Original Article

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Pattern of Hanging Deaths in Raichur Region

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Abstract

Background: Violent asphyxial deaths are one of the important causes of death nowadays. Hanging is one of the preferred mode of committing suicide. Pattern of suicidal death is a reflection of the prevailing social set up and mental health status of region. *Material & Methods:* A Prospective study was conducted from Jan 2013 to December 2013 in which 106 autopsy cases of hanging deaths were taken out of 976 autopsies conducted in the mortuary of Raichur institute of medical sciences, Raichur. *Results:* The maximum incidences of hanging deaths were in 21- 30 years age group (37.7%). Majority of the victims were married (67.9%). The most common place of hanging was closed space (93.3%). On external examination the ligature mark was at or above the thyroid cartilage in all the cases with no fracture of thyroid cartilage or hyoid bone. *Conclusion:* Hanging is the most commonly observed mechanical asphyxial death. The cause of death profile is an important set of public health information and forms the cornerstone of the health information system

Keywords: Hanging; Asphyxial Deaths; Ligature Mark.

Introduction

WHO 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 [1]. Suicide (Latin *suicidium*, from *sui caedere*,"to kill oneself") is the act of intentionally causing one's own death. According to Durham, the French biologist, suicide is death resulting directly or indirectly from a positive or negative act of the victim himself, which he knows will produce this result [2].

Suicide is a major socioeconomic and public health issue worldwide. Hanging is one of the 10 leading causes of death in the world accounting more than a million deaths annually [3]. In India, hanging is second common method of committing suicide after poisoning. Over the past 30 years the incidence of suicide by hanging is on increase, especially among young adults [4]. Suicide and attempted suicide, while previously criminally punishable, is no longer in most Western countries. It remains a criminal offence in our country. All cases of hanging are considered to be suicidal until the contrary is proved [5].

A detailed knowledge of various factors associated with suicidal hanging in that particular geographical area is very much necessary to prevent such suicides. Keeping this in mind we conducted a prospective study at Raichur to focus on the various factors associated with suicidal hanging with a view to identify the areas of intervention. Thus suicide which is very much a byproduct of the advancements of society needs a careful and refined approach so as to study the factors related to it, the causes and if possible to find ways to prevent such a tragedy.

Materials And Methods

A prospective study was conducted on 106 victims subjected to medico-legal autopsy at mortuary of Department of Forensic medicine,

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Raichur institute of medical sciences, Raichur over a period of one year from January 2013 to December 2013. The study design comprised of thoroughly scrutinized information gathered from the police and the relatives of the deceased, hospital records and laboratory report of viscera and their contents, fluids, diseased tissues and organs and other relevant suspicious samples available in our department. Suicide notes if any were also included.

Statistical Methodology

The results were analyzed using Statistical Software Package SPSS version 2.0. Statistical analysis was done for frequencies, percentages, proportions & ratios and results were interpreted.

Results

A total of 976 dead bodies were brought for post-mortem examination at Raichur institute of medical sciences, Raichur during a period of one year from January 2013 to December 2013. After post-mortem examination and correlation with the history received from the police and relatives of the deceased, it was confirmed that in 106 cases (10.9%), the victims had died because of hanging. These 106 cases were part of our study. This incidence rate coincides with studies by Patel A et al. [6] (4.65%), Sharma B R et al. [7] (3.41%) and Bhagora et al [8] (8.03%) (Table 1).

Table 1: Comparative study of incidence of hanging deaths

Author of study	Total autopsy	Total hanging cases	Percentage
Current study	976	106	10.9%
Patel A et al	6880	320	4.65%)
Sharma B R et al	2668	91	3.41%)
Bhagora et al	1270	102	8.03%

Table 2: Age wise distribution of deaths due to hanging

Age group	Number	Percentage
0-10 yrs	0	0%
11-20yrs	21	19.8
21-30yrs	40	37.7
31-40 yrs	17	16.1
41-50 yrs	15	14.2
51-60yrs	9	8.5
>60 yrs	4	3.7
Total	106	100%

Table 2 shows the age wise distribution of deaths due to hanging. The largest group was found to be in 21-30 yrs (37.7%) followed by 31-40 yrs (16.1%) which was in consistent with the study done by Amandeep et al. [9] (59.24%) but in contrast with the study Azmak et al. [10] (20.8%) in which the highest incidence of victim where in the age group of 30 -39 yrs. The above findings can easily be explained by the fact that 21-30 years of age group is most active,entrusted with responsibilities of family and are susceptible to frustration in life because of many factors like marriage, financial crunch, failure of love affairs and pressure of making a good career after completion of studies etc.

Table 3: Sex wise distribution of deaths due to hanging

Sex	Number	Percentage
Male	73	68.9%
Female	33	31.1%
Total	106	100%

Table 3 shows that the incidence of death due to hanging has male preponderance (68.9%) almost double than that of female. Similar male predominance was revealed by study of Sharija et al. [11], Gargi J et al. [12] and Wagmare PB [13] 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.

Table 4: Place of hanging

Place of hanging	Number	Percentage
Open space	7	6.7%
Closed space	99	93.3%
Total	106	100%

Table 4 shows that the most common place of hanging was closed space (93.3%) which was in consistent with the study done by Patel A et al. [6] and Bhagora et al. [8].

Table 5: Marital status of hanging

Marital status	Number	Percentage
Married	72	67.9%
Unmarried	31	29.2%^
Undetermined	03	2.9%
Total	106	100%

Table 5 shows that the most common victims were married (67.9%) which was in consistent with the study done by Bhargora et al. [8] and Sharija S et al. [11]. This high incidence in married persons may be due to various psycho socioeconomic factors in which domestic problem may play an important role which may lead to the lethal step taken by the victim.

Table 6: Post mortem findings on external examination

External findings		Number	Percentage
Placement of ligature mark (oblique)		106	100%
Place of ligature mark at the neck	At & above thyroid	106	100%
	Below thyroid	0	0
Congestion of face		52	49%
Dribbling of saliva		24	22.6%
Discharge of semen		20	18.9%
Discharge of urine/faecus		18	16.7%

Table 6 shows that the ligature mark was oblique (100%) in all the cases and the ligature mark was situated at and above the level of thyroid cartilage (100%) in all the cases which was consistent with the study done by Patel A et al. [6] and Bhagora et al. [8]. Dribbling of saliva from the angle of mouth was noticed in 24 cases (22.6%) which was in consistent with the study done by Bhagora L et al. [8] (22%) but in contrast with the study done by Patel A et al. [6] who noticed in 71.25% of cases. Discharge of semen (18.9%), discharge of urine and faecus (16.7%) was seen in the study which was in consistent with the study done by Patel A et al. [6] and Bhagora L et al. [8].

Table 7: Post mortem findings on internal examination

Internal findings		Number	Percentage
Subcutaneous tissue	White glistening	106	100%
	Contused		
Fracture of thyroid		0	0
Fracture of hyoid		0	0

Table 7 shows that the on internal examination the subcutaneous tissue were white glistening in all the cases (100%)and there were no fracture of thyroid cartilage and hyoid bone which was consistent with the study done by Patel A et al. [6] and Bhagora L et al. [8].

Conclusion

Hanging is the most commonly observed mechanical asphyxial death. The cause of death profile is an important set of public health information and forms the cornerstone of the health information system. At provincial level it is needed for health planning and deciding on intervention strategies. In present study, most of the victims were married males of 21-30 years age group. The result of this study indicates that a multi disciplinary approach is required to prevent the suicidal hanging deaths.

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References

1. World Health Organization. Figures and facts about suicide. Geneva: WHO 1999. Available at: http://www.who.int/mental_health/prevention/suicide/suicideprevent/en/.Accessed on Oct 26, 2013.
2. Behera A, Balabantry JK, Nayak SR.Review of suicidal cases. A retrospective study. Journal of Indian Academy of Forensic Medicine & toxicology. 2005;27(2):100-02.
3. Mohanty S, Sagu H, Mohanty MK, Patnaik M. Suicide in India: A four year retrospective study. J Forensic Leg Med. 2007;14(2):185-89.
4. Gunnell D, Bennewith O, Hawton K, Simkin S, Kapur N. The epidemiology and prevention of suicide by hanging: a systematic review. International Journal of Epidemiology 2005;34(2):433-42.
5. Modi J P. Medical Jurisprudence and Toxicology, Edited by K Mathiharan and Amrit K Patnaik, Lexix Nexis Publishers, New Delhi, 23rd edition; 2008.pp.565–614.
6. Sharma B R. A study of ligature mark on neck: how informative? Journal of Indian Academy of Forensic Medicine. 2005;27(1):10–15.
7. Patel A P, Bansal A, Shah J V, Shah K A.Journal of Indian Academy of Forensic Medicine. 2012;34(4): 342-345.
8. Bhagora L, Patel T, Parmar A, Suvera K, A Epidemiological Study of Hanging Cases at Bhavnagar Region. Natl J Integr Res Med. 2015; 6(3):40-43.
9. Singh Amandeep. A study of demographic variables of violent asphyxial death: Journal of Punjab Academy of Forensic Medicine and Toxicology. 2003;3:32–34.
10. Azmak D. Asphyxial deaths: A Retrospective study and review of the literature.American journal of Forensic Medicine and Pathology. 2006;27(2): 134–44.
11. Sharija S, Sreekumari K, Geetha O. Epidemiological profile of suicide by hanging in southern parts of Kerala: an autopsy based study. Journal of indian academy of Forensic medicine. 2011;33(3):237-40.
12. Gargi J, Gorea RK, Chanana A, et al. Violent asphyxial deaths - a six years study. Journal of indian academy of forensic medicine. 1992;171-6.
13. Waghmare PB, Chikhalkar BG, Nanandkar SD. Analysis of asphyxial deaths due to hanging. Journal of indian academy of forensic medicine.2014;36(4):343-5.