CRD summary
This review concluded that there was limited evidence (in terms of quality, quantity and consistency of findings) for the evaluation of effectiveness of contraception service interventions that were delivered in educational settings for young people. These cautious conclusions are appropriate and reflect the limitations in the evidence identified.

Authors' objectives
To evaluate the effectiveness of contraception service interventions for young people who were delivered in educational settings.

Searching
Unspecified "key health and medical databases" were searched for studies in English from 1995 to 2008. Search terms were reported. Reference lists of relevant systematic reviews and included studies were screened. Searches were also conducted on two programs: Baby Think It Over and Safer Choices. Additional searches were performed in MEDLINE and Web of Science.

Study selection
Studies that evaluated contraception service interventions (or interventions to encourage young people to use existing contraceptive services) that were delivered in educational institutions (such as schools, colleges and pupil referral units) in young people age 19 and under were eligible for inclusion. Studies of wider age groups were included if most participants were under 19 years. The outcomes reported in the review were rate of teenage pregnancy, rate of contraceptive use and change in sexual behaviour.

Most of the included studies focused on preventing teenage pregnancy or repeat pregnancy. Some studies also reported mixed outcomes relating to teenage pregnancy and sexual health. Where reported, intervention duration ranged from two or three days to nine years. All the included studies were conducted in USA. Most studies were conducted in state-run mainstream middle and high schools; two studies were conducted in colleges and one was in a university setting.

The authors did not state how many reviewers assessed studies for inclusion.

Assessment of study quality
Study quality was assessed using the National Institute for Health and Clinical Excellence (NICE) checklist. Internal and external validity of populations, method of allocation, outcomes and analytical methods were evaluated. Studies were classed as high quality if the conclusions were judged to be very unlikely to alter. Studies were classed as good quality if the conclusions were judged to be unlikely to alter.

One reviewer assessed study quality and another reviewer independently checked the assessment. Disagreements were resolved by consensus and consulting a third reviewer.

Data extraction
Data were extracted on the proportion of patients experiencing an event.

One reviewer extracted data and these were checked by another reviewer independently. Disagreements were resolved by consensus and consulting a third reviewer.

Methods of synthesis
The studies were combined in a narrative synthesis.

**Results of the review**

Twenty-nine studies included in the review included four randomised controlled trials (RCTs), 19 controlled before and after studies and five interrupted time series. Reported sample sizes ranged from 17 to 4,166. All RCTs were judged to be high quality. Fifteen controlled before and after studies were judged to be good quality. All interrupted time series studies were judged to be poor quality.

*Interventions to prevent adolescent pregnancy (seven studies):* One high-quality RCT reported that a brief intervention consisting of one session of motivational interview was significantly associated with an increase in the number of participants who used effective contraception compared with controls (64% versus 48%, p=0.03). Controls were associated with a significantly higher risk of alcohol-induced pregnancy as measured by change in drinking habits (OR 2.9, 95% CI 1.49 to 5.45).

One good-quality controlled before and after study reported that using infant simulators to prevent adolescent pregnancy significantly increased participants' awareness that failure to use contraceptives increased risk of unplanned pregnancy (p<0.001). Another poor-quality controlled before and after study did not show a significant difference between the intervention and control groups after several weeks follow-up.

There was inconsistent evidence from three studies about the effectiveness of abstinence-based programmes in preventing teenage pregnancy. Evidence from one good quality controlled before and after study did not support use of a large multicomponent intervention to prevent teenage pregnancy.

*Interventions to prevent repeat adolescent pregnancy (six studies):* Three good-quality controlled before and after studies and one poor-quality interrupted time series reported that intensive case management interventions conducted by a culturally matched social worker were effective as part of multicomponent interventions (along with other components that included peer education) in preventing repeat pregnancy.

One poor-quality interrupted time series study showed that the daily presence of a public health nurse in school monthly (pregnancy testing, health counselling and referral and health education classes) was effective in preventing repeat pregnancy; the repeat adolescent pregnancy rate declined from 25% at the year before the intervention to a mean of 4.7% over the nine years of intervention duration. The results from one good-quality controlled before and after study were not reported.

*Interventions of school-based health centers (six studies):* Four studies (two good-quality controlled before and after studies, one poor-quality controlled before and after study and one poor-quality interrupted time series) supported the direct provision of contraceptives dispensed on site from school-based health centers on increasing contraceptive provision. However, two studies (one good-quality controlled before and after study and one poor-quality interrupted time series) showed no improvement in outcomes for school-based health centers that offered only health care assessments or counselling.

Further results were reported on other relevant interventions investigated by a small number of studies.

**Authors’ conclusions**

Evidence was limited in quality, quantity and consistency of findings for the evaluation of effectiveness of contraception service interventions delivered in educational settings for young people.

**CRD commentary**

The review's inclusion criteria were clear. It appeared that relevant databases were searched, but full details were not reported. Attempts to locate unpublished studies appeared limited, which increased potential for publication bias. Only English-language studies were searched, which increased the risk of language bias. Steps were undertaken to minimise biases and errors in data extraction and validity assessment; it was unclear whether the process of study selection was performed in duplicate. Appropriate criteria were used to assess study quality. Given the diversity of included studies, a narrative synthesis was appropriate. Many studies did not adequately report the socioeconomic status of participants, which made it difficult to comment on the effectiveness of contraceptive service interventions among socially disadvantaged populations.
disadvantaged young people. All the included studies were conducted in the United States and the authors acknowledged that the generalisability of findings to other settings appeared to be limited given differences in school-based culture, policy and context between different countries.

The authors’ cautious conclusions are appropriate and reflect the limitations in the evidence identified.

Implications of the review for practice and research

Practice: The authors stated that an intensive case management intervention performed by a culturally matched school-based social worker (including peer education) can be effective in preventing repeat adolescent pregnancy. School-based health centres appeared to be most effective when contraception provision was made available on site.

Research: The authors did not state any implications for research.

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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.