665 STATISTICAL MODELLING FOR CROSSING BEHAVIOUR OF PEDESTRIANS ON URBAN ROAD: CASE STUDY DELHI, INDIA

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Background A significant number of pedestrians are willing to take risk while crossing the road at all type of crosswalks. The paper explored the utility of binary probabilistic modelling and its performance measures to analyse the pedestrians' unsafe crossing behaviour exhibited by different types of pedestrians and their associated risk at different traffic and road environments.

Methods Binary Logistic regression models were fitted to determine the probability of road crossing by a pedestrian with a set of predictor variables. To quantify the risk to pedestrian, adequate gap size to cross the road at the crosswalks was determined. Thereafter, binary Logistic regression models were fitted to determine the probability of crossing by a pedestrian with the gap size less than the adequate gap size for crossing.

Results Findings reveal that crossing behaviour of pedestrian significantly varies at different crossing locations. At signalised intersections and a free left turn crosswalk, no other predictor parameter, except the gap size parameter, is contributing to determine pedestrians' crossing behaviour, whereas at non-signalised crosswalks (at the foot of flyover and grade-separators and non-signalised crosswalk near bus-stop), their individual and traffic characteristics also contribute to determine their unsafe road crossing behaviour. At all types of crosswalks, almost all the pedestrians (who cross the road in an unsafe condition) cross with the gap size less than the adequate gap size.

Conclusions The results of the study are the basic inputs to understand the road crossing behaviour of pedestrian and their associated risk needed to design well structured and safe transport system. The results highlight human behaviour and risk taking owing to road geometry and traffic operations. Free left-turns, flyovers or grade separators are often introduced to reduce traffic congestion. However, the study shows the negative impact of these types of constructions on the pedestrians.

666 HUMAN COST OF "MOTORCYCLE MASS TRANSIT": REPORT OF 9,000 FATALITIES FROM URBAN ROAD INJURY SURVEILLANCE IN A DEVELOPING COUNTRY

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Background Many of the burgeoning megacities in developing countries have witnessed poorly planned urban sprawls. The absence of a coherent mass public transport system encourages the acquisition of inexpensive motorcycles for commuting and this has distorted the traffic mix. In Karachi the proportion of motorcycles on the road has risen from 34% of registered vehicles to 55% over the past decade. We have sought to assess the impact of this on road use fatalities by analysis of data captured by ongoing road traffic injury surveillance based in 5 city hospitals.

Methods The recorded road-use deaths were those dying within 30 days of being admitted to hospital and included cases brought dead to the EDs or the mortuaries of the hospitals. The case information included gender, age, number of vehicles involved in the crash, road-user type (motorcycle rider or pillion rider), helmet use and injury scoring.

Results During 8 years, 2007–2014, motorcycle occupants accounted for 3901 of the 9192 fatalities and over the study period these increased from 36% to 53% of the recorded road deaths ($p < 0.001$). 69% of them were aged 35 years or less. Though most motorcycle collisions resulting in death involved heavy commercial vehicles, 185 fatalities resulted from motorcycle to motorcycle collisions. Of the 3253 pedestrian fatalities recorded, a motorcycle had struck 19% of them. Of the 2179 instances where a cause could be ascribed to the motorcycle fatality, over speeding was reported in over 50% and the top 6 roads for motorcyclist fatalities were signal-free corridors.

Conclusions An escalating socio-economic tragedy is being played out in the urban centres of many developing countries by the juxtaposition of poor public transport and availability of inexpensive motorcycles. Our study suggests that while the implementation of mass transit schemes are awaited, strategies that segregate traffic and reduce speeds should be prioritised along with strict enforcement of helmet laws.

667 MOTORCYCLE ONE-WHEELING: A FATAL VENTURE IN PAKISTAN

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Background Motorcycle one-wheeling (MOW) is one of the burgeoning factors in motorcycle crashes in Pakistan. Young One-wheelers (YOW) perform dangerous stunts such as riding motorcycle while laying flat, lifting front-wheel and their backs facing motorcycle handles. Consequently, they put themselves and others at risk. A newspaper reported that over 200 YOW died and around 1,300 other road users were injured or killed in MOW crashes during 2011–2013. Current research is the first in Pakistan that presents the most recent epidemiology of MOW crashes.

Methods Retrospective analysis was conducted on crash data for last two years collected by Rescue 1122 (an emergency service in Pakistan) from 37 major cities of Province Punjab.

Results Rescue 1122 attended 389 MOW crashes during the study period. Of them, maximum MOW crashes were reported in Kasur ($n = 88$), followed by Lahore ($n = 69$) and Rawalpindi ($n = 41$). In all 351 injuries and 16 fatalities were reported among YOW. Of the 351 injuries, about 70% were critical (head, spinal & fractures). All 16 fatalities were aged between 16 and 25 years. Most (19%) were aged 21 years, followed by 13% amongst aged 18, 19 and 22 years respectively. None of fatalities/injured YOW were wearing helmet. Most MOW crashes were reported on Pakistan Independence Day (14 August) and Chand