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## Gun violence in north-western India

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### General Note



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## ABSTRACT

Gun violence is one of the important indicators of level of social and mental health. It is a global problem and causes considerable hazards in a developing country like India, where poverty and violence are not uncommon. Firearms and their use are modifiable risk factors, which if recognized and addressed, could help decrease the burden of violent death. Our Hospital based Descriptive Observational Study was aimed to assess the socio-demographic parameters of firearm injuries cases in North-Western India, conducted at the Department of Forensic Medicine S.M.S. Medical College, Jaipur during May 2014 to October 2015 period. The burden of gunshot violence is 0.49% (115 cases). Males outnumber females (9:1). Majority of victims were in the second and third decade age group. Incidence is higher in married, literate and rural population. Homicides were the most common manner of death. Property disputes, revenge, robbery are common underlying factors. Educational efforts, individual and community approaches are needed to alleviate firearm injuries. The epidemiologic reviews in this research shall enhance our understanding of various forms of gun violence, inform interventions, and help chart directions for future research.

**Key Words:** Firearm, Gun-Violence, Homicide, Jaipur

**Abbreviations:** W.H.O. - World Health Organization, S.M.S. – Sawai Maan Singh

## 1. INTRODUCTION

Gun violence is violence committed with the handling of a gun (firearm or small arm).<sup>1</sup> It is a global problem and causes considerable hazards in a developing country like India, where poverty and violence are common. The World Health Organization (W.H.O.) report on violence invokes member nations to scientifically and comprehensively adopt tactics to address this global health problem.<sup>2</sup> The estimated total number of guns (both licit and illicit) held by civilians in India is 40 million.<sup>3</sup> This probably explains that gunshot injuries in civilian environment in recent years have increased considerably in various parts of India with wide regional variations. Such injuries have a serious psychological and social impact on the family and community. Medical, legal and emotional costs of such violence impose an enormous burden on urban and rural hospitals, court of law, families, and the society as a whole.

Firearms and their use are modifiable risk factors, which if recognized and addressed, could help decrease the burden of violent death.<sup>4</sup>

Many researchers have studied the various aspects of the firearm injuries in different part of the world. The incidence of Gun violence is increasing day by day in north-western India (Jaipur-region) yet scanty of data is available. Our pioneer study is aimed to assess the socio-demographic parameters of firearm injuries cases in this region.

## 2. MATERIAL & METHOD

Descriptive Observational Study carried out during May 2014 to October 2015 at the Department of Forensic Medicine and Toxicology, S.M.S. Medical College and attached hospitals, Jaipur. All fatal and non-fatal medico-legal cases of firearm injuries reported at the study setting. Inclusion criteria include firearm injuries cases admitted for treatment purpose in the hospital and cases undergone for autopsy at the departmental mortuary.

Air gun injuries cases, explosion injuries cases and cases that did not provide informed written consent for the study were the exclusion criteria. A pre-validated questionnaire was developed to record socio-demographic data pertaining to firearm injury cases. The investigator contacted the subject and informed about the purpose of the study. A legally valid well informed written consent was obtained from patients themselves or from nearest relative, in case of subjects those who were recruited from the mortuary. The questionnaire included information on age, sex, marital status, residence, occupation, education, outcome (survival or death) and motive behind incidence happened. Data were entered in MS excel sheet and descriptive statistical analysis was done. Ethical clearance for the study was obtained from Institute Ethics Committee of S.M.S. Medical College, and attached group of Hospitals, Jaipur.

### 3. RESULTS

A total of 23,584 medico-legal cases were reported during study period at the Department of Forensic Medicine, S.M.S. Medical College and attached Hospital, Jaipur. Among them 115 cases were concluded to be of firearm injuries with a burden of 0.49 %. About 67% of cases were from 20-39 years of age with peak incidence in age group of twenties (38%) and mean age was concluded 31.45 years. Male victims (about 90% cases) predominated over females (as illustrated in table 1). Married population sharing 80% of the study population affected with gun-violence. 89% cases belong to rural region. Most of victims (79% cases) were literate and rest was illiterate.

**Table 1**

Age and Sex Wise Distribution of Victims of Firearm Injuries (N= 115)

Age group (in yrs)	No. of Males Victims	No. of Females Victims	Total No. of Victims	Percentage of Victims
<10	01	01	02	1.74
10-19	08	01	09	7.83
20-29	42	02	44	38.26
30-39	28	05	33	28.70
40-49	13	01	14	12.17
50-59	09	02	11	9.57
> 60	02	00	02	1.74
<b>Total</b>	<b>103 (89.57%)</b>	<b>12 (10.43%)</b>	<b>115</b>	<b>100</b>

**Table 2**

Distribution of Victims of Firearm Injuries according to the Motive behind the gun-shot injuries (GSI) (N= 115)

Motive behind GSI	Number of cases	Percentage
Property disputes	49	42.61
Revenge	16	13.91
Robbery	14	12.17
Unknown	12	10.43
Accidental (no motive)	10	08.70
Group Quarrel	08	06.96
Love Affair	03	02.61
Defense	03	02.61
<b>Grand Total</b>	<b>115</b>	<b>100</b>

Agriculture was the most common occupation of victims of gun-shot injuries followed by self-employed people (as displayed in figure 1). Majority of the incidences of gun-shot injuries were homicidal in nature (78%) followed by accidental episodes (16.5%).

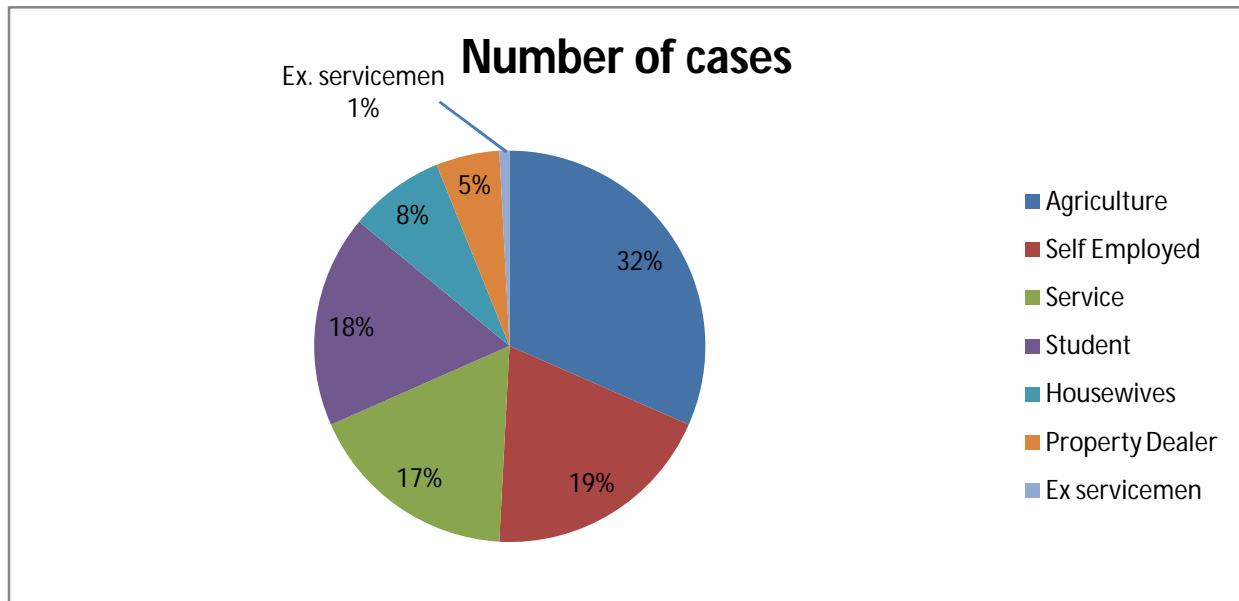
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Surprisingly, there were only 2 cases of suicidal gun- shot injury. Property disputes were the most common motive behind firearm injuries followed by revenge (as shown in table 2).



**Figure 1**

Distribution of Victim of Firearm Injuries according to Occupational Status (N= 115)

#### 4. DISCUSSION

Present study was conducted at the tertiary health care centre situated in Jaipur which provides health care to large number of referral population of the various districts of Rajasthan as well as other adjoining states of Haryana, Uttar Pradesh, Madhya Pradesh and Bihar.

During study period 23,584 medico-legal cases were received at the Department of Forensic Medicine. Out of these 115 cases were of gunshot injuries with burden of 0.49%. A total of 5,135 autopsies were conducted and among them 11 cases (0.22%) were fatal firearm injuries. This is quite less as compared to other past studies of Patowary A<sup>5</sup>, Kumar P et al<sup>6</sup>, Mehmat T et al<sup>7</sup>, Capt Mirza F et al<sup>8</sup>, Kumari S<sup>9</sup> but similar to other researchers viz Amiri A. et al<sup>10</sup>, Sachan R et al<sup>11</sup>, Shashikant VK et al<sup>12</sup>, Chaurasia N<sup>13</sup>, Davies MJ et al<sup>14</sup>, Rao D<sup>15</sup>). The reason for this great variation owes to the geographical variations in the different places of study.

In the present study maximum numbers of cases were from 20-39 years of age (66.96%) with peak incidence in age group of twenties (38.26%) which are the reproductive and active members of the society. The observations of the present study were similar to those of Patowary A<sup>5</sup>, Kumar P et al<sup>6</sup>, Sachan R et al<sup>11</sup>, Shashikant VK et al<sup>12</sup>, Chaurasia N<sup>13</sup> (peak incidence between 21-40 years of age in all). However, the results of the present study are variable from those of Kumari S<sup>9</sup>. The probable reason for this variation is the minor cultural and periodical differences as most other studies from the same state.

Males (89.57%) outnumbered the females (10.43%) with a male: female ratio of about 8.9:1. Similar results have been reported by Patowary A<sup>5</sup> (88.9% males) and Kumari S<sup>9</sup> (90% males). Males are the active participants of the society and more commonly engaged in outdoor activities. Moreover, they are more prone to episodes of rage and revenge. This explains the male preponderance in all studies.

About 80% victims of both sexes were married in the present study. It bears no correlation with such incidences but any type of outrageous behaviour is more common after marriage due to the burden of responsibilities that come hand in hand with it.

The victims of firearm injuries showed a rural preponderance (88.70%) while 11.30% victims belong to urban population. Chaurasia N<sup>13</sup> also showed preponderance of rural victims with slight variations in proportions of the two (72.9% rural & 27.1% urban victims) in both studies. Rural preponderance (46.3%) was also reported by Shashikant VK et al<sup>12</sup>. This is probably due to the easy availability of illegal firearms in rural regions owing to easier violation of laws. It is difficult to implement strict laws in rural

areas for many reasons, like large area, lower literacy rates, cultural influences, socio-political constraints etc. also, there are more disputes regarding land and property, honor and prestige issues, caste conflicts, social strictures, etc in villages as compared to modern cities, thus resulting in outrage and quarrel are more often.

The literacy status of our study population is high. It is expected from educated people to use such deadly weapons judiciously. However the literacy rates are not an indicator of the level of education. Educational status has not been described as a variable in most studies.

Among the occupational status of the victims, it was observed that agriculture was the most common occupation among victims (31.30%), which is quite obvious owing to the preponderance of rural population in this study. The higher numbers of persons from agricultural field is also attributable to the fact that land is an important cause of disputes leading to such heinous crimes either in impulse or with planning. Our results are also in accordance with those of Shashikant VK et al <sup>12</sup>.

Homicides (78.26%) were the most common manner of firearm injuries in the present study followed by accidental and suicidal pattern. Similar observations were concluded by other researches of Kumari S<sup>9</sup> (88.34%), Sachan R et al <sup>11</sup> (92%) and Chaurasia N <sup>13</sup> (85.4%) . Studies of Patowary A <sup>5</sup> and Kumar P et al <sup>6</sup> have restricted study of only homicidal pattern or suicidal firearm injuries (Rao D <sup>15</sup>). The preponderance of homicide in gun-shot injuries is explainable as these deadly weapons are generally used in planned manner assault or impulsively.

Land and property disputes were the most common reason behind firearm injuries in this study (42.61%) followed by revenge & robbery (13.91% & 12.17% respectively);

According to Patowary A <sup>5</sup> and Kumar P et al<sup>6</sup> most cases were due to militant activities, encounters, riots, robberies or family quarrel. This variation from our study is due to the regional variations in the areas of study as Guwahati and Imphal are militant activity prone areas. The results of the present study are quite similar to those of

Sachan R et al <sup>11</sup> who reported 29.51% gun-shot injuries due to property disputes; 21.1% for dacoity. But in slight variation to those of Chaurasia N <sup>13</sup> where maximum (53 %) homicides occurred for personal enmity.

## 5. CONCLUSION AND RECOMMENDATIONS

- The firearm homicide in Jaipur region is drastically increasing which is an eye opener to the Indian society.
- Our study conclusive of certain transformations may reduce the mortality, morbidity, and economical loss to the community.
- Inspection of Public health model to curb the gun violence.
- Indian Gun policy regarding armed violence prevention, gun control laws and the small arms trade needs improvisation.
- Young males of the population must be targeted for lifestyle adjustments such as training to refrain from anger or disputes and to prevent the easy access of firearms as a weapon to settle disputes.
- It is applicable to examine that sloppy firearm control is a great contributor to civilian gunshot injuries.
- Higher percentage of unemployment and poverty may be granting to the raised incidence of youth agitation, armed wrongdoing and related gunshot assaults.
- Strong laws are required to provide competent security for the brimming population.
- Promote access to adequate mental health services.

## SUMMARY OF RESEARCH

1. Gun violence is a global health hazard.
2. Firearms and their use are modifiable risk factors, which if recognized and addressed, could help decrease the burden of violent death.
3. Educational efforts and individual, community approaches are needed to alleviate gun violence.

## FUTURE ISSUES

The epidemiologic reviews in this research enhance our understanding of various forms of gun violence, inform interventions, and help chart directions for future research.

## DISCLOSURE STATEMENT

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