

## An Epidemiology of Firearm Injuries in District Quetta

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### ABSTRACT

**Aim:** To study the pattern, age, gender, number and location of firearm injuries in Firearm victims brought to the medicolegal department of Sandeman Hospital Quetta during the year 2001.

**Design:** Observational descriptive study

**Duration of study:** One year

**Methods:** The study was conducted in Rahber Medical College, Lahore based on the data of firearm cases of the year 2001, collected from the Medicolegal Department Sandeman Hospital Quetta.

**Results:** Out of 466 cases of firearm cases, Firearm victims were composed of 380(81.5%) males and 86(18.5%) females. Ages of victims ranged from 0 to more than 60 years and most frequent cases of firearm found at the age of 31-40yrs, 160(34.3%) and most common region found in fire arm victims was Thorax 200(42.9%).

**Conclusion:** The victims of firearm injuries were young people aged between 20-40 years and most common region involved was Thorax. It must be targeted for made aware of lifestyle adjustments such as training to refrain from anger or disputes.

**Keywords:** Firearm, epidemiology, thorax

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### INTRODUCTION

Injuries from firearms are a major health problem that severely affects the criminal justice and health-care systems<sup>1</sup>. Throughout the world deaths due to firearm weapons have increased tremendously<sup>2</sup>. Every year hundreds of thousands of people die from injuries caused by firearms<sup>3</sup>. The world witnesses over 500,000 deaths due to homicide annually<sup>4</sup>. In spite of legal controls, homicidal deaths are on the rise<sup>5</sup>. Firearms provide a means whereby a person can be killed without any physical contact between the victim and the assailant and provide an opportunity for escape by the offender and therefore, are becoming a weapon of choice<sup>6</sup>. It was reported that gunshots are the main cause of death in committing murders in a study carried out in Pakistan<sup>7,8</sup>. The epidemiology of homicidal deaths depends on many factors. These include but are not limited to factors such as the prevalence of weapons of offence such as firearms, the age and gender of the victims and assailants, the psychological status of

the society and in multi-ethnic societies, the ethnic group also has an effect on such deaths<sup>9</sup>. The medical, legal, and emotional costs of this violence impose an enormous burden on urban and rural trauma hospitals, and the courts, families, and society as a whole<sup>1</sup>. The evaluation of these injuries requires specialized training and expertise, whether by an emergency physician in a living gunshot victim or a forensic pathologist in the deceased. There is growing concern about the indiscriminate use of firearms on a large scale, particularly in the last decade. The availability of firearms known as small arms and light weapons (SALW) has been described as a cancer spreading across the developing world<sup>10</sup>. It destabilizes political, social, and economic systems, and leads to injury, death, and chaos<sup>1</sup>. There were a gap between the trends and result which were on medical record, so this study was planned to determine the pattern, age, gender, number and location of firearm injuries in Firearm victims brought to the medicolegal department of Sandeman Hospital Quetta during year 2001.

### MATERIALS AND METHODS

The study was conducted in Rahber Medical & Dental College, Lahore and data of all firearm fatalities, were collected from the medicolegal department of Sandeman Provincial hospital Quetta, and data collected from the period from January 2001 to December 2001. Our study was attempted to define the circumstances, motives, extent and severity of firearm-related injuries in their victims. All

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firearm death records were thoroughly reviewed the information like, demographic data of the victim and time interval between incidence, and medico legal examination & examination of the characteristics of firearm injuries like range and number of entry/exit wound, type of weapon used. A detailed history was taken from attendants or the persons accompanying the injured person. Police papers like, inquest report was thoroughly studied and relevant findings were noted at same time. This is an observational descriptive study and data of 466 cases of firearm injuries were recorded, compiled and analyzed.

**RESULTS**

A total of 466 cases of firearm injuries were recorded during the study period. Data were analyzed on using SPSS version 20. Firearm victims were composed of 380(81.5%) males and 86(18.5%) females. Table-1, showed the age of victims ranged from 0 to more than 60 years and most frequent cases of firearm found at the age of 31-40yrs, 160(34.3%) and 2<sup>nd</sup> most common in age group of 21-30yrs, 150(32%). In 3<sup>rd</sup> common age group was 41-50yrs, 60(12.9%). A least number of cases were found in 11-20 years age group, 40(8.6%) followed by the age group of 51-60yrs, 30(6.4%) and a very least age group was 0-10yrs, 10(2.1%), followed by the age group of more than 60yrs 16(3.4%). The minimum age of the child was 10yrs.

Table-2 showed the most common region found in fire arm victims was Thorax 200(42.9%), and the 2<sup>nd</sup> most common region in firearm victims was Pelvis, 96(20.6%), and the 3<sup>rd</sup> common region was Abdomen, 80(17.2%) found. Least region in firearm victims were Head and Neck, 40(8.6%) followed by Upper limb, 30(6.4%). Very least regions in firearm victims were lower limb, 20(4.3%).

In all above regions 75% from far distance injuries and 25% from near distance injuries were found. History of incidence, weapons used during the incidence and pattern of injuries mentioned 75% were rifled firearm injuries and 25% from smooth bore weapons used for such injuries.

Table 3 showed the Occupational history in which, 100(21.5%) victims were jobless, 110(23.6%) were farmers, 105(22.5%) were labourers, 35(7.5%) were students, 40(8.6%) were drivers, 36(7.7%) were housewives, 40(8.6%) were shopkeepers were seen in cases. In 80(80%) of firearm cases, the injuries were caused by homicidal attacks, whereas in 10 cases (10%) had history of accidental firearm injuries obtained; in 5 cases (5%) fatalities were suicidal and in the remaining 5(5%) the cause(s) of firearm injuries were due to robbery.

Cases weighted frequency

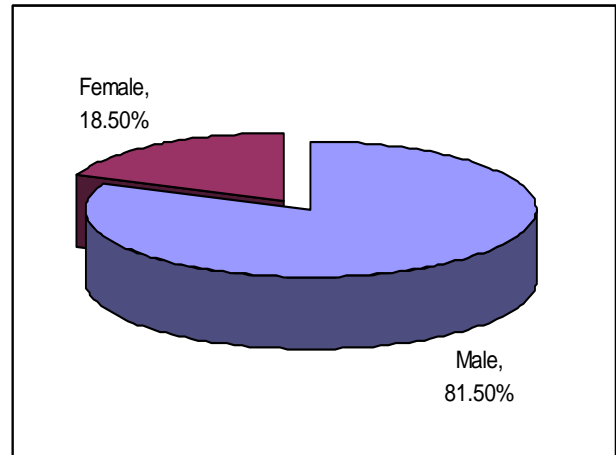


Table 1: Age variation

Valid	Frequen cy	%	Valid %	Cumulative %
0-10yrs	10	2.1	2.1	2.1
11-20yrs	40	8.6	8.6	10.7
21-30yrs	150	32.2	32.2	42.9
31-40yrs	160	34.3	34.3	77.3
41-50yrs	60	12.9	12.9	90.1
51-60yrs	30	6.4	6.4	96.6
>60yrs	16	3.4	3.4	100.0

Table 2: Body region involved in firearm victims

Valid	Frequen cy	%	Valid %	Cumulative %
Head & neck	40	8.6	8.6	8.6
Thorax	200	42.9	42.9	51.5
Abdomen	80	17.2	17.2	68.7
Pelvis	96	20.6	20.6	89.3
Upper Limb	30	6.4	6.4	95.7
Lower Limb	20	4.3	4.3	100.0
Total	466	100.0	100.0	

Table-3 Occupation of victims

Valid	Frequen cy	%	Valid %	Cumulative %
Jobless	100	21.5	21.5	21.5
Farmers	110	23.6	23.6	45.1
Labourers	105	22.5	22.5	67.6
Students	35	7.5	7.5	75.1
Drivers	40	8.6	8.6	83.7
House wives	36	7.7	7.7	91.4
Shopkeepers	40	8.6	8.6	100.0

**DISCUSSION**

The increasing availability of automatic weapons has resulted in multiple injuries in victims of firearm deaths<sup>11</sup>. Firearm injuries are usually labelled as low- or high velocity Injuries<sup>12</sup>. Low-velocity wounds are attributed to weapons having muzzle velocity of less than 600 meter per second and classically caused by

handguns and are, therefore, more common in civilian population. Military or hunting weapons have a muzzle velocity of more than 600 meters per second and cause high-velocity wounds<sup>13</sup>. The majority of the patients ranged between the age of 31-40yrs, 160(34.3%) and 2<sup>nd</sup> most common in age group of 21-30yrs, 150(32%). 30-40 years, and the males ratio is more as compared to females, which almost coincided with the already published work. The male preponderance is in keeping with the fact that males are generally more adventurous and more aggressive and a high proportion of firearm related injuries among male could be due to their gender role which obligate them to be more exposed to the outside environment than females. Another study showed similar findings in Baluchistan<sup>16</sup>. Data revealed that majority of cases were due to civilian assaults which was comparatively similar to other studies<sup>14</sup>. There was no any association of occupation found in risk of firearm injuries, in which most of the victims were engaged in simple occupations such as labour, farming, taxi driving; a good number of students were also victims<sup>15</sup>. In almost all the cases, high velocity weapons were used as firearms. The manners of injury in vast majority of cases were homicidal with few accidental suicidal and robbery cases. Sixty percent (60%) of deaths in our study belonged to rural areas as compared to 40% in the urban dwellers. This trend has also been reported in USA<sup>17,18</sup>. This predisposition of rural society to violence can be explained by the generally low levels of education in this group, whereby they tend to breed enmity amongst themselves and their emotions tend to flare-up more rapidly.

## CONCLUSION

The victims of firearm injuries were young people aged between 20-40 years and most common region involved was Thorax. Prevention efforts need to be initiated through strict gun control laws coupled with education and awareness. Snap checking for arms by law enforcement agencies and a system of surveillance for control of violence and street crimes may help in reducing the burden of deaths from firearms.

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