

Original Research Paper

Study of Weapons Related to Mechanical Injuries In Fatal Assault Cases Autopsied at Victoria Hospital

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Abstract

Weapons are instruments used with the aim of causing damage or harm to living beings. They are used to increase the efficacy and efficiency of tasks such as in humans fighting, defence, the committing of criminal acts and the preserving of law and order. Weapons are employed individually or collectively either by single assailant or multiple assailants. Commonly knives, daggers, choppers, bamboo sticks are used to inflict injuries. A cross sectional study was conducted in the Department of Forensic Medicine, Victoria Hospital, Bengaluru over a period of 1 year from Jan 2010 to Dec 2010 to highlight the weapons examined related to mechanical injuries in fatal cases of assault autopsied. Single weapon was commonly used in 20 (46.51%) cases of assault. Face (67.44%) was most commonly injured. Sharp heavy weapons like choppers were commonly used in assault cases.

Key Words: Weapons, Assault, Assailant, Injuries, Fatal, Autopsy

Introduction:

Weapons are the means or mechanical devices which when applied in a hostile manner, will produce injury. [1] Dangerous weapon is any instrument used for shooting, stabbing or cutting, or any instrument which, if used as a weapon of offence is likely to cause death: or by means of fire or any heated substance, or by means of any poison or any corrosive substance or by means of any explosive substance or by means of any substance which is deleterious to human body to inhale, to swallow or to receive into blood or by means of any animal. [1]

Deadly weapon- whoever is guilty of rioting, being armed with deadly weapon, which when used as a weapon of offence is likely to cause death, shall be punished with imprisonment of either description for a term which may extend to 3 years, or with fine, or with both. [1]

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Sharp weapons still stand as a very frequent cause of medico-legal deaths. The usual weapons for cutting and stabbing in today's era are knives, daggers, ice picks, hatchets and choppers. It has been observed that these weapons are used in enmity, robberies, and street-crimes, snatching especially in public transport and sometimes by the addicts. Such vicious means of deaths are indicative of extreme violence. [2]

Homicide is killing of a human being by another person. Homicides are of great concern all over world as they affect life and safety of the people. The frequency and the magnitude of such crimes induce a sense of insecurity and fear in the community. [3]

The pattern of homicides varies from country to country and is influenced by many factors which include method of killing depending on the availability of weapons as well as cultural influences which include family relationships, religious attitudes, criminal activity, drug culture, alcoholism and social, moral and political factors. Although the methodology of homicide differs from country to country, the pattern of homicide in any particular geographical area is surprisingly stereotyped.

For example in the United States, firearms are the most common weapons of assault. This is in contrast with South Asian countries like India where the most preferred choices are by means of inflicting blunt and sharp force trauma. [4]

There is an association between the weapon used and the fatal injury inflicted on the

body. [5] Assailants usually select a part of the body where the maximum damage can be inflicted with minimum effort and the outcome of the attempt depends on a number of factors e.g. type of weapon used, target site on the body, number blows, fitness of the victim etc. [6]

This study was conducted with the aim to highlight the weapons examined and their association with fatal injury inflicted on the body in fatal cases of assault autopsied at Victoria hospital Bengaluru.

Materials and Methods:

A cross sectional study of a total of 43 fatal cases of assault was conducted in the Department of Forensic Medicine, Victoria Hospital, Bengaluru over a period of one year from Jan 2010 to Dec 2010. The data was collected from the information furnished by deceased relatives and police; post-mortem examination and weapons brought by concerned police for examination. The data was analysed using descriptive statistics.

Observations and Results:

In this one year study total number of fatal cases of assault was 43 and total number of weapons used by assailants in these cases was 130. Single weapon was commonly used in 20 (46.51%) cases of assault followed by two and three weapons in six (13.95%) cases in our study. (Fig. 1)

Our study showed that single assailant was involved in 12 cases (27.9%) where they all used single weapon to inflict the injuries and more than five assailants were involved in 6 six cases (13.95%), among them; more than five weapons were used in 4 (9.3%) cases. But number of assailants was not known in 8 cases (18.6%). (Table 1)

Weapons were classified conventionally as light, moderate and heavy based on their weight. If the weight of the weapon was less than 0.1 kg, it was considered as light and if the weight of weapon was more than 0.5 kg, it was considered as heavy weapon.

Similarly if weight of the weapon was >0.1kg and <0.5kg, it was considered as moderate. In this study sharp weapons (84.5%) were commonly used in assault cases followed by blunt weapons (18.5%). Among sharp weapons, heavy sharp weapons (64.6%) were commonly used. (Table 2) Total 130 weapons were examined which were used in fatal assault cases. Among them, choppers (41%) were most commonly used weapon in infliction of injuries followed by knife (28%). (Fig. 2)

Our study showed that chop injuries (n=191) were the common injuries observed in

cases of fatal assault followed by stab injuries (n=112). Contusions (n=24) were least commonly found in assault cases. (Fig. 3) It was observed from this study that overall face (67.44%) was most commonly injured followed by front of chest 27(62.79%). When blunt weapon was used; face (20.93%) was commonly targeted.

When Sharp weapon was used, front of chest was targeted. Among sharp weapons, when light cutting weapon was used, front of chest was commonly injured but when heavy cutting weapon was used, head was commonly injured. (Table 4)

Discussion:

In total 43 cases of fatal assault, single weapon was commonly used in 46.51% cases which is similar to study by Subba SH et al [7] (94.2%). This observation can be explained that the number of weapons used by assailant(s) depends on availability of weapons and mind set of assailant(s).

In total 43 cases of fatal assault, single assailant was involved in 27.9% where they all used single weapon to inflict the injuries. More than 5 assailants were in 13.95%; among them, more than 5 weapons were used in 9.3% cases.

This observation could be due to variation in availability of weapons, motive, and circumstances of assault. Sharp weapons (84.5%) were commonly used in assault cases followed by blunt weapons (18.5%).

Among sharp weapons, heavy sharp weapons (64.6%) were commonly used. Our study findings were similar to observations by Shivakumar BC et al [8] (50%, 30%), Vij A et al [4] (49.4%, 34.8%), Mohanty S et al [9] (36.6%, 24.4%) Hugar BS et al [10] (33.25%, 28%) that sharp weapons were commonly used followed by blunt weapons in fatal assault injuries.

On the other hand, blunts weapons were commonly used than sharp weapons in studies conducted by Oberoi SS et al [11] (52.5%, 25%), Gupta S et al [12] (42.49%, 33.68%), Buchade D et al [13] (37.2%, 32.8%), and Rastogi AK et al [14] (31.75%, 21.96%).

This can be explained that type of weapons used in fatal assault cases depends upon availability of weapon, mind set of assailant, criminal activity, drug culture, alcoholism and social, moral and political factors. Out of 130 weapons examined, choppers (41%) were most commonly used weapon by assailants in infliction of injuries followed by knife (28%) whereas wooden sticks were commonly used in study by Subba SH et al. [7] Chop injuries (n=191) were the common

injuries observed in cases of fatal assault followed by stab injuries (n=112).

Contusions (n=24) were least commonly found in assault cases. This observation is consistent with common use of choppers followed by knife by assailants to inflict injury.

Overall face (67.44%) was most commonly injured followed by front of chest (62.79%). When blunt weapon was used; face (20.93%) was commonly targeted. When Sharp weapon was used, front of chest was targeted. Among sharp weapons, when light cutting weapon was used, front of chest was commonly injured but when heavy cutting weapon was used, head was commonly injured.

In contrast to this, Mohanty MK et al [5] observed that when the blunt objects were used, the head was the usual target and if a sharp object was used both head and abdominal regions were commonly involved.

This could be due to number of factors e.g. type of weapon used, position of victim as well as assailant, target site on the body, number blows, defence by victim etc.

Different perpetrators may execute multiple injuries on different body parts; in such cases it is prime responsibility of forensic pathologist to determine the fatal or non-fatal component of the injury. Such findings are useful in the court of law while deciding punishment or penalty for various offenders in particular case of homicidal death. [12]

A blow with a weapon having a flat surface will produce less severe injury than that due narrow object, because of diffusion of energy over a larger area. If a blow is struck with a weapon having a projecting object, a much more severe wound is caused as all of the force will be delivered to the end of the projection.

A blow to a rounded portion of the body, such as the top of the head will produce a more severe wound than the back same force delivered to a flat portion of the body, such as the back, where the force is dissipated because of contact with a larger area. [15]

Conclusion:

Single weapon was commonly used in fatal cases of assault. Sharp heavy weapons like choppers were commonly used in assault cases. When blunt weapon was used; face (20.93%) was commonly targeted and when sharp weapon was used, front of chest was targeted.

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Fig. 1: Weapons Used in Fatal Assaults Cases

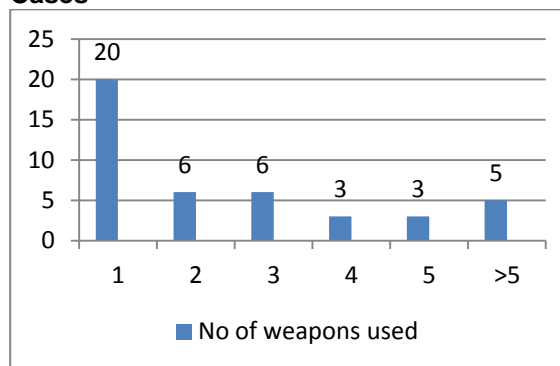


Fig. 2: Type of Weapons Used by Assailants

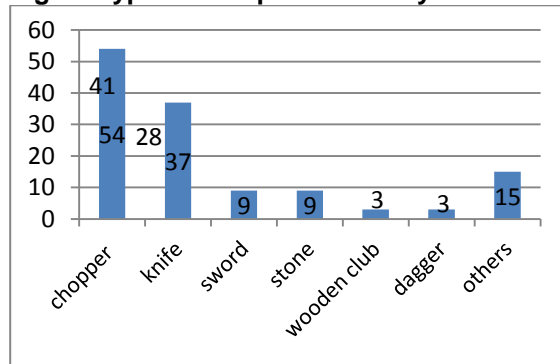


Fig. 3: Injuries inflicted on the victim of assault

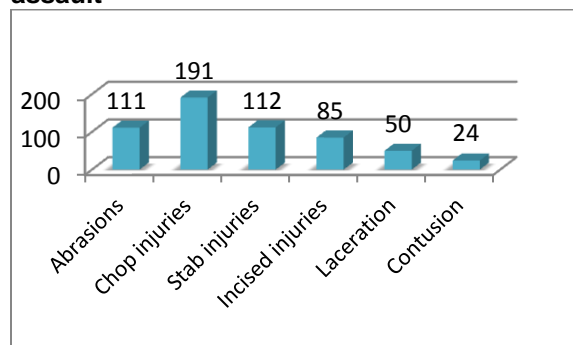


Table 2: Kind of Weapons

Weapon	Frequency(n=130)	(%)
Sharp	106	81.5
Light	22	16.9
Single edge	16	12.3
Double edge	6	4.6%
Heavy	84	64.6
Blunt	24	18.5
Light	2	1.5
Narrow surface	0	0
Broad surface	2	1.5
Heavy	22	16.9
Narrow surface	18	13.84
Broad surface	4	3

**Table 1
Number of Assailants and Weapons Used in Fatal Assaults Cases**

Number of Assailant	Number of Weapons						Total (%)
	One (%)	Two (%)	Three (%)	Four (%)	Five (%)	More than five (%)	
Unknown	4(9.3)	3(7)	0(0)	0(0)	0(0)	1(2.3)	8(18.6)
1	12(27.9)	0(0)	0(0)	0(0)	0(0)	0(0)	12(27.9)
2	2(4.65)	2(4.65)	0(0)	1(2.32)	0(0)	0(0)	5(11.6)
3	1(2.32)	0(0)	5(11.6)	0(0)	0(0)	0(0)	6(14)
4	1(2.32)	1(2.32)	0(0)	2(4.65)	0(0)	0(0)	4(9.3)
5	0(0)	0(0)	0(0)	0(0)	2(4.65)	0(0)	2(4.65)
>5	0(0)	0(0)	1(2.32)	0(0)	1(2.32)	4(9.3)	6(14)
Total	20(46.5)	6(14)	6(14)	3(7)	3(7)	5(11.6)	43(100)

**Table 3
Kind of Weapon and Site of Injury**

Site of Injury	Blunt (%)	Sharp (%)	Light (%)	Heavy (%)	Total (%)
Head	8(18.6)	15(34.88)	7(16.27)	8(18.6)	23(53.4)
Face	9(20.93)	20(46.51)	13(30.23)	7(16.27)	29(67.44)
Neck	2(4.65)	18(41.86)	13(30.23)	5(11.62)	20(46.51)
Front of Chest	3(6.97)	24(55.81)	17(39.95)	7(16.27)	27(62.79)
Back of Chest	1(2.32)	5(11.62)	5(11.62)	1(2.32)	6(13.95)
Front of Abdomen	1(2.32)	16(37.2)	12(27.9)	4(9.3)	17(39.53)
Back of Abdomen	0(0)	5(11.62)	3(6.97)	2(4.65)	5(11.62)
Lower limb	2(4.65)	12(27.9)	10(23.25)	2(4.65)	14(32.55)
Upper limb	4(9.3)	20(46.51)	13(30.23)	7(16.27)	24(55.81)
External Genitalia	0(0)	1(2.32)	1(2.32)	0(0)	1(2.32)
Axilla	0(0)	4(9.3)	3(6.97)	1(2.32)	4(9.30)