Pedestrian Crash Analysis in Uva Province: Case Study at Wellawaya, Buttala and Monaragala Cities

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Road crashes in Sri Lanka is becoming a major social, economic and health issue with rapidly increasing number of vehicles, road kilometers and vehicle kilometers travelled. Despite the significant increase in road infrastructure development in recent years (post war period), number of pedestrian related accidents remains at a very significant level. One of the reasons is not having due attention towards the pedestrian related infrastructure development such as pedestrian walkways, safe pedestrian crossings and safe and efficient public transport services, etc.

As a result, the probability of a pedestrian being exposed to unsafe road conditions has been increased giving way to the increased risk of pedestrian casualties from road crashes. Adverse effects of this were evident with comparatively higher number of pedestrian casualties all over the country. The impacts of these crashes are comparatively high due to the higher probability of these crashes being a fatal or grievous than other types of crashes. In the year 2013, 7004 pedestrian casualties were recorded while 10% of them being fatal making it the highest rate of fatalities from all the categories of casualty.

In parallel to the aged friendly city concept introduced in Moneragala District and considering severity of the problem of pedestrian crashes that affect elderly and disabled significantly, a case study was conducted to assess and find out the contributory factors caused by the deficiencies of roadway conditions towards pedestrian crashes in Sri Lanka taking Monaragala, Buttala and Wellawaya DS divisions. Total accidents and pedestrian related accident details for the past decade (2004-2013) in these areas were extracted from 'Sri Lanka Police Accident Database' and analyzed using descriptive statistics. The existence of a relationship between all crashes and pedestrian related crashes were checked using chi-square test. Spatial distribution of pedestrian related crashes within the study areas was

analyzed to find out hot spots for pedestrian crashes and then a site visit was made for those locations to collect information about the background.

It was found that less than 6% of the pedestrian related crashes occurred at junctions where limited pedestrian facilities are available while the rest of the crashes have occurred in mid-block sections (road stretches with no intersection within 10m). More than 55% of these crashes have taken place where there is ‘no pedestrian crossing within 50m’ or ‘on road without side walk’ depicting the inadequacy of pedestrian related infrastructure. Population wise, the portions of elderly people (age >= 60 years) and young people (age <= 14 years) within these three divisions are 9% and 27% consecutively and the pedestrian crash involvement of the above age categories are 15% and 20% respectively. The elderly people had significantly higher percentages of crash involvements than the elderly population proportion (9%) at locations where ‘no pedestrian crossing within 50m’ (19%) and at ‘roads without sidewalks’ (15%) in rural conditions. This points out the fact that elderly people are more susceptible for crashes especially at locations in rural condition. Site visits for the fatal pedestrian crash hot spots revealed mainly poor visibility due to geometric constraints such as sharp bends, rolling terrain (change in vertical alignment) and unavailability of pedestrian walkway nor enough hard shoulder compelling pedestrians to occupy carriageway increased the risk for pedestrian related crashes.

Key words: Pedestrian Crashes, Crash Hot Spots, Pedestrian Infrastructure, Aged People