Original Article

Suicide By Hanging: An Analysis Of 312 Cases

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Abstract

Hanging, the commonest method of suicide, is a form of violent asphyxia produced by suspending the body with a ligature round the neck. A total of 312 cases of suicidal hanging autopsied in this five years retrospective descriptive study spanning from January 2000 to December 2004 at Sir Salimullah Medical College (SSMC) morgue. The objective of this study was to evaluate the present situation, pattern of hanging, socio-demographic characteristics of victims and probable cause of suicidal hanging of studied population. Victims' mean(± SD) age was (23.5 ± 11.7) years and highest number 146 (46.8%) of victims were from the age group 21-30 years. This study revealed that numbers of suicidal hanging cases were increasing day by day in the studied area (46 in 2000 and 82 in 2004). Out of 312 cases, 171 (55%) were female and 141 (45%) were male. Married cases were 165 (53%) and 204 (66%) victims hanged themselves at night. In 165 (53%) victims' stomach were found empty. Most of the cases 309 (99%) were complete hanging and majority 299 (96%) of the bodies were recovered from the living rooms. In two hundred and sixty nine (87%) cases had ligature mark at neck, 132 (43%) cases had fracture of hyoid bone and 45 (15%) victims had the fracture of thyroid cartilages and none of the victims had found spinal cord injury. Maximum number of victims 134 (43%) used ropes as ligature materials. Most common known 70 (23%) cause of self-suspension was quarrel between husband and wife.

Keyword: *Violent asphyxia,suicidal hanging, victims.*

Introduction

Death due to pressure over the neck is common in the day to day practice of the Forensic Pathologist. Three forms of pressure on the neck are of medico-legal importance, namely hanging, manual strangulation and ligature strangulation. Hanging or self-suspension is a form of ligature strangulation where the pressure is produced by the weight of the body itself. It is almost invariably suicidal in nature until otherwise proved. Homicidal and accidental hangings are extremely rare. Hanging is a form of violent asphyxia produced by suspending the body, with a ligature around the neck, the constricting force being the weight of the body (or a part of the body weight)[1]. When one commits suicide by hanging, it is said to be a case of suicidal hanging. Suicidal hanging is a social crime and a problem pertinent to the modern affluent society. A good number of people die each year by suicide, making it one of the ten leading causes of death in the world accounting more than a million death annually[2].

When the body is fully suspended and no part of the body touches the ground and where constricting force is the weight of the whole body, it is called 'complete hanging'. Hanging is said to be 'partial' or 'incomplete' when the hanged body is partially suspended in a position that feet of the victim are found resting on the ground or the victim is found in sitting, kneeling, reclining, prone or any other posture.In typical hanging, the knot of the ligature is at the nape of the neck of the back. In atypical hanging the knot of the ligature is at any site other than the nape of the neck[1]. Hanging is one of the commonest methods of suicide especially

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amongst the Asian community. Malaysia is a country of multiethnic group and has a population of Malay 59%, Chinese 26% and Indian 8% but the rate of suicides is more in Indians and Chinese than Malays[3]. In Singapore, the ethnic composition is different, Chinese form 76.6%, Malays 15% and Indians 6%. Yet the rate of suicide reflected almost a similar pattern with Indians leading with 203 per million followed by Chinese 148 and lastly Malays 21 per million. Hanging, one of the most common methods of suicide all over the world, is highly lethal and more than 70% of those who attempted suicide by using this method would die[4-5]. In few cases, if the person is brought down within very short period of suspension and treated vigorously in hospital, there is always a hope for life. Depending on the area of the country and sex of the victim, hanging is either second or third most popular method of suicide[6].

Hanging produces painless death for the victims and no costs involvement. A thin rope around the neck will cause unconsciousness in 15 seconds, so the people prefer it as a common method of suicide[7]. Suicide by hanging is also common in Bangladesh, although there are other means of suicide like intake of over doses of barbiturate tablets in urban area and organochlorines (Endrine) ingestion in rural areas[8]. These methods are also followed in other south Asian countries[9-10]. Since suicidal hanging is gradually increasing year wise and its principal cause being frustration it's a manifestation of social agitation, the cause of which should be identified and eradicated. Even in developed countries like Serbia, Norway or Hungary suicide by hanging is the commonly observed procedure[11-13]. This study was carried out to evaluate the present situation, pattern of hanging, socio-demographic characteristics of victims and probable cause of suicidal hanging of studied population.

Materials and methods

This retrospective descriptive study was conducted among victims of hanging brought to Sir Salimullah Medical College (SSMC) morgue during the period of 5 years from January 2000 to December 2004. Most of the victims are brought to SSMC morgue from south-eastern part of Dhaka district. Various identification data of the victims like age, sex, marital status, locality, ligature material, places of incidence, thana from where dead body brought, religion, time and suspected causes of hanging were noted from the inquest report accompanying the dead bodies. Other information were collected from post-mortem report. All the data were collected in a predefined data collection sheet and necessary statistical analyses were performed by using the computer software SPSS (statistical package for social science) for window 17.0 and expressed in frequency and percentage.

Results

Out of 312 cases, 141 (45.20%) were male and 171 (54.80%) were female (Fig-1).

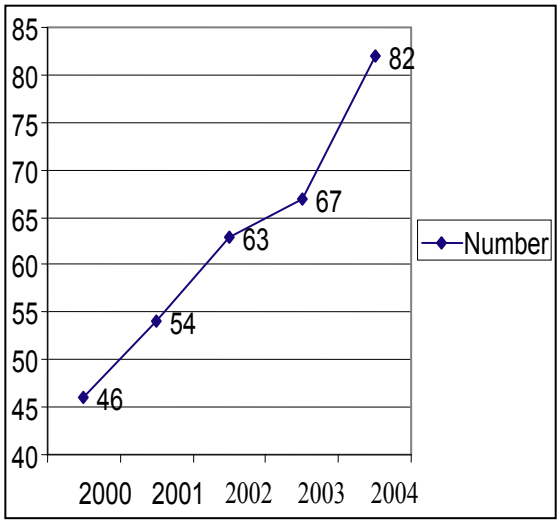

Fig-1: Year-wise increasing trends of Suicidal Hanging Cases

Among these victims 165 (52.88%) were married, 144 (46.16%) were unmarried and 03 (0.96%) were divorced cases (Fig-2).

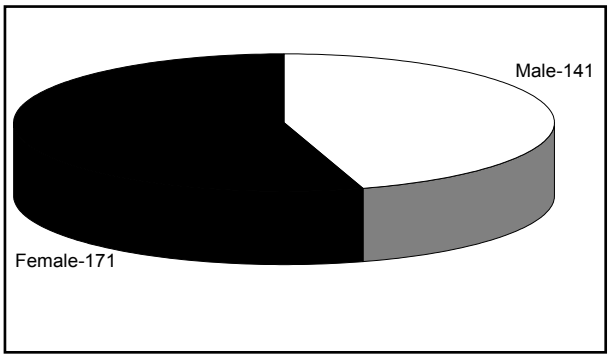

Fig-2: Sex distribution of victims

Mean (± SD) age was (23.5 ± 11.7) years and highest number of the victims 146 (46.79%) were from the age group 21-30 years followed by 107 (34.29%) from 11-20 years (Table-I).

The numbers of suicidal hanging cases were increasing day by day in the studied area (46 in 2000 and 83 in 2004) (Table-I).

Age Group (in year)	Year of Incidence					Total
	2000	2001	2002	2003	2004	
01 -10	01	00	01	00	02	**04**
11 -20	08	17	24	23	35	**107**
21 -30	25	31	28	28	34	**146**
31 -40	06	03	05	07	11	**32**
>40	06	03	05	09	00	**23**
Total	**46**	**54**	**63**	**67**	**82**	**312**

Table-I: Distribution of victims on the basis of age group and year of incidence (n=312)

Two hundred and four victims (65.38%) hanged by themselves at night, while 108 (34.62%) victims at day time. In 165 victims (52.88%) stomach were found empty and 135 victims (43.27%) stomach were filled with semisolid fluid. Three hundred and one bodies (96.47%) were recovered from inside the living rooms and 11 (3.53%) from outside. Three hundred and eight (98.72%) victims were fully identified whereas 04 (1.28%) victims were totally unknown. Considering the position of knot, most 154 (49.36%) of the knots were situated at the left side of the neck followed by right side of the neck 112 (35.90%). Among the victims two hundred and ninety three (93.91%) were Muslims and 19 (6.09%) were Hindus, 213 (68.27%) were from Urban and 99 (31.73%) were from Rural areas. Highest number of victims 134 (42.95%) used rope as ligature materials followed by Orna (Scurf) 96 (30.77%) (Table-II).

Locality (Thana)	Year of Incidence					Total
	2000	2001	2002	2003	2004	
Demra	08	09	10	11	15	**53**
Dohar	01	02	02	04	05	**14**
Hazaribagh	03	02	03	04	05	**17**
Kamrangirchar	03	03	05	05	06	**22**
Keranigonj	05	06	07	07	09	**34**
Kotwali	05	06	07	07	09	**34**
Lalbagh	05	05	05	05	06	**26**
Nowabgonj	04	06	07	07	09	**33**
Shampur	08	09	10	10	10	**47**
Sutrapur	04	06	07	07	08	**32**
Total	**46**	**54**	**63**	**67**	**82**	**312**

Table-II: Distribution of victims on the basis of Locality (south-eastern thanas of Dhaka district) (n=312)

Most of the dead bodies 55 (17.63%) were brought from Demra thana (Table-III).

Ligature Materials	Year of Incidence					Total
	2000	2001	2002	2003	2004	
Rope	20	28	23	38	25	**134**
Orna	13	14	19	18	32	**96**
Shari	04	10	11	03	14	**42**
Gamcha & Others	09	02	10	08	11	**40**
Total	**46**	**54**	**63**	**67**	**82**	**312**

Table-III: Distribution of victims according to ligature materials for hanging and year of incidence (n=312)

Fracture of hyoid bone was found in 132 (43%) and thyroid cartilages in 45 (15%) victims but no cervical spinal cord injury was found in any of those studied cases. Among the known causes of self-suspension family quarrel between couple were most common 70 (22.44%) followed by failure in examination & love affairs 45 (14.42%) (Table-IV).

Causes of Hanging	Year of Incidence					Total
	2000	2001	2002	2003	2004	
Quarrel between couples	08	09	17	13	23	**70**
Incurable illness	10	11	11	04	06	**42**
Failure in examination & love affairs	07	13	11	10	04	**45**
Drug addiction	03	01	05	08	05	**22**
Poverty & Family Problems	03	06	04	05	13	**31**
Unknown	15	14	15	27	31	**102**
Total	**46**	**54**	**63**	**67**	**82**	**312**

Table-IV: Distribution of victims on the basis of suspected causes of hanging and year of incidence (n=312)

Discussion

In this study 171 (54.81%) were female and rest were male. Among them 165 (52.88%) were married. Family quarrel between husband and wife was the commonest known cause 70 (22.44%) observed for self-suspension. In this study it was observed that as our society is male dominating, so physical torturing and dowry system, the female were the worst sufferer. Again female are comparatively less educated. Due to repeated physical and mental torture, they go beyond the threshold level of self constrain and commit suicide by hanging. In case of male, poverty, failure in love affairs, failure to secure an employment after untiring effort to do so, family problems, failure at examination, insanity, incurable illness and drug addiction are the remarkable causes of hanging. These causative factors are similar to India[14-15.] Exact number of suicidal deaths by hanging is still unknown in Bangladesh but in India, every 5 minutes a person commits suicide, 7 attempts to kill themselves forming around 1 lac suicidal death per year either by hanging or ingestion of insecticides or barbiturates[16]. A five year study (1998-2002) in Turkey also showed that hanging was the commonest method of suicide in Istambul[17]. A study in Lithuania showed that a total of 8324 suicides were committed during 1993 to 1997 and 7823 during 1993 to 2002. Among all these registered suicide cases, hanging was the commonest method used to commit suicide[18].

In present study most of the victims 146(46.79%) were from the age group 21-30 years. Study has shown that people belong to this age group were also common victims of hanging in other countries[19]. In middle and higher class family, members of this younger group belong to student community. In low socio-economic family they are the earning members like garments or other industrial workers. They commit suicide due to failure in examination or love affairs 45 (14.42%), drug addiction 22 (7.05%) and poverty 31 (9.94%) which are the common problems. Suicide by hanging is a tragic and preventable public health problem all over the world. In both developed and developing countries the suicide rate among young people appears to be rising[20].

Peer pressure and emotional issues are the triggering factors. In this study only one case of hanging was found over 71 years of age. The reason could be the family system of this country in which elders are taken care by earning family members and the elders enjoy their advancing life with grand children and increase inclination towards religious matters. About the religion, 293 (93.9%) victims were Muslims indicating that most of the worshippers in Bangladesh are Muslims. Most of the victims 204 (65.38%) hanged themselves at night. The stomachs were found empty 165 (52.88%) victims and 301 (96.47%) bodies were recovered from inside the living rooms. After while days of work, when the victims return home at night, they become exhausted with their brain full of problems and burdens, initiating reflexes for suicidal tendency. A number of victims committed suicide at late night, which is the explanation of empty stomach. Moreover at deep of night and inside the room, there would be no one to resist them from suicidal behaviour. Rope which is made by jute fibres

were most commonly 134 (42.95%) used as ligature material. Bangladesh is a country of golden fibre of jute that's why jute-made ropes were most commonly used as ligature materials. The victims hanged by themselves from ceiling fan, beams, girder etc, using a chair or table or tool as the base of standing later on push them away by feet. In the outdoor cases branch of a tree was commonly used as the point of suspension. In western countries lead, belt, electric cable, scarf, tie, dressing gown cord, shoe lace etc are used as ligature materials, which are not so used in Bangladesh[21]. Moreover firearms play an important role as a method of suicide, which are not commonly available in this country.

In most cases knots hanging loops were situated at left side of neck (49.36%) and rests on right side and back of neck. As rope was commonly used as suicidal material this was slippery and found on left side[22]. Two hundred and sixty six cases had ligature mark in neck. This mark appears as a furrow on the skin whose direction is determined by the point of suspension. Depending upon duration of suspension it may show a light brown or yellow parchment like areas[23].

Among the victims 132 (42.31%) cases had fracture of hyoid bones, 45 (14.42%) cases had fracture of thyroid cartilages. Number of fracture increases with advancing ages. Most of the victims had injuries to the sternocleidomastoid muscles. These findings coincide with studies done before[24]. Complete disruption of atlanto-occipital joint, cervical spine or spinal cord was not found in any of these cases since all these cases were suicidal in nature and mostly recovered inside the rooms. It is very unusual for the cervical spine to be broken in suicidal hanging cases unless there is long drop, which usually occur when the victim selects a branch of a high tree as the point of suspension for hanging. These disruptive changes are commonly observed in judicial hanging cases[25].

Conclusion

This study revealed that the number of suicidal hanging is increasing day by day in this study area (south-eastern part of Dhaka district). Young age groups are more vulnerable and quarrel between couples is the most common known cause though most of the causes are found unknown. Visiting the scene of crime in every unnatural death is of immense importance for the Forensic pathologist to find out the cause and manner of death more accurately. A well designed and comprehensive programme is needed to identify the causative factors and prevention of suicidal behaviors. Appropriate education, influencing the media in their portrayal of suicidal news, reporting method, involvement of young generations in encouraging activities may reduce the rate of suicidal death by hanging in future.

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