidents are on the rise globally. This study was conducted to document the socio demographic profile and various modalities of the treatment provided to the victims.

Victims predominantly belonged to the age group of 20 to 39 years were of low educational status. Maximum number of accidents occurred on Saturdays and Sundays and during the peak hours of traffic i.e., 10.00 am to 2.00 pm and 5.00 pm to 8.00 pm. Two wheelers are involved in accidents. Good number of victims were found to be under the effect of alcohol when accidents occurred and nearly about 25% of the drivers driving power driven vehicles did not have valid driving license. As large majority of accidents have occurred within the city limits, it has resulted in simple injuries to large extent. Large numbers of patients were discharged from the hospital within 7 days. It is also noticed that both the slow moving and fast moving vehicles ply on the roads, resulting in accidents occurring within 30 minutes of driving to a great extent. Very few victims have received treatment before reaching the hospital. Most of the cases were managed medically.

To sum up, younger age group, low educational status not having valid driving license, alcoholic intoxication, careless attitude by the pedestrians plying of slow and fast moving vehicles on the same road during the pack hours are the main reasons for road traffic accidents in this area.

### RECOMMENDATIONS

- Provide health education to public-
1. Regarding causes of road traffic accidents.
  2. Creating awareness regarding road traffic rules and regulations.



3. Prohibition of usage of mobile phones while driving.
  - Law enforcing authorities should strictly implement the traffic rules and regulations and maintain them.
  - First aid education should be made compulsorily a part of curriculum for high school children.
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