

# Profile of Road Traffic Accident Cases Attending in Combined Military Hospital Ramu, Cox's Bazar

A S M Zulfiquer Ali<sup>1\*</sup>

## 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. It is one of the leading causes of global disease burden. Road traffic accidents, injuries and fatalities are causing great concern to the community in Bangladesh. To find out the characteristics of road traffic accident cases attending in Combined Military Hospital Ramu, this research work was planned.

**Materials and methods:** This descriptive cross-sectional study was conducted at Combined Military Hospital Ramu. All the road traffic accident victims attending at Medical Inspection room (MI Room) of CMH Ramu from April 2019 to September 2019 irrespective of age and sex. All the victims entered in the 'special event statement register'. There were 119 Road Traffic Accident victims enlisted and selected by purposive type of sampling technique.

**Results:** Mean age of the respondents was  $28.77 \pm 5.14$  years. Out of 119 respondents, majority (26.9%) were in the age group of 31-40 years. Among the victims, 99.2% were motorized accident. Majority (33.6%) were due to Bus or Minibus accident, 43.8% victims were motor vehicle passenger. The highest 49.6% victims were passenger, followed by 31.9% were pedestrian. Regarding pattern of injury, majority 39.5% victims sustained Laceration and Cut injury. Majority of the accident (50.9%) happened in the main road, 33.6% happened during Noon (1000-1400 hrs) time, followed by 27.7% at afternoon (1400-1800 hrs) time.

**Conclusion:** Among the victims, most of them were male and majority of them were within the active age group. Most of accidents by motorized vehicles by Bus or minibus. Pedestrians and motor vehicle passengers were most vulnerable. Cut injury and Laceration were the most common type of injury. Main roads were the commonest site and accident occurred more during the day.

**Key words:** Military Hospital; Motor vehicle; Profile of road traffic accident.

## Introduction

Road Traffic Accident (RTA) is any vehicular accident occurring on the roadway i.e. originating on, terminating on, or involving a vehicle partially on the roadway.<sup>1</sup> Road traffic accidents are a human tragedy which has an immeasurable impact on the families affected.<sup>2</sup>

The road safety situation in Bangladesh has been deteriorating with increasing number of road accident deaths, largely as direct consequences of rapid growth in population, motorization, urbanization and lack of investment in road safety. Current road accidents and injury statistics reveal a deteriorating safety situation in

Bangladesh. In recent past, a very few numbers of studies conducted by government and non-government organizations to find out the causes, characteristics and the safety remedies as well. Bangladesh is a very densely populated and low income developing country of third world with the 160 million inhabitants living in an area of 144000 sq.km. About 30% of the population is living in the urban areas and more crucially dependent on daily use of transport. The rate of urbanization in Bangladesh over the last decade has been between 7%-8%, a growth, which is alarmingly high when compared with other developing countries and thus this is expected to conversion of rural to urban area up to 50% by the year 2025. The process of rapid urbanization in conjunction with socio-economic parameters have resulted in enormous road traffic accident problems.<sup>3</sup>

According to WHO report on Road traffic injury June'2021, Worldwide it was estimated that approximately 1.3 million people die each year as a result of road traffic crashes. Between 20 and 50 million more people suffer non-fatal injuries, with many incurring a disability as a result of their injury. In response to a growing concern about road traffic

1. Assistant Director of Medical Service (ADMS)  
10 Infantry Division, Ramu Cantonment, Cox's Bazar.

\*Correspondence : Colonel (Dr) A S M Zulfiquer Ali  
Cell : +88 01711 46 33 03  
Email : zulfiquer19@gmail.com

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injuries, WHO Director General has, for the first time in the history of WHO, devoted a WHD (World Health Day) specifically to road safety. Each year road traffic injuries take the lives of 1.2 million men, women and children around the world, and seriously injure millions more.<sup>4</sup>

The world is moving fast with new mechanized transport media. This fastness saves time, increases skill but gives crucial fate of increasing morbidity and mortality, Due to shortage of skill manpower paramedics, management of RTA victims continues to be problematic. Some effective service delivery system is to be evolved to provide a better service to the road accident victims.<sup>5</sup>

Study at Research Institute for Handicapped and Disabled (RIHD) shows that among all the traumatic cases road traffic accidents are the commonest. About 68% of the casualties take place in urban areas. Pedestrians are more vulnerable group accounting for half of all accidents. Heavy vehicles accounted for 81% of highway casualties and about 28% in the urban areas. On the other hand, light vehicles and three wheelers accounts for about 19% of highway casualties and about 72% in the urban areas. Loss of control is marked in three wheeler vehicles. It is responsible for about 15% of urban casualties.<sup>6</sup> The highways running across the capital and other townships also contribute major portion of road accidents.<sup>7</sup>

Evaluating the high incidence of Road Traffic Accidents in Bangladesh, the principal determinants of accidents which are taken into task are adverse roadside environment, poor detailed design of junctions and road sections, excessive speeding, overloading, dangerous overtaking, reckless driving, careless of road users, failure to obey mandatory traffic regulations, variety of vehicle characteristics and defects in vehicles. Others include a low level of awareness of the safety problem by policy makers, safety rules and regulations, inadequate and unsatisfactory education and traffic law enforcement and sanction etc.<sup>8</sup> Road traffic accidents are major yet neglected public health problem in developing countries. Trends in motorization indicate an increase in road traffic injuries and ranked third in the order of burden of disease. There are human factors, product and environmental factors related to injuries. Most of them are preventable.

The study will help to increase the knowledge about the determinants of road traffic accident cases and to develop counter measures to deal with the emergency management of road traffic accident victims.

### Materials and methods

This descriptive cross-sectional study was conducted at CMH Ramu with a view to find out certain determinants of RTA victims. A total of 119 Road traffic accident victims attending to CMH Ramu for treatment from April 2019 to September 2019 were taken for the study. Data were collected through questionnaire. Attendants of the patient were interviewed when patient was seriously ill. Confidentiality was duly ensured to all participants and informed consent was obtained. After collection data were scrutinized, edited and verified for its consistency. Data were processed and analyzed by computer software SPSS and expressed in frequency, percentage and mean standard deviation.

### Results

Mean age of the respondent was  $28.77 \pm 5.14$  years. Out of 119 respondents, majority (26.9%) were in the age group of 31-40 years followed by 26.1% were in the age group 21-30 years. Most of the respondents were Muslims (96.6%). Majority (42.9%) of participants were qualified in SSC or equivalent level of education. Regarding occupational status, 45.4% were military personnel, 27.7% were Business man, House wife, day laborer etc, Civil service holders were 14.3%. Among the victims 99.2% were motorized accident. Majority, 33.6% were due to Bus or Minibus accident, 43.8% victims were motor vehicle passenger. The highest 49.6% victims were passenger, followed by 31.9% were pedestrian. Regarding pattern of injury, majority 39.5% victims sustained Laceration and Cut injury. Majority of the accident (50.9%) happened in the main road, 33.6% happened during Noon (1000-1400 hrs) time, followed by 27.7% at afternoon (1400-1800 hrs) time.

**Table I** Distribution of respondents by age and sex

Age group (In years)	Male		Sex		Total Percentage	
	n	Percentage %	Female n	Percentage %	n	%
01-10	05	4.2	02	1.7	07	5.9
11-20	06	5.0	02	1.7	08	6.7
21-30	25	21.0	06	5.0	31	26.1
31-40	28	23.5	04	3.4	32	26.9
41-50	17	14.3	05	4.2	22	18.5
51-60	15	12.6	03	2.5	18	15.1
61-70	01	0.8	0	0	01	0.8
Total	97	81.5	22	18.5	119	100.0

Mean  $\pm$  SD =  $28.77 \pm 5.14$  years.

**Table II** Distribution of respondents by socio-demographic characteristics and other concerned

Characteristics		Frequency	Percentage (%)
Religion	Muslims	115	96.6
	Hinduism	04	3.4
	Illiterate	13	10.9
	Class I-V	17	14.3
	Class VI-X	12	10.1
	SSC/Equivalent	51	42.9
	HSC/Equivalent	13	10.9
	Graduation and above	13	10.9
	Total	119	100.0
Occupational status	Military	54	45.4
	Civil services	17	14.3
	Driver and Helper	03	2.5
	Student	12	10.1
	Others (Business, House wife etc)	33	27.7
Class of vehicle	Motorized	118	99.2
	Non-Motorized	01	00.8
Type of vehicle	Bus/Minibus	40	33.6
	Car/Jeep/Taxi	32	26.9
	Microbus/Pickup	11	9.2
	Motor Bike	16	13.5
	Auto rickshaw	15	12.6
	Truck/Covered van	02	1.7
	Train	02	1.7
	Rickshaw/Van	01	0.8
	Total	119	100.0
Type of victims	Pedestrian	38	31.9
	Motor vehicle passenger	52	43.8
	Motor vehicle driver	22	18.5
	Non-motor vehicle passenger	06	5.0
	Rickshaw puller	01	0.8
	Total	119	100.0

**Table III** Distribution of RTA victims according to various characteristics

Characteristics		Frequency	Percentage (%)
Victims by their role	Pedestrian	37	31.1
	Passenger	59	49.6
	Driver & Helpers	23	19.3
Victims by Morbidity pattern	Abrasion	18	15.1
	Cut injury, Laceration	47	39.5
	Fracture	19	16.0
	Multiple injury	22	18.5
	Head injury	05	4.2
Others	08	6.7	
Total	119	100.0	

Victims by the place of occurrence	Level crossing	02	1.7
	High ways	35	29.4
	Main roads	60	50.4
	Lanes	22	18.5
Time of occurrence	Morning (0600-1000 hrs)	16	13.4
	Noon (1000-1400Hrs)	40	33.6
	Afternoon (1400-1800)	33	27.7
	Evening (1800-2200hrs)	24	20.2
	Mid-night (2200-0200hrs)	05	4.2
	Late night (0200-0600hrs)	01	0.8

**Table IV** Distribution of respondent by defect of driving

Defect of driving	Frequency	Percentage (%)
Over speed	82	68.9
Overtaking	33	27.7
Impatience	01	0.8
Inattention	01	0.8
Avoidance of road sign	01	0.8
Others	01	0.8
Total	119	100.0

**Table V** Association between pattern of injury with place of occurrence

Pattern of Injury	Place of occurrence					Total n (%)
	Level crossing n(%)	Highways n(%)	Main roads n(%)	Lanes n(%)		
Abrasion	0	2 (1.7)	10 (8.4)	6 (5.0)	18 (15.1)	
Cut injury and Laceration	0	11 (9.2)	29 (24.4)	7 (5.9)	47 (39.5)	
Fracture	0	6 (5.0)	8 (6.7)	5 (4.2)	19 (16.0)	
Multiple injury	1 (0.8)	12 (10.0)	8 (6.7)	1 (0.8)	22 (18.5)	
Head injury	1 (0.8)	3 (2.5)	1 (0.8)	0	05 (4.2)	
Others	0	1 (0.8)	4 (3.4)	3 (2.5)	08 (6.7)	
Total	2 (1.7)	35 (29.4)	60 (50.4)	22 (18.5)	119 (100.0)	

**Table VI** Association between type of vehicle with time of occurrences

Type of vehicle	Time of occurrences						Total
	Morning n(%)	Noon n(%)	Afternoon n(%)	Evening n(%)	Mid-night n(%)	Late night n(%)	
Train	0	0	1 (0.8)	1 (0.8)	0	0	2 (1.7)
Truck/Covered van	0	0	1 (0.8)	1 (0.8)	0	0	2 (1.7)
Bus/Minibus	7 (5.9)	14 (11.8)	9 (7.6)	7 (5.9)	2 (1.7)	1 (0.8)	40 (33.6)
Microbus/pickup	0	5 (4.2)	1 (0.8)	5 (4.2)	0	0	11 (9.2)
Jeep/Car/Taxi	5 (4.2)	15 (12.6)	6 (5.0)	6 (5.0)	2 (1.7)	0	32 (26.9)
Auto-rickshaw	2 (1.7)	2 (1.7)	9 (7.6)	2 (1.7)	0	0	15 (12.6)
Motor Bike	2 (1.7)	4 (3.4)	7 (5.9)	2 (1.7)	1 (0.8)	0	16 (13.4)
Rickshaw /Van	0	0	0	1 (0.8)	0	0	1 (0.8)
Total	16 (13.4)	40 (33.6)	33 (27.7)	24 (20.2)	5 (4.2)	1	119 (100.0)

## Discussion

The study shows that most of the RTA victims were within 21-50 years of age. Cases of 21-30 years were 26.1%, 31-40 years age group 26.9% and 41-50 years age group were 18.5%. Total they constitute 71.5% of case. In this study mean age of RTA victims was  $28.77 \pm 5.14$  years. Worldwide, the victims of RTA are the most young, energetic and productive portion of the population. According to the Road Traffic Accident (RTA) report published by Road safety cell of Bangladesh, about 70% of the accident victims are in the age group of 16-50 years, the most economically active age group.<sup>9</sup> Road traffic injuries are one of the top three causes of death for people aged between 5 and 44 years.<sup>10</sup> A study conducted in Dhaka Medical College Hospital showed that adolescent and adult comprised 86% of the RTA casualties.<sup>11</sup>

In this study it was revealed that male victims were found 4.5 times higher than female. In this study out of 119 cases male was 81.5% and female 18.5%. Males are predominant victims because males being the bread earners for the family and are involved usually in outdoor activities exposing themselves to accidents. In our society, female are less active and mostly remain indoors.<sup>1</sup> Another prospective study on RTA induced spinal injury showed the sex distribution of cases as male 82.1% and female 17.9%.<sup>12</sup>

In this study it was depicted that 96.6% of cases were Muslim, which reflected the socio-demographic characteristic of Bangladesh as well as the characteristic of cases. The major religion practiced in Bangladesh is Islam (89.7%) and minority adheres to Hinduism (9.2%), Buddhists (0.7%), Christians (0.3%) and Animists (0.1%).<sup>13</sup>

In this study it was shown that 42.9% were SSC qualified, almost half of the sample. Overall literacy rate of Bangladesh is 72.8% of 15+ populations.<sup>14</sup> Inadequate and unsatisfactory education is one of the important factors of RTA in our country.<sup>15</sup> It was observed that, almost all accidents were committed by motorized vehicles, 118 of 119, remaining vehicle was rickshaw.

Regarding involvement of different type of vehicles, this study revealed that Bus/Minibus was found high 33.6%. Remaining were Jeep/car/Taxi 26.9%. In a study it was shown that trucks, buses and minibuses were the major contributor to road traffic accident and responsible for about 75% of pedestrian fatality. It was found that in almost of 90% of road deaths in Dhaka, a bus, truck or minibus was involved.<sup>16</sup>

In relation to the type of victims this study revealed that pedestrians were 31.1%, motor vehicle passengers 49.6%, drivers and helpers 19.3%. In a study conducted by Haque MM et al, where it was shown that pedestrian related accidents are by far the greatest among all accident types.<sup>17</sup>

Regarding injury pattern, it was observed that occurrence of laceration or cut injury were 39.5%, remaining cases were abrasion-15.1%, fracture-16.0% and multiple injury-18.5%. It was observed that the commonest site of accident was main roads 50.4%; remaining were highways 29.4%, in lanes 18.5% and in level crossing 1.7%. Regarding the time distribution of occurrence of accidents it was found that 'day times' especially the 'official working hours' was more vulnerable.

In this study it was shown that most of the injuries occurred in main roads (50.4%) and remaining were at level crossing 1.7%, highway 29.4% and lanes 18.5%. Laceration or cut injury was the common injury type occurred mainly in main roads (24.4%). In this study it was revealed that maximum accidents (33.6%) occurred during Noon (1000-1400 hrs) committed by Bus/Minibus (11.8%).

## Conclusion

In this study it was shown that Road traffic injuries affect mainly male in active and productive period of life. Mean age was  $28.77 \pm 5.14$  years. Males were 4 times more prone to accident than female, thus creating enormous economic hardship due to loss of breadwinners. This study also depicted that over speed and overtaking are important determinant causation or responsible for RTA. Morbidity and disability increases medical expenditure, reduces economic productive period and decreases national income. Among the victims, most of them were male and majority of them were within the active age group. Maximum victims were SSC qualified and military services. Most of accident by motorized vehicles by Bus or Minibus. Pedestrians and motor vehicle passengers were most vulnerable. The commonest type of Injury was laceration and cut injury. Main roads were the commonest sites and during day time accidents occurred more.

## Disclosure

The author declared no competing interest.

## References

1. Ahmed KM, Hussain IB, Ahmed SR. Study of road traffic accident cases attending tertiary care hospital in Hyderabad, India, Indian Journal of Forensic medicine and Toxicology. 2018;12(1):244.

2. Chourasia Sachin, Radhakrisna KV, Rautji Ravi, DK Shivakumar. Road Traffic accident cases attending casualty in a tertiary care Hospital. South Western India, International Journal of research in Medical science. 2019;7(10):37-44
3. Hussain K M. Road Traffic Accidents. Study of risk factors. Journal of Gomal Medical College. NWFP. Pakistan. 2020;2(2):7-10.
4. World Health Day 2004. The WHO news letter on road safety. November 2003, News letter 1.
5. Karim MR, Rahman M, Hawlader MAR, Shahidullah M, Mollah AR. Fracture Patella- Outcome of Early Movement of Knee after Stable Fixation. Journal of Armed Forces Medical College. 2009;5(1):11-13.
6. Alam S Md. Characteristics of Road Traffic accident cases treated in RIHD, Sher-e Bangla Nagor' Dhaka. BAFM journal. 2003.
7. Hasib MA and Mohammad MH. Systematic review- Distribution of road traffic accident deaths by road user group: A global comparison. Traffic safety in Dhaka city. Key issues and counter measure, by journal of Civil Engineering, The institute of Engineers, Bangladesh. 2002;CE 30.
8. Shawkat Ali AMM. The economic cost of road accidents in Bangladesh. Daily Star, 18 April, 2004.
9. Mohiuzzaman Quazi, senior transport engineer, World Bank, Dhaka. Road safety and Poverty Dynamics in Bangladesh. 2016
10. Biswas NU; Road traffic injuries related to Nocimon vehicle in Bangladesh. The News letter of the Road Traffic Injuries Research Network (RTIRN). November 2009.
11. Country Health system profile, Bangladesh. World Health Report, WHO publication. 2004;4-5.
12. Awal B. A. Md, Khan AA and Haque RAFM. Analysis of conservative treatment of the thoraco-lumber spinal injury with neurological lesion- A prospective study of 36 cases, BAFM journal. 1996;XXV(2):75.
13. Bangladesh. From Wikipedia, the free encyclopedia, modified on 16 Jul 2010 at 2256.
14. Bangladesh Bureau of statistics. (Source: Directorate of Primary education, SVRS, BBS). 2019.
15. National RTA Annual Report 2008. Bangladesh Road Transport Authority, Dhaka, Bangladesh; Overview of problems, progresses, priorities and options, Accident Research Centre (ARC) Jul 2004.
16. The status paper on Road safety problems in Bangladesh. The Bangladesh country paper. Accident research centre. 2006.
17. Hoque MM et al, The road to road safety: Issues and innovative in Bangladesh. Regional Health Forum. 2004;8(1).