A systematic review of school-based sexual health interventions to prevent STI/HIV in sub-Saharan Africa

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CRD summary
The review concluded that positive changes in knowledge and attitudes towards HIV and other sexually transmitted infections can arise from school based interventions, and that these are greatly needed in sub-Saharan Africa. Although the conclusions reflected the evidence presented, uncertainties about the quality of included studies and limitations in the review process meant that the reliability of conclusions was unclear.

Authors' objectives
To evaluate the efficacy of school-based sexual health interventions for the prevention of HIV/AIDS and sexually transmitted infections (STI) in adolescents in sub-Saharan Africa.

Searching
MEDLINE, EMBASE, CINAHL, PsycINFO, UNAIDS and WHO websites were searched between 1986 and 2006, and a Google search was made. The search strategy was described. Reference lists of included studies were screened to identify additional studies. Journals such as AIDS, AIDS Care and Journal of Adolescent Health were handsearched. No language restrictions were applied to any of the electronic bibliographic searches.

Study selection
Controlled studies evaluating school-based interventions in young adolescents (<19 years) in sub-Saharan Africa were eligible for inclusion. The average age of included participants was between 13.5 and 18 years, although two studies included participants over 19 years. The majority of studies were conducted in secondary schools. Interventions delivered by peers, health professionals, teachers and out-of-school youths were varied and included, for example: information giving; debates; and practical, written and audiovisual activities addressing issues connected with general health promotion and the prevention of HIV/STI. Intervention duration ranged from one hour to regular sessions over many weeks. Measured by self-administered questionnaires (their validation status unclear), the outcomes of interest were knowledge, attitudes, intentions and behaviour change. Interventions were compared with a no-programme control group in the majority of studies. Theory base was addressed in some studies. The papers were selected by a single author.

Assessment of study quality
The quality of the included studies was assessed using a 20-point checklist, which evaluated various issues such as adequacy of stated objective, study methodology, quality of interventions, statistical issues, interpretation of the results and quality of reporting. The overall score was expressed as a percentage of maximum possible score of 40. Studies with scores of 81 per cent to 100 per cent were considered strong, 51 per cent to 80 per cent was moderate and ≤50 per cent weak methodological quality.

The quality assessment of two studies was done by one author and checked by the second author. Differences of opinion were resolved by discussion and consultation with a third reviewer. A single author assessed the validity of the remaining studies.

Data extraction
Data on the outcomes of interest were extracted in order to assess the direction of effects and statistical significance (although no statistics were presented). The authors also attempted to extract the information regarding socio-economic status of participants as well as rural/urban status of areas where the participating schools were located.

Data extraction of two studies was done by one author and checked by the second author. Differences of opinion were
resolved by discussion and consultation with a third reviewer. A single author extracted the data from the remaining studies.

**Methods of synthesis**
A narrative synthesis was provided. The authors attempted to explore the differences between the included studies based on the study design, rural/urban status of the areas where interventions took place, socio-economic status of participants, type of interventions, outcomes measured, time from intervention to evaluation and the statistical methods used.

**Results of the review**
Ten intervention studies (n=9,222) were included: two were randomised at individual levels; four cluster-randomised at school levels; three non-randomised studies at school level; and one non-randomised study at individual level. Details of the methodological quality of individual studies according to the pre-specified scoring system were not given. The number of participants in individual studies ranged from 315 to 2,026. Attrition rates ranged from 3.8 per cent to 38.2 per cent. Follow-up assessments ranged from immediately after the intervention to 12 months.

Outcomes related to knowledge and attitude
The included studies evaluated one or more of the pre-specified outcomes. Compared with the control group, almost all studies that evaluated these outcomes showed that the intervention group reported a desired effect. For example, in relation to knowledge and attitudes regarding HIV, STI, and abstinence, use of condoms, knowledge and attitudes to AIDS, and attitudes to persons living with HIV/AIDS.

Outcomes related to behavioural intention
Two studies showed significant desired effect regarding abstinence. In one study, a significantly greater percentage of the control group reported intentions to abstain than intervention group. Two studies showed a desired effect on the intention to use condoms in the intervention group. In another study, the positive effect of intervention had diminished over a six-month follow up period.

Outcomes related to actual behaviour change
There was no difference between the groups regarding the actual use of condoms in all five studies reporting on this outcome. Three out of four studies showed no significant increase in the reported practice of abstinence in the intervention group. Two studies reported positive effect on the number of sexual partners in the intervention group. One study reported improved communication with new sexual partners among the intervention group at six-month evaluation, but this effect had diminished at the 12-month follow up.

Some studies found that interventions improved general communication skills and were more acceptable if portrayed as HIV or STI prevention strategies rather than sex education.

**Authors’ conclusions**
School-based interventions can improve knowledge and attitudes regarding HIV/AIDS/STI in young adolescents in sub-Saharan Africa, but positive changes in behavioural intentions and actual behaviour were difficult to achieve.

**CRD commentary**
This review addressed a well-defined question in terms of study designs, participants, interventions and outcomes. Several relevant sources were searched and attempts made to minimise language bias. It appeared that the processes for study selection, data extraction and quality assessment were not carried out with adequate attempts to minimise errors and bias. Study characteristics were presented in adequate detail. A variety of appropriate criteria (including some relevant to public health interventions) were used to assess the quality of included studies, although the results of the quality assessments were not provided. A narrative synthesis was appropriate given the diversity of included studies. Results were presented and interpreted based on the direction of effect without details of any statistical analysis, again making it difficult to verify the authors’ interpretation. Although the authors’ conclusions reflected the evidence presented, some of the methodological limitations identified above made the reliability of the conclusions unclear.
Implications of the review for practice and research

Practice: the authors stated that there was a need for effective school-based sexual health interventions to prevent HIV/STI in sub-Saharan Africa.

Research: the authors stated that there was a need for well-tailored interventional studies focusing on long-term outcomes. A number of specific recommendations for tailoring and improving intervention quality were made in the paper.

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