



Demographic Profile of Hanging Cases Autopsied in Rims, Ranchi

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ABSTRACT

Hanging is one type of unnatural death amongst death due mechanical asphyxia, which is commonly encountered in the autopsy room. The present study was carried out in the Department of FMT, RIMS, Ranchi prospectively from 1st March, 2013 to 30th May, 2014 with the aim of studying the demographic profile of hanging deaths. It was found the highest number of hanging was reported in males as compared to females. Highest numbers of deaths due to hanging were in the age group of 21-30 years. Most of the people prefer indoor locations for hanging. Majority of cases of hanging had not received any treatment and death occurred at place of incidence. In maximum cases the nature of suspension was complete type. Atypical hangings were seen in most cases. Most commonly used ligature among hard ligature material was Jute Rope, whereas Dupatta was most commonly used among soft ligature material. In maximum cases the position of knot was present at occipital region of the neck, followed by at over left mastoid region of the neck.

KEYWORDS : Hanging, Demographic Profile, Knot Position, Suspension, Ligature.

INTRODUCTION

Hanging is that form of asphyxia which is caused by suspension of the body by ligature which encircles the neck. The constriction force is being the weight of the body. Hanging may be partial or complete depending on the position or posture of the body at the time of hanging. Hanging is a common method of suicide around the world. In India hanging is among the top 5 methods of choice for committing suicide. (Aaron R, 2004)

More than 800,000 people die due to suicide every year and there are many more who attempt suicide. Hence, many millions of people are affected or experience suicide bereavement every year. Suicide occurs throughout the lifespan and was the second leading cause of death among the age group of 15-29 year globally. (Accidental Deaths and Suicides in India 2006)

Suicide by hanging is the next most frequent method in India. The profile of victims comprises married females or unmarried males in the age group of 21-30 years, faced with stressors in the form of unemployment, harassment for dowry, prolonged illness, failure in examinations, financial duress, or interpersonal problems (David G, 2005)

AIM AND OBJECTIVE

The present study was undertaken with the aim of studying the demographic profile of hanging deaths.

MATERIAL AND METHODS

The present study was carried out in the Department of FMT, RIMS, Ranchi prospectively from 1st March, 2013 to 30th May, 2014. The materials for the present study were dead body brought for autopsy from various police stations. Cases which died due to asphyxia as a result of hanging either alone or in association with other injuries are included for the study.

Information relating to cause of death and other associated informa-

tion like age, sex, place of occurrence, place of death, type of suspension (complete or incomplete), type of ligature used (rope, wire, clothes, sheet or lace) and localization of the knot (anterior, right, left or posterior) were gathered from the police records like inquest report, dead body challan etc and detailed history from accompanying relatives, neighbours, friends, and police officials.

OBSERVATION

There were 3307 cases of PM examinations conducted during the study period and among those 77 cases were hanging i.e. 2.32 %.

Table 1: SEX WISE DISTRIBUTION

SEX	NO. OF CASES	%
Male	52	67.53
Female	25	32.47
Total	77	100

Out of the cases of hanging males dominated over females in the ratio of about 2.1: 1.

Table 2: AGE WISE DISTRIBUTION OF HANGING CASES ALONG WITH SEX.

Age (in years)	Male		Female	
	No.	P.C.(%)	No.	%
0-10	00	0	0	0
11-20	17	22.07	6	7.79
21-30	22	28.57	9	11.70
31-40	06	7.79	8	10.38
41-50	04	5.20	2	2.60
51-60	02	2.60	0	0
61-70	01	1.30	0	0
71 & above	00	0	0	0

TOTAL	52	67.53	25	32.47
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The most vulnerable age for hanging was observed to be between 21-30 years followed by age group 11-20 years, 31-40 years and 41-50 years. Majority of cases amongst both males and females were belonged to the age group 21-30 years. The next vulnerable age group was 11-20 years in males and 31-40 years among females.

Table 3: PLACE OF OCCURRENCE

PLACE OF OCCURRENCE		No.	(%)	PLACE OF OCCURRENCE		No.	(%)
Indoor	Residence	68	88.31	Outdoor	Field	2	2.60
	Working place	3	3.90		Jungle	4	5.19
Total		71	92.21	Total		6	7.79

Most of the people prefer indoor locations for hanging of which maximum were at residence.

Table 4: HOSPITAL ADMISSION

TREATMENT TAKEN IN HOSPITAL	NO. OF CASE	%
Yes	10	12.99
No	67	87.01
Total	77	100

In the present study majority of cases of hanging had not received any treatment and death occurred at place of incidence.

Table 5: DISTRIBUTION OF THE POPULATION ACCORDING TO NATURE OF SUSPENSION (COMPLETE/PARTIAL)

TYPE OF HANGING	NO. OF CASES	SEX	NO. OF CASES	%	% OF TOTAL CASES
Complete	68	M	46	59.74	88.32
		F	22	28.58	
Partial	9	M	6	7.79	11.68
		F	3	3.89	
Total	77		77	100	100

Maximum cases were found where the nature of suspension was complete type. The ratio among males and females were almost similar in both type of hanging 2:1.

Table 6: POSITION OF KNOT

TYPE OF HANGING	Knot Position	TOTAL NO. OF CASES
Typical	Occipital Region	33 (42.86%)
Atypical	Front of Neck	00 (0%)
	Right Mastoid Region	14 (18.18%)
	Left Mastoid Region	30 (38.96%)
Total		77 (100%)

In maximum cases the position of knot was present at occipital region of the neck, followed by left mastoid region of the neck and least over right mastoid region of the neck. There was not a single case found where the position of knot at the front of the neck.

Table 7: TYPE OF LIGATURE MATERIAL USED

LIGATURE MATERIAL	No.	(%)	
Hard (51.95%)	Electric Wire	2	5
	Plastic Rope	9	22.5
	Jute Rope	29	72.5
	Sub-Total	40	100

Soft (48.05%)	Dupatta	26	70.27
	Others (Saree, Lungi, Muffler)	11	29.73
	Sub Total	37	100
(100%)	Total	77	

Maximum peoples used hard ligatures like jute rope, plastic rope, and electric wire. While in soft ligatures (48.05%) Dupatta, Saree, Muffler and Lungi were used. Most commonly used hard ligature material is Jute Rope, whereas Dupatta are used among soft ligature material.

DISCUSSION

The present study was conducted to analyse the demographic profile in hanging cases. During the period of study total 3307 autopsies were conducted out of which 77 cases were due to hanging (2.33%).

The male to female ratio in this study was about 2.1: 1. Similar findings were reported by Yadav A et al (2013) as 1.7:1, Patel et al (2012) as 1.5:1, Meera Th et al (2011) as 3.4:1, Sharma et al (2005) as 2.1:1. Male dominance can be explained by the fact that in Indian society the male members are more expected to bear all the above mentioned responsibilities. So, they have the dual pressure of career and family responsibilities.

The most vulnerable age for hanging was observed to be between 21-30 years, followed by 11-20 years, 31-40 years, 41-50 years and 51-60 years. A study was conducted by Yadav A et al (2013) and result showed that the largest group was found to be 21-30 years, followed by 11-20 years and 31-40 years respectively. These findings are very much similar to our findings. There were some more previous studies have also reported similar results, with 21-30 years age group being the most commonly involved. [Sharma BR et al (2005); Naik SK et al (2005); Ahmad M et al (2010); Meera Th et al (2011); Patel AP et al (2012)]

The above findings can easily be explained by the fact that 21-30 years of age group is most susceptible to frustration in life because of many factors like stressful marital life, dowry, financial crunch, failure of love affairs, and pressure of making a good career after completion of studies etc.

The majority of cases amongst both males and females were belonging to the age group 21-30 years. Similar findings were observed in the studies conducted by Yadav A et al (2013) and Patel AP et al (2013).

The findings of the present study showed that the most of the people (92.21%) prefer indoor locations for hanging of which maximum are residence (88.31%) and working place involved in least number of cases (3.90%). While in outdoor with a number of 7.79% comprising maximum jungle (5.19%). This may be compared with the observation of the findings reported by Meera Th et al (2011) that 73.81% of the cases committed suicide indoors while the remaining 26.19% of the cases committed suicide outdoors, similar finding also reported by Patel AP et al (2013) in a study among Gujarat population and observed that majority (96.25%) committed suicide by hanging within the closed secure places i.e. at their home rather than at open place like hanging from a branch of tree. Ahmad et al (2010) in a study conducted in Bangladesh who observed that 97.93% of the cases were recovered from inside the living rooms and 2.06% from outside. These findings may be explained by the fact that most of the victims in the present study committed suicide by hanging indoors and when a victim attempts to commit suicide in a room, they usually use a chair or a base for standing to reach the point of suspension which may be ceiling fans, beams, etc. and later on push them away by feet and hence most had complete suspension. This opinion is in concurrence with the explanation of Ahmad et al (2010).

In the present study majority of cases of hanging (87.01 %) had not received any treatment and death occurred at place of incidence, only 12.99% of the people admitted to hospital after fatal attempt prior to death. Similar findings were observed in the studies conducted by Ballur Mallikarjun S. (2013) that about 89 % of victims had not received any type of treatment before death.

In present study it was found that in maximum cases where the nature of suspension was complete type, which accounted for 88.32% where as partial type of hanging was few in number accounting for 11.68%. In complete hanging, the male to female ratio (46 males to 22 females) is about 2.09: 1. In partial hanging, the male to female ratio (6 males to 3 females) is 2: 1. The ratio among males and females are almost similar in both type of hanging. The present findings are comparable with the findings of the other authors like Saisudheer TS et al (2012) his finding showed that the complete hanging cases were about 64% and partial hanging cases were about 36%. Patel AP et al (2013) reported that the complete type of hanging in about 99% of total cases studied. Meera Th et al (2011) observed that about 88% complete and 12 % incomplete.

While the authors from other country like Charoonnate et al (2010) observed higher number of incomplete hanging cases (55%) as compared to complete hanging cases (45%) in a study at Thailand. This is in sharp contrast to the present study where complete hanging was seen in 88.32%.

The hanging deaths are taking different types in their execution as typical/atypical. In the present study, typical hangings are seen in about 43% and atypical hangings are seen in 57% of cases. In typical hanging, the male to female ratio is 1.75: 1 and in atypical hanging the male to female ratio is 2.38:1. There are some other studies which were conducted in country and abroad have also showed similar findings. The studies which was conducted in the country is included the observations of these authors to compare Patel AP et al (2013) reported that the atypical hanging in about 97% and only 3% were typical of total cases studied. Saisudheer TS et al (2012) reported that in about 89% cases the hanging was atypical and in 11% it was typical and findings of study conducted by Meera Th et al (2011) showed that the atypical hanging was seen in about 96% of the cases and typical hanging in only 4%. Similar findings are also reported by the various authors from different countries like a study conducted by Saiyed MZG et al (2013) found that about 82% cases showed right or left sided knot that indicate atypical hanging while only 13 cases about 18% showed knot was located on nape of neck that indicates typical hanging.

Studies conducted by Simonson J in 1988 and Feigin G in 1999 both have observed that the atypical ligature mark was observed in majority of cases in studies, which is comparable with the present study.

In the present study the maximum peoples are used hard ligature about 52% like jute rope, plastic rope, and electric wire and soft ligature about 48% like Dupatta, Saree, Muffler and Lungi while others have reported that most common ligature material used was dupatta (Soft) in 40 (54.05%) cases followed by Nylon rope (Hard) in 18 (24.32%) cases. [Saiyed MZG et al (2013)]. Similarly Meera Th. and Singh MBK (2011) had reported that about 57% were used cloth as a ligature material which were either scarf, towel, Khudei (Lungi worn by men in the local population), etc (Soft) and about 43% were used ropes - nylon or jute (Hard).

CONCLUSION

Hanging is a major cause of loss of life in this part of country. It is one of the common modes of suicide especially in the younger population with male preponderance. Family disputes pertaining to marital disharmony, mental illness, unemployment may be the major causative factors for suicidal hanging. People mostly resort to hanging using easily available clothes as ligature in the confines of their homes. Lots of social awareness is required to prevent precious loss of life to such a preventable cause.

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