Authors' objectives
1. To synthesise, in a qualitative way, research on the effectiveness of school-based programmes to reduce sexual risk behaviours.

2. To identify the distinguishing characteristics of effective programmes.

3. To identify important research questions to be addressed in the future.

Searching
Appropriate databases were searched, relevant journals were reviewed, and researchers in the field were contacted for additional material. Only research that had been published, or accepted for publication, in a peer-reviewed journal were considered.

Study selection
Study designs of evaluations included in the review
Experimental or quasi-experimental studies and national surveys were included.

Specific interventions included in the review
School-based programmes to reduce sexual risk behaviours.

Participants included in the review
Males and females of school age.

Outcomes assessed in the review
Reported sexual or contraceptive behaviour, or their outcomes, e.g. pregnancy rates, birth rates or sexually transmitted disease (STD) rates.

How were decisions on the relevance of primary studies made?
Decisions were made by a panel of experts established for the review.

Assessment of study quality
The authors do not report a method for assessing validity. The services of the expert panel were used, but the mechanisms of this process were not described in the paper.

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 reviewed in a narrative format.

How were differences between studies investigated?
The authors do not state how study differences were investigated.
Results of the review
Twenty-three studies in all: 6 experimental and 10 quasi-experimental studies that evaluated impact, and 7 national surveys.

National surveys (7 studies):

1. Initiation of sexual activities. Studies show inconsistent results and suggest that the impact of sex education instruction might vary with the topics covered and the age of the students.

2. Use of contraception. Results varied both with the particular study and with the time interval of contraceptive measure. Four of the 5 survey data sets produced some positive significant relationships between participation in a sex or AIDS education programme and either contraceptive or specifically condom use, while the fifth data set revealed a possible indirect effect through greater knowledge.

Specific programme evaluation (16 studies):

1. Abstinence programmes. There is insufficient evidence to determine whether school-based programmes focusing upon abstinence delay the onset of intercourse or affect other sexual or contraceptive behaviours.


Initiation of intercourse (5 evaluations). There is no evidence that programmes significantly hasten the onset of intercourse, and some may delay the initiation of sexual activity.

Frequency of sexual activity (4 studies). These measured the impact of the programme upon frequency of sexual activity, among those who had already initiated intercourse. None of the programmes significantly increased or decreased the frequency of intercourse.

Use of contraceptives (8 studies). Some, but not all, programmes increased contraceptive use. Only 2 of the 8 programmes significantly increased contraceptive use among all sexually experienced youths.

Combined education and reproductive health services (close to or with the schools) (5 studies).

The presence of reproductive health services was found to: neither hasten the onset of intercourse or increase the frequency, have mixed effects on contraceptive use, and be less critical than the presence of a strong educational component.

It is unclear whether school-based or school-linked reproductive health services, either by themselves or in addition to education programmes, significantly decrease pregnancy or birth rates.

In order to understand which characteristics are necessary for behavioural change, the characteristics of the 8 effective programmes were compared with those of the ineffective ones:

Effective Programme Characteristics:

1. Had a narrow focus on reducing sexual risk-taking behaviours that may lead to HIV-STD infection or unintended pregnancy.

2. Used social learning theories as a foundation for programme development. These programmes went beyond cognitive level: they focused on recognising social influences, changing individual values, changing group norms and building social skills.

3. Provided basic, accurate information about the risks of unprotected intercourse and methods of avoiding unprotected intercourse, through experimental activities designed to personalise this information.

4. Included activities that address social or media influences on sexual behaviours.
5. Reinforced clear and appropriate values to strengthen individual values and group norms against unprotected sex.

6. Provided modelling and practice in communication and negotiation skills.

Ineffective programme characteristics:

1. Were less focused and more comprehensive.

2. Used a decision-making model in which decision-making steps were taught, but students were implicitly instructed to make their own decisions.

Despite the identification of 6 common characteristics of the effective programmes, there is very little evidence regarding which factors or combination of factors had a positive impact on the sexual behaviours measured.

As a result of the review of identified studies, the authors have compiled a list of 6 priority areas for ongoing research in this area:

1. To determine more definitively the relationships between particular topics of instruction, the students’ ages, and sexual and contraceptive behaviour.

2. To investigate further which additional characteristics of curricula are particularly important in reducing risk-taking behaviour.

3. To determine whether curricula emphasising abstinence until marriage effectively delay the onset of intercourse and, if so, whether they are more or less effective than curricula that include clear messages about both abstinence and contraception.

4. To assess more definitively and accurately the impact of different approaches to improving access to reproductive health services.

5. To assess more accurately the impact of all of these educational and reproductive health service approaches on pregnancy, birth, STD and HIV rates.

6. To assess the durability of measured effects, and to determine whether reinforcement, e.g. booster sessions, is necessary and effective in sustaining desired effects.

Authors’ conclusions

The programmes reviewed did not hasten intercourse in older students, while evidence for younger students is less consistent. Some programmes can increase the use of condoms or other contraceptives.

The curricula that effectively delayed the onset of intercourse, increased the use of condoms or contraception, and reduced sexual risk behaviours had 6 common characteristics. The published literature does not provide good evidence to indicate that programmes focusing only on abstinence delay the onset of intercourse or reduce the frequency of intercourse.

There is insufficient direct evidence to determine whether any of these educational or clinic programmes actually decreased pregnancy rates, birth rates, or incidence of STD or HIV infections. There is evidence from 2 studies that some programmes delayed the onset of intercourse, reduced the number of sexual partners, and reduced the frequency of intercourse or increased the use of protection.

CRD commentary

The authors have done an excellent job of summarising the identified studies, identifying areas where more information is needed and listing limitations of existing work. They have identified what may be some of the common denominators of successful programmes and made recommendations for further work in the area.

The authors have not listed the databases searched, the publication dates included or the names of the journals that were
handsearched.

The ability of the authors to reach definitive conclusions, in which they can have confidence, was limited by the limited number of rigorous studies available for review, by methodological limitations of identified studies, and by inconsistent results.

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