ORIGINAL ARTICLE

Spectrum of Medico-Legal Deaths at Sheikh Zaid Hospital Lahore: A Retro-Spective Study

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ABSTRACT

Medico-legal cases have increased in globally due to the acts of terrorism using weapons, poisons and other means resulting in tragic death.

Purpose: To determine the frequency, causes and manners of medico-legal autopsies in a tertiary care hospital in relation to age of victims.

Study Design: Retrospective study.

Methodology: Patients (n=186) were enrolled in present study held at Forensic department, Sheikh Zaid Hospital, Lahore-Pakistan. Cases were included irrespective of the age and gender in present study.

Statistical analysis: Data analyzed by SPSS 22.0v.

Results: Data showed almost 68% males while 32% females. There was correlation between age & cause of death by Asphyxia. In present study, main cause of death due to weapon turned out to be firearm (55%) followed by blunt objects (15.5%).

Conclusion: Mostly young males of our population were involved in medico-legal cases and criminal activities with homicidal and accidental deaths. Major cause of death remained to be firearms.

Keywords: Autopsy, Manner of Death and Cause of Death.

INTRODUCTION

Autopsy or postmortem examination is a special examination of dead victim taken under the laws of the State in-order to protect its citizens and to identify the guilty as a cause of unnatural deaths.[1] Mostly cause of death seems obvious as in accidental deaths leading to mechanical injuries. It is crucial to have knowledge regarding underlying cause as well as the immediate cause and manner of death. Cause of death is a factor which produces an effect or its a combination of factors invariably resulting in an effect.[2]

"Gold standard" in the determining the cause of the death is clinical autopsy. Forensic autopsy is needed in suspected cases like suicide, homicide, accidental deaths or among drug abusers.[3] Any injury leading to death is 'cause of death'. Studies have shown that in around 1/3rd deaths the presumed cause of death is later found wrong.[2]The spectrum of medico legal deaths embrace all unnatural deaths (homicidal, suicidal or accidental) as well as suspicious deaths. Those deaths that occur in custody, mental asylums or natural deaths need inquiry under the law of the land. Homicide is killing of a human by another human. According to the Pakistani Law, it is a murder.[2] Major pattern of deaths include use of weapon, strangulation or hanging, drowning, burns and use of poison.[4]

Due to increasing urbanization, number of medico-legal cases are on the rise globally. Factors contributing to it involve poverty, un-employment, terrorism, drug addiction, economic crises and illiteracy leading to its burden on society. In developing nations economic crises is a major contributor.[5,6] As suggested by previous works that young offenders are becoming increasingly violent and this is a cause for concern, as they are future of any nation.[2] Literature review showed that in many studies, causes of death revealed after autopsies were cardiovascular and cerebro-vascular lesion in around 40% and 20% among all, respectively. According to one estimate, greater than 30%, wrong declaration regarding cause of death were made before autopsy.[5] As per legal procedure in Pakistan, all medico legal cases are investigated by the police/ magistrate and final declaration by courts.[2] The investigators require some important clues by forensic experts regarding cause, manner and time since death. This all is achievable only with a detailed autopsy procedure.[1,7]

In the light of increasing load of crime and deaths in our society but due to limited resources, this medico-legal aspect of investigation remained unrevealed. Hence, we planned current project to determine the frequency, causes and manners of medico-legal autopsies in a tertiary care hospital in relation to age of victims.

Objective: To determine the frequency, causes and manners of medico-legal autopsies in a tertiary care hospital in relation to age of victims.

Methodology: Patients (n=186) were enrolled in present study held at Forensic department, Sheikh Zaid Hospital, Lahore-Pakistan. Cases were included irrespective of the age and gender of 5 years in present study. The data was collected on written Performa from the records of Forensic medicine, Sheikh Zaid hospital, with permission of the authorities. Autopsy cases in which cause of death was determined either by external and internal examination or by histological examination / chemical analysis of viscera were also included in this study. Partially decomposed, advanced decomposed or skeletonized bodies, with no

internal or external injuries sufficient to cause death and histological and toxicological reports failing to reveal any abnormal findings, were included in the study. Age, gender, cause of death and manner of death with regions affected were noted.

Statistical Analysis: Data analyzed by SPSS 22.0v. Parameters including gender, cause of death and manner of death was expressed as frequency and percentages. Quantitative data was expressed as mean ± SD. Spearman's rho Tests of Correlation was applied and p-value <0.05 was in use as significant.

RESULTS:

Cases with respect to the age, cause of death, gender and manner of death were seen on forensic autopsy. Various causes of death like through weapons, asphyxia and poisoning were shown in table-1.

Table1: General parameters linked with autopsy cases

	Categories	Frequencies	Percentage
Age	<20	28	15%
	20 to 30	62	33%
	30 to 40	26	14%
	40 to 50	14	8%
	50 to 60	20	11%
	>60	20	11%
Gender	Males	120	67.9%
	Females	66	32.1%
Manner of Death	Suicidal	30	16.1%
	Homicidal	86	46.5%
	Accidental	70	37.42%
Cause of Death	Weapon	103	55%
	Asphyxia	12	6.4%
	Poisoning	1	0.54%
	Drowning	4	2.15%
	Burn	2	1.08%
	Road traffic accident	14	7.53%
	Cause unknown	64	34.41%

Data was stratified for age with gender. Data showed almost 68% males while 32% females as shown in table-2.

Table-2: Stratification Of Age with Gender

	Categories	Gender	Frequencies	Percentage
Age (years)	<20	Males	22	11.8%
		Females	6	3.2%
	20 to 30	Males	39	20.9%
		Females	19	10.2%
	30 to 40	Males	18	9.6%
		Females	6	3.2%
	40 to 50	Males	11	5.9%
		Females	2	1%
	50 to 60	Males	13	6.9%
		Females	4	2.1%
	>60	Males	17	9.1%
		Females	0	zero

As p-value in Spearman's rho Tests of Correlation is 0.023 so it was concluded that there was correlation between age & cause of death by Asphyxia as shown in table-3.

As p-value in Spearman's rho Tests of Correlation is 0.250 which is greater than 0.05, so it was concluded that there was no correlation between age & manner of death as depicted in table-4.

Table-3: Correlation between Age & Cause of death by Asphyxia

Correlations		Age	Cause of death by Asphyxia
Age	Pearson Correlation	1	.267*
	Sig. (2-tailed)		.023
	N	169	72
Cause of death by Asphyxia	Pearson Correlation	.267*	1
	Sig. (2-tailed)	0.02*	
	N	72	76

*Statistically significant

Table-4: Correlation between Age & Manner of death

	Correlations		Age	Manner of Death
Spearman's rho	Age	Correlation Coefficient	1.000	.117
		Sig. (2-tailed)	.	.250
		N	169	99
	Manner of Death	Correlation Coefficient	.117	1.000
		Sig. (2-tailed)	.250	.
		N	99	101

Sample data showed a minor difference in the mean scores of the cause of death by weapon in area wise. It showed that in area wise there is more cause of deaths by fire arm rather than other ones as shown in table-5.

Table-5: ANOVA for Area & Cause of Death by Weapon

		Frequency	Mean±S.D
Cause of Death	Blunt	29	2.10±0.72
	Sharp	11	1.91±0.71S
	Fire arm	63	1.64±0.69
	Drowning	4	1.25±0.5
	Burn	2	2.00±0.00
	Road traffic accident	14	2.4±0.92

DISCUSSION

"Gold standard" in the determining the cause of the death is clinical autopsy. Forensic autopsy is needed in suspected cases like suicide, homicide, accidental deaths or among drug abusers.[3,8] Any injury leading to death is 'cause of death'. Studies have shown that in around 1/3rd deaths the presumed cause of death is later found wrong.[2,3] Age was further stratified into groups as shown in table-1. This showed that most of the cases (n=62) in data belonged to 20-30 age group i.e young people and majority were male cases (table-2). Similarly, one previous study conducted in 2013 at Pakistan showed that Almost 47.3% victims were young ranging 19-32 years of age.[1] This data showed that mostly young males of our population were involved in medico-legal cases and criminal activities with homicidal and accidental deaths. These incidents are due to socio economic crisis of the young population, leading to even suicidal deaths of rape victims. Steps should be taken to

control the criminal activities of our young populations.[9] In present study, almost 46.5% cases were homicidal followed by accidental cases (37.4%) in present study. Minimum number of suicidal cases were reported (16.1%). In a local study of Multan, Pakistan done on homicidal deaths, around 400 cases of autopsies were studied, and around 70% were homicidal cases with male dominance and of the age of 40-60 years.[4] Similarly, one previous study conducted in 2013 at Pakistan showed that homicidal cases (54%) were in majority while suicidal were minimum (5.4%).[1] Paradoxically, one previous work depicted that manner of death was accidental 62%, suicidal (31%) and homicidal 7% respectively in their study.[7]In present study, main cause of death due to weapon turned out to be firearm (55%) followed by blunt objects (15.5%). In many previous studies held locally showed similar results.[2] One study reported that in their study, firearm was the most predominantly used weapon in 69.78% of the victims, followed by sharp weapons at 11.18%.[10] Paradoxically, in one study, autopsies reported that commonest cause was death due to mechanical factors (53%), and asphyxia (24.7%).[5] In a similar study done on mothers, analysis of the data of autopsies done to find the cause of maternal deaths showed that the cause of death was determined after autopsy and it was compatible with clinical diagnosis in around 60% cases, only. In our study we couldn't find data regarding the clinical diagnosis and clinical etiology cause of death.[6] A study held at Faisalabad showed that manner of death couldn't be determined in 14% autopsies in their study.[7] Similarly, in present study, 34.1% cases remained unknown leading to high burden of unrevealed cause of death. In present study, it was concluded that there was correlation between age & cause of death by Asphyxia but no correlation was seen between age and manner of death. Similar results were obtained in study by one researcher who concluded that young age was linked with illegal firearms cases.[10] Hence, due to increasing trend of crime among our society, proper awareness campaigns should be carried out along with preventive-strategies to keep people safe and to avoid lethal assaults.[11-13]

Limitations: Present study had number of limitations like small sample size, financial constrains and limited resources Cause of death remained unleashed in 34% cases.

CONCLUSION

This study concluded that the cause of death remained undetermined in around 1/3rd autopsies emphasizing that steps required in-order to improve performance of forensic departments. Mostly young males of our population were involved in medico-legal cases and criminal activities with homicidal and accidental deaths. Major cause of death remained to be firearms.

Author's Contribution: FT & SS: Overall supervision, write up and literature review. KM & SS: Statistics application analysis literature review, help in write up. SN, HR & TL: Literature review help in write-up.

Acknowledgements: I am thankful to Allah and my colleagues who made it possible for me.

Conflict of interest: None
Funding: None

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