

ORIGINAL ARTICLE

A Post-Mortem Medicolegal Study of Asphyxial Deaths: An Autopsy Based Study

ABDUL MAJEED MEMON¹, SONO MAL², INAYATULLAH MAGSI³, AISHA KHALID⁴, SADIA ABDUL QAYYUM⁵, HAFIZA NAIMA ANWAR⁶, ABDUL SAMAD⁷, EJAZ AHMED AWAN⁸

¹Senior Demonstrator, Department of Forensic Medicine, Suleman Roshan Medical College, Tando Adam, District Sanghar, Sindh, Pakistan

²Associate Professor, Department of Forensic Medicine, Sindh Medical College, Jinnah Sindh Medical University, Karachi

³Assistant Professor, Department of Forensic Medicine and Toxicology, Chandka Medical College/SMBBMU, Larkana

⁴Assistant Professor, Department of Forensic Medicine and Toxicology, Liaquat University of Medical & Health Sciences, Jamshoro

⁵Assistant Professor, Department of Forensic Medicine, Liaquat National Hospital and Medical College, Karachi

⁶Assistant Professor, Department of Forensic Medicine, Shahida Islam Medical Complex Lodhran

⁷Assistant Professor, ⁸Associate Professor & Chairman, Department of Forensic Medicine & Toxicology, PUMHSW, Nawabshah, District (SBA), Sindh, Pakistan

Correspondence to: Dr. Aisha Khalid, E-mail: aeshakhalid@yahoo.com Cell: 0300 3019419

ABSTRACT

Objective: To assess the medicolegal causes of asphyxial deaths in tertiary care hospital of Hyderabad, Sindh, Pakistan.

Study Design: Descriptive, observational and retrospective

Place and Duration of Study: Medicolegal Section of Liaquat University Hospital Hyderabad from 1st January 2015 to 31st December 2019.

Methodology: Two hundred and nineteen patients were retrieved and died due to other reasons were excluded from the study while no any patient's age and gender restrictions.

Results: There were 157 males and 62 females. Sixty six patients of asphyxial belonged to age 39-48 years. Among 74 patients of suffocation, 51 patients were males and 23 were females. There are 5 reported reasons of asphyxial deaths. Out of 45 hanging patients, 5 patients belonged to 18-28 years, 8 patients belonged to 29-38 years, 9 patients belonged to 39-48 years, 6 patients belong to 49-58 years and 15 patients belonged to ≥ 59 59 years.

Conclusion: Male is the most vulnerable victim of the violent asphyxial deaths. The major contribution in the suicidal deaths is dominant by the hanging and strangulations. The manner of deaths indicates the frustrations and carelessness of the majority of the population. The social awareness and helpfulness contributed by the awareness sessions and education on Individual levels is encouraged for such cases.

Keywords: Asphyxial, Post-mortem, Medicolegal causes

INTRODUCTION

The deaths occurring due to the ceased respiratory functions and failure of other body systems is called deaths due to asphyxia deaths.¹ The exchange of atmosphere in alveoli and lungs is prevented during the ceased respiratory systems, hence the lungs lack the oxygen supplying tissues in that case.²

The unnatural deaths include the various sequels of traumatic body injuries, assaulting with sharp weapons, the bomb blasts, neck or arms compressions, suicidal attempts and homicidal deaths.³ The violent asphyxial deaths with strangulations, throttling, hangings chokings, drowning and asphyxial deaths are the manners of suicides. According to a USA report the 93.2% of suicides occurred by poisoning, and hanging⁴

The Canadian report says the hanging is second most common suicidal method while suffocation remains the first cause.⁵ The drowning could be explained by asphyxiation that occurs by submersion in a water or liquid.⁶ The asphyxiation is a severe level of hypoxia that leads to hypoxemia and hypercapnia followed by loss of consciousness leading to deaths. According to estimation in 2008 the World health organization stated out of 305,929 deaths worldwide the 27,216 deaths were caused by drowned.⁷

The significance of the autopsy in clinical practices is well accepted and recognized since the clinical autopsy

provides the relatives with the accurate information related to deaths with feedbacks, diagnosis and the treatment, thus making the clinical autopsy a tool of quality control in health care system.⁸ The significant discrepancies of clinical autopsy include the major diagnosis as (class-1).⁹ After the diagnosis of such discrepancies the autopsy helps to improve the accurately in the deaths certificates along with the epidemiological database.¹⁰

The clinical autopsy involves the opening the cavities of body and dissection of body organism which is often unaccepted by families and relatives who have lost their important person. The autopsy also involves the consent of family which is difficult to obtain from families. The asphyxia death remains the common incident in the forensic practices while the manner of death is difficult to detect by autopsy.¹¹ The clinical autopsy plays the major role in solving the cases of investigational deaths. The main objective of the study was to assess the medicolegal causes of asphyxial deaths in an institution.

MATERIALS AND METHODS

This descriptive, observational and retrospective study was conducted at Medicolegal Section of Liaquat University Hospital Hyderabad from 1st January 2015 to 31st December 2019. Two hundred and nineteen patients were retrieved. Those patients who were died due to other reasons were excluded from the study while no any

patient's age and gender restrictions. Those patients who were died due to other reasons were excluded from the study while no any restrictions for age and gender.

RESULTS

There were 157 (75.9%) males and 62 (24.1%) females and 66 asphyxial patients were belonged to 39-48 years and 49 patients were belonged to age 49-58 years (Table 1). There were 6% of patients were categorized due to asphyxial deaths (Fig. 1).

Forty three patients were due to hanging, 28 were due to drowning, 39 were due to strangulation, 35 were due to throttling and 74 were due to suffocation (Table 2). There are 5 patients of asphyxial deaths. Regarding cause of death according to gender, in 45 hanging patients, 35 males while 8 females. Moreover, 8 drowning patients and 15 male patients while 13 female patients, 39 strangulation patients, 29 males and 10 female, 35 throttling patients, 27 males and 8 females. Seventy four patients have suffocation, among 51 males and 23 females (Table 3). Regarding cause of death according to age, in 45 hanging, 5 patients belonged to 18-28 years, 8 patients belonged to 29-38 years, 9 patients belonged to 39 to 48 years, 6

patients belonged to 49-58 years and 15 patients belonged to ≥59 years. In 28 drowning patients, 6 from 18-28 years, 5 patients from 29-38 years, 7 patients from 39 to 48 years and 5 patients from 49-58 years (Table 3)

Table 1: Demographic information of the patients (n=219)

Gender	No.	%
Gender		
Male	157	75.9
Female	62	24.1
Age (years)		
18-28	23	10.5
29-38	45	20.5
39-48	66	30.2
49-58	49	22.4
≥ 59	36	16.4

Table 2: Reasons of asphyxial death (n=219)

Reason	No.	%
Hanging	43	19.63
Drowning	28	12.78
Strangulation	39	17.80
Throttling	35	15.98
Suffocation	74	33.80

Table 3: Causes of asphyxial death according to gender and age

Variable	Hanging (n=43)		Drowning (n=28)		Strangulation (n=39)		Throttling (n=35)		Suffocation (n=74)	
	No.	%	No.	%	No.	%	No.	%	No.	%
Gender										
Male	35	81.39	15	53.57	29	74.35	27	77.14	51	68.91
Female	8	18.61	13	46.43	10	25.65	8	22.86	23	31.09
Age (years)										
18-28	5	11.63	6	21.42	4	10.26	3	8.57	5	6.76
29-38	8	18.60	5	17.85	7	17.94	9	25.71	16	21.62
39-48	9	20.93	7	25.0	10	25.64	15	42.86	25	33.78
49-59	6	13.95	5	17.85	11	28.20	5	14.28	22	29.72
≥59	15	34.88	5	17.85	7	17.94	3	8.57	6	8.11

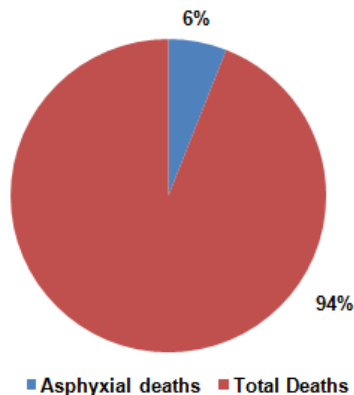


Fig. 1: Rate of asphyxial deaths

DISCUSSION

The demographic detail of our study showed that 75.8% were males and 24.1% were females similarly found in a study.¹¹ Another study reported the 69.1% males and female cases were 30.9% which also supports the findings of our study.¹² Our study showed the manners of deaths as hanging cases with respect to age the majority of cases 34.8% were more than the age of 58 years, similarly the deaths due to hanging were found around 38.1%.¹³

Moreover, the clinical autopsy improves the medical knowledge by providing the evidence-based findings, and source of additional biomedical research such as, obtaining the true impressions of normal and pathologically effected tissues.¹⁴

In spite of all the mentioned benefits and support to clinical autopsy in literature, the clinical autopsy rate has been on the declined position in past few decades.¹⁵ The manners of deaths comprised of hanging were found more in above the age of 60 years and above. The cases of drowning were found in 12.7% cases which showed the accordance with the study conducted showing almost similar findings. The cases of strangulations were found among 17.8% the throttling was 15.9%, followed by deaths due to suffocations were reported by 33.8% almost similar pattern of deaths were reported by the study.¹⁶

The autopsy with the evidence based diagnostic technologies in the modern medicines is well recognized yet, there are some divergences in the clinical diagnosis and post-mortem finding. The causes of deaths detected by autopsy may require the circumstantial evidences including the police inquiries, investigation of crime location for the eventual diagnosis and final report. The gender wise distribution was also been analyzed as part of study. The hanging cases were 81.3% among males, and females were 18.6% which is also similar to the study.¹⁷ The pattern

of gender in cases of suffocations the 68.9% were males, and 31% were females which slightly differs from the findings of a study.¹⁸ The throttling cases out of 35 total cases 77.1% were males, and 22.8% were females similarly shown in a study.¹⁹ Majority of study showed the involvement of males were more in all cases. The major involvement of male gender might be due to strenuous physical activities and work environment disasters.²⁰

The study reflects the predominance two major types of asphyxia deaths smothering and strangulation in males, compared to other type of violet asphyxia deaths. All of this evidence is similar to the findings of a study conducted by Chand et al²¹ the suicidal manners of deaths were reported by drowning 17.8%. Most of the studies conducted on asphyxia deaths reported the cases of strangulation similarly in males and young adults.²²

CONCLUSION

The males are the most vulnerable victim of the violent asphyxia deaths. The major contribution in the suicidal deaths is dominant by the hanging and strangulations. The manner of deaths indicates the frustrations and carelessness of the majority of the population. The social awareness and hopefulness contributed by the awareness sessions and education on Individual levels is encouraged for such cases.

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