

# Epidemiology of armed robbery-related gunshot injuries in Maiduguri, Nigeria

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## Abstract

**Background and Objectives:** Gunshot Injuries used to be rare in Nigeria until the civil war of 1967–1970. Unfortunately, it has become very rampant recently. The objective of this paper is to look at the epidemiology of armed robbery-related gunshot injuries as seen in the University of Maiduguri Teaching Hospital over a five-year period.

**Materials and Methods:** Data on patients that presented with gunshot injuries within the study period (January 2002 to December 2006) were collected and analyzed retrospectively.

**Results:** We studied 129 patients with gunshot injuries that were managed during the study period. This comprises of 117 males and 12 females (M:F=9.8:1). Eighty four (65.1%) were young males between 20 and 40 years. One hundred and fifteen (89.2%) of the 129 victims were shot by armed robbers, the remaining 14 (10.8%) were shot under other circumstances not related to armed robbery. Analysis of the time of attack revealed 72% of victims were attacked at night. Over 80% of victims were shot along the highway. The anatomical sites of gunshot entry wound show the extremities having the highest of 46.1%. Ninety one (79.1%) victims were treated operatively while 16 (13.9%) were treated nonoperatively.

**Conclusion:** Armed robbery is the motive behind most gunshot injuries in Nigeria. Most of these attacks are preventable if the government would support and motivate the security apparatus responsible. There is also need for the government to support the victims by shouldering their treatment and subsequent rehabilitation.

**Key words:** Armed robbery, gunshot injuries, Nigeria

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## Introduction

The incidence of gunshot injuries (GSI) is observed to be on the increase worldwide<sup>[1]</sup> While suicide attempts and gang related violence are reported as the main motives behind such injuries in the developed countries and most developing countries,<sup>[2]</sup> the Nigerian picture is different. Until recently in Nigeria, GSI were almost exclusively associated with military activities as in the civil war of 1969–1970,<sup>[3]</sup> or the occasional accidents that occur during celebrations or festivals.<sup>[4,5]</sup> It is disheartening to note that gunshot injuries have now become widespread and the motive behind most of these injuries in Nigeria is armed robbery.<sup>[5-7]</sup>

This is a retrospective study of all GSI seen in University of Maiduguri Teaching hospital within a period of five years (January 2002 to December 2006) with further analysis of the epidemiology of armed robbery-related GSI.

## Materials and Methods

The folders of all patients with a diagnosis of GSI during the study period were retrieved from the medical records library. Extracted information include the biodata of the patients, the reported motive of the assailant. Time and place of

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injury as well as the anatomical site of the wound. Other data extracted include treatment offered and the outcome of treatment. These were analyzed using simple percentages.

### Results

A total of 129 patients with Gunshot injuries were managed during the study period consisting of 117 males and 12 females (M:F=9.8:1) The median age was 30.3 years with a range of 14–67 years, 84 (65.1%) were young males between 20 and 40 years.

One hundred and fifteen (89.2%) of the 129 victims were shot by armed robbers, the remaining 14 (10.8%) were shot under other circumstances not related to armed robbery, as shown in [Figure 1]. Of the 115 victims of armed robbery, 103 were males while 12 were females. Occupation of the victims revealed 36 (31.3%) to be traders and 19(16.5%) were drivers, the other details are as shown in [Figure 2]. Time of attack revealed 83 (72.2%) victims were attacked at night (6 pm to 6 am inclusive) while 32 (27.8%) were by day time (6 am to 6 pm exclusive). Ninety three (80.9%) victims were shot along the highway while 14 (12.2%) were shot at home. Only 8 (7%) victims were shot at other locations such as places of work.

Fifty five (47.8%) victims arrived this hospital within the first 6 h of injury. The remaining 60 (52.2%) arrived hospital after the first 6 h of injury.

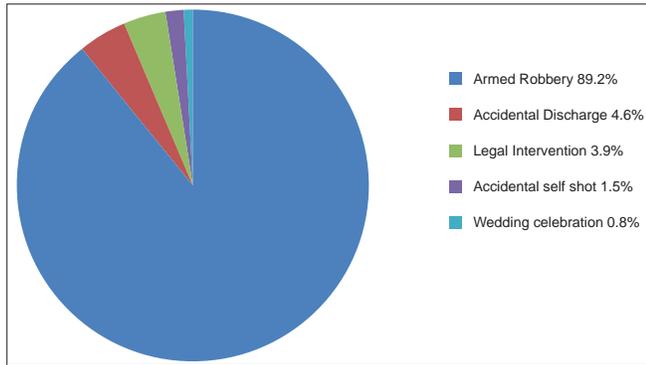


Figure 1: Motive for gunshot injury

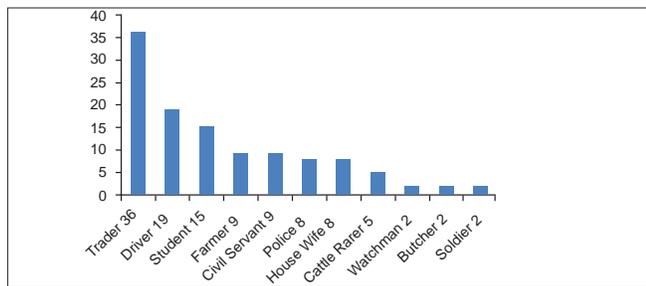


Figure 2: Occupational distribution of armed robbery victims (n=115)

The extremities were the most frequently attacked site with 53 (46.1%) while the head and neck region were the least with 4(3.4%). The other sites are as shown in [Table 1]. Ninety one (79.1%) victims were treated operatively, mostly by wound exploration and debridement followed by stabilization of the injured limb. Sixteen victims (13.9%) were treated nonoperatively. Eight (7%) victims left against medical advice (LAMA) before formal discharge from hospital. Outcome of treatment was found to be good in 89 (97.8%) operated cases. There were two deaths, a mortality rate of 1.7%. Of the nonoperated cases all had a good outcome. After discharge from hospital 48 (41.7%) patients were available for follow up, the remaining 67 (58.3%) were lost to follow up.

### Discussion

Our findings in this study are similar to findings by most workers from different parts of this country that most gunshot injuries in Nigeria are due to armed robbery attacks [Table 2]. It has become common knowledge that GSI are on the increase nationwide. This is clearly highlighted by the work of Adegboye *et al.* in Ibadan where they compared data from two different decades on penetrating chest injuries.<sup>[8]</sup>

There are many papers that reviewed gunshot injuries in this country but few if any that focused on analyzing the ominous role played by armed robbery as the motive behind these gunshot injuries. Except for the findings in Calabar,<sup>[9]</sup> most other studies found armed robbery as the leading motive behind GSI.<sup>[10-14]</sup>

Table 1: Anatomical site of gunshot injuries

Anatomical site	Frequency (%)
Lower limb	35 (30.4)
Upper limb	18 (15.7)
Multiple sites	18 (15.7)
Spine and pelvis	17 (14.8)
Chest	14 (12.2)
Abdomen	9 (7.8)
Head and neck	4 (3.4)
Total	115 (100)

Table 2: Prevalence of armed robbery in Nigeria

Study (Location)	Ref. No	Number studied (n)	Armed robbery % of n
Adesanya (Lagos)	4	78	61.6
Ogunlusi (Ile-Ife)	6	38	50
Afuwape (Ibadan)	7	80	71.3
Adisa (Aba)	10	116	78.3
Onuminya (Irrua)	11	76	69.7
Mohammed (Kano)	12	224	41
Solagberu (Ilorin)	13	79	57
Ahidjo (Maiduguri)	14	70	80

It is a common practice in this country for long distance travelers to prefer travelling at night rather than travelling during the day, unfortunately, this is the time that these robbers are most likely to operate as shown in this study. This may be that the hoodlums try to benefit from the cover of darkness for their operations and subsequent escape. The fact that majority of the attacks occur on the highway and at night supports this supposition. Traders followed by drivers are the highest population of victims, and it is known that these are the ones that are mostly on the highway at these odd hours. Students are the next group of victims involved in these attacks. This might not be unrelated to the fact that these students occasionally have to travel long distances to their respective universities across the country, this is similar to the findings by other workers<sup>[12,13]</sup>

Our findings of higher preponderance of young males between the ages of 20 and 40 as victims of armed robbery is similar to findings by most workers.<sup>[4,6,7,15]</sup> This is not unexpected considering the higher rate of travelling by males than females. Another possible explanation could be what was earlier advanced by some authors that the younger males are generally more aggressive and more adventurous in demonstrating resistance to perceived threat.<sup>[16]</sup>

The time interval between injury and arrival to hospital shows some variations in this study and studies done in other parts of the country. Adesanya<sup>[4]</sup> in Lagos and Onuminya<sup>[11]</sup> in Irrua found 79.7% and 64.4%, respectively of GSI victims arriving hospital within the first 6 h of injury. In Aba, Adisa<sup>[10]</sup> reported 63.2% of GSI victims reporting to hospital in less than 8 hours of injury. In Maiduguri, however, we found only 47.8% that arrived within 6 h of injury. This could be because in the former studies the shootings occurred mostly in urban street settings<sup>[10]</sup> whereas in Maiduguri the highway is the commonest setting. This means that the distance to hospital might be a factor in delaying victims from presenting early.

We found the extremities especially the lower limbs as the site most commonly affected by GSI, this is similar to what was found in most studies<sup>[10-13]</sup> The reason why it is so could be what was adduced earlier that these robbers shoot to scare or maim and probably not with the intention to kill<sup>[7]</sup> or that the shots are aimed to immobilize the victims.<sup>[16]</sup> It could also be that the victims who sustain fatal shots to other vital anatomical parts might not have survived to reach hospital, Majority of the victims in our study were treated by some form of surgical operation, mostly wound exploration and debridement followed by stabilization of the injured limb. This is similar to the findings by other workers.<sup>[9,11,14]</sup> Though some authors advocate just wound edge excision, with wound irrigation<sup>[17]</sup> formal wound debridement is still practiced in this country, this might not be unrelated to the high level of wound contamination and the delay in presentation that is still common in this part of the world.

Our findings of few GSI (7%) victims leaving against medical advice (LAMA) is similar to the findings by Ogunlusi *et al.*,<sup>[6]</sup> but in contrast to the whopping 49.4% found in Ilorin.<sup>[13]</sup> This is disheartening considering the high morbidity and mortality that is associated with traditional non-orthodox treatment of GSI in this country.<sup>[18]</sup> This might not be unrelated to the lack of a comprehensive insurance policy in this country that adequately covers for trauma victims. Since financial constraints are among the major reasons why most trauma patients leave against medical advice,<sup>[19]</sup> the only way this can be minimized is for the government to include all trauma victims under the coverage of the National Health Insurance Scheme (NHIS).

Our mortality of 1.7% is lower than what is reported in victims with penetrating chest injuries<sup>[8]</sup> or those with GSI to the orofacial region.<sup>[20]</sup> This may be explained by the fact that majority of our victims sustained limb rather than thoracic injury, and only 3.5% sustained head and neck injuries. The follow up rate was poor as more than half of the victims in this study were lost to follow up, this is similar to the findings in other studies from this part of the country.<sup>[21]</sup>

## Conclusion

This study has shown that majority of armed robbery attacks occur at night and young male traders, drivers and students are the major victims. By putting proper preventive measures by the responsible security apparatus these attacks can be prevented. Night travel which is very popular among these groups of victims should be discouraged. The government should include all victims of GSI under the cover of the National Health Insurance Scheme (NHIS) so as to stem the common occurrence of LAMA by the victims.

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