

Motor bicycle and three wheeler related road traffic accidents – burden to accident and emergency service of a tertiary care hospital: a clinical audit

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Key Words: Road traffic accidents; motor cycle; three-wheelers

Abstract

In the past few decades statistical data shows an increase in the total number of accidents in Sri Lanka. A retrospective analysis of admission records in the Accident and Emergency (A&E) service and the hospital police records related to road traffic accidents was done for a period of 3 months. In a total of 1210 RTA, 426 were due to motorcycle accidents (MC) and 201 due to three-wheeler (TW) accidents. In MC accidents, there were 55.6% bicycle riders, 20.4% pillion riders and 23.9% third party individuals. Among them 10.6% had open fractures, 15.5% closed fractures and 73.9% other injuries. Thirty five percent of bicycle riders were under the influence of alcohol at the time of the accident. Among the victims of TW accidents there were 26.8% TW drivers, 50.7% passengers and 22.4% third party individuals. Fifty seven patients had fractures in which 11.9% of them were open. Thirty three percent of TW drivers were under the influence of alcohol at the time of the accident. Nearly half of RTA related admissions are due to MC and TW accidents. In almost one third of the accidents, drivers were under the influence of alcohol during the incident.

Introduction

Motorcycles (MC) and three-wheelers (TW) are a popular mode of transport in third-world countries. MC is popular as a mode of personal transport and TW is popular as a mode of commercial public transport. The reason for the popularity of these vehicle types are most probably due to the low market price, low maintenance cost and easy handling in traffic congested roads. The numbers of MC and TW on the road has significantly increased in the recent past.

In the past few decades statistical data shows an increase

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in the total number of accidents in Sri Lanka. The traffic police continue to control this alarming rate of accidents. The main reason for the rapid increase is due to an increase in vehicle ownership together with inadequate road network development, which cannot support the demand [1].

The intention of this audit is to determine the burden of MC and TW accidents in an Accident and Emergency unit of a tertiary care hospital in Sri Lanka.

Materials and methods

A retrospective analysis of admission records in the A&E service and the hospital police records related to RTA were collected over a period of 3 months from 01-05-2015 to 31-07-2015.

Results

The total admissions to the A&E during the period of analysis was 3542 out of which 1210 (34%) admissions were due to road traffic accidents. Among the RTA, 426 (35.2%) admissions were due to MC accidents and 201 (16.6%) were due to TW accidents. The rest of the admissions were due to injuries not related to RTA e.g. fall from a height, assault, electrocution injuries etc [Figure 1].

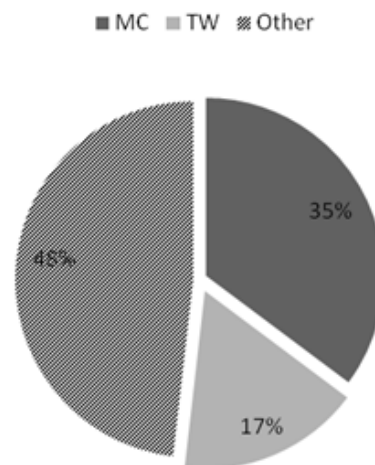


Figure 1. Admission of RTA to the Accident Service Unit of the Colombo South Teaching Hospital (MC= Motorcycle, TW=Threewheeler)

In analysis of victims of MC accidents, there were 237 (55.6%) bicycle riders, 87 (20.4%) pillion riders and 102 (23.9%) third party individuals. Among victims of MC accidents, 45 (10.6%) had open fractures, 66 (15.5%) sustained closed fractures and 315 (73.9%) individuals had other injuries. 35% of bicycle riders were under the influence of alcohol at the time of accident. Among admissions for TW accidents there were 54 (26.8%) TW drivers, 102 (50.7%) passengers and 45 (22.4%) third party individuals. Fifty seven patients had fractures in which 24 (11.9%) of them were open. 33% of TW drivers were under the influence of alcohol at the time of the accident. There were 18 (1.5%) on admission deaths reported due to RTA during the above period out of which 5 were due to TW accidents and 3 were due to MC accidents.

Discussion

Motorcycles and three-wheelers have significantly increased in numbers and this is evident according to the latest statistics published by the Ministry of Internal transport of Sri Lanka. Even though the percentage of MC and TW within the total vehicle population has not increased significantly over the years, the total vehicle population together with the MC and TW populations have increased significantly. When considering new registrations, the highest number of MC new registrations were recorded for the year 2014 since 2007 [2] [Figure 2 & 3].

As indicated in another local study conducted in the North Central Province of Sri Lanka, 65% of RTAs were due to MC and 11% were due to TW [3].

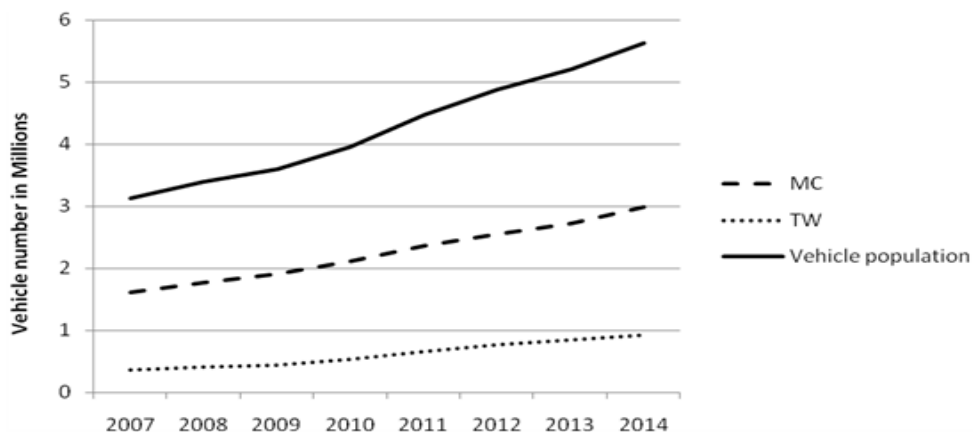


Figure 2. Total vehicle, MC and TW population changes from 2007 upto 2014 [2]

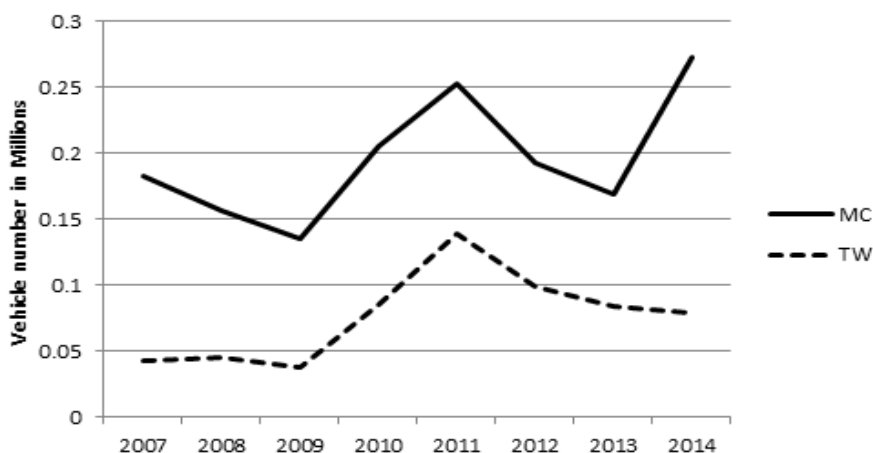


Figure 3. MC and TW new registrations from 2007 up to 2014 [2]

Alcohol seems to be a significant cause for accidents due to both MC and TW, as in one third of the accidents in both categories the drivers were under the influence of alcohol. In most cases, the type of alcohol consumed was stated to be “Strong Beer”.

Management of RTA patients will add a significant cost to the health care system whilst also leading to a significant proportion of the workforce in the country being disabled. It seems that the authorities have not realised the gravity of the situation as no restrictions are yet imposed to control the rising MC and TW population in the country. In contrast, unwise decisions such as tax deductions on these vehicles, have been entertained.

In order to control the accidents related to MC and TW it is important to take immediate steps to control the new registration of MC and TW by increasing the importation taxes on these vehicles. Strict road traffic laws should also be implemented for both TW drivers and MC riders, with an increase in the value of fines for any road related offences.

Conclusion

Nearly half of RTA related admissions are due to MC and TW accidents causing a significant burden to the A&E unit. In both categories, almost one third of the

accidents drivers were under the influence of alcohol during the incident.

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All authors disclose no conflict of interest. The study was conducted in accordance with the ethical standards of the relevant institutional or national ethics committee and the Helsinki Declaration of 1975, as revised in 2000.

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