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Epidemiology of Neurotrauma in Ife-Ijesha Zone of Nigeria

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BACKGROUND AND OBJECTIVE: **Trauma remains one of the important causes of severe disability and high mortality. In this study, we looked at the epidemiology of neurotrauma in our region so as to highlight essential factors for trauma prevention program.**

METHODOLOGY: **This is a cross-sectional study of all neurotrauma cases admitted to the neurosurgery service of our hospital over an 18-month period. Information was obtained on patients' demographic data, etiology of injury, duration of injury, site, and cause of accident among others.**

RESULTS: **One hundred forty-three patients were included in the study. The injuries occurred mostly in males and in the third decade. Most of the patients were students and traders. Eighty-one percent of the accidents were due to road traffic crash (RTC), and the most common contributory factors were head-on collision (46.2%) and overtaking (28.6%). Five of six patients who had RTC in the first decade of life were pedestrians. There were more crashes within the cities. None of the patients who had motorcycle accidents used helmet and only four patients used seatbelts at the time of the accident. Transfer to hospital was mostly in vehicles other than ambulance.**

CONCLUSION: **Neurotrauma in our study was mostly due to RTC and it is most common in young male students. Contributory factors were head on collision and overtaking.**

INTRODUCTION

Trauma remains one of the most common and important causes of severe disability and high mortality worldwide. Fortunately, this challenging and dismal outcome could be improved by appropriately planned and carefully implemented preventive measures. The latter is exemplified by the success of such programs in many developed countries of the world (7, 10). Many of the devastating effects of trauma result from head injury. Previous work from Ibadan and other parts of Nigeria have sought to give an overview of the etiology of neurotrauma in Nigeria (4-6, 9, 11, 13, 14). In this study, we looked closely at the epidemiology of neurotrauma in our hospital, which is the main referral center for such injuries in the Ife-Ijesha zone of Nigeria (**Figure 1**). This will help to plan a trauma prevention program for the study zone, and could also form a template for the entire country.

METHODOLOGY

This is a cross-sectional study of all neurotrauma cases admitted via the accident and emergency department to the neurosurgery service of our hospital over an 18-month period (October 2004 to March 2006). Information was obtained directly from patients or patients' relations/eyewitness when the former could not give information as in unconscious patients. We obtained information on patients' demographic data, occupation, etiology of injury, duration of injury, site, and cause of accident in cases of road traffic crash (RTC) among others. The data were then entered into the software program SPSS 11.1 for Windows for analysis.

Key words
- Epidemiology
- Neurotrauma
- Road traffic crash

Abbreviations and Acronyms
MCA: Motorcycle accident
RTC: Road traffic crash

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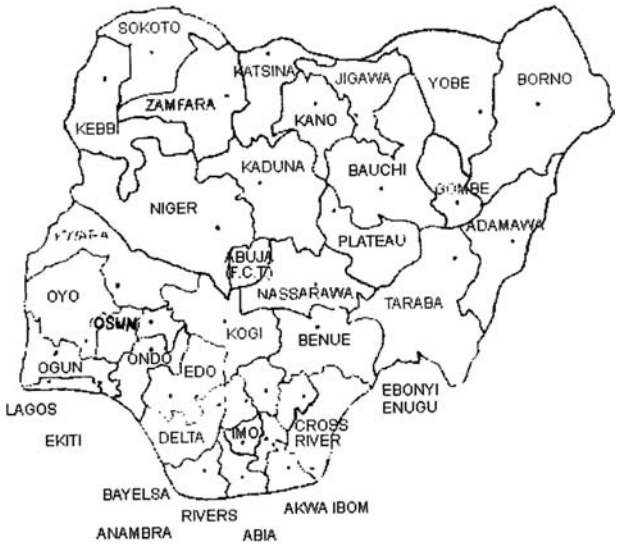

Figure 1. Map showing 36 states of Nigeria. Ife Ijesha zone is in Osun State.

RESULTS

One hundred forty-three patients were included in the study of 5270 patients seen in the accident and emergency department over the study period. The age range was from 1 to 70 years with a mean of 32.8 ± 15.12 years. The mode was 25 years. Most of the injuries occurred in the third decade of life. Table 1 gives further summary of the age distribution. Eighty-three percent of the patients were males and 17% were females.

Occupation

Table 2 shows the occupation of the patients. Students constitute the largest group (25%), followed by traders.

Etiology

Road Traffic Crash. Table 3 depicts the various causes of the injury. RTC constitutes the largest group, with motor vehicular accident and motorcycle accident (MCA) sharing equal frequency (59 cases each). Their combined percentage is 81%. Among the RTC cases, 23 (24.2%) were pedestrian accidents. Five of six patients who had RTC in the first decade of life were pedestrians.

Thirty-seven (58.7%) of 63 patients who had RTC were drivers and twenty-six (41.3%) were passengers. Thirty-nine of 69 vehicles were private and 30 of 69 were commercial vehicles. Of the 106 accidents, 66 (62.3%) occurred within the city (intra-city) and 40 were inter-city (37.7%).

Probable causes of accidents in RTC are shown in Table 4. Head-on collision (46.2%) followed by overtaking of another vehicle (28.2%) constitute the largest groups. Other factors associated with RTC were poor visibility during driving as reported by the driver/informant (15 cases), potholes (7 cases), slippery road (2 cases), and armed robbery attack (2 cases). Only four patients were using the seatbelts at the time of accident. None of the patients who had MCA used a helmet.

Fall. Table 5 further shows the summary of falls. Eight patients (50%) fell from various types of trees, including oil palm and colanut trees.

Gunshot Injuries. All the gunshot injuries were related to armed robbery attacks.

Table 1. Age Distribution of Patients

Age Group	Frequency	Percentage
0–9	10	7.0
10–19	12	8.4
20–29	42	29.9
30–39	33	23.1
40–49	25	17.5
50–59	10	7.0
60–69	9	6.3
70–79	2	1.4
Total	143	100

Table 2. Occupation of the Patients

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Trading	21	14.7	14.9	14.9
Civil servant	12	8.4	8.5	23.4
Apprentice	4	2.8	2.8	26.2
Motorcyclist	10	7.0	7.1	33.3
Student	25	17.5	17.7	51.1
Farming	13	9.1	9.2	60.3
Typist	1	0.7	0.7	61.0
Security officer	3	2.1	2.1	63.1
Driver	11	7.7	7.8	70.9
Clergy	4	2.8	2.8	73.8
Sawmiller	1	0.7	0.7	74.5
Artisan	17	11.9	12.1	86.5
Pupil	10	7.0	7.1	93.6
Police officer	1	0.7	0.7	94.3
Herbalist	1	0.7	0.7	95.0
Engineer	4	2.8	2.8	97.9
Nurse	1	0.7	0.7	98.6
Retired soldier	1	0.7	0.7	99.3
Pastor/farmer	1	0.7	0.7	100.0
Total	141	98.6	100.0	
Missing	2	1.4		
Total	143	100.0		