ROAD TRAFFIC INJURIES IN SOUTH INDIA

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Background and Aims: Road traffic injuries (RTIs) contribute 18% of total deaths in India and the number of RTI-related fatalities has been increasing by 8% annually. This study provides a detailed profile of RTIs on the National, State Highways (NH, SH) and local roads in Vellore district and identifies hotspots of RTIs using GIS methodology.
Methods: 3262 RTI records were abstracted from the police filed First Information Reports (FIRs) between January, 2005 and May, 2007. Each record contained information on accident's location, time, vehicle and injury characteristics. The NH vehicular density and RTIs were mapped. Highway junctions at risk for fatal RTIs and segments with high RTI rates were identified. Poisson regression analysis was used to compare RTIs across road categories and event time.
Results: The highest proportion of RTIs was observed on NH (52%) with 3.77 injuries/day, compared to SH (30%) and local roads (18%), which had 50% pedestrian involvement, in contrast to NH and SH (34% & 40%). Over the study period, the number of fatal RTIs on NH had increased by 57%. A significant 5 and 7-fold increase respectively were observed in all RTIs and fatal RTIs on the local roads. NH RTI rate (8.8/100,000 vehicles/day) varied from 5.8/100,000 (weekends midnight-to-6am) to 13.2/100,000 (weekdays 6pm-to-midnight). RTIs involving heavy motor vehicles (HMV) were more on weekends compared to weekdays (39.4% vs. 32.6%, $p<0.05$).Majority of RTIs on the NH had occurred at five major junctions, two of which had the highest fatality rates (17%). One NH segment exhibited the highest rate for fatal RTIs (1.2/100,000).
Conclusions: Despite the limited specificity of the police reports, this study has demonstrated the patterns and growing trends of RTIs in India. This study also demonstrates the value of GIS for policy makers in the design, maintenance of highways and in implementing preventive strategies.
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