

ORIGINAL ARTICLE

Analysis of Violent Asphyxial Deaths in Lahore

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ABSTRACT

The term asphyxia is used to describe a condition in which the supply of oxygen at the level of mouth, nose, neck or chest externally or to blood and body tissues internally is reduced by any interference with respiration. A retrospective study was conducted in Forensic Medicine and Toxicology Department of King Edward Medical University, Lahore from January 2012 to December 2013. The aim of the study was to determine the incidence of asphyxial deaths in Lahore. During this period, out of 1686 medico legal autopsies conducted, 67 deaths were caused by violent asphyxia having incidence of 3.98%. There were 37 males (55.2%) and 30 females (44.8%). Highest incidence was seen in age group 21-30 years (41.8%). Male predominance was seen in all asphyxial deaths except strangulation. Strangulation (41.8%) and hanging (35.82%) were the leading causes of asphyxia deaths. Homicidal deaths (59.7%) were most common followed by suicidal (35.82%) and accidental deaths (4.48%) respectively. A well designed comprehensive program is required to identify the causative factors and prevention of suicidal behaviors

Key words: Violent asphyxial deaths, hanging, strangulation, homicide, suicide

INTRODUCTION

Violence has been an integral part of the human civilization since its inception. In this modern era the crime and violence is claiming a great proportion of human lives. In spite of advancing civilization, killing self or someone is so easy in these days.

Asphyxia is derived from Greek word which literally means pulselessness. However in forensic practice, asphyxia denotes a condition in which the supply of oxygen to the blood and body tissues is reduced appreciably below the normal working level by any interference with respiration¹. In forensic context, asphyxia is usually obstructive in nature, where some physical barrier prevents access of air to the lungs. This obstruction can occur at any point from the nose and mouth to the alveolar membranes². Violent asphyxial deaths are classified as Hanging, Drowning, Strangulation, Suffocation and Traumatic asphyxia. The hanging and drowning are commonly seen in suicidal cases while strangulation including throttling is usually homicidal. In addition to these, accidental compression or trauma to the chest that prevent respiratory movement is also one of the causes of violent asphyxial deaths³. Hanging is one of the leading methods of suicide in which there is suspension of body by a ligature compressing the neck externally, the constricting force being the weight of the body⁵. In England and Wales,

hanging accounts for about 2000 deaths each year and is considered the most common method of suicide⁶. In United States of America, 92.3% of all cases of suicides were caused by firearm, hanging and poisoning⁷. Strangulation is a form of violent asphyxia caused by constricting the neck by some means, the force of constriction being other than that weight of victim's body. Depending upon the means used, strangulation can be of several types including ligature strangulation, manual strangulation (throttling), mugging, bansdola, garroting and palmer strangulation⁸. Strangulation is a common form of murder and is always presumed to be homicidal unless proved otherwise⁴. Drowning results from immersion in a fluid and inhaling it. Medium of drowning is usually water but at times a person may drown in other media like oil, dye or chemical solution⁹. Death due to drowning is common globally. Studies by United Nation's World Health organization have shown that throughout the region of South Asia, about 90,000 people drown every year. Most of the South Asian countries have higher drowning death rates than the world average¹⁰. Fatal accidental or homicidal smothering as a result of occlusion of external air passages i.e. nose and mouth is commonly seen in infants or young children though the old, weak, debilitated adults, epileptics and person under intoxication may be smothered. There may be no finding at autopsy if a soft pillow,

cloth or cushion is used even in cases of homicide. Careful examination, interpretation of history and crime scene observation may be rewarding in such cases and avoid miscarriage of justice¹¹. Another form of asphyxial death is Traumatic asphyxia” or “Crush asphyxia” which is associated with prevention of respiratory movements due to compression of, or penetrating trauma to the chest¹². Traumatic asphyxia is mostly accidental. Very little work has been carried out in Pakistan to evaluate different forms of violent asphyxial deaths. Studies conducted in Faisalabad and Karachi on suicidal deaths has reported hanging as the leading cause of suicide.^{13,14}. This study will help us to analyze the different patterns and manners of asphyxial deaths among the population of Lahore.

MATERIAL AND METHODS

This retrospective study was conducted over a period of 2 years from 2012 to 2013 at Forensic Medicine & Toxicology department, KEMU Lahore. During this period out of 1686 medico legal autopsies conducted, 67 deaths were caused by violent asphyxia. Data was collected from police papers, statements of relatives, postmortem

reports and chemical examiner reports. The findings regarding the number of cases, age, sex, manner and different types of asphyxial deaths were recorded on predesigned printed proforma. Data thus collected was tabulated and statistically analyzed on SPSS version 18.

RESULTS

The total numbers of medico legal autopsies conducted during the study period were 1686, out of which 67 cases were of asphyxial deaths, having incidence of 3.98% (Table 1). 37 cases (55.2%) were of males while 30 cases (44.8%) were of females. The highest incidence was noted in age group 21–30 years (41.8%), followed by 11–20 years (17.91%) and 31–40 years (13.43%) respectively. (Table 2, Figure 1).

There were 40 cases of homicide (59.7%) followed by suicidal (35.82%) and 4.48% accidental deaths (Table 3, Figure 2). Among different types of asphyxial deaths, strangulation was the most common with 28 cases (41.8%) followed by hanging 24 deaths (35.82%). Drowning was third common type involving 14 cases (20.9%) seen in both the sexes. (Table 4, 5; Figure 3)

Table 1: Incidence of violent asphyxial deaths

Total number of autopsies conducted	Violent asphyxial deaths	Percentage of asphyxial deaths
1680	67	3.98%

Table 2: Sex and age wise distribution of asphyxial deaths

Age Groups	Male	Female	Total	Percentage%
< 10 years	4	3	7	10.44
11-20 years	4	8	12	17.91
21-30 years	14	14	28	41.80
31-40 years	6	3	9	13.43
41-50 years	7	1	8	11.94
51-60 years	2	0	2	2.98
> 60 years	0	1	1	1.50
Total	37	30	67	100

Table 3: Manner of asphyxial deaths

S. No	Manner of asphyxial deaths	Cases	Percentage%
1.	Homicidal	40	59.70
2.	Suicidal	24	35.82
3.	Accidental	3	4.48
4.	Total	67	100

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Table 4: Types of asphyxial deaths

S. No	Type of asphyxial deaths	Cases	Percentage%
1.	Strangulation	28	41.80
2.	Hanging	24	35.82
3.	Drowning	14	20.90
4.	Smothering	1	01.48
5.	Traumatic asphyxia	0	00.00
6.	Total	67	100

Table 5: Gender distribution in asphyxial deaths

S. No	Types of asphyxial deaths	Male	Female	Total
1.	Hanging	17	7	24
2.	Drowning	9	5	14
3.	Strangulation	10	18	28
4.	Smothering	1	0	1
5.	Traumatic asphyxia	0	0	0
6.	Total	37	30	67

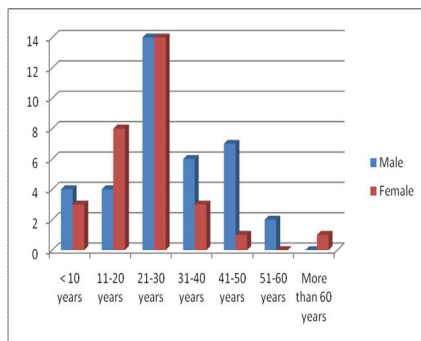


Figure 1:

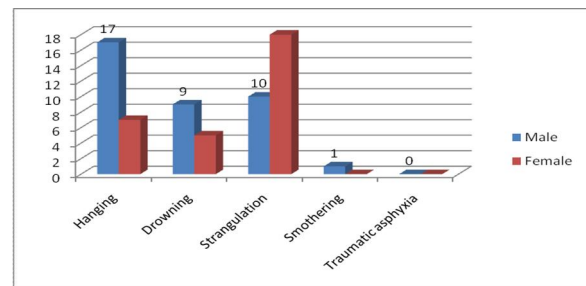


Figure 4

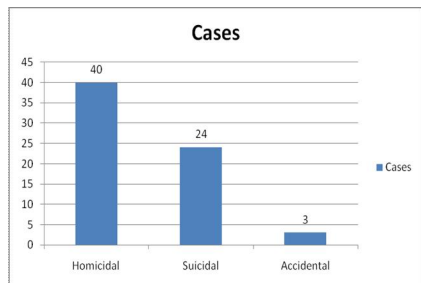


Figure 2:

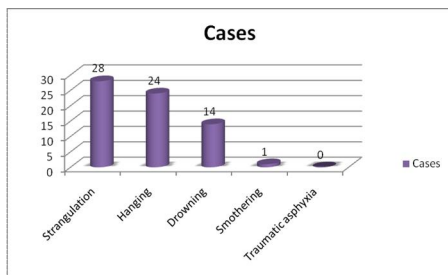


Figure 3

DISCUSSION

The incidence of violent asphyxial deaths found in our study is 3.98% which is in accordance with a study conducted by Gargi et al i.e 3.9%¹⁵. However, it is lower than the studies conducted by Tirmizi et al (7.08%)¹⁶ and Singh A et al (5.26%)¹⁷. A study conducted in Turkey has also shown higher incidence of asphyxial deaths (15.7%)¹⁸. This might be due to longer duration of study period of 21 years. In our study predominance of violent asphyxial deaths was seen in age group 21–30 years (41.8%) and then in 11–20 years (17.91%) which is consistent with studies by Tirmizi et al¹⁶ and Sharma et al¹⁹. Our study showed female predominance in deaths caused by strangulation which is in contrast with a ten year study conducted in Delhi showing male predominance²⁰. This can be due to the reason that females are weak and offer least resistance. Death due to drowning has shown considerable male predominance in our study (64.28%). Similar

trend has been observed in other studies^{21,22}. Hanging, as the method of choice for suicide, was found to be more prevalent among males (70.83%) as compared to females (29.17%). This finding was similar to a study conducted by Maqsood M et al.²³.

Suicidal manner of death was found in all cases of hanging while all accidental deaths were due to drowning. An autopsy based study in South Delhi by Department of Forensic Medicine, All India Institute of Medical Sciences has also reported hanging as leading method of suicide²⁴. In our study, ligature and manual strangulation is found to be homicidal in all cases. Most of the studies conducted in various countries reported strangulation as common method of homicide particularly practiced among women and young children thus consistent with our findings²⁵.

CONCLUSION

Strangulation and hanging are leading types of violent asphyxial deaths. Hanging and drowning show male predominance while strangulation reveal female predominance. Males and younger age group population between 21-30 years are more vulnerable victims of violent asphyxia deaths. Suicidal deaths as a result of hanging seem to be the major contributing cause of asphyxial deaths.

Lahore is a thickly populated city of Pakistan, so the number of medico legal deaths has increased tremendously. Violence in this city has also increased. This alarming situation is seeking attention particularly from those who handle and investigate these deaths on scientific basis. Appropriate measures to rectify socio economic disputes, familial conflicts, sexual jealousy and literacy status may prove beneficial to reduce the frequency of violent deaths in near future. A well designed comprehensive programme is required to identify the causative factors and prevention of suicidal behaviors.

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