

## Original Article

### A Retrospective Study to analyze causative factors and type of injury in Road Traffic Accidents

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#### ABSTRACT:

**Introduction-** Road traffic accidents (RTAs) is an issue of national concern, are the major cause of deaths all over the world. The present study aimed at determining various cause and types of injuries in RTA. **Materials & Methods-** The present retrospective study was performed in the department of community medicine. Information such as name, age, gender, type of injuries, alcohol consumption etc. was taken from hospital records. For assessing the site of injury, body was divided into regions such as thorax, abdomen, extremities etc.

**Results-** Out of 604 RTA, 296 were involving males and 308 females. Age group 0-10 years had 12 males and 14 females, 10-20 years had 35 males and 48 females, 20-30 years had 110 males and 142 females, 30-40 years had 88 males and 75 females, 40-50 years had 30 males and 16 females and >50 years had 21 males and 13 females. The difference was significant ( $P < 0.05$ ). Main vehicles involved in RTA was four wheelers (52%) followed by two wheelers (35%), heavy vehicles (10%) and three wheelers (3%). The difference was significant ( $P < 0.05$ ). Out of total 882 injuries, 510 were on right side and 372 on left side. Most commonly involved region was extremities (302), upper limb (150), lower limb (162), maxillofacial (118), head/neck (90), chest (30), abdomen (22) and other (8). The difference was significant ( $P < 0.05$ ). **Conclusion-** Over the past, there is increase in trend of RTA. Female predominance in this study was observed. Extremities were the most involved region and four wheelers were the commonly involved vehicle.

**Key words-** Four wheelers, Maxillofacial, Road traffic accidents

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#### INTRODUCTION

Road traffic accidents (RTAs) is an issue of national concern, are the major cause of deaths all over the world. World Health Statistics 2008 cited in Global Status Report on Road Safety states that RTIs in 2004 were the 9th leading cause of death and at current rates by 2030 are expected to be the 5th leading cause of death, overtaking diabetes and Human immunodeficiency virus infection/acquired immunodeficiency syndrome. Road traffic injury (RTI) is major but neglected public health problem in both developing and developed countries. By considering its magnitude and gravity and the consequent negative impacts on the economy, public health and the general welfare of the people, it is the topic needs attention.<sup>1</sup>

National Crime Record Bureau (2010) reported 37.2% of all accidental deaths due to unnatural causes. Road traffic crashes are a major cause of misery, disability, and death globally, with a disproportionate number occurring in developing countries. It has been predicted that by 2020, RTIs will rank as high as third among causes of disability adjusted life years lost.<sup>2</sup>

RTA can be due to negligence of people on the roads. The change in living trend of people, high speedy vehicles,

failure to obey the traffic rules is among various causes. Increase in the number of four wheelers over past few years led overcrowding on the roads. There is significant increase in the injuries due to RTA and hence the number of patients in the emergency wards and taking out a significant number of lives and resources.<sup>3</sup>

This is the serious matter needs to be dealt accordingly. People receive various complicated injuries in these accidents and may develop permanent disability. We need to know more about the numbers and types of injuries and about the circumstances in which these injuries occur.<sup>3</sup> Hence, the present study aimed at determining various cause and types of injuries in RTA.

#### MATERIALS & METHODS

The present retrospective study was performed in the department of community medicine. Cases admitted to the hospital were enrolled in the study. Ethical clearance was obtained from the institute. Information such as name, age, gender, type of injuries, alcohol consumption etc. was taken from hospital records.

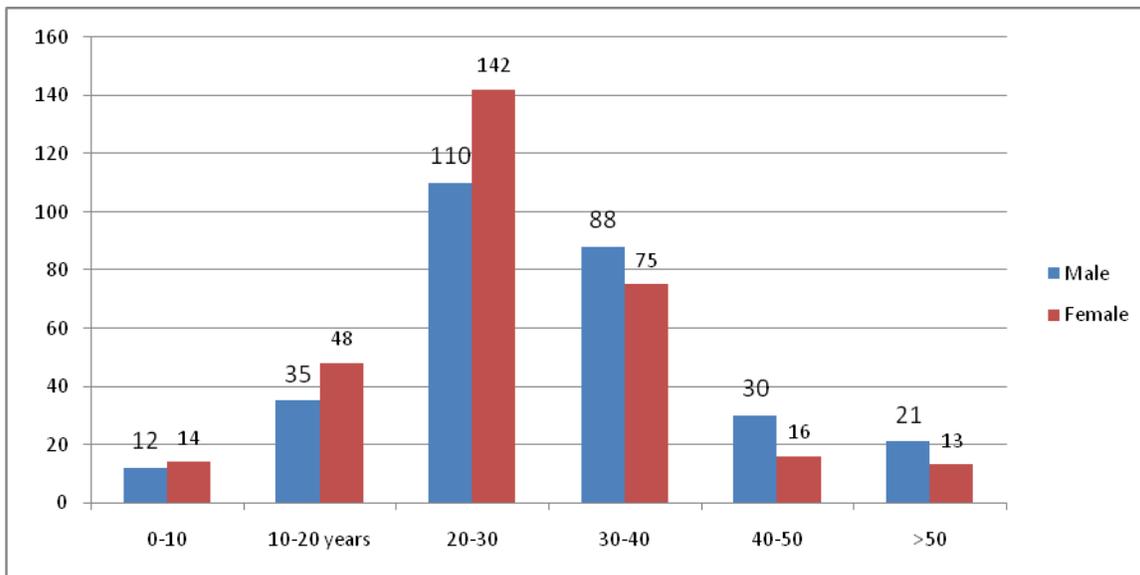
For assessing the site of injury, body was divided into regions such as thoraco-spinal injuries were included with those of the thorax and those of the lumbar spine with the

abdomen. Face was defined as that part of the head lying between the hairline and chin. Injuries of the shoulder and hip joint were included within the limb region. Results

thus obtained were subjected to statistical analysis using chi-square test. P value <0.05 was considered significant.

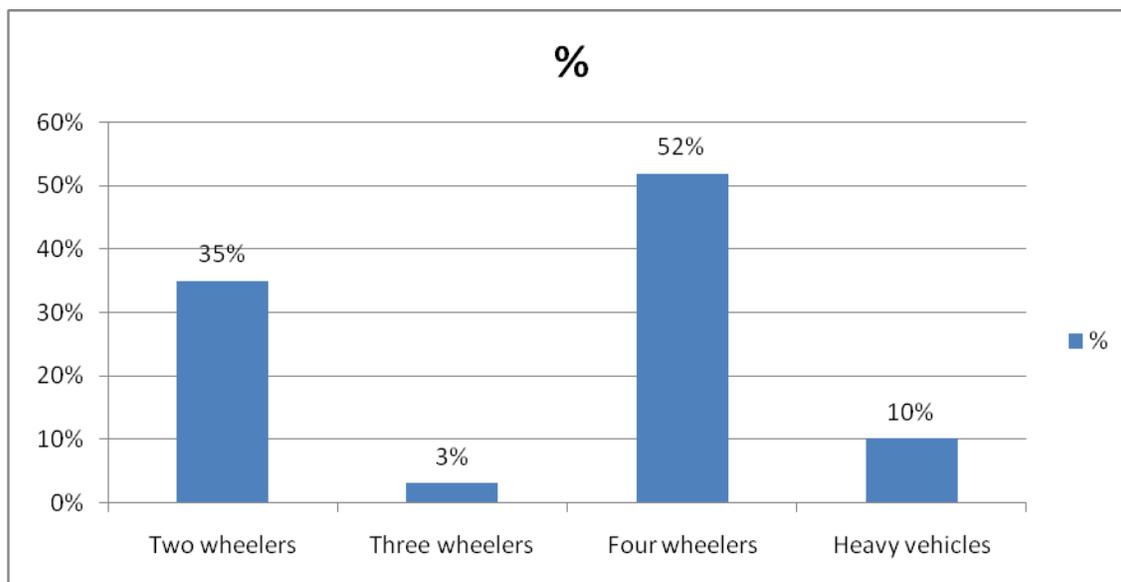
**RESULTS**

**Graph I** Age and gender wise distribution of patients



Graph I shows that out of 604 RTA, 296 were involving males and 308 females. Age group 0-10 years had 12 males and 14 females, 10-20 years had 35 males and 48 females, 20-30 years had 110 males and 142 females, 30-40 years had 88 males and 75 females, 40-50 years had 30 males and 16 females and >50 years had 21 males and 13 females. The difference was significant (P< 0.05).

**Graph II** Vehicles leading to RTA



Graph II shows that main vehicles involved in RTA was four wheelers (52%) followed by two wheelers (35%), heavy vehicles (10%) and three wheelers (3%). The difference was significant (P< 0.05).

**Table I** Distribution of body region injuries

Site	Total	Right side	Left side
Extremities	302	202	100
Upper limb	150	80	70
Lower limb	162	82	80
Maxillofacial	118	68	50
Head/neck	90	50	40
Chest	30	12	18
Abdomen	22	10	12
Other	8	6	2
<b>Total</b>	<b>882</b>	<b>510</b>	<b>372</b>

Table I shows that out of total 882 injuries, 510 were on right side and 372 on left side. Most commonly involved region was extremities (302), upper limb (150), lower limb (162), maxillofacial (118), head/neck (90), chest (30), abdomen (22) and other (8). The difference was significant ( $P < 0.05$ ).

## DISCUSSION

RTAs constitute a major public health problem in all over the world. The number of accidents is increasing day by day. The change in human behaviours, high speedy life and modernization are among various reasons.<sup>4</sup> The present aimed at determining various cause and types of injuries in RTA. We found that out of 604 RTA, 296 were involving males and 308 females. In our study, female predominance was observed. This is in agreement with Mehta et al.<sup>5</sup> The female predominance may be due to the untrained females driving the vehicles. We observed that maximum RTA were seen in age group 20-30 years (110 males, 142 females) followed by 30-40 years (88 males, 75 females), 10-20 years had 35 males and 48 females, 40-50 years (30 males, 16 females), >50 years (21 males, 13 females) and 0-10 years (12 males, 14 females). This is similar to Sathiyasekaran et al.<sup>6</sup>

We found that main vehicles involved in RTA was four wheelers (52%) followed by two wheelers (35%), heavy vehicles (10%) and three wheelers (3%). This is due to the fact that number of four wheelers has increased enormously over the past few years. But the rash driving leads to RTA. This is similar to results by Ghosh PK.<sup>7</sup>

Most commonly involved region was extremities (302) (Right side- 202, left side- 100), upper limb (150) (Right side- 80, left side- 70), lower limb (162) (Right side- 82, left side- 80), maxillofacial (118), head/neck (90) (Right side- 50, left side- 40), chest (30) (Right side- 12, left side- 18), abdomen (22) (Right side- 10, left side- 12) and other (8) (Right side- 6, left side- 2). This is in agreement with Vaghese M.<sup>8</sup> The possible explanation might be that motor vehicle occupants did not use seat belts, resulting in forward jerk during a collision and higher rate of injury.

There is need to educate the people about road safety. There should be frequent road safety programmes at large level. Road traffic rules should be strict and action should be taken against defaulters of the rules. Issuing of license to the expert drivers is one of preventive measure.<sup>9</sup>

## CONCLUSION

Author concluded that over the past, there is increase in trend of RTA. Female predominance in this study was observed. Extremities were the most involved region and four wheelers were the commonly involved vehicle.

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