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Spectrum of Firearm Related Deaths in Multan City: Autopsy Based Study

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ABSTRACT

Background: Excessive use of the firearms causing severe & lethal effect to the victims and their families, delivery of health care and judicial system as well as society where they live. The easy availability of guns has increased the firearm fatalities, especially in developing countries. **Objectives:** To study the pattern of lethal firearm injuries, in Multan city with special reference to the regions of the body affected, seasonal variation & vulnerable age group. **Study design:** Retrospective study. **Setting & duration:** The study was carried out by examining the record of all medicolegal autopsies conducted in the department of Forensic Medicine, Nishtar Medical College Multan during calendar year 2016. Only cases of firearm related deaths were selected for detailed examination and those died of other than firearm injuries were excluded. The reports were studied in relation to Age, types of firearm used, Gender, seasonal variation and regions of the body involved. **Results:** During 2016, out of total 197 medicolegal autopsies, 77(39.08%) died of firearm injuries & out of those, male victim were 67(44.66%). The most vulnerable age was 19-40 yrs (45.45%). Male female ratio was 6.4:1, the chest being the commonest targeted area was38.96%, while during the months of July & August highest incidence of deaths due to firearm observed (15.57%). **Conclusion:** The young males are the most common target & the leading cause of death was the injuries on the chest. There is need of strict implementation of law regarding possession of firearm and improvement in socioeconomic conditions of the individuals.

Keywords: Firearms, Fatalities, Homicide, Autopsy, Lethal Injuries, Cause of death

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INTRODUCTION

The firearm weapon is considered as one of the most devastating and fatal weapon that is also a major health problem.[1] Firearms are one of the leading causes of violent / unnatural deaths throughout the world affecting all communities. A study conducted in USA during 2003, mentioned that 67% of 16503 murders were committed with firearms.[2] In Adana, Turkey, firearms were causative agents for 54.83% of the homicidal deaths.[3,4] The weapon used in homicide varies in different parts of the world but is mostly firearm [5,6] and the mostly region of the body involved in homicide injuries are head and chest while maximum incidence of homicide occurred in summer.[5,7] The homicidal rate in a local study at Faisalabad has been documented as 8.3/100,000 of population / year & the firearm was used in 50% cases.[8] The principal types of firearm are smooth bored firearms and the riffled firearms. The smooth bored involves shotguns, muzzle loader, muskets, and the shotguns being more common. The riffled firearms involved service and sporting riffles, pistol, revolver etc.[9] The percentage distribution by age in Pakistan in 1995 was 0-14 years (42.7%), 15-64 years (54.2%) whereas 65 years and above (3.1%).[10] The main objective of this study was to find out the pattern & distribution of fatal firearm injuries over the body of victims autopsied in the department of Nishtar Medical College, Multan during the calendar year 2016. Also to determine the most vulnerable age group and gender being the victims of firearm injuries and the seasonal variation in those victims of Multan city during the study period.

METHODOLOGY

Study Design: Retrospective study
Place of Study: Department of Forensic Medicine, Nishtar Medical College Multan
Duration of Study: Calendar year 2016

A retrospective study conducted by collecting the data through examination of all the post mortem cases related to firearm deaths in the department of Forensic Medicine and Toxicology, Nishtar Medical College, Multan during the calendar year 2016. Total 197 autopsies were conducted during the study period and only 77 cases of firearm related death were selected for detailed study. The data collected, entered on predesigned Performa and results prepared using descriptive analysis. The considered variables were the victim's age, gender, type of firearms and body parts involved in firearms related deaths.

RESULTS

During the study period (January to December, 2016) in the department of Forensic Medicine and Toxicology, Nishtar Medical College Multan, total 197 autopsies were conducted (150 male & 47 female), out of these only 77 fire arm injury cases (67 male & 10 female) were considered for study. There

is marked decrease in number of female victims as compare to male victims. (Table:1).

Table 1: Total No. of autopsies during year 2016

Gender	Total Autopsies	Firearm injuries
Male	150	67
Female	47	10
Total	**197**	**77**

The analysis of victim's age group and gender reflects that age group 19-40 years is on the top, (45.45%) while next is the 41-60 years age group (41.55%). Also, there is marked increase in female cases of age 19-40 years (50%) and 41-60 years only two cases (20%). But among the males the ratio is same between 19-40 & 41-60 years (44.76%) each. (Table: 2).

Table 2: Age group & gender of firearm victims

Age group (years)	Male	%age	Female	%age	No. of cases	% age
12-18	03	4.47%	02	20%	05	6.49%
19-40	30	44.76%	05	50%	35	45.45%
41-60	30	44.76%	02	20%	32	41.45%
Above sixty	04	5.97%	01	10%	05	6.49%
Total	**67**	**100%**	**10**	**100%**	**77**	**100%**

The type of weapon used is riffled (pistol, revolver) i.e. (77.92%) and also among male (83.58%), while among the female cases the situation is reverse i-e smooth bore(shotgun) is 60% and riffled 40% (Table: 3).

Table 3: Types of weapon used

Types of weapon	Male	% age	Female	% age	Total	% age
Rifled	56	83.58%	04	40%	60	77.92%
Smooth bore	11	16.41%	06	60%	17	22.07%
Total	**67**	**100%**	**10**	**100%**	**77**	**100%**

The region involved is mostly chest (38.96%) and the second most is the abdomen (25.97%) and head is the third one (23.37%). (Table: 4). the seasonal variation was also observed and it was noticed that firearm cases on the top during the months of July & august (15.57%) each, while the May & June the second one (11.68%), observed in the months of January, February & December (2.59%) each. (Table: 5).

Table 4: Target area of body in victims of firearm injuries

Targeted Area	No. of cases	%age
Head & Neck	18	23.37%
Chest	30	38.96%
Abdomen	20	25.97%
Extremities	09	20%
Total	**77**	**100%**

Table 5: Month wise distribution of firearm related deaths

Month	No. of cases	%age
January	02	2.59%
February	02	2.59%
March	04	5.19%
April	08	10.38%
May	09	11.68%
June	09	11.68%
July	12	15.57%
August	12	15.57%
September	08	10.38%
October	05	6.49%
November	04	5.19%
December	02	2.59%
Total	**77**	**100%**

DISCUSSION

Total 197 cases were brought to the Department of Forensic Medicine, Nishtar Medical College Multan for Medicolegal autopsy during calendar year 2016 and only 77 (39.8%) were observed to be caused by firearm injuries which indicates that deaths due to firearm weapons are common in this area. These findings are in line with other local studies conducted in different cities of Pakistan.[12,13,14] Our study shows that injuries due to riffled firearms (pistol, revolver, and riffle) are more common 77.92% as compared to the shotguns (22.07%) respectively while on other hand, the use of shotgun is (60%) as compared to the riffled weapons (40%), among the female victims. The most vulnerable age group among victims of firearm fatalities was 19-40 years involving 44.76% males & 50% females. Our study is not in line with the results of a local study conducted by Qasim AP et al [11] showing the higher percentage of female victims to be involved in deaths due to firearms compared to our study. This shows that involvement of this age group (productive age group) in socioeconomic & cultural activities is higher than other group both male & female, which synchronizes the same study carried out by Qasim AP et al.[15] Male to female ratio in our

study is lower (6.7:1) as compared to the studies carried out at Peshawar and Sahiwal.[6,11] The involvement of body region in our study is the chest region (38.96%) which is almost the same as in other studies [11,16] this means that chest is the most targeted area of the body in the firearm deaths. The other 2nd common part is Abdomen (25.99%) which adjacent to chest and is true in other studies also. The seasonal variation shows that highest number of cases of firearm victims are noted during the months of July & august (15.57%) each. which reflects prolong day time, prolong working hours, longer contact time, hot summer period, which makes the poor socioeconomic persons to survive and produces the sense of deprivation, change in mood, behavior of the individuals and makes them aggressive. The same has been reported by other studies.

CONCLUSION

The mortality incidence is higher in Multan city. Majority of the cases are of young males (productive life period) involving the chest region. It needs the steps should be taken to minimize the use of firearm, the most lethal weapon by effective implementation of law, Ban on illegal possession, educational lectures to youth and steps to raise the literacy rate along with the improvement of socioeconomic status of the society.

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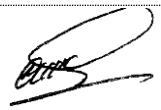
Dr. Altaf Pervez Qasim Professor / Head Department of Forensic Medicine, Sahiwal Medical College, Sahiwal	Layout of manuscript, Literature Review, Authentication of References, Proof Reading	
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