

## ORIGINAL ARTICLE

# FIRE ARM WEAPON INJURIES IN KARACHI IN RELATION TO MORTALITY & MORBIDITY AN 8-YEARS STUDY FROM 2007 – 2014.

Farhat Hussain Mirza<sup>1</sup>, Ishfaq Ali Langah<sup>2</sup>, Qudsia Hasan<sup>3\*</sup>

<sup>1</sup>Department of Forensic Medicine, Jinnah Sindh Medical University Karachi.

<sup>2</sup>Department of Forensic Medicine, Shaheed Mohtarma Benazir Bhutto Medical College Lyari Karachi, .

<sup>3</sup>Department of Forensic Medicine, Ziauddin Medical University, Karachi

## ABSTRACT

**Background:** Crime on gunpoint has increased in metropolis of Karachi in last many years with increasing mortality & morbidity so what could be done to minimize it and how we can proceed further to make Karachi a peaceful city. The objective of this study is to evaluate whether more firearm laws & associated firm restrictions over the availability of fire arm weapons is required to minimize fire arm fatalities

**Methods:** It is a cross sectional descriptive study for retrospective analysis of all firearm related deaths and injuries, reported to authorized medico-legal sections of Karachi, located in Civil hospital, Abbasi Shaheed & Jinnah Post Graduate Medical center. The study period is 8 years, extending from 1<sup>st</sup> January 2007 to 31<sup>st</sup> December 2014. All medico legal cases & postmortems due to firearm weapons reported and / or sent by police are examined & autopsies done in authorized medico legal sections are included in this study. All cases referred for treatment purposes from outside Karachi are excluded.

**Results:** Total 208241 medico legal cases referred during study period out of which 14.03% (n=27638) cases were identified as firearm weapons injuries. Maximum cases of firearm were reported in Abbasi Shaheed Hospital 37.9% (n= 10478) while minimum cases 29.3% (n=8107) in Civil Hospital Karachi. Postmortems conducted on fire arm weapons deaths were 37.7% (n=4246) in Abbasi Shaheed Hospital Karachi. Male dominated with 91.74% (n=10325) of post mortems over female with 8.26% (n=928) only.

**Conclusion:** The study concluded that homicidal firearm injuries contributed as one of the major cause of death. The age group of 21-25 years was most affected. The most commonly targeted body part was chest & abdomen. The use of fire arm weapons & resultant mortality is increasing day by day. The easy availability of weapons, unemployment, poor socio-economical conditions & the use of youth by Political parties & other criminal groups, for their perverted purposes are main factors behind increased homicidal killings. All these issues are required to be addressed seriously.

**KEY WORDS:** Mortality, Morbidity, Firearm, Post mortem, Medico legal cases.

## INTRODUCTION

The first murder committed on this earth was by the use of hard & blunt weapon that was a stone. This quarrel took place between Habeel & Qabeel, the two sons of 1st Prophet Hazrat Adam A.S. The cause of quarrel was a woman. Since then it is a popular saying that there are 3 main reasons behind each conflict i.e. ZAN (woman), ZAR (money), and ZAMEEN (Land). In Karachi street crimes such as mobile / purse snatching, bank robbery & theft on gun point are increasing day by day. Firearm weapons are among the leading cause of deaths in

the world due to violent injuries<sup>1</sup>. Firearm weapons are among the leading cause of morbidity with subsequent physical & psychological problems, handicapped individuals, families, communities & societies<sup>2</sup>. Gun violence is an ongoing problem in United State of America<sup>3</sup> with an incidence & cost of gun related homicides that is comparable to some disease of major public health concern i.e. taking shape of an epidemic<sup>4</sup> Poverty, unemployment, easy availability of fire arm weapons without restriction, religious/ political / party shelter, defective police inquiry along with weak judicial system and no fear of death sentence are main causes of

Corresponding Author: Qudsia Hasan\*

firearm weapons use. The rate at which gun related homicides occur is certainly determined by a complex set of socio-economic & political factors<sup>5, 6</sup>. Every one wishes a luxurious life without making hard and genuine efforts. When the resources are not available then person becomes psychologically depressed & tries to find out other alternates'. On failure person becomes angry, aggitative & aggressive which is main reason behind street crime & resultant fatalities. As far as punishment for these crimes is concerned, according to P.P.C section-302 as well as in Qisas & Diyat Islamic Laws, death sentence is awarded when a person commits a murder. The disposal of such cases is so slow in our country that it takes years to bring a criminal to book, so fear of punishment is decreasing, where a prompt action is needed thus there is no fear of law & punishments which result in increased Gun-Violence and deaths yearly. The other cofactors behind this rise of gun violence are the political parties & quarrel between them on their difference of opinion, corruption, un-Justified favors, lack of capabilities, increased inflation, un employment, poverty & illiteracy. The authorities, police & other law enforcing agencies are witnessing all this but are not going behind root causes / reasons. Criminal elements have political shelters. If any culprit is arrested, first police bargains and release him without lodging an F.I.R. Otherwise the case is prepared in such a way that accused is released on first day of trail. Political activists are so strong in Karachi that they kill all witnesses of the case. According to statistical data in Pakistan especially of Karachi, use of firearm weapon has increased with each passing year where pistol is easily available in Rs -5000 to 40,000 and even one can get it on rent. <http://defence.pk/therads/pakistan-%C2%97-gun-fact-figure-and-thelaw.179350/> Due to tribal culture & borders with Afghanistan, almost all kinds of sophisticated weapons are manufactured & smuggled throughout Pakistan. Studies on fire arm related deaths are well documented in all Western countries but in Pakistan where illegal use of fire arms is a common problem, no proper documentation is done or in few big cities only.

There is an unequal ratio when we compare death rates due to firearms among developed & developing countries. The graph of firearm related deaths continue to fall in countries like U.S.A<sup>7</sup>, England<sup>8</sup>, Saudi Arabia<sup>9</sup> and it is considerably very high when we compare it with India<sup>10</sup> Nigeria<sup>11</sup>, Egypt<sup>12</sup>, Kenya<sup>13</sup> & Bangladesh. Study revealed that commonly used weapons for assault were hard & blunt, sharp edged and firearms, but the most deadly weapon was firearm causing most fatalities.

**METHODS**

The details of these cases are recorded in an official record book, maintained at medico legal sections of these teaching hospitals. The cross sectional study was carried out on cases of fire arm injuries that were reported in three major teaching hospitals, during study period of 8 years, from 1st January 2007 to 31st December 2014. These hospitals were Civil Hospital, Jinnah Post Graduate Center & Abbasi Shaheed Hospital. The data was collected from these 3- centers & from Police Surgeon Karachi office and same was also verified from police papers. The data was entered in pre designed Performa SPSS version 17 and analyzed by using descriptive analysis.

**RESULTS**

Total 208241 medico legal cases were reported during study period from 2007 – 2014. Cases identified as firearm weapon injuries were 13.27% (n=27638) in medico legal sections of these teaching hospitals. The statistics of fire arms show that maximum cases 37.9% (n=10478) reported in Abbasi Shaheed Hospital, while minimum 29.3% (n=8107) cases were reported in Civil hospital and 32.8% (n=9053) reported in JPMC. Maximum cases 15.38% (n=4252) reported in 2013 while minimum 10.46% (n=2891) reported in 2007. Hence from 2007 onward there is gradual increase in firearm morbidity (Table -1). These medico legal firearm cases show that morbidity is 3454 .75 cases / year, 287.89 cases/ month and 3.06 cases/ day.

**Table -1 The Statistics of Medico Legal Cases of Fire Arm Weapons From 2007-2014 with Reference to Hospitals, Frequency & Percentage Per Year.**

Total Medico Legal Cases Of Fire Arm Weapon From 2007-2014										
Hospital	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL	%
JPMC	783	982	1213	1302	1148	1255	1148	1087	9053	32.8
Abbasi	1256	1348	1174	1365	1791	1265	1791	1270	10478	37.9
Civil	852	1000	1001	1250	1313	1250	1313	828	8107	29.3
G. Total	2891	3330	3388	3770	4252	3770	4252	3185	27638	100
	10.46	12	12.3	13.6	15.4	13.6	15.4	11.5	100	

Total 11251 postmortems were conducted on bodies due to firearm weapon deaths. Maximum postmortems 37.7% (n=4246) were conducted in Abbasi Shaheed hospital, while minimum 26.1%

(n=2932) in Civil hospital and 36.2% (n=4073) in JPMC. Maximum post mortems i.e. 19.47% (n=2191) were conducted in 2013, while minimum 4.96% (n=558) in 2007 (Table-2).

**Table -2 The Statistics of Postmortems with Fire Arm Weapon During Study Period from 2007-2014 With Reference to Hospitals, Frequency & Percentage Per Year.**

Post mortems of fire arm weapon from 2007-2014 in Karachi										
Hospital	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL	%
JPMC	210	306	296	405	540	747	873	869	4246	37.7
Abbasi	213	359	410	524	566	657	759	585	4073	36.2
Civil	135	232	232	272	399	528	559	575	2932	26.1
G. Total	558	897	938	1201	1505	1932	2191	2029	11252	100
Percentage	4.96	7.98	8.33	10.68	13.37	17.17	19.47	18.3	100	

The statistics show that firearm mortality is 1406.37 cases / year, 117.19 cases /month and 1.24 cases /day. The ratio of morbidity and mortality is 2.45:1. There is gradual increase in mortality due to fire arm weapons. The weapons used to inflict injuries in assault are shown in table- 3. The hard and blunt weapons stand on top with 39.14% (n- 77056) cases,

while firearm weapons stood at 2<sup>nd</sup> with 14.03% (n=27638) cases and sharp edge weapons stood at 3<sup>rd</sup> with 3.04% (n=5985) cases . The maximum post mortems 54.33% (n=11251) were conducted on bodies due to firearm weapons injuries , sharp edge weapons stand at 2<sup>nd</sup> with 3.4% (n= 737 ) and hard & blunt stand at 3<sup>rd</sup> i.e. 2.5% (n=548) ( table -3 ).

**Table -3 The Comparison of Medico Legal cases & Post Mortems due to Hard /Blunt, Sharp Edge & Firearm Weapons during Study Period.**

Weapon of assault	Medico legal cases		Post mortems	
	No.	%	No.	%
Hard/blunt	77056	39.14%	548	2.5%
Sharp edge	5985	3.04%	737	3.4
Fire arm weapon	27638	14.03%	11251	54.33

Male were dominated victims with 91.74% (n=10322), while female were 8.26% (n=929). The male/ female ratio was: 11.11: 1. Total known males

were 71.30% (n=8023) while 20.43% (n=2299) were unknown. The national database failed in proving their identity. Total female were identified (table 4).

**Table -4 Shows the Gender Wise Statistics of Fire Arm Mortality with no. of Identified /Un-Identified Cases & Percentage.**

Type/gender	No. Of cases	%	Total	
Male known	8023	71.30%	Males	91.74%
Male un-known	2299	20.43%	10322	
Female Known	929	8.26	Female	8.26%
Female un-known	0	0	929	
G.Total	11251	100%	11251	100%

Most common targeted body parts which sustained fatal injuries were chest /abdomen with 31.29% (n=3521) cases. The 2<sup>nd</sup> 24.08% (n=2710) head /chest, 3<sup>rd</sup> head with 16.06% (n=1807) of cases and minimum 1.11% (n=125) cases of pelvic region (table-5).

**Table -5 Shows Statistics of Body Parts Affected /Sustained Fire Arm Injuries with no. & Percentage**

Sr.no	Parts Involved	No.	%
1	Head	1807	16.06%
2	Head & chest	2710	24.08%
3	Chest/ abdomen	3521	31.29%
4	Head, neck & chest	1279	11.36
5	Abdomen	525	4.66
6	Chest/limbs	1284	11.41
7	Pelvis	125	1.11
	G Total	11251	100.00

The age of firearm victims was divided into 12 age groups. The minimum age group was 10 years and maximum was 66 years and above (table -6). The mean age was found to be 32.30(+17.43). Most affected age group was of 26-30 years with 24.03% (n=2704) cases, followed by 21-25 years with 20.46% (n=2302) cases. Collectively 80.75% (n=9086) of cases belongs to age group in between 16 to 40 years (Table -6).

**Table-6 Shows the Frequency of Age of Fire Arm Victims**

Age Group	Numbers	%
10-15 Years	58	0.51%
16-20 Years	1151	10.23%
21-25 Years	2302	20.46%
26-30 Years	2704	16.32%
31-35 Years	1837	9.70%
36-40 Years	1092	5.69%
41-45 Years	641	5.15%
46-50 Years	580	4.66%
51-55 Years	525	2.58%
56-60 Years	291	0.35%

**DISCUSSION**

Firearm weapons use is a continuing public health concern in Karachi for its mortality & morbidity. Fire arms affect nearly all segments of population in disproportionate percentage according to age, race & gender. This study showed that all deaths were declared homicidal on basis of police inquest & statements of relatives / persons & none were found suicidal, which shows deadly usage of firearm in our population. In U.S.A a total of 22571 firearm homicidal attacks were reported during 2009 - 10 & it was 15<sup>th</sup> leading cause of deaths in all ages and 86% deaths in youth. <http://www.cdc.gov/injury/wisqars/index.html>. Firearm deaths are most common in Karachi which coincide with other studies conducted in different cities of Pakistan <sup>14-17</sup>. Male and younger were proved to be more dominant & higher risk group<sup>18-20</sup> than female and elderly, which could be

due to their gender role which compels them to be more exposed to outside environments like job places. Body parts mostly affected are chest and abdomen due to exposed and wide body area & having vital organs as lungs, heart and large blood vessels which proves very fatal. Assailant prefers to hit on these areas <sup>21</sup>.

After Afghan war in 1980, smuggling of fire arm weapons and their easy availability is one of the major causes of increased homicidal attacks/deaths. Our country is under attack of terrorism & we are in state of war. High rate of homicidal deaths in Karachi put a question mark on efficiency of law enforcing agencies & higher authorities who claim to spend wholesome amount of budget on security of people. Firearm is most commonly used weapon <sup>22</sup> than sharp edge & hard & blunt weapons in these deaths.

The murder of one individual who is getting bread and butter for his family, poses great economical burden on the society and national economy as a whole. Loss of youth results in loss of energetic, working and earning force. Fire arm shooting & deaths were witnessed more in a low socio- economical population because frequency of cases were reported high in Abbasi Shaheed Hospital & JPMC , which caters majority of those areas /population . As most of youth don't have a career- promising education & career- binding opportunities so they are diverted to criminal activities due to frustration. There is strong need to help and encourage the youth to manage their anger & engaging them in sports, small businesses & other recreational activities. The proper strategies & policies regarding licensing of firearm weapons, maintaining law & order situation, eradicating social evils and inequality, punishments by prompt judiciary actions & curtailing down unemployment should be made to bring down the rising graph of fire arm deaths.

**CONCLUSION**

This study concluded that fire arm injuries contributed as one of the major cause of unnatural deaths and injuries. The strict restrictions and ban on availability of illegal fire arm weapons and implementation of capital punishments should be made as earliest as possible to minimize fire arm usage and resultant mortality & morbidity.

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