

Suicidal Death due to Hanging

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Abstract

Background: Hanging is always suicidal unless otherwise proved. It is a form of violent asphyxial death. It produces painless death for the victims so that it is a widely practiced method of suicide. In Bangladesh hanging is one of the commonest methods of suicide.

Objective: The objective of this study was to find out socio-demographic characteristics of victims, common ligature materials used by victims and post-mortem findings.

Materials and method: A retrospective cross sectional study was done in Dhaka Medical College Mortuary during the period of January 2009 to January 2010. During this period data were collected from 2133 cases of medicolegal autopsies by purposive sampling. **Results:** A total of 2133 medicolegal autopsies were analyzed of which 78 (3.65%) were deaths due to hanging. Out of these 78 cases maximum 37 (47.44%) deaths due to hanging were in the age group of 21-30 years. Majority of the cases (48; 61.54%) were observed in females. Majority (32; 41.03%) of victims had used Dopatta (orna) as a ligature material. Cyanosis of fingertips and nail beds was the commonest (75; 96.15%) findings in cases of asphyxial death due to hanging. **Conclusion:** Suicidal hanging is observed in this study mostly within the young age group ranging from 21-30 yrs. So, awareness at the level of family and community should be raised to improve personal and social relation in every sphere. The factors provoking an individual for an attempt to suicide should also be investigated for its prevention.

Keywords: Suicide; asphyxia; hanging.

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Introduction

Hanging is a mechanical form of asphyxia which is caused by suspension of the body by the neck. Any material capable of forming a ligature can be

used for hanging. The pressure of the ligature on the neck is produced by the weight of the body. The body needs not to be completely suspended, as

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death may result from hanging even in a sitting, kneeling or half-lying position.¹

The precise mechanism of death in hanging is incompletely understood. Causes of death include asphyxia &/or venous congestion, cerebral ischaemia, shock, fracture or dislocation of the cervical vertebrae.² It is very unusual for the cervical spine to be broken in suicidal hanging unless there has been an unusually long drop.³ Even in the absence of classical signs of asphyxia, death may occur very rapidly where carotid sinus pressure and neurogenic cardiac arrest play an important role.¹

Hanging is always suicidal unless otherwise proved. It is one of the most common methods of suicide from the primitive era.⁴ A review based on World Health Organization (WHO) mortality data reported that hanging was the most common method in most of the countries and its incidence has increased over the last 30 years.^{5,6} It is anticipated as a sure, quick and painless death with little awareness of dying and materials for hanging are easily available. So hanging is seen as the 'quickest' and 'easiest' method with few barriers to completion and sometimes adopted despite not being a first choice.⁷ In Bangladesh hanging and ingestion of insecticides are the most common methods of suicide.⁸ According to statistics provided by the Police Headquarters the suicide rate in Bangladesh is on the rise as over 10,000 people commit suicide every year. The statistics show that 73,389 people committed suicide in seven years from 2002 to 2009. Of them, 31,857 hanged themselves and 41,532 had swallowed poison.⁹

Materials and method

This retrospective cross sectional study was done in Dhaka Medical College Mortuary, Dhaka, Bangladesh during the period of January 2009 to January 2010. During this period data were collected from 2133 cases of medicolegal

autopsies. Data were collected on socio demographic characteristics, nature of ligature material and post mortem finding. Data were presented by a descriptive frequency.

Results

A total of 2133 medicolegal autopsies were conducted during the period of January, 2009 to January, 2010 of which 78 (3.65%) deaths were due to hanging. Majority of the victims (61.54%) were females. Maximum (47.44%) deaths due to hanging were in the age group of 21-30 years. Most commonly used ligature material were dopatta (orna) in 32 (41.03%) cases followed by nylon rope in 22 (28.21%) cases. Common autopsy findings in cases of asphyxial death due to hanging were cyanosis of fingertips and nail beds (96.15%), and pale, white, hard, glistening subcutaneous tissues underneath the ligature mark (87.46%) followed by dribbling salivary marks (29.49%).

Table I shows that the majority of the victims were females (61.54%).

Table I: Sex wise distribution (n=78)

Sex	Frequency	Percentage
Male	30	38.46%
Female	48	61.54%

The most vulnerable age group was 21 to 30 years with total 37 cases (47.44%). (Table II)

Table II: Age wise distribution (n=78)

Age Group (Yrs.)	Frequency	Percentage
10-20	20	25.64%
21-30	37	47.44%
31-40	14	19.95%
41-50	4	5.13%
51-60	3	3.85%

Out of 78 cases, most common ligature material used was dopatta (orna) in 32 (41.03%) cases followed by nylon rope in 22 (28.21%) cases, sari in 8 (10.26%) cases and electric wire in 6 (7.69%) cases. (Table III)

Table III: Distribution according to ligature material used (n=78)

Material used	Frequency	Percentage
Dopatta (orna)	32	41.03%
Nylon rope	22	28.21%
Sari	8	10.26%
Electric wire	6	7.69%
Bed sheet	4	5.13%
Towel (Gumcha)	2	2.56%
Lungi	2	2.56%
Cloth	2	2.56%

Table IV shows cyanosis was found in 75 (96.15%) cases, subcutaneous tissues underneath the ligature mark was found pale, white, hard, glistening in 68 (87.46%) cases and dribbling marks of saliva were seen in 23 (29.49%) cases. Subconjunctival haemorrhages were noticed in 21 (26.92%) cases while petechial haemorrhages in brain were in 18 (23.08%) cases.

Table IV: Distribution according to post mortem findings (n=78)

Findings	Frequency	Percentage
Cyanosis	75	96.15%
Subcutaneous tissue underneath the ligature mark found pale, white, hard, glistening	68	87.46%
Dribbling marks of Saliva	23	29.49%
Subconjunctival haemorrhages	21	26.92%
Petechial haemorrhages	18	23.08%
Tongue bite	11	14.10%
Injury to subcutaneous tissue underneath the ligature mark	4	5.13%
Injury to the neck muscles	5	6.41%

Discussion

Suicide is a public health problem too often neglected by researchers, health policymakers and the medical profession.^{10,11} In our study most of the suicidal hanging cases were found in age group of 21-30 years. These are the most active years and an individual has to face various sorts of struggle of life with emotional, financial, familial or other crises. In many other studies similar observations

were documented.^{10,12,13} Suicide data by WHO also mentions that suicide occurs throughout the lifespan and is the second leading cause of death among 15-29 year olds globally.¹⁴

Worldwide suicide rate is higher in males.¹⁵ In UK suicide is three to four times more common in men than in women of any age group.¹⁶ On the contrary suicide rate is higher in women in our community which was also reflected in our study. Suicidal hanging was more common among females in this study. Statistics released by Bangladesh Manabdhikar Bastabayan Sangstha, reveal that in an eight months period from January 2011 to August 2011 a total of 258 people had committed suicide. Among them 180 were women and 78 were men.⁹ Due to inequity of gender, familial and social oppression, marital disharmony, lack of economic freedom, early marriage, low literacy, sexual abuse and such cultural factors, majority of the Asian countries has lower male-to-female suicide gender ratios.^{11,15} Most of the previous studies done in Bangladesh reported similar trend with a negligible exceptions in a few studies.¹⁷⁻²⁰

Majority of victims used dopatta (orna) followed by nylon rope, sari and electric wire. Ali et al. reported that soft material like orna, saree, and cloth were the preferred material for hanging in their study followed by firm materials like rope. Hard material likes iron wires, cable wires, etc. were used very rarely.²⁰ Almost similar observations were made by a good number of authors.^{12,13,18,19}

In present study cyanosis of fingertips and nail beds of both hands was the commonest finding followed by pale, white, hard, and glistening subcutaneous tissue underneath the ligature mark and dribbling marks of saliva. These findings are the most important signs of asphyxia and are mentioned in every literature available.¹²

Suicide is a global phenomenon throughout the world and according to WHO 78% of suicide

occurred in low and middle income countries in 2015. In 2015 suicide accounted for 1.4% of all deaths worldwide making it the 17th leading cause of death. It is recommended that effective and evidence-based interventions should be implemented at population, sub-population and individual levels to prevent suicide and suicide attempts.¹⁴

In Bangladesh there were an estimated 10,000 “reported” suicides in 2012. As suicide is stigmatized, it remains under-reported. To combat a phenomenon such as suicide, the issue must be prioritized as a public health issue and should involve both state and non state actors. It would require resource allocation in the annual budget that would pay for health services and educational materials, raising awareness amongst the general population with the aid of national media, which has its role in being responsible when it comes to reporting on suicide, educating the masses by providing information on where and how to get help.²¹ Suicidal deaths should be prevented by all out effort.

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