Interventions to prevent substance use and risky sexual behaviour in young people: a systematic review.

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CRD summary
The authors concluded that there was limited evidence that programmes to reduce multiple risk behaviours in school children can be effective. The most promising programmes were those that addressed multiple domains of influence on risk behaviour. Given some potential limitations in the included studies and in the review process, this conclusion is suitably cautious and is likely to be reliable.

Authors' objectives
To evaluate the effects of interventions to prevent substance use and risky sexual behaviour in young people.

Searching
MEDLINE, EMBASE and PsycINFO were searched from inception to 2010 for published studies in English. Reference was made to a MEDLINE search strategy. Reference lists of relevant studies were scanned and field experts were contacted for additional studies.

Study selection
Experimental and quasi-experimental studies focusing on programmes for primary prevention of multiple risk behaviours targeted at young people aged five to 25 years were eligible for inclusion. Studies had to have at least six months follow-up and report on the use of alcohol, tobacco or illicit drugs and risky sexual behaviour during adolescence or young adulthood (aged 11 to 25 years).

Included studies were located mainly in the United States; one study was based in England. Interventions were largely complex (multi-component) and were broadly categorised as: school-based curriculum-focused programmes with or without additional components; whole school or multi-setting programmes; non-school-based individual or family programmes; and community-based projects. Intervention content, duration, outcome measures and definitions varied widely. All control groups received some form of intervention (for example, existing curricula).

Two reviewers independently selected the studies for inclusion. Disagreements were resolved by discussion.

Assessment of study quality
Study quality was assessed using the Quality Assessment Tool for Quantitative Studies (Effective Public Health Practice Project) for selection bias, study design, confounders, blinding, data collection methods and withdrawals/drop-outs. Study quality was rated as strong, moderate or weak.

Two reviewers independently assessed study quality.

Data extraction
Where possible, data were extracted or calculated to enable presentation of odds ratios (OR) or relative risks (RR) along with 95% confidence intervals (CI). Alternatively, data were collected to enable a summary description.

One reviewer extracted the data.

Methods of synthesis
Effect sizes and other data were presented in forest plots and a narrative summary of these was provided in the text, grouped by setting and intervention complexity.

Results of the review
After excluding five methodologically weak studies, 13 studies (22,575 participants) remained for the synthesis. There were 10 randomised controlled trials and three controlled trials. One study was rated as strong methodological quality;
12 were rated as moderate. Most studies were followed up for three years or less. Intention-to-treat analysis was used in seven studies. Study attrition ranged from 7% to 57% where stated.

Results were mixed and some were contradictory between the studies in each intervention category.

Programme success was greatest in terms of effects on cigarette smoking. Of the nine studies that reported this outcome, four studies demonstrated significant positive effects and two studies showed non-significant positive effects on at least one measure. Eleven studies measured alcohol use and two showed significant positive effects on at least one measure. Illicit drug use was evaluated in 10 interventions and three of these reported significant positive effects on at least one measure. Five interventions (out of 13 studies) reported significant positive outcomes on at least one measure of sexual risk behaviour.

**Authors' conclusions**
There was some limited evidence that programmes to reduce multiple risk behaviours in school children can be effective. The most promising programmes were those that addressed multiple domains of influence on risk behaviour.

**CRD commentary**
The review question was clear and inclusion criteria were sufficiently detailed, although naturally broad in the context of public health interventions. The search strategy included relevant sources but language and publication biases could not be ruled out. The review process was conducted largely with attempts to minimise error and bias (although bias was possible at the data extraction stage). A relevant quality assessment tool was used and the overall standard for studies included in the synthesis appeared to be acceptable. Study characteristics were provided in substantial detail. The chosen method of synthesis was appropriate in light of the immense variation between studies.

The authors acknowledged several limitations in the review which included potentially limited generalisability. Their conclusion is suitably cautious and is likely to be reliable.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated a need for a randomised controlled trial to explore the effect on later risk behaviour of intervening in the mid-childhood years. Future research should compare the effects of multi-focused interventions with those targeted at single risk behaviours. Studies needed to have sufficiently long follow-up and assess the effects by gender and socioeconomic status.

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