

A DESCRIPTIVE STUDY OF ROAD TRAFFIC ACCIDENT VICTIMS AT TRAUMA CARE CENTER

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Abstract — Today road traffic injuries are a major cause of death and disability globally. Each year nearly 1.3 million people die as a result of a road traffic collision and more than 3000 deaths each day. According to official statistics 1, 36,834 deaths occurred in India due to road traffic accidents in year 2011. Road traffic injuries are partially predictable and hence preventable. Thus the present study was undertaken to study the epidemiology of road traffic accident victims. For this purpose all the victims of road traffic accident registered as Medico Legal Case (MLC) and admitted to the hospitals during study period from March 2011 to February 2012 were included in the study. It was observed that there was a marked male preponderance (83.65%) with maximum involvement of younger age groups. Most of the accidents occurred during rainy season (43.16%). Most of the road users were drivers 255 (47.93%) followed by passengers 159 (29.89%) and pedestrians 118 (22.18%).

Index Terms — Epidemiological study, Road Traffic Accidents.

I. INTRODUCTION

Road traffic accident constitutes a major public health and development crisis in total world today. Road traffic injuries are a major cause of death and disability worldwide, with a disproportionate number occurring in developing countries. [1]

Each year nearly 1.3 million people die as a result of a road traffic collision, each day more than 3000 deaths; more than half of these people are not travelling in a car. 20 to 50 million more people sustain non-fatal injuries from a collision, and which are an important cause of disability worldwide. 90% of road traffic deaths occur in low-and middle-income nations, which claim less than half the world's registered vehicle fleet. [2]

India has a high incidence of serious road traffic accidents. According to official statistics 1, 36,834 deaths occurred in India due to road traffic accidents in year 2011. A total of 4, 40,123 road traffic accidents occur in India, with injury of 4, 46,800 people. In India, around 375 deaths and 1284 injuries per day occur due to road traffic accidents. The deaths due to road traffic accidents increased by 2.2% during 2011 over 2010.3

According to the National Crime Records Bureau (NCRB) of India, the rate of accidental deaths per 1000 vehicles in Maharashtra is 0.9 in the year 2011 as compared to 1.2 at National level. In Maharashtra, 13,680 deaths occurred in 47,120 road traffic accidents during 2011. Maharashtra

ranks second after Tamil Nadu in fatal road accidents with 10.7%. [3]

India has witnessed unprecedented motorization in the last two decades which has also been accompanied by increased purchasing power of people and rather slow expansion of road infrastructure. In strict terms, safety policies and programs should have accompanied this motorization with the consequent effect that despite increase in number of vehicles on roads, deaths and injuries should have declined. [4]

Therefore, it underlines the need of; the present study was conducted in an attempt to determine epidemiological factors along with risk factors involved in road traffic accident in the city.

II. AIM AND OBJECTIVE:

To describe epidemiology of road traffic accident victims.

III. MATERIALS AND METHODS:

The present study was a descriptive study undertaken to determine epidemiology of road traffic accident victims. The study was done at trauma care centers in the city from March 2011 to February 2012. All the victims of road traffic accident registered as Medico Legal Case (MLC) and admitted to the hospitals during study period were included in the study. A total of 431 road traffic accidents were registered with 568 victims in the city. Among 578 victims, 28 victims were referred outside the city while 18 victims were untraceable after treated as OPD basis. Therefore, a total of 532 victims were included in the study. A preformed and pre-test questionnaire specially designed was used to collect the information from the victims. The victims of road traffic accident were interviewed to obtain information about the circumstances leading to the accident. The information collected consisted of category of road users, general epidemiological data, day and time of accident and severity of injuries. The medico legal records and case-sheets of victims were referred for collecting more information. For the study purpose road traffic accident has been defined as accident which took place on road (including the side walk or foot path) between two or more objects, either of which must be a kind of a moving vehicle. The study was approved by the Ethical Committee of the Medical College.

IV. RESULTS:

Table no. 1: Distribution of Road Traffic Accident Victims according to Age and Sex

Age Group (Years)	Female Victims	Male Victims	Total (%)
≤10	06	06	12 (2.26)
11-20	17	52	69 (12.97)
21-30	23	182	205 (38.53)
31-40	12	132	144 (27.07)
41-50	18	39	57 (10.71)
51-60	08	22	30 (5.64)
Above 60	03	12	15 (2.82)
Total	87 (16.35%)	445 (83.65%)	532 (100)

The table no.1 describes that, out of 532 victims of road traffic accident 205 (38.53%) victims from the age group of 21 to 30 years. The mean age of victims was 31.4 ± 12.25 years. In road traffic accident majority of victims were male 445 (83.65%) while females were 87 (16.35%).

Table no. 2: Distribution of Road Traffic Accidents based on Season of Accident

Season	No. of Accidents	Percent
Rainy (June to September)	186	43.16 %
Winter(October to January)	151	35.03 %
Summer (February to May)	94	21.81 %
Total	431	100 %

The table no.2 describes seasonal distribution of road traffic accidents. It was observed out of 431 accidents, 186 (43.16%) accidents occurred during (June to September) rainy season.

Table no.3: Distribution of Road Traffic Accidents based on day of Accident:

Day of Accident	No. of Accidents	Percentage
Monday	69	16.01 %
Tuesday	42	09.74 %
Wednesday	48	11.14 %
Thursday	40	09.28 %
Friday	62	14.38 %
Saturday	68	15.78 %
Sunday	102	23.67 %
Total	431	100 %

From the table no.3, it was observed that most of the accidents occurred on Sundays 102 (23.67%). The number of accidents on weekends from Saturday to Monday were 239 (55.45%) as compared to other week days 192 (44.55%) from Tuesday to Friday.

Table no.4: Distribution of Road Traffic Accidents based on Place of Accident

Place of Accident	No. of Accidents	Percentage
Within City	194	45.01 %
Outside City	237	54.99 %
Total	431	100 %

The majority of accidents 237 (54.99%) occurred outside the city as compared to accidents within the city 194 (45.01%).

Table no.5: Distribution of Road Traffic Accident Victims based on Road Users:

Sr. No	Category of Road User	No. of Victims	Percentage
1	Drivers	255	47.93%
2	Passengers	159	29.89%
3	Pedestrians	118	22.18%
4	Total	532	100%

From the table no.5 it is observed that among 532 victims most of the road users were drivers 255 (47.93%) followed by passengers 159 (29.89%) and pedestrians 118 (22.18%).

Table no.6: Distribution of Road Traffic Accidents based on Type of Vehicles Involved

Sr. No	Type of Vehicle	No. of Accident	Percentage
1	Bicycle	07	01.62 %
2	Two wheeler	259	60.09 %
3	Three wheeler	34	07.89 %
4	LMV	94	21.81 %
5	HMV	33	07.66 %
6	Others	04	00.93 %
7	Total	431	100 %

(LMV= Light motor Vehicle, HMV= Heavy motor Vehicle, Others include Tractor & Minivan)

The table no.6 describe that most of the vehicles involved in accidents were two wheelers 259 (60.09%) followed by light motor vehicles (LMV) 94 (21.81%). Heavy motor vehicles (HMV) were involved in 33 (07.66%) accidents while bicycles in 07 (01.62%) accidents.

V. DISCUSSION:

The present descriptive study was carried out at trauma care centers of the city with total of 431 road traffic accidents and 532 victims included in the study.

In present study out of 532 victims, 205 (38.53%) victims of road traffic accident were affected from age group between 21 to 30 years. 406 (76.32%) victims from age group 21 to 50 years were most affected which was most active and productive age group and most of the road traffic accident victims were males 445 (83.65%) while females constituted 87 (16.35%). According to the study done by Nilamber Jha et al[5] in JIPMER, it was observed that maximum road traffic injuries were in the age group of 20-29 years (31.3%) and (71%) of the victims were under 40 years of age. Similar findings were present in another hospital based study by Ganveer G.B.[6] were majority of the victims (75%) were in the age group 18-37 years while Pramod

kumar[7] in Delhi found the total injuries (69%) occurred in the age group of 15 to 35 years. This shows that people from the most active and productive age groups were involved in road traffic accidents. This may cause serious economic loss to family as well as community. The greater exposure of males to traffic as compared to females makes them as vulnerable group. Males were maximum drivers and frequent travelers in motor vehicles for work related activities.

It was observed that (table 2) out of 431 accidents most of the accidents occurred in rainy season 186 (43.16%) from June to September. In the study done by Pramod Kumar Verma et al [7] at Delhi found that among 680 cases, 387 (56.91%) cases of road traffic accident occurred in July, August and September (rainy season). Similarly, in the study done by Nilambar Jha and Chandrashekhar Agrawal[8] from Eastern Nepal observed that 37% cases were registered in rainy season (July to September) followed by winter months (33.50%). This may occur because in rainy season roads become slippery along with less visibility on road due to rain and day light.

The distribution of accident according to day of accident as per table no.3 shows that most of the accidents occurred on Sunday 102 (23.67%). In the study done by Nilambar Jha et al [5] in JIPMER, Pondicherry found that 17.1% of the injuries occurred on Sundays. The reason for most accidents on weekends may be due to holiday and overcrowding on the roads. Majority of people came out on roads for outing during weekend.

The accidents outside the city were more in this study (table 4). The reason for this may be due to higher speed of vehicles outside the city which cause major trauma to the victims due to impact of high speed vehicles. The accidents inside the city were slightly less as most of the roads were over crowded which leads to less speed of vehicles and minor trauma to victims.

It was observed from table no.5 that, the majority of the road users were drivers 255 (47.93%). In the study conducted by Saidi H.S. [9] found that majority of road users injured were drivers (70%). This could be attributed to the fact that in the present study, the most common mode of transport was two wheelers.

From table no.6 it was observed that most of the vehicles involved among drivers were two wheelers 183 (71.76%). In the study done by Deepak Sharma et al[10] at Anand, Gujarat found that out of 236 drivers, 177 (75%) were two wheeler riders followed by four wheeler drivers 25 (10.59%). Among the motorized vehicles, two wheelers drivers were more commonly involved in road traffic accidents. This could be due less stability of two wheelers along with direct impact to the body. In four wheelers drivers were enclosed and well protected as compared to two wheelers.

It was observed from the present study major addiction among 51 (20%) drivers was of chewing tobacco while alcohol was found among 44 (17.25%) drivers. 169 (66.27%) drivers gave no history of any addiction. It was also found that 38 (14.90%) drivers

and 10 (08.47%) pedestrians were under alcohol influence prior to accident.

VI. CONCLUSION

Majority of the victims were male than female and in the productive age group which causes serious economic loss to family as well as community. The number of accidents was more during day time and on weekends due to maximum activities during this period. Among the road users majority of them were drivers. The vehicles involved in the accidents were majority of two wheelers followed by four wheelers.

The risk factors involved in the accident were younger age group, driving under influence of alcohol. The other risk factors were nonuse of safety measures like helmet and seat belts and lack of awareness among people about road safety.

VII. RECOMMENDATIONS:

Health education to the public regarding causes of road traffic accidents. The awareness related to road traffic rules and regulations. The Law enforcing authorities should strictly implement the traffic rules and regulations and maintain them.

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