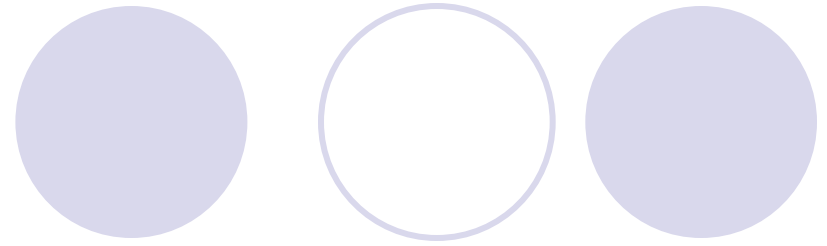


Review of evaluation of education as a countermeasure for cyclist injury

Julie Hatfield

Search strategy



- Searches conducted in
 - Google scholar
 - Psychinfo
 - Medline

Bicycle Cycle Cyclist	Injury Injuries Safety	Education Training Skills
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- Focus on peer-reviewed publications since 1990

Search results



- Many reports and evaluations of “educational” interventions that have sought to promote helmet wearing (for review see Rivara et al, 1998)
- Few have sought to improve other behaviours or attitudes
- Few evaluations of injury outcomes
- Most interventions target child cyclists

Carlin et al (1998), Australia

- School based bicycle safety education and bicycle injuries in children: a case-control study. *Inj Prev* 4, 22-27
- “Bike Ed” aims to cover safe riding skills, traffic knowledge and skills, and basic bike mechanics
- 148 cases recruited from ED of 2 hospitals in NW Melbourne; 130 controls recruited by random telephone survey; all aged 9-14 years
- Possible negative effect (OR: 1.64 95%CI: 0.98-2.75), unaffected by adjustment for sex, age, SES, exposure
- BUT: Matching? Accuracy of information on education? Time since Bike Ed? Relevance of injuries (many off-road)?

Colwell and Culverwell (2002) UK

- An examination of the relationship between cycle training, cycle accidents, attitudes and cycling behaviour among children. *Ergonomics* 45, 640-648
- “National Cycling Proficiency Scheme” (NCPS) includes instruction on cycle rules and control skills
- 336 children sampled from 2 schools, 154 reporting having taken the NCPS
- Training was not associated with
 - crashes (n=64)
 - “safer attitudes” (e.g. concentrating properly when riding)
 - “safe cycling” behaviours (e.g. give an arm signal before turning)
 - “showing off behaviours” (e.g. ride through traffic lights if safe)
- BUT: Self selection bias? Training was on average 4 years prior

Macarthur et al. (1998), Canada

- Evaluation of a bicycle skills training program for young children: a randomised controlled trial. *Inj. Prev* 4, 116-121
- Playground-based bicycle handling skills
- Comparison of Grade 4 children from randomly selected intervention schools and control schools
 - Straight line riding: 90% vs 88%, $p=.78$
 - Coming to a complete stop: 90% vs 76%, $p=.23$
 - Shoulder checking before turn: 0% vs 2%, $p=1.00$
- Conclude: “not effective in improving safe cycling behaviour, knowledge, or attitudes”



Stutts and Hunter (1990), US

- *Evaluation of a bicycle safety education curriculum for elementary school age children.* Chapel Hill: North Carolina University
- “Basics for bicycling” is an on-bike closed-course training program
- Curriculum schools compared to control schools
- Improvements in bicycle safety knowledge and riding skills, as well as helmet use

Nagel et al. (2003) US

- Educating grade school children using a structured bicycle safety program
- 351 students view video and listen to structured discussion of rules
- 251 students completed post-test at 1 month
- Improved knowledge about riding with traffic, helmet wearing, warning pedestrians, and stopping before riding onto street
- BUT: control group?

Thomas et al. (2005)

- Report: Impact of school-based, hands-on bicycle safety education approaches for school-aged children
- Several programs with on-bicycle training and 2+ encounters
- Assessed
 - Knowledge assessed before, after, and up to 1 year after
 - Riding behaviour assessed after and up to 1 year after
- Comparison with control students suggested that each program resulted in sustained improvements in
 - Knowledge
 - Reported frequency of safe-riding behaviour

Conclusions



- Existing studies not particularly supportive
- Young driver research suggests that skills training is less useful than training risk awareness
- Importance of content
- More research is needed:
 - Interventions that improve risk awareness and “shared respect”
 - Interventions for adults and motorists
 - Careful consideration of outcome measures