



Study Of Pattern Of Asphyxial Deaths

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Abstract

At present times, a great proportion of human lives have crime and violence. In an age of advancing civilization, it has become an easy task to kill oneself or someone. Even though we are able to improve the healthcare and control death rate in our society with advancing technology. But one cannot overlook the fact of increase in number of unnatural deaths, which may be due to homicide, suicide or accident, reported on a daily basis. A common mode of suicide being by means of hanging and homicide, being strangulation. According to National Crime Records Bureau of India suicide is among the top ten causes of death in India. Here in our study, data of asphyxial death cases brought for autopsy in Rajarajeswari Medical College and Hospital, Bengaluru for a period of 1 year is taken and the pattern of different manners of asphyxial death are studied.

Keywords: asphyxial death, hanging, strangulation, asphyxia

Introduction

Conventionally the term asphyxia has been applied to conditions in which the supply of oxygen to the blood and tissue has been reduced appreciably below the normal level by any interference with respiration, though other terms such as hypoxia or anoxia are more accurate (1) However, the use of the term asphyxia in forensic medicine is restricted to those forms of oxygen lack resulting from mechanical interference with respiration. (2)Asphyxia is the generic term for mechanisms that cause a deficiency of the tissue oxygen supply that is required to sustain metabolic function. The four physiological causes of asphyxia are reduced oxygen in the environment, reduced blood oxygenation, reduced cardiovascular oxygen transfer, and interference with cellular oxygen absorption. (3)The term ‘asphyxia’ literally means lack of oxygen, though etymologically, asphyxia means ‘absence of pulsations. Death is said to have occurred due to asphyxia, when respiratory function ceases first and initiates the process of failure of other two vital systems. In asphyxia, there

is prevention of exchange of air between the atmosphere and the alveoli of lungs and there is lack of oxygen supply to the tissues (4)

Material And Methods

A cross sectional retrospective study of asphyxial deaths was done by collection of data from medico legal autopsies conducted in the department of Forensic Medicine, Rajarajeswari Medical college and hospital Bangalore from January 2021 to December 2021.

The following parameters were studied:

1. the manner of asphyxial death
2. sex wise distribution
3. age wise distribution
4. religion wise distribution
5. time of death
6. marital status of the victim

Results

Out of a total of 171 autopsies in the last year, January 2021 to December 2021 was conducted in

the Department of Forensic Medicine, Rajarajeswari Medical College and Hospital Bangalore, out of 171 cases 130(70.02%) cases were male and females constituted 41(23.97%). Incidence of hanging was 115(68.42) reported in out of all asphyxial deaths and 30.41% of total autopsies, second most common manner of asphyxia was through drowning death, strangulation and choking constituted 0.1% each from total asphyxial deaths. Out of the total autopsies conducted 89.47% was Hindus, 1.75% was Muslims, 3 Christian victims were found and 6.43% were

unknown (others). The asphyxial deaths are seen more in 21-30 years and the 31-40 years which are 32 and 41 in numbers respectively constituting 24.61% and 31.53% of total 130 victims. Age group among which asphyxial death was prevalent was between 21-30 years of age throughout the year. The age groups 41-50 were third in total fatality. 1-10 years and above 70 years have 0.76% and 1.53% asphyxial deaths respectively. We could not report educational and socio-economic status in all asphyxia death, because of lack of information.

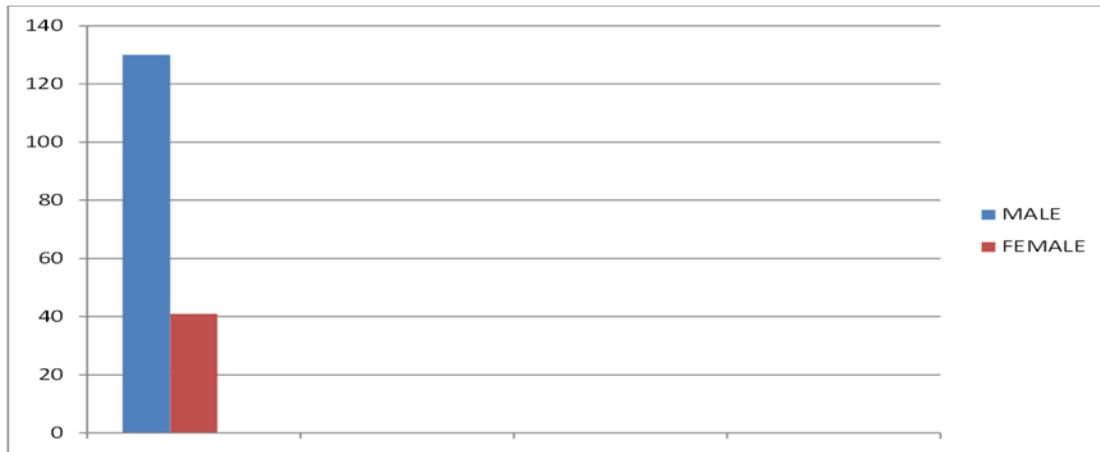
RESULTS

A total of 171 cases of asphyxia were included in the study. Data from the proforma was compiled tabulated and analysed by descriptive statistics by calculating percentage and proportions.

TABLE 1: THE NUMBER OF CASES ACCORDING TO THE AGE GROUP AND THEIR PERCENTAGE

Age(in years)	Male	Female
1-10	1(0.76%)	1(2.43%)
11-20	12(9.23%)	8(19.51%)
21-30	32(24.61%)	14(34.14%)
31-40	41(31.53%)	8(19.51%)
41-50	27(20.76%)	3(7.31%)
51-60	7(5.38%)	5(12.19%)
61-70	8(6.15%)	0
71-80	2(1.53%)	2(4.87%)
Total	130	41

CHART 2: WITH RESPECT TO SEX DISTRIBUTION



The table shows analysis of sex distribution. The cases are seen more in male victims as compared to females. Male constituted 76.02% and female were 23.97%.

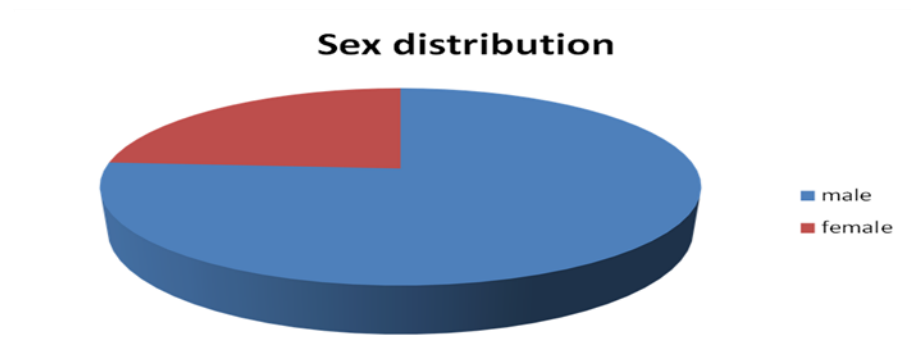
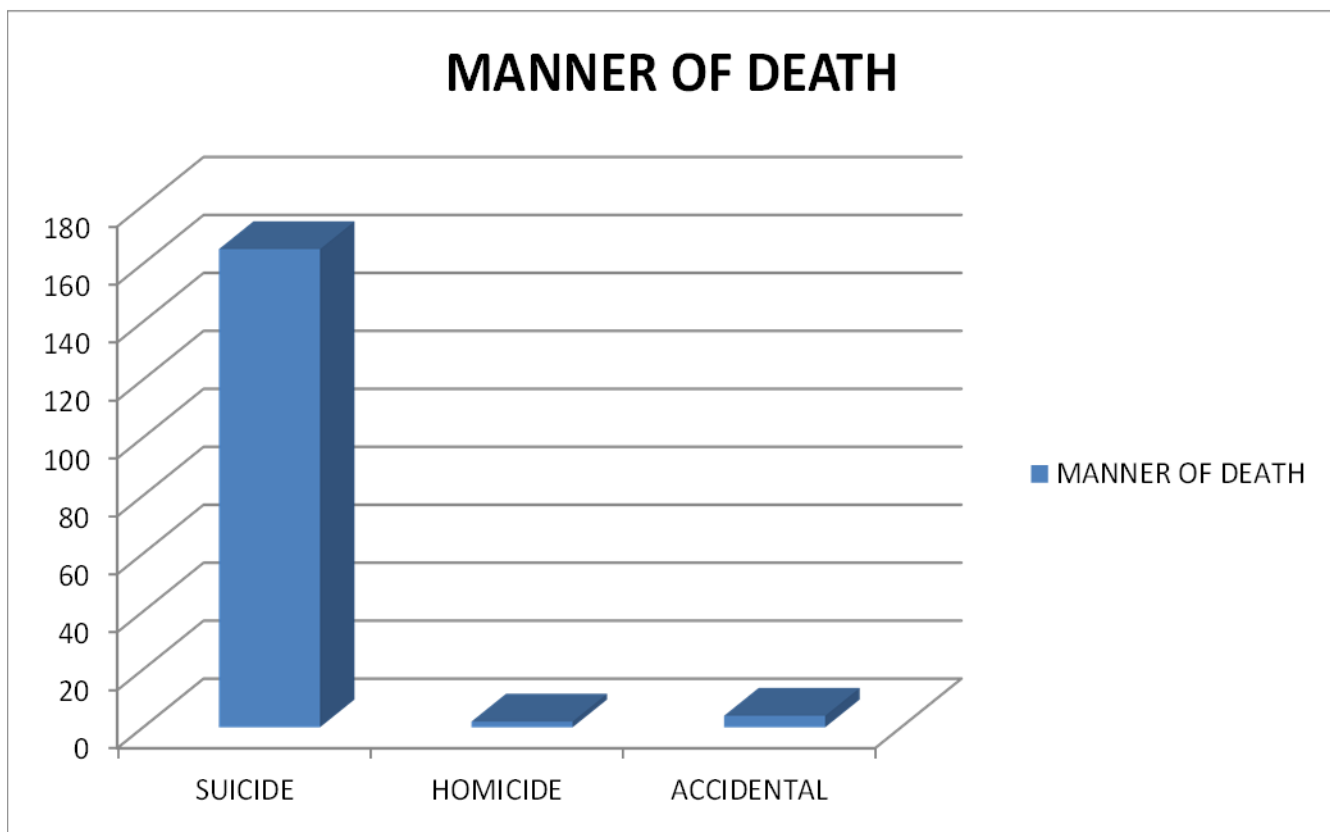


TABLE 6: DATA ON THE MANNER OF DEATH

Manner of Death		
Suicide	Homicide	Accidental
165	2	4

CHART 6: DISTRIBUTION OF THE MANNER OF DEATH

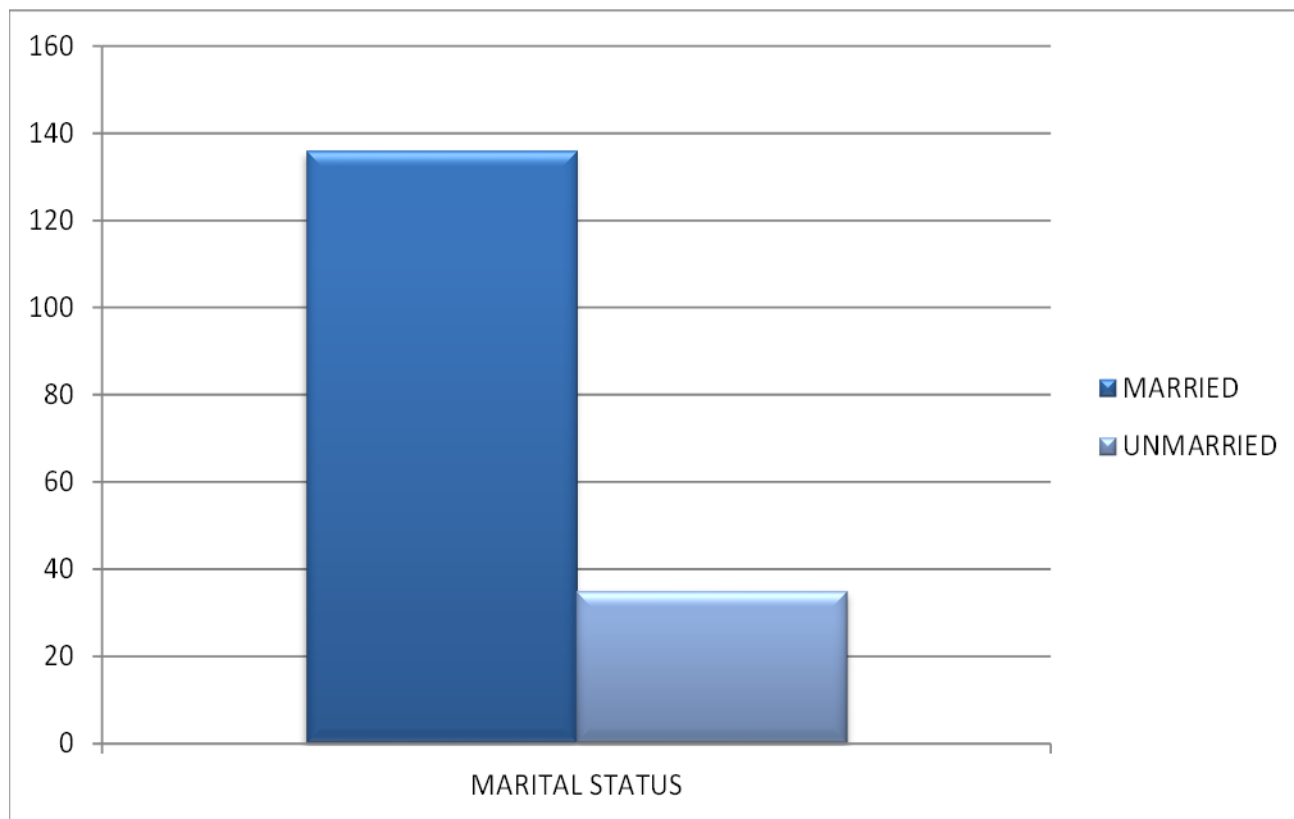


The data analysis with respect to the manner of death in asphyxia deaths is more through suicide 165(96.49%) and least was through homicidal deaths 2(1.16%).

TABLE 3: TABLE BASED ON MARITAL STATUS OF CASES

Marital status	
Married	Unmarried
136	35

CHART 3: DISTRIBUTION OF CASES BASED ON MARITAL STATUS

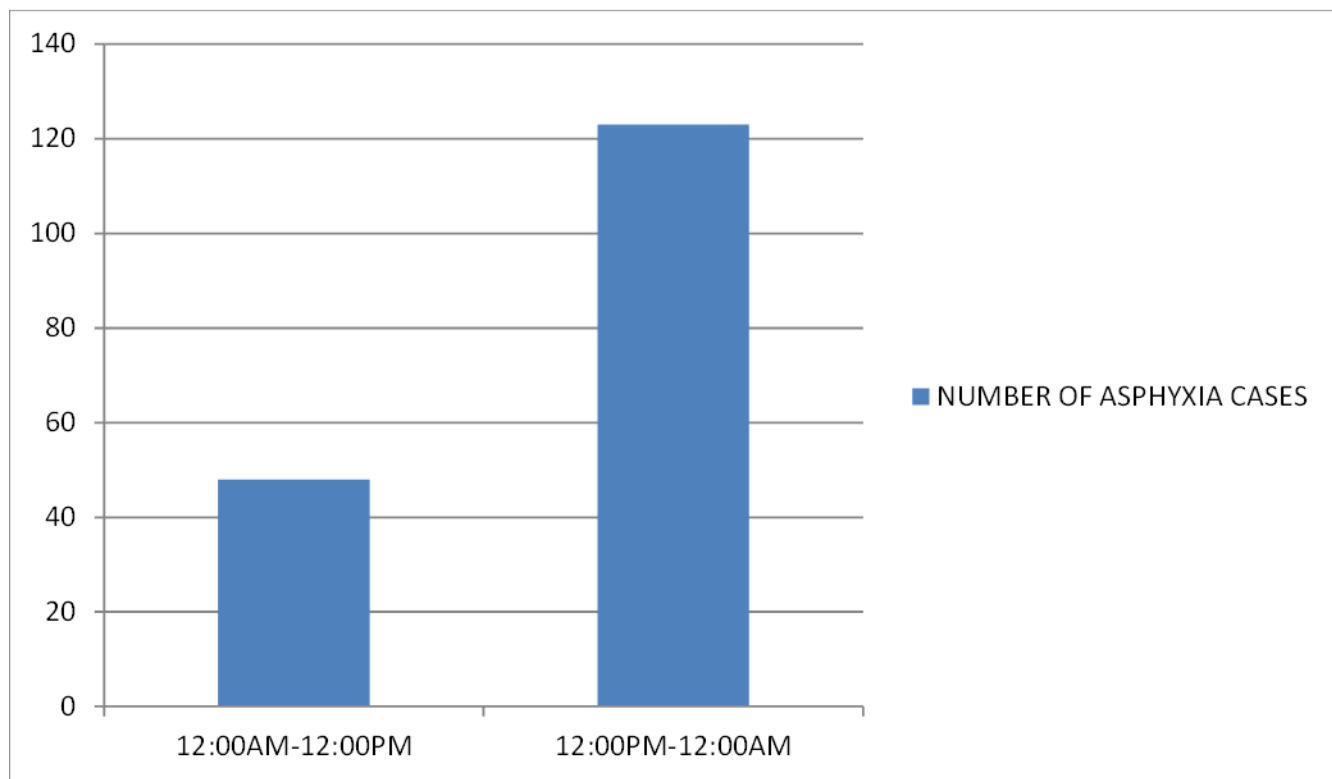


This table data shows majority of asphyxia cases are more among married cases 136(79.53%) and the least is among unmarried cases 35(20.46%).

TABLE 4: TABLE ON TIME OF INCIDENCE

Time of incidence	
12:00am-12:00pm (morning)	12:00pm-12:00am (night)
48 (28.07%)	123 (71.92%)

CHART 4: DISTRIBUTION OF ASPHYXIAL CASES BASED ON THE TIME OF INCIDENCE

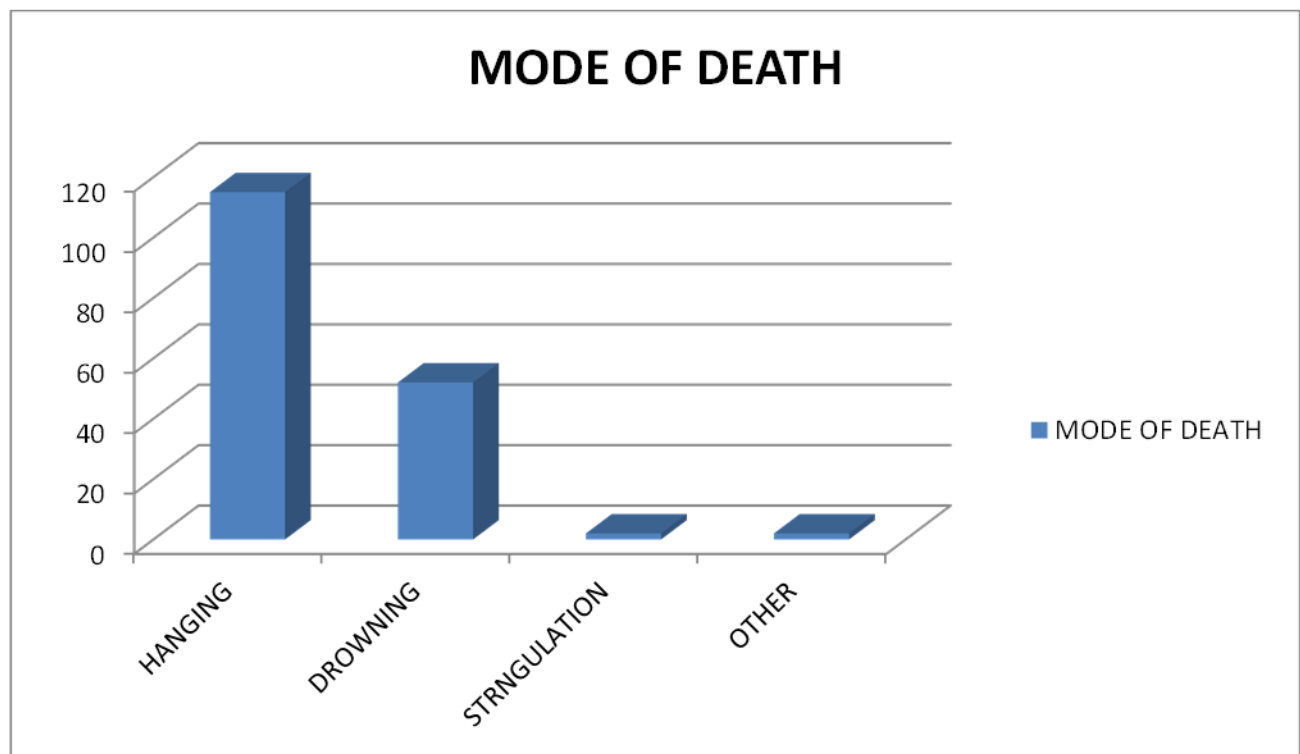


The time was divided into 2 periods of 12 hour interval. In this aspect of study most of the asphyxia deaths have occurred during 12:00pm-12:00am midnight (71.92%) and least during 12:00am midnight-12:00pm (28.07%).

TABLE 5: MODE OF DEATH

Mode of Death			
Hanging	Drowning	Strangulation	Others
115 (68.42%)	52 (30.41%)	2 (1.16%)	1.chocking 2.aspirational chocking

CHART 5: CAUSE OF DEATH



Data shows the modes of asphyxial deaths were through hanging 115(68.42%) and the least was through choking 1 and aspirational choking 1

Discussion:

The present study showed a wide range of similarities and dissimilarities in findings and mode of asphyxial deaths with the work of other authors. Comparing to

the observations of our study to the different short term period studies from various parts of the country, like from Varanasi by Chaurasia (1), gives the incidence of asphyxial deaths more in males as 60.89% (1), from Hamburg, Germany death caused by asphyxia was identified in 249 autopsies, two-thirds of the cases of death caused by asphyxia involved boys, most of whom had died from accidents. Girls were more often the victims of homicides. (3)Our study shows that the manner of hanging was more; drowning was second and the leading cause by asphyxial deaths were through hanging 115(68.42%) and the least was through choking 1 and aspirational choking 1 while from the data of Chaurasia (1) studied 542 cases of asphyxial deaths in Varnasi, in which hanging was the commonest mode observed in 52.21% cases followed by drowning in 45.02% cases as compared to our study we found hanging was 68.42% and drowning 30.41% which is higher than the study done by Chaurasia in 2008-2011. (1)In our study showed a maximum number of cases (31.53%) in 31-40 years age groups (Table:1) this is followed by 21-30 years (24.61%) cases. This was different from the study conducted by Chaurasia (1) which showed maximum number of cases in the age group 21-30 (35.79%) and after that comes 11-20 (20.30%). The age group less than 10 and above 70 constituted only less than 1% of the study. On the other hand, only 1.16% victims were found to be less than 10 years and 2.3% victims above 70 years of age. In our findings, This study has several limitations because of its retrospective design. Because the data were gathered from autopsy reports in a short period of one year, they are not completely standardized and, thus, are dependent on the relative quality of the examination and documentation. We in our study have managed to cover the marital status (Chart:3) and the time of the incidence which are more among married couples 79.53% (Table:3) and while considering the time of incidence, this aspect of study most of the asphyxia deaths have occurred during 12:00pm-12:00am midnight (71.92%) and least during 12:00am midnight-12:00pm (28.07%) (Table:4). Khalkho study about incidences of asphyxial death was more common in married 89 (59.33%) as compared to unmarried 55 (36.67%) and 6 (4%) cases were of unknown marital status. (4)In our study, the manner of death is of 165 cases are of

suicidal, 4 accidental and 2 homicidal deaths. Whereas from the study of Naik et Al⁶ (98.44%), 83 (98.81 %) cases of hanging were suicidal and 01 (01.19%) case of homicidal hanging was observed. Out of 171 cases, 136 (79.53%) are married while the least 35 people are unmarried (20.46 %) in our study while it is not so consistent with studies by Behera A. et al(1) (Married 51.56% and unmarried 47.8%).⁷

Conclusion

Medico-legal autopsies provide an important statistical data related to legal incidents of that particular region. The violence in the form of asphyxia is also contributing to the increased number of deaths in this world (about 10% overall) and in Khalkho study it was the fourth most common cause of unnatural death after Road Traffic Accident, burn and poisoning in 2018⁽⁴⁾, at present asphyxia continues to remain one of the leading causes of deaths. It is difficult for forensic experts and scientific community to find out the exact cause of increasing number of asphyxial deaths. Our study serves to explain the tendency of men and women to opt for hanging as the preferred manner of death (suicide). Another interesting aspect of this study is marital status of the victims which gives us an implication that suicidal tendencies appear to be more among the married couples than among the unmarried couples where they again have opted for suicide as the manner of death. A brief idea about the time of incidence can also be drawn from the studies we have conducted that most of the victims chose the second half of the time interval i.e., between 12:00pm to 12:00am. Suicide is a major public health issue of the world especially in developing countries. Attempt to commit suicide; under section 309 of IPC viz shooting, hanging and stabbing are a 'hard' way of committing suicide and typically a male choice; poisoning and drowning are typically female choice. But in our study both men and woman on a majority have opted for hanging as the mode of death; while suicide remains as the leading manner of death.

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