

Injury Pattern Among Non-fatal Road Traffic Crash Victims

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ABSTRACT

Objective: To study and analyse the pattern of injuries among non-fatal road traffic crash victims.

Design: Retrospective analytical study.

Setting: Kenyatta National Hospital, Nairobi over a six-month period from February to July 2004.

Subjects: Road traffic crashes victims treated at Kenyatta National Hospital, Nairobi during the period under study.

Results: One thousand four hundred and twenty four victims of road traffic crashes were treated over a six-month period. The male: female ratio was 3:1 and the pedestrians were the majority (69.7%). The commonest injuries were fractures (69.0%) and the tibia/fibula being the most fractured bones (30.3%). Age group 15-44 years was the most affected (81.9%). There was one incidence of a ruptured eye in a passenger.

Conclusion: Road traffic injuries are a major cause of death and disability globally with disproportionate number occurring in the developing countries. The most affected age group 15-44 years lead to double tragedy to these countries with loss of productive man-hours and expenditure incurred to treat them.

INTRODUCTION

Road traffic injuries are currently ranked ninth globally among the leading causes of disability adjusted to life years lost, and the ranking projected to rise to third by year 2020 (1). These injuries are a major cause of death and disability globally with disproportionate number occurring in the developing countries.

In developing countries road traffic injuries particularly affect the economically active cohort with peak age 15-44 years. This is a double tragedy to these countries, mainly because of the productive man-hours lost and expenditure incurred to treat them.

Though this is a pilot study it is hoped that it will stimulate further expansive studies. Availability of empirical data in our setting would not only reveal the magnitude of the problem but would also help in identifying the target groups so that a scientific approach to prevention can be planned. The data would also assist in identifying the areas to be strengthened in post injury management of the victims.

MATERIALS AND METHODS

The study was carried out at Kenyatta National Hospital, Nairobi. All the non-fatal victims of road traffic crashes

reporting to Kenyatta National Hospital, Casualty Department between February and July 2004 were included in this study. Using the victims' records, the demographic and injury characteristics were recorded on a predesigned proforma. The collected data was analysed using SPSS® 11.5 version.

RESULTS

A total of 1424 victims of road traffic crashes were treated at Kenyatta National Hospital, Casualty Department during the period between 1st February 2004 and 31st July 2004.

The males were 1063 (74.6%) and 361 (25.4%) females making male female ratio 3:1.

These were divided into six categories of pedestrians, passengers, drivers, cyclists, motorcyclists and *mkokoteni* (a large non-motorised cart used to ferry goods) pushers. The distribution of the different categories is as shown in Table 1 and the pedestrians comprised the highest percentage (69.7%). The pedestrians were injured while crossing the road (62.5%) and the rest (32.5%) while walking along the road.

The gender distribution in the different categories is as shown in Table 2.

Table 1*Category distribution of victims*

Category	Frequency	(%)
Pedestrian	993	69.7
Passenger	292	20.5
Cyclist	72	5.1
Driver	51	3.6
<i>Mkokoteni</i> * pusher	8	0.6
Motorcyclist	8	0.6
Total	1424	100

* A large non-motorised cart used to ferry goods

Table 2*Gender and category distribution*

Category	Male	Female	Total
Pedestrian	756	238	994
Passenger	170	122	292
Driver	50	1	51
Cyclist	71	0	71
<i>Mkokoteni</i> * pusher	8	0	8
Motorcyclist	8	0	8

* A large non-motorised cart used to ferry goods

The ages of the victims ranged from 1 year to 75 years and the ages were divided into groups of five years starting from 0-4 years up to 70+ age groups. The age groups 15-19 years up to 40-44 years were the most affected (Table 3) and comprising 81.9% of the total victims.

Table 3*Age groups distribution*

Age group (years)	Frequency	(%)
0-4	23	1.6
5-9	63	4.4
10-14	40	2.8
15-19	92	6.5
20-24	264	18.5
25-29	280	19.7
30-34	267	18.8
35-39	143	10.0
40-44	119	8.4
45-49	51	3.6
50-54	42	2.9
55-59	18	1.3
60-64	9	0.6
65-69	7	0.5
70+	6	0.4
Total	1424	100

The areas injured were recorded as head, face, neck, thorax, abdomen, thoracic spine, lumbar spine, upper extremity lower extremity and pelvis. There were 590 (41.4%) victims injured in two areas and 107 (7.5%) injured in more than two areas. The most frequent type of injury was fractures (69.0%) followed by head injury (25.6%) (Table 4). The most common fractures seen were tibia fibula (30.3%) followed by femoral (12.4%). For the 119 victims who had head injury, 25 of them had fracture skull seen on skull radiographs whereas the rest was clinical diagnosis.

Table 4*Injury type distribution*

Injury type	Frequency	(%)
Fracture	322	69.0
Head injury	119	25.6
Dislocation	12	2.6
Blunt abdominal injury	6	1.3
Cervical spine injury	4	0.9
Lumbar spinal injury	1	0.2
Ruptured eye	1	0.2
Haemopneumothorax	1	0.2
Total	467	100

A total of 362 (25.4%) victims had sustained injuries, which required inpatient management. There were 221 (61.4%) victims admitted in the Orthopaedic wards and 125 (34.5%) in General Surgical wards (Table 5).

Table 5*Admission distribution*

	Frequency	(%)
Orthopaedic	221	61.0
General Surgical	125	34.5
Paediatric Surgical	13	3.6
ICU	2	0.6
Ophthalmology	1	0.3
Total	362	100

DISCUSSION

The present study carried at Kenyatta National Hospital, Nairobi revealed that most of the road crash victims are in age group 15-44 years. Earlier studies have also reported high incidence of road traffic injuries in similar age groups (2-6). The male: female ratio was 3:1.

The pedestrians formed the majority of victims (69.7%) as compared to the passengers (20.5%) in this study. This could be attributed to the fact that in year 2004 there was an introduction and enforcement of legislation that all passenger vehicles install speed 'governors' limiting the speed to 80 km / hr and roadworthy inspection of the vehicles before being

allowed on the road. This measure reduced the number of passengers injured in buses and minibuses (7).

The pedestrians were injured while crossing roads (62.5%) or walking along the road (32.5%). In Nairobi there are few pedestrian friendly walkways and the Nairobi City Council is blocking the few available in order to discourage hawkers who tend to display their merchandise in any open space including walkways and pavements. Construction of bumps and rumble strips have been shown to be effective in taming the vehicle speeds especially in areas with high density of pedestrians crossing the road (8).

The most common injuries were fractures (69.0%) with fractures tibia/fibula being the most recorded (30.3%). Other studies have reported similar observations (6).

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