



Original Article



Decoding Demise: A Comprehensive Analysis of Unnatural Deaths in Rahim Yar Khan

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ABSTRACT

A medico-legal autopsy is a systematic examination of a deceased body conducted under the law of the state to determine the cause, and manner of death and to verify or dismiss any potential involvement of foul play related to the deceased. **Objective:** To assess the spectrum of unnatural deaths in the district of Rahim Yar Khan. **Methods:** This retrospective descriptive study was done at the Department of Forensic Medicine and Toxicology, Sheikh Zayed Medical College, Rahim Yar Khan from 1st January 2021 to 31st December 2023. Variables were age, gender, cause and manner of death, weapon, and residence. All autopsies referred by police were included except hospital, police torture and custodial deaths, and putrefied or exhumed bodies. Data from police, hospital records, and autopsy reports were recorded on a pre-designed form. **Results:** There was male preponderance of 72.57% to female with 27.43%. In general, 78% of all deaths were homicidal, compared to 12% suicidal, 9% accidental and 1% remained undetermined. The 21-30-year age range is the most often afflicted group. Firearms as the leading cause of death followed by blunt objects, asphyxia and sharp weapons accounted for the majority of fatalities respectively. The instances involved 44.25% urban inhabitants as compared to 55.75% peri-urban ones. **Conclusions:** It was concluded that men accounted for the majority of unnatural deaths. The most common cause of death was murder. Guns and blunt weapons were the leading causes of death. Compared to the surrounding area, the city had a higher number of unnatural fatalities.

INTRODUCTION

Ultimately, we will all face death, no matter how much we try to escape it. Despite being inevitable, it is not easily accepted. Things get trickier when they aren't natural—that is when they go against nature's order or are brought about too soon as a result of harm, aggression, or poison [1]. A lower figure for the frequency of unnatural fatalities in a certain location indicates a secure, peaceful, and hospitable community, which in turn reflects the law and order situation in that area. Many fatalities across the world are supposedly caused by supernatural forces [2]. According to medical science, a person is considered to have died when the heart, lungs, and brain no longer pump blood throughout the body. "Manner of death" denotes the

circumstances or manner of death, such as accidental, homicidal, suicide, or others, whereas "cause of death" refers to the medical conclusion of what led to the individual's mortality. Injuries or poisoning are examples of unnatural causes of death, whereas diseases and ageing are common causes of natural death. Intentional injuries, such as those caused by murder or suicide, and accidental injuries, such as those sustained in car accidents, are two subsets of these exogenous variables [3]. The loss of a loved one has far-reaching consequences for those closest to them as well as for society as a whole, and suicide is one of the biggest killers on a global scale. An individual's risk of suicide increases due to a wide range of situations,



including, but not limited to, a history of depression, substance misuse, relationship failure, and community violence [2]. One person commits suicide in Pakistan per hour, with a daily rate of 15–35 suicides [3]. A homicide occurs when one person intentionally causes the death of another. When a person's demise is due to anything that was not anticipated, it is referred to as an accidental death. When a person knowingly and voluntarily ends their own life, it is referred to as a suicide. Lack of clear results from toxicological tests and autopsies has left several unexplained deaths unsolved. Unexpected death rates are an indicator of the mental and social health of a society. The purpose of conducting a medico-legal inquiry into death is to determine responsibility and provide punishment in many nations. The results of a death inquiry are useful for more than just filling gaps in understanding; they are also essential for public health monitoring, epidemiological research, and enhancing community safety [4]. Conclusive toxicological testing or indecisive physical examination on autopsies leave many unexplained deaths unsolved. It is socially stigmatizing to die from certain causes, such as suicide or violent crimes, and the prevalence of unexpected deaths is an indication of the mental and social health of a society. The goals of justice and offering comfort to the grieving family and the society at large are achieved in most nations through medico-legal investigations into deaths that determine blame and appropriate punishment. As a society, we must prioritize this for the sake of peace, justice, and the prevention of crime. A medico-legal inquiry is required if it is known or suspected that an unnatural cause contributed to a death [5]. A police or magistrate inquiry, followed by a court review, is necessary in the event of an unexplained death in Pakistan. Licensed medical experts perform autopsies at public hospitals and other government-run facilities. If you want to know what killed someone, you need an autopsy. The method of death explains the process by which an illness or injury causes death and can be either natural, accidental, suicide, homicidal, or undetermined [3]. Deaths by suicide, animals or equipment, accidents, torture or ill-treatment, occupational illnesses, alleged medical malpractice, strange or unnatural deaths, fatalities after surgery or anesthesia, and bodies that cannot be recognized or have only their skeletons preserved are all examples of this [6]. Authorities such as police, magistrates, coroners, or medical examiners conduct inquests to collect evidence regarding a death. The police will safeguard the area and collect evidence on criminal charges. When a person dies in a murder, the medical examiner orders an autopsy to establish the cause of death. This can provide light on any circumstances surrounding the death, such as whether it was a suicide, an accident, an act of violence, or a crime.

The use of both police and magistrate inquests is commonplace in Pakistan. In situations concerning alleged medical negligence, violent deaths, unexpected or mysterious deaths, and issues about surgical or medical procedures, an inquest is conducted by an authorized official or a police officer from a specific station in conjunction with an investigation. In cases of death while in custody, magistrates investigate the circumstances surrounding the death [7]. Sheikh Zayed Medical College's Forensic Medicine Department conducts medico-legal autopsy in Rahim Yar Khan. Sitting at the crossroads of the Punjab and Sindh provinces, this city is a hive of activity. Like any major city, Rahim Yar Khan has its fair share of criminal activity, but residents there tend to feel safer than in other parts of Pakistan. Police personnel from several stations within the district's urban and peri-urban legal jurisdiction refer cases that need autopsies.

This study aims to investigate the circumstances surrounding a death that occurs suddenly or for no apparent reason.

METHODS

This retrospective descriptive study was done at the Department of Forensic Medicine & Toxicology, Sheikh Zayed Medical College, Rahim Yar Khan from 1st January 2021 to 31st December 2023 after getting approval with reference no. 87/IRB/SZMC/SZH. A total of 226 cases, where police had requested autopsies, were conducted by authorized medical officers /demonstrators of the Forensic Medicine Department. Data were collected from respective official Police records, FIRs and post-mortem reports and recorded on pre-structured proformas. It was categorized based on the type of manner of death, cause of death, age groups involved, gender, weapon, residence and year-wise number of cases. Non-probability purposive sampling technique was used. The sample size was estimated using a prevalence of 18%, a margin of error of 10%, and a confidence interval of 95%. Male and female cases of all age groups, from the area of Police stations under the Department of Forensic Medicine, Sheikh Zayed Medical College, Rahim Yar Khan were included. Cases killed in police encounters were excluded from this study. The autopsies were meticulously performed in the mortuary, involving a thorough physical examination, examination of clothing, external and internal body inspection, and required investigations. Various details such as age, sex, address, circumstances leading to death, findings from the autopsy, laboratory test results, and the final opinion were compiled into a single document. The data were entered and analyzed by using Statistical Package for Social Science (SPSS) version 26.0. Results for gender are presented by using frequencies and percentages. Age is described by mean \pm SD. All data for death are presented by years. Distribution of deaths by age,

and gender, by gender and residential status, by years and manners of death, and by years and cause of death are presented in tables with frequencies.

RESULTS

There were 164 (72.5%) male deaths more than female deaths 62 (27.43%) and the mean age was 3.84 ± 1.55 years (Table 1).

Table 1: Demographic Profile of Participants (n=226)

Gender	Number (%)
Male	164 (72.57%)
Female	62 (27.43%)
Mean Age (Years)	3.84 ± 1.552

The age range between 21-30 years showed more responses as compared to other age ranges. Total number of victims involved in the age range between 21-30 years is 28(26.5%)(Table 2).

Table 2: Comparison of Gender According to Age from 2021-2023 of Autopsies

Age (Years)	2021			2022			2023		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-10	4	6	10	1	1	2	3	1	4
11-20	6	4	10	1	1	2	14	-	14
21-30	8	12	20	10	4	14	24	4	28
31-40	16	2	18	10	4	14	8	10	18
41-50	8	2	10	8	6	14	14	-	14
51-60	3	1	4	7	5	12	3	1	4
>71	-	-	-	-	-	-	-	-	-
Total	49	29	78	38	22	60	72	16	88

It showed the peri-urban residents had more responses 126 (55.75%) as compared to urban cases 100 (44.25%) involvement of victims (Table 3).

Table 3: Sex-Based Demographic Distribution of Autopsies

Area	2021		2022		2023		Total
	Male	Female	Male	Female	Male	Female	
Urban	20	12	20	10	32	6	100
Peri-urban	34	12	20	10	42	8	126
Total	54	24	40	20	74	14	226

In unnatural deaths, the homicidal manner is leading with 160 (70.79%) cases, followed by suicidal 26 (11%) and accidental 12(5.3%). The cases which remained undetermined were 28(12.3%)(Table 4).

Table 4: Manner of Death in Autopsies

Year	Manner of Death				Total
	Homicidal	Suicidal	Accidental	Undetermined	
2021	58	6	2	12	78
2022	44	8	4	4	60
2023	58	12	6	12	88

Firearms are the leading cause of 66(29.2%) cases followed by blunt weapons with 48(21.23%) deaths and asphyxia with 28(12.38%) causes of death (Table 5).

Table 5: Causes of Death in Autopsies

Year	Cause of Death								Total
	Sharp	Blunt	Fire arm	Asphy-xia	Drow-ning	Poison-ing	Accident	Undeter-mined	
2021	12	18	22	4	-	6	2	12	78
2022	-	14	20	8	4	-	4	4	60
2023	10	16	24	16	4	-	6	10	88
Total	22	48	66	28	8	6	12	26	226

DISCUSSION

As per the World Health Organization, the term "cause of death" encompasses "all illnesses, abnormal conditions, or injuries that directly led to death or played a role in the occurrence of death, along with the circumstances of any accidents or instances of violence that led to such fatal injuries." The realm of mortality encompasses both natural and unnatural causes. An individual becomes a casualty of unnatural demise when they expire under circumstances beyond their control. Medico-legal (ML) autopsies are conducted at the behest of the investigating authority in cases of ML deaths [8]. There were 12 (5.31%) accidental cases, 160 (70.79%) homicidal cases, 26 (11.50%) suicides, and 28 (12.39%) the cause of death could not be determined. Among the 62 (27.43%) unnatural deaths of females, 8 (12.9%) were suicides, 50 (80.64%) were homicides, and none were accidental. This study also shows out of 226 medico-legal deaths, the majority of cases involved being killed by another person (homicide) followed by committing suicide and accidents in last. These findings are consistent with other studies showing that the leading cause of unnatural deaths is homicide and also demonstrate the dominance of gunshot deaths in medico-legal mortality [9]. The second most common manner of death in our study in contrast with the statistics shows that suicides are more prevalent in the US in comparison with homicide with a ratio of 3:1 [10]. According to the results of the current study, there were 164 male deaths (72.5%) more than female deaths 62 (27.43%), and the ratio of male to female deaths was 3:1. The male preponderance result is consistent with those of other authors [11, 12]. In general, distinct male domination in unnatural cases is likely the same as the result of a study done at Faisalabad [13]. Current findings are also in line with the findings of the study done in India [14] may be due to the same socio-economic conditions of both countries. It can also explain men's greater mobility, involvement in outdoor work activities, and travel in countries with similar socio-cultural values, which put them at greater risk than women. In this study, the victims' age group from 21 to 30 was the most severely affected 62 (27.43%). These results are similar to the studies of others that reported the highest rates of fatalities among this age group [12]. This can be because this age group is more energetic, emotional, and

autonomous in their childhood, exposing them to all kinds of harshness and stressors. The present study showed that a major portion of victims was found to be peri-urban inhabitants, in contrast with the study in which urban cases are more than in peri-rural areas. The study shows that 66 (29.20%) deaths were caused by firearms. This could be explained in a way that people in this region may consider firearms as status symbols and keep guns at their place of residence. In the context of Punjabi music, Sharma posits that the portrayal of guns and violence may contribute to the reinforcement of traditional gender roles, as men are often depicted as powerful and dominant through the use of firearms [15]. Availability of firearm weapons and lack of education suggests a relationship exists between the high rate of guns and gun ownership and the number of homicides, suicides and injuries [16]. In the United States, from 2020 to 2021, the percentage of homicides and suicides attributed to firearm injuries increased from 79% to 81% and from 53% to 55%, respectively, resulting in the highest percentage for homicide in more than 50 years and the highest percentage for suicide since 2001 [10]. The second most predominant cause of death is blunt 48 (21.23%), as a variety of blunt weapons are readily accessible and commonly cited in crime cases, including items such as walking sticks, hammers, pipe wrenches, wrecking bars, and heavy-duty flashlights [17]. Asphyxia is the third main contributor as the cause of death with 28 (12.38 %) which is quite similar to the study done at Rawalpindi [18]. The results of our study are in accord with the results of a study done in India where the cases of hanging were all suicidal and smothering, strangulation and throttling were homicidal. Among the cases of drowning, 89.28% were accidental and 10.71% were suicidal [19]. According to the study, 12 (5.3%) participants were killed in automobile accidents which is very negligible in contrast with the study in the same region in which accidents were the most significant cause of death constituting 63.27% [20]. Non-violent methods including ingesting pesticides, being poisoned by fumes, suffocation, and drug overdose made up only a small proportion of the study. Poverty can lead to living in unsafe environments, inadequate access to healthcare services, and increased exposure to risk factors such as substance abuse and violence. Education levels can also impact mortality rates, as higher education is often associated with better health knowledge and behaviours.

CONCLUSIONS

It was concluded that the leading causes of death in the study were found to be accidents, suicide, and violent crimes. At the same socioeconomic level, male mortality was greater. Shooting deaths were created by the media's and society's portrayal of guns and their accessibility and

significance. Victims of car accidents, suffocation, and sharp objects died in peculiar ways. South Punjab's road traffic accidents, poverty, and illiteracy all contribute to the region's high death toll, as predicted.

Authors Contribution

Conceptualization: QUAK

Methodology: QUAK, UM, MIP

Formal analysis: QUAK, UM, MIP, AS, SI, MA

Writing review and editing: UM, MIP, AS, MA

All authors have read and agreed to the published version of the manuscript

Conflicts of Interest

All the authors declare no conflict of interest.

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