

Targeted Update

Interventions for preventing unintended pregnancies among adolescents

This is a **Targeted update** of the Cochrane Review Oringanje C, Meremikwu MM, Eko H, Esu E, Meremikwu A, Ehiri JE. Interventions for preventing unintended pregnancies among adolescents. Cochrane Database of Systematic Reviews 2016, Issue 2. Art. No.: CD005215. DOI: 10.1002/14651858.CD005215.pub3.

Latest search was performed: **11 November 2015** by the review authors as part of a full review update.

Results of the search, list of new references, details of updates to methods, study characteristics, risk of bias assessments, and details of data analyses with forest plots can be found in [Supplementary material](#).

This **Targeted Update** was prepared by Hanna Bergman¹ and Nuala Livingstone². Data were taken from the (now published) draft full review update that was carried out by the review authors and accepted for publication by the Cochrane Fertility Regulation Group editorial team. The abstract was adapted from the draft full review update.

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What's a Targeted Update?

Targeted Updates are two to three-page documents that use the Cochrane Review as their foundation, but focus on updating only one or two important comparisons, and the seven most relevant outcomes. They include an updated Summary of Findings table and Abstract, and use Cochrane methodology. The full search results, risk of bias assessments, analyses, and references do not form part of the Targeted Update, but are available as supplementary information. Targeted Updates are intended for use by policy makers.

What's the context for this Targeted Update?

The Norwegian Health Directorate commissioned this Targeted Update to help develop a guideline.

What's new

The comparison 'Multiple interventions versus no additional activity/intervention to existing conventional population-wide activities' was included in this Targeted Update. Thirty-five studies (ten of which were new to the 2016 update) with 67,743 adolescents were included in this update. The Targeted Update synthesised RCTs and cluster-RCTs, and included meta-analysis data from included studies that were presented in a table in the Cochrane review. The Targeted Update found that interventions combining educational and contraceptive-promoting components may reduce unintended pregnancy among adolescents.

The Cochrane review (2016 update) that this Targeted Update is based on concluded that a combination of interventions such as education, skills-building, and contraception promotion reduces the risk of unintended pregnancy in adolescents but offers little evidence about which of these interventions is most effective. Overall, the evidence remains inconclusive and could not be the basis for recommending the use or discontinuation of any of these interventions (or their combinations) where they are already in use.

Interventions combining educational- and contraceptive-promoting components for preventing unintended pregnancies among adolescents may reduce unintended pregnancies.

Background

Unintended pregnancy among adolescents represents an important public health challenge in high-income countries, as well as middle- and low-income countries. Numerous education strategies to prevent unintended pregnancy have been employed such as health education, community services, skills building, and group or individual counselling. Contraceptive-promoting interventions have also been implemented including education with or without contraceptive distribution. However, there is uncertainty regarding the effects of a combination of these interventions, hence the need to review the evidence base.

Objectives

To assess the effects of prevention interventions combining educational and contraceptive promoting components on unintended pregnancies among adolescents.

Search methods

All relevant studies regardless of language or publication status were searched up to November 2015. Searches included the Cochrane Fertility Regulation Group Specialised trial register, The Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2015 Issue 11), MEDLINE, EMBASE, LILACS, Social Science Citation Index and Science Citation Index, Dissertations Abstracts Online, The Gray Literature Network, HealthStar, PsycINFO, CINAHL and POPLINE, and the reference lists of articles.

Selection criteria

Both individual and cluster randomised controlled trials (RCTs) evaluating any interventions that aimed

to increase knowledge and attitudes relating to risk of unintended pregnancies, promote delay in the initiation of sexual intercourse and encourage consistent use of birth control methods to reduce unintended pregnancies in adolescents aged 10 years to 19 years, compared with no intervention over existing population-wide activities, were included.

Data collection and analysis

Two review authors independently assessed trial eligibility and risk of bias, and extracted data. Risk ratios (RR) with 95% confidence intervals (CI) were calculated for binary outcomes, and pooled using a random-effects model. When effect estimates, but not sample sizes per group had been reported, we used the generic inverse variance (GIV) method and calculated odds ratios (OR) with 95% CIs. We adjusted for clustering and combined cluster and individual RCTs.

Main Results

We included 35 RCTs (21 cluster RCTs and 14 individual RCTs), published 1986 to 2014, involving 67,743 adolescents (11 studies female only, 24 studies both genders) in this Targeted Update. Twenty-eight of these studies provided data for the meta-analyses; data from seven studies (5748 adolescents) were not usable. Ten of these studies were new to the 2016 review update (eight new with usable data). No ongoing RCTs were identified, and 2 studies are awaiting classification due to insufficient information reported in conference abstracts.

For several of the included studies the risk of bias was unclear as the randomisation process, allocation concealment, and blinding was not adequately

described in the report. Studies may also be at risk of self-report bias.

There was low-quality evidence that interventions combining educational and contraceptive-promoting components may reduce unintended pregnancies in adolescents (OR 0.70, 95% CI 0.52 to 0.95, 13 studies, n=10,136), including in studies with <20% attrition (RR 0.61, 95% CI 0.39 to 0.94, 6 studies, n=1918), compared with no additional activity/intervention over existing conventional population-wide activities. There was low-quality evidence that such interventions may make little or no difference to initiation of sexual intercourse (OR 0.89, 95% CI 0.76 to 1.04, 18 studies, n=30,519, and sexually transmitted diseases (RR 0.83, 95% CI 0.64 to 1.04, 5 studies, n=1727). Interventions probably increase use of condom at last sex (moderate quality evidence, OR 1.24, 95% CI 1.02 to 1.49, 12 studies, n= 7259), and may increase consistent condom use (low quality evidence, RR 1.32, 95% CI 1.09 to 1.60, 9 studies, n=2791). We are uncertain about the effect on use of hormonal contraceptives as the evidence was of very low quality.

Implications and conclusions

A combination of educational and contraceptive-promoting interventions may reduce unintended pregnancy among adolescents.

The quality of the evidence was mostly moderate to low due to inconsistency and imprecision in the results and unclear risk of bias. Therefore, further research may have some impact on these estimates.

Summary of Findings: Interventions combining education and contraceptive promotion for unintended pregnancies in adolescents

Patients: Adolescents.

Setting: Studies were school-based or clinic-based (school health service) or a combination of both in Chile (1 study), Mexico (1), Nigeria (1), UK (2), and USA (23).

Comparison: Interventions combining education and contraceptive promotion versus no additional activity/intervention to existing conventional population-wide activities

Outcome	Plain language summary	Absolute effect		Relative effect (95% CI) N° of participants & studies	Certainty of the evidence (GRADE)
		Control	Intervention		
Unintended pregnancy follow up: 3 months to 48 months	Interventions combining education and contraceptive promotion may reduce unintended pregnancies in adolescents.	GIV analysis, absolute effect cannot be estimated.		OR 0.70 (0.52 to 0.95)* Based on data from 10,136** participants in 13 studies	⊕⊕⊕⊕ LOW ^{1,2}
Initiation of sexual intercourse follow up: 3 months to 36 months	Interventions combining education and contraceptive promotion may make little or no difference to initiation of sexual intercourse in adolescents.	GIV analysis, absolute effect cannot be estimated.		OR 0.89 (0.76 to 1.04) Based on data from 30,519* participants in 18 studies	⊕⊕⊕⊕ LOW ^{1,2}
Condom use at last sex follow up: 6 months to 24 months	Interventions combining education and contraceptive promotion may increase condom use at last sex in adolescents.	GIV analysis, absolute effect cannot be estimated.		OR 1.24 (1.02 to 1.49) Based on data from 7259* participants in 12 studies	⊕⊕⊕⊕ MODERATE ¹
Consistent condom use follow up: 6 months to 36 months	Interventions combining education and contraceptive promotion may increase consistent condom use in adolescents.	370 per 1000	488 per 1000	RR 1.32 (1.09 to 1.60) Based on data from 2791* participants in 9 studies	⊕⊕⊕⊕ LOW ^{1,2}
		Difference: 118 more per 1000 participants (95% CI: from 33 to 222 more per 1000 participants)			
Use of hormonal contraceptives follow up: 16 months to 24 months	It is uncertain how interventions combining education and contraceptive promotion affects use of hormonal contraceptives; evidence was of very low certainty.	241 per 1000	244 per 1000	RR 1.01 (0.70 to 1.44) Based on data from 3987* participants in 3 studies	⊕⊕⊕⊕ VERY LOW ^{1,2,3}
		Difference 2 more per 1000 patients (95% CI: from 72 fewer to 106 more per 1000 participants)			
Sexually Transmitted Diseases follow up: 6 months to 17 months	Interventions combining education and contraceptive promotion may make little or no difference to sexually transmitted diseases in adolescents.	147 per 1000	120 per 1000	RR 0.82 (0.64 to 1.04) Based on data from 1727* participants in 5 studies	⊕⊕⊕⊕ LOW ^{1,3}
		Difference 26 fewer per 1000 patients (95% CI: from 53 fewer to 6 more per 1000 participants)			

CI= confidence interval; GIV=generic inverse variance; OR=odds ratio; RR= risk ratio * Sensitivity analyses excluding studies with >20% attrition did not alter results (RR 0.61, 95% CI 0.39 to 0.94, 6 RCTs, 1918 participants) and therefore we did not downgrade for high attrition in these studies. ** Actual number of participants. In cluster trials, numbers of events and sample sizes were adjusted appropriately to account for correlation within clusters

¹ Downgraded one level for risk of bias: most studies did not describe randomisation, concealment of allocation, or blinding process adequately.

² Downgraded one level for inconsistency: Considerable heterogeneity ($I^2 > 50\%$; $p < 0.05$).

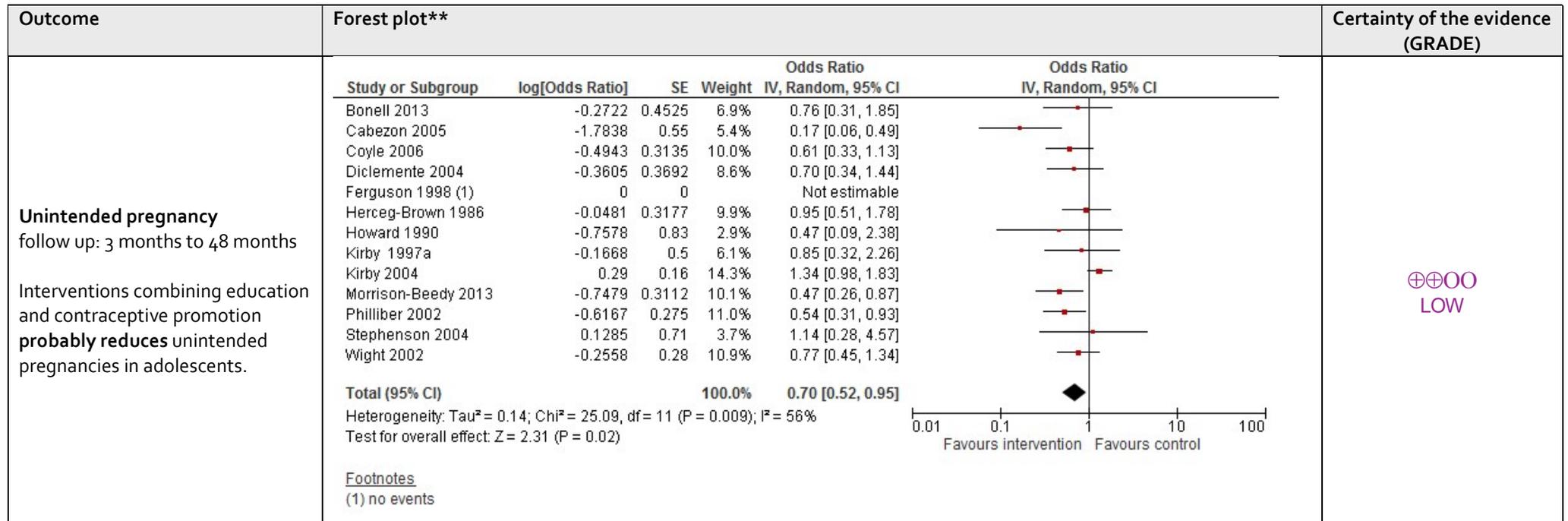
³ Downgraded one level for imprecision: The 95% CI around the pooled estimate of effect includes both no effect and appreciable benefit for the intervention.

Forest plot: Interventions combining education and contraceptive promotion for unintended pregnancies in adolescents *

Patients: Adolescents.

Setting: Studies were school-based or clinic-based (school health service) or a combination of both in Chile (1 study), Mexico (1), Nigeria (1), UK (2), and USA (23).

Comparison: Interventions combining education and contraceptive promotion versus no additional activity/intervention to existing conventional population-wide activities



* Forest plot for primary outcome. Forest plots for all outcomes are presented in Supplementary materials.

** In cluster trials, numbers of events and sample sizes have been adjusted appropriately to account for the induced correlation within clusters.