

Pedestrian Behavioral Analysis for Safety at Road Crossing at Selected Intersections in Dhaka City

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Abstract : A clear understanding of pedestrian behaviour at road crossing at intersections is needed for providing necessary infrastructure and also for enhancing pedestrian safety at any intersection. Pedestrian road crossing behaviour is studied at Motijheel and Kakrail intersections where Motijheel intersection is a controlled roundabout, and Kakrail intersection is a signalized intersection. Around 60 people at each intersection were interviewed for a questionnaire survey and video recording at different time of a day was done for observation at each intersection. In case of Motijheel intersection, we got pedestrian road crossings were much higher than Kakrail intersection. It is because the number of workplaces here is higher than Kakrail. From questionnaire survey, it is found that 80% of pedestrians crosses at intersection to avail buses and their loading and unloading locations are at intersection, whereas at Kakrail intersection only 25% pedestrian crosses the road for buses as buses do not slow down here. At Motijheel intersection 25 to 40% of pedestrians choose to jump over the barricade for crossing instead of using overbridge for saving time and labour. On the other hand, the pedestrians using overbridge told that they use overbridge for safety. Moreover, pedestrian crosses at the same pace for both red and green interval with vehicle movement in the range of 12.5 to 14.5 km/h and gaps between vehicle were more than 4 m. Here pedestrian crossing speed varies from 3.5 to 7.2 km/h. In Kakrail intersection the road crossing situation can be classified into 4 categories. In case of red time, pedestrians do not wait to cross the road, and crossing speed varies from 3.5 to 7.2 km/h. When vehicle speed varies from 5.4 to 7.4 km/h, and gaps between vehicle vary from 1.5 to 2 m, most of the pedestrians initially choose to wait and try to cross the road in group with crossing speed 2.7 to 3.5 km/h. When vehicle speed varies from 10.8 to 18 km/h, and gaps between vehicles varies from 2 to 3 m most of the people waits and cross the road in group with crossing speed 3.5 to 5.4 km/h. When vehicle speed varies from 25.2 to 32.4 km/h and gaps between vehicles vary from 4 to 6 m most of the pedestrians choose to wait until red time. In Kakrail intersection 87% of people said that they cross the road with risk and 60% of pedestrians told that it is risky to get on and off the bus at this intersection. Planned location of loading and unloading area for buses can improve the pedestrian road crossing behaviour at intersections.

Keywords : crossing speed, pedestrian behaviour, road crossing, use of overbridge

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