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Research Article

**ONE-YEAR PROSPECTIVE STUDY TO ASSESS THE  
PATTERNS OF INJURIES CAUSED BY RTA (ROAD TRAFFIC  
ACCIDENT) DUE TO MULTIPLE FACTORS (OVER-  
SPEEDING & RESTRAIN USE)****Maham Ghaffar, Aasia Jabeen, Sadia Basheer**  
Bahawal Victoria Hospital Bahawalpur**Abstract:**

**Objectives:** Our research reports about the injury patterns due to the factor of over speeding on the roads also known as RTA (Road Traffic Accidents).

**Methodology:** Our research spans over one-year prospective design that assesses the collected data of the emergency department treated RTA patients at Sir Ganga Ram Hospital, Lahore (October 2016 to October 2017). We further subdivided the sample patients between Group – I and II having respectively fracture patients and without fracture patients.

**Results:** Research sample consisted of 1513 patients out of which Group – I and II included respectively 628 and 885 patients. Females were less in number as only 157 females were made a part of the research; whereas, rest of the other (1356) were males. The age group was from one to eighty-five years. Most of the injured patients were of young age group, sitting on the front seaters or driving the vehicles. A meagre strength was in a habit of using restraints. We compared restraints use and high speed of both groups in this particular research. In terms of time of accidents, most of the accidents were reported from 1200 Hours to 2400 Hours without any discrimination of group.

**Conclusion:** The reasons behind the incident of road accidents were the same as reported in other parts of the world with a few unique and specific reasons as well. Various non-compliance reasons of RTA were over speeding, fatigue, traffic laws avoidance and non-compliance and carelessness. Their reasons are common; whereas, few were unique to this series such as lack of driving skills, lack of driving training, underage driving, kids lying in the laps of the drivers or front seaters, patience lack and excessive and unnecessary mobile phone usage while driving.

**Keywords:** Injury Pattern, RTA (Road Traffic Accident), Fracture, Trauma and Causation.

**Corresponding author:**

**Maham Ghaffar,**  
Bahawal Victoria Hospital,  
Bahawalpur

QR code



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**INTRODUCTION:**

There is an obvious increase in the incidents of RTA all over the world because of various reasons which cost about ten million permanent disabilities and above one million deaths every year all over the world. Large numbers of injuries and deaths due to RTA are reported only in the USA as it is the first country to report a higher number of injuries and deaths all over the world [1].

Due to an increased motorization in the underdeveloped countries, there is an increase in road traffic accidents which causes RTA as a major concern for the healthcare department [2]. Road Traffic Accidents are one of the primary reasons of death and disability among patients all over the world as it stands at number nine all over the world which is likely to increase in the coming years till 2020 as reported by various estimates [3]. It raises the question of "How to control and eradicate disability and death caused by Road Traffic Accidents?" [4]. Unfortunately, education of the drivers, safety programmes and various training sessions have badly failed to reduce and control the onset of RTA among various countries [5].

Multiple factors are possibly contributing to this menace of RTA as the onset of RTA is increasing day after day, causing loss of precious deaths especially in the productive age group, economic burdens in terms of treatment costs, rehabilitation and hospitalization. All these factors also cause non-availability of regular routine by the patients for a longer period of time and sometimes for life. It seems that we cannot stop this increased morbidity and mortality rates attributed to the incidence of RTA. Therefore, in this particular research, our research reports about the injury patterns due to the factor of over speeding on the roads also known as RTA (Road Traffic Accidents).

**METHODOLOGY:**

Our research spans over one-year prospective design that assesses the collected data of the emergency department treated RTA patients at Sir Ganga Ram Hospital, Lahore (October 2016 to October 2017). We further subdivided the sample patients between Group – I and II having respectively fracture patients and without fracture patients. Researcher secured ethical approval before the commencement of this research. We included only those patients who had

met road traffic accidents and had various injury patterns. Patients also gave an informed consent before research commencement; whereas, we did not include any injured case other than RTA and infants from this particular research.

The research sample consisted of 1513 patients out of which Group – I and II included respectively 628 and 885 patients. Females were less in number as only 157 females were made a part of the research; whereas, rest of the other (1356) were males. The age group was from one to eighty-five years.

**RESULTS:**

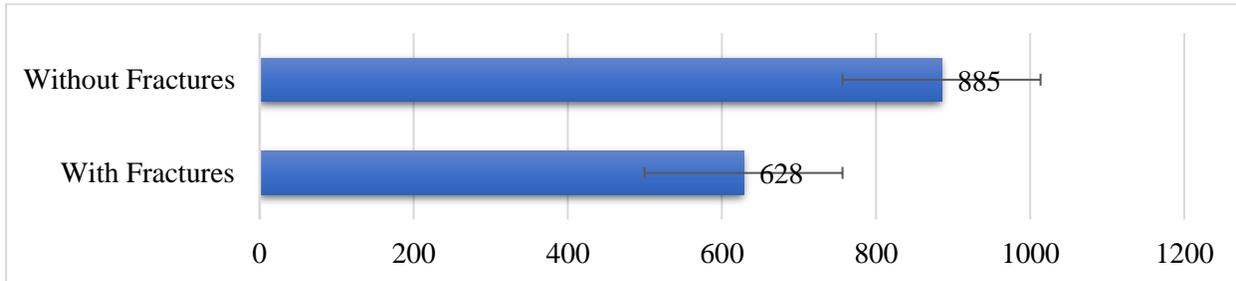
The research sample consisted of 1513 patients out of which Group – I and II included respectively 628 and 885 patients. Females were less in number as only 157 females were made a part of the research; whereas, rest of the other (1356) were males. Most of the injured patients were of young age group, sitting on the front seaters or driving the vehicles. A meagre strength was in a habit of using restraints. We compared restraints use and high speed of both groups in this particular research. In terms of time of accidents, most of the accidents were reported from 1200 Hours to 2400 Hours without any discrimination of group.

Group-wise gender distribution was such as Group – I had a total of 564 males (89.80%) and 64 females (10.20%); whereas, Group – II had respectively a total of 792 males (89.49%) and 93 females (10.51%). Summer seasons met a lot of accidents because the majority of the people move from one place to other in order to rejuvenate and enjoy visiting places with respect to other times of the year. Group – I used restraints in comparison to the second group; whereas, a speed of more than hundred kilometres per hour was also more in Group – I than Group – II. Most of the accidents occurred in the time bracket of 1200 Hours to 2400 Hours in both of the Groups. Majority of the drivers failed to produce a valid driving license or even did not hold any driving license.

Both the groups faced injuries of lower and upper extremities; whereas, Group – I included only fracture cases and Group – II included non-fracture cases. Hospitalization was more in Group – I patients than Group – II patients. Majority of the patients received mandatory first aid and immediate management and moved to their homes.

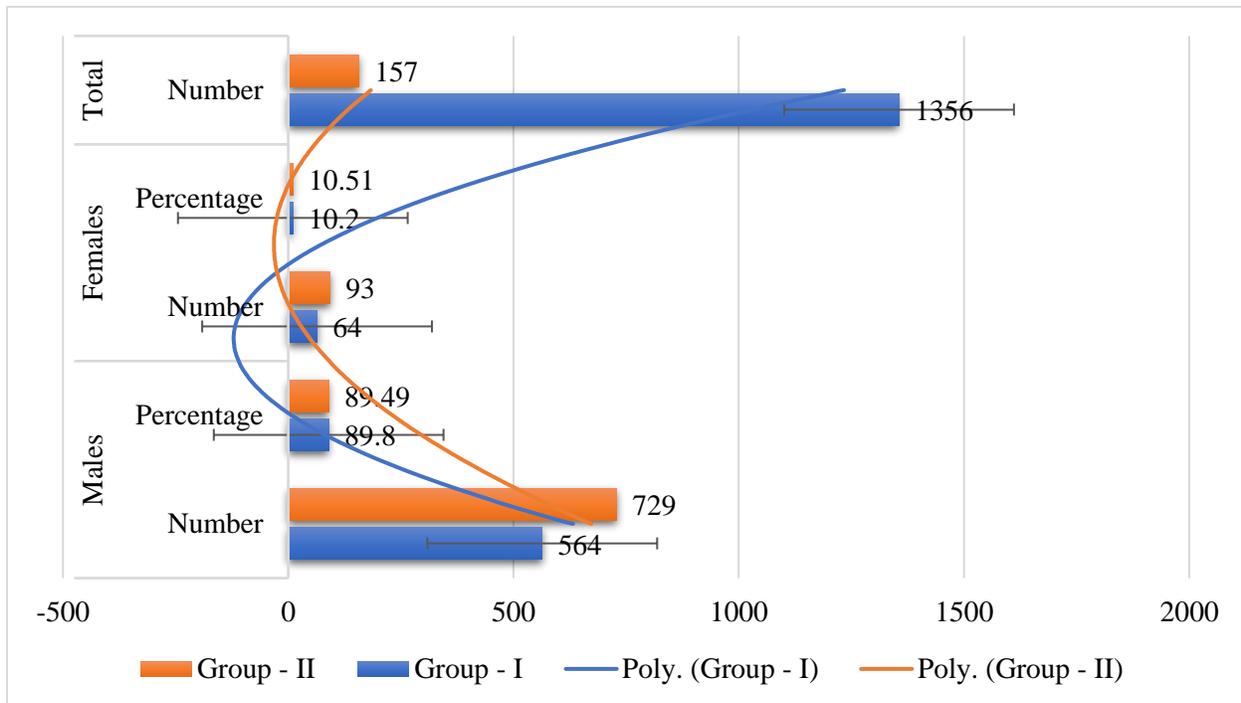
**Table – I:** Patient’s Distribution as With and Without Fractures

Patients Distribution	Number
With Fractures	628
Without Fractures	885



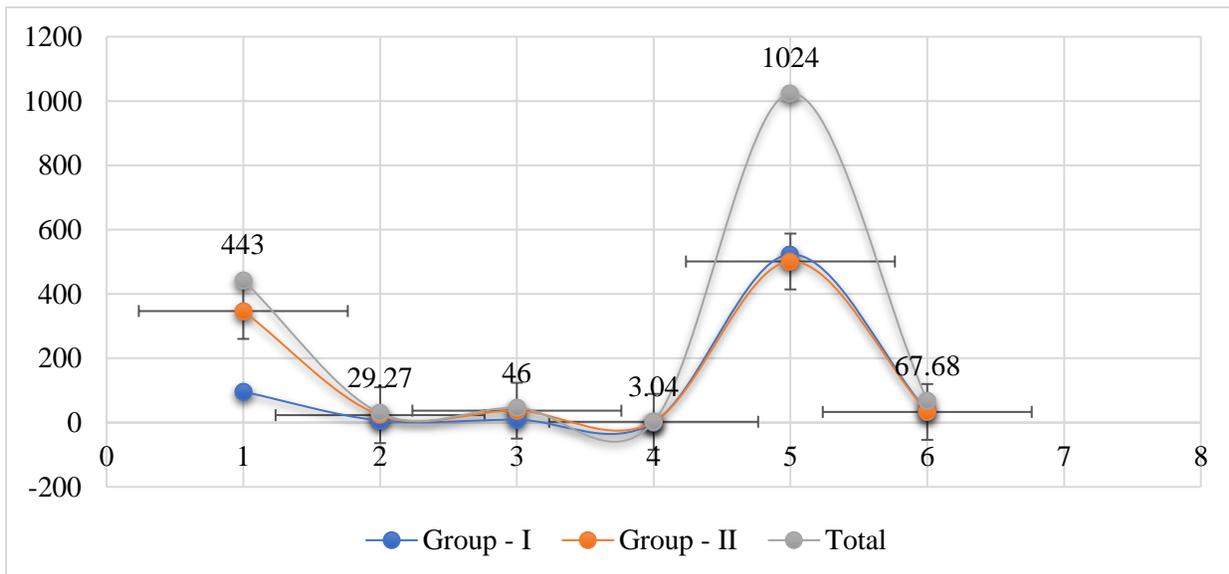
**Table – II:** Male and Females Distribution

Group	Males		Females		Total Number
	Number	Percentage	Number	Percentage	
Group – I (With Fractures)	564	89.80	64	10.20	1356
Group – II (Without Fractures)	729	89.49	93	10.51	157



**Table – III:** Restraints Wise Stratification

Group	Seat Belts		Air Bags		None	
	Number	Percentage	Number	Percentage	Number	Percentage
Group – I (With Fractures)	96	6.34	9	0.59	523	34.56
Group – II (Without Fractures)	347	22.93	37	2.44	501	33.11
Total	443	29.27	46	3.04	1024	67.68

**Table – IV:** Stratification with Respect to Speed

Group	< 100 Kph		100 – 120 Kph		> 100 Kph	
	Number	Percentage	Number	Percentage	Number	Percentage
Group – I (With Fractures)	128	8.46	274	18.10	226	14.93
Group – II (Without Fractures)	592	39.12	159	10.50	134	8.85
Total	720	47.58	433	29.27	360	23.79

Kph = Kilometers Per Hour

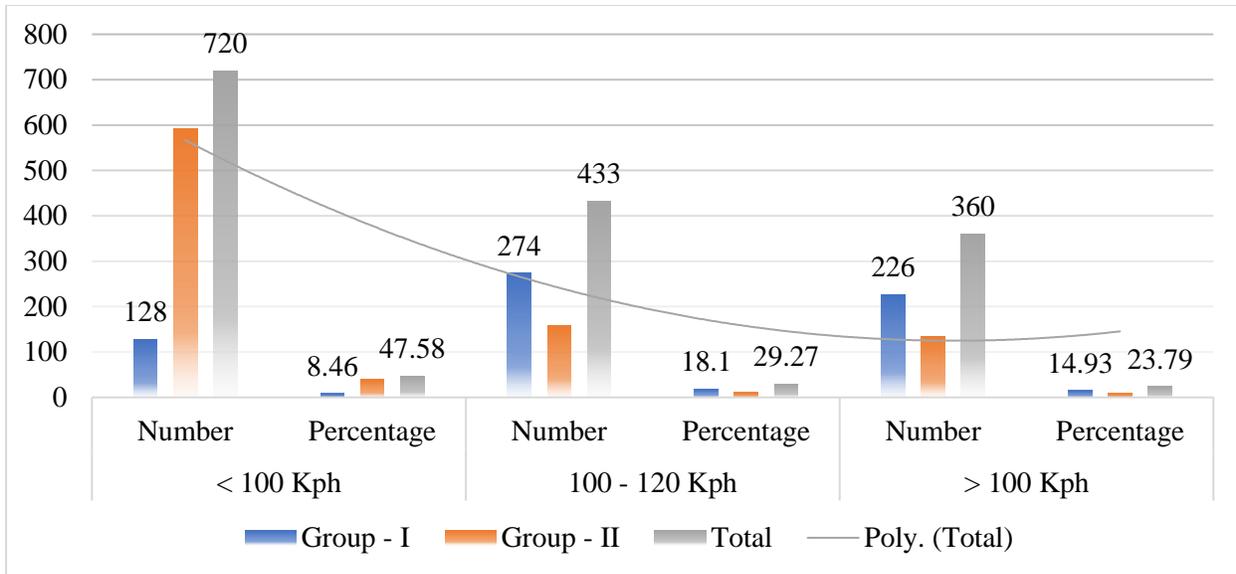


Table – V: Stratification with Respect to Time

Group	2400 to 1200 Hrs		1200 to 2400 Hrs	
	Number	Percentage	Number	Percentage
Group – I (With Fractures)	143	9.45	485	32.05
Group – II (Without Fractures)	244	16.12	641	42.36
Total	387	25.57	1126	74.42

Hrs = Hours

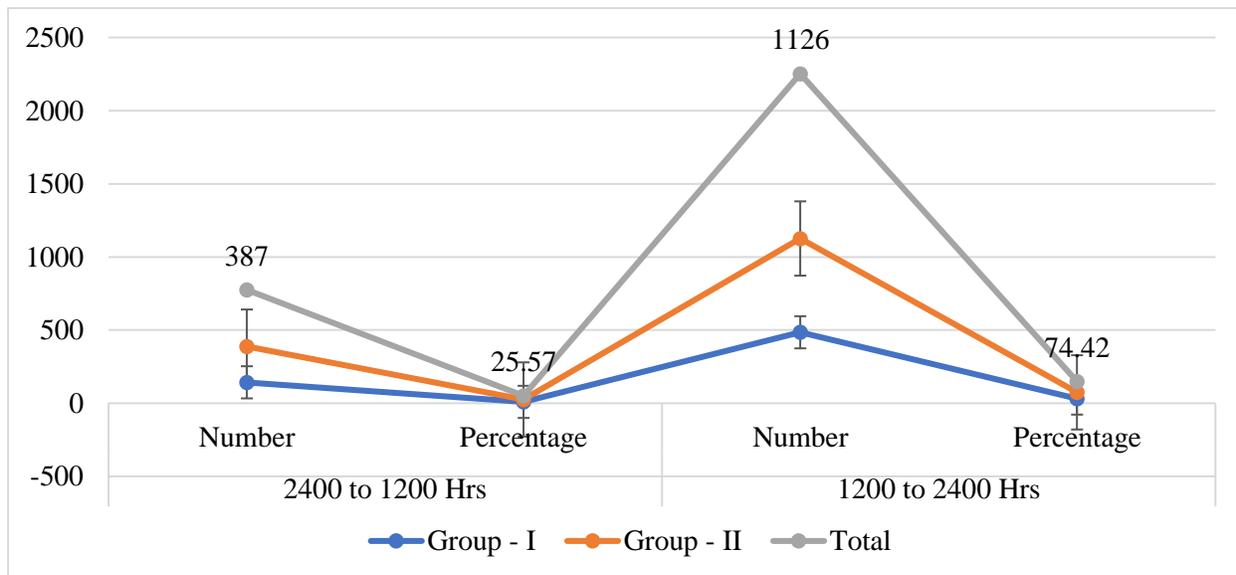
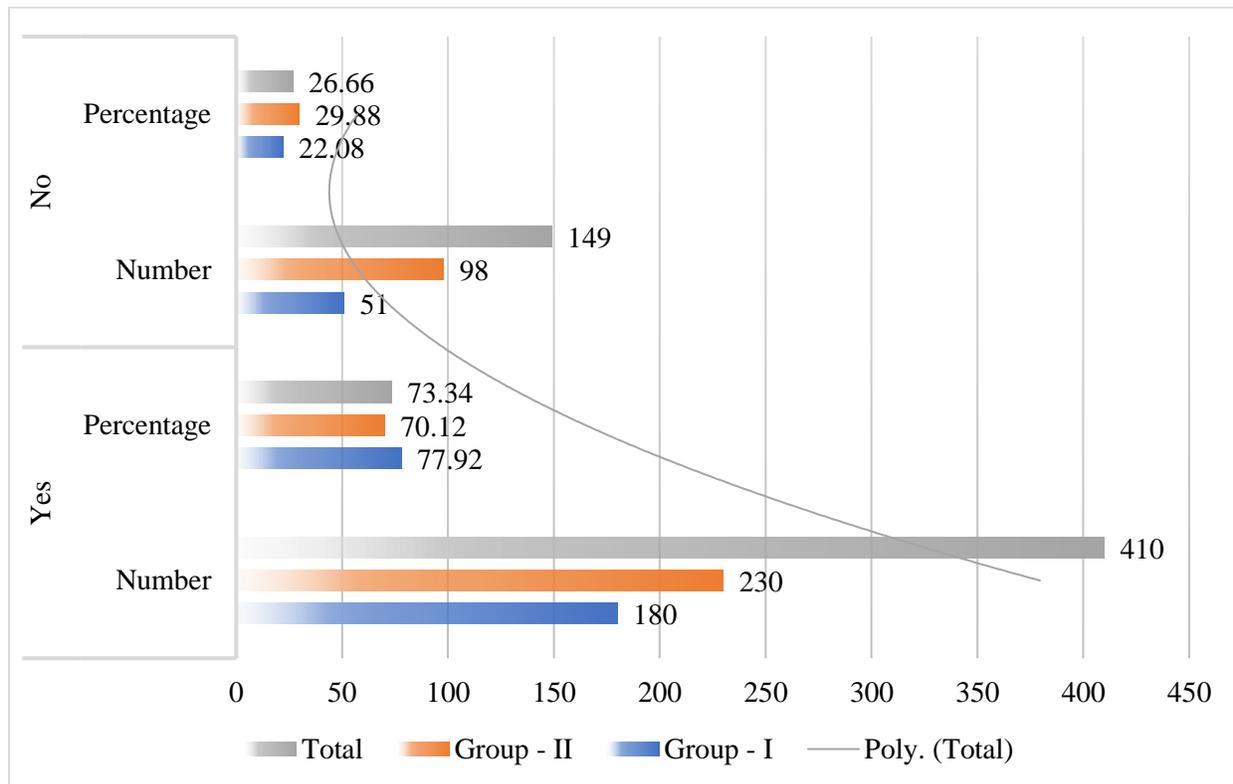


Table – VI: Driving License Stratification

Group	Yes		No	
	Number	Percentage	Number	Percentage
Group – I (With Fractures)	180	77.92	51	22.08
Group – II (Without Fractures)	230	70.12	98	29.88
Total	410	73.34	149	26.66

**DISCUSSION:**

All over the world, there is an evident increase in a number of vehicles on road with non-trained drivers and less implementation of traffic rules. All these factors of non-adherence to traffic rules, non-skilled driving, underage driving, less patient attitude and various other reasons attribute in the increased incidence of road traffic accidents all over the world causing death and disability to the individuals [2]. Various other contributing factors are scarcity of public transportation facilities, locally employed population, expanding cities, vertical growth, increasing vehicles on the roads, car loaning facilities especially in the last two decades. Human occupancy is three-person per vehicle. Road Traffic Accidents are also occurring because of associated human factor such as fatigue, careless attitude and over speeding

[6].

It is evident from the available literary evidence that in the recent years vehicle impact caused most of the deaths and injuries because of increased velocity of the vehicles as vehicles moving at a pace of above one hundred kilometers pose a serious vehicle impact and non-adherence to the use of restrains such as helmets and seat-belts also attributes to increased rate of serious and fatal injuries that may possibly lead to death or permanent disability [7]. The features of increased fracture rates are very much different from the trauma cases; these fractures are closely linked with the various another injury mechanism [8]. Repeated fractures and injury locations include lower and upper extremities, maxillofacial and skull for front seaters and drivers. Drivers commonly face

fractures of sternocostal locations. Passengers travelling while sitting at back seats have decreased involvement in the fractures and injuries than the front seaters as drivers and front seaters face a direct physical and visual impact [8].

Males were in more numbers than females as females are less exposed to society because of cultural boundaries. Accidents were more common in the age bracket of 20 – 30 years as they usually ride to enjoy and rejuvenate and more often overspend and cut sharp turns, drift and race even when drunk. More accidents were reported at midnight and noon; the reasons behind this higher incidence in no clear. School times and busy hours are other reasons for such accidents. Injuries caused by RTA are more than the reported outcomes of Saudi Research Studies which involves almost the same attributing factors of road traffic accidents [8, 9].

### CONCLUSION:

The reasons behind the incident of road accidents were the same as reported in other parts of the world with a few unique and specific reasons as well. Various non-compliance reasons of RTA were over speeding, fatigue, traffic laws avoidance and non-compliance and carelessness. Their reasons are common; whereas, few were unique to this series such as lack of driving skills, lack of driving training, underage driving, kids lying in the laps of the drivers or front seaters, patience lack and excessive and unnecessary mobile phone usage while driving.

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