



## AN ANALYSIS OF DEATHS IN MALE VICTIMS BY FIREARM – THE FORENSIC MEDICINE DEPARTMENT'S PERSPECTIVE IN TURBAT BALUCHISTAN, PAKISTAN

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### ABSTRACT

**Introduction:** The excessive utilisation of weapons has serious consequences for both victims and their families, as well as the healthcare and judicial systems, which has led to a rise in gun-related deaths, particularly in developing nations.

**Objective:** To estimate firearm-related deaths in male victims reported to the mortuary of Turbat Teaching Hospital, Baluchistan, Pakistan.

**Materials & Methods:** A retrospective review of male firearm death cases was conducted out of the total medico-legal post-mortems performed at the mortuary from January to December 2021. Police inquest reports and firearm postmortem data were used to identify the cases. Statistical analyses were performed using SPSS v.20.0.

**Results:** Of the 314 autopsy cases, 184 (58.60%) were firearm-related male deaths. Young adults aged 21-30 years (33.70%) and 31-40 years (28.26%) were the most frequently affected age groups. The head and neck were the main targets (38.59%) followed by the chest (25%). The majority of the cases were from rural areas (77.17%), and the summer season (May to August) accounted for the highest number of cases (53.26%).

**Conclusions:** Young males in rural areas were more prone to firearm injuries, with the head and neck being the main target areas. The highest number of cases were reported during the summer season. These findings can help experts implement preventive strategies such as counselling, improved education, and legislation to address this public health concern.

**Keywords:** Firearms; Autopsy; Clinical pattern; Death.

## INTRODUCTION

Firearm-related fatalities are a global cause of death. A meticulous assessment of the pathological and autopsy results, along with the investigative report, pertinent medical history, and further supporting studies are essential to accurately determine the cause of death. An exhaustive assessment of the complete body of data is required when examining the fatalities caused by gunshots. Scene investigation and investigative results are crucial for accurately determining the way of death.<sup>1</sup> The firearm is well recognised as an extremely destructive and lethal weapon, and is also a significant public health concern. A 2003 study conducted in the USA reported that firearms were used in 67% of 16,503 homicides analysed. Firearms were responsible for 54.83% of homicides in Adana, Turkey. The choice of weapons in cases of homicide differs across different regions of the world, with firearms being the most commonly used. The most frequently affected regions of the body in homicide cases are the head and chest. Additionally, the highest number of homicide incidents tend to occur during the summer season.<sup>2</sup>

Factors including an ineffective and weak justice system, insufficient security measures, and easy access to ammunition (through smuggling) increase the probability of gun violence in a community. Stringent rules should be in place to prevent the acquisition of weapons on a global scale. For crimes in which the perpetrator is likely to flee the scene, weapons are the preferred means of self-defense.<sup>3</sup> The number of casualties caused by mass shootings can be mitigated through the implementation of legislation that bans the ownership and use of semiautomatic and automatic assault weapons and imposes stringent licencing procedures. As far as mass murder goes, the United States is also at the top of the world.<sup>4</sup>

According to the World Health Organization (WHO), firearms are responsible for two-thirds of all killings and one-fifth of all suicides worldwide. Firearms are linked to 42% of killings worldwide. The prevalence of firearm violence in society is often attributed to the easy availability of ammunition, its illegal smuggling into the country, a weak and ineffective legislative framework, and a compromised security system. Stringent monitoring should be maintained during the acquisition of weapons worldwide. Firearms are the preferred weapons for committing crimes due to the ample opportunity they provide offenders to escape from the crime scene.<sup>5</sup> When looking at homicides around the world, we can see that there are a few main causes that share common behavioral patterns.<sup>6</sup> In the province where we currently reside, there is a highly developed tribal social system in which traditional standards are treated with great respect and the three Z's are recognized as important causes of homicide. Zan(woman), Zar (wealth), and Zamin (piece of land).<sup>7</sup>

A social-psychological analysis of these cases reveals that the majority of murders are motivated by the need to exact revenge on family shame.<sup>8</sup> The global firearm homicide rate per 100,000 people is 3.2 in the USA, 0.51 in Canada, 0.14 in Australia, and 0.07 in the UK. By contrast, Japan strictly prohibits firearm violence. It has the lowest rate of gun homicides in the world, with less than one-tenth per million people. The possession of firearms or bladed weapons is extremely rare, with only a few individuals being an exception.<sup>9</sup> Available data on mortality rates indicate that European countries have fewer instances of gunshot injuries. Sweden, for example, has reported approximately 200 deaths per year, which may be attributed to suicide attempts. Over the past two decades, there has been a notable increase in the incidence of gunshot injuries in Pakistan. Gun-related injuries are a leading cause of disability and death in low-income nations and are influenced by factors such as access to firearms, legal systems, and regulations. Low-income countries exhibit a higher prevalence of both firearm ownership and instances related to firearms, in addition to having less stringent gun control laws.<sup>10</sup>

This study aimed to analyse the different patterns of firearm-related fatalities among male patients at the Turbat Teaching Hospital in Baluchistan, Pakistan. Experts in the field can use the study's findings on the distribution of deaths by age, geographic region, and month to implement preventive strategies, such as counselling, improved education, and legislation.

## MATERIALS AND METHODS

This retrospective chart review was conducted from January to December 2021 at Turbat Teaching Hospital, Baluchistan, Pakistan. All males whose deaths were attributed to firearms and whose records were turned over to the mortuary were considered for the study. Cases in which the necessary paperwork was missing were excluded. Complete inspection of the cranial, thoracic, and abdominal chambers was part of the internal examination. The trajectory of the bullet was traced, and damage to the individual organs was determined. The details of both the entry and exit wounds were identified. After entering the aforementioned data into SPSS v.20.0, the findings were summarised in text and tables.

## RESULTS

This study analysed 314 male autopsy cases presented for the examination, of which 184 were firearms.

Table 1 showed that the age group between 21-30 years (33.70% )was most frequently shot followed by 31-40 years having 28.26%. The results showed that adults in the middle-aged group were mostly the victims of firearm injuries.

**Table 1: Age-wise Distribution of Male Firearm Victims**

Age group (years)	Number of victims (%)
0-10	17 (9.23 %)
11-20	31 (16.84 %)
21-30	62 (33.70 %)
31-40	52 (28.26%)
41-50	14 (7.61%)
51-60	8 (4.35%)
Above 60	2 (1.09 %)

Table 2 also revealed that 38.59% of the victims were shot in the head and neck, followed by 25% being shot in the chest. Approximately 11% of the victims had multiple injuries.

**Table 2: Target area of the body in Male victims of firearm injuries**

Targeted area	No. of cases
Head & Neck	71 (38.59%)
Chest	46 (25%)
Abdomen	40 (21.74%)
Multiple	22 (11.96%)
Extremities	5 (2.71%)

Table 3 revealed that the maximum of the cases was from rural areas 142 (77.17%) while the remaining 42 (22.83%) were from Urban areas.

**Table 3 : Area wise distribution in Male victims of firearm injuries**

Area	Number of cases	Percentage
Urban	142	77.17%
Rural	42	22.83%
Total	184	100%

Table 4 revealed that summers had more cases than any other season.

**Table 4: Month-wise distribution of firearm deaths in Male victims**

Month	Number of Cases	Percentage %
January	11	5.98%
February	9	4.89%
March	13	7.07%
April	12	6.52%
May	30	16.30%
June	21	11.41%
July	27	14.67%
August	20	10.87%
September	13	7.07%
October	14	7.61%
November	10	5.43%
December	4	2.17%

## DISCUSSION

In homicidal deaths worldwide, there were far more men than women. According to statistics from South Africa that cover the overall epidemiology of firearms, males were the predominant gender in all cases reported in 2017.<sup>11</sup> Female victims of firearms are disproportionately represented in the data obtained at the Forensic Medicine and Toxicology Department of Peshawar, which is consistent with research undertaken in other cities of Pakistan.<sup>12-13</sup> However, a few studies reveal that car accidents and gunshot wounds are the leading causes of death.<sup>14</sup>

This study included male autopsy cases from the District of Turbat Baluchistan. The results revealed that young adult age groups were mostly affected, which is similar to many other studies conducted all over Pakistan.<sup>15-17</sup> The majority of firearm injuries occurred in men which is in accordance with the study by Samad et al..<sup>18</sup> The important organs are located in the head, neck, and chest, making these areas prime targets for gun violence. (Table-2) A similar pattern has been observed in other studies.

Living in a remote area increases the likelihood that a woman would be a victim of gun violence. Many arguments are in favour of this, including improved city enforcement, greater literacy rates, and more equitable city jobs. To reduce gun violence, the report recommends that new legislation be enacted at federal and state levels to limit the acquisition of firearms, particularly among youth. New educational campaigns are aimed at parents and children to raise awareness about the risks of gun ownership and use. By emphasising morals, the jirga system can replace the old feudal systems that were used in the Old World. In the tribal areas around Peshawar, law enforcement should also work to stop people from making guns and ensure that only legally bought guns are sold. Additionally, hospitals should have a reliable system in place to treat gunshot patients immediately to limit the number of preventable deaths.<sup>19-20</sup>

A country's lack of regulation over the production and sale of firearms poses a threat to the safety of its neighbors and other nations.<sup>21</sup> According to our research, the leading cause of death for female victims in the Peshawar district is gunshot wounds to the chest, head, or abdomen. More than 60% of homicides, 25% of assaults, 35% of robberies, and almost 50% of suicides in the United States involve firearms.<sup>22</sup>

The small sample size of the study is a drawback, but a larger investigation could confirm the findings.

## CONCLUSION

The study concluded that young males in rural areas are more prone to firearm injuries with the head and neck as the main target part of the body. In addition, a maximum of the cases were reported in the summer season.

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