

## Original Article

# Road Traffic Accidents by 'Nasimon' and 'Karimon'-A Study in Faridpur Medical College Hospital.

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### Abstract

Road traffic accidents in Bangladesh have been rapidly increasing with huge mortality through road accidents each year. There are many causes of road accidents in recent years; one important cause is running of locally made improvised three wheelers (flat bed tricycle) in the urban areas and also on the highways, popularly known as 'Nasimon' and 'Karimon'. This prospective study was carried out in Faridpur Medical College Hospital from January through June 2011, to study the accident patients caused by 'Nasimon' and 'Karimon'. Fifty six (12%) patients were of RTA by 'Nasimon' and 'Karimon' out of a total of 468 patients admitted into our hospital during this period. Most patients (41, 73.21%) were male, highest accidents (24, 42.86%) were observed among 21-30 years age group and most victims (33, 58.93%) were belonged to low socioeconomic status. Commonest (31, 55.36%) victims were passengers of 'Nasimon' and 'Karimon' while maximum number of accidents (46, 82.14%) took place in the urban areas and on the highways. Injury pattern of victims were similar to that found in any other road accident patients. These three wheelers 'Nasimon' and 'Karimon' are run in violating of Bangladesh Motor Vehicles Act (1983) as they are totally unfit for plying on the highways. Strict surveillance against these illegal and risky vehicles on the highways and in the urban areas by law enforcing agencies is required as a measure to reduce the burden of road accidents in our country.

**Key words:** Nasimon, Karimon, RTA.

### Introduction :

Road traffic accident (RTA) causes largest number of injuries and fatalities worldwide by killing around 1.2 million people each year and injuring 50 million<sup>1</sup>. The financial costs to the communities for RTA are greater than required for treatment of any other major disease. These are the most common causes of death below the age of 50 years in developed countries. With the continuation of present trends, road traffic injuries are predicted to be the third leading contributor to the

global burden of diseases, just behind clinical depression and heart disease by 2020<sup>2</sup>. Rapid urbanization, unplanned roads and highways, incompetent traffic system, violation of traffic laws by the drivers and pedestrians, overcrowding, reckless driving etc are possible explanations for increased figure of RTA.

Bangladesh is a densely populated country where most of its people live in the rural areas. There is no traffic system on the rural roads. Now a days in our villages a new vehicular transport has become popular, named as 'Nasimon' and 'Karimon'. They are locally assembled shallow diesel engine driven improvised three wheelers. These vehicles have no licenses, fitness certificates and road permits. 'Nasimon' and 'Karimon' are used mainly on the rural roads but due to lack or incompetent traffic system and ignorance of drivers; these types of vehicles are often run on the highways where they frequently cause road accidents.

Faridpur Medical College hospital is a peripheral tertiary care hospital about 130 Kilometers from the capital city of Dhaka. It's General Surgery and Orthopaedics department regularly deals with a large number of RTA patients, many of them are caused by 'Nasimon' and 'Karimon'. The present study is designed to asses RTA victims by 'Nasimon' and 'Karimon'.

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**Photograph:** A 'Nasimon' on the highways



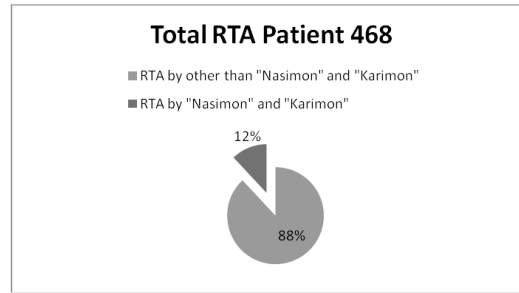
**Photograph:** A 'Nasimon' on the village road

**Materials & Methods :**

This was a prospective study carried out in the department of general surgery and orthopaedic surgery, Faridpur Medical College Hospital from January through June 2011. All RTA victims by 'Nasimon' and 'Karimon' (either passenger of these vehicles or passenger of other vehicles and pedestrian hit by 'Nasimon' and 'Karimon') who attended Faridpur Medical College hospital were included in this study. Various data were collected including demographic profile, socioeconomic status of victims, types of victims and geographical distribution of accidents. Detailed injury note and outcome of treatment were also recorded.

**Results:**

A total of 468 RTA victims were treated in the department of general surgery and department of orthopaedic surgery during the study period and of them 56 (12%) patients were of RTA by 'Nasimon' and 'Karimon' (Fig. 1). Among 56 patients of RTA by 'Nasimon' and 'Karimon', 41 (73.21%) were male and 15 (26.79%) were female. Highest incidence of victims 24 (42.86%) was observed among 21 to 30 years age group, followed by 31 to 40 years age group, 15 (26.79%) and 11-20 years age group, 7 (12.50%); Table-I.



**Figure 1:** Pie diagram showing causes of RTA

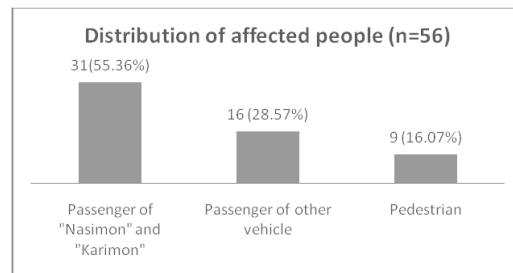
**Table I:** Age distribution of RTA patients by 'Nasimon' and 'Karimon' (n=56)

Age in years	Number of victims	Percentage (%)
Up to 10	01	1.79
11-20	07	12.50
21-30	24	42.86
31-40	15	26.79
41-50	6	10.71
Over 50	3	5.36
	56	100.00

Most victims belonged to low socioeconomic status, 33 (58.93%), followed by middle socioeconomic status, 17 (30.36%) and high socioeconomic status, 6 (10.71%), Table-II. Commonest victims (31, 55.36%) were passengers of 'Nasimon' and 'Karimon' followed by passengers of other vehicles, 16 (28.57%) and pedestrian, 9 (16.07%); Fig. 2.

**Table-II:** Socioeconomic status of affected people (n=56)

Socio-economic condition	No. of affected people	Percentage (%)
Low	33	58.93
Middle	17	30.36
High	06	10.71
	56	100.00



**Figure 2:** Distribution of affected people

Maximum number (46, 82.14%) of accidents took place in the urban areas followed by the rural areas, 10 (17.86%); Table-III. Among the cases 100% victims had multiple abrasions and bruises, laceration were present in 37 (78.72%) patients, and head injury in 21 (44.68%) patients; Table-IV. Although the maximum number (32, 57.14%) becomes completely cured without any disabilities, a total of 10 (17.86%) patients faced disability and, a total of 8 (14.29) patients were referred to specialized care centers and a total of 6 (10.71%) patients died from their injuries, Table-V.

**Table-III:** Geographic Distribution of road traffic accidents (n=56)

Area of occurrence	Number of patients	Percentage (%)
Rural areas	10	17.86
Urban areas	46	82.14
	56	100.00

**Table-IV:** Pattern of injury (n=56)

Pattern of injury	Number of patients	Percentage (%)
Multiple abrasions	56	100
Multiple bruise	56	100
Laceration	37	78.72
Intraabdominal injury	08	17.02
Chest injury	3	6.38
Head injury	21	44.68
Fracture of long bone	18	38.29
Pelvic fracture	3	6.38
Burn	2	4.25

(N.B. Same patients had multiple types of injury)

**Table V:** Outcome of treatment (n=56)

Outcome	Number of patients	Percentage
Completely cured	32	57.14
Disabled	10	17.86
Referred to tertiary care center	8	14.29
Death	6	10.71
	56	100.00

## Discussion :

Traffic accidents are a 'global tragedy' and have now been recognized as one of the significant diseases of industrialized societies and are an increasing public health economic issue in developing countries. According to world report on traffic injury prevention-2004, road traffic accidents as the 6<sup>th</sup> place (was the 9<sup>th</sup> in 1990) of a major cause of death worldwide, will rise to become the 3<sup>rd</sup> leading cause of DALYs (Disability Adjusted Life Years) lost by 2020; the 2<sup>nd</sup> leading cause of DALYs lost for low and middle income countries<sup>3</sup>. Accident rates in developing countries are often 10-70 times higher than that in developed countries. Whereas traffic accident situation is slowly improved in the industrialized societies (e.g. Australia, USA, UK etc.), most developing countries face a worsening situation<sup>4</sup>.

It is expected that over the next 10 years developing countries will experience an alarming increase in traffic injuries.

Road traffic accidents are causing a great concern regarding communications within Bangladesh. According to police report the total numbers of road traffic accidents were 40,927 in Bangladesh during the period of 2001-2010, and the number of killed person were 32,261. In 2010; 3,300 people were killed in RTA, which rose to 5928 in 2011, a rise of 80%<sup>5</sup>. Roadways' length of Bangladesh is ranked in the 21<sup>st</sup> among 219 countries (CIA, World Factbook, 2008). A total of 39% of these have access to an all season road (World Bank). The density of the total road network (km.roads/km<sup>2</sup>.land area) was 1.44 in 1999 and 1.66 in 2003 (World Bank). The main motorised vehicles are Bus, Truck, motorcycle, baby-taxi, tempo, microbus, minibus, car and jeep. Again the non-motorised vehicles are bicycle, rickshaw, push cart and animal drawn carts. New types of locally made vehicles carry much attention in recent years as they are regularly causing RTAs.

For the last one decade, these types of vehicular transport have become popular in rural areas of Bangladesh particularly in its northern part. They are named as 'Nasimon', 'Karimon', 'Vatbhati' and 'Alamsadhu' in different areas of this country (called 'Nasimon' and 'Karimon' in Faridpur District). These ingenious vehicles are innovated by the rural talents. They are locally assembled improvised three wheelers (flat bed tricycle) run by shallow diesel engine, a device for irrigating arable lands. They are widely used for carrying goods and passengers in the rural areas. It has high centre of gravity and inadequate breaking device. These vehicles have no licenses, fitness certificates and road permits. The drivers of these vehicles are often illiterate, untrained and under aged. 'Nasimon' and 'Karimon' are used mainly in the rural roads but due to lack or incompetent traffic system and ignorance of drivers, these types of vehicles are often runs on the highways and in the urban where they frequently cause RTAs. Although no broad based nationwide data were available regarding the total number of these vehicles and the total number of casualties they cause, it is frequently seen in the dailies newspaper or in other electronic media in our country that they are involved in RTAs in many areas.

Faridpur Medical College Hospital is situated close to the Dhaka-Barisal and the Dhaka-Khulna highways. Its general surgery and orthopedics department regularly deals with a large number of road accident patients. Many of them are caused by 'Nasimon' and 'Karimon' who are either passenger of these vehicles or passenger of other vehicle or pedestrian hit by 'Nasimon' and 'Karimon'. This study is designed to assess road accidents caused by 'Nasimon' and 'Karimon'. A total of 468 road accident patients were admitted into Faridpur Medical College Hospital during the 6 months study period; of which 56 (12%) patients were due to

accident by 'Nasimon' or 'Karimon'. Among the 56 patients, 41 (73.21%) were male and 15 (26.79%) were female. Men are at higher risk of the injuries than women because in our country they are predominantly the earning member of the family. They also have greater exposure to traffic and other more risky behavior than females. Most study on road accidents report that more than one half of all RTA victims globally occur among people ages 15 to 44 years<sup>6,7</sup>. In our study, the highest (24, 42.86%) incidence of victims was also observed among the age group 21 to 30 years, followed by the age group 31 to 40 years 15 (26.79%).

'Nasimon' and 'Karimon' are low cost vehicles and their main users are poor village people. It is likely that most injured patients are from low socioeconomic status. Most victims (33, 58.93%) of 'Nasimon' and 'Karimon' accidents belonged to low socioeconomic status, followed by middle socioeconomic status (17, 30.36%). In Bangladesh, at the national level, 49% of road accident victims are pedestrians, 37% are passengers and 14% are drivers, according to the Road Traffic Accident Report published by Road safety Cell of Bangladesh. But in accidents caused by 'Nasimon' and 'Karimon' the commonest victims were passengers of 'Nasimon' and 'Karimon', 31 (55.36%) followed by the passengers of other vehicles, 16 (28.57%) and pedestrian, 9 (16.07%). This explains by the fact that 'Nasimon' and 'Karimon' are unsafe vehicles. They are flat bed tricycles powered by diesel engine having no safety measures for its own passengers. They cause a huge noise and therefore the pedestrian can easily become aware of these vehicles.

Maximum number (46, 82.14%) of accidents took place in the urban areas and on the highways followed by that of the rural areas (10, 17.86%). These vehicles are mainly run on the rural roads where they cause much less accidents than that in the urban areas and on the highways. This could be attributed to the fact that numerous other different kinds of vehicles also run in the urban areas and on the highways where unsafe 'Nasimon' and 'Karimon' may easily collide with those vehicles. Considering the injury pattern, 100% victims of this study had multiple abrasions and bruises all over their body. Lacerations were present in 37 (78.72%) cases followed by head injury (21, 44.68%), fracture of long bone (18, 38.29%) and intra abdominal injury (8, 17.02%). These are the common patterns of injury found in RTA victims. Thirty two (57.14%) patients became completely cured without any disability with the hospital care but 10 (17.86%) patients faced disabilities with some functional loss. Eight (14.29%) patients were referred to specialized care centers and 6 (10.71%) patients succumbed to their injuries in spite of our good care.

The road safety situation in Bangladesh has been deteriorating with increasing number of road accidents in recent years. There are many causes of increasing road accidents; rapid growth in population, motorisation, urbanisation and lack of investment in

road safety. Accidents are also taking place in the country almost in every day due to the movement of 'Nasimon' and 'Karimon' type vehicles. These three wheelers 'Nasimon' and 'Karimon' are run in violation of Bangladesh Motor Vehicles Act (1983) as they are totally unfit for plying on the highways. The Home Ministry, basing upon the advice of the Parliamentary Standing Committee, have promptly banned two popular diesel engine three wheelers namely 'Nasimon' and 'Karimon' on the highways and in the urban areas but they still continue to run in the highways and in the urban areas and causing serious road accidents. Strict surveillance against these illegal and risky vehicles on the highways and in urban areas by law enforcing agencies is required as a measure to reduce road accidents in our country.

### Conclusion :

Road traffic injuries are a major but neglected public health challenge. This small scale study carried out in one of the district level medical college hospital of Bangladesh truly reflects the magnitude of problem created by these types of unsafe vehicles. 'Nasimon' and 'Karimon' are banned on the highways and in the urban areas but still they are running there due to an incompetent traffic surveillance system and a tendency to violate rules by drivers of 'Nasimon' and 'Karimon'. As these are cheap vehicles and randomly used by the rural people, concerned authorities should look at those with a positive attitude to make these vehicles safe, and, drivers of these vehicles should be properly trained and then licensed. Actually there are no data available regarding these types of vehicles and the total casualties caused by these vehicles, so a broad based, nationwide study should be undertaken to unearth the actual scenario.

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