

## **Understanding child-pedestrian injuries in Ghana: Implications for policies and supervision strategies**

James Damsere-Derry

Senior Research Scientist. Building & Road Research Institute, Transportation Engineering Division, UPO Box 40, Kumasi Ghana

Jane Esi Monkah

Principal Technologies. Building & Road Research Institute, Transportation Engineering Division, UPO Box 40, Kumasi Ghana

Child-pedestrian constitutes one of the most vulnerable road users in the world. While child-pedestrian injury prevention techniques are specifically implemented to counteract road injury incidence in many developed countries, such countermeasures are limited for the prevention of these incidence in Ghana. The main objectives of this research were to establish the; (i) prevalence of child-pedestrians' injuries and; (ii) the association between child-pedestrian injuries and covariates such as age, gender and temporal characteristics. A five-year crash data between 2016 and 2020 obtained from the crash database of the Building & Road Research Institute (BRI) were queried and analyzed. Descriptive statistics were used to characterize the patterns of child-pedestrian injuries while logistic regressions were used to establish the association between child-pedestrian fatality and risk factors. Results show that during the study period, there were 803 child-pedestrian injuries out of which 25% (n=194) was fatal and the rest suffered varying degrees of injuries. It was evident that child-pedestrian fatalities have significantly declined over the years. Compared with the baseline (2016), the relative risk of child-pedestrian death has declined between 48% and 51% in the ensuing years. Age was found to be a significant predictor of child-pedestrians death. The probability of death among child-pedestrians was 31%, 23% and 16% respectively among 5-year-olds, 10-year-olds and 15-year-olds. Speeding was found to be a significant predictor as child-pedestrian fatalities attributed to excessive speeds was more than twice the injuries in which the drivers involved were judged to have no faults. Also, the relative risk of death was significantly higher among male child-pedestrians compared with their female counterparts OR=1.57, 95% CI: 1.13 to 2.18; p=0.007. There was a significant interaction between child-pedestrians' age and their gender. Over the period, there has been a significant decline in child-pedestrian deaths. This indicates that there has been some successes in child-pedestrians' safety in the country. However, to complement these efforts towards a zero fatality and serious injuries as prescribed by the safe system approach, new preventive strategies specifically targeting these vulnerable road users may be amenable. Firstly, there is a need to establish a mandatory child-pedestrian supervision policy. This will make it an offense for people who allow their kids below certain ages such as pre-school children to be involved in road crashes. Secondly, the scaffolding behavioral modelling procedure is recommended for young adolescents.