

ROAD TRAFFIC ACCIDENT-RELATED INJURIES AND FIRST-AID NEGLIGENCE IN BANGLADESH

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Abstract: *The goal of this research was to examine the situation regarding road traffic accident-related injuries on national highways and first aid management in Bangladesh. It conducted a (500) semi-structured questionnaire survey of road traffic accident victims, doctors, nurses, and other government and non-governmental organization employees. According to the research, approximately 2.6 percent of victims received first aid at the accident site, 53.00 percent from government hospitals, and 21.6 percent from pharmacies. As road traffic accident victims, data indicates that about 50.2 percent failed to seek first help at government hospitals, and 20.6 percent, 27.7 percent, and 48.0 percent were subjected to first aid negligence by doctors, hospital administration, and all of them, respectively. Around 77.7 percent of respondents observed that government hospitals lacked first aid supplies. Around 72.2 percent of responders to the study possessed first-aid knowledge, whereas 27.8 percent lacked it. Therefore, 68.4 percent of respondents cited legal problems as a critical impediment to providing emergency first aid to hospital road accident victims. The study suggests that Bangladesh's first aid system is fragile and poorly managed. Additionally, this study advises some immediate initiatives for reducing complexities and hurdles and increasing people's awareness of basic first aid in the country.*

Keywords: *Accidents, Road Traffic, Public Health, Injury, Bangladesh*

Introduction

In Bangladesh, the rising incidence of road traffic deaths and injuries has become a major concern. People who have been critically injured are admitted to various medical and hospital facilities for better and more immediate care ¹. However, both public and private hospitals in South Asia, including Bangladesh, neglect to provide emergency services to traffic crash victims ². It has also been determined that many road traffic accident victims die or become permanently crippled every day due to significant delays in treatment or a lack of emergency drugs administered by skilled personnel ². According to the world health organization (WHO), around 1.25 million people die each year due to traffic accidents. Road traffic accidents are the main cause of death among people between the ages of 15 and 29. Nevertheless, it also said that 90 percent of road deaths occur in poor and middle-income nations, even though these countries own 54 percent of the world's vehicles ⁴.

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The newly approved 2030 Agenda for Sustainable Development has set an ambitious goal of reducing worldwide road traffic fatalities and injuries by 2020⁵. RHD has adopted the aims of the United Nations (UN) Decade of Action (DoA) for road safety from 2011 to 2020⁶ as part of this commitment. As part of the 2030 Agenda for Sustainable Development, the United Nations General Assembly has established two specific road safety targets. These aim to reduce road deaths and serious injuries by half by 2020 (Sustainable Development Goal-3) and provide all people with safe, affordable, accessible, and sustainable transportation systems by 2030 (Sustainable Development Goal-4) (Sustainable Development Goal-11).

The second goal is to improve public transportation, focusing on vulnerable populations such as women, children, the disabled, and the elderly. With rising traffic accident deaths, Bangladesh's road safety condition has deteriorated. According to the Bangladesh Police, approximately 19,450 road traffic accidents occurred between 2009 and 2015, resulting in 18,510 deaths and 14,442 injuries (BRTA)⁷. In 2015, a total of 2376 people died due to road trauma (RTA), 1,958 people were badly injured, and there were 2376 accidents. In Bangladesh⁸, injury-related patients filled roughly 33% of beds in primary and secondary-level hospitals⁸. The annual cost of road accidents is estimated to be 7,500 core Bangladeshi Taka (1 USD=82 BDT), or 1.5 percent of GDP.

The social tragedy associated with each life lost in traffic accidents is far more horrific than the statistics show numerically⁹. According to a study conducted in Bangladesh, many families have become impoverished due to the death or injury of an earning family member in a road traffic accident. Medical expenses, burial expenses, and a loss of family income result in lower food consumption, lower living standards, and greater debt¹⁰. A road traffic accident costs a lot of money for the family, the community, and the country. In addition, every year, a large number of workers become disabled and lose their employment opportunities, putting a strain on the economy. The World Bank, the UNDP, and the WHO have all conducted studies to determine the causes of road traffic accidents and the resulting damages. However, those studies rarely explore first aid fundamentals and the risks associated with First Aid Negligence. To close the gap, the study focused on the nature and state of road traffic accident-related injuries in Bangladesh and first-aid management systems. This study focused solely on the neglect that injured victims of road traffic accidents encounter. It also looked into the causes of such first-aid carelessness and the problems that government hospitals face, focusing on the required knowledge, trained labor, technology, and resources. As a result, the study contributes to government policymaking by identifying and removing barriers to receiving first assistance in government hospitals.

Materials and Methods

The study was carried out using a semi-structured questionnaire-based social research survey method to obtain more frequent and accurate information about road traffic accident-related injuries and first-aid management incompetence in Bangladesh. A total of 500 semi-structured questionnaire surveys were administered to hospitalized accident victims or patients and people who had observed road accidents. Hospitalized accident victims or patients, drivers, passengers, pedestrians, police, medical physicians, nurses, NGO workers, transportation professionals, medical authorities, and other relevant demographics made up the study population. The information was gathered mostly at Dhaka City's hospitals, transport terminals, and government buildings. As the nation's capital, the hospitals, bus terminals, and offices are brimming with people from across the country. As a result, the responders reflect the entire country of Bangladesh. All the

surveys were coded and entered into the IBM SPSS 20 database after the obtained data was checked and cross-checked. The study's analysis was focused on the study's objectives by highlighting the leading indicators. The term "first aid knowledge" refers to a basic level of education and treatment skills. In this study, first aid neglect is defined as a lack of genuine reaction to patients and a delay in emergency treatment.

Results

Table 1: Socio-economic background of the respondents

Socio-demographic variables	Frequency (n=500)	Percent
Age (Years)		
≤20	16	3.2
21-30	181	36.2
31-40	150	30.0
41-50	98	19.6
51-60	42	8.4
60≤	13	2.6
Mean± SD	35.19±11.026	
Sex		
Male	489	97.8
Female	11	2.2
Educational Qualification		
Uneducated	59	11.8
Primary	105	21.0
Secondary	108	21.6
Higher Secondary	58	11.6
Honors	98	19.6
Masters	72	14.4
Marital Status		
Married	359	71.8
Unmarried	137	27.4
Divorcee	4	0.8
Occupation		
Government employee	38	7.6
Private Job	215	43.0
Businessman	87	17.4
Freelancing	14	2.8
Student	87	17.4
Driver	59	11.8

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Nearly one-third of the respondents (36.2%) were in the age group of 21-30, while 30% of the total respondents were in the age group of 31-40 years. However, the mean age of the respondents was 35.19 ± 11.026 years. Most of the respondents (97.8%) were males in this study, while the rest, 2.2%, were females. More than one-fifth of the study's respondents (21.6%) have completed secondary education and almost the similar portions of the respondents (21%) have completed their primary education. Nearly one-fifth of the respondents (19%) were graduates, and close to one-seventh of the respondents (14.4%) reported completing a master's degree. Therefore, one-tenth of the respondents (11.8%) have reported being uneducated as their academic qualification. More than two-thirds of the respondents (71.8%) were married in the study, followed by 27.4% of the unmarried respondents. The remaining portion of the respondents, 0.8%, was a divorcee. Close to half of the respondents (43%) were private job holders, while government job holders were nearly one-tenth of the respondents (7.6%). Nearly one-fifth of the respondents (17.4%) were businesspersons. The students' proportions were also similar (17.4%) to a businessperson. The remaining portion of the respondents, 2.8%, were freelancers (Table 1).

Table 2: First Aid Management

Variables	Frequency (n=500)	Percent
Do they take first aid from the hospital or not?		
Yes	472	94.4
No	28	5.6
Where do they take First Aid?		
Accident site	13	2.6
Community Health Center	21	4.2
Govt. hospital	265	53.0
Private Hospital	78	15.6
Pharmacy	108	21.6
Someone's home	15	3.0
Who gave First Aid?		
General people	28	5.6
Registered Doctor	245	49.0
Nurse	100	20.0
Health worker	19	3.8
Pharmacy	95	19.0
Village Doctor	13	2.6

Table-2 demonstrates that most respondents (94.4%) took first aid from hospitals. However, the rest, 5.6% of the respondents, did not take first aid from hospitals. Above half of the respondents (53%) took first aid from government hospitals, while slightly less than one-seventh of respondents (15.6%) took first aid from private hospitals. Around one-fifth of the respondents (21.6%) took first aid from a pharmacy, followed by the least proportion of the respondents, 2.6%, who took first aid on the spots. The table also indicates almost half of the respondents, 49% took first aid from a registered doctor. One-fifth of the respondents (20%) took their elementary treatment from nurses. The pharmacists also provided primary treatment to nearly one-fifth of respondents (19.0%). Finally, the least portion of the respondents (2.6%) took first aid treatment from village doctors.

Table 3: Problems related to hospitalization Complications and Problems in the First Aid System of Bangladesh

Variables	Frequency (n=500)	Percentage
Distance of the Medical Centre from accident		
≤0.5km	15	3.0
1-3 km	246	49.2
4-5 km	58	11.6
≥5 km	181	36.2
Time is taken before hospitalization		
≤5 Minute	265	53.0
5-10 Minute	102	20.4
11-15 Minute	76	15.2
16-20 Minute	49	9.8
≥20 Minute	8	1.6
Facing problems related to vehicle		
Yes	168	33.6
No	332	66.4

Table-3 shows that nearly half of the respondents (49.2%) were far (1-3) km from the hospitals when they fell into accidents. Almost one-third of the respondents (36.2%) said that the places of the accidents were at least 5 km or more from the hospitals. However, a slight portion (3%) of them said that the places of their accidents were near the hospitals, less than half a km. Above half of the respondents (53%) said the hospitalization took less than 5 minutes. Close to one-fifth of the study's respondents (20.4%) said that it took about 5-10 minutes to hospitalize the victims. Nearly one-seventh of respondents (15.2%) said about 15-20 minutes, and a very small portion (1.6%) said about at least 20 minutes or more than this were taken to hospitalize the patient. Nearly two-thirds of the respondents (66.4%) complained about vehicle problems when they stepped up to go to hospitals. However, around one-third of the respondents (33.6%) said about not facing any problems related to vehicles during hospitalization.

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Table 4: Negligence at government hospital

Variables	Frequency (n=500)	Percent
Experience of facing negligence		
Yes	296	59.2
No	204	40.8
The allegation against whom responsible for making negligence		
Doctor	61	20.6
Nurse	11	3.7
Hospital Authority	82	27.7
All of them	142	48.0

Table-4 demonstrates that more than half of the respondents reported witnessing negligence in government hospitals. Therefore, slightly less than half of the respondents said about not facing such negligence. Close to half of the respondents (48%) complained about the whole hospital management system, and the actors were responsible. Nearly one-fourth of the respondents (27.7%) about hospital authority as responsible for negligence. Around one-fifth of the respondents (20.6%) said that doctors were responsible for negligence in providing first aid services. The rest, 3.7 % of the respondents, complained about nurses for showing negligence.

Inadquacy of Medical Kits

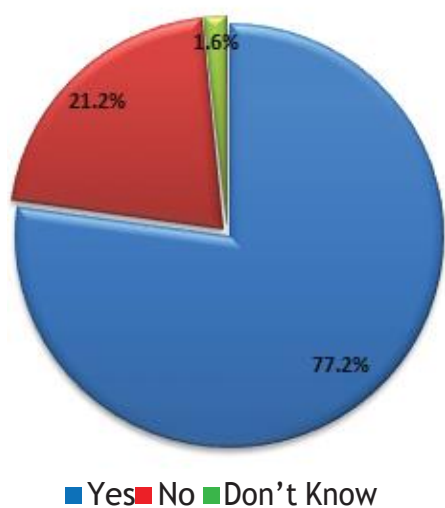


Figure 1: Respondents' opinion about the inadequacy of Medical Kits

The figure-1 shows that more than three-fourths of the respondents (77.2%) complained about government hospitals as they could not provide first aid facilities due to their inadequate medical

tools. However, slightly more than one-fifth of the respondents (21.2%) discarded the allegation of having inadequacy in medical tool facilities. A very small proportion of the respondents (1.6%) said about not have any idea about the inadequacy of medical tools in government hospitals.

Table 5: First Aid knowledge of general people

Variables	Frequency (n=500)	Percent
The status of the people's knowledge of First Aid Treatment		
Yes	251	50.2
No	249	49.8
Who taught them the first Aid treatment?		
NGO	52	14.4
Social Media	69	19.1
TV	120	33.2
Primary School	120	33.2

Table-5 indicates that nearly half of the respondents (50.2%) said they had first aid knowledge and another half (49.8) mentioned not having any idea or knowledge regarding first aid. Around one-third of the respondents (33.2) mentioned TV as their first aid knowledge source. A similar proportion of the respondents (33.2%) indicated that primary schools as the distributors of first aid information. About one-fifth of the respondents (19.1%) credited social media for disseminating first aid information. Nearly one-seventh of the respondents (14.4%) mentioned NGOs for circulating first aid information.

Table 6: Different Limitations in providing First Aid

Variables	Frequency (n=500)	Percent
Availability of first aid tools in Public transport		
Yes	13	2.6
No	480	96.0
Don't know	7	1.4
Legal complexities after a road traffic accident		
Yes	342	68.4
No	96	19.2
Don't know	62	12.4

Table-6 shows that most of the respondents (96%) have complained about not getting adequate first aid facilities in public transport. A small proportion of the respondents (2.6%) mentioned about availability of such facilities. However, the remaining half of the respondents (1.4%) indicated no knowledge about the availability of first aid facilities in public transport. Slightly more than two-thirds of the respondents (68.4%) have mentioned facing legal complications in taking first aid. Around one-fifth of the respondents (19.2%) talked about experiencing no such legal complications in taking first aid. However, one-tenth of the respondents (12.4%) mentioned not having any idea about such legal complications.

Discussion

According to the findings, the respondent's first-aid knowledge and promptness of treatment are related to their educational background, occupation, socio-economic status, and geographic area. Only around 3% of respondents (2.6%) received first assistance on the spot, with nearly half, 53.00% coming from government hospitals and roughly 21.6% from private hospitals. The findings of this study corroborate those of another study, which found that 81.7 percent of injured patients received first help, with 79 percent of service providers lacking medical training. Only 2.6 percent of service providers have a medical background. Those who received first aid from a medically trained provider, regardless of age, sex, surgical intervention, occupation, socio-economic status, geographic location, or education, were 1.3 times more likely to recover or be on their way to recovery than those who did not receive first aid from trained providers 11.

The report demonstrates several connected problems in Bangladesh's first-aid system. For example, someone who has fallen in an accident needs immediate medical attention. However, instead of receiving first aid, he or his family must flee to complete legal paperwork. The hospital is frequently hesitant to admit such seriously injured persons because of the potential for legal complications. As a result of the unnecessary delay in providing first assistance, crucial infections often occur, leading to another sickness. The study also reveals that most respondents have just rudimentary first-aid expertise. Most individuals are unaware of the importance of receiving immediate first aid following an injury. As a result, ordinary injuries have frequently been infected and developed into life-threatening diseases due to a lack of treatment. In addition, the lack of medical supplies, skilled staff, technology, and transportation issues was cited by most respondents as important issues in Bangladesh's first-aid system.

Conclusion

The present study discovered numerous types of injuries caused by road traffic collisions, including head injuries, hand fractures, and body injuries. On the other hand, those accidents frequently resulted in fatalities on the spot. The study shows that our medical institutions and health centers cannot provide emergency first aid treatment due to a lack of medical gear, drugs, and manpower. It has increased the severity of injuries and, in many cases, resulted in patients' death. The report depicts the situation at government hospitals, where most respondents blamed the whole management for patient negligence. The study also uncovers several other obstacles to receiving emergency first assistance. It was discovered that most public transportation lacks basic first aid, which is critical for quick response. The general public's lack of basic first-aid knowledge is also a major source of worry. The study advises that legal complexity be reduced, allowing victims to receive medical treatment more quickly. The study further suggests that the responsible authorities should take more thorough and sincere actions by implementing required measures and boosting awareness by incorporating first aid into textbooks, seminars, and campaigns.

Ethical statement

Before the commencement of this study, the Ethical Review Committee of BMRC, Dhaka, approved the research protocol. Therefore, verbal consent was taken from all the respondents before conducting the survey interview. The consent form was read before the respondent, and the survey interview was started upon receiving their consent. However, the right to refuse and withdraw from the study at any time was accepted. The information gathered from the respondents was kept confidential.

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