

## Sociodemographic Profile among the Victims of Road Traffic Accident Reported in a Tertiary Level Hospital: A Cross Sectional Observation

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### ABSTRACT

**Introduction:** Road traffic accident is an unbaiting concern of health security issues to the community in Bangladesh. Every individual RTA contributes a tragic social impact due to its morbidity or mortality associated to each family.

**Objectives:** To assess the sociodemographic profile among the victims of RTA.

**Material and Methods:** This cross sectional study was conducted in 2010 among purposively selected 126 victims of road traffic accident reported to the medical inspection room of Combined Military Hospital Dhaka. Data were collected by a structured questionnaire through the review of medical records of the patients.

**Results:** More than half (53.2%) of the respondents were in the age group of 21-40 years and 44.4% were educated up to SSC level. Majority of them (81.7%) were Male and 45.23.8% were from military service. About 27.3% of RTA occurred by truck/covered van/Bus/ minibus which was followed by Jeep/car/microbus and pickup (35.7%) and 44.4% of the affected respondents were from motor vehicle passengers which was followed by pedestrian (37.3%). Majority of the patients experienced laceration and cut injury (38.1%) which was equally followed by abrasion and fracture (15.9%). Statistically significant ( $p < 0.05$ ) association revealed between education with role of affected person and occupation with morbidity pattern.

**Conclusion:** As the victims of RTA are mainly male in active and productive period of life, so this group should be motivated.

**Key words:** Road Traffic Accident (RTA), Sociodemographic profile, Combined Military Hospital Dhaka, Tragic social impact.

### Introduction

Road traffic accident is an unbaiting concern of health security issues to the community in Bangladesh. With a very densely populated (1265 per Km<sup>2</sup>) 164 million people of Bangladesh faces many challenges including road accident that has become a major mortality stimulus due to its rapid increasing trend<sup>1</sup>. At present road accidents are regular happenings in all over the country. It is increasing day by day. The road safety situation is very severe by international standards as well. Thousands of people die every year due to street accidents. Most of the road accidents take place in the urban areas and in the highways<sup>2</sup>.

There has been an alarming rise in road accidents over the past few years. The roads in Bangladesh have become deadly. A high growth in urbanization and motorization can be identified as one of the factors leading to the higher number of incidents. Side by side, the road systems are experiencing greater congestion, physical deterioration and safety problems. According to the Road Safety Global Report (2015), Bangladesh lacks best practice legislations for all five road safety risk factors, including speeding, helmet use, drink driving, seatbelt use and child restraint use, which make the situation even worse<sup>3</sup>. Recent study finding

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by “Nirapod Sorok Chai” a platform working for passengers’ welfare reveals that in the year 2019 more than 21 people lost their lives on roads each day in Bangladesh<sup>4</sup>.

Every individual RTA contributes a tragic social impact due to its morbidity or mortality associated to each family. Many lives are nipped in the bud. Many a family loses the only earning member. Many people become crippled. According to the latest WHO data published in 2017 Road Traffic Accidents Deaths in Bangladesh reached 20,660 or 2.62% of total deaths. The age adjusted Death Rate is 15.56 per 100,000 of population ranks Bangladesh #103 in the world. The economic cost of road accidents to developing countries like Bangladesh is about 2-3% of GDP<sup>5</sup>. This problem can be solved by all out efforts from both the authority and the general mass. For a long-term solution, increasing public awareness through evidence-informed strategies, with prioritisation of road safety in national policy and rigorous enforcement of road traffic legislation, can improve road safety and decrease the number of victims of road traffic accidents in Bangladesh<sup>6</sup>.

The present study was conceived to undertake the various sociodemographic profile of the RTA victims reported to the central medical inspection room of Combined Military Hospital Dhaka. This study analyses and compares the sociodemographic characteristics with various attributes of RTA.

### Materials and Methods

This cross sectional study was conducted in 2010 among purposively selected 126 victims of road traffic accident reported to the medical inspection room of Combined Military Hospital Dhaka with an objective to assess the sociodemographic profile among the victims of RTA. Data were collected by a structured questionnaire through the review of medical records of the patients. Prior to conduct the study ethical clearance was taken from Ethical Committee of Armed Forces Medical Institute (AFMI). The questionnaire includes various sociodemographic information like age, sex, occupation, education etc., role of the victims (Pedestrian, motor vehicle passenger, motor vehicle driver), types of vehicle involved in RTA (Bus,

minibus, jeep, microbus, motorbike, pickup etc.), morbidity patterns of the victims, time and place of occurrence of RTA etc. Data processing and analyses were done using Statistical Package for Social Sciences (SPSS) version 20. Frequencies, percentage, mean and standard deviation (SD) were used for descriptive statistics. Chi square test were used to describe various association between sociodemographic characteristics with other attributes of RTA.

### Results

More than half (53.2%) of the respondents were in the age group of 21-40 years and around 12.7% were below 20 years of age. Average age of the respondents was 35.5 years with SD of 14.19 years and their age range was 4 to 60 years [Table 1]. Near about half of them (44.4%) were educated up to SSC level. Majority of them (81.7%) were Male and 45.23% were from military service. [Table 1].

**Table – I:** Sociodemographic Characteristics

Characteristics	Frequency	percentage
<b>Age of the Respondents (Years)</b>		
<20	16	12.7
21-40	67	53.2
41-60	43	34.1
<b>Mean (±SD)</b>	<b>35.50 (±14.19)</b>	
<b>Range</b>	<b>4-60</b>	
<b>Sex of the Respondents</b>		
Male	103	81.7
Female	23	18.3
<b>Educational Qualification</b>		
Below SSC	43	34.1
SSC	56	44.4
HSC	13	10.3
Graduate	14	11.1
<b>Occupation</b>		
Military Service	57	45.23
Civil Service	40	31.74
Drivers and Helper	15	11.90
Student	14	11.11

About 27.3% of RTA occurred by truck/covered van/Bus/ minibus which was followed by Jeep/car/microbus and pickup (35.7%) (Table II). About 44.4% of the affected respondents were from motor vehicle passengers which was followed by pedestrian (37.3%) and motor vehicle drivers (18.3%) (Table III). Among the respondents, majority of

them experienced laceration and cut injury (38.1%) which was equally followed by abrasion and fracture (15.9%) (Table IV)

**Table II:** Type of vehicle

	Frequency	Percent
Truck/Covered van/Bus/Minibus	47	37.3
Jeep/Car/Microbus/Pickup	45	35.7
Auto rickshaw/Tempo	16	12.7
Motorcycle	18	14.3
Total	126	100.0

**Table III:** Role of Affected Person

	Frequency	Percent
Pedestrian	47	37.3
Motor vehicle passenger	56	44.4
Motor vehicle driver	23	18.3
Total	126	100.0

**Table IV:** Morbidity Pattern

	Frequency	Percent
Abrasion	20	15.9
Laceration, cut injury	48	38.1
Fracture	20	15.9
Poly trauma	23	18.3
Head injury	15	11.9

Among the 126 respondents, 22 were pedestrian and from below SSC group and 29 were motor vehicle passenger who were educated up to SSC. It was found that there is a statistically significant association with education and role of affected person with value of  $p < 0.00$  and  $\chi^2 = 38.38$ ;  $df = 6$  (Table - V)

**Table-V:** Association with educational status and role of affected person

Educational Status	Role of person			$\chi^2$	df	p
	Pedestrian	Motor vehicle passenger	Motor vehicle driver			
Below SSC	22	18	3	38.36	6	0.00*
SSC	20	29	7			
HSC	5	4	4			
Graduation & above	0	5	9			

Among the 126 respondents, majority were from military services and sustained laceration/cut injury (21) which was followed by abrasion and fracture. Among the civil services respondents, 17 sustained laceration injuries. It was found that there is a statistically significant association with occupation and morbidity pattern with value of  $p < 0.01$  and  $\chi^2 = 24.66$ ;  $df = 12$  (Table - VI)

**Table VI:** Association between morbidity patterns with occupation of the respondents

Occupation	Morbidity Pattern					$\chi^2$	df	p
	Abrasion	Laceration, cut injury	Fracture	Poly trauma	Head injury			
Military svc	12	21	11	6	7	24.66	12	0.017*
Civil svc	5	17	6	7	5			
Driver & Helper	1	3	0	9	2			
Students	2	7	3	1	1			

## Discussion

This study was conducted to assess the socio-demographic profile among the victims of RTA reported to the central medical inspection room of the combined military hospital Dhaka. The study shows that majority (53.2%) of the RTA victims were within 21-40 years of age which was followed by 41-60 years of age. The mean age of RTA victims was 35.5 years. This finding is similar to the report published by the Road Safety Cell of Bangladesh on Road Traffic Accident which showed that about 70% of the accident victims are in the age group of 16-50 years<sup>9</sup>. Similar findings also found from the global status report on road safety 2009 by WHO<sup>12</sup>. A descriptive study conducted on RTA cases treated in RIHD showed that patients of 15-30 years constitute 48.72% and of 30-45 years constitute 29.93%<sup>13</sup>. Another study conducted in Dhaka Medical College Hospital showed that adolescent and adult comprised 86% of the RTA casualties<sup>14</sup>. A study in Dhaka conducted by DMP in 1996 concluded that the age group from 21-35, especially from 26-30 are the most vulnerable to accidents and they seem to represent the potential economic force of Bangladesh<sup>8</sup>.

We revealed that out of 126 cases male was 81.7% and female 18.3%. Almost similar finding noted in a study on 'Road Traffic Accidents; Study of risk

factors' which showed that, among the victims male were 76% and female were 24%. 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, females are less active and mostly remain indoors<sup>7</sup>. Another prospective study on RTA induced spinal injury showed the sex distribution of cases as male 82.1% and female 17.9%<sup>11</sup>.

Analyzing the 'religion' of RTA victims in the study it was found that 98.4% of cases were the believers of Islam 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 a sizable minority adheres to Hinduism (9.2%), Buddhists (0.7%), Christians (0.3%) and Animists (0.1%)<sup>15</sup>.

We revealed that out of 126 patients, 44.4% were educated up to SSC level which was followed by below SSC (34.1%). Our overall literacy rate is 51.6% of 15+ populations<sup>16</sup>. Inadequate and unsatisfactory education is one of the important factors of RTA in our country<sup>10</sup>. The educational qualification may not represent the overall road accident pictures of our country; relevant study was not available for comparison. Location of the study (CMH) and minimum qualification of soldiers (SSC) may influence the formulation above statistics.

As the study conducted in a military hospital, so in regards to the occupation the majority of the respondents were from military service.

Among the patients, 37.3% sustained accidents by truck/covered van/bus/minibus which was followed by Jeep/Car/Microbus/Pickup (35.7%). In a study conducted in Dhaka city showed 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 were involved<sup>8</sup>.

We revealed that about 44.4% victims were in motor vehicle passengers which was followed by pedestrians (37.3%). This finding was not similar to the study conducted by Hoque et al who revealed in their study in Dhaka city that pedestrian related

accidents are by far the greatest among all accident types<sup>10</sup>. This dissimilarity may be due to the fact that the study is conducted in cantonment area where the road network is such that the safety of pedestrians get high priority from the concerned authority and at the same time the amount of motorized vehicle is more in the cantonment area.

We revealed statistically significant association ( $p < 0.05$ ) between education and role of the affected patients where it showed that among 126 respondents, 22 were pedestrian and from below SSC group and 29 were motor vehicle passenger who were educated up to SSC. It may be due to the fact that majority of the patients were from military background and the minimum educational qualification for enrollment in military is SSC.

The study also revealed a statistically significant association ( $p < 0.05$ ) between occupation of the patient with morbidity pattern after RTA which showed that among the 126 respondents, majority were from military services and sustained laceration/cut injury (21) which was followed by abrasion and fracture. Among the civil services respondents, 17 sustained laceration injuries.

### Conclusion

Road traffic accidents have loomed as a serious and growing public health problem in Bangladesh. As the victims of RTA are mainly male in active and productive period of life, so this group should be motivated.

**Conflict of interest:** None.

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