

# A Study of Deaths Due to Hanging: A Retrospective Study a Research Paper

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## Abstract

Hanging is one of the most common methods of committing suicide all around the world. This is retrospective study conducted between June 2014 to December 2016, which included 50 cases of Hanging which were autopsied in Mortuary of Government Medical College associated Hospital, Ambikapur, Sarguja, Chhattisgarh during this period. Out of 50 cases of Hanging, 26 (52%) cases were males and 24 (48%) cases were females. Maximum number of victims 16 (32%) were in the age group of 21-30 years. Maximum 48 (96%) cases occurred in closed place and least number of cases occurred in open place 02 (4%). Cyanosis was seen in 46 (92%) of cases and face congestion seen in 24 (48%) cases. Ligature mark present above the level of thyroid cartilage in maximum number of cases 48 (96%). Fracture of hyoid bone present in 1 (2%) case. Aim of the study was to find out incidence, trends and patterns of hanging in Chhattisgarh.

**Keywords:** Hanging; Cyanosis; Ligature mark; Autopsy; Suicide.

## Introduction

Asphyxia is a condition caused by interference with respiration, or due to lack of oxygen in respired air, due to which the organ and tissues are deprived of oxygen. Mechanical Asphyxia is a broad term in which enough external pressure is applied to the neck, chest or other areas of the body, or the body is positioned in such a way that respiration is difficult or impossible.<sup>1</sup> In violent asphyxial deaths, the process of respiration i.e., exchange of air between the atmosphere and the lung beds is prevented by some violent mechanical means. Hanging is a process in

which the body is suspended with a ligature around the neck which causes constriction of the air passage preventing exchange of air between the atmosphere and the alveoli of the lungs, leading to asphyxia and death. The constricting force is either the weight of the whole body or the weight of the head alone.<sup>2</sup> In India, hanging is among the top 5 methods of choice for committing suicide, the other preferred methods being poisoning, drowning, burning and jumping from a tall structure or in front of a train.<sup>3</sup> Main purpose of the study was to find out incidence, trends and patterns of hanging in Chhattisgarh.

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## Materials and Method:

This is retrospective study conducted between June 2014 to December 2016, which included 50 cases of hanging which were autopsied in Mortuary of Government Medical College associated Hospital, Ambikapur, Sarguja, Chhattisgarh during this period. The data is collected from Inquest reports and post-mortem reports. The data thus obtained was analyzed and the study was done with respect to: age & sex wise distribution, manner of death, postmortem findings & Ligature findings. Information about crime scene obtained from police inquest report. The Collected data were tabulated on master chart and analyzed using Microsoft Excel.

## Results

Distribution of Hanging cases according to Age and Sex:

Out of 50 cases of Hanging, 26 (52%) cases were males and 24 (48%) cases were females, thus indicating that majority of victims were males. Maximum number of victims 16 (32%) were in the age group of 21-30 years, followed by 15 (30%) victims and 08 (16%) victims were in the age group of 11-20 years and 31-40 years. Minimum numbers of victims were in the age group 71-80 years 01 (2%).

**Table 1: Distribution of Hanging cases according to Age and Sex:**

Age (in Years)	Male	Female	Total No. of cases	Total Percentage(%)
<10	00	00	00	0%
11-20	04	11	15	30%
21-30	08	08	16	32%
31-40	05	03	08	16%
41-50	03	02	05	10%
51-60	02	00	02	4%
61-70	03	00	03	6%
71-80	01	00	01	2%
>80	00	00	00	0
Total	26 (52%)	24 (48%)	50	100%

Place of occurrence of hanging cases:

Out of 50 cases of hanging maximum 48 (96%) cases occurred in closed place and least number of cases occurred in open place 02 (4%). In most of the cases ligature material was present along with the dead body insitu where as in remaining cases investigating officer was asked to provide ligature material for examination. In the present study ligature material was divided into two broad groups

1. Soft Material – Duppta, gamcha, Bedsheet, Saree etc.
2. Hard Material – e.g. Electric wire, Nylon rope etc.

In our study, dupatta was most common ligature material seen in 46% of cases. Knot was fixed in 82% of cases where as running type in 18% of cases.

Distribution of Hanging cases according to post-

mortem findings:

Out of 50 cases of hanging, cyanosis was seen in 46 (92%) of cases, face congestion seen in 24 (48%) cases, sub conjunctival hemorrhage seen in 18 (36%) cases, dribbling of saliva was seen in 16 % of cases and petechial haemorrhage was seen in 11 (22%) of cases.

**Table 2: Distribution of Hanging cases according to post-mortem findings:**

Postmortem Findings	No. of cases	Percentage(%)
Face congestion	24	48%
Sub conjunctival haemorrhage	18	36%
Cyanosis	46	92%
Dribbling of saliva	16	32%
Petechial haemorrhage	11	22%

**Location of ligature mark:**

Out of 50 cases of hanging, ligature mark present above the level of thyroid cartilage in maximum number of cases 48 (96%).

**Condition of Neck structure:**

Out of 50 cases of hanging, fracture of hyoid bone present in 1 (2%) case.

**Table 3: Condition of Neck structure:**

Condition of Neck structure	No. of cases	Percentage(%)
Fracture of Hyoid bone	01	2%
Fracture of Thyroid cartilage	00	0%
Fracture of Cricoid cartilage	00	0%
No fracture	49	98%
Total	50	100%

**Discussion**

The use of the term asphyxia (Greek meaning pulselessness) in the forensic field is restricted to those forms of oxygen lack (anoxia, hypoxia) which results from mechanical interference with the process of respiration, that is, anoxic anoxia<sup>4</sup>.

Out of 50 cases of Hanging, 26 (52%) cases were males and 24 (48%) cases were females, thus indicating that majority of victims were males. Maximum number of victims 16 (32%) were in the age group of 21-30 years, followed by 15 (30%) victims and 08 (16%) victims were in the age group of 11-20 years and 31-40 years. Minimum numbers of victims were in the age group 71-80 years 01 (2%).

Our result was similar to the observations made in the study conducted by Saiyed MZG the majority of the victims were males 46 (62.16%) while the females were 28 (37.83%) in number.<sup>5</sup> Most vulnerable age group was 21 to 30 years with total cases 34 (45.94%); by Chandegara PK et al in which males were 63% and females were 37%.<sup>6</sup> Most common age group was 21-30 years seen in 45% of cases.

Out of 50 cases of hanging maximum 48 (96%) cases occurred in closed place and least number of cases occurred in open place 02 (4%).

The observations in our study were similar to the study done by Patel AP et al majority of the victims (96.25 %) were recovered from closed areas. <sup>[7]</sup>

Out of 50 cases of hanging, cyanosis was seen in 46 (92%) of cases, face congestion seen in 24 (48%) cases, sub conjunctival hemorrhage seen in 18 (36%) cases, dribbling of saliva was seen in 16 % of cases and petechial haemorrhage was seen in 11 (22%) of cases.

Our results are similar with the study conducted by Saiyed MZG where out of 74 cases of hanging, Cyanosis was found in 70 (94.59%) cases. <sup>5</sup> Our results are not correlating with study conducted by Shaikh MMM where Facial congestion and cyanosis present in 34.88% cases of hanging and Dribbling of saliva was present in maximum 38.37% cases of hanging. <sup>8</sup>

Out of 50 cases of hanging, ligature mark present above the level of thyroid cartilage in maximum number of cases 48 (96%).

Our results are similar with the study conducted by Dekal V it was observed that in 192 (84.95%) cases, the level of ligature mark was above the level of thyroid cartilage. <sup>9</sup>

Out of 50 cases of hanging, fracture of hyoid bone present in 1 (2%) case.

The observations in our study were similar to the study done by Shaikh MMM et al where fracture of hyoid bone present in only 11.63% cases;<sup>8</sup> by Miziara ID in which fracture of hyoid bone present in only 22.6% cases.<sup>10</sup>

**Conclusion**

In our study we conclude that, Out of 50 cases of Hanging, 26 (52%) cases were males and 24 (48%) cases were females, thus indicating that majority of victims were males. Maximum number of victims 16 (32%) were in the age group of 21-30 years. Maximum 48 (96%) cases occurred in closed place and least number of cases occurred in open place 02 (4%).

Suicide by means of hanging still remains one of the critical health issues leading to loss of life. Poverty, family dispute, mental illness, unemployment are some the important factor leading to suicide. Government and NGOs should actively participate

to overcome this problem. Focusing on stress management and proper mental health education should be provided.

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