

ORIGINAL RESEARCH**Pattern of hanging deaths**

Dr. Anupkumar T N

Assistant Professor, Department of Community Medicine, SVS Medical College, Mahabubnagar, Telangana, India

Corresponding Author

Dr. Anupkumar T N

Assistant Professor, Department of Community Medicine, SVS Medical College, Mahabubnagar, Telangana, India

Received: 12 January, 2022

Accepted: 10 February, 2022

ABSTRACT

Background: Suicide ranks as the 13th most common cause of death globally. Up to 20 times as many people attempt suicide as actually complete suicides. The present study was conducted to assess pattern of hanging deaths. **Materials & Methods:** 78 hanging deaths of both genders were studied. Records were kept on parameters such the time of occurrence, the kind of ligature material, the hanging technique, the hanging type, and the clinical findings. **Results:** Out of 78 cases, males were 41 and females were 37. The type of hanging was typical in 30 and atypical in 48. Type of ligature material was saree in 25 and towel in 9, dupatta in 16, rope in 28. Manner of hanging was suicidal in 61, homicidal in 15 and uncertain in 2 cases. Clinical findings were visceral congestion in 43, congestion of face in 42, neck muscle hemorrhage in 17, petechiae in 28 and cyanosis in 36 cases. The difference was significant ($P < 0.05$). **Conclusion:** Rope was the most common type of ligature material employed. The hanging was done in homicidal, suicidal and uncertain manner. The kind of hanging was really unusual.

Key words: hanging, suicidal, cyanosis

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution- Non Commercial-Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

INTRODUCTION

Suicide ranks as the 13th most common cause of death globally (World Health Organization).¹ Suicidal behavior can take many different forms, from simply considering suicide to planning and acquiring the necessary tools, trying to kill oneself, and ultimately completing the act of "completed suicide." Up to 20 times as many people attempt suicide as actually complete suicides.² The general word for processes leading to a shortage of tissue oxygen supply which is necessary to maintain metabolic function- is asphyxia.³ Reduced oxygenation of the blood, decreased oxygen transmission across the circulatory system, and disruption of cellular oxygen absorption are the four physiological reasons of hypoxia.⁴ Mechanical reasons including strangulation, aspiration of foreign objects or boluses, or constriction are among the mechanisms of asphyxia.⁵ Other mechanisms include changes in breathable air, such as flue gas inhalation, strangulation mechanisms like hanging or ligature strangulation, positional asphyxia, and drowning.

Asphyxia deaths rank among the leading causes of mortality from violence.⁶ While strangulation is one way of homicide, hanging is a prevalent means of suicide. Suspicion over the mode of death in cases with both complete and partial body suspension and the location of ligature signs frequently results in the innocent being punished or the guilty being spared.⁷ The present study was conducted to assess pattern of hanging deaths.

MATERIALS & METHODS

The present study consisted of 78 hanging deaths of both genders. The consent was obtained from their relatives of deceased.

Data such as name, age, gender etc. was recorded. Records were kept on parameters such the time of occurrence, the kind of ligature material, the hanging technique, the hanging type, and the clinical findings. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS**Table I Distribution of patients**

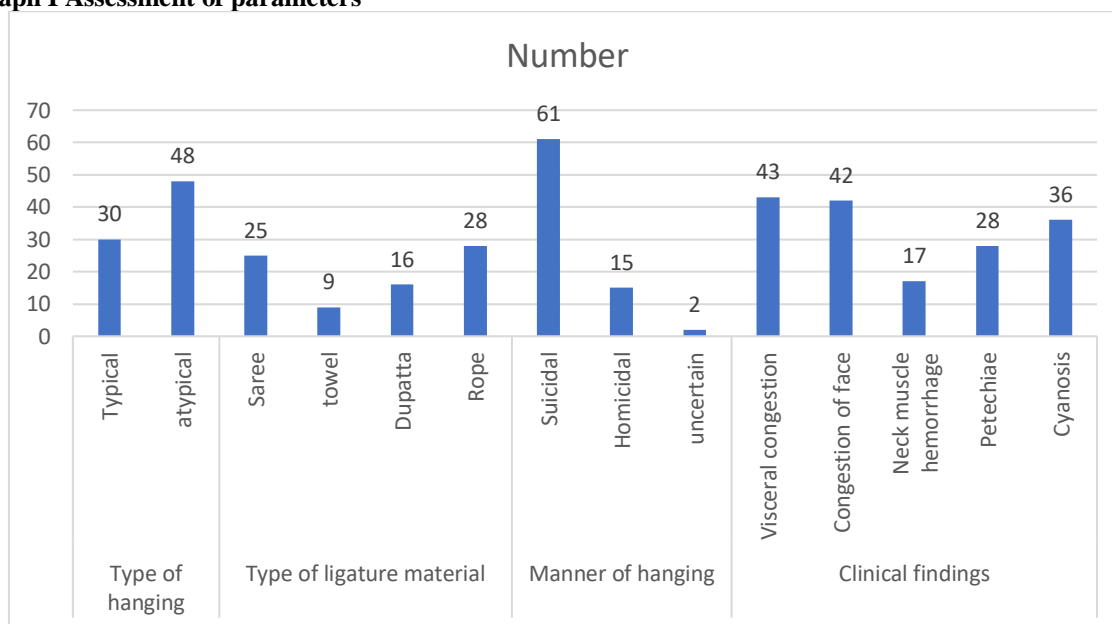
| Total- 78 | | |
|-----------|-------|---------|
| Gender | Males | Females |
| Number | 41 | 37 |

Table I shows that out of 78 cases, males were 41 and females were 37.

Table II Assessment of parameters

| Parameters | Variables | Number | P value |
|---------------------------|------------------------|--------|---------|
| Type of hanging | Typical | 30 | 0.05 |
| | atypical | 48 | |
| Type of ligature material | Saree | 25 | 0.79 |
| | towel | 9 | |
| | Dupatta | 16 | |
| | Rope | 28 | |
| Manner of hanging | Suicidal | 61 | 0.01 |
| | Homicidal | 15 | |
| | uncertain | 2 | |
| Clinical findings | Visceral congestion | 43 | 0.58 |
| | Congestion of face | 42 | |
| | Neck muscle hemorrhage | 17 | |
| | Petechiae | 28 | |
| | Cyanosis | 36 | |

Table II, graph I shows that type of hanging was typical in 30 and atypical in 48. Type of ligature material was saree in 25 and towel in 9, dupatta in 16, rope in 28. Manner of hanging was suicidal in 61, homicidal in 15 and uncertain in 2 cases. Clinical findings were visceral congestion in 43, congestion of face in 42, neck muscle hemorrhage in 17, petechiae in 28 and cyanosis in 36 cases. The difference was significant ($P < 0.05$).

Graph I Assessment of parameters

DISCUSSION

Despite the advancement of civilization, suicide and other self-inflicted deaths are nevertheless commonplace nowadays.⁸ A number of variables, including the family, the organization, and the psychological setting, are significant contributors to this illegal activity. An increasing number of violent deaths make up a sizable portion of medicolegal autopsy.^{9,10} Even while hanging is equally common among men and women, medical officials will have significant challenges in this day and age when hanging by a woman is perceived with suspicion, particularly when the hanging is unusual or the body has been let down.¹¹ A partial hanging with feet touching the ground, a double ligature mark, or its absence could mislead the investigating officer and

provide room for false charges regarding the cause and manner of death and in this situation role of medico legal expert becomes crucial.^{12,13} The present study was conducted to assess pattern of hanging deaths.

We found that out of 78 cases, males were 41 and females were 37. Ghodake et al¹⁴ in their study the correlation of external and internal findings in case of 60 hanging cases were studied with respect to age, gender, circumstances of death, type of ligature material, manner and apparent cause of death. The incidence rate of hanging in our study was 5%. The most common age group was between 21 to 30 years (37%). Hanging was preferred by males (77%) than females (23%). Nylon rope was used as the most common ligature material (39%). Conclusion:

Enlightenment of people by educating them is the key in preventing suicidal thoughts. It is further suggested to find out the root cause and psychiatric illness responsible for suicide and design a health care protocol.

We found that type of hanging was typical in 30 and atypical in 48. Type of ligature material was saree in 25 and towel in 9, dupatta in 16, rope in 28. Manner of hanging was suicidal in 61, homicidal in 15 and uncertain in 2 cases. Clinical findings were visceral congestion in 43, congestion of face in 42, neck muscle hemorrhage in 17, petechiae in 28 and cyanosis in 36 cases. Coe et al¹⁵ presented a review of the circumstances and medical findings of 280 fatalities. Two hundred and forty-one (241) of the cases were examined prospectively. Most of the 280 deaths were in males (88%), and most were in the age range of 15–35 years (56%). Seven cases occurred in children aged 15 or less. There was one homicide, 14 cases thought to be accidental, and 261 suicides; in 4 cases the manner of death could not be determined. In one-third of the cases there was a medical history of a psychiatric condition. The majority occurred in or around the decedent's home (71%). The most commonly used ligature was a rope (59%). Alcohol was the most commonly detected drug following post mortem analysis (30%). There was one hanging death every 6.5 days, the majority being suicides, in men of young adult age, typically occurring in or around the home.

In the study conducted by Shiuli et al¹⁶, every case of hanging death presented to the mortuary was examined in terms of incidence, correlation with age and sex, fluctuations during the day, mode of death, place of residence, ligature material, and different post mortem findings. Males dominated the autopsy results of 1180 hanging death cases (54.66%). The majority of instances are in the 11–30 age range. The most common times were at noon and at night. The most popular ligature material for men was the saree, and for women, the dupatta (scarf). Sixty-four percent of the cases had an urban background. In each case, cyanosis and visceral congestion were discovered. The majority of instances involved suicidal behavior and unusual hanging.

CONCLUSION

Authors found that rope was the most common type of ligature material employed. The hanging was done in homicidal, suicidal and uncertain manner. The kind of hanging was really unusual.

REFERENCES

1. Michael A Clarke, John D. Feczko D. Hawley, Pless J, Tate L, Fardal P. Asphyxial deaths due to hanging in children. *Journal of Forensic Sciences*.1993;38(2):344-52.
2. Petrauskiene J, Kalediene R, Starkuviene S. Methods of Suicides in Lithuania & their Associations with Demographic Factors. *Medicina (Kaunas)*. 2004;40(9):905-11.
3. Patel-Ankur P, Bhoot-Rajesh R, Patel-Dhaval J, Patel-Khushbu A. Study of violent Asphyxial Death. *International Journal of Medical Toxicology and Forensic Medicine*. 2013;3(2):48-57.
4. Sharma BR, Harish D, Pal-Singh V, Singh P. Ligature mark on neck: How informative. *JIAFM*. 2005;27(1):10-5.
5. Prajapati P, Sheikh I, Brahmabhatt J, Choksi C. A study of violent asphyxial death at Surat, Gujrat. *Indian Journal of Forensic Medicine & Toxicology*. 2015(1):66-70.
6. Michael A Clarke, John D. Feczko D. Hawley, Pless J, Tate L, Fardal P. Asphyxial deaths due to hanging in children. *Journal of Forensic Sciences*.1993;38(2):344-52.
7. Singh RK, Sanatomba, Devi M. Analysis of Changing Patterns of Unnatural Deaths in Manipur during 1991–1995. *J Forensic Med Toxicol*. 26:23–5.
8. Murty OP, Agnihotri AK. Homicidal Deaths in South Delhi. *J Ind Acad Forensic Med*. 2000;22:9–1.
9. Gargi J, Gorea RK, Chanana A, Mann G. Violent asphyxial deaths - A six years study. *Journal of Indian Academy of Forensic Med*. 1992;171-6.
10. Singh A, Gorea K, Dalal S, Thind S, Walia D. A study of demographic variables of violent asphyxial death. *Journal of Punjab Academy of Forensic Medicine and Toxicology*. 2003;3:22-5.
11. Luke L. Asphyxial deaths by hanging in New York City, 1964-65. *Journal of Forensic Sciences*. 1967;12(3):359-69.
12. Rao D. An autopsy study of death due to Suicidal Hanging–264 cases. *Egyptian Journal of Forensic Sciences*. 2016 Sep 1;6(3):248-54.
13. Singh A, Singh D. Comparative study of hanging and strangulation cases in northeast and northwest regions of Punjab. *Journal of Punjab Academy of Forensic Medicine & Toxicology*. 2009;9(1):6-8.
14. Ghodake D, Sonawane S, Sharma H, Tatarbe T. An autopsy study of ligature mark in cases of hanging. *Int J Acad Med Pharm*. 2023;5(5):1179-83.
15. Cooke CT, Cadden GA, Margolius KA. Death by hanging in Western Australia. *Pathology*. 1995 Jan 1;27(3):268-72.
16. Shiuli R, Abhishek P, Anoop KV, Mousami S. Frequency of Hanging Deaths in Lucknow, India 2008-2012. *International Journal of Medical Toxicology and Forensic Medicine*. 2015; 5(3): 126-30.