Epidemiology Of Cases Of Hanging At Vadodara, Gujarat

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Background: Hanging is a very simple suicide method that does not require complicated techniques but requires relatively minimal neck pressure. It is one of the most commonly used suicide methods and has a high mortality rate.   **Aims & Objectives:** The present study was undertaken to know the epidemiology of distribution of cases of hanging based on age and sex distribution, month wise data, the employment status of the deceased, socio-economic status, type of family, and the place of occurrence of event. The suspected reason, motive for suicide and the time of incidence were also studied. **Methods:** The present study is a prospective and observational study, which was conducted in the Department of Forensic Medicine, S.S.G. Hospital and Medical College, Baroda. All the cases of Hanging deaths, which were brought to us for autopsy examination during one year period from 1st October 2013 to 30th September 2014, were selected to study demography and distribution of the cases. **Results:** In our study male cases of Hanging were twice that of the females. Majority of the victims of Hanging were male in their 3rd & 4th decade of life. Most of the suicide cases by hanging in this study occurred during late night or early morning hours or during twilight hours. Most cases occurred in the confinement of the bedroom or indoors.

Conclusion: Our study shows that the incidence of Hanging is one of the leading causes of suicides in Vadodara. Hanging included 4.36% of all autopsies at the centre. Nearly half of them were young adults less than 30 year belonging to the middle income strata. Most of the incidence occurred when the deceased was lonely at home. Our study shows that no age, sex, or employment, social status is spared from this method of taking away one's life.

Key-words: Hanging, asphyxia, suicide.

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INTRODUCTION:

Hanging is a mode of intentionally killing oneself via suspension from an point by a ligature or by jumping from a height with a noose around the neck. The fatal period is usually about 3-5 minutes. Virtually all hangings are suicidal. Depending on the area of the country and the sex of the victim, hanging is either the second or third most popular method of suicide[1]. In the International Statistical Classification of Diseases and Related Health Problems, suicides by hanging are classified under the code X70: "Intentional self-harm by hanging, strangulation, and suffocation".[2]   It is one of the commonest method of suicide, which causes instant death.

MATERIAL & METHODS:

We conducted this prospective longitudinal autopsy based study in the Department of Forensic Medicine, SSG Hospital & Medical College Baroda. Cases of hanging which came to the autopsy examination during the period of one year between October 2013 to September 2014 were included in this study. Ethical clearance was obtained from the College Ethical Committee. Informed consent was taken from the relatives of the deceased. Post-mortem examination of each case was carried out, the epidemiology of the hanging cases including detailed history regarding the circumstances of death were collected from the police, relatives of the deceased, inquest

papers and hospital records were collected and analyzed.

RESULTS:

Total 2315 autopsies were conducted during the study period and out of them 101 cases (4.36%) were of hanging which included 1 case of homicidal hanging and 07 cases of near hanging. In our study majority of the cases were Males (66.3%). The age of victims ranged from 07 to 67 years and average age was 31.28 years. Almost two third of the victims (64%) of hanging were belonging to 21-40 years of age group. The majority of the cases were from urban areas (n-96) and belonged to Hindu religion (93%) followed by 5% Muslims and 2% Christians and Sikhs. In our study 54% victims of hanging were married (34 males and 20 females) and 39% were unmarried (26 males and 13 females) and about 8% were either widow/widower or divorcee. Majority of the cases belonged to the middle class family (62.37%) followed by lower class (25.75%) and upper class and above (10.9%) while in

Table 1: Age & Sex wise Distribution

Age (In Yrs)	No. of Cases	Males (%)	Females (%)
1-10	01	00 (0%)	01 (02.9%)
11-20	19	10 (14.9%)	09 (26.4%)
21-30	34	20(29.8%)	14 (41.2%)
31-40	29	20 (29.8%)	09 (26.4%)
41-50	07	06 (08.9%)	01 (02.9%)
51-60	10	10(14.9%)	00 (00%)
61-70	01	01(01.5%)	00 (00%)
Total	101	67(66.3%)	34 (33.7)

Table-2: Distribution of Cases according to Time of Hanging

Time of Hanging	No. of Cases
0- 6 hrs	25(*24.75%*)
6-12 hrs	34(*33.67%*)
12-18 hrs	18(*17.82%*)
18-24 hrs	24(*23.76%*)

one case the whereabouts were not known. Month wise distribution of the cases shows that maximum incidences of hanging were in the month of February (13.85%), followed by August (12.80%) and least were in the month of April (2.9%) while the average number of cases per month was 8.4%.

Table-3: Cases according to Reason wise

Reasons for Suicide	No. of cases	%
Money/financial problems	23	23%
Love failure/ problems	08	08%
Exam/Result/ Studies	09	09%
Health related reasons	13	13%
Family Reasons	21	21%
Multiple	07	07%
Unknown	19	19%

Based on the family structure nuclear families consist 73.26% cases, followed by extended families which included 20% cases and rest 6% were staying alone. Amongst the occupation status most deceased were unemployed followed by the home makers and students. In present study, most common reason to commit suicide was financial crisis followed by family reasons, while in one fifth of the cases the motive was either not known or relatives did not reveal the reason due to social stigma. In males financial problems and females marital discord tops the list amongst commonest motives for suicide. Multiple reasons included family, employment, health and other problems all together. Maximum of the suicide cases (34 cases) by hanging in this study occurred between 6-12 hours i.e., in morning hours or during twilight hours (25 cases). Majority of the cases occurred in the confinement of the bedroom or indoors of home. There were 6 cases of near hanging wherein the treatment was given to the victim before their terminal event of death while in remaining 94 cases there was instant death.

Table-4: Hanging cases based on place of occurrence

Place of Event	No. of Cases	%
Home	95	94.0%
Outside Home	04	03.9%
Work place	02	01.9%

Table-5: Hanging cases based on Employment

Employment	Frequency	%
Unemployed	23 (M-21, F-02)	22.7%
Students	15 (M-6, F-9)	14.8%
Service class	15 (M-13, F-02)	14.8%
House wives	21 (F)	20.8%
Labourers & Workers	13 (M)	12.8%
Self employed	14 (M)	13.8%

DISCUSSION:

Hanging is one of the most common causes of suicide. Suicide by hanging at our centre constitutes 4.36% of total autopsies, which is consistent with the observations of Sharma et al[3] and Sadikhusen et al.[4] The Male:Female ratio was 2:1, which is well supported by the study of Sadikhusen et al[4] and Naik & Patil[5] and most of other authors also found Hindu male predominance in their studies. In this study, majority of the victims ranged from 7-67 years with an average age of 31.28 years, which was also observed by others.[3,4,5,6] Average age of females was 25.5 years and of males was 34.2 years while the overall average age was 31.3 years. Peak incidence was seen in the 3rd and 4th decade of life. These results are almost similar with the study of Sharma and Harish[3,] Kautilya[6], Selvakumar[7], Vijayakumari[8], Saini et al[9], Kanchan and Menezes[10] and Godin et al.[11] In all decades the males were outnumbered by the female. Majority of the victims who committed suicide by hanging were married, which was also observed by Vijaykumari[8] &

Gururaj[12] in their studies. Incidences of hanging were found more in married persons by Saisudheer and Nagaraja.[13]

Majority of the cases belonged to middle socioeconomic class (62.37%) followed by lower and upper class, which was also observed by Vijaykumari.[8] Month wise distribution of the cases in present study does not showing any specific seasonal variations. Maximum number of cases of suicide were in first quarter (3 month period) of the year which had 32 cases, 18 in second quarters and 30 in third quarter and 21 in last quarter of the year. Based on time-honoured classification of seasons in the region October to January- Winters (30 cases); February to May- Summers (32 cases); June to September- Monsoons (39 cases), no typical seasonal variations in suicidal hangings were observed. Findings of studies done to relate season and suicides vary from region to region."[14] In our study, most of the victims of hanging were unemployed. Only 6 cases sought medical treatment and rest were instant death, which is consistent with the statement that hanging carries the highest mortality in contrast to other methods of suicide as there is little opportunity to change one's mind as death generally occurs rapidly after suspension.

Our study shows that members of nuclear family are 3 times more prone for suicides as compared to extended families. Most common reason to commit suicide in present study was financial crisis followed by family reasons, while in study done by Vijayakumari[7] marital discord was the leading cause followed by health related reasons, while financial crisis was observed only in 3.2% cases. It might be due to different study population in a different geographical area. Most of the suicide cases by hanging in this study occurred in morning hours or during twilight hours and majority of the victims hanged themselves in the confinement of the home especially bedroom. This study is similar to most study of suicides which prove that suicides are more prone for the extreme act during midnight and early morning (twilight) hours.

CONCLUSION:

The present study is first of its kind in this area of Gujarat and we observed that majority of the victims were Hindu Males in their 3rd and 4th decade of life belonging to urban area and middle class status who committed suicide by hanging during morning and twilight hours due to financial crisis. A well designed and comprehensive programme is needed to identify the causative factor and prevention of suicidal hanging. Such studies can help us to understand the current scenario of suicide in a particular region so the preventive strategies can be planned to reduce the mortality.

Conflict of Interest: None declared.

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