Journal of Biology, Agriculture and Healthcare
ISSN 2224-3208 (Paper) ISSN 2225-093X (Online)
Vol.5, No.3, 2015

An Analysis of Trends of Fatal Firearm Casualities in Medicolegal Autopsy in Varanasi Region (India)

Dr. K. S. Vithalrao
MD ,Department of Forensic Medicine, Institute of Medical Sciences- Banaras Hindu University, VARANASI

N. Chaurasia Dr. S. K. Pandey
Department of Forensic Medicine, IMS- BHU, VARANASI

ABSTRACT
Use of firearm is a worldwide increasing and Varanasi is no exception to this. This is due to increasing number of hijacking, urban terrorism, dacoity, rioting, robberies, smuggling of drugs**,** political motivation, personal and group rivalry, quarrel over land, Property, caste feuds and the like.In present study fifty four cases of fatal firearm injury has been drawn from the medicolegal autopsies brought to the mortuary of Department of Forensic Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi, U.P. India, during the period from 1 June, 2009 to 30th March 2011, were studied for a detailed epidemiological and medicolegal analysis. The paper highlights the important facts that out of total 3534 autopsies conducted during the above period 54 (1.52%) victims had had died due to fatal firearm injury and to know the common victim of fatal firearm injury, sex and age, range of fire, vital parts involved. The main purpose of study to view their various epidemiological, motivational and pathological aspects in order to fill-up lacunae and also to add to the body of the knowledge regarding the cases and help the scientific crime investigation.
Key words: Epidemiology; Pathological aspects: Group rivalry;

INTRODUCTION

Invention of fire was the greatest invention for the human civilization but the invention of firearm has come as a curse to this world, it has become the most dreaded killing tool used by human being to kill themselves. It has been improving day by day from the primitive Matchlock system of firearm to the present day's semi-automatic and automatic weapons. Though in western countries, suicidal fatal firearm injury is very common, in this region of the world, it is mostly used in the homicide cases only. ***A.J. Patowary, (2005).***

Firearms have passed through continuous evolutionary changes and have established as the most popular instrument for committing homicide, whether during peace or in war time. Firearms are the principal source of state power, as has been very aptly epitomised by none other than Mao-Tung, the great evolutionary leader of modern China that the "Political power flow from the barrel of the gun".

Since guns are recognised as being highly lethal, all assailants who use such weapons were believed by Wolfgang to have been highly determined to kill. Wolfgang proposed the 'weapon substitution hypothesis'. This hypothesis posits that the intentions of an assailant, whether they are to kill or injure, determines the weapon selected. For example, if an assailant has a single minded, thoroughly 'determined' intent to kill their victim, they will seek out the kind of weapon that is most likely to ensure the desired outcome. Because a gun is well recognised as being a highly lethal weapon, that intent on killing will, if it is available, seek out such a weapon. If a firearm is not available, then this effective weapon will be substituted for the next most available and lethal weapon. This hypothesis suggests that if an assailant did not intend to kill but only harm their victim, then they would have selected some other less lethal weapon ***Wright et al., (1983***).

MATERIALS AND METHODS

The present study comprised of Fatal Firearm injuries drawn from the medico legal autopsies held in mortuary of the department of Forensic Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi, U.P., India, during period of 1st June 2009 to 30th March 2011, accompanied by sufficient number of relevant persons who were thoroughly interviewed at the time of autopsy on the body of deceased victim of fatal firearm injury.

For the study, relevant questionnaires schedule were prepared to collect various data, socioeconomic factors, data about incidence of fatal firearm injuries, data about medicolegal crime investigation and evidential data etc. These cases were studied for the history of the cases, their epidemiological characteristics e.g. Age, sex, community character etc. nature, distribution and types of injuries including their medico legal aspect.
The various data relating to the cases were collected from sources as under:

A. Examination of inquest reports and connected papers.
B. Interviewing the police personnel accompanying the cases.
C. Interviewing the relatives, friends and neighbors of the deceased.
D. The autopsy examination paper.

RESULTS AND OBSERVATIONS

Table1: Incidence of fatal firearm injuries in medicolegal autopsies (22 months from 1.6.2009 to 30.03.2011)

Total number of autopsies	Fatal firearm injuries	
	Total number	Percentage
3534	54	1.52

Above table shows that total number of fatal firearm injury cases was 54 (1.52%).

Table 2: Age and sex distribution of victims of fatal firearm injury (N-54)

Age group (year)	Male	Female	number	Percentage
11 to 20	2	-	2	3.7
21 to 30	21	-	21	38.88
31 to 40	15	-	15	27.77
41 to 50	8	1	9	16.66
51 to 60	5	-	5	9.25
61 to 70	1	-	1	1.85
71 to 80	1	-	1	1.85

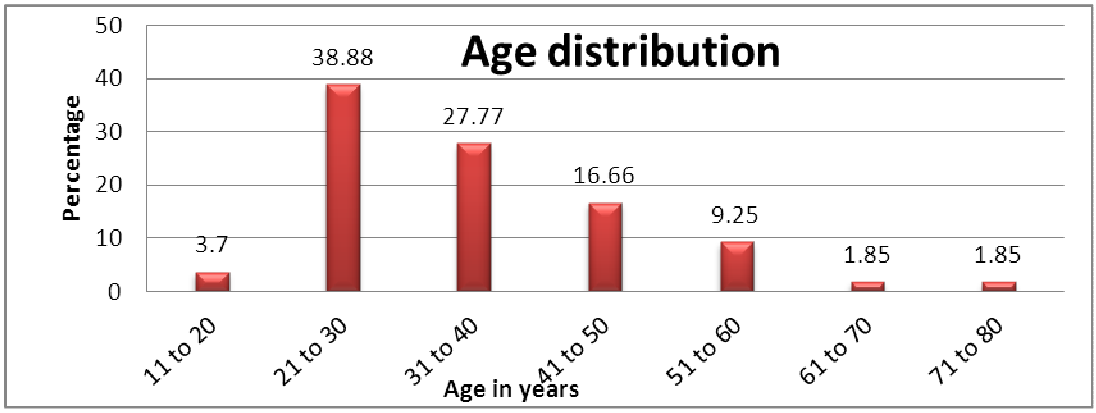


Figure2: Age and sex distribution of victims of fatal firearm injury

Above table and figure shows age and sex distribution of victims of fatal firearm injuries, it is observed that most of the victims (98.15%) were male and only one victim (1.85%) was female. Over majority (66.65%) were young adult in the age group of 21-40 years. 16.66 per cent victims were of middle age (41-50 years). Adolescents comprised 3.7 per cent. 13 per cent of victims were of old aged, 51 years and above. **Gupta *et al.* (1979)** analysed 89 case of firearm deaths in Varanasi area and found that 33.67% cases were drawn from the age group of 31 to 40 years, followed by (28.08%) the cases who came under 21 -30 years.

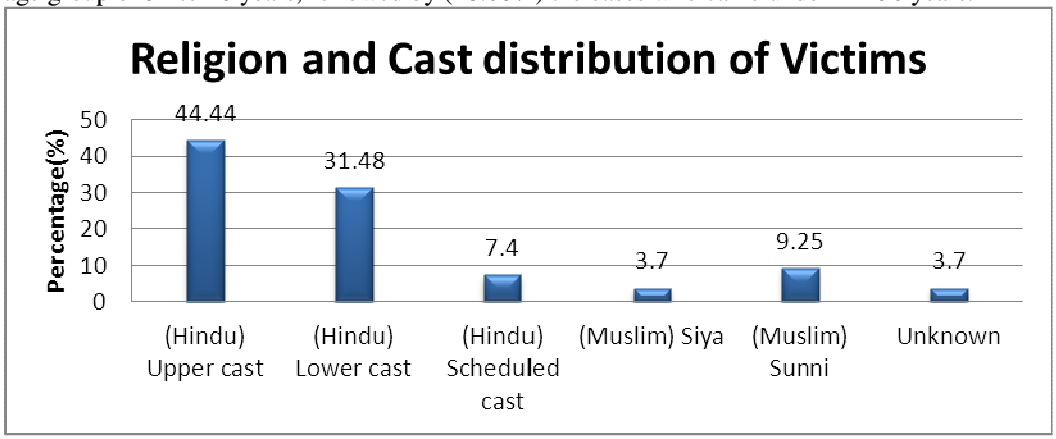


Figure 3: Religion and caste distribution of victims of fatal firearm injury (N-54)

Figure given above shows that most of the victims (83.33%) of fatal firearm injury were Hindu followed by Muslims (12.96%). Religion and cast of two victims was not known. Over majority (44.44 %) of Hindu victims belonged to upper caste followed by lower caste (31.48%) and scheduled caste (7.4%). Of the total of seven Muslim victims, five were Sunni and two belonged to Siya. There were no victims belonging to either Christian or Buddhist or Sikh.

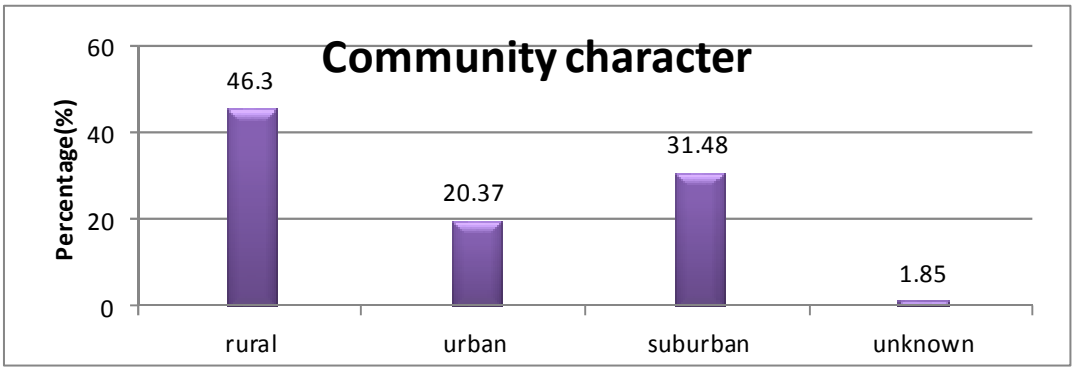


Figure 4: Community character of victims of fatal firearm injury (N-54)

Above figure on community character of victims of fatal firearm injury, reveals that the maximum number 46.3% of victims came from rural areas followed by suburban area 31.48% and urban area 20.37%. **Gupta et at. (1979)** found that the percentage distribution of community character of the firearm victims and recorded 43.82% rural, 21.95% urban and 17.17% suburban of Varanasi area. **Das Gupta et al. (1983)** in their study showed preponderance of rural (65.86%) over the urban (17.17%) victims in firearm fatalities. However, a small fraction (10.2%) belonged to sub-urban area of Varanasi. **Rajeev Kumar et al**. **(2001)** recorded that maximum victims (44%) were drawn from rural area followed by urban (32%) and suburban (24%) population.

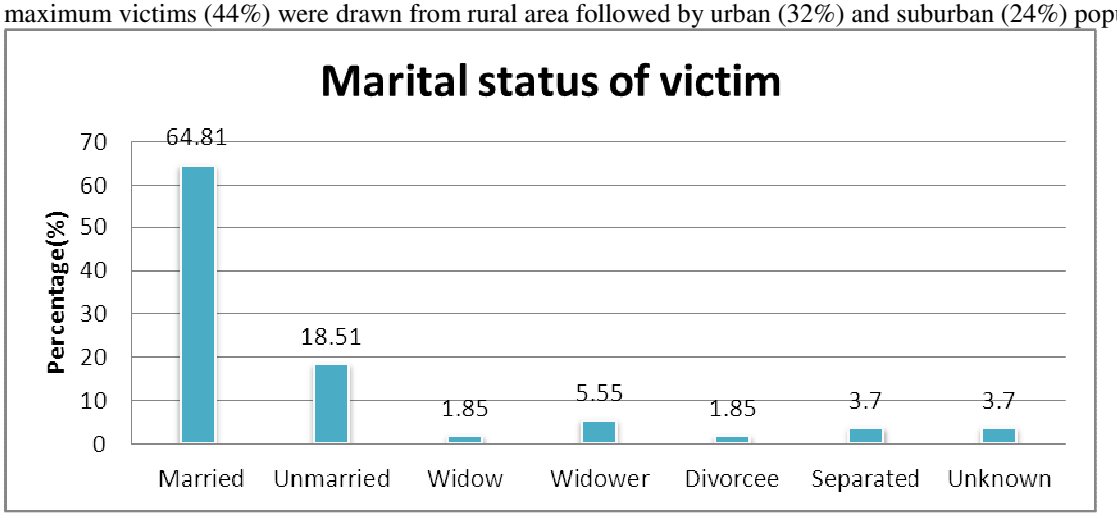


Figure 5: Marital status of victims of fatal firearm injury (N-54)

Above given Figure for marital status victims of fatal firearm injury shows that majority (64.1%) were married followed by unmarried (18.51%), widower (5.55%), separated (3.7%). One victim was a widow and one victim was divorcee. Marital status of two victims was not known. **Gupta *et al.* (1979)** in their study also found a high rate of married cases amongst the victims of fatal firearm injuries (80.91). **Krishna (1981)** found in Delhi that 62% victims were married and 37% victims were unmarried

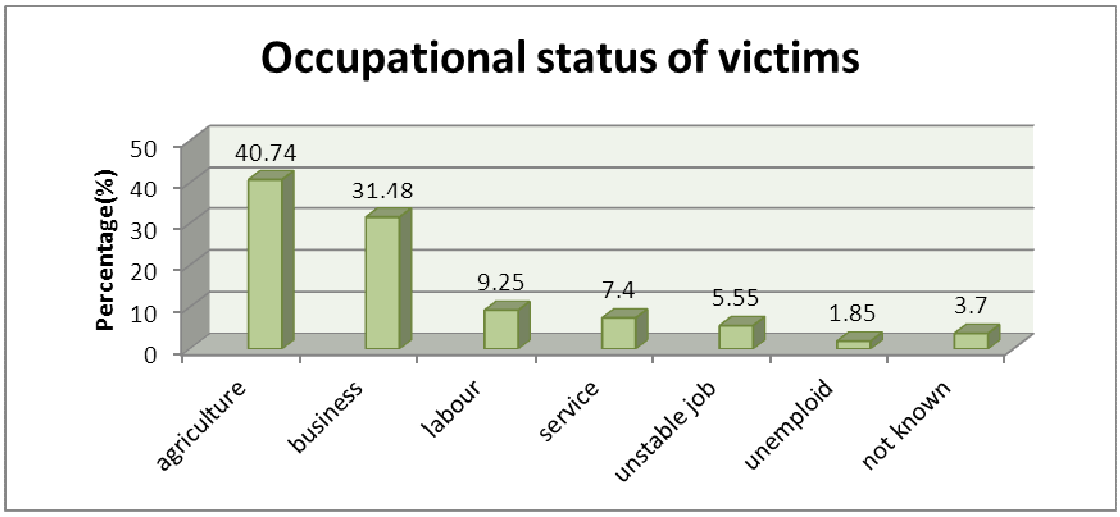


Figure 6: Occupational status of victim of fatal firearm injury (N-54)

Above figure reveals that the occupation of maximum (40.74%) victim was agriculture followed by business (31.48%), labourer (9.25%), service (7.4%) and unemployed (1.85%). Occupation of two victims was not known.

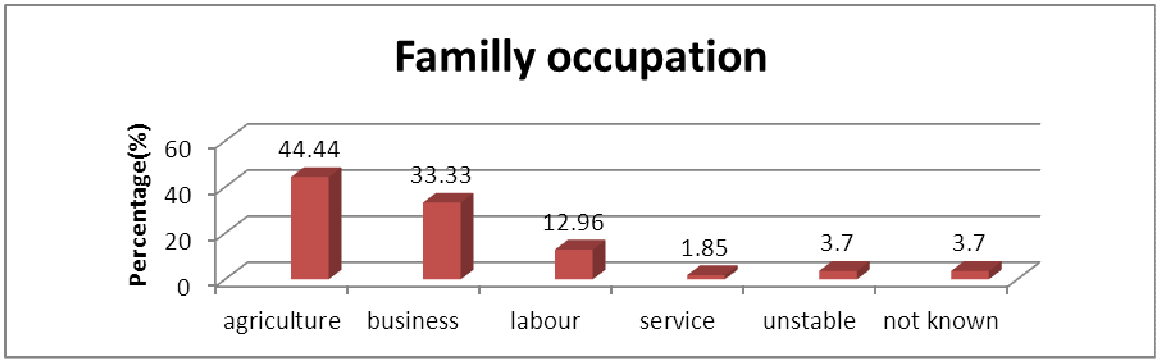


Figure 7: Family occupation of victims of fatal firearm injury (N-54)

Above given figure shows that agriculture was the family occupation of maximum (44.44%) victims followed by business (33.33%), labourer (12.96%), service (1.85%), unstable job (3.7%) and family occupation of two victims not known.

Family type	Number	percentage
Alone	3	5.55
Joint	42	77.77
Nuclear	7	12.96
Unknown	2	3.7

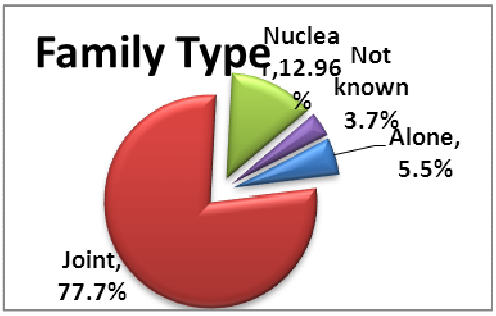
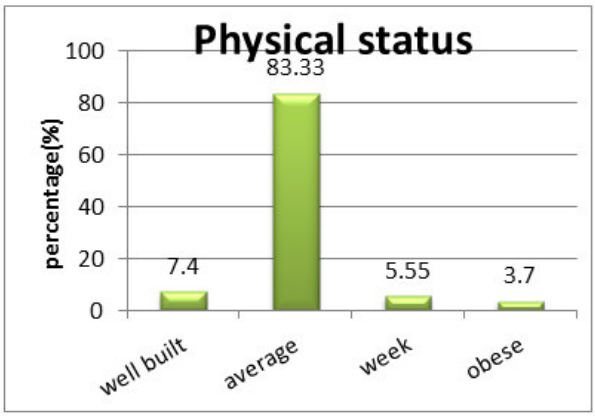


Figure 8: Family type of victims of fatal firearm injury (N-54)

Figure given above on family type of victims clearly show that majority (77.77%) of victims came from joint family followed by those from nuclear family type (12.96%). However, 5.55 per cent victims were loner.



Physical status	Number	Percentage
Well built	4	7.4
Average	45	83.33
Week	3	5.55
Obese	2	3.7

Figure 9: Physical status of victims of fatal firearm injury (N-54)

Above figure shows that over majority (83.33%) of victims were of average built followed by well built (7.4%), weak (5.5%) and 3.7 percent victim were observed.

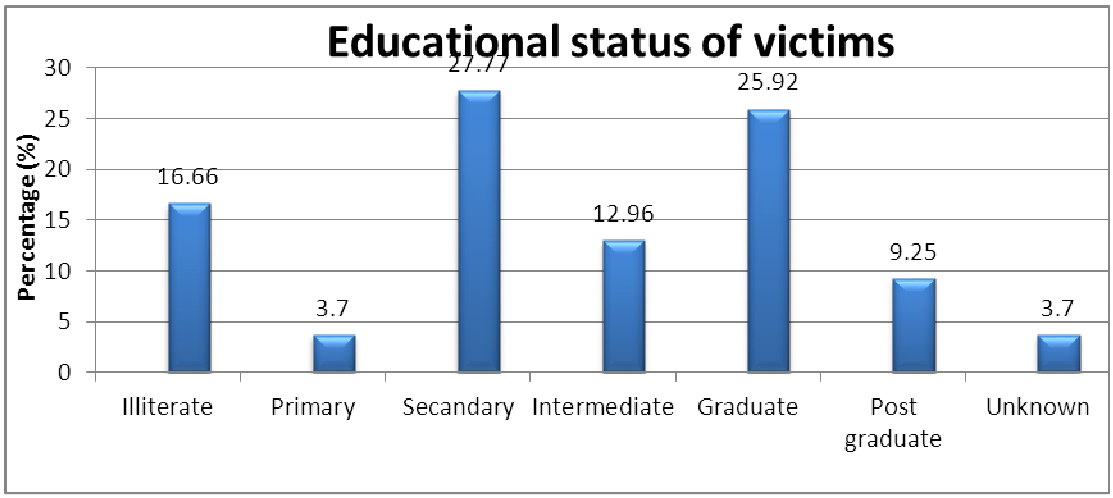


Figure 10: Educational status of victims of fatal firearm injury (N-54)

Above figure of an educational status of victims of fatal firearm injury shows that maximum (27.77%) victims were of secondary school education, followed by graduate (25.92%), illiterate (16.66%) and intermediate (12.96%), post graduate(9.25%).However 3.7% victim's education were primary education and 3.7 percent victim's educational status not known.

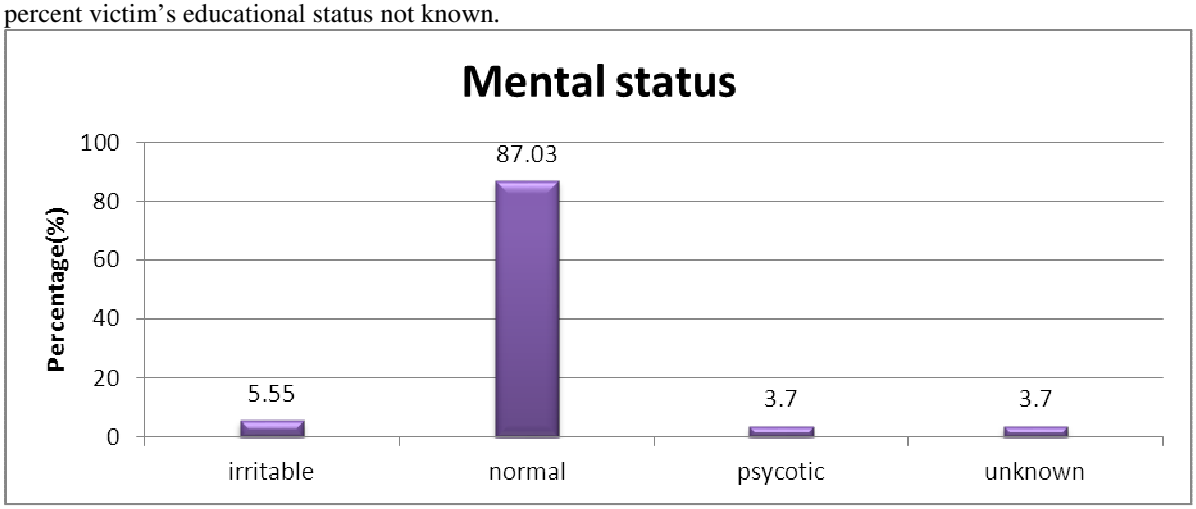


Figure 11: Mental status of victims of fatal firearm injury (N-54)

Above figure shows that 87.03 percent of victims were normal followed by irritable (5.55%), psychotic (3.7%) and mental status of 3.7 percent victims was not known.

Dependent	Number	Percentage
No	13	24.07
One	6	11.11
Two	15	27.77
Three	12	22.22
Four	6	11.11
Not known	2	3.7

Figure 12: Dependent of victim of fatal firearm injury (N-54)

Above figure shows dependent of victim of fatal firearm injury in which maximum percentage (27.77)of dependent were two followed by no dependent (24.07%),three dependent (22.22%),one and four(11.11%).

CONCLUSION

The overall incidence of fatal firearm injury is reduced as compared to previous studies conducted in this area. Though overall incidence of fatal firearm injury is reduced because of legal restriction on license of personal firearms weapon, the incidence of firearm injury due to country made guns are increased which are illegal, easy available and cheap. In previous studies in this area, **Das Gupta *et al.* (1983)** observed that largest number of cases died by firearm injury (40.49%).

In our study we observe enmity was the major motive behind the fatal firearm injury as compared to previous studies conducted in this area in which dispute over landed property was major motive. Police patrolling for early detection of crime and shifting of injured to the hospital/critical care center and provision of prompt ambulance service by state/private hospital or NGOs for medical care is another aspect, which may decline mortality due to such crimes.

Single firings (including homicidal ones) were predominant in our study, but this was not the case everywhere with some regions of the world having a predominance of multiple homicidal firings. A significant difference gets highlighted when we analyze the manner of death. In our region homicidal firearm fatalities were most common and suicidal fatalities were uncommon. Most other regions of the world had patterns which were the opposite, i.e. a small number of homicidal fatalities and a substantial number of suicidal ones. **A.J. Patowary, (2005)** observed that 7.36% of the death was due to homicidal firearm injury. **Shilekh Mittal et al, (2005)** observed that 13% death was due to firearm injury. **Pradip kumar et al (2005)** reported that 31.62% of total number of the medico-legal autopsies was of homicidal fatal firearm injury.

The distinction between homicide, suicide and accident can sometime be extremely difficult and a final conclusion can only be reached after a full police investigation. If suicide can be ruled out by features of the injury, a single gunshot injury could be either accidental or homicidal. Multiple firearm wounds, on the other hand, strongly suggest homicide. To prevent such killings, there should be combined effort from all sections of the society.

Following steps should be of help in its prevention

A) Proper employment facility for the youth.
B) Social stability and creation of proper political environment.
C) Strong and effective measures to control the unlicensed arms.
D) Need to eliminate illegal gun making units in our region in order to decrease the rate of firearm fatalities.
E) Various law enforcing agencies have to make concerted efforts and be more vigilant on this account in order to accomplish these goals.

REFERENCE

1. A.J. Patowary, Study of pattern of injuries in homicidal firearm injury cases. JIAFM, 2005; 27 (2).
2. Wright, J.D., & Rossi, P.H., Armed and considered dangerous: a survey of felons and their firearms. New York: Aldine.1986; ISBN 0-202-30330-6.
3. Gupta A.K., Das Gupta S.M. and Rastogi B.L. Study of Injuries from Firarm in Medicolegal Autospies. Thesis Submitted for the Degree of Doctor of Medicine (Forensic Medicine), Institute of Medical Science, B.H.U., Varanasi, 1979.
4. Das Gupta S.M. and Tripathi C.B. A Study of the Homicide Cases Occurring in Varanasi Area. Indian Medical Gazette. CXVII (9) 1983; 285-288.
5. Krishna K.P. Victims of Homicide: A Study in Personal and Sociocultural Antiecedents. Police Research and Development. 1981; page.No.11.
6. Shilekh Mittal et al. Medicolegal study of mechanical injuries in culpable homicide, JIAFM: 2005; 27 (4).
7. Pradip kumar et al. Homicidal fatal firearm injuries, JIAFM, 2005; 27 (4).

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: http://www.iiste.org/journals/ All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: http://www.iiste.org/book/

Academic conference: http://www.iiste.org/conference/upcoming-conferences-call-for-paper/

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar