The effectiveness and cost-effectiveness of behavioural interventions for the prevention of sexually transmitted infections in young people aged 13-19: a systematic review and economic evaluation


CRD summary
This review concluded that school-based skills building behavioural interventions could bring about improvements in knowledge and increased self-efficacy. However, there were few significant differences between interventions and comparators in terms of sexual behavioural outcomes such as condom use. These conclusions are likely to be reliable but the possibility of publication and language bias should be considered.

Authors' objectives
This abstract only addresses the clinical effectiveness evaluation based on the systematic review in the report.

To assess the effectiveness of schools-based skills building behavioural interventions for the prevention of sexually transmitted infections in young people.

Searching
Eleven databases were searched for English language studies, including MEDLINE, MEDLINE In-Process and Other Non-Indexed Citations, EMBASE, PsycINFO, CINAHL, ASSIA and Sociological Abstracts. ASSIA was searched from 1987 to March 2008. All other databases were searched from 1985 to March 2008. Reference lists of relevant systematic reviews and retrieved studies were screened for further studies. Experts in the field were contacted to identify any additional published and unpublished studies.

Study selection
Eligible randomised controlled studies (RCTs) evaluated schools-based behavioural interventions where an element of the intervention included the development of sexual behavioural skills (such as how to use a condom, how to negotiate safer sex with partners) in young people aged 13-19 years. Studies assessing interventions of teaching skills outside the context of sexual health such as life skills were excluded. Studies had to report changes in self-reported sexual behaviour. Other outcomes of interest included changes in knowledge, attitudes and skills and self-efficacy measures.

Most studies compared a behavioural intervention with standard sex education or an "attention" control (focusing on a non-sexual health-related topic), while one study compared two similar behavioural interventions. The interventions in the majority of studies were delivered by teachers and/or peer educators. All interventions included components of the provision of education/information and skills training, with an aim to improve knowledge of human immunodeficiency virus (HIV) and other sexually transmitted infections. The length and intensity of interventions varied across included studies. Where reported, the age of included participants ranged from 12 to 18.3 years. Studies predominately included equal numbers of male and female participants. Most studies were conducted in the USA but two were conducted in the UK.

One reviewer assessed titles and abstracts for inclusion. Two reviewers independently assessed full papers for inclusion, with any disagreements resolved by discussion or a third reviewer.

Assessment of study quality
The quality of studies was assessed with the following criteria: method of randomisation, allocation concealment, blinding, baseline comparability, attrition, selective reporting, validation of outcome instruments, length of follow-up and unit of data analysis. Study quality was classified as "methodologically sound" and "not methodologically sound". The studies were classified as "methodologically sound" if they were judged to have avoided selection bias, attrition bias and bias due to selective reporting.

Two reviewers independently assessed study quality, with any disagreements resolved by discussion or a third reviewer.
Data extraction
Data were extracted on event rates to enable the calculation of odds ratios (ORs) with 95% confidence intervals (CIs). For cluster RCTs that did not report an intracluster correlation coefficient, a value of 0.2 was imputed. Where necessary, study authors were contacted for missing data.

Two reviewers independently performed data extraction, with any disagreements resolved by discussion or a third reviewer.

Methods of synthesis
The studies were combined in both narrative synthesis and meta-analysis. The pooled odds ratios with 95% confidence intervals were calculated on the basis of intention-to-treat data with a fixed-effect model. Statistical heterogeneity was assessed using $\chi^2$ and $I^2$. For five cluster RCTs that reported an intracluster correlation coefficient, these values were entered into the meta-analysis. Subgroup analyses were conducted on the basis of gender. One included study was not included in the meta-analysis as it compared two similar behavioural interventions.

Results of the review
Fifteen RCTs were included in the review. Twelve RCTs were judged to be methodologically sound, nine of which were cluster RCTs. Three RCTs were not judged to be methodologically sound and their results were not included in the analyses. The length of follow-up in ten RCTs was less than one year, while the length of follow-up in the remaining RCTs ranged from more than one year to seven years.

No significant difference was observed in the rate of initiation of sexual intercourse (OR 1.03, 95% CI 0.74 to 1.43; four RCTs) and condom use (OR 1.07, 95% CI 0.88 to 1.30; six RCTs) between the school-based skills building behavioural intervention and control groups. No significant heterogeneity was observed for both outcomes. There were very few statistically significant differences between the intervention and control groups in terms of other behavioural outcomes (sexual intercourse, number of sexual partners, contraception and pregnancy).

Ten RCTs reported a significant increase in knowledge outcome measure in the intervention group compared with controls. Statistically significant effects were reported for some of the self-efficacy measures in terms of assessing the success of the skill component of interventions.

Results for other outcomes (such as assessment of attitudes, participants’ intentions) were reported, as were subgroup analyses by gender for some outcomes.

Authors’ conclusions
School-based skills building behavioural interventions could bring about improvements in knowledge and increased self-efficacy. However, there were few significant differences between the interventions and comparators in terms of sexual behavioural outcomes such as condom use.

CRD commentary
This review’s research question was clear and supported by appropriate inclusion criteria. A number of relevant databases were searched. No sufficient attempts were made to find unpublished studies, which increased publication bias potential. The review was restricted to studies in English, which may have increased the risk of language bias. Data extraction and validity assessment were performed in duplicate. However, only one reviewer assessed titles and abstracts in the study selection process, so the possibility of reviewer errors and biases could not be ruled out. Appropriate criteria were used to assess study quality. Clinical heterogeneity between studies was investigated. Statistical heterogeneity was assessed and appropriate methods were used to synthesise the data. The synthesis took into account study quality and clustering effect. The authors’ conclusions reflected the evidence presented. These conclusions were likely to be reliable but the possibility of publication and language bias should be considered.

Implications of the review for practice and research
Practice: The authors stated that policy makers and practitioners should be cautious in their expectations about the impact of school-based skills building behavioural interventions on sexual behavioural changes in young people. There was a need to provide high-quality information to enable young people to make informed decisions. School-based behavioural interventions should be culturally relevant and context specific.
Research: The authors stated that further trials should include long-term follow-up to evaluate the extent to which safer sexual behaviour was adopted and maintained into adulthood. These trials should assess the impact of booster sessions and report data on the effects of the interventions on sexual health inequalities where appropriate. These trials should also incorporate a rigorous process evaluation to assess factors that contribute to success or failure of interventions. Prospective cohort studies were required to determine the parameters describing the transmission of sexually transmitted infections between partners.

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Other publications of related interest

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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.