

SHORT ARTICLE

A STUDY ON EPIDEMIOLOGICAL FACTORS ASSOCIATED WITH ROAD TRAFFIC ACCIDENTS PRESENTING TO THE CASUALTY OF A PRIVATE HOSPITAL IN BHUBANESWAR

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Introduction

Throughout the world the growth of transport system has increased phenomenally. On top of it there is an increase of population, urbanization and industrialization. So this has led to the probability of increase in road traffic accidents. The problem also exists in India. Every year six lakh deaths and fifteen million injuries take place due to Road traffic accidents (RTA) i. e. to say one life is lost every minute and an injury every two seconds. Two third of these victims are from third world countries¹. The reasons for the high burden of road traffic injuries in developing countries are: growth in the numbers of motor vehicles, higher number of people killed or injured per crash in low-income countries, poor enforcement of traffic safety regulations, inadequacy of health infrastructure and poor access to health care. This study was conducted to find out the epidemiological factors that are associated with road traffic accidents and the most common site of injury.

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Material and Method

A cross sectional study was conducted at the Neelachal Hospital, Bhubaneswar. The study period was from October 1st to November 30th 2008. The study group consisted of all the road traffic accident victims reporting to hospital during this two-month period i.e. 40 consecutive cases, both male and female, of all age groups. An RTA was defined as an accident which took place on the road, one of which had to be a moving vehicle. (1) Any injury on the road without involvement of a vehicle (e.g. a person slipping and falling on the road and sustaining injury) or injury involving a stationary vehicle (e.g. person getting injured while washing or loading a vehicle) were excluded from the study. The accident victims were interviewed with a pre-tested questionnaire especially designed for this purpose. The information collected comprised of demographic characteristics of victim, day of accident, type of vehicle involved, protection used, the category of road users, use of alcohol, and the site of injury. Statistical analysis was done using proportions.

Observation

Table I. Age and sex distribution of Road Traffic Accident (RTA) victims

Age Group	Males		Females		Total	
	No.	%	No.	%	No.	%
0 – 19	5	15.6	1	12.5	6	15
20 – 39	14	43.8	4	50	18	45
40 – 59	9	28.1	2	25	11	27.5

60 and above	4	12.5	1	12.5	5	12.5
Total	32	100.0	8	100.0	40	100.0

Out of 40 RTA victims, 80% were males. **Table I** shows the age and sex distribution of RTA victims. Majority i.e. 45% of victims belonged to the age group of 20-39 years. The next highest victims were from 40-59 years. This pattern was seen in both the sexes.

Table II. Educational status of RTA victims

Education	Frequency	
	No	%
Illiterate	8	20.0
Primary School	4	10.0
High School	7	17.5
Intermediate	7	17.5
Graduate and above	13	32.5
Not applicable	1	2.5
Total	40	100

Table II describes the educational status of the RTA victims. The highest proportion i.e. 32% of accident victims were graduates and above. Almost an equal percentage (17.5%) of victims had either high school education or intermediate education.

The highest number 21 (52.5%) of victims was reported on Sundays followed by Saturday i.e. 15% and accident rate was equal on Monday and Friday (7.5%). The categories of road users involved in these accidents were occupants of different vehicles (47.5%), drivers (37.5%) and pedestrians (15%).

There were different types of vehicles that were involved like 24 (60%) were two - wheelers, followed by 8 (20%) were bicycles or rickshaws and rest were cars, jeep and 3-wheelers.

The most common anatomical region injured was head and neck region including face (30%), followed by fractures in lower limb (15 %). Most (32.5%) of them had injuries in multiple sites. During accident many of the injured people i.e. 14(35%) had helmets with them but were not using it at the time of accident. Six (15%) of the RTA victims were under the influence of alcohol.

Discussion

Forty RTA cases were reported from a private hospital in Bhubaneswar. The accident was four times more in males than in females. This may point towards that females either are more cautious while driving or they may prefer staying indoors. The highest percentage (45 %) of these were in the age group of 20-39 years. Similar findings were observed in other studies^{1,2,3}. A higher number of cases in this age group can be explained on the basis that this is the most active period of life during which there is a tendency to take risk.

In this study, the highest proportion i.e. 32% of accident victims were graduates and above. In another study in Nepal, equal percentage (23%) of victims were either illiterate or had had only primary-level education⁴. It can be explained in this study these graduates are probably more independent and own their vehicle. But to establish a statistical relationship, a study with larger sample is necessary.

In the present study the highest number 21 (52.5%) of victims was reported on Sundays followed by Saturday i.e. 15%. Since it is a no working day, more number of people tend to have recreation and this results in higher accidents on these days. Many studies have shown RTA more in weekends than during weekdays^{2,3}. The possible reason for highest number of victims as occupants of the vehicle (47.5%) is that they were not prepared for the accident.

There were (60%) two - wheelers, followed by (20%) were bicycles or rickshaws and rest (20%) comprised of 3 – wheelers, cars, jeeps or vans. Rough driving, overtaking at wrong time and callous attitude towards traffic rules could have been the reason for these accidents. In the Nepal study buses (31.4%), trucks (12.3%) and bicycles (11.3%) were vehicles commonly involved in RTAs⁴

This study suggests 35% had no protective gear like helmet and it was seen that 30% had injuries in head and neck region. Although there is a law for use of helmet in Bhubaneswar, this trend is not very encouraging. In another study in Pondicherry, none of the accident victims used protective gear.⁵

In this study 15% were under the influence of alcohol which is a higher proportion than 4.6% reported by others³.

Conclusion

This study points out some important findings in our set up like use of helmet should be implemented more through health education messages in addition to strict implementation of laws. Prompt and easily accessible ambulance services should be available. More and more studies on this aspect should be taken up in near future, so that a strong data base can be created.

References

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