The effectiveness of interventions to prevent accidental injury to young persons aged 15-24 years: a review of the evidence


Authors' objectives
To assess the effectiveness of interventions aiming to prevent accidents or minimise injury among adolescents and young adults aged 15 to 24 years.

Searching
MEDLINE was searched from 1966 to 1994, CINAHL from 1983 to 1994, ASSIA from 1983 to 1994, NIOSHTIC from 1994, SPORTSDiscus from 1975 to 1994), CISDOC from 1993), HSELINE from 1987 to 1994, and PsycLIT from 1974 to 1994; HELMIS, BIDS, SIGLE, TRIS, and the IRRD File 43 via European Space Agency host were also searched (search dates unclear). The search strategies are given in the report. Additional published and unpublished literature were obtained by contacting professionals, organisations and voluntary agencies with an interest in accident prevention, and by visiting UK libraries.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs), controlled trials, cohort studies, case-control studies, time series, opinions and descriptive studies were included.

Specific interventions included in the review
Primary interventions such as structural changes in the workplace, and secondary interventions such as cycle helmets and car seat restraints, to reduce the severity of injury if an accident occurs. In addition, interventions were classified into three broad categories: engineering, educational and enforcement.

Participants included in the review
Adolescents and young adults aged 15 to 24 years were included.

Outcomes assessed in the review
Decrease in rates of accidents, reduction in the severity of injury if an accident occurred, and surrogate outcomes such as increased knowledge and attitude change, were assessed.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
The studies were graded according to the scheme used in the national epidemiologically-based needs assessment programme, where evidence from RCTs was grade I through to evidence from opinions of respected authorities or descriptive studies, which was grade III. A strength of recommendation was applied, based on the quality of the evidence and how successfully the intervention had been implemented. The authors do not state how the papers were assessed for quality, or how many of the authors performed the quality assessment.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction.
Methods of synthesis
How were the studies combined?
The studies were combined by a narrative review, with tables presented for each of the 3 main areas (road, home and work, and sport and leisure) broken down by type of intervention (e.g. education, community-based interventions, bicycle helmets, etc.).

How were differences between studies investigated?
The findings were presented according to the strength of evidence.

Results of the review
Road (n=84), home and work (n=14), sport and leisure (n=34) and cost-effectiveness studies (n=9) plus 2 reviews of the literature, were included.

The most effective interventions appear to be legislative or regulatory controls, which in road, sports and workplace settings are associated with fewer accidental injuries in adolescent populations, although reported changes in numbers of accidents occurring may be due to variations in exposure. Interventions evaluated in well-designed trials, for which there was good evidence to support their recommendation, were: raising the minimum legal drinking age to between 18 and 21 years, motorcycle helmets, environmental engineering changes to sports environment, and prophylactic injury prevention programmes. Interventions in which there was fair evidence to support their recommendation were: bicycle helmets, area-wide urban traffic safety, speed control humps, curfew, airbags and seat belts, subsidised public transport, warning notices combined with low-cost compliance measures to encourage the use of protective devices, and smoke detectors. Interventions in which there was good or fair evidence to reject their recommendation were: formal enhanced pre-car licence driver training and education, periodic motor vehicle safety checks and random roadside inspections, and driver improvement programmes for problem drivers.

Cost information
There were no cost-effectiveness studies in relation to accident prevention initiatives for this particular age group, which were directly applicable to the UK.

Authors' conclusions
The strength of recommendation for most interventions was neutral mainly because the results were based on surrogate measures, or on trials in laboratory conditions or issues relating to efficacy or implementation, which were still outstanding.

CRD commentary
This review is well carried out, with a thorough search of the literature and assessment of the quality of the studies.

Bibliographic details

Other publications of related interest

Indexing Status
Subject indexing assigned by CRD
MeSH
Accident Prevention; Accidents; Accidents, Home /prevention & control; Accidents, Occupational /prevention & control; Accidents, Traffic /prevention & control; Adolescent; Adult; Bicycling; Head Protective Devices; Motorcycles; Sports Medicine

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Record Status
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.