Interventions for preventing unintended pregnancies among adolescents

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An updated version of this systematic review has been published and can be found online at www.cochrane.org. We will soon update the below RHL summary to reflect the updated findings of the systematic review.

1. INTRODUCTION

Unintended pregnancy (both unplanned and unwanted) among adolescents is a common public health problem worldwide. Repeat pregnancies in this group also occur frequently and are related to increased risks of adverse outcomes for adolescent mothers and their babies. Pregnancy and childbirth-related deaths are the number one killers of 15–19-year-old girls worldwide (1), with nearly 70,000 annual deaths (2). At least 2 million more young women are left with a chronic illness or disability, which may bring them life-long suffering, shame, or abandonment. Physically immature and often with few resources, the youngest first-time mothers are most at risk. Moreover, each year 2.2–4 million adolescents resort to unsafe abortion (3). Ninety-nine per cent of maternal deaths occur in the developing world (4), most of which (an overwhelming 74%) are preventable (5).

Many adolescent girls become brides, get pregnant, and have children before they are physically, emotionally, and socially mature enough to be mothers. Married or unmarried, adolescent girls become pregnant for different reasons. For some, pregnancy is accidental and the results of experimenting with sexuality or of lack of knowledge about how to prevent conception. Others seek pregnancy and motherhood to achieve adult status or fill an emotional void. But most adolescent pregnancies have little to do with choice or mistake. Globally, the majority of adolescent girls who become pregnant are married and pressured to have a child. For others, pregnancy often results from abusive, forced, or coerced sex (6).

Many technical and political agencies at the global, regional and national levels have been implementing a variety of interventions with diverse approaches to address a wide range of factors related to unintended pregnancies among adolescents. The goals of these agencies have included, among others: helping adolescents to change psychosocial risk and protective factors involving sexuality; increasing teens’ knowledge about risks and consistent and safe use of contraceptives; and skills training to support their social inclusion and personal development.

At the present time, stakeholders ranging from teens’ parents, health-care providers, teachers, and policy-makers need to understand better how to set up programmes that can be practical, evidence-based, culturally appropriate, acceptable for adolescents, and that can guarantee good results in terms of the goals to be achieved to the satisfaction of all those involved, principally adolescents. For this to be feasible, experts are
stating that interventions should address manifold factors at the same time. Still, evaluation studies of specific interventions as well as reviews and meta-analysis of the effects of existing strategies do not show consistent evidence about their effectiveness.

The present Cochrane review (7) assesses the effects of prevention interventions on unintended pregnancies among adolescents. Although it does not tackle all the aspects needed to evaluate an intervention aimed at changing behaviours as a consequence of limitations of current literature, the review is none the less relevant and provides appropriate insight into the field, generating new questions and the need for other study designs and data collection techniques for further research.

2. METHODS OF THE REVIEW

The review is comprehensive since it included a search strategy that combined the most important literature databases (in medicine, public health and social sciences), cross-referencing, hand-searching, and contacting experts and national and international academic centres working in the subject field. No language restriction was imposed and the search included published, unpublished and in-progress documents. The search terms used were appropriate for the focus of the review. The review authors followed generally sound methods in the conduct of the review. The presentation of the data, both in text format and tables developed for each study reviewed, are clear and follow international standards.

The review includes randomized controlled trials, including cluster randomized trials where the unit of randomization was the household, community, youth centre, school, classroom, health facility, or faith-based institution, including male and female subpopulations aged 9–19 years. Two reviewers independently assessed trial eligibility and risk of bias in the studies that met the inclusion criteria. Where appropriate, binary outcomes were pooled using random effects model with a 95% confidence interval (CI).

3. RESULTS OF THE REVIEW

Out of 98 potentially relevant studies identified, 41 met the inclusion criteria, which were based on the standard methods for randomized controlled trials (Cochrane Handbook for systematic review of interventions Version 5.0.1). However, data could be pooled for only 15 trials because of variations in the reporting of outcomes.

The primary outcome measured was unintended pregnancy. Secondary outcomes included: reported changes in knowledge and attitudes about the risk of unintended pregnancies; initiation of sexual intercourse; use of birth control methods, abortion, stillbirth, morbidity related to pregnancy, abortion and childbirth; mortality related to pregnancy, abortion and childbirth; and sexually transmitted infections (including HIV).

All the included studies were randomized controlled trials: 11 had randomized individuals, 26 had randomized clusters (schools, classrooms, and communities/-neighbourhoods), and three were mixed (individually and cluster randomized). The follow-up duration varied from 3 months to 4.5 years. A total of 95 662 participants were included in the 41 selected studies. The age of the participants ranged from 9 years to 19 years, except in four studies in which the age ranged from 9 years to 24 years (although 75% of the participants were within the stipulated age limit). In most studies, the participants included males and females. As for the settings, only two trials were conducted in developing countries and all others in developed countries. Most of the trials were conducted in schools. In terms of types of intervention, educational interventions (both sex education and skill-building), contraception methods access or contraception education, as well as multiple interventions (educational and contraceptive promotion) made up the core interventions.

The review reports problems related to allocation, blinding, incomplete outcome data and selective reporting, as well as other potential sources of bias such as limitations of self-reporting and behavioural outcome data, heterogeneity in programme design and implementation, and underreporting of
implementation data.

Notwithstanding these limitations, results from two individually randomized trials showed that risk of unintended pregnancy was lower (although not statistically significant) among those who received multiple interventions (educational and contraceptive access interventions) [relative risk (RR) 0.72, 95% CI 0.51–1.03]. At the same time, five cluster randomized trials adjusted for design effect showed lower risk of unintended pregnancy in the intervention group than the control group, but the difference was not statistically significant (RR 0.50, 95% CI 0.23–1.09). However, sensitivity analysis excluding trials with high attrition rates showed that the risk of unintended pregnancy was significantly lower in the intervention group than the control group (RR 0.20, 95% CI 0.10–0.39). Further, an analysis that combined cluster randomized trials with individually randomized trials showed statistically significantly lower risk of unintended pregnancy in the intervention than the control group (RR 0.49, 95% CI 0.33–0.74).

4. DISCUSSION

While single interventions were not found to be effective, combinations of interventions to improve education and contraceptive access were found to reduce unintended pregnancies among adolescents. The information provided in this review is somewhat limited because of the limitation of the included studies in terms of their design (e.g. no baseline data collected and no relevant variables assessed that might affect the outcome), allocation concealment; and/or outcomes measures (e.g. attrition rates or abortion not measured). On the other hand, some of the methodological strengths of these studies were relatively large sample sizes and statistical control for baseline differences.

4.1. APPLICABILITY OF THE RESULTS

All but two studies were conducted in developed countries, where the patterns of sexual culture and behaviour, gender roles, family formation values, issues related to adolescent forced marriage, labour and educational opportunities, and sexual violence are very different from developing countries. Hence, the findings of this review are not applicable to under-resourced settings.

Sexual and reproductive health is deeply rooted in cultural and social values thus limiting the applicability of the results of these studies. Besides, unintended pregnancy is a complex socio-cultural phenomenon that might be addressed taking into consideration a comprehensive framework of social and cultural determinants not easily appraised by standardized questionnaires and interventions. More comprehensive conceptual frameworks are needed to address the evaluation of interventions aimed at changing values and behaviours in the sexuality field (8).

4.2. IMPLEMENTATION OF THE INTERVENTION

Taking into account broad cultural and social variations among regions, there is evidence from observational studies, qualitative research, ecological studies, and operational research that may be useful for stakeholders and policy-makers working in the sexual education field targeting adolescents (9). Particularly, UNFPA's adolescents and youth publications and WHO Youth InfoNet which address critical dimensions of adolescents’ sexuality and its relationship with reproductive behaviour and outcomes. In addition, the Campbell Collaboration may be a useful source for different approaches and examples of specific interventions addressing the central topic of this review (10, 11).

The results of this review show that combined interventions (such as educational and contraceptive promotion) can play a key role in reducing unintended pregnancies among adolescents. At the same time, other related outcomes (such as abortion rates or changes in knowledge and attitudes about the risk of unintended pregnancies) that should also change in order to reinforce the expected effect of reducing unwanted pregnancies in a comprehensive way have no conclusive results.
The aim of all efforts directed at adolescents should be to give them the best chance of developing both personally and socially. Interventions implemented at schools, the community or health-care facilities that aim at changing any process or outcome variables related to adolescents’ sexual and reproductive behaviours should take into account the economic and social and opportunities available to adolescents, as well as their cultural values.

4.3. IMPLICATIONS FOR RESEARCH

Future research should be aimed at evaluating the diverse dimensions of the design and implementation process of interventions for reducing unintended pregnancies among adolescents. The cost–effectiveness of all proposed interventions, along with the basic investments needed in terms of qualified and sustainable human resources, should be assessed. Moreover, the strengthening of intersectoral policies (such as health, education and social welfare programmes) should be also addressed. Finally, further research is needed on how best to build consensus among the principal stakeholders in the field, including adolescents groups and organizations; such research would focus on evaluation of the efficacy, cultural sensitivity and feasibility of interventions aimed at adolescents.

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