

**SOCIODEMOGRAPHIC STUDY OF HANGING VICTIMS IN COASTAL DISTRICTS OF ODISHA**Rathin Kumar Duari<sup>1</sup>, Asis Kumar Ray<sup>2</sup><sup>1</sup>Assistant Professor, Department of Forensic Medicine and Toxicology, Kalinga Institute of Medical Science, Bhubaneswar.<sup>2</sup>Associate Professor, Department of Forensic Medicine and Toxicology, Kalinga Institute of Medical Science, Bhubaneswar.**ABSTRACT**

Hanging has been a common method of capital punishment since medieval times, and is the official execution method in numerous countries and regions. Hanging is the most reliable method of suicide in which a person applies a ligature to the neck that leads to unconsciousness and then death by suspension. In all societies including developed or developing countries, hanging is considered as a medical and psychological problem with severe economic and social consequences not only to them, but also to their family and society in general. Death due to hanging (65.9%) was found to be the most commonly observed mechanical asphyxia. Maximum number of hanging cases were from rural areas (61.15%). Male victims outnumbered those of female by ratio 1.12:1. In the age group 21-30 years, maximum number of hanging deaths were seen. 55.37% of victims were married. Maximum numbers of hanging cases (38.84%) were seen during summer season (March-June). Only few cases are associated with disease (0.057%) and pregnancy (0.049%). Present prospective study was conducted at the mortuary of SCB Medical College and Hospital, Cuttack, Odisha over 2 years from January 2008 to March 2010. The aim of the study is to study the demographic profile and incidence of hanging death in coastal district of Odisha.

**KEYWORDS**

Suicide, Hanging, Autopsy, Demographic Variables, Ligature Mark, Violent Asphyxia.

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**INTRODUCTION**

WHO<sup>[1]</sup> reported approximately one million people die from suicide, and 10 to 20 times more people attempt suicide worldwide every year. This represents one death every 40 seconds and one attempt every 3 seconds on average. All over the world, suicide is now one of the three leading causes of death among people aged 15-34 years. Until recently, suicide was predominating among the elderly, but now suicide predominates in younger people in both absolute and relative terms, in all countries. On world suicide prevention day 2008, WHO claimed that Japan, China, India might account for about half of the world suicide rate.<sup>[2]</sup> In India, according to the National Crime Record Bureau (NCRB), 2012, 1.3 lakh people committed suicide every year. About 4 lakh people attempted suicide, and 15 suicides took place every 1 hour during 2012. There has always been a raise every year. Overall, male victims are more common in suicide cases. In females, 1 suicide out of every 6 suicides was committed by a housewife.<sup>[2]</sup>

Hanging is a form of violent asphyxial death produced by suspending the body with a ligature around neck and the constricting force being the weight or part of the body weight. It is the method of capital punishment adopted by Indian legislature.<sup>[3]</sup> Any substance available at hand may be used as ligature.<sup>[4]</sup> Articles commonly found to be used for hanging are 'saree', 'lungi', 'dhoti', 'rope' and electric wire. In short, the material can be anything handy and available near the place of occurrence as the suicide is an impulse mediated act.<sup>[5]</sup>

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**AIMS AND OBJECTIVES OF THIS STUDY**

In this study, incidence of hanging deaths, its relationship with the sex of the deceased and different socioeconomic factors was studied.

**MATERIALS AND METHODS**

This prospective study was conducted on 121 cases of known dead bodies of both genders, brought for medicolegal autopsy with a definite history of suicide by hanging, at the Department of Forensic Medicine, SCB Medical College, Cuttack, during the period from January 2008 to March 2010. On the basis of post-mortem findings and correlating with the detailed history elicited from the police and the relatives of the deceased, it was concluded that the cause of death was hanging in 121 cases (65.9%) of all mechanical asphyxia. All these hanging cases were selected for the present study. The data so collected were tabulated on a master-chart and analysed.

**OBSERVATION**

A total of 3626 dead bodies were brought for post-mortem examination at the mortuary of SCB Medical College, Cuttack during a period of 2 years and 3 months ranging from 1st January, 2008 to 30th March, 2010. After post-mortem examination and correlation with the history received from the police and relatives of the deceased, it was confirmed that in 121 (3.33%) cases (Table 1), the victims had died because of hanging. These 121 cases are the part of the study. Amandeep Singh<sup>[6]</sup> encountered the incidence of hanging as low as 1.28%.

In our study, highest incidence (54 cases forming 44.6% of total) was noticed in the age group of 21-30 years (Table 2). Amandeep et al<sup>[6]</sup> also found nearby results with highest incidence (59.24%) amongst the population of 15-25 years. Whereas Azmak D et al<sup>[7]</sup> described highest victims (20.8%) between 30 to 39 years. It is clear that in majority age groups, males outnumbered females with a male: female ratio of 1.5:1. (Table 2).

A good majority of victims, 67 (55.37%) were married (Table 3). The percentage of married victims could be even higher since the marital status was undetermined in another 06 cases due to want of information (Table 3). Maximum number of hanging cases were from rural areas (61.15%) as shown in Table 4. Male victims outnumbered those of female by ratio 1.12:1 (Table 2).

The maximum number of hanging cases 47(38.84%) were seen in summer (Table 5) and only few cases were associated with chronic disease (5.7%) and pregnancy (4.9%) as evident from the table 6.

## DISCUSSION

Three thousand six hundred and twenty six cases of unnatural death were brought for post-mortem examination at the mortuary of SCB Medical College, Cuttack over a period of two years. Out of 3626 cases, 121 (3.33%) cases were due to hanging. The study of Gargi<sup>8</sup> states the incidence to be 0.58% lower than the present study. The difference of incidence can be explained on the basis of different socioeconomic status and lifestyle because the study of Gargi was conducted in Punjab.

Incidence of death due to hanging has male preponderance almost double than that of female. Similar male predominance was revealed by study of Sharija<sup>9</sup>, Gargi<sup>8</sup>, Salacin<sup>10</sup> and PB Wagmare<sup>11</sup> et al. This high incidence of hanging death among males could be attributed to failure in domestic life, failure in love affairs, unemployment, frustration in life, maladjustment to the society, etc. Western studies are not in agreement with these findings where maximum occurrence in both sexes was between 21 to 30 years.<sup>[12]</sup>

Marriage does not seem to be a protective factor. In the present study, 67 (55.37%) victims were married. Ashish Srivastav<sup>13</sup> had found 68% and Sharija<sup>9</sup> found 55.8% of the victims were married. These cases present a clear picture of the strain by various psycho-socioeconomic factors precipitating ultimately in death in this manner. Domestic problem is a major concern and failure to cope with it may lead to this lethal step taken by victim.

The incidence of death due to hanging is high in rural population (61.16%) as evident from the Table-4. Gargi (85-91)<sup>[8]</sup> found similar findings in his study that maximum cases i.e. 41.81% from the rural areas. It can be concluded that socioeconomic stress among the rural folks could have accounted for this large incidence.

Most of the hanging cases were seen during summer 47 (38.84%). PB Wagmare<sup>11</sup> et al found summer and winter season contributes equal cases of hanging and fewer cases in monsoon season. In this study also the lowest numbers of cases were seen during monsoon season which corroborates with PB Wagmare study. Seasonal variation has a role in this type of death, this can be concluded from this study.

Association of chronic disease (0.057%) and pregnancy (0.049%) is negligible with this form of death. P B Wagmare<sup>11</sup> et al found higher association of chronic disease (18.33%), this higher incidence of chronic disease may be explained by the fact that sample size was smaller (60 cases) when compared to the present study (121 cases). Katherine J. Gold et al<sup>14</sup> has described death by hanging in pregnant women is negligible, substance use and intimate partner problems seen with pregnancy-associated suicide. Females do not prefer violent methods such as hanging for suicide.

## CONCLUSION

Hanging is the most commonly observed mechanical asphyxial death. Hanging death shows maximum frequency among the married people of either sex. It has been found that it occurs more frequently among the rural population than urban. Marked differences were noted in different geographical areas regarding age group, gender and seasonal variation in hanging. Chronic diseases or pregnancies are least associated with this form of death, but other psycho-socioeconomic factors have to be studied to get a clearer picture with this form of death. There is an increasing tendency towards suicide by hanging among the youth and families. The reason for this increased rate of suicides may be due to the transition phase from protective to liberal economy in Odisha, which is a mineral rich state, and growing ambitions of youth and lack of social support. The government has to accept this reality and take steps to tackle this growing menace at the grass root level by setting up counselling centres and improving economic status of rural population.

Year	Total No. of Autopsy	Hanging Cases	% Hanging Cases
2008-2009	1883	87	4.6
2009-2010	1743	34	1.9
<b>Total</b>	<b>3626</b>	<b>121</b>	<b>3.33</b>

**Table 1: Incidence of Hanging during 2008-2010**

Age Group in Yrs.	Hanging Cases	Male	Female	% Hanging Cases
0-10	01	01	0	0.82
11-20	14	11	03	11.6
21-30	54	32	22	44.6
31-40	29	18	11	23.9
41-50	12	09	03	9.9
51-60	03	03	0	2.5
Above 60	08	07	01	6.6
<b>Total</b>	<b>121</b>	<b>81</b>	<b>40</b>	

**Table 2: Distribution of Hanging cases According to Age and Sex**

Marital Status	Hanging Cases	% Hanging Cases
Married	67	55.37
Unmarried	48	39.67
Undetermined	06	4.96

**Table 3: Marital Status of Hanging Victims**

Area	Hanging Cases	% Cases
Urban	44	36.36
Rural	74	61.15
Undetermined	03	2.48
<b>Total</b>	<b>121</b>	

**Table 4: Area Distribution of Hanging Victims**

Season	Hanging Cases	% Cases
Summer (March to June)	47	38.84
Rainy (July to October)	35	28.92
Winter (November to February)	39	32.23

**Table 5: Seasonal Variation in Hanging Deaths**

Associated Condition	Hanging Cases	% Cases
Chronic Disease	07	5.7
Pregnancy	06	4.9
Undetermined	02	1.6
<b>Total</b>	<b>13</b>	<b>10.7</b>

**Table 6: Hanging Death Associated with Chronic Disease/Pregnancy**

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