Driver Behaviour at Pedestrian Crossings

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***ABSTRACT*:**While driver behaviour plays an important part of urban transport system, pedestrian also contributes significantly to the efficiency of the system. As the driver behaviour differs in greater extend from country to country, findings of one area may not be applicable to others. Most of the Sri Lankan drivers do not follow the rule of "Give way to pedestrians" at pedestrian crossings. Therefore this study was conducted to study the behaviour of various driver categories at pedestrian crossings in Kandy city limits. In the field surveys percentages of drivers (1) Stopping for pedestrian, (2) Non stopping while pedestrian waiting to cross and (3) Overtaking at pedestrian crossings were observed.

Field data was collected using Video Survey, Observer Measurement and Drivers Interview. Six different Zebra crossings located within Kandy - Peradeniya - Gelioya road segment were selected for field surveys. Those Zebra crossings were selected to represent several features such as; Lane type (Two Lane, Three Lane), Traffic flow direction (One way, Two way), Special features (Speed humps, Bus halt, near intersections) and Traffic condition (Vehicle and Pedestrian flow)..

Behaviour of drivers at pedestrian crossings were summarized as a result of this paper to use as a guideline to improve the safety of pedestrians at pedestrian crossings.

KEYWORDS: Road safety, Pedestrian crossing, pedestrian safety, survey methods

1. INTRODUCTION

Pedestrians are indicated as vulnerable road users compared to rest of the group. Their vulnerability goes up due to inadequate facilities, encroachment and mis-use of facilities, behavior of drivers etc..

To improve the safety of pedestrians on pedestrian crossings, behavior of both pedestrians as well as drivers should be studied in detail to propose a suitable remedial measures. The present study is carried out to evaluate the behavior of different driver categories at pedestrian crossings.

1.1 Objectives

The main objective of this study is to estimate the behavior of drivers at pedestrian crossings to propose a suitable technique to improve the safety of pedestrian crossings.

2. METHODOLOGY

Three different methods were administered to capture data to facilitate this study. They were, road side observations, video survey and driver interviews. In all three types of surveys, driver begaviour in

front of pedestrian crossings were tested under three themes. When there are pedestrians waiting to cross, whether drivers stop for pedestrians to cross, whether drivers drive without stopping and whether drivers overtake another vehicle were three observations made to facilitate this study. Drivers passing the test location when the pedestrian crossing is empty was not considered for analysis.

These surveys were carried out at six different locations in Kandy town limits and suburbs. Video surveys were carried out at four locations and roadside observer method was carried out at two locations.

Data collected using both methods were tabulated and analysed to find the behavior of drivers at each location.

Fig. 1 Vehicle stopped at a pedestrian crossing to pick a passenger

Fig. 2 Vehicle overtaking at a pedestrian crossing

Figures 1 and 2 are typical characteristics of pedestrian crossings.

2.1 Data collected

Table 1. Behaviour of drivers at a pedestrian crossing (closer to a hospital)

	Behaviour of drivers			
Vehicle category	Total	Stopped	Did not stop	Overtook
Car	359	29	44	6
Bus	162	11	18	1
MBike	273	5	31	22
ThreeWheeler	447	18	53	14
Van	298	20	10	6
Jeep	90	8	8	3
HeavyVehicle	116	4	9	0
Total	1745	95	173	52

. Table 2 Behaviour of drivers at a pedestrian crossing closer to a bank

	Behaviour of drivers			
Vehicle category	Total	Stopped	Did not stop	Overtook
Car	285	12	24	11
Bus	209	3	20	4
MBike	261	4	24	28
ThreeWheeler	371	9	32	19
Van	304	16	39	5
Jeep	53	2	6	0
HeavyVehicle	82	5	5	0
Total	1565	51	150	67

Tables 1 and 2 are typical behaviours of drivers at pedestrian crossings. Due to lack of enforcement, lack of geometrical restrictions etc. a reasonable number of drivers tend to overtake at pedestrian crossings. Another considerable number of drivers neglect the right of a pedestrian at a pedestrian crossing.

2.2 Driver interviews

Drivers were interviewed based on a structured questionnaire to collect their observations and feed back about various driver categories at pedestrian crossings.

From the driver interviews, 42% of the drivers stated that Motorcycle Riders and Three Wheeler drivers are very often overtake at pedestrian crossings. According to the video survey, 9.89 % Motorcycle riders and 4.35 % Three Wheeler drivers overtake compared to other drivers at pedestrian crossings. As per the driver interview 67% of drivers indicated that they stop the vehicle if at least one or two pedestrians are available at the crossings. According to the video survey only 24% of drivers stopped allowing pedestrians to cross.

2.3 Results

Table 3:Summary of Driver behavior observed at all six pedestrian crossings

Vehicle category	Percentage Behaviour of drivers		
	Stopped	Did not stop	Overtook
Car	4.30	10.52	2.87
Bus	2.46	7.56	0.88
MBike	0.91	9.80	9.89
ThreeWheeler	2.34	10.04	4.35
Van	4.03	8.33	2.43
Jeep	5.26	10.53	3.51
HeavyVehicle	2.33	6.99	0.19

Details collected at all six pedestrian crossings were summarized and tabled to identify the driver behavior at pedestrian crossings.

3. Concluding remarks

According to the data collected with the intention of estimating the driver behavior at pedestrian crossings, it is clear that in average nearly 9.1% of drivers do not stop for pedestrians to cross at pedestrian crossings and another 3.4% drivers overtake at pedestrian crossings. The situation is worst with respect to Motor bikes and three wheelers.

Needless to state that this misbehavior contributes to accidents leaving pedestrians as main victims. According to the available data, 2 – 3 % of pedestrian accidents reports at pedestrian crossings.

This phenomenon should be taken into consideration by responsible authorities to enforce law and order at pedestrian crossings to make drivers to stop when pedestrians are waiting to cross and introduce traffic calming measures to prevent overtaking at pedestrian crossings.

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