

Fire Arm Injury & Homicidal Deaths Presenting at Tertiary Care Hospital of Sindh

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ABSTRACT

Objective: To study fire arm injury, homicidal deaths, causes and outcome at a tertiary care hospital.

Study Design: Observational study.

Place and Duration: January 2011 to February 2013.

Material and Methods: 235 cases of violent injury including fire arm injury were studied. A detailed autopsy was conducted according to Robert Virchow's technique in case of dead bodies. Findings were collected in a pre-designed proforma. All the biodata were noted as per medico-legal point of view. Data was entered on SPSS version 21.0 (IBM, USA). Continuous and categorical variables were analyzed using student t test and Chi square test. Microsoft excel was also used for graphing.

Results: Of 235, 15.7% (n=37) were female and 84.2% (n=198) male (p=0.0001). Male to female ratio was found 5.3:1. Mean \pm SD of age was noted as 39.1 \pm 11.9 years. Of 235, in 199 (84.6%) cases were of fire arm injury. Common cause of fire arm injury was quarrel (39.1%) followed by robbery (21.1%) and accidental (17.5%). Of 199 fire arm injuries, 67 were received as "dead bodies", fifty seven died at emergency unit and remaining survived but with physical disabilities. Of 36 cases of other causes were poisoning and blunt trauma and were dead before reaching hospital.

Conclusion: Very high rate of homicide with fire arm weapons was observed. Social conflict, robbery and accidental fire arm injury were most frequent.

Key words: Fire arm injury, Homicide, Autopsy, Sindh

INTRODUCTION

Violence is ranked as eight leading cause of deaths in World^{1,2}. Violent injuries are common in developing countries and particularly in low social class. People with low and middle income groups are aggressively involved in violence. Some pockets of people of particular ethnicity and race are also involved in violent activities; hence violence varies according to social class and geographical territory³. Violence, of serious type, often ends up in homicidal killings.

Homicide is defined as killing of human being by another because of conduct of first one. Homicide may be intentional, most often observed, because of enmity or unintentional as some innocent by stander is killed in a street firing⁴.

Currently, poverty, religious sectarianism and extremism, political hatred, indigenous tribal traditions and ethnical divisions have increased homicidal killings⁵.

The frequency of fire arm injury related deaths is reported to decline in KSA (Kingdom of Saudi Arabia)⁶, United Kingdom⁷, & United States of America⁸. But reported to incline in Kenya, Egypt, Nigeria, Bangladesh and India².

A study on homicidal deaths showed gunshot wounds as the most common death cause. Stab wounds, asphyxia and blunt physical trauma were also reported as cause of homicidal deaths⁹. Besides high death toll, firearm injuries cause significant morbidity and long-term physical and psychological disability of individuals, families,

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and communities¹⁰. In 2010; guns took the lives of 31,076 Americans in homicidal, suicidal and unintentional fires, this equals to a death toll of 85 per day and >3 deaths per hour¹¹. Gun related violence is commonly seen in poor urban areas and in conjunction with gang violence, often involving juveniles/teenagers^{12,13}.

Homicide is a major crime in all codes of law. It is reported and analyzed reliably and regarded serious, socially as well as legally. If interpersonal conflicts resulting in this crime are to be studied we need to consider circumstances, relationships and stages of life of the assailant and the victim¹¹.

Current scenario of Pakistan is strikingly different from ever before. Pakistan is involved in "war of friends" which has increased spread of fire arm weapons in geographical territory and war game and weapon game is rising day by day. Nowadays, firearm weapon has erupted as a cause of robbery and gun point snatching related homicidal killings has deprived many innocent citizens of their lives. The present study was conducted at tertiary care hospital of Liaquat University of Medical and Health Sciences Jamshoro/Hyderabad to evaluate causes of fire arm injury and homicidal deaths.

MATERIAL & METHODS:

A descriptive study was conducted at Department of Forensic Medicine and Office of Police Surgeon- Medico legal section, LUMHS Jamshoro/Hyderabad from January 2011 to Feb 2013. Subjects who presented with violent injuries, fire arm injury or homicidal attacks were included. All cases of homicidal fire arm injury presenting at the Medico-legal department of Liaquat University Hospital were evaluated in particular. Only those cases were included in data file, which were injured or killed with fire arm injury, or any other agent with suspicion of homicidal death. Finally, a sample of 235 cases of was collected, analyzed and studied.

A detailed autopsy was conducted according to Robert Virchow's technique in case of dead bodies. Findings were collected in a pre-designed Proforma. All of the biodata were noted

as per medico-legal point of views. Medico-legal department of Liaquat University hospital keeps all the details of cases as they are part of medical jurisprudence to be presented at the court of Law. Data was entered on SPSS version 21.0 (IBM, USA). Continuous and categorical variables were analyzed using student t test and Chi square test. Microsoft excel was also used for graphing. P-value of =0.05 was defined as significant.

RESULTS:

A sample of 235 including 15.7% (n=37) female and 84.2% (n=198) male (p=0.0001) were studied. Male to female ratio was found as 5.3:1. Mean ±SD age was noted as 39.1±11.9 years. Mean age was significantly low in female population (p=0.021). Age & gender distribution is shown in table I, and age category distribution is shown in graph 1. Common age group belonged to fourth decade (n=91), followed by third (n=57) and second (n=39) decade. Of 235, 199 (84.6%) cases presented with history of fire arm injury. Other causes are listed in table II. Fire arm related deaths are shown in table III. Common causes of fire arm injury were noted as quarrel (39.1%) because of social issues in community belonging mostly to rural area, followed by robbery (21.1%) and accidental (17.5%) fire arm injuries as shown in graph 2. Common body part involved was abdomen (44.7%), followed by thorax (17%) and head, neck and face (16%). Body parts distribution is shown in table IV and graph 3. Of 199 fire arm injuries, 67 were received as "dead bodies", fifty seven died at emergency unit and remaining survived but with physical disabilities. Other 36 cases belonging to poisoning and blunt trauma were dead before reaching hospital, while 3 of drug intoxicated subjects died.

Table-1: Age & Gender of Study Population (n=235)

Age (years)	39.1+11.9	p-value
Male	198	0.0001
Female	37	

Table-II: Causes of Fire Arm & Homicidal Deaths (n=235)

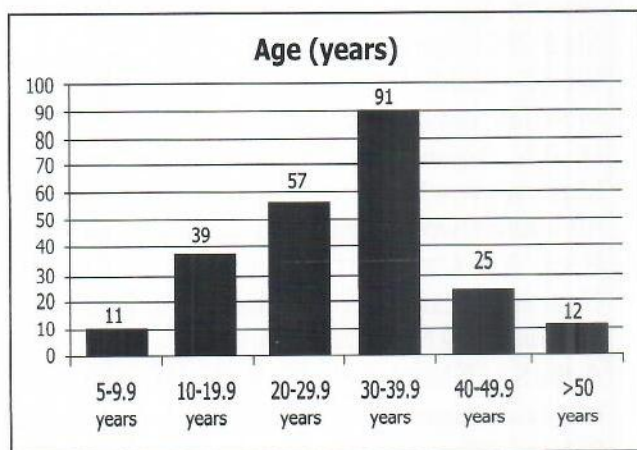
	No.	%
Firearm Injury	199	84.6
Poisoning	11	4.6
Blunt Trauma	7	2.9
Drug Intoxication	13	5.5
Unknown	5	2.1
Total	235	100

Table-III: Causes of Fire Arm Related Deaths (n=199)

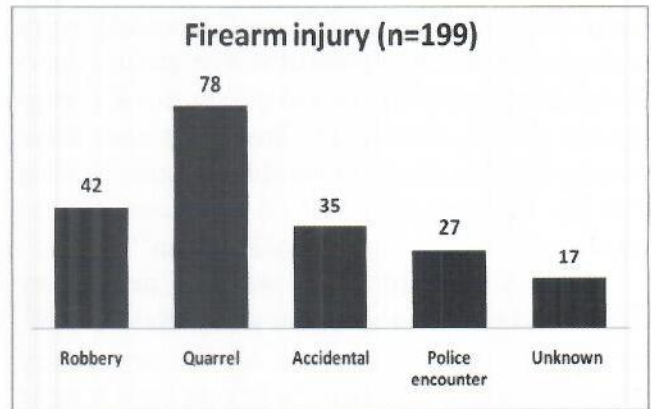
Causes	No.	%
Quarrel	78	21.1
Robbery	42	39.1
Accidental	35	17.5
Police Encounter	27	12.5
Unknown	17	8.5
Total	199	100

Table-IV: Body Parts Involved in Fire Arm Injury (n=199)

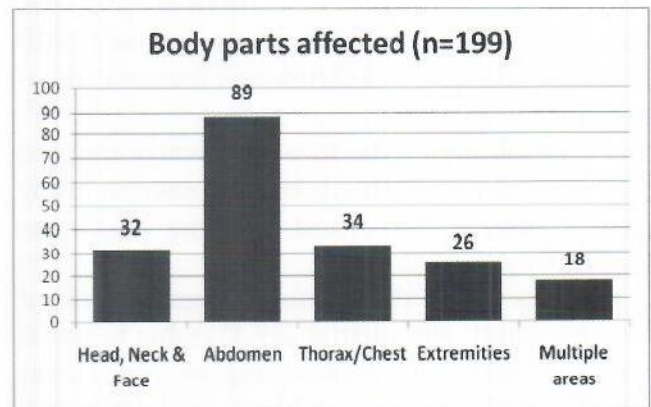
	No.	%
Head, Neck & Face	32	16.0
Abdomen	89	44.7
Thorax/Chest	34	17.0
Extremities	26	13.0
Multiple Areas	18	9.0
Total	199	100



Graph-1: Age Distribution of Study Population



Graph-2: Causes of Fire Arm Injury



Graph-3: Body Parts affected in Fire Arm Injury Cases

DISCUSSION

Present study was conducted at Liaquat University Hospital, Hyderabad/Jamshoro, which caters a large population of Sindh. It caters all types of casualties and medico-legal cases from different areas. The male to female ratio in present study was 5.3:1. Of 235 cases, most belonged to homicidal deaths caused by fire arm injury. Common cause of fire arm injury was quarrel (39.1%) because of social issues in community belonging mostly to rural area, followed by robbery (21.1%) and accidental (17.5%). Male predisposition, dying in homicidal assault, has been reported by most of studies mentioned in literature from World over.^{2,11,14-16}

Most common age group belonged to fourth decade (n=91), followed by third (n=57) & second (n=39) decade. A recent study¹¹ reported most common age in homicidal deaths was fourth decade; the finding is in keeping with present

study. High incidence of 3rd or 4th decade is very much explained by the fact the age group is involved in earning of livelihood of families & is engaged in public place where fires erupt most often making this age group vulnerable to death. Similar are the findings reported in previous studies reported from different parts of Pakistan^{11,17,18}.

Most common cause was fire arm injury noted in 84.6% of cases in our study. Haider et al¹¹ reported a 44.3% frequency of fire arm injury which is also a consistent finding as their sample was small enough compared to present study.

Most common body involved was abdomen (44.7%), followed by thorax (17%) and head, neck and face (16%). Findings are in keeping with previous studies with difference of thorax & abdomen, some reported thorax was more injured^{2,11,19}.

In our study, the most frequently targeted part was the abdomen while in a previous study from Peshawar¹⁶ the chest was the part most frequently involved.

This study, shows most common cause of fire arm injury was quarrel (39.1%) due to social issues in community belonging to rural areas mostly, followed by robbery (21.1%) and accidental (17.5%) fire arm injuries. The robbery is consistent with previous studies reported from Karachi.^{2,20}

Multiple firearm injuries were noted in 18 cases which is as usual a fact that high velocity automatic guns most often strike at multiple body parts. The findings are consistent with other study¹¹.

Mirza et al² in a recent study from Karachi reported that the most common cause of death was homicidal, and most common weapon used was the fire arms. The findings are consistent with present study. Mirza et al² reported 98.6% of deaths as homicidal. Our present study also reveals similar observation regarding use of fire arm for homicide. Fire arm for homicide purpose is becoming frequent in the era due to easy availability of fire weapons, rapid killing and easy escape, may be within seconds to minutes. The fire arm weapons are freely available these days.

A previous study from Mirpur Kashmir,

reported homicidal killing as most frequent with a fire arm injury. Out of eighty eight autopsies, 80 were homicidal. It was reported that the fire arms are freely available these days by militants and because of Afghanistan war²¹. Similar prevalent are the conditions of Sindh, where firearm weapons of any type are easily accessed.

In present study, most of homicidal killings belonged to village areas. Our finding is in agreement with a report from Peshawar¹⁶, which concluded that the automatic fire arms are freely available in the rural areas of Peshawar and these weapons are accompaniment of public as a traditional habit, primarily used for safety purpose.

CONCLUSION:

A very high rate of homicide with fire arm weapons was observed in present study. Social conflict, robbery and accidental fire arm injury was found most frequent. Free access to illegal fire arm weapons must be seriously controlled and law related to fire arm must be implemented strictly to prevent alarming situation of killing of innocent citizens.

REFERENCES:

1. Murray CJ, Lopez AD. Mortality by cause for eight regions of the World: Global burden of disease study. *Lancet*.1997;349(9061):1269-76.
2. Mirza CF, Khan AW, Malik L, Malik M, Parveen K. An autopsy based study of pattern of firearm injuries in Karachi, Pakistan. *Emerg Med*. 2013;3(6):165.
3. World Health Organization, World report on violence and health: summary. Geneva: World Health Organization, 2002. Available from: http://www.who.int/violence_injury_prevention/violence/world_report/en/summary_en.pdf
4. Blci Y, Canogullari G, Ulupinar E. Characterization of gunshot suicides. *J Forensic Leg Med*. 2007;14:203-8.
5. Agha SA, Khan J, Rehman S, Zarif P. A study of homicidal deaths in Mirpur district of Kashmir, Pakistan. *Gomal J Med Sci*. 2012;10(2):230-2.

6. Elfawal MA, Awad OA. Firearm fatalities in Eastern Saudi Arabia: impact of culture and legislation. *Am J Forensic Med Pathol.* 1997; 18(4):391-6.
7. Davies MJ, Wells C, Squires PA, Hodgetts TJ, Lecky FE. Civilian firearm injury and death in England and Wales. *Emerg Med J.* 2012; 29(1):10-4.
8. Christoffel KK. Firearm injuries: epidemic then, endemic now. *Am J Public Health.* 2007; 97(4):626-9.
9. Cros J, Alvarez JC, Sbidian E, Charlier P, Lorin de la Grandmaison G. Homicidal deaths in the Western suburbs of Paris: a 15-year-study. *Am J Forensic Med Pathol.* 2012; 33(4):404-9.
10. Richardson JD, Davidson D, Miller FB. After the shooting stops: follow-up on victims of an assault rifle attack. *J Trauma.* 1996;41(5):789-93.
11. Haider A, Khan J, Kamran S. Demographic distribution of homicidal fire arm injuries in Dear Ismail Khan. *Gomal J Med Sci.* 2014;12(1):27-9.
12. Streib EW, Hackworth J, Hay Ward TZ, Jacobson LE, Simons CJ, Falimirski ME, et al. Firearm suicide: use of firearm injuries and death surveillance system. *J Trauma* 2007;62(3):730-4.
13. Bridges FS, Kunselman JC. Gun availability and use of guns for suicide, homicide, and murder in Canada. *Percept Mot Skills.* 2004; 98(2):594-8.
14. Lemard G, Hemenway D. Violence in Jamaica: an analysis of homicides 1998-2002. *Inj Prev.* 2006;12(1):15-8.
15. Hassan Q, Shah MM, Bashir MZ. Homicide in Abbottabad. *J Ayub Med Coll Abbottabad.* 2005;17(1):78-80.
16. Marri MZ, Bashir MZ. An epidemiology of homicidal deaths due to rifled fire arms in Peshawar, Pakistan. *J Coll Physicians Surg Pak.* 2010;20(2):87-9.
17. Reza A, Mercy JA, Krug E. Epidemiology of violent deaths in the world. *Inj Prev.* 2001; 7(2):104-11.
18. Najem GR, Aslam S, Davidow AL, Elliot N. Youth homicide racial disparities: gender, years and cause. *J Natl Med Assoc.* 2004; 96(4):558-66.
19. Niaz K, Shujah IA. Civilian perspective of fire arm injuries in Bahawalpur. *J Pak Med Assoc.* 2013;63(20):20-4.
20. Nasrullah M, Razzak JA. Firearm injuries presenting to a tertiary care hospital of Karachi, Pakistan. *J Inj Violence Res.* 2009; 1(1):27-31.
21. Agha SM, Khan J, Rehman S, Zarif P. A study of homicidal deaths in Mirpur district of Kashmir, Pakistan. *Gomal J Med Sci.* 2012; 10(2):230-2.