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A study of violent asphyxial deaths

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ABSTRACT

Background: *Violent asphyxial death is a common incident in forensic practices and is increasing day by day.* ***Materials and methods***: *A Retrospective study of violent asphyxial deaths (116 cases) is done for 4years brought to the Mortuary of JNIMS, Imphal, Manipur, during the period of January 2014 to December 2017.* ***Results***: *Incidence of violent asphyxial deaths was 14.44% of total autopsies. Hanging is the most commonly encountered violent asphyxial death followed by drowning. The highest incidence was in the age group of 20-30 years (31.89%) followed by 10-20 years (25.86%). Males constitute (58.62%) of the total cases.* ***Conclusion***:*Suicidal death was the most common manner of death. All cases of strangulation and smothering were homicidal.*

Key words: *Hanging; drowning; strangulation; smothering.*

INTRODUCTION

Asphyxia may be defined as a state in which the body lacks oxygen because of some mechanical interference with the process of breathing.[1] Violent asphyxial deaths include hanging, strangulation, smothering, traumatic asphyxia, suffocation, choking and drowning. Hanging is commonly seen in suicidal cases while strangulation is usually homicidal.[2] Accidental hanging can occur among children during playing or in toddlers by slipping of restraining straps, or among athletes who are in habit of exhibiting hanging, or in persons with masochistic or transvestic tendency.[3]

With the increase in crime, the count and variety of medico-legal deaths has increased tremendously in the recent years. Due to population explosion, poverty and increasing stress and strain in our daily life, we frequently come across cases of suicides, homicides and accidents. With urbanization, rural areas are not left aloof and this can be seen from the increasing incidence of such cases from these areas.[4]

It has been observed that the cases of asphyxial deaths are occurring in huge number in our state. It is becoming more common in the middle age group.

MATERIALS AND METHODS

The post-mortem report of 116 cases of violent asphyxial deaths which were examined in the Mortuary, Jawaharlal Nehru Institute of Medical Sciences, Imphal, Manipur, during the years 2014-2017 were studied and analysed.

RESULTS

A total of 803 autopsies were conducted during the period in the mortuary of Jawaharlal Nehru Institute of Medical Sciences, Imphal, Manipur. Out of 803 autopsies, 116 cases (14.44%) were of asphyxial deaths. Maximum cases of asphyxial deaths occurred in the age group of 20-30 years (31.90%), followed by 10-20 years (25.86%), and 30-40 years (18.97%), and least was found in age group 40-50 years and 0-10 years with 5.17% cases each (**Table 1**).

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Table 1 Age wise distribution of cases

Sl. No.	Age range (in years)	Frequency	Percentage
1	Below 10	6	5.17%
2	10-20	30	25.86%
3	20-30	37	31.90%
4	30-40	22	18.97%
5	40-50	6	5.17%
6	50-60	8	6.90%
7	Above 60	7	6.03%
	TOTAL	**116**	**100.00%**

Out of 116 violent asphyxial deaths, males constitute 68(58.6%) and females 48(41.4%) (**Table 2**).

Table 2 Sex wise distribution of cases

Sl. No	Sex	Frequency	Percentage
1	Male	68	58.6 %
2	Female	48	41.4%
	Total	**116**	**100.0%**

Most of the victims i.e., 57(49.14%) cases were unemployed, of which 35 were suicidal, 15 were accidental and 7 were homicidal in nature, followed by students 31(26.72%) cases of which 15 were suicidal, 10 were accidental and 6 were homicidal in nature. 28(24.4%) of the cases were employed, of which 16 were accidental, 9 were suicidal and 3 were homicidal in nature(**Table 3**).

Table 3 Distribution of manner of death base on occupation of victims

Sl No.	Occupational Status	Manner of Death			Total	Percentage
		Suicidal	Accidental	Homicidal		
1	Student	15	10	6	**31**	26.72%
2	Employed	9	16	3	**28**	24.14%
3	Un-Employed	35	15	7	**57**	49.14%
	Total	**59**	**41**	**16**	**116**	**100.00%**

Table 4 Distribution of manner of death base on type of asphyxial death

Sl. No	Type of Asphyxial Death	Manner of Death	Male	Female	Total	Total	Percentage
		Suicidal	32	27	59		
1	Hanging	Accidental	0	0	0	**59**	**50.9%**
		Homicidal	0	0	0		
		Suicidal	0	0	0		
2	Drowning	Accidental	32	9	42	**43**	**37.1%**
		Homicidal	0	1	2		
		Suicidal	0	0	0		
3	Strangulation	Accidental	0	0	0	**12**	**10.3%**
		Homicidal	4	8	12		
		Suicidal	0	0	0		
4	Smothering	Accidental	0	0	0	**2**	**1.7%**
		Homicidal	0	2	2		
	TOTAL		**68**	**48**	**116**	**116**	**100.00%**

The incidence of various asphyxial deaths were recorded and hanging was found to be the most common type with 59(50.9%) cases, of which 32 were male and 27 were female, followed by drowning with 43(37.1%) cases, of which 32 were male and 11 were female, strangulation with 12(10.3%) cases of which 4 were male and 8 were female, smothering with 2(1.7%) cases with female preponderance (**Table 4**).

Regarding manner of death, it is found that all the cases of hanging i.e., 59(50.86%) cases, were suicidal in nature. Accidental and homicidal hanging were not found in the study. All strangulation (10.34%) and smothering (1.72%) cases, were of homicidal in nature and out of 43 cases of drowning (37.06%), 42 were found to be accidental and remaining 1 was homicidal in nature (**Table 4**).

Most of the cases occurred between 6 am – 12 noon with 50 cases contributing 43.1%, followed by between 12 noon – 6 pm with 36 cases (31.0%), 12 midnight – 6 am with 19(16.4%) cases and between 6 pm-12 midnight with 11 cases (9.5%) (**Table 5**).

Table 5 Distribution of cases base on time of incident

Sl. No.	Time of Incidence	Frequency	Percentage
1	00- 6am	19	16.4%
2	6am - 12noon	50	43.1%
3	12noon-6pm	36	31.0%
4	6pm-00	11	9.5%
	TOTAL	**116**	**100.00%**

DISCUSSION

In the present study, it was found that the incidence of violent asphyxial deaths was 14.44% of the total autopsy cases brought to JNIMS Mortuary, Imphal. This incidence rate closely resembles to the study done by Ghadge MR[5] (12.8%), Gupta Ved Prakash et al[6] (11.54%), Lalwani S et al[7] (11.21%), but contrast with the study done by DK Vadgama[8] (22.2%), who found higher rate of incidence and study done by Momochand A et al[9] (7%) and Chaurasia N et al[10] (6.95%), found lower rate of incidence in their respective studies. Variations of geographical location, culture, ethnicity etc are most probably the reasons for the difference in incidence rate.

In this study, maximum incidence of asphyxial deaths was seen in the age group ranges from 20-30 years followed by 10-20 years of age, contributing 31.90 % and 25.86 % of the total asphyxial deaths respectively. It clearly indicates that young adults are the main victims of asphyxial deaths. The findings of the present study are similar with the study done by Gupta Ved Prakash et al[6] (33.12%), Momochand A et al[9] (33.1%) and Chaurasia N et al[10] (35.79%). Teenage and adulthood are the most active phases of life wherein exposure to anxiety, unemployment, failure in love, increasing stress in daily life, can frequently come across cases of suicides, homicides and accidents.

In our study, males outnumbered females, contributing 58.6% and 41.4% respectively. Similar findings were observed in the study done by Chaurasia N et al[10] (males: 60.89% and females: 39.11%), Reddy SP et al[11] (males: 59.14% and females: 40.86%) Bakkannavar[12] (males: 63% and females: 37%) and Firoz Ahmed et al[13] (males: 61.9% and females: 38.1%).The high incidence among the males may be due to their lifestyle which causes them to confront dangers without thinking that death may result. Males being natural breadwinners of the family are expected to be outdoors most of the time and therefore more exposed to the danger of violence and accidents.

In the present study, a maximum of 49.14% victims were unemployed, followed by students i.e. 26.72% and 24.14% were service holders. Low level of education of the victims found in the study is correlated with the fact that victims either remain unemployed or competition for the job is one of the major anxiety factors among them. Committing suicide is also high, poverty and struggles for survival being the main reason for increasing the incidence of suicide.

In the present study, it was observed that hanging was the commonest method used in deaths due to asphyxiation in our study accounting to 50.86% which was in agreement with the studies done by Chaurasia N et al[10] (52.21%), Reddy SP et al[11] (61.19%) and Sharma BR et al[14] (56.3%). The victims of hanging preferred outside their home for their violent act in this study.

In this study, of all the total asphyxial deaths, suicidal deaths was found to be the highest, followed by accidental and homicidal deaths.

Hanging as the method of suicide, was found to be more prevalent among all suicidal deaths, the reason being it is painless, materials required are easily available, a wide range of ligatures can be used and has a very high mortality rate. Out of the 43 cases of drowning, 42 were accidental and only 1 was homicidal in nature and all the cases of strangulation and smothering in this study were homicidal which is similar with the findings of Lalwani S et al[7], Chaurasia N et al[10], Davidson A et al[15], Majumder BC[16], Azmak D[17], Kanchan T et al[18].

CONCLUSION

Medico legal autopsies not only give the cause and manner of death but also provide an important statistical data related to legal incidents in the region. Asphyxial deaths accounted for 14.4% of the total studied cases. The most common asphyxial death is hanging followed by drowning. Males were commonly involved than females. Most common age group for such type of death is 20-30 years. Hanging type of death was generally found to be of suicidal manner . Suicidal deaths as a result of hanging and accidental deaths as a result of drowning seems to be the major contributing causes of asphyxial deaths. Both these manner of deaths indicates frustration and carelessness on the part of population. Measures to improve in the fields of education, health, increase in employment opportunities are expected to lessen

the existing stress and strain of the society.

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