



ORIGINAL RESEARCH PAPER

Forensic Medicine

EPIDEMIOLOGY OF ROAD TRAFFIC ACCIDENTS IN SURARAM HYDERABAD TELANGANA STATE

KEY WORDS: RTA, Premature deaths, lacerations and self-skid

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ABSTRACT

BACKGROUND: Road traffic accidents (RTA) are the major causes of premature deaths. Most of these deaths can be averted by adopting proper measures. Knowledge of mode of occurrence of these accidents may give insight of prevention. The present study has been taken up to know the epidemiological factors of road traffic accidents in Suraram village, Qutbullapur Mandal, Hyderabad (Telangana State)

MATERIALS AND METHODS: The present retrospective study was conducted in the department of forensic medicine Malla Reddy Institute of Medical Sciences (MRIMS) located at Suraram village, Qutbullapur Mandal, Hyderabad. MRIMS Hospital is located on NH9

(Narsapur Road). The hospital has 650 beds with all the specialties and is catering services to the surrounding areas. The Vehicular traffic being high and added is the poor road conditions contributing to increased number of accidents. The study was conducted for 6 months period from April to September 2016, during which, 84 cases were reported to the hospital. All the cases reported to MRIMS Hospital were studied in relation to various variables. The data analyzed using MS-excel to form tables.

OBSERVATIONS: During study period 84 cases reported.

RESULTS: the results shows more than 50% of the RTAs occurred in the age group of 15- 30yers, Maximum accidents occurred (29.76%) occurred during afternoon 3-6P.m around 50% of the accidents occurred in the month of July .The time interval from the occurrence of the RTA to arrival at hospital was 1-2hrs in 41.67% of the cases .Majority of the RTA occurred among two wheeler users (52.38%).RTA due to self-skidding occurred in 26.19% of the two wheeler users

CONCLUSION: It is observed, among all the categories of vehicles involved in RTA, the two wheeler users were the majority involved in accidents (52.38%). Most of causes of the accidents were due to fault of the driver and in (8.34%) of the cases, there was influence of alcohol while driving

INTRODUCTION

The Global status report on road safety' 2013 presents information on road safety from 182 countries, accounting for almost 99% of the world's population. The total number of road traffic accidents all over the world remains as high as 1.24 million per year. Comprehensive road

Safety laws for risk factors, like driving under the influence of alcohol, driving at high speed, failing to use helmets and seat belts are followed by 28 countries covering 7% of the world's population. The above report serves as a base for the decade of action of road safety 2011 - 2020 declared by the UN general assembly. This is realized by finding from bloom berg philanthropies

A road traffic accident is a result of an unfortunate event occurring on the road, resulting in One or more persons getting injured or killed .due to the involvement of a moving vehicle.

The RTA may result due to two vehicles colliding, or when a moving vehicle hits a Pedestrian, an animal, a pole or tree and causing various injuries. RTAs are tragic as they not only involves suffering and pain but also social economic costs and pre mature deaths. There is loss of productivity and economic loss to the individual and nation In India during 2011 a total of 497686 RTA 'S were seen in all states and union territories. There was consistent rise of occurrence from 18.1% in 2002 to 24.4% in 2011

Inter-City comparisons²

Any city with a population of more than 10 lakhs people is called as mega city as per 2011 census .The worst accident prom city in 2011 was Chennai with 9,663 accidents resulting in 8,628 injuries with 8,628 injuries and 140 l deaths, the next was Delhi city with 5,865 accidents accounting for 1,527 deaths and Bangalore with), 508 accidents involving 725 deaths .

Hyderabad is a capital of Telangana which has a 400 years history. It is the fifth largest city in India with a population of more than 10 million people. Due to rapid and unplanned urbanization, there is an increased incidence of road traffic accidents.

The roads are same but the numbers of vehicles are **renewably increasing in Hyderabad it is as follows³**

Vehicles Movin2 in HYD	Number
Two wheelers	36.24 Lakhs
Cars	8.4 Lakhs
Goods carrier	2.04 Lakhs
Autos	1.44 Lakhs
Maxi Cabs	14,536
Motor Cabs	56,734
Tractors	27,471
Contract Carriers	5133
School Buses	11448
Private Service Vehicles	954
State Carriers Vehicles	8313
Others	28366
Total NO Of vehicles Moving	49.79 lakhs

Hyderabad total vehicular population is fifty lakhs, of this 72 % are two wheelers.

Objectives:

1. To know the social profile of the road traffic accidents on basis of month, time of the day, age and sex
2. To analyze the road traffic accident as per the type of vehicle involved, mode of accident and the injuries sustained

Collection of data from various sources is essential for providing effective services. The objective of paper is to know the epidemiological factors of RTA and comparison of same results with other study results and in-depth analysis of various variables and their relation to RTAs.

MATERIALS AND METHODS:

The present retrospective study was conducted in the department of forensic medicine Malla Reddy Institute of Medical Sciences (MRIMS). located in Suraram village, Qutbullapur Mandal, Hyderabad. MRIMS Hospital is located on NH9 (Narsapur road) it has for taking care of all the patients. Due to the presence of hi-tech city in the vicinity ,with more than 20 colleges, a number of schools and theaters in vicinity of the area of study , there is an enormous increase in the employees and students traveling in various vehicles to reach their destination in a hurry ,thus causing RTA'S

A retrospective study was conducted from the month of April

2016 to September 2016 to analyze the number of RTA'S and their r epidemiology, during the period, 84 cases of RTA.were found and all the cases were taken for the study. A proformawas designed for collection of data by using different variables. Pilot study was conducted at Malla reddy.

Hospital after obtaining ethical clearance from the institute. The data was obtained from the record section and the medical legal certificates from the emergency, casualty department. APerforma was designed for the collection of the data for RTAS, by using different variables, liketime,date,age,sex ,type of vehicle involved, injuries sustained , time between accident and entry to the casualty of hospital, if MLC was made properly ,ifinvestigations done,ifbasic treatment given and to note theplace of occurrence of the accident. All the above data was compiled using Ms-excel to form tables.

OBSERVATIONS & DISCUSSIONS:

84 RTA cases were reported during the study period from April to September 2016. Out of 84 cases, 70 were males and 14 were females. All the cases reported to the hospital were registered as medico legal. First aid was given to all the cases and referred the higher centers like orthopedic department for further follow up.

Table-I: Age wise distribution of RTAcases reported to MRIMS Hospital

Age	No.	%
<14 years	7	8.33
15-<20	15	17.86
21-<25	18	21.43
26-<30	14	16.67
31-<35	9	10.71
36-<40	3	3.57
41-<45	3	3.57
46-<50	7	8.33
51-<55	1	1.19
56-<60	3	3.57
60+	4	4.76
Total	84	100

Table 1 shows the age wise distribution of RTA cases reported to the hospital. More than 50% of cases occurred in the prime age of 15-30 years.

Table-2: Time of occurrence of RTA

Time	No.	%
0-<3 AM	8	9.52
3.1-<6 AM	1	1.19
6.1-<9 AM	2	2.38
9.1-< 12 AM	8	9.52
12.1-<3 PM	14	16.67
3.1-<6 PM	25	29.76
6.1-<9 PM	12	14.29
9.1-< 12 PM	14	16.67
Total	84	100

Table 2 shows accident in relation to part of the day. Maximum number of accidents occurred in the afternoonbetween 3.1-6 p.m (29.76%).

Table-3: Month wise incidence of RTA for the study period

Month	No	%
April	2	2.38
May	10	11.90
June	15	17.86
July	22	26.19
August	16	19.05
September	19	22.62
Total	84	100

Table 3 shows month wise incidence of cases. Around 26.19% of the cases were reported in the month of July.

**Table-4: Type of injuries in RTA
Lacerations were commonly seen in 39.29% of the cases**

Type ofInjuries	No.	%
Abrasion	11	13.10
Laceration	33	39.29
Contusion	1	1.19
Degloving	3	3.57
Fracture	6	7.14
Swelling and pain	7	8.33
Simple injury	4	4.76
Dislocation	1	1.19
Multiple injuries	18	21.43
	84	100

Table-5: Interval between time of occurrence of RTA and arrival to hospital

Time	No.	%
<1 hour	29	35.42
1-<2	35	41.67
2-<3	11	13.10
3-<4	2	2.38
4-<5	1	1.19
5-<6	2	2.38
6-<7	2	2.38
24 hours	2	2.38
	84	100

Table 5 shows the time interval between times of occurrence to reach of hospital. More than three fourth of cases reached hospital in less than 2 hours.

Table-6: Type of road user (vehicle) among the road traffic accident in the study

Typeofroaduser (vehicle)	Number of cases	Percentage
Two wheelers	44	52.38
Four wheelers	21	25.00
Three wheeler (auto)	10	11.90
Bus	6	7.14
DCM	2	2.38
Lorry	1	1.19

Table 6 shows that maximum occurrence of accidents were due to two wheelers i.e. 52.38%.

Table-7: Mode of accidents:

Mode of Accident	Number of cases	Percentage
Selfskid two wheeler	22	26.19
Fall from bike	5	5.95
Bike hit by another bike	9	10.71
Bike hit by the four wheeler	8	9.52
Hit by four wheeler/pedestrian	11	13.10
Auto rickshaw /pedestrian	7	8.33
Auto rickshaw upside down	3	3.57
Hit to tree of four wheeler	2	2.38
Hit by heavy vehicle	5	5.95
Running bus fall	4	4.76

26.19% of the accidents occurred due to self skidding of two wheelers

Table-8: Accidents Under the influence of alcohol

Vehicles	Number of cases	Percentage
Two Wheelers	5	5.95
Four Wheelers	2	2.38

5.95%and2.38% of the accidents occurred in two wheelers and four wheelers respectively, due to driving, under the influence of alcohol

DISCUSSION:

AGE:

As per the present study more than 50%(55.96) of the cases

occurred during prime age of 15- 30 years. As per the study by Singh et al 79.47% of the victims of RTA were of age group 15-56. As per the study by Ruiker M. et al the age group of 25-65 accounted for 15.9% of RTA coincided with the study by P. Shakeer Kahn et al⁶ at 63.8% less than 40 years of age. It also coincided with Ganveer G. B et al⁷ majority of the cases 82% (of the victims of the age group of 18-37.

Sex:

In the present study the males were 83.33% and females 16.67% high corresponding to 4 Pramod et al with 89.6% males 10.4% females. As per Ruiker M. et al, the males were 85% and females 15%. As per P Shakeer Kahn R et al⁶ the males were 85%. RTAS, Yerpude⁹ Praveen there were 87.61% males and 12.39% females. As per Nilambar Jha¹⁰ study of RTAS shows 83% males and 17% females.

Time of accidents:

In the present study the peak period of time of RTA was 3-6 pm at 29.76%. As per the study in Ruiker et al⁵ the RTAS occurred between 3-6 pm at 16.7%. As per P Shakeer Kahn R et al⁶ the peak incidence was during 6-10 pm at 35.3%. As per S. Ghanshyam Singh et al⁸ accidents occur at 7-8 pm at 6.85%

Month wise occurrences of RTAS:

In the present study July is the maximum incidence at 26.19%, as per Ruiker et al⁵ occurred in May 8.8%, As per P Shakeer Kahn R et al⁶ the Maximum accidents occurred in November to December at 8.57%. As per Yerpude⁹ Praveen it occurred in January 14.45% As per Nilambar Jha¹⁰ study it occurred in the month of January 12.9%

Type of Vehicle Involved (Two wheelers)

As per our present study- 52.38% of the Two wheelers were involved in RTA's As per Pramod Kumar Varma³

the number of two wheelers was- 39.9% As per Shakeer Kahn⁶ R et al. the number of two wheelers was-54.3%. As per Sharma D Singh¹² et al Gujarat Study-75%.

Alcohol Intoxication by Drivers

As per our present study the drivers consuming alcohol was - 8.3%. In the study by Nilambar Jha to the alcohol consumptions was - 15% and as per Sood S¹³ study The alcohol consumption was "8%

CONCLUSIONS

The following conclusions can be drawn from the present data

It is observed that among all the categories of vehicles involved in accidents, the two wheelers comprise the single most cause. Amongst the two wheelers Self skidding of the two wheelers was noted in 50% of cases Most of the accidents occurred during 3-6 Pm The cause of accident was due to the driver's fault Driving under alcohol intoxication was seen in 8.34% of the vehicles involved in the accidents

The cause of the accident was due to the presence of potholes on the roads, two wheeler drivers, riding with three people, wrong side over taking and signal jumping. Driving in high speed and suddenly applying brakes, leading to self skidding was a major cause in this study. The seven seater autos loaded with 10 to 12 people and over turning itself was cause of accidents. Trolleys carrying heavy loads of material caused over turning of vehicles causing accidents. Car drivers under the influence of alcohol hit a tree due to intoxication causing accidents. Bus accidents resulted, due to climbing or getting down of the running buses. Most of the injuries observed due to the accidents were lacerations which were treated and referred.

Recommendations:

Counseling of two wheeler users regarding road safety measures Counseling regarding the wearing of helmets for two wheelers and seat belt for four wheelers are recommended. Drunken driving should be avoided and checking for alcohol levels with breath

analyzer should be conducted by the police. There is a need for increased strength of traffic police and other volunteers in helping in controlling the traffic during the peak hours. Human factors like inexperienced driving, impulsiveness, signal jumping, left side over taking and unawareness of road signals should be avoided Adolescent driving, triple driving on two wheelers is to be avoided Overcrowded of buses with people climbing on or getting down from the running buses. Should be avoided Heavy vehicle drivers should be checked for impaired vision, color blindness, Cataract and heart ailments. Overcrowded of autos and goods carriers results in overtaking and tilting of vehicle, which should be avoided Proper Road lighting is essential, pot holes should be closed and speed breakers should be properly leveled

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