

# The Study of Profile of Autopsy Cases of Hanging with Respect to Educational Status, Family Status and Place of Hanging of Victims in a Rural Region of Central India

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## Abstract

The increase crime rates with stress in the day to day life is responsible for wide range of medico legal autopsies in the society. The violent asphyxial deaths are responsible for the large number of medicolegal autopsies out of which hanging is a very common in society. Hanging is the cheapest and painless form of self-destruction. It has been employed as the method of suicide since time immortal. The study under consideration is a cross sectional study which was carried on the dead bodies of either sex. The deceased were brought for medico legal autopsy with the history probably revealing the cause of death due to hanging in the autopsy room at a medical college in Central India from 1st August 2011 to 31st July 2017. The number of hanging cases during the study period were 101, the majority of victims 66 (65.34%) belong to the nuclear family while the 31 (30.69%) cases belong to the joint family. The family status of 4 (3.96%) cases cannot be ascertained as the bodies were unidentified. The majority of victims 70 (69.30%) cases, preferred indoor place for hanging while about 31 (30.69%) cases preferred outdoor place for hanging. Considering their educational status about 24.75% cases had educated upto primary school, 10.89% had upto secondary school, 24.75% upto higher secondary, 22.77% upto graduate or more and 11.88% were uneducated. Also in 4.95% cases, the educational status was unknown.

**Keywords:** Hanging, Nuclear family, Educational status, indoor.

## Introduction

Although the tradition of hanging can be traced back to millennia earlier, the well-reported documents

indicate that it was practiced in Anglo-Saxon Britain as a form of practice until the 5th century. The first person in Britain to have been hanged by state officials on charges of treason, Mr. William Fitz Osbert. This is one of the widely used high-mortality suicide strategies. Often it is found that the partially conscious person may be killed and suspended around the neck in order to induce a suspicious by certain means. If the victim is found to be hanging, the question arises whether it is a suicide or a murder? In addressing this question, post mortem review and crime scene visits are key. An assessment by the World Health Organization in 56 countries in 2008 found the suspension to be the most commonly

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used suicide tool, contributing 53% of males with 39% of female suicides.<sup>1</sup> Moreover, it has been found that the adolescent age group which has the highest impact of electronic media on them are more prone for substance abuse and adapt hanging as a method of suicide.<sup>2</sup>

Hanging could be typical or atypical depending upon the features of the ligature mark around the neck. Also it can be complete or partial depending upon the degree of suspension. If the body is completely suspended such that none of the body parts touches the ground, it is called as complete hanging and if any part of the body is touching the ground then it is called as partial hanging<sup>3</sup>. The pattern of neck injuries differs in cases of judicial hanging with that of the routine suicidal hanging. Rarely the manner of death in the cases of hanging can be accidental e.g. auto erotic deaths. Such cases are of paramount importance as the manner of death can be established by the pornographic photographs and the partially naked dead body at the scene of crime. Even though hanging is suicidal in the majority of cases, the post-mortem suspension of the body is also very common. In situations like the allegations of post mortem suspension, the internal findings of the neck structures play an important role to assess the manner of death of the individual. Regardless of the material used to form the noose, suspension hanging will kill its victims in three ways: compression of the carotid arteries, the jugular veins and the airway<sup>4, 5</sup>. A 5 kg of pressure is required to compress the carotid artery; 2 kg for the jugular veins and at least 15 kg for the airway<sup>6</sup>. The amount of time it takes to die and lose consciousness is difficult to predict accurately and depends on the several factors. It took a man who filmed his hanging, 13 seconds to become unconscious, 1 minute and 38 seconds to lose muscle tone and 4 minutes and 10 seconds for muscle movements to cease<sup>6</sup>. The post mortem lividity is found on the dependent parts of the body during hanging from which time since death can be assessed.<sup>7</sup> The ligature mark is a vital evidence of hanging deaths. The source and direction of ligature mark helps in differentiating the death as hanging or strangulation. The ligature mark is an abraded contusion which changes its colour as time passes and has age related changes.<sup>8</sup> An inverted V shaped mark is often seen in hanging. Because of the pressure on the jaw, the tongue is sometimes protruded, causing it to dry<sup>4</sup>. In hanging, the ligature mark is commonly located in the upper part of the neck resulting in the compression of the neck structures. The damage caused by the ligature

mark to the internal neck structures depends on various factors like nature of the ligature material, weight of the body and the length of time of suspension.<sup>3</sup>

### **Aims and Objectives:**

1. To study the summary of hanging cases with respect to the educational status, family and the economic status of the victims.
2. To devise and promulgate the plan for the prevention of hanging in such cases by target based approach.

### **Materials and Method**

The study is a cross sectional study type based on the bodies of either sex brought for medico legal autopsy with the history of death due to hanging in the autopsy room at Datta Meghe Medical College in collaboration with Jawaharlal Nehru Medical College (Datta Meghe Institute of Medical Sciences) Sawangiand Mahatma Gandhi Institute of Medical Sciences Sevagram, Wardha, Maharashtra, from 1st August 2011 to 31st July 2017. The study is having prospective and retrospective nature with a total of 101 cases with definitive history of hanging is included in the study. All the information gathered from relatives of the deceased, from the police inquest, crime scene reports and photographs taken from the police and post-mortem reports of the department were studied.

**Inclusion Criteria:** Autopsy on all medicolegal cases of asphyxial deaths due to hanging conducted at Mortuary, situated in central India are included in the current study.

### **Exclusion Criteria:**

1. All violent asphyxial deaths other than hanging.
2. Birth asphyxia.
3. Sudden natural deaths.
4. Presence of advanced decomposition state.

### **Statistical Analysis:**

1. The software for graphs and calculation of statistical values is – SPSS.
2. The software used during creation or modification of some of the diagrams.
  - (a) Adobe Photoshop (R) 7.0.
  - (b) Corel Draw X3.
  - (c) Windows-10.

## Observations and Results

The present study is a cross sectional study (both prospective and retrospective) carried out on 101 cases of hanging for a time period of 6 years. All the cases of hanging autopsied are being studied. of the total medicolegal autopsied cases of the above tenure, the hanging cases were precisely selected based on the objectives of the study, inclusion and the exclusion criteria's.

**Table No. 1: Showing Educational status of hanging cases.**

| Type of Education | No. of cases | Percentage |
|-------------------|--------------|------------|
| Primary           | 25           | 24.75      |
| Secondary         | 11           | 10.89      |
| Higher Secondary  | 25           | 24.75      |
| Graduate or more  | 23           | 22.77      |
| Uneducated        | 12           | 11.88      |
| Unknown           | 05           | 4.95       |

Out of the 101 cases, 25 (24.75%) cases were educated upto primary school, 11 (10.89%) cases upto secondary class education, 25 (24.75%) cases upto higher secondary class, 23 (22.77%) cases upto graduate or more and 12 (11.88%) cases were uneducated. Also in about 5 (4.95%) cases, the educational status was not known. Thus the majority of victims were educated.

**Table No. 2: Showing profile of cases with respect to place of hanging.**

| Place of Hanging | No. of cases | Percentage |
|------------------|--------------|------------|
| Indoor           | 70           | 69.30      |
| Outdoor          | 31           | 30.69      |

Out of the 101 cases of hanging, the majority of victims 70 (69.30%) cases, preferred indoor place for hanging while about 31 (30.69%) cases preferred outdoor place for hanging.

**Table No. 3: Showing profile of hanging cases with respect to type of family.**

| Type of family | No. of cases | Total | Percentage |
|----------------|--------------|-------|------------|
| Nuclear        | 66           | 101   | 65.34      |
| Joint          | 31           | 101   | 30.69      |
| Unknown        | 04           | 101   | 03.96      |

Out of the 101 cases, the majority of victims 66

(65.34%) belong to the nuclear family while the 31 (30.69%) cases belong to the joint family. The family status of 4 (3.96%) cases cannot be ascertained as the bodies were unidentified.

## Discussion

**1. Educational status of victims of hanging:** Out of the 101 cases, 24.75% cases had educated upto primary school, 10.89% had upto secondary class, 24.75% upto higher secondary, 22.77% upto graduate or more and 11.88% were uneducated. Also in 4.95% cases, the educational status was unknown. Thus the majority of victims were educated.

The above findings are consistent with that done by authors Udhayabanu R et al<sup>9</sup> and Chandegara Paresh Kumar et al<sup>10</sup>. The findings are in contrast to the observations done by author Samanta Ashok Kumar et al<sup>11</sup> at Bhubaneswar where he had found that in 45.7% of cases, hanging is common in illiterate people which is in contrast with our study where we had observed the same percentage to be 11.88%. The reason might be the fact that though the study area of ours is situated in a rural set up but it is having more educational infrastructure with the government and private colleges as well as schools in the vicinity of the medical college and professional courses in the maximum field of education. It is considered as the educational hub in central India.

**2. Family status of the victims of hanging:** Out of the 101 cases, the majority of victims (65.34%) belong to the nuclear family while the 30.69% belong to the joint family. The family status of 3.96% cases cannot be ascertained as the bodies were unidentified.

The findings are in harmony with the study conducted by Ali E et al<sup>12</sup> in Dhaka, Bangladesh where observed that the 76% victims of hanging belong to a nuclear family. The reason might be the fact that in the joint family there is good cooperation between people resulting in the establishment of tremendous socio economical and psychological backing from the various family members in different matters of life as compared to nuclear family. There is always a psychosocial rapport among family members especially in crisis and disastrous incidences occurring in family. Hence there is a need to reconstruct the concept of joint family in our society which is always pushing towards the nuclear family concept.

We did not find the observations of any other study in contrast to our findings.

- 3. Profile of hanging victims with respect to the place of hanging:** Out of the 101 cases of hanging, the majority of victims 69.30% preferred indoor place for hanging while 30.69% preferred outdoor place for hanging. Thus the most preferred area for doing the act of hanging is indoor and lonely place.

The findings of our study are in accordance with the study done by authors Udhayabanu R et al<sup>9</sup>, Samanta Ashok Kumar et al<sup>11</sup>, Pal SK et al<sup>13</sup>, Singh Pradipkumar K H et al<sup>14</sup>, Vinita V E et al<sup>15</sup>, Bhosle S H et al<sup>16</sup>, Meera T H et al<sup>17</sup> and Kumar Chetan et al<sup>18</sup>. The reason might be the fact that the victims did not want to get rescued during the attempt of hanging and also they want to be alone during the a goning hours of hanging and further they are so determined to do the act that they don't want their act to get interfered by any other person.. We did not find the observations of any other author in contrast to our study.

### Conclusion

From the above observations it can be summarized that hanging is more common in educated people who are having nuclear family in the majority of cases with the preferred site being indoor for hanging. The government should target such parameters by constructive planning including chapters like psychosocial stress management in educational studies right from primary education. The importance of concept of joint family should be borne in mind of the new generation so that they will be able to share thoughts with their elderly people who are well versed with the strain and stress of life. The above active interventions will boost their morale thereby reducing the death due to hanging in our society.

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