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International Journal of Pharmaceutical and Clinical Research 2023; 15(6); 2378-2384

**Original Research Article** 

# An Analysis of Injuries in Homicidal Deaths based on Cross-Sectional Autopsies

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#### Abstract:

**Background:** The most serious crime in human history—reported as early as in the Bible—is homicide. One of the main causes of unnatural deaths is homicide, which is defined as the killing of one human being by another. The most severe type of violence, responsible homicide, is a major health issue that is pervasive throughout the world. An act of culpable homicide might be committed for a variety of reasons. Because of increased urbanization, rising stress levels, unemployment, and drug addiction, there are more responsible homicides every day. The act of killing a person represents the ultimate kind of hostility that exists across all cultures. The primary motivation behind these murders has persisted over the years as greed for wealth, women, and land. Two factors must come together in order for a murder to be committed. Strangulation, homicidal hanging, suffocating, drowning, burns, poisoning, assault with a sharp or blunt object, guns, etc. are some of the different patterns of homicidal fatalities.

**Aim:** The present study was conducted to explore the types of injuries, type of weapon, and anatomical region of the victim affected and to compare them with the demographic profile of the victims.

**Material and Method:** The Department of Forensic Medicine conducted this retrospective cross-sectional investigation. All cases with an alleged history of homicide that were brought to the department for medico-legal autopsies as well as cases that were later registered as homicides were examined, and cases that were subjected to autopsies but later registered as non-homicidal based on the autopsy results, circumstantial evidence, and police investigation were excluded. It omitted suspected dowry death burn instances, suspected homicidal poisonings, and cases where the injuries had been completely destroyed by advanced decomposition changes. Police post-mortem and inquest reports provided the data.

**Results:** 50 cases of homicidal deaths were sorted out for this study amongst 200 total autopsies conducted. Among 50 cases, 35 (70%) were male and 15 (30%) were female. It is observed that the most commonly affected victims were from the 21 - 30 years age group followed by the 31 - 40 age group. On analyzing the region affected, 88% of victims had injuries in their head, followed by 58% on the neck and various other regions.

**Conclusion:** Each age group experienced different types of wounds, and consequently, different kinds of weaponry were utilized. Even though several anatomical parts were implicated in the most of the cases, the majority of the victims' heads were the anatomical regions that were most frequently attacked. Additionally, it was noted that the gender and age of the victims affected both the type of injuries and the weapon used. As it was restricted to a fairly narrow area and excluded suspected history-related homicide instances, this study had its own limitations.

Keywords: Homicidal Death, Autopsy, Motive, Acquaintance and Unnatural Death.

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#### International Journal of Pharmaceutical and Clinical Research

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#### Introduction

The killing of one human being by another is referred to as homicide. As old as civilization it, homicide is the most serious crime and one of the main causes of unnatural death.[1] Homicide is defined as deliberate killing that combines а "mensrea," the mental component of an individual's intention to commit a crime. and "actusreus," the actual commission of the crime or guilt. In all cultures, the act of killing a person represents the ultimate level of aggressiveness. Homicide, then, is of killing both people the and humanity.[2]In all cultures: killing someone represents the highest level of hostility. The primary motivation behind these murders has persisted over the years as greed for wealth, women, and land. Mens rea, which refers to prior thought or planning, and Actus reus, which refers to the act itself, must both be present for the crime of murder to be committed.[3]Strangulation, homicidal hanging, suffocating, drowning, burns, poisoning, assault with a sharp or blunt object, guns, etc. are some of the different patterns of homicidal fatalities.

Homicide rates are rising daily as a result of changing lifestyles, unemployment, drug addiction, and life stress. Without a thorough autopsy analysis, homicide investigations are never finished. Due to shifting cultural influences and trends, the pattern of homicidal deaths varies across populations, geographical locations, and across time. Law enforcement tactics may benefit from knowing how homicidal deaths are injured. The forensic expert's job is to aid in the fair administration of justice. Medical-legal autopsies provide information on the manner and cause of death as well as the pertinent statistical information on legal incidents in the cities and regions where the autopsy are performed. Homicide rates vary greatly

between nations; in 2012, they were approximately 6.2 per 100,000 people worldwide, with 31% of those cases taking place in Africa. Due to the inherent data shortage, these reports are not uniform across Africa, as the majority of these fatalities are attributed to South African data.4 Years of political unrest, injustice, gang violence, armed robberies, food hunger, unstable economies, unemployment, and lax rule of law are all factors in Africa's comparatively high homicide rate.[4,5]

To reconstruct the crime scene, a thorough investigation and scientific interpretation of the autopsy results are essential. Autopsy surgeons not only assist in determining the victim's cause of death by examining the body and correlating it with circumstantial evidence, but they also assist in completing the methods and means used in these acts as well as the necessary detailing of the injuries inflicted, which is crucial in formulating charges in cases.

Assisting the legal system in punishing the criminal implicated. The identification of the killing tool is aided by a thorough inspection of the wounds. When determining the charges to be brought against the accused, which in turn decide the sentence in each case, the type of weapon used and the seriousness of the injury caused together are crucial factors.[6]

The repercussions of murder are numerous. Some effects include the possibility of years missed, financial burden, posttraumatic stress disorders, and insecurity.[7] The amount of security in the state under review can also be determined by looking at the homicide rate in that state.[8]The current study is being conducted in light of the magnitude and

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frequency of such deaths as well as their effects on society in order to identify the most vulnerable age group, sex incidence, motive, pattern, and period of survival. Additionally, an effort is being made to shed light on cases that had a history of suicidal, accidental, or natural deaths but were later classified as homicidal deaths by the police based on the autopsy reports.

### Material and Methods

The Department of Forensic Medicine conducted this retrospective crosssectional investigation. All cases with an alleged history of homicide that were brought to the department for medico-legal autopsies as well as cases that were later registered as homicides were examined, and cases that were subjected to autopsies but later registered as non-homicidal based on the autopsy results, circumstantial evidence, and police investigation were excluded. It omitted suspected dowry death burn instances, suspected homicidal poisonings, and cases where the injuries had been completely destroyed bv advanced decomposition changes.Police post-mortem and inquest reports provided the data. Each case's injuries were examined and classified based on their nature; as a result, the type of weapon used instance was recorded. in each Additionally examined and researched was the injuries' anatomical distribution. The age and gender of the victim were studied associated with a number of and characteristics, including fatal injuries, the type of weapon used, and the anatomical distribution of fatal injuries.

### Inclusion criteria:

• All homicidal deaths as a result of mechanical injuries were included.

### **Exclusion criteria:**

• Homicidal deaths due to poisoning and burn were excluded.

### **Study Criteria:**

50 cases of homicides caused by mechanical injuries were considered in this investigation. The police, the victim's family and friends, visits to the place of the crime, or inferences drawn from images of the crime scene were all used to gather detailed information about the circumstances of the murder. There was a post-mortem investigation of the victims. In cases where alcohol intake was suspected, viscera were sent for chemical analysis. The purported weapons that were allegedly manufactured in each case were scrutinized and opinions were given. In accordance with the request issued by the Investigating Officer at the College's Autopsy Center, all cases that were brought to the Department of Forensic Medicine for autopsy and suspected to be homicide cases by police were included in the study. The study period includes a total of 50 patients. The victim's family members and the police were contacted for information regarding all the circumstances of the crime, and the author visited the crime scenes or took pictures of them to use as part of a structured The questionnaire. post-mortem examination was performed in accordance with the guidelines. 200 medico-legal autopsies were performed during the study period, 50 of which involved homicides.

### Homicide Law:

Possession of sharp or firearm weapons should have been subject to strict legal enforcement. Medical professionals should handle injuries to key organs and regions correctly. In contrast to Western nations where the homicide unit is organized and members exchange their information in order to solve crimes, in India the investigating officer. the forensic pathologist, and the judicial system all operate independently. Due to the fact that most homicides occurred either in the evening or late at night when drunk. A thorough analysis of the injuries and wounds should be performed by an autopsy pathologist, and the investigating officer should collaborate with the autopsy pathologist to solve homicides since the pattern of injuries is symptomatic of the mode of death.

#### **Statistical Analysis**

Descriptive statistics for qualitative type of data were summarized using frequency and percentage along with a 95 %

confidence interval. Data were entered into SPSS 17 statistical package and analyzed.

#### **Result:** -

50 cases of homicidal deaths were sorted out for this study amongst 200 total autopsies conducted. Among 50 cases, 35 (70%) were male and 15 (30%) were female.

Region	Number of cases	Percentage
Head	30	60%
Neck	26	52%
Chest	14	28%
Abdomen	10	20%
Upperlimb	22	44%
Lowerlimb	17	34%

 Table 1: Region-Wise Distribution of Injuries among the Homicide Cases

On analyzing the region affected, 60% of victims had injuries in their head, followed by 52% on the neck and various other regions as shown in Table 1. It was also observed that 74% of victims had injuries in more than one region and only 20% of victims had injuries involving only one anatomical region.

<b>Type of Injuries</b>	Number of cases	Percentage
Abrasion	24	48%
Contusion	22	44%
Laceration	20	40%
Incision	10	20%
Stab	15	30%
Chop	33	66%

## **Table 2: Various Modes of Injury among the Homicide Cases**

On analyzing the type of injuries, the majority of victims had chop injuries (66%) among the sharp force weapon-induced injuries followed by abrasions (48%) among blunt force weapon-induced injuries as tabulated in Table 2.

able 5. Type of weapon among the fromfelde Cases						
<b>Type of Weapons</b>	Number of cases	Percentage				
Sharp	42	84%				
Pointed	15	30%				
Blunt	43	86%				

<u><b>Fable 3:</b></u>	Type of V	Weapon	among the	e Homicide	Cases

Among the type of weapons, Blunt weapon and sharp weapons were used in most of the cases (86%) &84% respectively) as shown in Table 3.

On analyzing the gender with choice of weapon, it was found that the majority of male victims had sharp-force weaponinduced injuries and most of the female victim's hadblunt-force weapon-induced injuries.

This analysis reflects that injuries were presented over vital body parts and was sufficient to cause death in the ordinary course of nature, thus constituting the

crime of culpable homicide amounting to murder.

### Discussion

Homicides caused a variety of wounds, including attack with a sharp, blunt, or gunshot, as well as strangulation, smothering, burns, and poisoning. In different regions of the nation, homicide rates are rising on a daily basis, and the distribution of injuries in homicidal deaths is evolving as well. The current study was conducted to examine the patterns of injuries in homicide because of the increasing severity and frequency of such killings and the detrimental effects they have on society.

Studies conducted by Scott K.W.M.1990[9] and Mohanty M.K.'s2005[10] studies that most of the victims belonged to the age group 21-30 vears which is in contrast to the observation made by Wahlsten Ρ. 2007[11] where most of the victims belonged to 31-40 years, by Kominato Y's1997[12] belonged to 36-45 years, by Henderson, J.P. 2005[13] belonged to 30-39 years and by Saint Martin P. 2006[14] where most of the victims belonged to 50-59 years.

Studies conducted by Behera et al.2019[15] Shivkumar et al, 2011[16] Mohanty et al, 2013[17] Gupta, S.2009[18], and Prajapati in Studies conducted in Nigeria[19] and South Africa[20] Most of the victims having fatal injuries in more than one region show the firm intention of the assailant to kill the victim. Among the various regions, fatal injuries were present in the head and neck in 88% and 52% respectively. This finding is similar to studies conducted by Vij et al, 2010[21] Buchade and Mohite.2010[22] Chest region was commonly involved in conducted Delhi studies in and Pakistan<sup>[23]</sup> where firearm injuries on the chest were observed. These observations show that the head, neck, and chest are considered vital areas by the assailants,

and striking at these regions makes certain of the victim is killed with maximum assurance.

Few blunt weapon injuries were unpremeditated, and attackers employed the blunt weapon that was on hand at the time of the incident. The bulk of blunt and sharp weapon injuries were premeditated and primarily related gang rivalry. As India's gun licensing laws are rigorous, there were just 2 incidences of gunshot injuries reported. A similar study was made by Vijayakumari N et al.2013[24], where blunt weapon injury was the most common cause of death and Mohanty M K et al.2005[10], blunt weapon injuries accounted for 36.5%. Our study is in contrast to the studies by Hugar B S et al.2010[25], and Gupta A et al.2004[26], sharp weapons were the most commonly used. Humayum H et al.2009[27] noticed firearms were the most common means used for homicide. Since the majority of these attacks were premeditated, this might be explained by the lethality of the weapon and the attacker's determination to murder the victim.

The study conducted by Behera et al. 2019[15] where that sharp weaponinduced injuries were common among males, followed by injuries with firearms and blunt weapon injuries being common among female victims.

The majority of injuries were found to be caused by blunt weapons at the extremes of age (i.e., below 10 years (100%) and above 60 years (62.5%), whereas the majority of injuries were found to be caused by sharp weapons in the medium age groups. Retaliation was the primary factor in the majority of homicides (26.50%), and this includes disputes over real estate, gang rivalries, commercial contracts, etc. 17.5% of killings were the result of financial disputes, the majority of which included domestic violence and dowries.

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The study conducted by Behera et al.2019[15] also found similar findings with sharp weapons and firearm-induced injuries in adult age groups and blunt weapon-induced injuries and asphyxial injuries in extremes of ages. In a research done in Bangkok, Thailand, 26 gunshot wounds in people of all ages were often reported. Additionally, a study of 27 child homicide cases in Leeds found that asphyxial injuries and blunt force injuries were the most often found injuries.

The worst crime is culpable homicide. The responsible parties should act decisively to stop this horrific crime. For law enforcement authorities and autopsy pathologists, a study of the pattern of injuries in homicidal deaths may be a useful signal. In this study, blunt weapons were generally used to attack the head and whereas sharp weapons were face. primarily used to strike the neck and thoracoabdominal areas. Within six hours of suffering injuries, more than half of the patients passed away.

## Conclusion

When the homicides in this area of the country were analyzed, it was discovered that there were more male victims than female victims, with young adults aged 21 to 30 being the most victimized age group. Each age group experienced different types of wounds, and consequently, different kinds of weaponry were utilized.

Even though several anatomical parts were implicated in the most of the cases, the majority of the victims' heads were the anatomical regions that were most frequently attacked. Additionally, it was noted that the gender and age of the victims affected both the type of injuries and the weapon used.

As it was restricted to a fairly narrow area and excluded suspected history-related homicide instances, this study had its own limitations.

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