A Study on the Socio-Demographic Profiles of Road Traffic Accident Cases Attending a Peripheral Tertiary Care Medical College Hospital of West Bengal

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ABSTRACT

BACKGROUND
A road traffic accident (RTA) is any injury due to crashes originating from, terminating with or involving a vehicle partially or fully on a public road. Increased mechanisation and improved socio-economic condition of the people in developing countries like India leads to increased use of motor vehicles, disproportionate to the increase in the number of roads. We wanted to assess the socio-demographic profile of road traffic accident victims and study the antecedent factors influencing the road traffic accidents.

METHODS
This is an institution based descriptive, cross-sectional study, conducted among 114 patients.

RESULTS
Maximum numbers of the victims, 33.32 % (N = 38) were in the age group of 21-30 years followed by 26.31 % (N = 30) in the age group of up to 20 years, mean age of the victims was 29.53 ± 13.85. Majority of the victims, 70.05 % (N = 80) were on motorcycles, and 26.32 % (N =30) of the victims were alcoholic at the time of accident. Majority of the victims, 92.86 % (78 out of 84), among the motor-cycle riders, four-wheeler drivers, and front seat passengers had not used any safety measures at the time of accident.

CONCLUSIONS
Road traffic accidents emerged as the major epidemic of non-communicable disease, holding a major share of mortality and morbidity data all over the world, majorly among the young productive portion of the population. It was evident from the study that the majority of victims were young adults, from lower socio-economic background, and rural residents. So, lack of proper information and consciousness regarding road safety rules and measures are definitely the important aetiology behind this epidemic. Almost two third of the cases were among the bikers in the present study, which is pointing out the need of focusing on the road safety rules related to bikers by the road traffic authority.

KEYWORDS
Alcoholic Intoxication, Motor Vehicle, Road Traffic Accidents, Tertiary Care Centre
BACKGROUND

A road traffic accident is any injury due to crashes originating from, terminating with or involving a vehicle partially or fully on a public road. It is projected that road traffic injuries will move to the third position by the year 2020 among leading causes of the global disease burden. According to data published by World Health Organization (7th December 2018) approximately 1.35 million people die each year due to road traffic accident, and most vulnerable road users are pedestrians, cyclists and motor-cyclists.

Increased mechanisation and improved socio-economic condition of the people in developing countries like India leads to increased use of motor vehicles, disproportionate with the increase in the number of roads. Added by the factors like poor consciousness among the people about road safety measures, lack in enforcement of road safety rules and delay in reaching health care facilities, morbidity and mortality due to road traffic accident show an alarming rise in magnitude in recent times. With 1% of total motor vehicle of the world, India is having 6% of total number of RTA cases worldwide, which eventually costs a major portion of health expenditure by union and state governments.

The present study was contemplated with the search for socio-demographic profile of the victims of RTA and studies the antecedent factors influencing the road traffic accidents with an ultimate goal of searching a social pathology of this emerging epidemic.

METHODS

It was an institution based descriptive study, cross-sectional in design conducted among patients admitted with a history of RTA in the hospital to assess socio-demographic profiles of road traffic accident victims and to study the antecedent factors influencing the road traffic accidents. The present study was conducted after obtaining ethical clearance from institutional ethics committee in a tertiary care and teaching hospital in Eastern India, catering mainly rural and semi urban population.

Sampling Technique & Sample Size

Convenience sampling technique was used. On review of hospital data for last two month, an average 5 road traffic accident patients were admitted at general surgery and ENT ward per day. Data was collected one day in a week among the study participants. Duration of the study was 6 months from 2019 July to 2019 December, so the sample size was 4×26 = 104 (6 months = 26 weeks). Finally, the study was conducted among 114 patients.

Inclusion Criteria

All victims of road traffic accident admitted at general surgery and ENT ward of a tertiary care hospital.

Exclusion Criteria

Patients who did not give their consent for the study.

Study Tool

The pre-designed interview schedule was developed in regional language (Bengali) from the different studies and modified according to the objectives and context of the study. The interview schedule was pre-tested among 31 victims of traffic accident cases admitted at a different peripheral government medical college and hospital.

Data was collected by interview method from the victim and relatives. Consent was obtained from the study subjects after explaining the study objectives and procedures and information regarding their right to refuse to participate at any point of the study.

Study variables were age, sex, education, occupation, resident, socio-economic status, position of victim at the time of accident, spot of accident, grievous injury, alcoholic, safety measures and driving license.

Statistical Analysis

Data was compiled on Microsoft Excel worksheet. Data was analysed using Statistical Package for Social Science (SPSS) statistical software program version 20 (IBM, Chicago, USA). The categorical variables were analysed by proportions while the continuous ones by means and standard deviations.

RESULTS

Maximum numbers of the victims, 33.32 % (N = 38) were in the age group of 21-30 years followed by 26.31 % (N = 30) in the age group of up to 20 years and above 60 years were 1.74 % (N = 2), mean age of the victims was 29.53 ± 13.85. Majority of the victims were males 77.22 % (N = 88) and around one fourth of the victims, 22.78 % (N = 26) were female. 68.43 % (N = 78) of the victims were form rural area, which may be due to the location of the hospital catering mostly rural population. Most of the victims, 49.11 % (N = 56) were educated up to primary level followed by 24.62 % (N = 28) at secondary level.

29.81 % (N = 34) of the victims were businessman followed by 27.31 % (N = 30) semi-skilled labour and 25.62 % (N = 28) unskilled labour. Maximum number of victims, 54.41 % (N = 62) were in the class II of socio-economic class in the modified B. G. Prasad scale followed by 22.11 % (N = 26) class I and 20.12 % (N = 24) class III and no one in the socio-economic class V. (Table 1)

Majority of the victims, 70.05 % (N = 80) were in motor cycle [both driving seat 33.31 % (N = 38) and back seat 36.74 % (N = 42)] at the time of accident followed by pedestrians 12.31 % (N = 14) and cyclists 10.51 % (N = 12).
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Majority of the victims, 92.86% (78 out of 84), among the motor-cycle riders, four-wheeler drivers and front seat passengers had not used any safety measures at the time of accidents. (Table 3)

| Characteristics               | Number (%)          |
|-------------------------------|---------------------|
| Age median (IQR) 28.00 (19.75-40.00) in years | ≤ 20 30 (26.31) |
|                               | 21-30 38 (33.32)   |
|                               | 31-40 22 (19.32)   |
|                               | 41-50 16 (14.00)   |
|                               | 51-60 6 (5.31)     |
|                               | > 60 2 (1.74)      |
| Sex                           | Male 88 (77.22)    |
|                               | Female 26 (22.78)  |
| Resident                      | Urban 36 (31.57)   |
|                               | Rural 78 (68.43)   |
| Education                     | Illiterate 6 (5.32) |
|                               | Primary 50 (43.91) |
|                               | Secondary 28 (24.62) |
|                               | Higher secondary 6 (5.32) |
|                               | Graduate and above 18 (15.73) |
| Occupation                    | Unskilled labour 28 (25.62) |
|                               | Semi-skilled labour 30 (27.31) |
|                               | Business 34 (29.81) |
|                               | Service 6 (5.31)   |
|                               | Homemaker 10 (8.73) |
| Socio-economic status         | Class I (≥ 7000) 26 (22.11) |
|                               | Class II (3504-7000) 62 (54.41) |
|                               | Class III (2102-3503) 24 (20.12) |
|                               | Class IV (1051-2101) 4 (3.46) |

Table 1. Background Characteristics of the Study Participants (% = 114)

| Characteristics               | Number (%)          |
|-------------------------------|---------------------|
| Position of victim at the time of accident | Motorcycle driving 38 (33.31) |
|                               | Motorcycle back seat 42 (36.94) |
|                               | Four-wheeler driving 2 (1.81) |
|                               | Four-wheeler passenger front seat 2 (1.81) |
|                               | Four-wheeler back seat 4 (3.62) |
|                               | Cyclist 12 (10.51) |
|                               | Pedestrian 14 (12.31) |
|                               | National highway 22 (19.32) |
|                               | State highway 54 (47.41) |
|                               | Local city road 18 (15.75) |
|                               | Local village road 20 (17.52) |
|                               | Grievous injury 66 (57.87) |
|                               | No 48 (42.13)      |

Table 2. Characteristics of the Road Traffic Accident Victims at the Time of Accident (% = 114)

| Characteristics               | Number (%)          |
|-------------------------------|---------------------|
| Alcohol                       | Yes 30 (26.32)      |
|                               | No 84 (73.68)       |
| Driving license               | Yes 34 (29.76)      |
|                               | No 12 (10.53)       |
|                               | Not applicable 68 (59.61) |
| Safety measures use           | Yes 8 (7.00)        |
|                               | No 78 (68.44)       |
|                               | Not applicable 28 (24.56) |

Table 3. Factors that Contribute to Road Traffic Accidents (% = 114)

Accident is considered as a major epidemic of non-communicable disease in 21st century.11 As per the World Health Organization (WHO) bulletin, 90% of the total road traffic deaths occur in underdeveloped and developing countries.12 It has emerged out as one of the major cause of mortality as well as morbidity in young adults (most productive population from economic point of view) worldwide.13 Treatment of road traffic trauma cases comprises a major share of health care expenditure of the country, ultimately adding an economic burden of the country. The burden is further added by the cases of lifelong disabilities as a result of accident. But in many aspects these incidences can be prevented. Most of the similar studies from different area of India reported the same findings regarding the high incidences among younger population.

DISCUSSION

Figure 1. Number of Victims Having Grievous Injury

Figure 2. Number of Victims Having Driving License
Road traffic accidents emerged as the major epidemic of non-communicable disease in the present century, holding a major share of mortality and morbidity data all over the world, majority among the young productive portion of the population. Apart from these, it also captures a considerable proportion of government health budget due to treatment of the victims. Both the factors ultimately affect the economy of any country. But the responsible factors are preventable in most of the aspects. It was evident from the study that the majority of victims were young adults, from lower socio-economic background, and rural residents. So, lack of proper information and consciousness regarding road safety rules and measures are definitely the important aetiology behind this epidemic. Almost two thirds of the cases were among the bikers in the present study, which is pointing out the need of focusing on the road safety rules related to bikers by the road traffic authority. Another serious issue in this regard was the reluctant attitude of the people regarding the use of safety measures on road. This must be controlled by strict implementations of the acts and rules of road safety by the concerned authority.

Data sharing statement provided by the authors is available with the full text of this article at jebmh.com. Financial or other competing interests: None. Disclosure forms provided by the authors are available with the full text of this article at jebmh.com.

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