

Original Article:

Epidemiology of Road Traffic Accident observed in Bangladesh: A Retrospective Study

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ABSTRACT

Background: Road Traffic accident are more than responsible to loss of life, disabilities and induce multiple injuries of many people every year. It increasing at an alarming rate which causes increase of both morbidity and mortality. **Objectives:** To explore the epidemiology of Road Traffic Accident in selected area of Bangladesh. **Methods and Materials:** A descriptive type of cross-sectional study was conducted from a retrospective record review which was performed in the Department of Forensic Medicine and toxicology at Shaheed Suhrawardy Medical College over one year from January 2023 to December 2023. A total of 163 cases of road traffic accident were collected from the department of Forensic Medicine & Toxicology with the verbal consent from the reporting doctors. The data collection technique and approval was taken from ShSMC ethical clearance committee. **Result:** A total number of 7902 people were killed in 6261 road traffic accidents in 2023 according to Bangladesh Jatri Kalyan Samity (BJKS). Among a total of 163 cases were enrolled in Shaheed Suhrawardy Medical College morgue. Among the study the majority 21.23% were in the group of 22-27 years of age. Male constituted of 79.37% of total victims. The majority of total numbers of accidents took place in the month of January 22.37%. Majority 98.16% of injuries due to abrasion and bruise in post mortem cases. **Conclusion:** In conclusion incidence of road traffic accident increases day by day. Common victims are the people of age group of 22-27 and males suffered most. Preventive measures should be taken and awareness through seminar, rally, symposium, various online media and social platform.

Key words: Road traffic accidents, Deaths, Victim, Abrasion and bruise

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Introduction

Road traffic accident causes major epidemiological problems not only in our country but all over the world. In our country it not only disability or mortality of a person but associated with creating

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disability of a family. Other dependent family members are also affect such accident.¹ According to world health organization about 1.35 million lives are lost every year around the world of which 2/3rd mortality is in developing countries.² Worldwide estimated 10-15 million persons are injured daily. This represents one death in every 50 seconds and one injury in every two seconds around the world. Road traffic crashes cost most countries 3% of their gross domestic product.³ Nearly 90% Road Traffic Accident in the world occurring in low- and middle-income countries. Causes of vehicular accident are 1) Fault of the victim 2) Fault of the driver 3) Fault of vehicle 4) Fault of another vehicle not involved in the accident 5) Bad road condition 6) Wrong signaling. Causes related to driver are 1) Lack of driving skill 2) Lack of knowledge of mechanism of vehicle 3) Alcoholism 4) Drug abuse 5) Disobedience of traffic rules 6) Defects in visual and auditory system 7) Heart disease and epilepsy 8) Physical and mental exhaustion. 9) Overloading passenger. RTA occurs when a vehicle collide with another vehicle, pedestrian, animal, stationary barrier like signal pole or tree. Road hypnosis is a physical condition that most drivers are unaware of. Road hypnosis starts 2.5 hours after getting on the road, the eyes of the hypnosis driver is open, but the brain does not record and analyze what the eye sees. The most common causes related to vehicle are 1) Sudden break failure 2) Sudden tire puncture 3) Large number of old, poorly maintained vehicles 4) Ignoring the necessity of periodic checkup.⁴ A total of 6,929 accidents occurred across roads, rail tracks and waterways in the year of 2022, resulting in 8,505 fatalities and 10,999 injuries according to the annual road accident report of Bangladesh Jatri Kalyan Samity.⁵ Motorcycle accidents contributed the most with 2,031 incidents resulting in 2,152 deaths and 1,339 injuries.⁶ The common injuries in road traffic accidents abrasion, bruise, laceration, fracture of the bones, dislocation of the joint, head injury, trauma to the chest and abdomen, rupture of the viscera's or vital structures, crush syndrome.⁷

Methodology

A descriptive type of cross-sectional study was conducted from a retrospective record review which was performed in the Department of Forensic Medicine at Shaheed Suhrawardy Medical College, Dhaka over one year from January 2023 to December 2023. A total of 163 cases of road traffic accident were included in the current study. The relevant data collected from the department

with the verbal consent from the reporting doctors. Data were compiled and presented by a descriptive frequency and percentage in table no 1-4. The data collection technique and approval was taken from ShSMC ethical clearance committee.

Objectives of Autopsy

- 1) Identification of victims.
- 2) Find out whether cause of death as a result of trauma or other natural causes,
- 3) Identification of driver and detection of any disease or driver may or may not under the influence of alcohol.
- 4) To reconstruct the accident.

Result

The present study showed data of victims of RTA were collected from ShSMC morgue. Table-1 shows the occurrence of RTA in accordance to months in which most accidents were occurred in the month of January 33, August 18 and December 17 of cases. This time pattern mostly may be due to people tends to vacation time visit at different places of Dhaka and their hometown.

Table-1: Month wise reported case of RTA (n=163)

Month wise reported cases of RTA in 2023 at ShSMC Morgue	Number of death	Percentage
January	33	20.24
February	04	2.45
March	07	4.29
April	13	7.90
May	11	6.74
June	17	10.42
July	11	6.74
August	18	11.04
September	09	5.52
October	09	5.52
November	14	8.58
December	17	10.42

Table- 1 showed that most RTA month of January 33 (20.24%)

Table-2 Distribution of victims of RTA by Gender (n=163)

Gender	Frequency	Percentage
Male	129	79.15%
Female	34	20.85%
Total	163	100

Table-2 showed sex distribution of post mortem cases revealed that two-third (79.15%) were male and one third (20.85%) were female.

Table-3 Distribution of age group of RTA post mortem cases (n=163)

Age group (year)	Frequency	Percentage
Less than 10	00	00.00
10-15	09	05.52
16-21	17	10.43
22-27	43	26.38
28-33	16	09.82
34-39	15	09.20
40-45	33	20.25
46-51	09	05.52
52-57	08	04.91
58-63	07	04.29
64 and above	06	03.68
Total	163	100

Table-3 showed the distribution of age group of RTA postmortem victims. Age incidence was higher 26.38% in 2nd decades 22-27 age group.

Table-4 Distribution of injuries on the body of RTA post mortem cases. (n=163)

Injuries in the body	No of cases	Percentage
Abrasion and bruise	160	98.16
Skull and Scalp	142	87.12
Brain and Spinal cord	126	77.3
Chest	93	57.06
Abdomen	67	41.1
Pelvic region	89	54.6
Total	163	100

Table-4 It was found that all most all cases suffered from multiple type of injuries, bruise and abrasions

98.16% were found majority cases. There are also injury to scalp & skull 87.12%, intracranial & intra-spinal injuries 77.3%) Chest injuries 57.06%, abdominal injuries 41.10% and pelvic injuries 54.60%.

Discussion

Current govt. gives emphasis over development of roads and highway. There has been alarming rise of RTA fatalities now a days. According to WHO report globally RTA costs 1.3 million deaths per year.⁸ The RTAs cause mechanical trauma, resulting in morbidity, disability, and even mortality. The victim must admit in the hospital as early possible to prevent its fatal complications and thus reduce morbidity and mortality.

A wide range of male gender 79.15% was found exposed to RTA noticed in our study, this can be explained on the basis that male are more exposed to road for working purpose. Similar findings were also observed in other study at Pakistan but in India the male female ratio was same.⁹

It was observed in our study that most of the incidence of RTA occurred in the month of January 20.24% because of religious and national festivals. Similar type of findings was noted by the authors of Thailand.¹⁰

It has been observed that the incidence of RTA was high 26.38% in the age group 22-27 year, which are similar to the different studies in Bangladesh and India.¹¹⁻¹³

In this study, almost all the cases were suffered from multiple types of injuries. Bruise and abrasion 98.16% were most common type of injuries which are similar to the studies of India.¹⁴⁻¹⁶

In contrast to Sri Lanka annul death due to RTA is 1.25 million per year.¹⁷ In Bangladesh RTA are major causes of hospital admission at primary and secondary facilities.¹⁸ According to WHO, the economic cost of RTA in developing country is 2-3% of country's GDP.¹⁹

Limitations

Purposive selection of the study place, small sample size and information collected from record books supplied by the department of Forensic Medicine and Toxicology, the findings which we revealed might not be fully representative in contrast to comprehensive scenario of RTA in Bangladesh.

Ethical Considerations

The confidentiality of cases, information was maintained, when the data were obtained from record books of the department of Forensic Medicine and Toxicology, Shaheed Suhrawardy Medical College, Dhaka, Bangladesh.

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Recommendation

Measure should be taken to improve current situation-

- 1) Modernization of licensing process to enhance the skillfulness of drivers.
- 2) Fitness of drivers and fitness of vehicle strictly maintained.
- 3) Awareness campaigns and enforcement of law for drivers, vehicle occupants and pedestrian.

Conclusion

Preventive measures should be taken and awareness through seminar, rally, symposium, various online media and social platform. Mortality and Morbidity can be minimized by prompt treatment and effective referral system. It needs combined effort of both government and nongovernmental organization. It can be reduced by strict maintenance of traffic rule, ensuring good road condition, use of seat belt within car, maintaining of fitness of vehicles, standardization of licenses and avoidance of alcohol during driving.

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