Community-based programs to promote car seat restraints in children 0-16 years: a systematic review

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CRD summary
The authors concluded that there was some limited evidence to support the effectiveness of community-based programmes to increase the use of car seat restraints in children aged up to 16 years. It was not possible to estimate the reliability of these conclusions, because of inadequate reporting in the original study reports and of several aspects of the review methodology.

Authors' objectives
To evaluate the effectiveness of community-based programmes to increase the use of car seat restraints in children aged up to 16 years.

Searching
Computerised searches of MEDLINE (1966 to 2003), CINAHL (1982 to 2003) and PsycINFO (1872 to 2003) were performed; the search strategy was reported. Additional hand and computerised searches of the journals Injury Prevention (1995 to 2002) and Accident Analysis and Prevention (1995 to 2002), as well as keyword searches of EMBASE (1992 to 2003), TRIS online versus 2.7 (1876 to 2003), NTIS (1990 to 2003) and the Cochrane Library, were conducted. The reference lists from four systematic reviews were handsearched.

Study selection
Study designs of evaluations included in the review
Controlled studies were eligible for inclusion in the review.

Specific interventions included in the review
Studies that involved community-based interventions compared with a community or historical control were eligible for inclusion. A community-based intervention was defined as one that used more than one strategy and was targeted at a whole community or a group of individuals. The included studies involved two or more of the following interventions: legislation, targeted education, mass media education, behavioural interventions, environmental interventions and the World Health Organization's safe community approach. The control interventions included the use of a control community, a broader geographical area or an historical control design.

Participants included in the review
Studies that involved participants aged 0 to 16 years were eligible for inclusion. Of the included studies, one targeted children aged 4 to 8 years, one targeted children aged under 5 years and one targeted children aged 0 to 9 months; several studies targeted high deprivation areas. One of the included study populations was based in Sweden and the remainder were based in the USA.

Outcomes assessed in the review
Studies that evaluated either injury rates due to motor vehicle crashes or observed changes in child restraint use were eligible for inclusion. Four of the included studies measured injury rates (including hospital treatment, deaths and surveillance system data) and four used observed rates of child safety restraint use.

How were decisions on the relevance of primary studies made?
The authors did not state how many reviewers performed the initial selection of papers. Having discarded 62 studies, two authors independently assessed the papers for relevance. The authors did not state how any disagreements were resolved.
Assessment of study quality
The authors stated that two reviewers independently assessed the validity of the included studies, but did not state the criteria used for this assessment.

Data extraction
Two authors independently abstracted the data using standardised abstraction forms. Any disagreements were resolved by a third reviewer. Absolute or percentage values were reported for outcomes. Where possible, relative risks or odds ratios with 95% confidence intervals were reported.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative.

How were differences between studies investigated?
Some differences between the studies were described in the review text and tables. The results were described in terms of the age range of the children, the type of control group and the size of the geographical region concerned.

Results of the review
Eight studies (six with community controls and two with historical controls) were included in the review. The total number of participants was unclear.

Injury rates (4 studies).
Three studies, all in the USA, found significant reductions of injury rates by 33 to 55% in the intervention compared with control communities. The authors noted that one of these studies was limited by methodological problems. The results from the study in Sweden could not be evaluated.

Use of car restraints (5 studies).
All studies found higher use (ranging from 8 to 50%) of car restraints in intervention compared with control communities. The authors noted that three of these studies were limited by methodological problems.

Authors' conclusions
There was some limited evidence to support the effectiveness of community-based programmes to promote car restraint use.

CRD commentary
The review question and inclusion criteria were stated clearly. The authors made no attempts to search for unpublished data and acknowledged that this might have led to publication bias in the review. There were insufficient details on the assessment of studies for relevance, and it was therefore not clear whether adequate steps were taken to minimise bias in the review process. The authors stated that they assessed validity, but neither the method nor the findings of the assessment were described, and it was therefore not possible to evaluate the reliability of the review's results. In general, sufficient details of the primary studies were given, although the authors acknowledged that some details were lacking in the original studies with regards to the population characteristics and intervention methods. It was not possible to estimate the reliability of the authors' conclusions, because of inadequate reporting of several aspects of the review methodology.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.
Research: The authors stated that further high-quality research is needed to evaluate the effectiveness of community-based interventions for the use of car restraints.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.