

Toronto, Canada. Case and control schools were defined as those with the highest and lowest quartile of PMVC rates, calculated using census data. Potential risk factors included built and non-built environment variables obtained from municipal data sources as well as via direct observational counts done in the spring, 2015, to measure the proportion of children walking to school. Logistic regression was used to compare case versus control schools stratified by geographic location (downtown vs inner suburbs).

Results The mean PMVC rate in case schools ($n = 50$) was 13.4/10,000/year and in controls ($n = 50$) was 1.75/10,000/year. Walking was not associated with high PMVC rates after adjustment for the built environment and school social disadvantage. Overall, lower residential (OR 0.56, 95% CI: 0.37, 0.86) and higher one-way street densities (OR 4.00, 95% CI: 1.76, 9.08), school crossing guards (OR 3.65, 95% CI: 1.10, 12.20) and higher social disadvantage (OR 1.37, 95% CI: 1.11, 1.70) were associated with high PMVC schools. Similar associations of high PMVC schools with built environment features were found in the inner suburbs; however, there was a stronger association with school social disadvantage downtown.

Conclusions Walking to school was unrelated to high PMVC rates after controlling for the built environment. The built environment and school disadvantage were associated with higher PMVC rates with possible differences by geographic location.

404 A SYSTEMATIC REVIEW AND META-ANALYSIS OF SCHOOL BASED PROGRAMMES TO PREVENT CHILDHOOD INJURIES

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Background The aim of this Cochrane systematic review was to evaluate the effectiveness and cost-effectiveness of school-based education programmes to prevent unintentional injuries in children and young people.

Methods A total of 28 electronic databases and websites were searched. We included randomised and non-randomised controlled trials and controlled before-and-after studies of primary and secondary prevention interventions, delivered in the school setting, aimed at a range of injury mechanisms. The primary outcome was self-reported or medically-attended unintentional (or unspecified) injuries and secondary outcomes were observed safety skills, observed behaviour, self-reported behaviour and safety practices, safety knowledge and health economic outcomes.

Results 27 studies reported in 29 articles were included. Interventions comprised information giving, peer education or were multi-component. 7 studies reported the primary outcome of injury occurrence and only 3 of these were similar enough to combine in a meta-analysis with a pooled incidence rate ratio of 0.76 (95% CI: 0.49, 1.17) and significant heterogeneity between effect sizes ($\text{Chi}^2 = 10.38$, $\text{df} = 2$, $P = 0.006$; $I^2 = 81\%$). Safety skills reported in 2 studies showed significant improvement, as

did all 4 studies reporting observed safety behaviours and 13 out of 19 studies describing self-reported behaviour. The 21 studies measuring changes in safety knowledge were varied in their focus, including water, burn, sport, brain and spinal cord, agricultural or mixed injury prevention programmes and most reported that safety knowledge improved. Only one study reported intervention costs but did not undertake a full economic evaluation.

Conclusions There is good evidence that school-based injury prevention programmes improve safety skills, behaviour and knowledge. We found insufficient economic studies to assess cost-effectiveness.

405 PREVENTING HOME INJURIES AMONG CHILDREN IN MALAYSIA: A CLUSTER RANDOMISED CONTROLLED TRIAL

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Background Child injury at home has become a growing concern in developing countries. This project aims to evaluate the effectiveness of two intervention strategies—home-based safety tutorial program and educational pamphlet—to reduce in-home hazards for unintentional child injuries within the home in Malaysia.

Methods We conducted a prospective cluster randomised controlled trial in Hulu Langat district, Malaysia. We randomised 59 clusters to two study arms (30 for tutorial and 29 for pamphlet) with 30 households per cluster. On an initial household visit, a baseline home safety hazard assessment was conducted, followed by the intervention and two follow-up visits at 2 and 4 months. The outcome measures are in-home hazards for child injuries, and incidence of child home injuries.

Results The study enrolled 1170 households, with 13324 children 1–5 years of age. Overall, almost 40% (5061) of children experienced an injury at home in the 3 months preceding our initial visit. The three most common types of injuries reported were falls (86.2%), poisoning (2.9%), and animal bites (2.1%). The most common types of safety hazards for such injuries observed were having pedestal fan within reach of children in living/sleeping area (tutorial: 45% vs. pamphlet: 46%, $p = 0.13$), presence of open buckets of water (45% vs. 44%), and having lock of the bathroom door within reach of children (41% vs. 45%). Adjusting for socio-demographic factors at household level and caregiver characteristics, estimates of a generalised linear model fit showed that presence of open buckets of water significantly predicts child injuries (OR = 1.8, 95% CI: 1.4–2.4).

Conclusions The study improves understanding of the burden of household injuries among children in a Malaysian district, and findings can guide intervention strategies for addressing home injuries among children. Materials and interventions developed in this study can be adapted to other settings.