

Epidemiological Study of Road Traffic Accident Cases Attending the Civil Hospital, Ahmedabad



Medical Science

KEYWORDS : Accidents, Epidemiological study, Injuries

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ABSTRACT

Research Questions: What are the various epidemiological factors related to road traffic accident cases? What are different types of injuries among road traffic accident cases?

Aims & Objective: (1) To know the demographic characteristic of victims of road traffic accident cases (2) To identify the social & environmental factors related to road traffic accidents.

Methods & Material: A hospital based cross sectional study was carried out in civil hospital, Ahmedabad. 255 Road traffic accidents victims were interviewed by using predesigned study proforma.

Results: Among 255 road traffic accident victims, 82.35% were male & 17.65% were female. Drivers of various vehicles constituted the 45.49% of victims. Majority of the victims were young adults as 34.5% of them were in the age group of 20-29 year. Head injuries were the commonest form of internal injuries (36.47 %).

Introduction:

In India, among individuals more than 4 years of age, more life years are lost due to road traffic accident cases than due to cardiovascular diseases¹. Most of the developing countries like India are at a transition phase of growth and development². India has one of the largest highway and road network second only to road network of U.S³. Human, vehicles and environmental factors play a major role in road traffic accidents and epidemiological study will be useful in identifying these factors².

Each year RTAs claim some 6,00,000 lives and thirty times this number, that is over fifteen million are injured according to the World Health Organization. This represent more than one life lost every minute and an injury every two seconds. Two third of these victims are from the third world countries⁴.

Objectives:

- (1) To know the demographic characteristic of victims of road traffic accident cases
- (2) To identify the social & environmental factors related to road traffic accidents.

Materials and Methodology:

This study was conducted at civil hospital, Ahmdabad, Gujarat. From 1st June, 2013 to 31st august, 2013. The study group consisted of all the RTA victims reporting to civil hospital in the above three months period.

For the purpose of study, a Road Traffic Accident (RTA) was 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. Any injury on the road without involvement of a vehicle (e.g. a person slipping and falling on the road and sustaining injury) or deaths due to RTA were excluded from the study. The victims of the accidents were interviewed to obtain the information about the circumstances leading to accident. A pre-designed proforma was used for interviewing the accident victims. Where the condition of the victims did not warrant the interview, the relatives or attendants were interviewed. The information collected consisted of personal identification data, time, date, day and type of vehicles involved in

RTA, Protective gear worn and category of road users.

Results:

A total of 255 victims reported at civil hospital during this study period.

Table 1: socio-demographic characteristics of the victims

SOCIO-DEMOGRAPHIC CHARACTERISTIC OF VICTIMS		
	FREQUENCY	PERCENTAGE(%)
AGE		
< 10 YEARS	5	1.96
10-19 YEARS	23	9.05
20-29 YEARS	88	34.5
30-39 YEARS	65	25.49
40-49 YEARS	36	14.11
50-59 YEARS	25	9.8
60-69 YEARS	6	2.35
70-79 YEARS	7	2.74
> 70 YEARS	0	0
TOTAL	255	100
EDUCATION		
ILLITERATE	70	27.45
PRIMARY	75	29.41
SECONDARY	61	23.92
HIGHER SECONDARY	33	12.94
GRADUATE	13	5.10
POST GRADUATE	3	1.18
Total	255	100
OCCUPATION		

EMPLOYEE IN SERVICE	84	32.94
LABOURER	82	32.16
HOUSE WIFE	23	9.02
AGRICULTURIST	21	8.24
STUDENT	15	5.88
AUTO DRIVER	11	4.31
RETIRED	8	3.14
UNEMPLOYED	11	4.31
TOTAL	255	100

TABLE 2 : HEAD INJURY AMONG DRIVERS

	HEAD INJURY		TOTAL
	YES	NO	TOTAL
DRIVER	51	65	116
PASSENGER	43	96	139
TOTAL	94	161	255

Z= 2.147957, p < 0.05

So it was observed that head injury was significantly higher among drivers as compared to passengers.

TABLE 3 : SERIOUSNESS OF THE PATIENT IN CASE OF HEAD INJURY

	HEAD INJURY		TOTAL
	YES	NO	
PATIENT SERIOUS	74	80	154
PATIENT NON SERIOUS	19	82	101
TOTAL	93	162	255

$\chi^2=22.50, df=1, p=0.000003261$

Those who had head injuries were significantly ($p<0.05$) more serious than others who did not have head injuries.

Discussion:

In the present study, highest number of RTA victims (34.5%) were found to be between the age group of 20 to 29 years. The similar findings were also reported from Delhi & Nepal also^{5,6}. However, in few studies, 16 to 30 years & 15 to 35 years age group were more involved in RTA^{7,8}. Another study from Delhi reported that people of the 3rd decade of the age were most commonly involved in RTAs⁹. The present study also found that more than 74% of the victims were in the age group between 20-49 years. This shows that the people of the most active & productive age group are involved in RTAs, which adds a serious economic loss to the community. Similar

observations were also made by others.

The present study observed that below age group of 20 and above 49 years, there were less accidents. The reasons may be that the children are taken care of by elders & less usage of vehicles in the adolescent age group. Lower proportion of RTAs in 60 plus age could be due to the less mobility of those people.

The accident rates were 4.6 times higher in males than in females according to this study. Similar results were also observed in Delhi⁵. Whereas in the other study, male:female was very high⁹(9:1). Males are much more exposed to RTAs than females.

It was observed that more people with lower level of education were involved in RTAs. Similar results were also observed by others⁵. However, this relationship between education & RTA may not be casual.

Drivers constituted 45.49% & pedestrians constituted 22.75% of the road users involved in RTAs. Two wheelers were the highest (36.47%) number of vehicles involved in RTAs because of their higher speed, which can be achieved over short distances and less stability of the vehicle.

This study found 16.38% drivers of different vehicles were without driving license, which is higher compared to 7.4% found in Delhi⁵. The reason may be the easy accessibility of the vehicles & the casual attitude of drivers towards obtaining licenses. When they were interviewed they mentioned that they would be applying for obtaining the license in future.

Only 16.38% victims were used protective gear like seatbelt & helmet. 83.62% drivers were found without any protective gear like seatbelt and helmet. This is because of poor implementation of the law for usage of protective gear like seatbelt or helmets.

Lower limb injuries were the most common mode of external injuries (86.67%), followed by face injuries (37.65%) and head injuries (36.47 %) were most common form of internal injuries.

Conclusion and recommendation:

Head injuries were one of the common form of internal injuries, was observed in the study and only 16.38% of them had used protective gear like helmet or seatbelt, strict implementation of existing law for the use of properly designed helmet and seat belt is recommended.

There is clearly a need for road safety education and it should be directed towards road users who are frequently involved and injured especially younger age group.

The real pressure and motivation to improve driving skills can come only through licensing authorities by adopting stricter, more comprehensive and scientifically based test laying a stress on road rules, regulations and traffic control devices.

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