

Prevalence of Gunshot Injuries Seen in Robbery Cases in Karachi and their Characteristic Features

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ABSTRACT

Aim: To determine the prevalence of gunshot injuries seen in robbery cases at different locations in Karachi and their characteristic features.

Methodology: This retrospective observational study was conducted from January to December 2022 at the Office of the Police Surgeons in Karachi and comprised 63 gunshot cases. Information related to the physical and internal examination of the cases was included. Death features like the presence of rigour mortis, post-mortem lividity, and bleeding status were also included.

Results: The mean age was 35.30 ± 14.15 , and 95.2% were males. Most of the cases were reported in Ittehad Town (20.6%), with 92.1% of participants having blood stains on their clothes. Around 88.9% had an average physique. Almost 84.1% were developing rigour mortis, 61.9% had post-mortem lividity and 87.3% had identifiable features. Exactly 50.8% of cases were not oozing blood from any wound or site. Internal examination was performed in 46% of the cases. Of which, 19% of participants still had the bullet inside their bodies. It was found that 57.1% of participants instantly died after the gunshot, while 34.9% died within a few minutes, respectively. Most of the participants received gunshots on their chests ($n=35$), and most of the participants received 2 to 4 bullets at a time ($n=67$).

Conclusion: The high prevalence rate of gunshot injuries during robbery in Karachi. Higher authorities should strictly follow up on the increased number of casualties, and law and enforcement policies should be strictly followed to avoid further such cases.

Keywords: Prevalence, Gunshot injuries, Robbery, Characteristic features

INTRODUCTION

Criminalities like robbery have become human misery globally. Their prevalence is continuously increasing in both developing and developed countries. These criminalities actually serve as the source of an unhealthy and non-peaceful society and produce a sense of agitation, insecurity, and torture¹.

Several factors contribute to the development of these criminalities in society, including unemployment and a decreased economy². Several studies were conducted empirically to assess the sociodemographic determinants of these criminalities in both developed and developing countries³⁻⁹.

The crime rate in Pakistan has increased over the last decade¹⁰. Several sociodemographic determinants are identified that play a role in the incidence of these criminalities. These determinants include industrialization, income level, health and literacy among the people, urbanisation, unemployment, poverty, and inflation. Further cultural, family, and psychological backgrounds of the people also contribute to the increased prevalence of these crimes¹¹.

Deaths due to these gunshot injuries have tremendously increased around the world¹². It is estimated that hundreds to thousands of people died due to these gunshot injuries globally. 13.14 While in Pakistan, gunshot injuries are considered to be the main cause of death, as per the findings of a recent study. The gunshot injuries severity could be determined by the mechanical damage of the tissue caused by bullet and tissue interaction and the cavity made by the bullet. Tseverity of the violence causes an emotional, legal, and healthcare burden on society as a whole.

Therefore, the assessment of these gunshot injuries is required as they destabilise the socioeconomic system and political condition of society, leading to increased rates of disability and death¹⁷.

To reduce crime rates in Karachi, control corruption, enhance operational capabilities, and improve administrative infrastructure. Increase awareness about birth control methods, public-private partnerships, legislative measures, and education. Address issues like depleting natural gas resources, load

shedding, increased fuel prices, and security problems.

Thus, this study aimed to determine the prevalence of gunshot injuries seen in robbery cases at different locations in Karachi and their characteristic features.

SUBJECTS ANDMETHODS

After permission from IRB, a retrospective observational study was conducted on the gunshot cases reported from January to December 2022 in the Office of the Police Surgeons in Abbasi Shaheed Hospital, Jinnah Postgraduate Medical Centre (JPMC), and Civil Hospital, Karachi. Data was obtained through the history of gunshot injuries as reported at the study center. While cases reported outside of the study centres were excluded, Information related to the location of the incident, age, gender, and physical appearance at the time of the incident, including clothing condition and physique, was attained. Death features like the presence of rigour mortis, post-mortem lividity, eye, mouth, and nose conditions, in addition to bleeding status, were also included. Moreover, the duration between the gunshot and death and death and post-mortem was also calculated. Additionally, the number of wounds (entry and exit both), size of entry and exit wounds, and site of the gunshot were also assessed. Data was entered in an Excel sheet, which was then analysed using SPSS-22.

RESULTS

The mean age was 35.30 ± 14.15 years. Most of the participants were males (95.2%), and only 3 participants were females (4.8%). Further, most of the cases were reported from Ittehad Town (20.6%) (Fig. 1).

It was found that blood stains were present on the clothes of the majority of the participants (92.1%). Most of the participants had an average physique (88.9%). Further, most of the participants were developing rigour mortis (84.1%), 61.9% had post-mortem lividity, and 87.3% had identifiable features. Of which 69.8% and 71.4% had right and left eyes closed, respectively, 82.5% had a closed mouth, and 77.8% had a tongue inside the mouth. Almost half of the patients (50.8%) were not oozing blood from any wound or site (Table 1).

Internal examinations were performed in 46% of cases. Of

Received on 15-04-2023

Accepted on 05-07-2023

which, 19% of participants still had the bullet inside their bodies. It was found that 57.1% of participants instantly died after the gunshot, while 34.9% died within a few minutes, whereas 4.8% and 3.2% of participants died within a few hours and some days after the incident, respectively (Table 2).

Most of the participants received gunshots on their chests (n = 35), followed by their heads (n=18). Further, it was also found that most of the participants received 2 to 4 bullets at a time (n = 67), followed by 1 gunshot only (n = 55) [Fig. 2].

Table1: Physical appearance of the participants (n=63)

Variables	No.	%	
Clothes Condition	Blood stain not present	5	7.9
	Blood stain present	58	92.1
Physique	Average	56	88.9
	Thin/Lean	4	6.3
Rigor Mortis	Developing	53	84.1
	Developed	9	14.3
	Passing of	1	1.6
Post-mortem lividity	Not present	24	38.1
	Present	39	61.9
Features	Non identifiable	8	12.7
	Identifiable	55	87.3
Right Eye	Closed	44	69.8
	Opened	6	9.5
	Partially opened	13	20.6
Left Eye	Closed	45	71.4
	Opened	6	9.5
	Partially opened	12	19.0
Mouth	Closed	52	82.5
	Opened	3	4.8
	Partially opened	8	12.7
Tongue	Inside mouth	49	77.8
	Outside mouth	14	22.2
Bleeding	Not oozing	32	50.8
	Oozing from mouth	8	12.7
	Oozing from nose	4	6.3
	Oozing from ears	1	1.6
	Oozing from wounds	4	6.3
	Oozing from all sites	8	12.7
	Oozing from mouth and nose	6	9.5

Fig. 1: Number of gunshot cases reported at different hospitals during January 2022 to December 2022 (n=63)

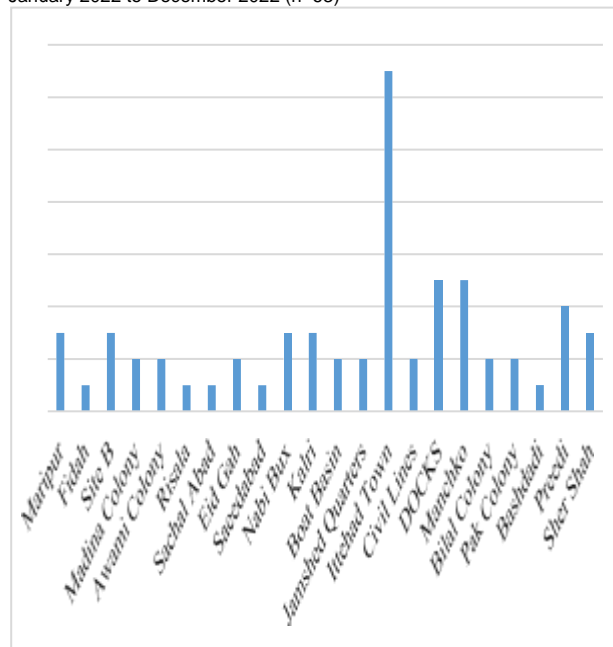
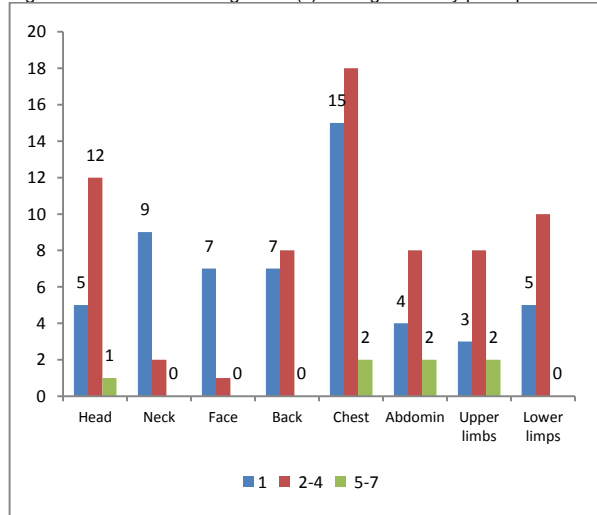


Table2: Internal Examination of the Participants

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Duration between death & PM (Hours)	63	1	15	4.11	2.66
No of entry wounds	53	1	8	2.38	1.59
No of exit wounds	46	1	6	2.33	1.49
Entry wound size (cm)	57	0.5	4	0.84	0.65
Exit wound size (cm)	45	0.7	5	1.30	0.94

Fig. 2: Site and number of gunshot(s) among the study participants



DISCUSSION

Gunshot injuries are a major concern in society these days. It severely affects the families of the victim specifically, and generally the healthcare system, law and enforcement agencies, and society as a whole. Various studies have reported that deaths due to these injuries are really common in Pakistan^{17,18}. But little is known about the characteristic features of these gunshot injuries; thereby, this study was conducted to determine the prevalence of gunshot injuries seen in robbery cases in Karachi and their characteristic features. Similarly, another study reported a total of 73 death cases during robberies until June 2020¹⁹. For instance, there is a need to use technical measures to further prevent such crimes and their related casualties. Another study reported a death prevalence of 30.2% due to gunshot injuries²⁰.

It was also determined that the socioeconomic conditions of society also have a significant effect on the criminality rate in any country²¹. Urbanisation, population density, and unemployment all have a positive and significant effect on the crime rate, while increased education, education index, and remittances have a negative and significant effect on these criminalities. It was also identified that committing these crimes is increasing in overcrowded areas as it provides major opportunities for robbery, gunshots, and even hiding after committing the crime²². Similarly, the current study also showed a high prevalence of gunshot injuries and related deaths in areas like Ittehad Town, followed by DDC'S and Manchko. These are some of the most densely populated areas of Karachi. Thereby, it is recommended that measures to promote education and remittances be taken immediately.

The different studies have also reported high incident rates of gunshot injuries and deaths among young males as compared to females^{17,20}. The current study also found an increased prevalence of gunshot injuries among males and young to middle-aged people in Karachi. It is recommended to increase awareness and literacy rates regarding human life respect and more focused law and intervention implementation to decrease casualties in the future.

Further, the current study reported most of the gunshots on chest followed by head. The study from Baluchistan reported the gunshot injuries and related death due to bullets in chest and abdomen as compared to other parts of the body¹⁷. Another study from Afghanistan reported that the common site of injury due to a gunshot was the head²⁰.

Regarding the internal examination, it was found that entry and exit wound sizes were reported to be 0.84 ± 0.65 cm and 1.30 ± 0.94 cm, respectively, in the current study participants. It is predicted that the entry wound size is mostly equal to the diameter of the bullet used for the gunshot. However, in gunshot injuries of high velocity, the size of the exit wound is usually larger than the size of the entry wound, as shown in the current study. Thus, it could be assumed that most of the gunshots were distant, which is consistent with other study results^{20,24}.

The current study also reported that around 19% of participants still had the bullet inside their bodies. It was also found that 57.1% of participants instantly died after the gunshot, while 34.9% died within a few minutes. The various studies have identified that tissue resistance and density can stop the bullet, and thereby the bullet remains embedded in the body. Further, these gunshot injuries could cause nerve damage and increased loss of blood, causing instant deaths in some cases^{20, 23, 25}.

Some recommendations are advocated to combat crimes in all districts of Karachi, Pakistan, which could provide assistance to the government in making an appropriate system to report the crimes, thereby reducing these criminalities and their related casualties. First of all, the entire police structure should be improved to plug up the trust gap between the general public and the police. The corruption should be controlled, operational capabilities should be enhanced, and administrative infrastructure should also be improved. Further, the needs of the increasing population in the city should be met by providing awareness to the general population regarding the methods of birth control, increasing public-private partnerships, improving legislative measures, and increasing the educational index. Crime rates could also be controlled by increasing the employment rate among the people living below the poverty line and increasing remittances generally. Moreover, issues like depleting natural gas resources, load shedding, increased fuel prices, and security problems should also be managed to decrease the crime rates in metropolitan cities like Karachi.

CONCLUSION

The high prevalence rate of gunshot injuries during robberies in Karachi was reported. As most of the people died instantly from the gunshot, the common site of injury was the chest and head. Higher authorities should strictly follow up on the increased number of casualties, and law and enforcement should be strictly followed to avoid further such cases. General public awareness sessions should also be conducted to deal with such cases, thereby decreasing the rate of mortality due to gunshot injuries.

Authorship and contribution declaration: Each author of this article fulfilled following Criteria of Authorship:

1. Conception and design of or acquisition of data or analysis and interpretation of data.
2. Drafting the manuscript or revising it critically for important intellectual content.
3. Final approval of the version for publication.

All authors agree to be responsible for all aspects of their research work.

Conflict of interest: None

Funding: None

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This article may be cited as: Ali G, Naz R, Fatima M, Tarmizi ZA, Ahmed R, Irshad F: Prevalence of Gunshot Injuries Seen in Robbery Cases in Karachi and their Characteristic Features. *Pak J Med Health Sci*, 2023;18(9): 25-27.