Original Article

A Break up of Autopsies Conducted at District Head Quarter Hospital Kasur

1. Shaukat Ali 2. Akmal Shaheen 3. Romela Naz 4.Muhammad Iqbal Mughal 5.Pervaiz Zarif

1. Asstt. Prof. of Forensic Medicine, Rashid Latif Medical College, Lahore 2. Asstt. Prof. of Forensic Medicine, PGMI, Lahore 3. Asstt. Prof. of Forensic Medicine, Sir Syed College of Medical Sciences, Karachi 4. Prof. of Forensic Medicine, CPMC, Lahore 5. Asstt. Prof. of Forensic Medicine, SIMS, Lahore

ABSTRACT

Background: This is the first time study to find out the cause and manner of death through medico-legal autopsies in a small district comprising municipal boundaries and rural setup (District Kasur) and comparing it with urban studies conducted by the Forensic Medicine Departments of various medical colleges. This study is also aimed to assess the criminal behavior in this segment of society.

Study Design: Observational Study.

Place and Duration of Study: This study was conducted at District Head Quarter Hospital Kasur from 2008 to 2010.

Materials and Methods: This study was carried out on 451 medico legal autopsies performed at District Head Quarter Hospital Kasur. The findings were extracted from autopsy reports, chemical examiner reports, relevant hospital record and police documents. The cases were examined for various characteristics like cause and manner of death, age and sex of victim and condition of body at the time of autopsy.

Results: The results revealed that homicide was the most common manner (82.26%) among unnatural deaths and males became three times more victims than females. The most vulnerable age group in unnatural deaths were from 15 to 45 years (77.39%). In 44.12% cases firearm is the weapon responsible for death. Regarding condition of body at autopsy, 364 (80.71%) bodies were in fresh condition.

Conclusions & Recommendations: Medico legal autopsy rate reflects the incidence of crime & criminal behavior of that segment of society. Compared with more civilized societies the crime incidence in our society is very high. In order to control it, we need to change the behavior of society through improvement in literacy rate, socioeconomic status and law & order situation. In order to improve the quality of medico-legal reporting there is need to strengthen the expertise in forensic medicine both at urban and rural level.

Key Words: Autopsis, un-natural death, crime & criminal behaviour

INTRODUCTION

The term autopsy derived from the ancient Greek autopsia, "to see for oneself" is made up of 2 words autos _ "oneself" and opsis _ "eye".[1] It is a highly specialized surgical procedure that consists of a thorough examination of a corpse to determine the cause and manner of death and to evaluate any disease or injury that may be present. The other synonyms used for this procedure are postmortem examination, necropsy, autopsia cadaverum and obduction.

About 3000BC, the ancient Egyptians were one of the first civilizations to practice the removal and examination of the internal organs of the humans in the religious practice of mummification[1]. Autopsies that opened the body to determine the cause of death are attested in the early 3rd millennium BC. [2] There are three main types of autopsies, i.e., medico legal or forensic autopsy to find the cause and manner of death and to facilitate identity of deceased in unknown cases; clinical or pathological autopsy to diagnose a particular disease or for research purpose; and anatomical or academic autopsy performed by students of anatomy for study purpose only. In legal medicine, deaths are placed in one of five manners: (1) Natural, (2) homicide, (3) suicide, (4) accidental, and (5) undetermined. In 2004 in England and Wales, there were 514,000 deaths, out of which 225,500 were referred to coroner & out of these referrals 115,800 (22.5%) resulted in autopsy.[3] Medico legal autopsies also give important statistical data related to legal incidents in the cities and regions where the autopsies are conducted.[4]

Medico legal autopsy is performed when death is believed to result from an unnatural cause or in cases of sudden death. These examination are performed under a legal authority and do not require the consent of the relatives of the deceased .Conduction of medico legal autopsy is a statutory duty of the authorized medical officer being designated by the provincial government.[5] In many cases there are circumstances in which it is possible to state whether the fatal injury or poison is homicidal, suicidal or accidental but in other cases it will need collaboration of many other facts and details to give opinion about causative weapon and manner of death (scene of crime, statements of witnesses).[6] Homicide refers to the act of one human killing the other human which can be criminal as well as non

criminal. The criminality is determined by the state of the mind of the perpetrator and statutes defining the crime. Murder and manslaughter are criminal homicides. Non criminal homicides can take place in circumstances like automatism, self defense, insanity & immaturity. As homicidal cases comprise a major portion of medico legal autopsies, therefore they get special importance in general criminal profile of the society.[7] The Geneva Declaration on Armed Violence and Development states that there were approximately 49,000 intentional homicides in 2004 & the global rate for this year was 7.6 intentional homicides per100,000 inhabitants.[8] The latest data reveals that in 2010 Honduras topped the world with homicide rate 78 per 100,000 inhabitants[9] and Austria remained lowest with rate of 0.56 persons per 100,000 inhabitants.[10] The latest available data about Pakistan for the year 2008 shows a rate of 6.8 homicides per 100,000 inhabitants.[11] Data about some of the individual cities of Pakistan is available in medical journals.[12-16]

The WHO estimates that suicide is the 10th leading cause of death worldwide with about a million people dying by suicide annually.[17] Worldwide suicide rates have increased by 60% in developing countries. A disproportionate amount of suicides in the world occur in Asia, which is estimated to account for up to 60% of all suicides. According to WHO, China, India and Japan may account for 40% of all world suicides.[18] The human costs of both suicide and homicide are severe and they are creating public health and legal issues in any country.[19] The No. of accidental deaths ,including those for motor vehicle accidents is also increasing all over the world. According to centers for Disease Control and Prevention in US in 2008 the No of deaths taking place from all unintentional injury deaths was 123,706 with a rate of 41.0 deaths per100, 000 population and ranking 5. Of this motor vehicle traffic deaths were 42,031 at a rate of 13.9 per 100,000 populations.

Unnatural deaths have remarkable impact on the society at large and the victim's families in particular. For every person who dies as a result of violence, many more are injured and suffer from a range of physical, social and mental health problems. This places a massive burden on the country.[20] According to Kasur Police, the crime statistics show a decline in number of homicidal deaths, During the years 2007, 2008, 2009 and 2010 respectively the attempted murders were 274,263,236 & 219 with approximate population more than 3 millions.[30]

MATERIALS AND METHODS

This study was undertaken on the cases autopsied at District Head Quarters Hospital Kasur for a period of 3 years, i.e, from 1st January 2008 to 31st December 2010. These cases were examined regarding manner of death, age and sex of the victim, cause of death & condition of the body at the time of autopsy. The Findings were extracted from autopsy reports, chemical examiner / bacteriologist to Government of Punjab reports, relevant hospital record and police documents. The cases were examined for various characteristics like cause and manner of death, age and sex of victim and condition of body at the time of autopsy.

RESULTS

A total of 451 autopsies were conducted during study period. Out of this 371(82.26%) were homicides, 9(1.99%) were suicides, and 25(5.54%) were accidental. 18(3.99%) cases remained undetermined whereas 22(4.88%) were found to die from natural causes (Table 1). The sex and age distribution are given respectively in Table 2 and Table 3. The distribution of causes of death is given in Table 4.

The condition of body was determined by the post mortem changes affecting the body. 'Fresh' describes the condition in which exterior of the body is intact and the maximum time interval between death and post mortem is within 48 hours. 'Early putrefaction changes' describes a condition in which decomposing skin change have taken place but the corpse is still identifiable in terms of facial recognition, age assessment sex identification and both external injuries and visceral damage. The probable duration between death and post mortem examination in this type was 2-5 days, depending upon the weather conditions. In the 'late putrefaction changes' the body has undergone advance changes. It is not recognizable. The age can be assessed by anatomical parameters & sex may be identified from internal sexual organs. This kind of presentation is found in cases where more than 5 days have elapsed. In the skeletonized condition bodies were presented in the form of just bones. In skeleton form bodies were brought both buried as well as not buried. This condition could result in days to years depending the burial status .They were further sent to Anatomist Govt. of Punjab for his opinion. (Table 5, Fig. 1)

Table No.1: Distribution of manner of death (n=451)

Manner of death	2008	%age	2009	%age	2010	%age	Total cases in 3 yrs	%age
Homicidal	129	82.69	121	79.60	121	84.61	371	82.26
Suicidal	5	3.20	2	1.32	2	1.40	9	2.00
Accidental	7	4.49	16	10.53	8	5.60	31	6.87
unascertained	6	3.85	4	2.63	8	5.59	18	3.99
Natural	9	5.77	9	5.92	4	2.80	22	4.88
Total	156	100.00	152	100.00	143	100.00	451	100.00

Table No.2: Sex Distribution (n=451)

Sex	2008	%age	2009	%age	2010	%age	Total cases in 3 yrs	% age
Male	120	76.92	117	76.97	109	76.22	246	76.72
Female	35	22.44	35	23.03	34	23.78	104	23.06
Undetermined Sex	1	0.64	-	-	-	-	1	0.22
Total	156	100.00	152	100.00	143	100.00	451	100.00

Table No.3: Age Distribution (n=451)

Age group (in years)	No. of cases	%age
0<15	30	6.65
16-30	206	45.68
31-45	143	31.71
45-60	48	10.64
61 - Onward	19	4.21
stillbirths	4	0.89
Aborted material	1	0.22
Total	451	100.00

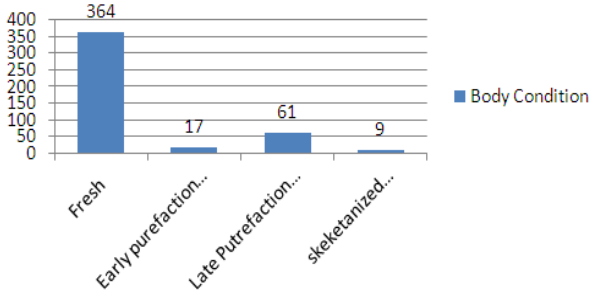

Figure No. 1: Distribution of condition of body at the time of autopsy

Table No.4: Distribution of causes of death (n=451)

Weapon or mean of death	2008	%age	2009	%age	2010	%age	Total cases in 3 yrs	% age
Firearm	60	38.46	72	47.37	67	46.85	199	44.12
Asphyxia	38	24.36	20	13.16	28	19.58	86	19.07
Blunt	10	6.41	15	9.87	10	6.99	35	7.76
Sharp	21	13.46	10	6.57	11	7.69	42	9.31
Poisoning	3	1.92	2	1.32	4	0.70	9	2.00
Chronic Addiction leading to Starvation	5	3.21	4	2.63	3	2.10	12	2.66
Road Traffic Accidents	6	3.85	11	7.24	8	5.59	25	5.54
Diseases	3	1.92	2	1.32	0	0	5	1.11
Drowning	2	1.28	6	3.95	1	0.70	9	2.00
Burns	1	0.64	2	1.32	1	0.70	4	0.89
Electrocution	0	0.00	0	0.00	1	0.70	1	0.22
stillbirth	1	0.64	2	1.32	1	0.89	4	0.89
Unascertained	6	3.85	6	3.95	8	5.59	20	4.43
Total	156	100.00	152	100.00	143	100.00	451	100.00

Table 5: Condition of body at the time of autopsy (n=451)

Condition of body	Year 2008	Year 2009	Year 2010	Total	% age
Fresh	119	125	120	364	80.71
Early putrefaction changes	6	6	5	17	3.77
Late putrefaction changes	26	18	17	61	13.53
Skeletonized	5	3	1	9	1.99
Total	156	152	143	451	100.00

DISCUSSION

Violence is generally increasing all over the world though its expression has changed in the last two decades. The use of bomb blasts and explosives has increased a lot in the recent years which has resulted in mass causalities instead of single cases. The number of autopsies due to other causes of deaths has generally fallen. This is evident both from the number of autopsies conducted during the three consecutive years under study and district Kasur police report already quoted above. During the three years under study there have been 371 homicidal deaths.

The aggregate suicidal rate for the three years of study remained 2.00%. It is less than that in a study conducted in Lahore, i.e., 3.42% in 2006-2008.[21] A comparable study in Lahore showed 0.62%[22] in 1996(one year study). But lower than that in D.I. Khan[23] which in 2004 was 2.00% (one year study).[23] It is substantially lower than western countries and our

neighbor India where it is 19.50%.[24] The studies conducted in London showed that the strongest risk factor for suicide is mental disorder especially depression.

The accidental death incidence in our study is 6.8% which is close to 7.42%[21] but lower than 11% in 1996.[25] In 2002, in the world, the road traffic injuries were the 11th leading cause of death. This rate is lowest in the high income countries and highest in East Mediterranean (26.4) and African countries (28.3)[21]. In our society most of the suicidal and accidental cases are disposed off without autopsy so the figures determined are approximations. At least if we consider the number of daily road traffic accidents reported in the media this number looks to be ridiculous. Therefore to know the correct statistics and make them useful for future planning, the autopsy of every accidental and suicidal death must be made mandatory.

The unascertained incidence in this 3year study is 3.99% which is half to that of Lahore in1996 8% (one year study)[25] but higher than (0.8%) during 2007-08 of D.I.Khan (two year study)[15]and 1.42% of Peshawar during 2004 (one year study).[26] The natural death incidence rate in this study was 4.88%. It included those cases in which the death occurred due to starvation and malnutrition secondary to chronic addiction. There were 12 such cases (2.66%).

As regards sex in our study of 451 deaths, 346 (76.72%) were males and 104 (23.06%) were females. In one case of aborted material sex remained undetermined. Age distribution reveals that major chunk of the victims falls in the age group of 15-30 years, that is 206 (45.68%) and 30-45 years 143 (31.71%). Though no age group is immune from violence, 19(4.21%) cases were above 60 years. The unnatural death of adolescents and young adults in any society has many socioeconomic repercussions for the bereaved families and the country at large. The male to female ratio is 3.33:1 which is roughly half to that of 6.22:1[27] in Peshawar in2006 but almost similar to those of other studies of 3.47:1 in 2004 in Faisalabad[13] and 3:1 of Lahore.[28] The obvious reason for more males involved in unnatural deaths is their more involvement in outdoor activities and more public interaction which sometimes can lead to conflicts and murders. In some parts of Pakistan and world violence against women in the form of honor killings is common .But such cases are infrequent in this study period because the literacy rate and socioeconomic conditions in this region are quite satisfactory.

An analysis of causes of deaths shows that firearms injuries constitute a major portion both annually during the three years [60(38.46%), 72(47.37%) and 67(46.85%)] as well as collectively 199 (44.12%). It is followed by asphyxia 86 (19.07%), sharp edged weapons 42 (9.31%), blunt means 35(7.76%), road traffic accidents 25(5.54), drowning 9(2.00%), burns 4(0.89%), diseases 5(1.11%). In 12(2.66%)cases in which the death occurred due to starvation and malnutrition secondary to chronic addiction. Of sharp edged cases half, i.e., 21 were due to cut throat and in one case torso without head was produced for post mortem examination. In cases of blunt weapons or blunt means, out of total 35 cases & 24(68.57%) were due to trauma to head resulting in brain damage.

This district was lucky enough in the sense that it remained safe from terroristic activities of bomb explosives whereas it was 2.12% in Peshawar[27] and as high as 32.96% in D.I. Khan.[29] Bomb explosions take a heavy toll of deaths every year in terror stricken areas of Pakistan, Afghanistan, and Iraq etc.

At the time of autopsy 364(80.71%) bodies were in fresh condition whereas 61(13.53%) were in condition of late putrefaction. Most of cases in the latter condition were recovered from canals and crop fields as unknown bodies. An exhaustive process is required to trace the origin of such bodies. It needs the full cooperation and coordination of many institutions like NADRA, police, intelligence, medical and forensic sciences experts.

CONCLUSION

Medico legal autopsy rate reflects the incidence of crime & criminal behavior of that segment of society. Compared with more civilized societies the crime incidence in our society is very high. In order to control it, we need to change the behavior of society through improvement in literacy rate, socioeconomic status and law & order situation. In order to improve the quality of medico-legal reporting there is need to strengthen the expertise in forensic medicine both at urban and rural level.

REFERENCES

1. Kelly R. The Autopsy Through History. In: Ayn Embar-seddon, Allan D, editors. Forensic Science. Salem Press;2008.p. 100. ISBN 978-1587654237 [online] 2008 [cited 15-09-2011] available from: http://en.wikipedia.org/wiki/Autopsy
2. Elizabeth D. Ancient science and forensics. In: Ayn Embar-seddon, Allan D, editors. Forensic Science. Salem Press;2008.p. 43.ISBN 978-1587654237. [online] [cited 15-09-2011] available from: http://en.wikipedia.org/wiki/AutopsySchafer
3. UK Department for Constitutional Affairs . Coroners Service Reform Briefing Note. 2008.p. 6 [online] 2006 [cited 15-09-2011] available from: http://en.wikipedia.org/wiki/Department_for_Constitutional_Affairs
4. Ahmet H, Nemci C, Mete G, Hakan OM, Ramazan K. Homicide in Adana, turkey: A 5 year review. Am J Forensic Med 2005; 26(2):141-5.
5. Govt. of Punjab Notification No. SO (H&D) 5-5/2002, Dated 1st Dec 2004; Part III:14.

6. Parikh KC. Parikh's Text of Medical Jurisprudence Forensic Medicine and Toxicology. 6th ed. CBS Publishers & Distributors: India; 2010.p. 82
7. Hougen HP, Rogde S, Poulsen K. Homicide in two Scandinavian capitals. Am J Forensic Med 2000; 21:281-6.
8. Global Burden of Armed Violence Report. Geneva Declaration on Armed Violence and Development [online] [cited 15-09-2011] available from: http://en.wikipedia.org/wiki/List_of_countries_by_homicide_rate
9. Homicidios en Centroamérica (in Spanish) (PDF). La Prensa Grafica de El Salvador. p. 1, 3. [online] 2011 [cited 15-09-2011] available from: http://en.wikipedia.org/wiki/List_of_countries_by_homicide_rate.
10. List of countries by homicide rate. 47 Morde im Jahr. [online] 2010 [cited 15-09-2011] available from: http://oesterreich.orf.at/stories/488848/
11. Homicide statistics, Trends (2003-2008) UNODC. [online] 2008 [cited 15-09-2011] available from: http://en.wikipedia.org/wiki/List_of_countries_by_homicide_rate.
12. Malik AR, Malik SA, Baluch NA, Rana PA. Audit of homicidal deaths in Lahore in year 2003.PPMJ 2005; 16(1):25-29.
13. Bashir MZ, Saeed A, Khan D, Aslam M, Iqbal M, Ahmed M. Pattern of homicidal deaths In Faisalabad. J Ayub Medical College Abbotabad 2004; 16(2):57-9.
14. Memon MU, Khalil ZH, Aziz K, Kheri GQ, Khalil IR. Audit of cases autopsied in the mortuary of Khyber Medical College Peshawar during the year 1999.Ann King Edward Med Coll 2001;7(3):190-3.
15. Humayun M, Khan D, Zaman F, Khan J, Khan O, Parveen Z, et al. Analysis of homicidal deaths in District D.I. Khan: An Autopsy Study. J Ayub Med Coll Abbottabad 2009;21(1):155-7.
16. Ali SMA, Rizvi SIH, Ali MA Chaudari TH. Weaponary patterns in the homicidal deaths in Bahawalpur. The Professional 2000; 7(4):514-6.
17. Suicide. Bruis Gross. Forensic Examiner. [online] 2006 [cited 15-09-2011] available from: http://en.wikipedia.org/wiki/Suicide^Bruce Gross
18. WHO Statement: World Suicide Prevention Day 2008. World Health Organization [online] 2006 [cited 15-09-2011] available from: http://www.who.int/entity/mental_health/prevention/suicide/wspd_2008_statement.pdf.
19. Wu B. Testing the stream analogy for lethal violence: A macro study of suicide and homicide. Western criminology review 2003;4(3):215-25.
20. Whitman S, Benbow N, Good G. The epidimology of homicide in Chicago. J Natl Med assoc 1996; 88(12):781-1.
21. Maqsood M, Ch MK, Jawad I, Mughal MI, Khokhar JI, Shaheen A, et al. Profile of Medicolegal Autopsies in Lahore. JFJMC 2011; 5(2):41-47.
22. Mujahid M, Hassan Q, Arif M, Gandapur J, Shah H. Homicidal deaths by firearms in D.I. Khan: An Autopsy study. Pak J Med Res 2006;45(1):14-16.
23. Ambade VN, Godbole HV, Kukde HE. Suicidal and homicidal deaths: A comparative and circumstantial approach. J Forensic Leg Med 2007; 14(5):253-60.
24. Parveen Z, Mughal MI, Bhatti AM. Comparison of causes of Death in Lahore in year 2003. PPMJ 2005; 16(1):25-29.
25. Hussain Z, Shah MM, Afridi HK, Arif M. Homicidal deaths by firearms in Peshawar:An autopsy study. J Ayub Med Coll Abbottabad 2006;18(1):44-45.
26. Murri MZ, Bashir MZ, Munawar AZ, Khalil ZH, Khalil IR. Analysis of homicidal deaths in Peshawar Pakistan. J Ayub Med Coll Abbottabad 2006; 18(4): 30-3.
27. Aziz K, Rana P, Malik SA. Homicida deaths in Lahore. PPMJ 1999;10(1): 10-13.
28. Humayun M, Zamman F, Khan J, Parveen Z, Zaman M. Homicidal death and injuries by bomb blasts in Dera Ismail Khan. Gomal J Med Sci 2009;7(1):51-4.
29. District Kasur Police Statistics; [online] 2011 [cited 15-09-2011] available from: http://www.kasurpolice.gov.pk/page6244.htm

Address for Corresponding Author:
Dr. Shaukat Ali,
Asstt. Prof. of Forensic Medicine,
Rashid Latif Medical College,
Lahore.