ORIGINAL ARTICLE

Sociodemographic Profile and Implications of Suicidal Deaths: Study of 870 Cases Reported in Dhaka Medical College Hospital

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Abstract:

Suicide is a neglected global public health problem and Bangladesh is not an exception. . Unfortunately, suicide is not given enough priority as a serious public health issue. Approximately one million people commit suicide in every year worldwide. This research sought to determine the frequency, sex, sociodemographic characteristics, and suspected causes of suicide as well as the rate of suicidal deaths at Dhaka Medical College. A retrospective study was carried out in the morgue of the department of Forensic Medicine, Dhaka Medical College for the period of 2 years from January 2017 to December 2018. A total of 870 suicidal death autopsies cases were done at DMC mortuary during the mentioned period. Data was collected from findings of the postmortem reports, inquest reports and challan through maintaining legal and ethical issues. The results of our study showed that, out of 870 cases, female victims were substantially heavier (67.5%) than male victims (32.4%), and that the age group most afflicted by suicide is 21 to 30 years old. Hanging by rope was the prevalent method 510 (58.6%) then poisoning 290 (33.3%) and then others method 70 (8%). According to our research, the greatest group of people who attempt suicide due to family discord was housewives (27.6%). The majority of victims (65.7%) were from rural areas and are married (67.8%). information arranged systematically, with tables and graphs thoroughly explained. Suicide patterns might differ from country to country and even from culture to society. It is necessary to implement particular suicide prevention strategies, such as family conflict resolution, all-encompassing mental health programs, and interventions created especially for populations at high risk.

Key words: Suicide, Death, Autopsy, Hanging, poisoning

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Introduction:

Suicidal deaths are a major global public health concern that requires careful examination to fully understand the many elements that contribute to this tragic phenomena[1]. A complex mystery, suicide fatalities are influenced by a wide range of biological, psychological, and social factors[2]. According to World Health Organization (WHO) estimates, suicide claims 10,000 lives annually and is becoming a major cause of death for young adult females in Bangladesh. This puts the annual

death toll from suicide at close to 700,000, making it one of the leading causes of death[3]. Suicide rates among teenagers between the ages of 15 and 18 were significantly higher than those of the overall population, with 17.1 suicides per 100,000 individuals for men and 22.7 suicides per 100,000 for girls annually[3,4]. The choice of suicide methods varies widely, reflecting the intricate interplay of individual predispositions and environmental influences[5]. According to this study, the majority of suicide deaths occurred in individuals between

the ages of 21 and 30, however all suicide fatalities occurred between the ages of 10 and all age groups, respectively. Compared to men, women commit suicide at a higher rate. In poisoning cases, male victims outnumbered female victims, although female victims died by hanging more frequently than male victims. Hanging is a form of violent asphyxia caused by suspension of the body by a ligature which encircles the neck, the constricting force being the weight of the body[6]. The constricting force is either weight of the whole body or the weight of the head alone resulting in complete and partial hanging[7]. Hanging is also termed as self-suspension[8]. Hanging produces painless death for the victims and no costs involvement. It only takes a thin rope around the neck to knock someone out for 15 seconds, which is sufficient to induce death. It is therefore recognized as a typical suicide technique[9]. Partial hanging occurs when a portion of the body contacts the ground, also known as incomplete Hanging. It requires no complicated preparation and simply the expense of ligature material. A small rope around the neck may render a person unconscious in 15 seconds, making it a painless and quick death option[10]. The two primary methods of hanging are suspension hanging and drop hanging. A drop hanging can cause death in addition to hypoxia, and in cases where a person survives, it can cause chronic consequences such cerebral anoxia, laryngeal fractures, cervical spine fractures, tracheal fractures, and damage to the carotid arteries. Still, out of the two hanging techniques, suspension hanging is more common. The body may sometimes be suspended from above when employing the suspension method this is known as complete hanging. When a part of the body touches the ground, it is referred to as incomplete hanging or partial hanging[10]. Poisoning accounts for a notable proportion of self-harm incidents globally and poses a unique set of challenges for both medical practitioners and public health researchers. This is consistent with their wide use across South Asia for agriculture and hence for self-poisoning[11]. On the other country, women who commit suicide use less violent methods, such as drugs and carbon monoxide poisoning, than do men, who more often use violent methods such as guns and hanging. The study aimed to analysis the socio-demographic picture of suicide death in Dhaka, Medical college on the study groups.

Materials and method:

This descriptive cross-sectional study was conducted at the Department of Forensic Medicine & Toxicology, Dhaka Medical College Dhaka. The research spanned two year, commencing from January 2017 to December 2018, adhering strictly to legal and ethical guidelines. The retrospective data were collected from the Department of Forensic Medicine & Toxicology with the verbal consent of the Authority. There were 3600 autopsy performed in total over the time and 870 were suicide-related deaths among them. Additionally, thorough postmortem examinations of the bodies were performed and chemical analysis reports were noted.

Results and observation:

After observation collected data were analyzed. Observation and results are noted carefully. The results were presented in the forms of chart and tables and figures. Among 3600 cases 870 were suicidal cases (24.1%). The results were presented in the forms of tables and chart. Of these 510 (59%) were hanging, 290 (33.3%) were poisoning- and 70 (8%) were caused by burns, falls from a height, firearms, drowning, and traffic accidents. The female cases were 588 (67.6%) and males 282 (32.4%). Out of 870 suicidal fatalities, the majority of victims were in the age range of 21 to 30. On the study group hanging was the most common method of suicide death by rope followed by poisoning and other incidents including burns, drowning, falls from heights, gunshot wounds, and traffic accidents Table II Demonstrates that 43.6% of instances utilized rope as a ligature material, 28.9% used clothing, 13.7% used sheets, 5.7% used others like (phone wire, steel rope). Majority of victims were female housewives from rural area committed suicide due to family disharmony with partner.Suicide rates were higher among victims from nuclear families than those from mixed families.

Table I: Age distribution of victim both male and female (n=870)

Age distribution	No	Percentage
0-10	11	1.2%
11-20	250	28.7%
21-30	429	49.3%
31-40	155	18%
Above 40 years	25	2.8%

Table No.1 revealed that majority of suicide in both sexes are seen in age group 21-30 years This is followed by age group 11-20 years then age group 31-40 years.

Table -II: Different ligature materials used for hanging

Ligature materials	Number of victim	Percentage
Rope	380	43.6%
Clothing	250	28.9%
Sheet	120	13.7%
Cable	70	8.1%
Others	50	5.7%

Table III: Socio-demographical characteristics of the study case (N=870).

Variables	frequency	Percentage
Gender distribution		
Female	588	67.5
Male	282	32.5
Marital status		
Married	590(67.8%)	(67.8%)
Unmarried	200(23%)	(23%)
Divorce or separation	80(9.2%)	(9.2%)
Profession		
Housewife	240	(27.6%)
Student	220	(25.2%)
Service holder	170	(19.5%)
Unemployed	85	(9.8%)
Cultivator	155	(17.9%)

Family structure		
Nuclear Family	520	(60%)
Join Family	350	(40%)
Habitat		
Urban	300	(34.4%)
Rural	570	(65.6%)

Table IV: Distribution by suspected reason for suicide

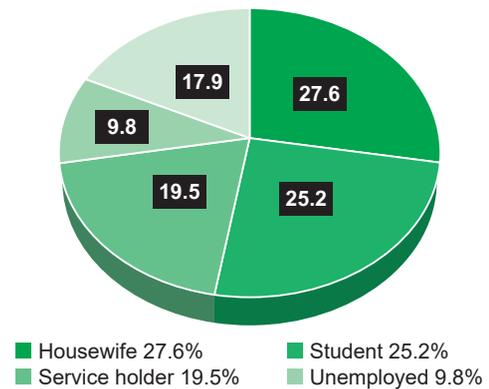| Reason for suicide	Frequency	Percentage
Failure of love affairs	190	21.8%
Family disharmony with partner	280	32.1%
Sexually harassed	85	9.8%
Verbal abuse	70	8.1%
Depression	80	9.2%
Failure in exams	45	5.1%
Emotional conflict with parents	120	13.9%

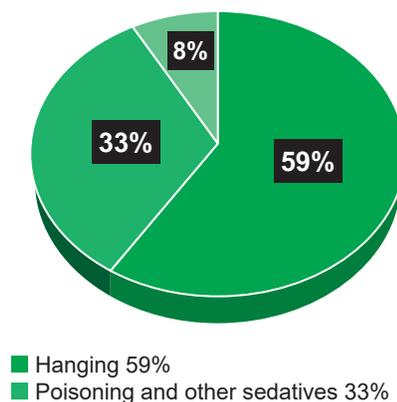**Figure-1:** Distribution of suicidal hanging by profession

- Housewife 27.6%
- Student 25.2%
- Service holder 19.5%
- Unemployed 9.8%

Figure-2: Percentage of different modes of suicide

- Hanging 59%
- Poisoning and other sedatives 33%

Discussion:

Suicide is a major public health problem in Bangladesh. Age, place of residence, economic status and literacy were the major associating factors related to suicide. Every year 703 000 people take their own life and there are many more people who attempt suicide. Every suicide is a tragedy that affects families, communities and entire countries and has long-lasting effects on the people left behind. An estimated 10,000 people commit suicide in Bangladesh, every year as reported by the WHO in 2019. In our study the age range of individuals committing suicide falls between 21-30 years. According to other authors findings indicate that young individuals in their second and third decades of life contribute significantly to overall suicidal deaths .A systematic review revealed a high prevalence of suicide rates in the 20-29 age group, with females predominating in suicides under 30 years, while males were more prominent in the 30 years or older age group. Suicide rates by age range. In 2021, the suicide rates were higher among adults ages 25 to 34 years (19.48 per 100,000) and 75 to 84 years (19.56 per 100,000)[12]. Shabnam et al. reported 46.9% of death cases aged 21-30 years[13]. Nunez-Samudio et al. identified the most affected age group as 20-29 years[14] which is similar to this study. According to our research there were far more female victims (67.5% vs. 32.5%) than male. In another study there were females (51.2% vs. 48.7%) males[15] and also in some other study suicide rates were higher in men than in women. Males between the ages of 20 and 40 made up 69.2%. The majority of the victims belonged to the middle class of society. In terms of the reasons behind the hanging suicides, family conflicts accounted for the majority of male suicides (38.9%), whereas harassment especially against married women accounted for the majority of female suicides (23.1%)[16] which varies with our study. Because family conflict was the primary cause, the corresponding findings from previous studies on the gender distribution of suicide were similar to those from this study. Housewives are commonly committed suicide than other profession and more significant in rural area. In some the other current study, students comprise the largest profession (38.73%) out of 350 suicidal cases[17]. The recent survey noted that the Dhaka division has the highest number of school and college students committing suicide is highest in percentage followed by the southern port city of Chattogram division. According to gender-based analysis, more females committed suicide than males. Students between 13 and 19 years old are most likely to commit suicide Among several reasons that emerged for suicide are being emotionally hurt, love affairs, family conflict, depression, psychological problems., financial problems, harassment and rape or sexual harassment. In some cases, the reasons behind the suicide are not known, said the survey. This discovery indicates that students are now more likely than housewives to commit suicide. This trend may be brought on by stressful life events including relationship or academic setbacks, breakups with significant others, the loss of a loved one, divorce, or a serious family dispute. Depressive illness was present in around 8% of all suicide deaths in our study. The rate of mental health disorders of India which is between 20-40%. This data different from those reported in Western literature where mental health disorder exists in 91% of suicide deaths[18]. In order to gain a better understanding of the risks associated with adolescence, some studies were concentrated on juvenile suicides that have been performed before the age of 18 years[19]. Among the methods used in this study, hanging is the most common. Numerous other researchers also demonstrate that hanging is by far the most practical approach then pesticide in respect of our country. In Western countries. A comparison of male and female suicide methods showed that males have a statistically significantly higher risk than females of using firearms, hanging and poisoning by other means, and lower risk in poisoning by drugs, drowning and jumping. Females more often used poisoning by drugs than males in all countries. It was only in Italy that the higher risk of female poisoning by drugs was not statistically significant[20]. There is a strong correlation between the victim's monthly average income and their suicidal attempt. According to a study of OPC

poisoning the author found that the likelihood of using OPC to commit suicide increases with decreasing income. This study revealed that people in lower income groups accounted for the majority of OPC poisoning cases[15]. By contrast, in high-income countries (HIC), women's suicide rates are three times lower than men's rates (World Health Organization, 2014, 2016). Women's suicide rate in LMIC is 8.7 per 100,000, as compared to a rate of 5.7 for women in HIC (World Health Organization, 2014)[21]. In this study income distribution of victims was not included. Suicide from nuclear family is significant than mixed family on our study. It may be due to factors related to the family, such as strained relationships with one or both parents, arguments within the family, cohabitation status, parental substance misuse, parental mental illness, and single-parent households, have been shown to increase the risk of suicide in adolescents and young adults worldwide.

Conclusion:

Suicide death is becoming more common in Bangladesh on a daily basis, and this is seriously affecting public health. An elaborate and well-planned program is needed to identify the contributing and causative factors. a carefully planned awareness effort to prevent suicidal thoughts and acts in extreme circumstances. Role models, appropriate education, and media influence are essential for reducing the incidence of suicide deaths.

Recommendation:

Counseling and family bonding may be crucial in enhancing the mental health state A supportive family environment, healthy relationships among the family members, and open communication may help prevent suicidal behaviors   Increase access to marital therapy programs are also needed to assist spouses in managing their conflicts. A healthy marriage is vital to the overall health of the family.

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