

Spectrum of Homicidal Injuries in a Tertiary Hospital in North-central Nigeria

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Abstract

Background and Objectives: There has been an upsurge in fatal crimes and violent conflicts in Nigeria, with the victims dying from a variety of injuries. This study analyzed the pattern of injuries found during postmortem examination of the bodies of victims of homicidal deaths. **Materials and Methods:** A retrospective audit was done on the cases of alleged homicidal deaths on which autopsies were performed over a period of 5 years in the pathology services unit of a tertiary hospital in the North-central region of Nigeria. **Results:** There were 236 alleged homicidal death cases and the ages ranged from 1.5 to 6 years. There were more male victims (87.7%) than females (12.3%), ratio of 7.1:1. Gunshot injuries and chop wounds accounted for 39.8% ($n = 94$) and 19.1% (45), respectively. The other injuries found in this study included lacerations, skull fractures, contusions, cerebral lacerations, stab wounds, burns, and incised wounds. Blunt force injuries (laceration, contusion, and abrasion) and sharp force injuries (incised, stab, and chop wounds) made up 18.6% ($n = 44$) and 21.2% ($n = 50$) of the total number of cases, respectively. Some of the victims had a combination of injuries. Most of the decedents were persons within the third decade and 67.4% of them were <40 years old. **Conclusion:** This retrospective review of homicidal injuries showed that most victims died from gunshot and sharp force injuries. Gunshot wounds were found to be more common on the chest and abdomen, whereas chop wound was more to the head, followed by the neck.

Keywords: Homicidal injuries, medicolegal autopsy, North-central Nigeria

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INTRODUCTION

Homicide is the intentional or nonintentional loss of life of an individual due to the action or inaction of another person.^[1] Alleged cases of homicidal deaths for which autopsies are requested by the coroner may turn out to be murder, manslaughter, or otherwise.^[1] Homicidal deaths may result from injuries inflicted by blunt or sharp objects, firearms, fire, poisoning, drowning, strangulation, hanging, electrocution, exposure to the elements, or use of the physical body.^[2,3] In a series of 1987 coroner autopsy cases, homicide alone constituted 50.5%, whereas the remaining 49.5% were due to accidents, natural deaths, maternal deaths, and suicides combined.^[4] However, the actual number of homicide deaths per year has remained unknown because of the pervasive challenges of accurate record keeping in sub-Saharan Africa, Nigeria inclusive. These deaths are often due to interpersonal disagreements, rival youth gang assaults, community

invasions, armed robbery attacks, domestic violence, mob killings (or “jungle justice”), political assassinations and electoral violence, intercommunity clashes, religious riots, and kidnappings. The North-central region states of Benue, Kogi, Kwara, Nasarawa, Niger, and Plateau have also been plagued by repeated orgies of violent homicides.^[5,6]

During internecine conflicts and crimes, various kinds of weapons, freely used, include firearms, machetes, swords, axes, knives, clubs, and a host of other improvised weapons with the consequence of a wide variety of fatal injuries. The purpose of this study was to document and analyze the pattern of injuries found during the autopsy on the deceased bodies

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of victims of homicides. It is believed by the authors that an analysis of the nature of the injuries and causes of death in alleged homicide deaths will complement the efforts of the relevant agencies in constructing an accurate representation of homicide rates in the region. In addition, categorization of injuries is important for proper forensic interpretation. Injuries may be grouped into those inflicted by a sharp and blunt forces and gunshots. Sharp force injuries may be caused by an object with a sharp-cutting edge such as knives, glass, and blades. A blunt force may induce splitting of the skin by the impact upon underlying structures such as bone. "Chop wound" is a term used to describe a large-gaping wound inflicted by heavy-cutting objects such as an axe or machete in which the nature of the wound results from both the sharpness of the cutting edge and the impact due to the heaviness of the object.^[7] In this research, a retrospective analysis was done on the records of cases of alleged homicidal deaths which had coroner autopsies performed in a tertiary hospital.

MATERIALS AND METHODS

A retrospective evaluation of consecutive autopsy cases carried out in the Department of Anatomical Pathology, Benue State University Teaching Hospital, Makurdi, Nigeria, from December 2013 to January 2019 was performed. The major criterion for inclusion was allegation or suspicion of homicidal death as indicated on the police initial report in the coroner form requesting the autopsy. The reports and duplicate coroner forms and autopsy record book were examined, and those that met the inclusion criteria had the relevant data extracted. The cases excluded included those which did not have appropriate documentation in the autopsy records and those with submitted coroner forms but did not have the actual autopsy performed. Furthermore, the researchers had to be satisfied from the accompanying police record that there was suspicion of homicide from the onset. The collected demographic data include the age, sex, and nature of the injury and cause of death. The injuries were arranged *ab initio* into blunt force injuries (lacerations, bruising/contusions, and abrasions), sharp force injuries (incised wounds, stab wounds, and chop wounds), and gunshot injuries. Other important fatal injuries such as skull fractures and cerebral lacerations were included in the analysis. Approval for the research was obtained from the institution's research ethics committee.

The data obtained were analyzed using IBM SPSS Statistics version 23 (Release date 2015. IBM Corporation, Armonk, New York, USA) and Microsoft Excel 2016 version (Release date 2016, Microsoft Corporation, Redmond, Washington).

RESULTS

Two hundred and thirty-six alleged homicidal death cases met the inclusion criteria and were used for this review. As shown in Table 1, there were more homicidal deaths involving males than females with a ratio of 7.1:1. There were 207 (87.7%) male and 29 (12.3%) female. Furthermore, most of the

Table 1: Types of injuries in homicidal deaths: Gunshot injuries are responsible for most of the homicidal deaths. Sharp force and blunt force wounds combined occurred in 39.8% of the cases.

	Injury	Male	Female	Sum	%
1	Gunshot wounds	84	10	94	39.8
2	Chop wounds	37	8	45	19.1
3	Laceration/Tears/Ruptures	25	2	27	11.4
4	Skull fracture	19	3	22	9.3
5	Contusion/Bruise/ Haematoma	12	2	14	5.9
6	Cerebral laceration	11	2	13	5.5
7	Other Bone Fractures	8	1	9	3.8
8	Stab wounds	3	1	4	1.7
9	Abrasion	3	0	3	1.3
10	Strangulation	2	0	2	0.8
11	Burns	2	0	2	0.8
12	Incised wounds	1	0	1	0.4
	Total	207	29	236	100.0

deceased individual died from gunshot wounds with these cases accounting for 39.8% ($n = 94$). This was followed by chop wounds 19.1% (45). The other injuries found in this study include lacerations, skull fractures, contusions, cerebral lacerations, stab wounds, burns, and incised wounds. Blunt force injuries (laceration, contusion, and abrasion) made up 18.6% ($n = 44$) and sharp force injuries (incised, stab, and chop wounds) made up 21.2% ($n = 50$) of the total number of cases. Some of the victims had a combination of different kinds of injuries.

The ages of the victims ranged from 1.5 to 65 years. Eight (3.4%) of them were <18 years old. The age distribution of the injuries is presented in Table 2. Majority of the homicidal deaths occurred within the third decade (20–29 years), followed by those in the fourth decade. Among those who died from gunshot injuries, majority of the deaths occurred in those aged 20–29 years age group accounting for 14.4% (34/236) of the homicidal deaths and 36.2% (34/94) of those who died from gunshots. It is pertinent to note that most of those who died from fatal chop wounds and lacerations were within the 20–29 years age group. Furthermore, 67.4% of the deaths occurred in individuals <40 years old. The age distribution of the cases with gunshot injuries is graphically represented in Figure 1. It depicts a sharp rise in the number of deaths within the 20–29 years age group and a slow decline in the older age groups.

Most of the gunshot injuries were to the chest constituting 51.6% (48/93) of the gunshot injuries and 20.3% (48/236) of all the alleged homicidal deaths. Gunshots to the abdomen made up 14% (13/93) of the gunshot-related deaths. The remaining sites of gunshot deaths are presented in Table 3.

Chop wounds to the head were found in 28.9% (13/45) of the chop wound-related deaths. This was followed by chop wound to the neck of 15.6% (7/45) of the victims who died

Table 2: Age distribution of homicidal deaths. Most of the deaths involved young men within the third decade. Those at the extremes of life were also not spared, although they constituted a smaller proportion.

Injury type	Age Groups (Years)							Sum
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	
1 Gunshot wounds	0	6	34	21	21	6	6	94
2 Chop wounds	3	0	18	13	8	1	2	45
3 Laceration/Tears/Ruptures	0	1	10	5	7	2	2	27
4 Skull fracture	3	1	5	6	4	2	1	22
5 Contusion/Bruise/Haematoma	0	1	6	3	3	1	0	14
6 Cerebral laceration	2	1	2	4	2	1	1	13
7 Other Bone Fractures	1	0	2	3	2	1	0	9
8 Stab wounds	1	0	0	1	2	0	0	4
9 Abrasion	0	1	0	1	0	1	0	3
10 Strangulation	0	0	1	1	0	0	0	2
11 Burns	0	0	1	0	1	0	0	2
12 Incised wounds	0	0	1	0	0	0	0	1
Total	10	11	80	58	50	15	12	236
Percentage (%)	4.2	4.7	33.9	24.6	21.2	6.4	5.1	100.0

Table 3: Anatomical distribution of gunshot injuries. Most of the injuries were found penetrating the chest, followed by the abdomen and some other locations.

Site	Number	Percentage
1 Head	7	7.5
2 Neck	7	7.5
3 Shoulder	1	1.1
4 Upper arm	1	1.1
5 Chest	48	51.6
6 Abdomen	13	14.0
7 Back	4	4.3
8 Thigh	1	1.1
9 Knee	2	2.2
10 Chest and abdomen	8	8.6
11 Shoulder and abdomen	1	1.1
Total	93	100.0

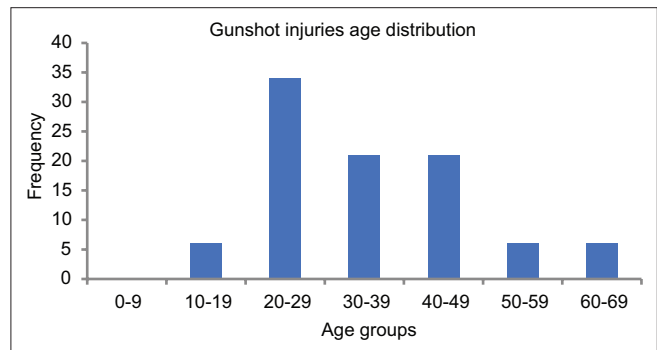


Figure 1: Age distribution of gunshot injuries

from such wounds. Ten of the decedents (4.2%) had combined chop wound and gunshot injuries. The anatomical distribution of chop injuries is shown on Table 4.

DISCUSSION

The termination of an individual’s life by another may be legal and authorized by law as in the case of execution of convicted criminals by a government agency or illegal as in the case of a homicide. Alleged homicide deaths may be intentional or unintentional. Further details concerning determination of culpability in an alleged homicide cases are outside scope of this article.

The National Bureau of Statistics, Nigeria, 2018, reported that in the North-central region of the country, 21% of death were due to terrorism, 55% land or resource access conflicts, and 16% cultism or criminality.^[5,6] Many other local reviews have indicated that homicide deaths constitute a significant

component of medicolegal autopsy cases. Mandong *et al.* and Ngbea *et al.* reported 36.2% (101/279) and 8.2% (35/421), respectively from North-central Nigeria with Jos city inclusive, second only to accidental deaths. Surprisingly, in an elaborate review of 5035 medicolegal autopsies performed in Benin over a 20-year period, Akhiwu *et al.* reported a rather low proportion of homicides, constituting just 5% (223/5035) of the cases.^[8] However, the 2013 report of the United Nations Office on Drugs and Crime stated the homicide rate in Lagos to be 12.2/100,000 while that of the country as a whole was estimated to be 20/100,000 population.^[9]

In line with the coroner law which operates in Nigeria, postmortem examination of the deceased body in every case of an unnatural death is a legal requirement. However, this is yet to receive wide acceptance and popularity, especially in the northern part of Nigeria for many reasons, mostly rooted in cultural practices or religious beliefs regarding matters related to the dead.^[10] However, a review article by Atanda *et al.* has re-echoed the fact that the teachings of the major religions are not opposed to performance of autopsy.^[11] Individuals in many communities, especially in the rural areas, generally do not subscribe to comprehensive postmortem examination and

often find ways to circumvent it except by legal compulsion. Autopsy in the north regions pale in rate when compared to the high frequency the southern part of the country.^[12]

With the upward trend in the rate of violence in Nigeria, most reports show that there are more male deaths than females. In our study, males constituted 87.7% of the homicidal deaths. This is consistent with findings of forensic studies in many places for obvious reasons. A study of individuals who died from sharp force injuries in Pretoria in South Africa observed that 84% were male.^[13] Authors from Ibadan, Calabar, Maiduguri, and Port Harcourt, all in Nigeria, Ghana,

and Pakistan, have all reported the preponderance of males in violence-related fatal injuries.^[4,14-18] The male-to-female ratio of 7.1:1 found in our study is slightly <12.4:1 reported by Obiora and Amakiri.^[4] Outwater carried out a review of 29 articles published by authors from Kenya, Mozambique, Nigeria, Senegal, South Africa, and Tanzania which suggested that in Sub-Saharan Africa, males were 4–10 times more likely to be murdered than females.^[2] A review of 975 medicolegal autopsies in the Niger Delta showed that 96 (9.8%) of the cases involved females, out of which 45 (4.6%) died from homicide.^[19]

Eze *et al.* observed that gunshot fatality accounted for 1.6% of 697 coroner cases and 91.7% of all homicidal deaths in their series. Obiorah and Amakiri and Nwafor *et al.* found 67.9% of 1987 and 69.1% of 223 homicide cases, respectively.^[20] These figures are much higher than the 39.8% obtained in our review. These higher figures could have been due to higher incidences of armed robbery attacks or assassinations, politically motivated or otherwise, in the regions where these studies were done. In Karachi, Pakistan, firearm-related deaths were found to constitute 44.6% of 2090 autopsy cases.^[21] Males were more victims of fatal gunshot injuries in our review, similar to the findings of many other authors.^[8,17,20,22,23] The predominance of male deaths could be because many of the deaths resulted from rural community invasions, intracommunity disputes, attacks by rival cult gangs, political assassinations, or armed robbery attacks. Most of the gunshot injuries were the chest in an assassination style pattern, followed by abdominal ones.

In addition to death by firearms, the pattern of injuries shows that objects which exert a sharp force were responsible for 21.2% ($n = 50$), whereas blunt force caused 18.6% ($n = 44$) of the deaths in our study. The figures from some recent literature on fatal injuries inflicted by either blunt or sharp force as reported in autopsy or forensic papers are represented in Table 5.^[8,21-26]

The literature shows a wide variation in the pattern of these injuries. These variations are probably determined by local environmental factors. The chop injuries found in our study

Table 4: Anatomical distribution of chop injuries. These were inflicted with heavy objects like machetes or axes creating deep gaping wounds cutting through soft tissue and sometimes right through bones. These kinds of injuries were mostly found on the head, chopping through skin, skull bone and brain parenchyma.

	Site	Number	Percentage
1	Head	13	28.9
2	Head and trunk	2	4.4
3	Neck	7	15.6
4	Neck and back	1	2.2
5	Chest and abdomen	2	4.4
6	Back	3	6.7
7	Face	2	4.4
8	Chest	2	4.4
9	Chest, back and abdomen	2	4.4
10	Shoulder	2	4.4
11	Head, face, neck, knee	1	2.2
12	Head and face	1	2.2
13	Head, Chest and Abdomen	1	2.2
14	Head, shoulder and arm	2	4.4
15	Head and leg	1	2.2
16	Chest and shoulder	1	2.2
17	Head and hands	1	2.2
18	Both legs	1	2.2
	Total	45	100.0

Table 5: Review of literature on sharp and blunt force injuries involved in cases of homicide from some countries.

Author	Year	Country	<i>n</i>	Sharp Force			Blunt Force		
				Chop wounds	Stab wounds	Incised wounds	Lacerations	Contusion/bruises	Abrasions
Akiwu <i>et al</i> ¹⁰	2013	Nigeria	222	-	11 (5%)	2 (1%)	-	20 (9%)	-
Mirza <i>et al</i> ¹⁹	2013	Pakistan	2090	-	67 (3.2%)	-	-	60 (2.9%)	-
Neblett <i>et al</i> ²²	2014	Jamaica	4264	-	57 (1.3%)	-	-	-	-
Herbst <i>et al</i> ²³	2015	South Africa	424	6 (1.4%)	83 (19.6%)	59 (13.9%)	315 (74.3%)	184 (43.4%)	317 (78.8%)
Uchendu <i>et al</i> ²¹	2015	Nigeria	39	-	10 (24.39%)	-	-	7 (21.95%)	-
Sohail <i>et al</i> ²⁴	2017	Pakistan	52	-	3 (7.1%)	-	-	3 (7.1%)	-
Nikitopoulou <i>et al</i> ²⁰	2019	Greece	29	-	8 (27.6%)	-	-	2 (6.9%)	-
Vhritherhire <i>et al</i>	Present study	Nigeria	236	45 (19.1%)	4 (1.7%)	1 (0.4%)	27 (11.4%)	14 (5.9%)	3 (1.3%)

were mostly to the head-and-neck region with multiple deep cuts leading instantly to death. Ten of the decedents had combined gunshot and machete cuts.

Majority of the victims of homicide in our study were young adult males. For instance, victims of gunshot deaths were mostly between the ages of 20 and 29 years. This pattern has resonated through most of the reports earlier cited. Eight of the victims in our study were <18 years old. This is consistent with the finding of 3.6% ($n = 8/223$) of homicide deaths in Benin City composed of children <15 years old.^[8] In contrast, a study in South Africa of 1018 childhood homicides documented a rate of 5.5 childhood homicides per 100,000 of the population, a rather high figure.^[3] However, despite the rising concerns about violence against children, many articles suggest that they have been relatively protected from homicides.^[2]

The death of young men of the productive age groups has had a direct profound adverse impact on the economy of the North-central Nigeria region, detailed discussion of which is beyond the scope of this article. It suffices to state that a direct relationship exist between measurable economic indices and homicide rate, proven both empirically and by research. For instance, a study comparing homicide rates in different cities of the world found that cities with a high homicide rate have low levels of both gross domestic product and human development index, suggesting a direct long term impact on overall economic growth.^[9]

CONCLUSION

This retrospective review of homicidal injuries showed that most victims died from gunshot and sharp force injuries. Gunshot wounds were found to be more common on the chest and abdomen, whereas chop wound was more to the head, followed by the neck. Moreover, young adults were mostly affected.

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Conflicts of interest

There are no conflicts of interest.

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