

## ORIGINAL RESEARCH

# Assessment of etiology and type of fractures among study population

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### ABSTRACT

**Background:** All ages of people can sustain fractures. However, the kind and position within the body fluctuate greatly based on a variety of circumstances, primarily those pertaining to the quality of each person's bones and the sort of trauma. The present study was conducted to assess cases with fracture. **Materials & Methods:** 105 patients with fractures were subjected to radiological investigation such as X- ray skull, upper limb, lower limb, CT scan etc. Etiology of fracture and associated injuries was also reported. **Results:** Out of 105 patients, males were 63 and females were 42. The etiology of fracture was road traffic accident (RTA) in 76, fall in 21 and violence in 8 cases. Site of fracture was upper limb in 56, lower limb in 32, fracture of spine and trunk in 10, fracture of skull, and intracranial injury in 7 cases. Associated injuries was superficial injury in 9, contusion in 6, and open wound in 18 patients. The difference was significant ( $P < 0.05$ ). **Conclusion:** The most common type of fractures was fracture of upper limb, fracture of lower limb, fracture of spine and trunk. The etiology found to be road traffic accident.

**Key words:** Fracture, Spine, Population

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### INTRODUCTION

All ages of people can sustain fractures. However, the kind and position within the body fluctuate greatly based on a variety of circumstances, primarily those pertaining to the quality of each person's bones and the sort of trauma.<sup>1</sup> Knowing the prevalence of various fractures in a certain population is interesting from a sociological perspective. Such information can serve as a foundation for planning appropriate medical care and implementing preventative actions to lower the risk of fractures.<sup>2</sup> This could entail broader community organization, such as managing traffic and senior housing, but it could also entail more targeted preventive actions for certain risk populations. The fractures occurring in the elderly population, which are often fragility fractures, increased preventive measures are of interest.<sup>3</sup> The World Health Organization (WHO) has described fragility fractures as fractures that result from mechanical forces that would not normally lead to a fracture. The incidence of fractures in many locations have been reported to increase.<sup>4</sup>

Road traffic injuries (RTIs) cause more years of life lost than most human diseases and account for a

significant percentage of deaths and injuries. Road factors, vehicle factors, and human behavior variables all play a role in the causes of traffic jams.<sup>5</sup> For the majority of the world's population, the cost of road traffic injuries in terms of societal and economic consequences is significantly increasing, despite the fact that the number of fatalities from traffic crashes has been down in high-income nations over the past few decades.<sup>6</sup> The present study was conducted to assess cases with fracture.

### MATERIALS & METHODS

The present study comprised of 105 patients with fractures reported in orthopaedics department. The written informed consent was obtained from all patients.

Data such as name, age, gender etc. was recorded. All cases were subjected to radiological investigation such as X- ray skull, upper limb, lower limb, CT scan etc. Etiology of fracture and associated injuries was also reported. Results thus obtained were assessed statistically. P value  $< 0.05$  was considered significant.

**RESULTS**

**Table I Distribution of patients**

Total- 105		
Gender	Male	Female
Number	63	42

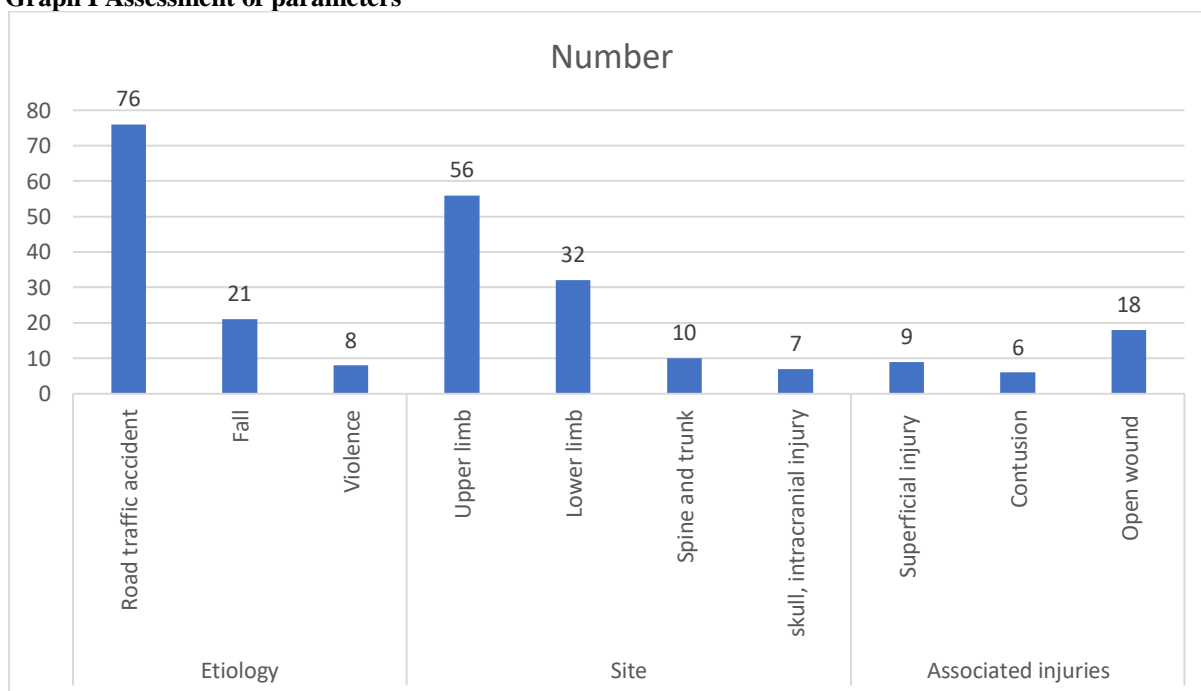
Table I shows that out of 105 patients, males were 63 and females were 42.

**Table III Assessment of parameters**

Parameters	Variables	Number	P value
Etiology	Road traffic accident	76	0.01
	Fall	21	
	Violence	8	
Site	Upper limb	56	0.02
	Lower limb	32	
	Spine and trunk	10	
	skull, intracranial injury	7	
Associated injuries	Superficial injury	9	0.76
	Contusion	6	
	Open wound	18	

Table II, graph I shows that etiology of fracture was road traffic accident (RTA) in 76, fall in 21 and violence in 8 cases. Site of fracture was upper limb in 56, lower limb in 32, fracture of spine and trunk in 10, fracture of skull, and intracranial injury in 7 cases. Associated injuries were superficial injury in 9, contusion in 6, and open wound in 18 patients. The difference was significant ( $P < 0.05$ ).

**Graph I Assessment of parameters**



**DISCUSSION**

The incidence of fractures, particularly those associated with osteoporosis, is a significant public health concern. Fractures can occur in any bone, but the most common sites are the wrist, hip, and spine.<sup>7</sup> The overall incidence of fractures varies by age, gender, and geographic location. High incidence due to physical activity and sports. Lower incidence compared to children, but still significant due to occupational hazards and lifestyle factors. Highest incidence, particularly due to osteoporosis and

increased fall risk.<sup>8</sup> Women are more prone to fractures than men, especially postmenopausal women. Osteoporotic fractures are fractures that occur in bones weakened by osteoporosis. These are most common in older adults and significantly impact morbidity and mortality.<sup>9</sup> The World Health Organization (WHO) has described fragility fractures as fractures that result from mechanical forces that would not normally lead to a fracture.<sup>10</sup> Many factors may contribute to changes in the incidence rate such as comorbidities of diabetes, obesity, and others; the

use of certain medications; mental factor and social factors.<sup>11,12</sup>The present study was conducted to assess cases with fracture.

We found that out of 105 patients, males were 63 and females were 42. Guifo et al<sup>13</sup> determined the demographic characteristics, clinical presentation, treatment patterns and outcomes of paediatric fractures. They enrolled 147 fractures from 145 children with a mean age of 7 years and male-to-female sex ratio of 2.5:1. The main mechanisms of injury were games (53%) and accidental falls (20.7%). Forearm fractures were the most common fractures (38%). The mainstay of management was non-operative in 130 (88.5%) fractures, with 29.3% manipulations under anesthesia and 17 (11.5%) open reductions with internal fixation. The most surgically reduced fractures were supracondylar humeral fractures. Major difficulties were long therapeutic delay, lack of diligent anaesthesia and the lack of fluoroscopy. The outcome of treatment was favorable in 146 (99.3%) paediatric fractures.

We observed that etiology of fracture was road traffic accident (RTA) in 76, fall in 21 and violence in 8 cases. Site of fracture was upper limb in 56, lower limb in 32, fracture of spine and trunk in 10, fracture of skull, and intracranial injury in 7 cases. Associated injuries was superficial injury in 9, contusion in 6, and open wound in 18 patients. Guifo et al<sup>14</sup> evaluated the relation of mortality during one year post operative period after hip surgery to associated co morbidities. Out of 56 patients operated, 9 patients died during first year post operative period. Of them 4 were males and 5 females. 2 patients died in first one month of follow up, one due to aspiration pneumonia and second patient from septicaemia. 3 patients died in first 3 months of follow up due to deep vein thrombosis leading to pulmonary embolism, cardiac failure and cerebrovascular accident. 4 patients died due to cardiac failure between 3 months to one year postoperative period. Out of 9 death 4 were in hospital 3 in home, one in old age home and one person in unknown place. In 9 deaths 3 patients had bipolar prosthesis, 2 dynamic hip screws fixation, 2 with proximal femoral locking compression plate, 2 with proximal femoral nailing and 1 with Austin Moore prosthesis. Death of patients more than 75 years were 5 and between 65-74 years was 4.

According to Pan et al<sup>15</sup>, the average death rate of inpatients admitted as a result of traffic accidents was 0.68%, and the incidence of hospitalizations connected to traffic accidents ranged from 9.17% to 11.54%. Orthopedic fractures accounted for the majority of the injuries sustained by inpatients following traffic accidents in Taiwan, accounting for 29.36% of cases. Three categories of orthopedic fractures—fractures of the upper limb, lower limb, and spine and trunk—accounted for a total of 391,197 cases. An increase in the yearly national medical costs, which varied from US\$ 45.6 million to US\$ 86 million, was observed for inpatients with orthopedic

fractures. The frequency with which certain orthopedic fracture patterns were linked to other events, particularly head injuries, varied from 14% to 26%. A significant relation to male gender, older age, low income, and admission to high-level hospital to the observed fracture patterns was observed.

## CONCLUSION

Authors found that most common type of fractures was fracture of upper limb, fracture of lower limb, fracture of spine and trunk. The etiology found to be road traffic accident.

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