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Cochrane Database of Systematic Reviews 2014, Issue 4. Art. No.: CD011067.

DOI: 10.1002/14651858.CD011067.

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[Intervention Protocol]

Contraception interventions for women seeking abortion

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Editorial group: Cochrane Fertility Regulation Group.

Publication status and date: New, published in Issue 4, 2014.

Citation: Zhang WH, Che Y, Chen Q, Cheng L, Temmerman M. Contraception interventions for women seeking abortion. *Cochrane Database of Systematic Reviews* 2014, Issue 4. Art. No.: CD011067. DOI: 10.1002/14651858.CD011067.

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ABSTRACT

This is the protocol for a review and there is no abstract. The objectives are as follows:

To assess the effects of interventions to promote contraceptive use and reduce repeated unintended pregnancy among women seeking abortion.

BACKGROUND

It is estimated that 40% of all pregnancies worldwide are unintended and most of these are due to the non-use or failure of contraceptive methods (WHO 2007). A strong negative correlation has been reported between abortion and contraception use, such that abortion incidence declines as contraceptive use increases in settings with steady fertility rates over time (Marston 2003; Rahman 2001). How to increase contraceptive use is a critical issue for public health researchers, service providers and policy makers. Many interventions have been designed to inform women of reproductive age about the risk of unintended pregnancies, promote their consistent use of contraceptive methods and reduce unintended pregnancies (Moos 2003; Stephenson 2008; Steiner 2006; Wang 1998). Nevertheless, few interventions were seen to promote contraceptive use for women seeking an abortion.

Women who seek abortion services are a vulnerable population group. The available evidence indicates these women are largely neglected by service providers. A 2010 survey in the USA showed

that abortion risk among some groups of women was increasing, i.e. poor women (44.4 per 1000), 'poor cohabiting' (52.0 per 1000), women aged 20 to 24 years (39.9 per 1000), and non-Hispanic African American women (40.2 per 1000) (Jones 2010). Moreover, these women were often at high risk of unintended pregnancies and repeated abortions. It is estimated that 30% of them would have another abortion by the age of 45 years (Jones 2010). Surveys in China show that women seeking abortions tend to be young and unmarried. One-third to half of them have had a previous abortion (Cheng 1997; Wu 2011). The high level of repeated abortion among women seeking abortion suggests that their contraceptive needs might not be met, and that post-abortion care should be improved to bridge the gap. Teenagers who sought abortion were more likely to be non-users of contraceptive methods and to seek abortion services late in pregnancy, which may be due partly to poor compliance with medical advice, poor contraceptive knowledge and poor motivation (Lim 2012; Wu 2011). Women who sought abortion were shown to be more motivated than their counterparts to use effective and safe contra-

ception after the service procedure (Speroff 2008). Post-abortion could therefore be an optimal time to initiate an effective contraceptive method. The main aim of this review is to explore how effective contraception interventions might be for women seeking abortion to reduce future unintended pregnancies.

Description of the condition

Unintended pregnancy is a common public health problem and is an extremely common occurrence in women's lives. In the US, for the example, half of all pregnancies are unintended (Jones 2006). Unintended pregnancy has negative consequences for the health of women and their children (WHO 2007) and is associated with significant costs to the healthcare system (Trussell 2009). Abortion is a commonly used way to end an unintended pregnancy. In 2003, an estimated 42 million abortions were induced worldwide (Sedgh 2007). The abortion rate (yearly number of induced abortions per 1000 women aged 15 to 44 years) was the highest in Eastern Europe at 44, followed by Eastern Asia at 28 which is dominated by China (Sedgh 2007). The induced abortion rate has increased from 10 million in 2003 to 13 million in 2008 in China (Johnston 2010), of which one third of women have undergone repeat abortions (Cheng 1997).

Until recently, there has been limited information on the nature of contraception interventions for women seeking abortion (Bender 2004; Ferreira 2009; Nobili 2007; Schunmann 2006; Zhu 2009). Reviewing these studies, it appears that the appropriate contraceptive education, appropriate contraceptive recommendation and follow-up service after abortion have received insufficient attention by investigators.

Description of the intervention

The intervention is defined as any activity designed to increase the knowledge or change the attitudes of women seeking an abortion on the risk of unintended pregnancies, promote their use of contraceptives or reduce the likelihood of unintended pregnancies. The intervention could be commenced within two weeks before or after an index abortion.

Interventions must include at least one of the following practices:

1. contraceptive education;
2. individual-based or group-based counseling;
3. family planning counseling, including visual and auditory components, interaction between service providers and clients;
4. free provision of contraceptive materials;
5. provision of Emergency Contraceptive Pills (ECPs) before the abortion;
6. male partner involvement;
7. interventions with multiple approaches i.e. those which include two or more of the above approaches.

How the intervention might work

Abortion is mainly due to unintended pregnancy. In broad terms the two main factors perceived as contributing to unintended pregnancy were contraceptive failure or non-use of contraceptive methods. Traditional contraceptive methods, such as periodical abstinence and withdrawal, are much less effective than modern methods like intrauterine devices (IUDs). Inconsistent use of condoms or contraceptive pills is associated with an increase in unintended pregnancy (WHO 2010). Nevertheless, a previous study showed that pre-abortion counseling had a limited impact on post-abortion contraceptive practice (Bender 2004). Neither a community information campaign nor structured contraceptive counseling increased contraceptive practices among abortion applicants (Larsson 2006; Langston 2010). In one study in Switzerland, even though professional counseling was given at the time of a woman's request for an abortion, most women used the same type of contraceptive methods before and six months after an abortion, and 17 per cent of women had gone back to the non-recommended method they used before abortion, including no method (Bianchi-Demicheli 2003). On the other hand, comprehensive intervention measures which including personalized post-abortion family planning counseling with a range of contraceptive choices plus intensive follow-up services after abortion significantly increased contraceptive use after abortion (Lin 2011) and significantly reduced the risk of repeated abortion (Shen 2010). These results indicate that the efficient use of contraceptive methods may require more than ensuring ease of availability or information. Psychological factors may play a role. Effective post-abortion care should include comprehensive intervention approaches, including personalized family planning counseling, with a wide availability of contraceptive methods and good quality of follow-up service. These approaches may encourage women seeking abortion services to adopt modern contraceptive methods and/or correct use of contraceptives, which would consequently prevent unintended pregnancy and repeated abortion in the future.

Why it is important to do this review

There is no agreement among health providers on the impact of contraceptive interventions on improving contraceptive use among women seeking abortion services (Ferreira 2009; Halpern 2011; Landry 2008; Moos 2003). Some studies reported that counseling was an important component of improving women's contraceptive use (Landry 2008) while others found that the effectiveness of counseling was limited (Ferreira 2009; Halpern 2011; Langston 2010; Moos 2003). The effectiveness of other intervention approaches, such as free provision of contraceptive materials and involvement of male partners, on reducing unintended pregnancy is debatable (Beenhakker 2004; Rasch 2005; Zhu 2009). Before conducting further research to assess the effects of various interventions on increasing contraceptive use and reducing the risk

of unintended pregnancy, it is necessary to do a systematic review. In this review, we plan to identify all trials on contraceptive interventions for women seeking abortion and to explore the effects of the interventions on promoting contraceptive use and preventing unintended pregnancy.

OBJECTIVES

To assess the effects of interventions to promote contraceptive use and reduce repeated unintended pregnancy among women seeking abortion.

METHODS

Criteria for considering studies for this review

Types of studies

We will include individual and cluster randomized controlled trials (RCTs).

Types of participants

Women of reproductive age (15 to 49 years) who seek an abortion.

Types of interventions

The Intervention is defined as any activity designed to:

1. increase knowledge about or change attitudes towards the risks of unintended pregnancy among women seeking abortion services,
2. promote contraceptive use, and
3. reduce unintended pregnancy.

The intervention should be within two weeks before or after an index abortion.

Intervention approaches include one or more of the following practices:

1. contraceptive education;
2. individual-based or group-based counseling;
3. family planning counseling with visual and auditory components or interaction between service providers and clients;
4. free provision of contraceptive materials;
5. provision of Emergency Contraceptive Pills (ECPs) in advance;
6. male partner involvement; and
7. interventions combining multiple approaches, which may include one or more of the above practices.

Interventions will be grouped into three categories as follows:

1. Counseling: health education; contraceptive counseling; group-based or individual-based counseling; family planning counseling with visual and auditory components or interaction between service providers and clients;
2. Contraceptive promotion: contraceptive counseling with free provision of contraceptive methods;
3. Interventions with multiple approaches: a combination of counseling intervention, free provision of contraceptive methods, male partner involvement or other measures.

Control:

Women in the control group receive routine abortion care, which means that no additional activity/intervention is performed except for the existing conventional activities of pre- or post-abortion care.

Types of outcome measures

Primary outcomes

The primary outcomes are:

1. Prevalence of use of modern contraceptive methods three and six months after an index abortion;
2. Pregnancy/unintended pregnancy rates three months and six months after an index abortion;
3. Incidence of induced abortion during the three months or six months after an index abortion.

Secondary outcomes

1. Immediate contraceptive uptake;
2. Utilization of any of contraceptive method six months after the index abortion;
3. Knowledge and attitudes towards contraception at the time of follow-up;
4. Satisfaction regarding the abortion and contraceptive services.

Search methods for identification of studies

Electronic searches

We will search for all relevant studies regardless of language or publication status (published, unpublished, in press, and in progress).

We will search:

- the Cochrane Central Register of Controlled Trials (CENTRAL, *The Cochrane Library*, latest issue)
- PubMed (1966 to present)
- EMBASE (1980 to present)
- PsycINFO
- CINAHL

- HealthStar
- POPLINE
- Dissertation Abstracts Online (<http://library.dialog.com/bluesheets/html/bl0035.html>)
 - the Gray Literature Network (<http://www.osti.gov/graylit/>)
 - the Specialist Health Promotion Register (Social Science Research Unit (SSRU), Institute of Education, University of London)
 - LILACS (La Literatura Latinoamericana y del Caribe de Informacion en Ciencias de la Salud) database
 - the Social Science Citation Index and Science Citation Index (1981 to present)
 - the China Academic Journal Network Publishing (CAJNP) database (1982 to present).

We will use the Cochrane Fertility Regulation Group search strategy (Helmerhorst 2004).

Non-English data will be translated into English using pre-designed data extraction forms. Search strategies are presented in [Appendices 1 to 6](#).

Searching other resources

We will also search the following databases:

- WHO Reproductive Health Library,
- Chinese Biomedical Literature Database (1982 to present)
- National Science & Technology Library,
- Chinese Science & Technology Journal Database, and
- China Academic Library & Information System (1982 to present).

In addition, we will contact individual researchers, national and international research institutes/centres and organizations (including non-governmental organizations) working in the field of reproductive health in order to obtain information on unpublished and on-going trials. To ensure that no relevant studies are omitted, we will read through the list of references in each relevant study in order to follow up on articles that may qualify for inclusion in the review.

Data collection and analysis

Selection of studies

Titles and abstracts retrieved through the search strategy will be reviewed independently by the first and second authors to identify and select potentially relevant studies using pre-defined inclusion criteria (see [Criteria for considering studies for this review](#)). The full text of all articles selected by either team member will be retrieved for review. Disagreement will be resolved through discussion with a third review author. All studies which initially appeared to meet inclusion criteria but upon inspection of the full text do

not merit inclusion will be detailed in the 'Excluded Studies' table with reasons for exclusion.

Data extraction and management

We will design a form to facilitate the process of data extraction and two review authors will extract the data separately. Any discrepancies or disagreements about the abstracted data will be resolved by discussion or by consulting a third author. If necessary, we will contact study authors to obtain additional information about the study methods and the outcome measures. We will enter and analyse the data using RevMan 5.2 software. Correct entry of the data will be verified by at least one other review author.

Assessment of risk of bias in included studies

Relevant studies will be assessed for methodological bias using the Cochrane Collaboration's 'Risk of bias' tool ([Higgins 2011a](#); chapter 8 [Higgins 2011b](#)). Factors considered will include sequence generation method, allocation concealment, blinding of participants and personnel, blinding of outcome assessors, losses to follow up and selective outcome reporting. Only those studies deemed by both authors to be methodologically sound will be included in the review. Jadad scale for reporting randomized controlled trials will be used to assess the methodological quality of a trial ([Wikipedia 2013](#)).

Measures of treatment effect

Using RevMan, we will calculate odds ratios with 95% confidence intervals (CIs) for dichotomous variables, and mean difference with 95% CIs for continuous variables.

Unit of analysis issues

In the case of a study having more than two arms, the overall effects of the intervention versus control will be examined by pooling the individual effect of each intervention arm, and weighting the overall values for the numbers within each arm. Cluster-randomised trials will be clearly identified in the review and information regarding data will be clearly stated. When necessary (and possible), the results of clustered trials will be re-analysed to take account of the clustered design. If re-analysis is not possible then standard errors may be inflated. Where appropriate, cluster-randomised trials will be combined with individually-randomised trials in the same meta-analysis (as advised in Chapter 16 of the *Cochrane Handbook for Systematic Reviews of Interventions* ([Higgins 2011b](#); [Higgins 2011a](#))). Only cluster-randomized trials for which adjustment had been made for the design effect will be included in the meta-analyses. Appropriate statistical advice will be sought if necessary

Dealing with missing data

We will contact study authors directly by email if outcome data are unclear or are not fully reported. If data are available, intention-to-treat analysis will be conducted. However, If the information cannot be obtained this will be reflected in the 'Risk of bias' table. In addition, we will record the completion rates of both intervention and outcome and classify according to completion. Sensitivity analyses will be conducted to evaluate bias related to missing data at the endpoint (see [Sensitivity analysis](#)).

Assessment of heterogeneity

We will assess heterogeneity by exploration of the forest plots, and estimate it using the I^2 statistic. If substantial heterogeneity ($I^2 > 50\%$) is identified, we will use the random-effects model.

Assessment of reporting biases

We will assess the methodological quality of included studies using standard methods for randomized controlled trials as described in the *Cochrane Handbook* (Higgins 2011b, Higgins 2011a). We will consider six parameters: generation of allocation sequence, concealment of allocation sequence, blinding, incomplete outcome data, selective outcome reporting and other sources of bias.

Data synthesis

We will carry out statistical analysis using RevMan 5.2 software. We will use the fixed-effect model for combining data where trials

are examining the same intervention, and we judge the trials' populations and methods sufficiently similar. Where we suspect clinical or methodological heterogeneity between studies sufficient to suggest that treatment effects may differ between trials, we will use a random-effects model. If we identify substantial heterogeneity in a fixed-effect model, we will note this and repeat the analysis using a random-effects method.

Subgroup analysis and investigation of heterogeneity

We will classify intervention into three groups (counseling, contraceptive promotion and multiple contraceptive interventions) and will perform subgroup analysis for the three groups. In addition, the use of specific contraceptive methods will be another element for subgroup analysis.

Sensitivity analysis

We will conduct a sensitivity analysis of the primary outcome including and excluding trials with high attrition rates (> 20%).

ACKNOWLEDGEMENTS

QJ Chen received a scholarship funded by LOTUS Project of Reasmus Mundus 2 of European Commission and contributed to drafting the protocol.

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* Indicates the major publication for the study

APPENDICES**Appendix 1. CENTRAL search strategy**

(contracept* OR family planning OR birth control) in Title, Abstract or Keywords AND (abortion) in Title, Abstract or Keywords AND (counsel OR communicat* OR educat* OR information OR intervention) in Title, Abstract or Keywords.

Appendix 2. PubMed search strategy

- 1) abortion;
- 2) termination of pregnancy;
- 3) postabortion OR preabortion OR peri-abortion;
- 4) 1) OR 2) OR 3)
- 5) contracept*;
- 6) birth control;
- 7) family planning;
- 8) 5) OR 6) OR 7)
- 9) intervention;
- 10) counselling;
- 11) education;
- 12) health promotion;
- 13) services;
- 14) care;
- 15) programs or program;
- 16) 9) OR 10) OR 11) OR 12) OR 13) OR 14) OR 15);
- 17) 4) AND 8) AND 16);
- 18) Randomized clinical trial or RCT*;
- 19) Random allocation;
- 20) 18) OR 19) ;
- 21) 17) AND 20);

Appendix 3. EMBASE search strategy

(abortion OR termination of pregnancy) AND (contracept* OR birth control OR family planning) AND (intervention OR counselling OR education OR service OR program OR care OR health promotion) AND (randomised controlled trial OR RCT*).

Appendix 4. POPLINE search strategy

(contracept* OR family planning OR birth control) in Title, Abstract or Keywords AND (abortion) in Title, Abstract or Keywords AND (counsel OR communicat* OR educat* OR information OR intervention) in Title, Abstract or Keywords.

Appendix 5. Clinicaltrials.gov search strategy

Search terms: abortion OR termination of pregnancy

Interventions: (contraceptive OR contraception OR births control OR family planning)

Appendix 6. Chinese database search strategy

Key words for Chinese database searches:

- 1) 流产(abortion) 或 人工流产(induced abortion) 或 药物流产 (medical abortion) ;
- 2) 干预(intervention) 或 咨询(counseling) 或 流产后咨询 (counseling after abortion) ;
- 3) 避孕 或 计划生育 (contraceptive or family planning) 或 避孕服务 (family planning services) ;
- 4) 1) and 2)
- 5) 4) and 3)

CONTRIBUTIONS OF AUTHORS

WH Zhang initiated the project and contributed to developing and revising the protocol. Y Che contributed to revising the protocol. QJ Chen contributed to drafting the protocol. LN Cheng and M Temmerman revised the protocol.

DECLARATIONS OF INTEREST

None declared.

SOURCES OF SUPPORT

Internal sources

- No sources of support supplied

External sources

- LOTUS project of Erasmus Mundus Action 2 of the European Commission and EU FP7 under grant agreement no: 282490, Not specified.