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A Brief Account on Socio-demographic Profile of the Victims of Violent Asphyxial Deaths in Dhaka City

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Abstract

Background: Violent asphyxial deaths are often dealt with during autopsy, and its magnitude is mentionable nowadays.

Objective: To determine the frequency of cases of violent asphyxial death along with the determination of the socio-demographic variety of the victims.

Study Design: It is a cross-sectional type of descriptive study.

Place of Study: Department of Forensic Medicine of Sir Salimullah Medical College, Mitford, Dhaka, Bangladesh.

Duration: The study was conducted from January 01, 2017, to December 31, 2019.

Materials and Methods: A proforma was prepared where various data were tabulated, compiled and analyzed.

Results: 1060 cases of violent asphyxial death were encountered out of 9410 medico-legal autopsies. Male (68.67%) predominance was evident. The age group of 20-29 years (44.15%) was principally affected. Maximum victims were from urban areas (61.03%). Victims were mainly married (56.6%) and unemployed (26.6%). The Muslim (81.32%) victims were mostly seen and lower class people (58.2%) were the prime victims. Hanging (65.84%) and drowning (27.64%) were chiefly encountered.

Conclusion: The study reflects the magnitude of violent asphyxial death and a brief picture of the socio-demographic profile of the victims.

Keywords: Violent asphyxial death, Hanging, Strangulation, Drowning, Autopsy.

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Introduction

The term "Asphyxia' has been accepted in the true medico-legal sense for many a year around the globe.[1] It is a Greek term that means pulselessness.[2] But in Forensic Parlance, it is meant by "Interference with oxygenation".[3] Mechanical asphyxia is a broad term in which enough external pressure is applied to the neck, chest, or other areas of the body, or the body is positioned in such a way that respiration becomes difficult or impossible.[4] Commonly encountered violent asphyxial deaths include hanging, ligature strangulation, manual strangulation or throttling, smothering, drowning, traumatic asphyxia, and choking. Among these, hanging is one of the prime methods to commit suicide.[5-11] Hanging is invariably thought to be suicidal except accidental hanging in autoerotic deaths, homicidal hanging in case of lynching, and judicial hanging. In England and Wales, hanging constitutes about 2000 deaths each year and is considered the most common method of suicide.[12] Hanging is the second most common technique to commit suicide as per the report published in Canada.[13] Death due to strangulation is considered homicidal all the time, but it may be accidental.[14-18] Since Bangladesh is a land of rivers and there are plenty of lakes, ponds, and wells, a large seacoast, drowning cases are often encountered at autopsy. Based on a global burden of disease (GBD) study conducted by WHO in 2010, global mortality due to drowning is estimated to be 7% of all asphyxial deaths. They also estimated the annual global incidence of death in drowning to be 4,00,000.[19-23] The cases of smothering are very rarely dealt with in Bangladesh. Postmortem findings are often missed during autopsy if a soft pillow or a soft cloth is used for this purpose. Careful history taking, crime scene investigation, and careful examination

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can solve this problem and may preserve justice.[24] Cases of traumatic asphyxia are not often found in Bangladesh.

In most cases, traumatic asphyxia is accidental.[25] Literature in this respect is of unmentionable number here in Bangladesh. Henceforth, this study aimed to ascertain the frequency of cases of violent asphyxial death in Sir Salimullah Medical College Morgue House, Dhaka from socio-demographic viewpoints.

Aims and Objectives

- The study was done to assess the impact of violent asphyxia to bring about death along with other unnatural causes
- To determine the socio-demographic variety of the victims.

Materials and Methods

This study was done from Jan 2017 to Dec 2019 at Sir Salimullah Medical College Mortuary Dhaka in which the study revealed 1060 cases of violent asphyxial death out of the total 9410 medico-legal autopsies. A proforma was prepared and findings were written down in various tables. Epidemiological data, including age, sex, religion, dwelling place, marital status, occupation, and family history, were collected from the police inquest reports and information gathered from interviews with the relatives of the deceased. After that, these variables were tabulated, assembled, and scrutinized.

Observations and Results

Table 1 shows a gradual yearly increase in the total number of cases of violent asphyxial death which denotes 303 cases (10.84%) of the total 2794 autopsies in 2017 followed by 336 cases (10.72%) of the total 3133 autopsies in 2018 and 421 cases (12.08%) of the total 3483 autopsies in the year 2019. Thus, this study revealed a total of 1060 cases of violent asphyxial death, comprising 11.26% of the total 9410 autopsies.

Table 2 shows a total of 728 (68.67%) male victims, which outnumbered the females (332 victims/31.32%) out of the total 1060 cases of violent asphyxia.

Table 1: Year-wise distribution of cases of violent asphyxial death

Year	*Total no. of the autopsy performed*	*Frequency of cases of violent asphyxial death*	*Percentage (%)*
2017	2794	303	10.84
2018	3133	336	10.72
2019	3483	421	12.08
Total	9410	1060	11.26

Table 2: Sex-wise distribution of cases of violent asphyxial death (n=1060)

Sex	*Frequency*	*Percentage (%)*
Male	728	68.67
Female	332	31.32
Transgender	0	0
Total	1060	100`

Table 3 indicates the most affected age group was 20–29 years in 468 cases (44.15%) followed by 30–39 years in 244 cases (23.01%), 40–49 years in 124 cases (11.69%), 50–59 years in 113 cases (10.66%), 10–19 years in 107 cases (10.09%), 0–9 years in 3 cases (0.28%) and >60 years only in 1 case accounting for 0.09% of the total.

Table 4 shows that the majority of the victims were from urban areas i.e., in 647 cases (61.03%) followed by rural in 228 cases (21.50%), sub-urban in 178 cases (16.79%), and 7 victims were unknown, comprising 0.66% of the total.

Table 5 Manifests that among 728 male victims 387 (53.15%) were married, 336 (46.15%) were unmarried, and 5 victims (0.68%) were unknown. On the other hand, among 332 female victims, 213 (64.15%) were married, followed by unmarried 117 (35.24%) and unknown 2(0.6%). Wherefore, this study revealed a total of 600 (56.60%) married victims followed by 453 (42.73%) unmarried and only 7 (0.66%) unknown victims out of the total 1060 cases of violent asphyxial death.

Table 6 reveals that Muslims were on top of the list concerning religion which means in 862 cases (81.32%) followed by Hindus in 132 cases (12.45%) and Christians in 5 cases (0.47%). There were 7 (0.66%), unknown victims, as well.

Table 7 shows the dominance of lower-class people as far as socio-economic class is concerned that means in 617 cases (58.20%) followed by the middle class in 239 cases (22.54%) and upper class in 197 cases (18.58%).

Table 8: indicates that maximum victims were unemployed which means in 282 cases (26.60%) followed by housewives in 276 cases (26.03%), students in 192 cases (18.11%), day laborers in 188 cases (17.73%), service holders in 64 cases (6.03%), businessmen in 33 cases (3.11%), farmers in 16 cases (1.50%) and only 2 victims (0.18%) who were retired from their job.

Table 3: Age-wise distribution of cases of violent asphyxial death (n=1060)

Age in years	*No. of cases of violent asphyxial death*	*Percentage(%)*
0–9	3	0.28
10–19	107	10.09
20–29	468	44.15
30–39	244	23.01
40–49	124	11.69
50–59	113	10.66
>60	1	0.09
Total	1060	100

Table 4: Distribution of cases of violent asphyxial death in relation to dwelling place (n=1060)

Dwelling place	*Frequency*	*Percentage (%)*
Urban	647	61.03
Rural	228	21.50
Sub-urban	178	16.79
Unknown	7	0.66
Total	1060	100

Table 5: Distribution of cases of violent asphyxial death based on marital status (n=1060)

	Male		Female		Total	
Marital Status	*No.*	*%*	*No.*	*%*	*No.*	*%*
Married	347	53.15	213	64.15	600	56.60
Unmarried	336	46.15	117	35.24	453	42.73
Unknown	5	0.68	2	0.6	7	0.66
Total	728	100	332	100	1060	100

Table 6: Distribution of cases of violent asphyxial death according to religion (n=1060)

Religion	*Frequency*	*Percentage (%)*
Muslim	862	81.32
Hindu	132	12.45
Christian	5	0.47
Buddhist	0	0
Unknown	7	0.66
Total	1060	100

Table 7: Distribution of cases of violent asphyxial death concerning socio-economic status (n=1060)

Social Class	*Frequency*	*Percentage (%)*
Lower class	617	58.20
Middle class	239	22.54
Upper class	197	18.58
Unknown	7	0.66
Total	1060	100

Table 8: Distribution of cases of violent asphyxial death according to occupation (n=1060)

Occupation	*Frequency*	*Percentage (%)*
Unemployed	282	26.60
Housewives	276	26.03
Students	192	18.11
Day Laborers	188	17.73
Employed (service)	64	6.03
Businessmen	33	3.11
Farmers	16	1.50
Unknown	7	0.66
Retired persons	2	0.18
Total	1060	100

Table 9: Distribution of cases of violent asphyxial death on the basis of type of death (n=1060)

Type of Death	*Frequency*	*Percentage (%)*
Hanging	698	65.84
Drowning	293	27.64
Traumatic Asphyxia	34	3.20
Strangulation	19	1.79
Throttling	14	1.32
Smothering	2	0.18
Total	1060	100

Table 9 shows that hanging was mostly encountered among other cases of violent asphyxial death which means hanging was in 698 cases (65.84%) followed by drowning in 293 cases (27.64%), traumatic asphyxia in 34 cases (3.20%), strangulation in 19 cases (1.79%), throttling in 14 cases (1.32%) and smothering only in 2 cases accounting for 0.18% of the total.

Discussion

Table 1: This study revealed 1060 cases (11.26%) of violent asphyxial death. Almost indistinguishable observations were drawn by Kumar *et al.*[26] (10.5%), Murty *et al.*[27] (10%), Tirmizi *et al.*[28] (7.08%), Arif *et al.*[29] (5.9%), Patel *et al.*[30] (5.63%), Amandeep *et al.*[31] (5.26%) and Sharma *et al.*[32] (5%). On the other hand, in studies conducted by Azmac D *et al.*[33] and Reddy SP *et al.*,[34] the occurrences were 15.7% and 19.7%, respectively.

Table 2: Male predominance was observed in this study. Similar impressions were obtained from the study done by Patel *et al.*[30] Males were the most common victims in other studies done by Chaurasia *et al.*[35] (Males-60.89% & females- 39.11%), Vadgama e*t al.*[36] (Males-64% & females-36%), Ahmad *et al.*[37] (Males-61.9% & females-38.1%) and Akber *et al.*[38] (Males-54.07% & females-45.92%).

Table 3: The age group of 20-29 years was most affected. Similar findings were found from other studies done such as Ghadge *et al.*[39] and Arora. *et al.*[40]

Table 4: Maximum victims were from urban areas. Studies showing similar pictures include Chauhan *et al.*[41] (Urban 70.2%, sub-urban-19.85% and rural-9.89%), Rawat *et al.*[42] (Urban-72.28% and rural-27.72%). Some other studies reflected dissimilar pictures where the victims were more in rural areas than urban areas which include Singh et al[43] (Rural-51.6% & urban-48.4%), Santosh CS *et al.*[44] (Rural-51.14% & urban-44.86%) and Gupta *et al.*[45] (Rural-43.75% & urban-41.56%)

Table 5: Both male and female victims were from the married group in this study. In contrast, these findings were almost similar to the study done by Kumar et al[26] in which there were 63.9% married victims as compared to 36.1% victims who were unmarried. Waghmare *et al.*[46] revealed 68.33% victims who were married as compared to 25% unmarried victims, and Ahmad *et al.*[37] revealed 51 (57.3%) married and 38 (42.7%) unmarried victims.

Table 6: In this study, Muslims were the predominant victims. A similar study revealed a completely different picture as reported by Sharma *et al.*[32] in which predominant victims

were Hindus (98.6%) and Mohanty *et al.*[47] also revealed the dominance of Hindu victims (93.5%).

Table 7: People of lower socioeconomic status were the prime victims in this study. A similar study conducted by Singh *et al.*[48] revealed 215 (98.17%) victims were also from the lower class followed by the middle class (3 cases/1.36%) and upper class (1 case/0.45%).

Table 8: Maximum victims were from the group of unemployed and housewives as per observation from this study. A similar study was done by Majumder *et al.*[49] in which there were 25.8% students, 21.3% farmers and 11.3% service holders.

Table 9: In this study, cases of hanging and drowning were mostly encountered. A study conducted by Singh *et al.*[48] revealed hanging in 60.27% followed by drowning (19.63%) and strangulation (14.61%). Similar pictures were observed in a study conducted by Gurudut *et al.*[50] Cases of smothering are rarely dealt with in Bangladesh. A study, conducted in Ghana revealed that cases of smothering accounted for 0.158% of the total 635 cases of unnatural death in the central region of Ghana.[51,52] Another study was conducted in Varanasi, India in which there were 33 cases of traumatic asphyxia among the other cases of violent asphyxial death.[53]

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Conclusion

In the light of the above, this study concluded that hanging and drowning were mostly encountered among all other violent asphyxia. Hanging was observed to be the most chosen means to commit suicide. Furthermore, people with emotional instability and suicidal tendencies need counseling and psychiatric consultations to prevent suicide. Drowning contributed mainly to accidental deaths. Carelessness, hurriedness and heavy rushes in launches, steamers and boats on the part of the passengers during the festival time are identified causes of accidental drowning in Bangladesh. Electronic and print media can play a vital role in initiating awareness among mass people. Law enforcing authority and Bangladesh Inland Water Transport Authority (BIWTA) have to monitor the movement of the water transports vigorously, particularly during major festivals, to cut down and prevent further incidences of accidental drowning from the country.

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