Original Article

Trauma International 2016 Jan- April;2(1):34-36

Frequency of Motor Bike Injuries, Helmet Vs Non Helmet Wearing in Karachi Pakistan

Ranjeet Kumar[1], Muhamad Muzamil[1], Kashif Mahmood[1], Prof Anisuddin Bhatti[1], Prof Saeedi Minhas[1], Vinod Kumar[1]

Abstract

Purpose: To assess the frequency of motor bike injuries in Karachi, Pakistan's largest city, and frequency of helmet and non helmet wearing among motorcyclist.

Material and Methods Accident& emergency department of Jinnah Post Graduate Medical Center, Civil hospital, Abbasi Shaheed Hospital, Aga Khan hospital and Liaqat Hospital Karachi. Pakistan from Jan 2014 to December 2014.

Patients and Methods: A descriptive cross-sectional study was carried out by Road Traffic Injury Research And Prevention Centre "RTIR&PC" in the five tertiary care hospitals (Civil Hospital ,Jinnah Postgraduate Medical Center, Abbasi Shaheed Hospital and Aga Khan Hospital) of Karachi, Pakistan. All male motorbike accident victims presented to the emergency department of the selected hospital, were included in the study. A pretested trauma registry form was completed for all patients.

Results: Total numbers of accidents were 24360 and total number of injured were 30274. Minor injury 23825 approximately 78.6%, around 65 per day, serious were 5382 approximately 17%,around 15 per day and fatal were 1067 approximately 3.5%, 3 per day. Bike rider injuries were 25855 approximately 85% of all injuries and fatal bike rider accident were 506 approximately 47% of all fatalities. Helmet wearing bike riders were 1123 approximately 4.3% and non helmet wearing were 16681 approximately 64.5%. Injuries related to body part were , head and neck 23% ,fatal were 53%, face 17% ,fatal were 16%, chest 1% fatal 1%, abdomen, pelvic contents 1% fatal 1%, extremity, pelvic girdle 29% fatal 17% external injuries 28% fatal 12%.

Conclusion: Injuries in city of Karachi are an important public health problem and contribute to major bulk of Emergency facilities. Motorbike riders are known to be more vulnerable to road accidents and became victims of severe form of injuries even death by road traffic accidents, this unfortunately also becomes a socio economic problem. Non helmet wearing is the major risk factor in fatality for motor bike accidents. By putting into effect laws that enforce road safety measures and helmet usage can prevent these injuries.

Key Words: Motor bike , Helmet and Karachi.

The Global status report on road safety 2013 presents information Worldwide, the number of people killed in road traffic crashes each year is estimated at almost 1.24 million, while the number injured could be as high as 50 million – the combined population of five of the world's large cities. It was the 2nd leading cause of deaths among 15 - 44 years of age and 80% of these deaths occurred in developing countries[1]. By 2020 road traffic accidents are expected to be the 3rd leading cause of death and disability worldwide[2]. Organization (WHO) 2011 fact sheet, "over 90% of the world's fatalities on the roads occur in low-income and middle-income countries, even though these countries have less than half of the world's vehicles."1 In a 2009 report, WHO estimated that in Pakistan road traffic injuries result in 25.3 deaths per 100,000,2 which is high by the international organization's standards. Currently it is the 9th leading cause of disability and adjusted life year lost globally, moreover 90% of the disability and adjusted life year lost occurs in developing countries Being economical and convenient city traffic the use of motorbikes has increased tremendously during the last few years. Almost percentage of the inhabitants of Karachi belongs to lower middle class and relies on motor bikes as the main mode of transportation in Karachi. In 2010 the number is estimated to climb to 3.6 million by According to an article published in Dawn, there were about 1 million motorbikes the year 2030. Unfortunately motorcyclists also contribute to a significant number in the mortality and morbidity in road traffic accidents. Even in developed countries, the accident risk of motorcycles is 20 times more per kilometer than drivers of other vehicles[4-6] .non helmet wearing is one of the most important factor in fatality in bike riders.

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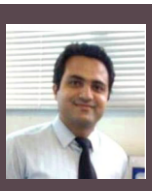
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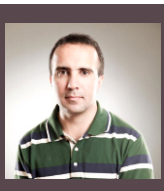
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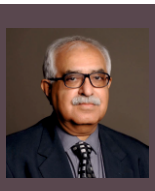
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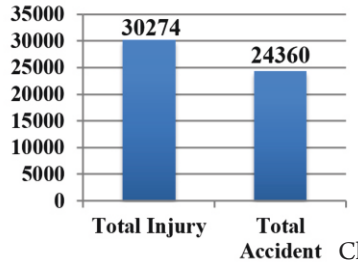
Methods:

It is cross sectional study conducted by ROAD TRAFFIC INJURY RESEARCH AND PREVENTION



Disposal	2014	Per Day
Minor	23825	65
Serious	5382	15
Fatal	1067	3
Total	30274	83

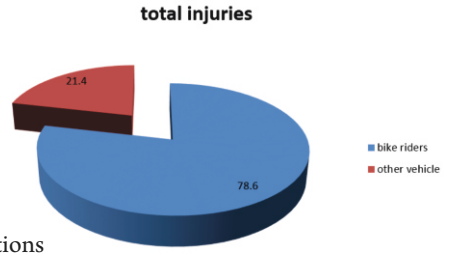
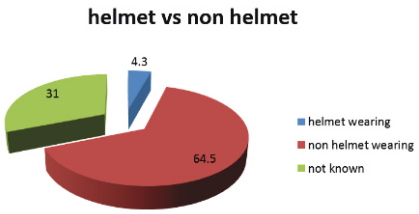
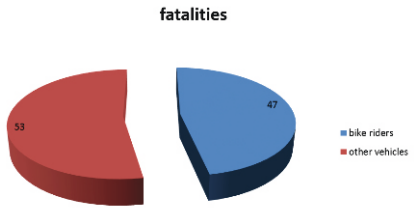


Chart 1: Distribution of total injuries and sub classifications





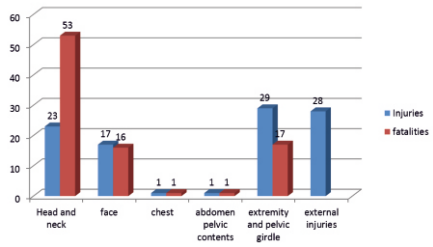


Chart 2: Distribution of fatalities and anatomical injuries

CENTRE "RTIR&PC" in emergency department of all five major hospitals in Karachi including Jinnah Postgraduate Medical Center, Civil hospital, Abbasi Shaheed Hospital, Aga Khan Hospital and Liaqat Hospital Karachi. . All male motorbike accident victims presented to the emergency department of the selected hospital, were included in the study. Inclusion criteria were injured patients of any age or sex presenting to the Accident, Emergency . A pretested trauma registry form was completed for all patients. If the patient was brought unconscious, an attempt was made to collect the information from the patient's attendant. Basic demographic characteristics, time and date, nature and cause of injury, vital signs and outcome data were recorded. Type of vehicle and mode of collision was recorded in cases of road traffic accident.

Results:

Total numbers of accidents were 24360 and total number of injured were 30274. Minor injury were 23825 (approximately 78.6%, around 65 per day), serious were 5382 (approximately 17%, around 15 per day) and fatal were 1067 (approximately 3.5%, around 3 per day)(Chart 1). Bike rider injuries were most common around 25855 (approximately 85% of all injuries) and fatal bike rider accident were 506 (approximately 47% of all fatalities). Helmet wearing bike riders were only 1123 (approximately 4.3%) and non helmet wearing were 16681 (approximately 64.5%). Injuries related to body part were , head and neck-23% ,fatal were-53%, face-17% ,fatal were 16%, chest-1% fatal 1%, abdomen, pelvic contents-1% fatal 1%, extremity, pelvic girdle-29% fatal 17% external injuries-28% fatal 12%. The most common mortality is due head and neck injuries which are due to not helmet wearing among bike riders (Chart 2).

Discussion:

Trauma is increasingly recognized as a global public health epidemic. WHO has predicted that trauma will rise from 9th leading burden of disease in 1990 to third leading cause in 2020 worldwide 8. In present study we found that annual incidence of trauma in road traffic accidents are commonly affecting bike rider which also have the highest fatality percentage among all road traffic accidents. We also found out that head and neck injuries are the commonest cause of fatality in these incidences and non helmet wearing is the commonest cause.

A study on An autopsy-based study of death due to road traffic accidents in metropolis of Karachi found out that Death were due to injury to the head (66.4%) victims, to the chest (14.5%) cases, multiple traumatic injuries in (8.6%) and pelvis (2.9%) cases.9 It is estimated that 45% of road traffic fatalities in low income countries are among pedestrians, whereas an estimated 29% in middle-income and 18% in high income countries are among pedestrians[24]. In Hong Kong, pedestrians accounted for 70% of RTA fatalities. On the other hand, in China, Malaysia and Thailand, pedestrian deaths are between 10-15% but over 50% of deaths due to RTA involved motorcyclists[10].

Unsurprisingly, the non-compliance of motorcyclists to wear helmets and the vulnerability of pedestrians accounts for head injuries proving fatal in 47% of the cases.: In a study in Nigeria, the most common cause of death was head injury 48.3%11 while in Singapore the second most common cause of death was head injuries 30.9%[12].

Conclusion:

Injuries in city of Karachi are an important public health problem and contribute to major bulk of Emergency facilities. Motorbike riders are known to be more vulnerable to road accidents and became victims of severe form of injuries even death by road traffic accidents, this unfortunately also becomes a socio economic problem. Non helmet wearing is the major risk factor in fatality for motor bike accidents. By putting into effect laws that enforce road safety measures and helmet usage can prevent these injuries.

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Conflict of Interest: NIL
Source of Support: NIL

How to Cite this Article

Kumar R, Muzzamml M, Mahmood K, Minhas MS, Vinod K. Frequency of motor bike injuries, helmet vs non helmet wearing in Karachi Pakistan. Trauma International Jan-April 2016;2(1):34-36.