

Original Article

Demographic Trends of Adolescent Suicidal Hanging Deaths in Sylhet

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Abstract

Background: The incidence of suicide has emerged as a global health problem, especially in low- and middle-income (LAMI) countries. Hanging is one of the most prevalent forms of suicide worldwide, particularly among adolescents. During conventional autopsies, suicidal hanging was found to be a leading cause among the unnatural deaths in Bangladesh.

Methods: An observational study based on retrospective data was conducted to analyse the demographic trends of suicidal hanging cases in Sylhet. Data on demographic variables were collected from all suicidal hanging cases referred for medico-legal autopsy from January 2015 to December 2020 at the Sylhet MAG Osmani Medical College mortuary in Bangladesh.

Results: An increasing trend of hanging was observed among ages between 14 and 19 years (88.4%), with a peak incidence in the late adolescent group (52.1%). Female adolescents outnumbered male victims and accounted for two-thirds of the total deaths (66.3%). Hanging deaths were more prevalent among the adolescents in the geographical areas of Gowainghat (13.7%) and Airport (13.2%).

Conclusion: The high suicide rates highlight the importance of identifying suicide among adolescents as a legitimate concern in these areas, with an urgent need for preventive intervention.

Keywords: Adolescents, suicidal hanging deaths, demographic state, Sylhet, Bangladesh.

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Introduction

Suicidal ideation and attempts are considered as a major public and mental health problem in LAMI countries.¹ World Health Organization (WHO) recognized suicide as a public health priority in 2014.² Suicide accounted for 1.3% of all deaths worldwide. Every year 7,03,000 people die due to suicide and many more people who attempt suicide. In 2019, above 77% of global suicides were occurred in LAMI countries. Globally, it is the 17th leading cause among adults and 4th leading cause of death among 15-29 year olds.^{3,4} Suicide attempts among adolescents range from 1.3-3.8% in males to 1.5-10.1% in females, with females having greater rates than males

in the older adolescent age range.⁵ The point prevalence of suicidal ideation in adolescents is about 15-25%, with severity ranging from thoughts of death to suicidal ideation.⁶ In Bangladesh, age standardized suicidal rate was in both sex 3.85 per 1,00,000 population, where male was accounted 6.02 and female was accounted 1.66 per 1,00,000 population in 2019.⁷

Suicide methods are determined by the availability of instruments, knowledge of lethal effects, and the victim's choice. Male and female suicide strategies differ in key respects.⁸ Suicide by hanging is the most prevalent method of suicide in underdeveloped countries such as Bangladesh.^{9,10} In our country, among the

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all suicides most of cases are young people who are the economically active lives.¹¹ Multiple factors are responsible for suicidal behaviors.¹² Suicide is a serious cultural and religious taboo in Bangladesh, and individuals who attempt or die by suicide are frequently stigmatized and ostracized by their communities.^{13,14} Many suicides happen impulsively in moments of crisis with a breakdown in the ability to deal with life stresses, such as financial problems, relationship break-up or chronic pain and illness.^{4,11}

Suicidal hanging is a type of death caused by asphyxia.¹⁵ Inevitably rope or readily obtainable clothes is used as the ligature material.^{16,17} The hanging may induce death through a variety of processes that work alone or in conjunction. Spinal cord injuries, venous and arterial occlusion, airway obstruction, carotid complex compression resulting in reflex cardiac arrest, and so on are manifestations.^{18,19}

The purpose of this retrospective study is to analyze the demographic trends in suicidal hanging in this Bangladeshi region. It also investigates gender disparities between men and women, which may be valuable in identifying people at risk and devising preventive measures.

Methods

Study design and settings

We retrospectively analyzed the autopsy records of deaths due to suicidal hanging conducted at the Department of Forensic Medicine and Toxicology, Sylhet MAG Osmani Medical College (SOMC), Sylhet 3100, Bangladesh, during the six-year period between the years January 2015 to December 2020. The aim of the study was to analyze the demographic trends of suicidal hanging cases autopsied in the study place.

Study samples

In accordance with the WHO definition, victims of age 10-19 years were included in the adolescent group. The study sample includes all the cases autopsied in the SOMC mortuary by suicidal hanging in the age group of 10-19 years during the study period. Cases were further categorized into three groups; early adolescents (10-13 years), middle adolescents (14-16 years), and late adolescents (17-19 years).

Data collection procedures

A total of 190 medico-legal autopsies of deaths due to suicidal hanging were carried out. Among them, 32 in 2015, 34 in 2016, 32 in 2017, 44 in 2018, 28 in 2019 and 20 in 2020 respectively cases were identified based on the inquest reports, hospital records, and autopsy examination findings. All medico-legal cases were referred from 17 different police stations located in Sylhet district. Data were collected using a pre-designed schedule from autopsy registers and reports. Demographic data of suicide victims included age, gender, and localities.

Data analysis

All data were manually entered into a Microsoft Excel sheet and were statistically analyzed by presenting the data in the form of appropriate table and charts and computing the frequency and percentages.

Ethical aspects

The study was conducted in accordance with the Declaration of Helsinki (1964). Confidentiality of data was ensured, and unauthorized access to data was not allowed. This study was approved and ethical permission was taken properly from the Department of Forensic Medicine and Toxicology, Sylhet MAG Osmani Medical College, Sylhet 3100, Bangladesh. (Reference: SOMC/FM/23/329)

Results

The study comprised all autopsies performed at SOMC mortuary by suicidal hanging deaths. A total of 190 medico-legal autopsies were conducted during the study period. The victim's ages ranged from 10 to 19 years, with a peak incidence in the late adolescents (n=99, 52.1%), followed by a progressive drop up to the middle adolescents (n=69, 36.3%), and early adolescents (n=22, 11.6%). The incidences of hanging were higher in 2018 (n=44, 23.2%) and least in 2020 (n=20, 10.5%), which accounted for the total cases (N=190, 100%). The victim's mean age (S.D.) was 17.2±3.6 years. These observations were presented in Table 1.

In suicidal deaths due to hanging among adolescents, female victims accounted for two-thirds of the total cases (n=126, 66.3%), with a male-female ratio of 1:2, as shown in Figure 1.

In suicidal deaths by hanging among adolescents during the study period, nearly one-third (n=56, 29.5%) of the total deaths came from three geographical areas named Gowainghat (n=26, 13.7%), Airport (n=25, 13.2%), and Companygonj (n=5, 2.6%).

Table 1: Age wise distribution of cases of suicidal hanging among adolescent (N=190)

Age groups	Study period						Total (N=190) n(%)
	2015 (n=32) n(%)	2016 (n=34) n(%)	2017 (n=32) n(%)	2018 (n=44) n(%)	2019 (n=28) n(%)	2020 (n=20) n(%)	
	10-13 years (Early adolescent)	6(18.8)	5(14.7)	3(9.4)	3(6.8)	4(14.3)	
14-16 years (Middle adolescent)	9(28.1)	12(35.3)	15(46.9)	17(38.6)	11(39.3)	5(25.0)	69(36.3)
17-19 years (Late adolescent)	17(53.1)	17(50.0)	14(43.7)	24(54.6)	13(46.4)	14(75.0)	99(52.1)
Mean±SD	32(16.8)	34(17.9)	32(16.8)	44(23.2)	28(14.7)	20(10.5)	190(100)
	17.2±3.6 years						

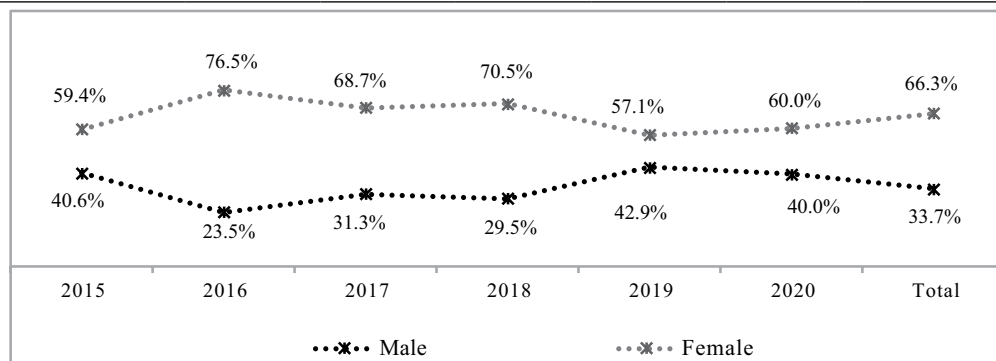


Figure 1: Sex wise distribution of the adolescent's victim (N=190)

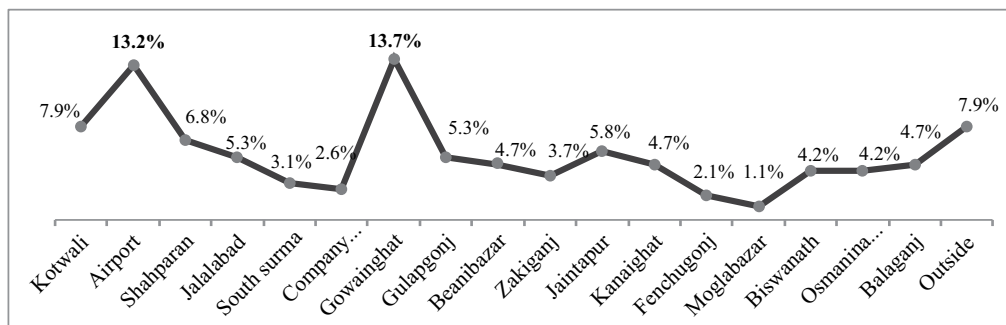


Figure 2: Distribution of the locality of the adolescent's victim (N=190)

Discussion

Suicide strategies vary by demographic and geographical area.²⁰ Suicidal hanging has become a substantial socioeconomic and public health burden in Bangladesh as its prevalence is mounting.²¹ This research will help in the development of preventive policies based on demographic variables.

Regarding the age of suicidal hanging adolescents, the victim's mean age (S.D.) was 17.2±3.6 years. The victim's ages ranged from 10 to 19 years, with a peak incidence in the late adolescents (52.1%), followed by a progressive drop up to the middle adolescents (36.3%), and early adolescents (11.6%). There was an increasing

trend of hanging among ages between 14 and 19 years (88.4%), and the highest number of victims was noted in 2018 (n=24, 54.6%). Several researchers observed similar findings of a greater incidence of suicide deaths among adolescents aged 15 to 19.²²⁻²⁶ The incidence of hangings increased with advancing age, which was observed in our study. The lower incidence of suicide among the 10-14 year old age group could be attributed to a variety of factors, including a lack of cognitive maturation, a high levels of parental care, good relationships with parents, a lack of development of imprecise thoughts about the nature and conviction of death, and less exposure to risk factors.²⁷ Suicide rates consistently rise with age, potentially due to an

increased prevalence of psychopathology in teenagers. Older adolescents are also more intellectually capable of planning and carrying out a lethal suicide attempt, and they have higher planning and intent.²⁸ The incidences of hanging were higher in 2018 (23.2%) and least in 2020 (10.5%). The distribution of total adolescent deaths due to hanging by year revealed no discernible trend in this study.

In suicidal deaths due to hanging among adolescents, females outnumbered male victims (M:F ratio 1:2) and accounted for two-thirds of the total deaths (66.3%). Female predominance among suicidal deaths due to hanging in adolescents was observed in different states of India like in South Delhi²² (58.82%), in Nagpur²⁹ (65%), and in Chennai (75.0%).³⁰ Female preponderance may be attributed to psychological problems such as anxiety and depression, which are more common in adolescent girls.

In the present study, the most prevalent places of hanging among adolescents were Gowainghat (13.7%), Airport (13.2%), and Companygonj (2.6%). There was an observed increasing trend of hanging among the adolescents in these geographical areas, apart from other areas of Sylhet district. The higher prevalence of hanging in this region may be attributable to a lower literacy rate (70.3%) compared to the national literacy rate (75.2%).^{31,32} In contrast to the other parts of Sylhet, the people in these areas are low-income, and cultural taboos are more prevalent. We analyzed the demographic data to formulate a preventive plan to lower the prevalence of hanging suicide is frequently seen as a cost-effective yet effective action.

Conclusion

The study revealed that increasing age among adolescent groups is more vulnerable to committing suicide by hanging, and females are more vulnerable. It has also been observed that geographical dispersion has a substantial impact on suicidal ideation and suicide. Increasing public awareness regarding accidental and suicidal hanging among adolescent individuals, as well as increased monitoring, counseling, identification, and early psychiatric consultation of high-risk adolescents, are all possible effective approaches for the prevention of hanging deaths. However, it is important for identify high-risk adolescents by parents, peers, and teachers. Their suicidal behaviours and ideations must be treated appropriately through psychological counseling and intervention.

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