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A CROSS-SECTIONAL DESCRIPTIVE RESEARCH ON THE IMPORTANCE OF AUTOPSIES IN ORDER TO MINIMIZE THE ROAD TRAFFIC ACCIDENTS FATALITIES IN TERM OF AGE, GENDER AND SIGHT OF INJURY: HOW THE PROCESS AUTOPSY ASSISTS THE LEGAL PROCEEDINGS AND HELPS TO ASSERTION THE CAUSE OF DEATH

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Abstract:
Objective: *This research studies the victim's demographic distribution in the road traffic accidents which were brought for the medico legal autopsy, identification of the injury fatality, month wise autopsies variations and autopsied users of the road.*
Methods: *Design of the research was descriptive cross-sectional held at the Services Hospital, Lahore in the time duration of April, 2015 to March, 2016. All the dead bodies which were presented to police for external/partial autopsy were not made a part of the research study. Collected data was analyzed on SPSS.*
Results: *RTA victims were 581 cases (27.8%) including 324 autopsies in the age group of 19 – 40 years (55.8%), male to female ratio was observed as 510 males (87.8%) and 71 females (12.2%) with a proportion of seven to one with a significant p-value as (0.05). Head injury caused majority of the death cases as observed in 386 victims (66.4%), 84 chest victims (14.5%), 50 cases of multiple traumatic injuries (8.6%) and 17 pelvis injury cases (2.9%). Pedestrians and motorcyclists were in majority respectively 389 pedestrians (67%) and 122 motorcyclists (21%). Every month average autopsies were carried out as (48.4 ± 7.46) without any statistical variation in the count of autopsies.*
Conclusion: *We observed in the incidence of autopsies that males were dominant in number over females. But for the significant variation in both groups need proper association of sex in the incidence of Road Traffic Accidents and at the same time for the females autopsied compliance.*
Keywords: *Epidemiology, Pakistan, Road traffic accidents (RTA), Autopsy, Accidents, Numerical data and Statistics.*

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INTRODUCTION:

According to (WHO, 2011),"middle and low incomed nations face ninety percent of the road fatalities even in the situation that they have half of the vehicles in comparison to the developed countries" [1]. As per the estimation of the (WHO, 2009) 25.3% deaths in Pakistan are caused because of the Road traffic injuries [2]. Data collection has taken extensive efforts in the last fifteen years in Pakistan about the road traffic accidents related mortalities and injuries at national and local levels by various departments such as police and health department [3, 4]. However, autopsy is an international standard for the assessment of the RTA rate in any nation. Medico-legal autopsies assist in solving death related cases such as time since death, time since injured and time between the death and injury; which helps in the proceedings of the court [5]. It also helps the administration in order to manage ambulances, beds in the hospital and provision of related medicines, doctors and healthcare staff in the healthcare units [6, 7]. A South African research concludes that "deaths associated to RTA are three times higher than the global perspective" [8]. Various countries and authors have reported various statistics related to injuries and death rate caused by the incidence of RTA [9].

A research held in Norway favors the importance of the forensic investigation of the autopsies which assists in the prosecution process, awareness about the importance of autopsies in the forensic setting is emphasized in this research [10]. In the perspective of Pakistan, we need to investigate the unnatural deaths by the magistrate and police as it is an obligation of the law enforcing agencies by the Section – 174 (Criminal Procedure Code of Pakistan, 1898). Any death whether accidental, homicidal or suicidal is to be properly investigated for exhumation and judicial inquiry [11]. Police can only release the dead body if the relatives are not willing to investigate the cause of death (Police Act 25.34, Clause – II) [13]. In two various research studies it was observed that ten percent RTAs were reported in 1999 and in 2006 only six percent cases were covered by the police [14, 15]. Reported injuries are 4.5 times less in Pakistan in comparison to the rest of the Asian countries [16]. Facts assertion is important for the medico-legal and fact finding under the law in vogue such as “Motor Vehicle Ordinance” [18]. Scarce literature is available that covers the unnatural deaths in the big cities and metropolitan areas of Pakistan including Lahore [2]. This research studies the victim’s demographic distribution in the road traffic accidents which were brought for the medico legal autopsy, identification of the injury fatality, month wise autopsies variations and autopsied users of the road.

SUBJECTS AND METHODS:

Design of the research was descriptive cross-sectional held at the Services Hospital, Lahore in the time duration of April, 2015 to March, 2009. All the dead bodies which were presented to police for external/partial autopsy were not made a part of the research study. Collected data was analyzed on SPSS. Sample was selected through non-probability convenience technique of sampling. We used a pre-designed proforma for the documentation of the sex, age, injury’s physical location, autopsies frequencies per month, death manner and identification of the case. We classified age into four major groups such as Group I, II, III & IV respectively (0 – 18 years), (19 – 40 years), (41 – 60 years) and (above 60 years) as shown in Table – I. Fatality of the injuries were categorized on the basis of the injured area such as head, abdomen, chest, pelvis and these areas combination in case if more than one area is damaged. P-value was significant as (< 0.05).

RESULTS:

In the 2090 autopsies which were carried out during the research duration, RTA victims were 581 cases (27.8%) including 324 autopsies in the age group of 19 – 40 years (55.8%), male to female ratio was observed as 510 males (87.8%) and 71 females (12.2%) with a proportion of seven to one with a significant p-value as (0.05). Head injury caused majority of the death cases as observed in 386 victims (66.4%), 84 chest victims (14.5%), 50 cases of multiple traumatic injuries (8.6%) and 17 pelvis injury cases (2.9%). Pedestrians and motorcyclists were in majority respectively 389 pedestrians (67%) and 122 motorcyclists (21%). Every month average autopsies were carried out as (48.4 ± 7.46) without any statistical variation in the count of autopsies.

Majority of the casualties were in the age group of 19 – 40 years; whereas, senior citizens above the age of sixty were less involved in the RTA causalities. Males dominated females in injuries caused by RTA as shown in Table – I. Site of injury and RTA fatalities are shown in detain respective in Table II and III.

Table – I: Autopsies conducted after RTA – Distribution of gender and age

Age Group (Years)	Male		Female		Male to Female Ratio		Total autopsies	
	N	%	N	%	Male	Female	N	%
0 – 18	88	80.7	21	19.3	4.2	1	109	18.8
19 – 40	297	91.7	27	8.3	0:00	0:00	324	55.8
41 – 60	101	87.1	15	12.9	6.7	1	116	20
Above 60	24	75	8	25	0:00	0:00	32	5.4

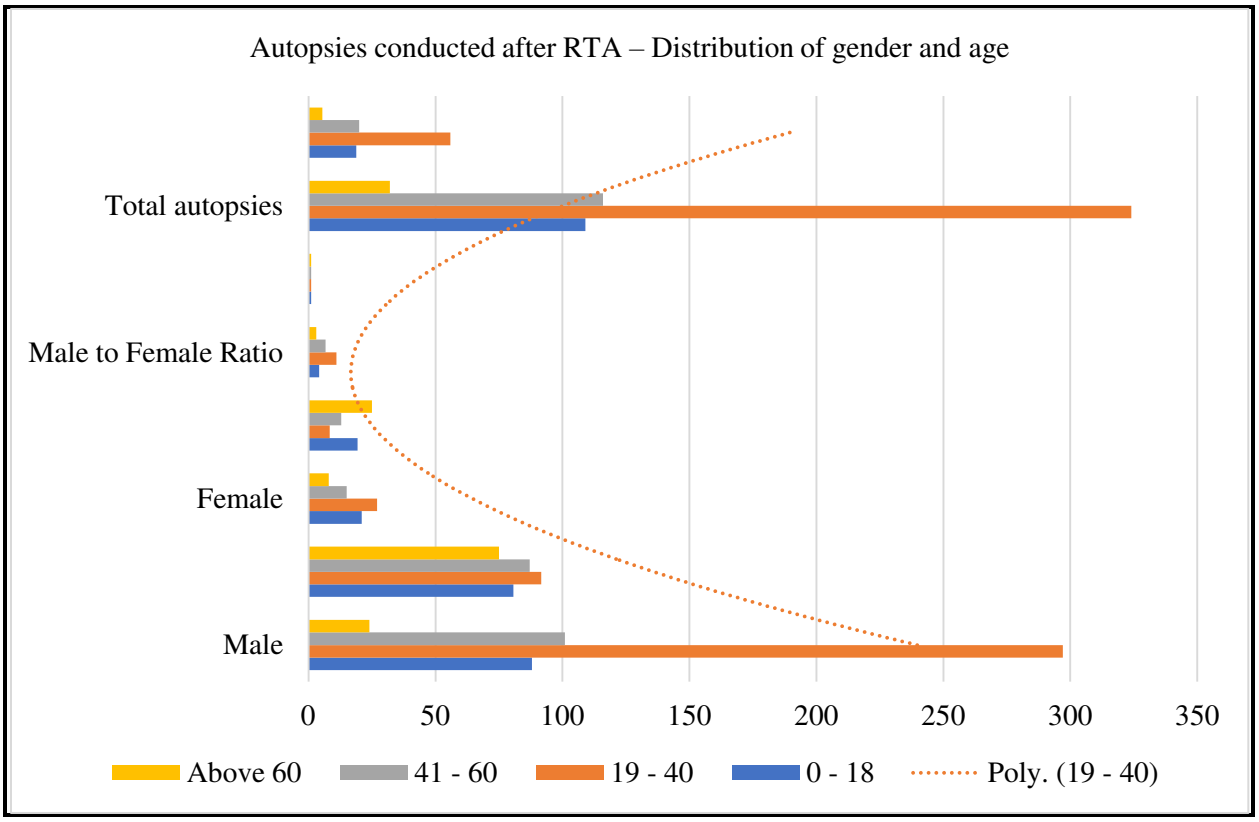

Table – II: Site of fatal injuries

Injury Site	Number	Percentage
Head	386	66
Head, Chest, Abdomen	26	5
Head, Chest	24	4
Chest	84	14.5
Abdomen	14	7.6
Pelvis	17	3

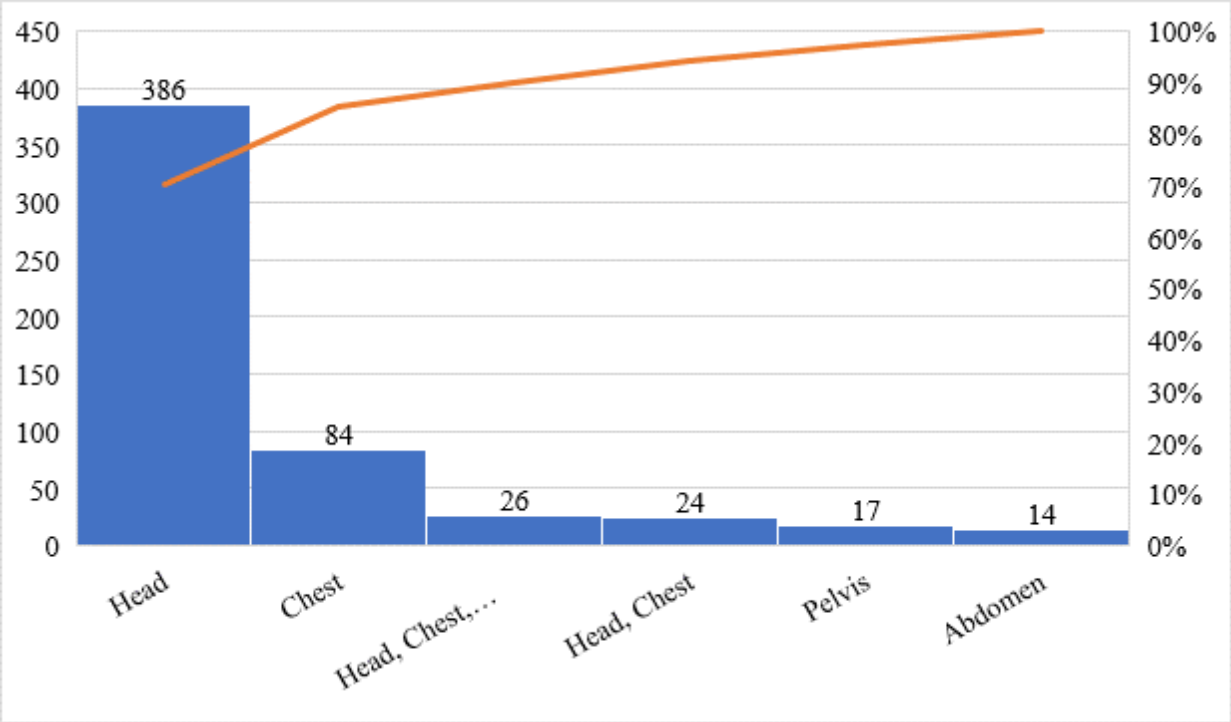

Table – III: Comparison of fatalities due to RTA injuries

Method	Data from Police Road Safety Report	Data from Capture - Recapture
Fatalities recorded in that particular study	1185	1375
Fatalities reported to the police in that particular study	655	616
Percentage of total fatalities reported to the police	55.20%	44.80%
Total autopsies conducted in the year as per our data	581	581
Percentage of total fatalities autopsied Percentage of police record	49.03%	42.25%

DISCUSSION:

Aim of the research was to develop a better understanding of the injuries caused by the RTA. It primarily aimed at the determination of the significant disproportion in the autopsies number because of the incidences of RTAs. Data was also compared with the two reports on the same subject carried out by police back in 2008 for the estimation of the fatalities [18, 19]. In the total death cases autopsied cases were only fifty percent as shown in Table – II; however, according to the police record a total of 88.7 percent & 94.3 percent cases were autopsied. It was also observed that families were reluctant to launch the FIR and avoided court proceedings or police herself was not proactive in this regard. Local police were not called in by the hospitals because of the prolonged proceedings of the legal department. Majority of the Pakistani cases were desisting from the examination of post-mortem to bury the relatives in an urgency as religious obligation and they also fear the maltreatment with the dead body. Few other reasons also include awareness lack, cultural foundations and prolonged official protocols [20].

Parameter of age was also a significant parameter as in the age of 15 – 44 years almost 73 percent deaths were documented, which forms the major part of the deaths [21]. We observed in our research that highest rate was observed in the age group of 19 – 40 years in the adult group. Male to female proportion of the autopsies was observed as males (7.18) to one female. In a research held in Karachi the same has been reported as 89 percent male's autopsies when compared to females [21]. Same has been observed by an Indian author [23]. We also found two

variations in the pre-teen group as in the age group of (1 – 14 years) proportion of male to female was (3.3:1) (p-value = 0.05); whereas, in the age group of (19 – 31 years) this proportion raised to (11:1) and for the age group of (26 – 32) years ratio was (16:1) (p-value = 0.05). Two reasons may be attributed to this fact as female autopsied compliance and gender involvement in the RTA injuries. Conclusive remarks cannot be made because of the availability of sufficient data.

RTA injuries estimation on the pedestrians was observed as (45%) in the perspective of low-income nations; whereas, in the middle-income countries it was observed as (29%) and in the high-income nations observed as (18%) [24]. In a research held at Hong Kong seventy percent of the pedestrians were accounted for fatalities of RTA; whereas, the rate of death in China (10% – 15%), Thailand and Malaysia (50%) with an involvement of the motorcyclists [25]. We observed in our research that 67% of the pedestrian's cases were autopsies and 21% of the motorcyclists. It is clear that motorcyclists were less autopsied than the pedestrians. We were not able to specify the reason behind this argument of autopsies. It has also been observed that there is an increase in the motorcyclists on the roads increasing per year at the rate of almost 120,000 – 750,000 units/year. Vulnerable causes of the RTA are non-compliance of the helmet and safety gears use by the motorcycle riders causing fatalities of the head areas as (66.4%) and pelvis (2.9%) causing frequents death cases in the under-developed and developed countries. Head injury has been the repeated death cause in the research outcomes of Singapore and Nigeria respectively 30.9% and 48.3% [26].

CONCLUSION:

RTA victims were 581 cases (27.8%) including 324 autopsies in the age group of 19 – 40 years (55.8%), male to female ratio was observed as 510 males (87.8%) and 71 females (12.2%) with a proportion of seven to one with a significant p-value as (0.05). Head injury caused majority of the death cases as observed in 386 victims (66.4%), 84 chest victims (14.5%), 50 cases of multiple traumatic injuries (8.6%) and 17 pelvis injury cases (2.9%). Pedestrians and motorcyclists were in majority respectively 389 pedestrians (67%) and 122 motorcyclists (21%). Every month average autopsies were carried out as (48.4 ± 7.46) without any statistical variation in the count of autopsies. We observed in the incidence of autopsies that males were dominant in number over females. But for the significant variation in both groups need proper association of sex in the incidence of Road Traffic Accidents and at the same time for the females autopsied compliance.

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