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Demographic Profile of Unnatural Deaths; Autopsy Study at Tertiary Care Hospital of Southern Punjab

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ABSTRACT

Objectives: To illustrate the demographic profile of the victims of unnatural deaths with reference to gender, age, residential background, cause & manner of death to explore the trends of unnatural deaths in southern Punjab region for planning and implementing new strategies. **Study design:** Retrospective Study. **Settings & Duration:** Department of Forensic Medicine, Sheikh Zayed Medical College, Rahim Yar Khan for the period of three years (1st January, 2015 to 31st December, 2017). **Methodology:** The record of 138 autopsies conducted by the Department of Forensic Medicine, Sheikh Zayed Medical College, Rahim Yar Khan during the study period was examined in detail. The cases labeled as natural deaths by the hospital's authorities, intra operative deaths, exhumations and those died in police encounters / custodial deaths were excluded. Purposive non-probability sampling technique was used for collection of data. The information collected from police papers, hospital record & autopsy reports were entered on pre-designed performa and subsequently analyzed by using SPSS version-23. Ages, Gender, residential background, cause & manner of death were the variables of study. The frequency and percentage of these parameters with regard to year wise stratification was calculated. **Results:** Out of the total 138 cases autopsied during the study period of three years; 46(33.3%) autopsies were conducted in 2015 and 40(28.9%) postmortem examination were conducted in 2016 while 52(37.6%) cases were autopsied in 2017. Gender distribution showed male predominance involving (79.8%) males and (20.2%) females. Age group of 21-30 year was the most common victim of unnatural deaths involving 49(35.5%) cases. The extreme ages were least vulnerable to unnatural deaths and involved 6.5% cases of the age less than 10 years. Most significant cause of death was road traffic accidental in (63.27%) cases followed by drowning in (24.48%), railway accidents (6.1%) cases, electrocution (4.08%) and burn (2.04%) cases. As regard manner of death; Homicide was found more prevalent implicating (39.85%) cases while accident contributed in (35.5%) and suicide was responsible for (9.42%) cases of unnatural deaths while manner of death remained undetermined in (15.21%) cases. **Conclusion:** Males are the predominant victims of unnatural deaths probably due to social interaction and outdoor activities. Younger age group is the common victim of unnatural deaths. The most significant cause of death was trauma in road traffic accidents & the most prevalent manner of unnatural death was homicide; a measure of crime rate in the region. A significant number of deaths resulting from RTAs need proper reforms in terms of traffic regulation. Similarly, quality education & awareness, Law enforcement, financial / social supports are required to reduce the incidence of unnatural deaths.

Keywords: Demography, Autopsy, Unnatural deaths, Manner of death, Homicide, Accidental, Cause of death.

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INTRODUCTION

Death--whether we like it or not, it's coming for all of us. Although it is inescapable, cannot be gainsaid yet not accepted with ease. Situation becomes more difficult when it is not natural, i.e. against the order of nature or prematurely caused by injury, violence or poison.[1] The incidence of unnatural deaths in a particular area can depict its law and order situation hence its lower value is an indicator of a secure, peaceful & congenial society. All over the world, a significant number of deaths are claimed to be unnatural.[2]

Evaluation of natural causes of death is a matter of medical research while unnatural or suspicious cases are concern of the state, for which it uses the tool of medicolegal autopsy. The manners of death legally classified as natural and unnatural. Unnatural deaths are of accidental, homicidal and suicidal types.[1] The changing trends and attitudes of a society regarding the importance of life can be assessed by periodic analysis of the frequency, gender predominance, and vulnerable age of victims, pattern of causes and manners of deaths occurring in the society. Publication of such data is essential for the researchers and the government officials to formulate strategies for eradication of the causative factors. Hence, it was planned to study the demographic profile of unnatural deaths with special reference to the age, gender, causes & manner of death in the region of study & finding will be compared with those from other regions of Pakistan & international researchers to estimate the crime rate of region.[3]

METHODOLOGY

Study Design: Retrospective study.

Settings: Department of Forensic Medicine Sheikh Zayed Medical College; Rahim Yar Khan-Pakistan

Duration: 1st January, 2015 to 31st December, 2017.

Methods: The record of 138 autopsy cases conducted during the study period was examined in detail. Purposive non-probability sampling technique was used. The cases of intra operative deaths, exhumations & those died in police encounters / custodial deaths were excluded from sampling

frame. The information collected were entered on pre-designed performa and subsequently analyzed using SPSS version-23 and presented in tables / figures. Gender, age, residential status, cause and manner of death were the variables of study. Frequency and percentage of these parameters with regard to year wise stratification were calculated.

RESULTS

Total 138 cases were autopsied in three years; 33.3% cases in 2015 while 28.9% cases in 2016 and 37.6% cases were autopsied during year 2017. Gender distribution showed male predominance involving 79.8% males. During 2015, 86.9% males & 13% female were autopsied whereas 72.5% males & 27.5% females in 2016 while postmortem examinations were conducted on the corpses of 78.8% male & 21.1% females in year 2017. (Shown in Table-1)

Table 1: Gender distribution (n=138)

Gender	2015 Frequency (%)	2016 Frequency (%)	2017 Frequency (%)	Total Frequency (%)
Male	40 (86.96%)	29 (72.5%)	41 (78.8%)	110 (79.8%)
Female	6 (13.04%)	11 (27.5%)	11 (21.1%)	28 (20.2%)
Total	46 (100%)	40 (100%)	52 (100%)	138(100%)

People of younger age groups were the most common victims of unnatural death involving 49(35.5%) cases belonging to the age of 21-30 years. Although extreme of ages were the least vulnerable but lower extreme i.e. less than 10 years had the incidence of 6.5% and upper extreme having incidence of 2.8% in ages above 70 years. Results depicted in (Table-2).

Table 2: Involvement of age groups in unnatural deaths

AGE (Years)	2015	2016	2107	TOTAL
Less than 10	01	04	04	09 (6.5 %)
11-20	06	05	06	17 (12.3 %)
21-30	17	16	16	49 (35.5 %)
31-40	09	02	08	19 (13.7 %)
41-50	05	05	07	17 (12.3 %)
51-60	06	04	05	15 (10.8 %)
61-70	01	04	03	08 (5.7 %)
71-80	01	Nil	03	04 (2.8 %)
Total	**46**	**40**	**52**	**138 (100%)**

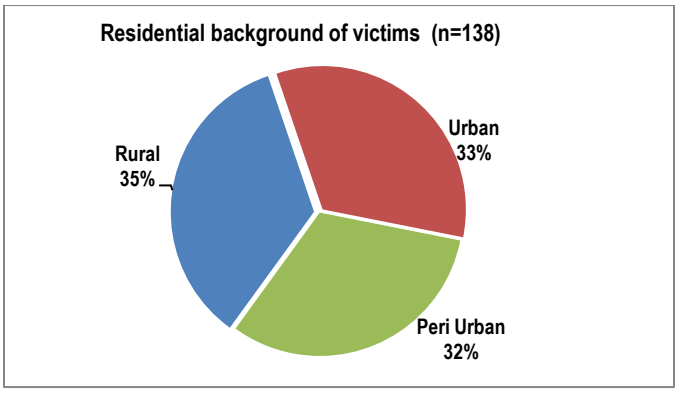

Figure 1: Inhabitants / Residential background

The cases of unnatural deaths belonging to rural area were 35% as compared to 33% urban citizens while 32% were inhabitants of peri-urban areas. (Fig-1)

As regard manner of death; homicide was found as prevalent manner involving 39.85% cases followed by accidental deaths in 35.51% and suicide in 9.42% cases while manner of death remained undetermined in 15.22% cases. Frequency of accidental deaths was comparable to homicide i.e. 49(35.51%) versus 55(39.85%) while suicide remained less common involving 13(9.42%) cases. Findings are shown in (Table-3).

Table 3: Detail regarding manners of death (n=138)

	2015	2016	2017	Total
Accidents	14 30.43%	14 35%	21 40.38%	**49** **35.51%**
Homicides	20 43.47%	15 37.5%	20 38.46%	**55** **39.85%**
Suicides	4 8.7%	3 7.5%	6 11.54%	**13** **9.42%**
Un-determined	8 17.4%	8 20%	5 9.62%	**21** **15.22%**
Total	46 100%	40 100%	52 100%	**138** **100%**

Most significant cause of death among accidental cases were the injuries resulting from road traffic clashes involving 31(63.27%) cases followed by drowning in 12(24.49%). Life of 3(6.12%) persons lost in railway accidents, 2(4.08%) died of electrocution and flame burn was responsible for only 1(2.04%) death. Year wise distribution regarding causes of accidental deaths has been shown in (Table-4).

Table 4: Causes of death in accidental cases (n=49)

	2015	2016	2017	Total
Road Accidents	12 85.71%	6 42.87%	13 61.91%	**31** **63.27%**
Railway Accidents	NIL	2 14.28%	1 4.76%	**3** **6.12%**
Drowning	2 14.29%	4 28.57%	6 28.57%	**12** **24.49%**
Electrocution	NIL	1 7.14%	1 4.76%	**2** **4.08%**
Burns	NIL	1 7.14%	NIL	**1 2.04%**
Total	**14** **100%**	**14** **100%**	**21** **100%**	**49** **100%**

Similarly, causes of homicide have been shown in Table-5. Amongst 55 homicidal deaths; firearms were the weapons of choice used in 33(60%) cases while 10(18%) persons were killed by manual strangulation, 5(9.09%) deaths attributed to sharp edged weapon whereas 4(7.2%) victims died of hanging and blunt trauma caused the death in 3(5.45%) cases.

Of the total 138 cases of unnatural deaths, frequency of suicidal deaths 13(9.42%) is comparatively less than other entities. Among those 13 victims of suicide; hanging has been found as the commonest modality in 6(46.1%) cases followed by poisoning in 3(23.1%) and firearm in 3(23.1%) cases whereas

railway injuries contributed 1(7%) case. These results are shown in (Table-6)

Table 5: Cause of death in homicidal cases (n=55)

	2015	2016	2017	Total
Fire-arm	12 60%	10 62.5%	11 57.8%	33 60%
Strangulation	4 20%	3 18.75%	3 15.7%	10 18%
Hanging	1 0.5%	1 6.25%	2 10.5%	4 7.20%
Blunt	2 10%	NIL	1 5.2%	3 5.45%
Sharp edged	1 0.5%	2 12.5%	2 10.5%	5 9.09%
Total	**20 100%**	**16 100%**	**19 100%**	**55 100%**

Table 6: Cause of death in suicidal cases (n=13)

	2015	2016	2017	Total
Hanging	2 50%	1 33.3%	2 33.3%	**6 46.1%**
Poisoning	1 25%	1 33.33%	1 16.6%	**3 23.1%**
Firearm	1 25%	Nil	2 33.3%	**3 23.1%**
Railway accidents	Nil	1 33.3%	1 16.66%	**1 7.7%**
Total	4 100%	3 100%	6 100%	**13 100%**

DISCUSSION

The term 'unnatural death' covers the death by multiple causes, ranging from a pure criminal intent or negligence to the infliction of self-harm, also the deaths with no intent of harm or an accidental /misadventure's death.[4] In cases of unnatural /suspicious deaths, the forensic pathologist performs meticulous autopsy to produce a legally justifiable cause and manner of death in the court of law. Cause of death, manner of death, identification, time since death, duration between injury and death and finding different clues regarding case are the objectives of medico-legal autopsy.[5] Males were found more vulnerable victims of unnatural death as compared to female. This observation is in agreement to the study conducted by Yousfani et al[6] reporting the predominance of males in unnatural deaths. This can be attributed to the fact that males are more prone to deaths because of their outdoor activities and social status. The boldness, physical vigor, outrage, arrogance and mindset of tit for tat, are some of the factors which finally lead him to be the sufferer or aggressor.[6]

Our study revealed that ages between 21-40 years were the most common victims of unnatural deaths involving 49.2% cases while similar trend was observed by Qasim et al [7] while conducting a study in rural setting at Tehsil Headquarter Hospital in which 59% cases belonging to the 3rd & 4th decade of life were reported to be victims of unnatural deaths. This can be attributed to earlier independent lifestyle in youth thus exposing them to all sort of cruelty. Although the extremes of ages were the least vulnerable to unnatural deaths but lower extreme has more incidence 6.5% than upper extreme 2.8% in above 70 years, indicating increasing violence to youngsters.

In our study; homicide was found the leading manner of unnatural deaths representing a trend of violence in the area of study. Increased incidence of homicidal death can be attributed to rapidly increasing population, unemployment, poverty, illiteracy & frustration. The rampant socio economic and political conditions, growing differences of the rich and poor, drug addiction, easy availability of weapon and unpunished crimes are also contributory factors to it. If we look on the crimes in our society, most of them are result of economic crisis.[8,9]

Accidental deaths were found second common cause of unnatural deaths in our study as in majority of the world communities. Of the accidental deaths; road traffic accidents are the major reason that is in line with studies of other regions of the country and the world. In provinces, Punjab contributes to a high rate of total number of accidents, while Khyber Pakhtunkhwa, Sindh and Baluchistan placed second, third and fourth respectively.[10]

Suicide comparatively has a low incidence i.e. 13(9.42%) cases in our study as compared to other manners of death but is still higher than other regions of the country / overall worldwide incidence of suicide. The suicide rate for the world as a whole is estimated at 11.6 per 100,000 inhabitants.[11] Shooting was not the prevalent cause of suicide, instead hanging (46.15%) and poisoning (23.08%) etc. were found as the more common way of self-harm which is in contrast to the studies in USA where shooting is more common for suicide and 52% of suicide among men were with shooting as reported by a recent study conducted by Fisher et al.[12] This means that despite poor socioeconomic conditions in this region awareness regarding suicide is better or other possibility can be that reported cases of suicide are lesser than unreported cases.

Firearm injuries have been found the most prevalent modality for killing in homicides which is 60%. This is fact now that gun as weapon is the most commonly used killing tool.[13] Another study conducted by Warlow et al[14] showed that in United States of America nearly 25000 people are killed using firearms every year. The findings of a local study conducted by Qasim et al[15] also documented that firearms were the most commonly used weapon involving 70.17% cases of homicidal deaths. Proper licensing and law enforcement is required on national and international levels along with proper education and awareness to control this dilemma. Previous studies were conducted regarding homicidal cases as well as autopsies / annual audits have been performed[16-20] but still adequate work is required at the level of Primary Health Centers, Tehsil Headquarter Hospitals, DHQ Hospitals in order to update the knowledge / skills of those involved in important pathological maneuver related to medicolegal and autopsy work.

CONCLUSION

The law and order situation in a particular area of jurisdictionthat is the basic reason to plan such studies for situational analysis

of unnatural deaths in the region of study for comparison to the national & global statistics in order to find out the possible remedies for minimizing the incidence of unnatural deaths. Gender predominance, rampant age group, causes and manners of unnatural deaths in our study are more or less similar to the pattern found in most of the national studies. The study set the goal of improving the situation by planning new reforms in terms of traffic regulations, improving literacy rate & socioeconomic resolution.

REFERENCES

1. Rahim M, Das TC. Mortuary profile for unnatural deaths at Forensic Medicine Department of Dhaka Medical College. Bangladesh Med J. 2009;38(2):44-7.
2. Pathak A, Sharma S. The study of unnatural female deaths in Vadodara city. J Indian Acad Forensic Med. 2010;32(3):220-3.
3. Ullah A, Raja A, Aamir Y, Hamid A, Khan J. Pattern of causes of death in homicidal cases on autopsy in Pakistan. Gomal J Med Sci. 2014;12(4):218-21.
4. Awan NR. Principles and practice of forensic medicine 1st ed. Lahore; 2009;91-105.
5. Parmar P, Rathod GB. Study of knowledge, attitude and perception regarding medicolegal autopsy in general population. Int J Med Pharma Sci. 2013;3(6):1-6.
6. Yousfani GM, Memon MU. Spectrum of Unnatural Deaths in Hyderabad: An Autopsy Based Study. J Dow Uni Health Sci. 2010;4(2):54-7.
7. Qasim AP, Ali MA, Baig A. Firearm Fatalities in Rural Settings: Autopsy Based Study at Tehsil Headquarter Hospital.Med Forum.2017;27(3):31-5.
8. Hugar BS, Chandra GYP, Harish S, Jayanth SH. Pattern of homicidal deaths. J Indian Acad Forensic Med. 2010;32:194-8.
9. Santhosh CS, Vishwanathan KG, Satish Babu BS. Pattern of unnatural deaths - A cross sectional study of autopsies at mortuary of KLES'S Hospital and MRC, Belgaum. J Indian Acad Forensic Med. 2011;33:18-20.
10. Imran M, Nasir JA. Road Traffic Accidents; Prediction in Pakistan. Professional Med J. 2015;22(6):705-9.
11. Värnik P. Suicide in the world. Int environ res public health. 2012;9(3):760-71.
12. Fisher LB, Overholser JC, Dieter L. Methods of committing suicide among 2,347 people in Ohio. Death studies. 2015;39(1):39-43.
13. Ganpat SM. Comparing characteristics of homicides in Finland, the Netherlands and Sweden. Handbook on Homicide Wiley-Blackwell: Oxford.2017:308-19.
14. Warlow T. Firearms. In: The law and forensic ballistics. 2nd ed. New York CRC press 2005. p.1-18.
15. Qasim AP, Tariq SA, Naeem M. Profile of unnatural Deaths in Faisalabad. Med forum.2014;25(5):51-4.
16. Khokhar JI, Nadir S, Iqbal M. Chest the most targeted area in homicidal firearm fatalities in Lahore. Med Forum. 2013; 24(8):31-4.
17. Ali S, Shaheen A, Zarif P. Firearm injuries pattern in cases autopsied at DHQ Hospital Kasur. Med Forum. 2012;23(1):90-4.
18. Owais K, Khan I. Acute poising; etiological agents and demographic characteristics in patients coming to ER of a tertiary care hospital. Professional Med J.2015;22(12):1591-4.
19. Qasim AP, Awan ZA, Ansari JA. Critical appraisal of autopsy work. APMC. 2016;10(4):194-202.
20. Siddiqui BA, Saeed A, Masud U. Epidemiology of homicidal deaths in Sargodha, Pakistan. Professional Med J.2013;20(5):793-7.

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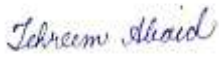
Dr. Tehreem Abaid Assistant Professor of Forensic Medicine, Nishtar Medical University, Multan.	Designing of charts / tables Comparison & Discussion	
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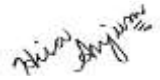
Hira Anjum Demonstrator of Forensic Medicine Quaid-e-Azam Medical College, Bahawalpur	Critical review, Proof reading	
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