

Education for contraceptive use by women after childbirth (Review)

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ABSTRACT

Background

In 1966, the Population Council (a non-profit, non-government organisation which aims to foster reproductive health around the world) sponsored demonstration projects (known as the 'International Postpartum Program') on postpartum family planning, focussing primarily on developing countries and including 25 hospitals in 14 countries (Zatuchni 1970). These projects were based on the assumptions that women are receptive to family planning education in the postpartum period, and that they will not return to health centres for contraception once they have been discharged from hospital. The demonstration projects were declared a success given their ability to reach large numbers of women, and they were expanded to include hospitals in 21 countries (Winikoff et al 1991). Randomised controlled trials were not used to assess the effectiveness of the program.

The provision of education on contraceptive use to postpartum mothers has come to be considered a standard component of postnatal care, with up to 84% of women noting that a discussion on contraception took place with a midwife on the postnatal floor (Glasier et al 1996). Although education frequently is provided as an integral component of discharge planning, many women experience this as a perfunctory discussion included as part of a checklist of topics (Glasier et al 1996). Midwifery and obstetric texts routinely refer to the provision of such education as a responsibility in the provision of postpartum care; however, the effectiveness of this intervention is seldom questioned (Keith et al 1980; Semeraro 1996). Questions have been raised about the assumptions that are the basis for such programs, e.g. that postpartum women are motivated to use contraception and that they will not return to a health centre for family planning advice (Winikoff et al 1991). In addition surveys conducted postpartum indicate that women may wish to discuss contraception antenatally and post hospital discharge, preferably in the context of general education about maternal and child health (Ozvaris 1997).

Objectives

Postpartum education on contraceptive use is a routine component of discharge planning in many different countries with a wide variety of health care systems. This education is based on assumptions concerning women's receptivity to contraceptive education during the postpartum period and their presumed lack of access to such education after that time.

The objective of this review is to assess the effects of education about contraceptive use to postpartum mothers.

Search strategy

We searched the Cochrane Controlled Trials Register, MEDLINE, EMBASE, CINAHL, Psychlit, Popline, citations indexes and reference lists of relevant articles. We contacted subject experts to locate additional research, in addition to the Group's Specialised Register of Controlled Trials.

Date of the most recent search: March 2001.

Selection criteria

Trials using random or quasi-random methods of allocation which evaluated the effectiveness of postpartum education about contraceptive use.

Data collection and analysis

Two independent reviewers abstracted data on trial characteristics and results.

Main results

No new trials were identified since this review was updated in 1999.

Three trials were identified with 5438 women. These trials were conducted in Lebanon, Peru and Nepal. None of the trials examined all major prespecified endpoints.

Postpartum education about contraceptive use influenced short-term use assessed between 40 days and three months post-partum. Women in the intervention groups were less likely to be non-users than women in the comparison groups (Odds Ratio (OR) = 0.47, 95% Confidence Interval (CI) 0.39 to 0.58). This benefit was not apparent following analysis of data from better quality studies (OR = 0.67, 95% CI 0.41 to 1.13). An apparent benefit on contraceptive use at six months post-partum (OR = 0.52, 95% CI 0.37 to 0.74) was not apparent following sensitivity analyses (OR = 0.59, 95% CI 0.33 to 1.06). Data are inadequate to assess the impact on cessation of breast feeding and non-attendance at family planning clinics. Unplanned pregnancies, knowledge about contraception and satisfaction with care were not assessed in any trial.

Authors' conclusions

The effectiveness of postpartum education about contraceptive use has not yet been established in randomised controlled trials. Such education may be effective in increasing the short-term use of contraception. However, there are only limited data examining a more-important longer-term effect on the prevention of unplanned pregnancies. Research needs to be undertaken to assess the effectiveness of the minimalist education provided in more developed countries and the variety of programs provided in less developed regions. Such research should examine the content, timing, range and organisation of postpartum education on contraceptive use including lactational amenorrhea, as well as its impact on breast feeding rates.

PLAIN LANGUAGE SUMMARY

Not enough evidence on education about contraception and family planning for women who have just given birth, or when such education would be most valuable

Family planning advice and education about contraception are commonly provided to women who have just given birth. As women may not return for health care, it is seen as an important opportunity to introduce family planning. However, this may or may not be the best time around pregnancy to raise the issue with women. The review of trials found little evidence about the effects of contraception education after childbirth. There was some indication of short-term benefit in using contraception, but no evidence of a decrease in unplanned pregnancy.

No new trials were identified when the search for this review was updated in late 2001.

BACKGROUND

In 1966, the Population Council (a non-profit, non-government organisation which aims to foster reproductive health around the world) sponsored demonstration projects (known as the 'International Postpartum Program') on postpartum family planning, focussing primarily on developing countries and including 25 hospitals in 14 countries (Zatuchni 1970). These projects were based on the assumptions that women are receptive to family planning education in the postpartum period, and that they will not return to health centres for contraception once they have been discharged from hospital. The demonstration projects were declared a success given their ability to reach large numbers of women, and they were expanded to include hospitals in 21 countries (Winikoff et

al 1991). Randomised controlled trials were not used to assess the effectiveness of the program.

The provision of education on contraceptive use to postpartum mothers has come to be considered a standard component of postnatal care, with up to 84% of women noting that a discussion on contraception took place with a midwife on the postnatal floor (Glasier et al 1996). Although education frequently is provided as an integral component of discharge planning, many women experience this as a perfunctory discussion included as part of a checklist of topics (Glasier et al 1996). Midwifery and obstetric texts routinely refer to the provision of such education as a responsibility in the provision of postpartum care; however, the effectiveness of this intervention is seldom questioned (Keith et al 1980; Semeraro

1996). Questions have been raised about the assumptions that are the basis for such programs, e.g. that postpartum women are motivated to use contraception and that they will not return to a health centre for family planning advice (Winikoff 1991). In addition, surveys conducted postpartum indicate that women may wish to discuss contraception antenatally and/or post hospital discharge, preferably in the context of general education about maternal and child health (Glasier et al 1996; Ozvaris 1997). Notwithstanding this dearth of research, there is evidence that there are unmet needs for contraception among over 60% of postpartum women included in Demographic and Health Surveys in 27 countries (Ross 2001). In addition, there is evidence from the Matlab project examining the impact of providing experimental maternal and child health and family planning programs in a rural area in Bangladesh compared with a comparison area, that intensive provision of family planning services does result in an increased uptake of contraceptive use (Koenig et al 1992).

OBJECTIVES

The primary objective of this review is to determine the effectiveness of education about contraceptive use to postpartum mothers in terms of the number of unplanned pregnancies, and mothers' contraceptive knowledge, attitudes, practices, breast feeding behaviour and satisfaction with care.

Secondary objectives are:

- (1) To determine the effectiveness of this advice according to the mode of delivery of the education: pamphlet or other written material, video/audiotape, one-to-one counseling, or group counseling;
- (2) To determine the effectiveness of this advice according to the health professional giving the advice: midwife/nurse, physician, or specially trained lay person;
- (3) To determine the effectiveness of this advice according to its timing: immediately postpartum, postpartum visit either in a health care facility or at home, or another occasion.

CRITERIA FOR CONSIDERING STUDIES FOR THIS REVIEW

Types of studies

Controlled trials using random or quasi-random methods of allocation examining postpartum education about contraceptive use, whether delivered to individuals or to groups of women.

Types of participants

All women giving birth at 20 weeks gestation or more.

Types of intervention

Trials were included if they evaluated specific education provided post-partum, to influence uptake of contraception including lactational amenorrhea. Educational interventions may have been based on written materials, video or audiotapes, one-to-one counseling and/or group counseling.

Types of outcome measures

The main outcomes of interest are unplanned pregnancies, attendance at family planning clinics, use of contraception, knowledge about contraception, breast feeding and satisfaction with postnatal care.

SEARCH METHODS FOR IDENTIFICATION OF STUDIES

See: methods used in reviews.

A substantive amendment to this systematic review was made in March, 2002. Cochrane reviews are regularly checked and updated if necessary. We conducted searches of MEDLINE, The Cochrane Controlled Trials Register, EMBASE, Popline, CINAHL, PsycINFO (which includes PsycLit), SIGLE (Grey Literature in Europe) and ASSIA (Applied Social Sciences Index and Abstracts) using the search strategies outlined below. Reference lists of relevant papers were examined for additional citations. The following organisations were emailed requesting advice about relevant research: Alan Guttmacher Institute, California Family Health Council, Contraceptive Research and Development, Couple to Couple League, Engender Health, European Commission, Health, Family Planning and AIDS Unit, Family Planning Association of Queensland, Family Planning Councils of America, Family Planning International Assistance, Family Planning Management Development, Healthy Women, Johns Hopkins University Center for Communication Programs, Marie Stopes International, National Family Planning and Reproductive Health Association, Planned Parenthood Global Partners, Population and Community Development Association, Population Reference Bureau, Prime II, Program of Appropriate Technology in Health.

Although we contacted several investigators in the field to seek unpublished trials or published trials we had missed, this revealed no new references. In addition, a search was made of databases listing publications by the Population Council and Family Health International and the World Health Organization.

MEDLINE (OvidWeb 1966-2001 August) and The Cochrane Controlled Trials Register

1. COUNSELING/
2. SEX COUNSELING/
3. PATIENT EDUCATION/
4. HEALTH EDUCATION/
5. HEALTH PROMOTION/

6. exp TEACHING/
 7. (counsel\$ or debrief\$ or educat\$ or teach\$).ti,ab.
 8. 1 or 2 or 3 or 4 or 5 or 6 or 7
 9. POSTNATAL CARE/
 10. exp PUERPERIUM/
 11. MATERNAL HEALTH SERVICES/
 12. MATERNAL-CHILD HEALTH CENTERS/
 13. MATERNAL BEHAVIOR/
 14. PATIENT DISCHARGE/
 15. (postnatal\$ or post-partum or postpartum or post partum or postpartal\$).ti,ab.
 16. (maternity or maternal or mother\$).ti,ab.
 17. puerperium.ti,ab.
 18. discharg\$.ti,ab.
 19. 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18
 20. CONTRACEPTION BEHAVIOR/
 21. exp CONTRACEPTION/
 22. exp CONTRACEPTIVE AGENTS/
 23. exp CONTRACEPTIVE DEVICES/
 24. exp FAMILY PLANNING/
 25. FAMILY PLANNING POLICY/
 26. POPULATION CONTROL/
 27. ((family adj6 planning) or contracept\$ or (pregnan\$ adj6 prevent\$)).ti,ab.
 28. (birth adj6 control).ti,ab.
 29. 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28
 30. 8 and 19 and 29
 31. 30 and human/
 32. RANDOMIZED CONTROLLED TRIAL.pt.
 33. CONTROLLED CLINICAL TRIAL.pt.
 34. RANDOMIZED CONTROLLED TRIALS/
 35. RANDOM ALLOCATION/
 36. DOUBLE-BLIND METHOD/
 37. SINGLE-BLIND METHOD/
 38. CLINICAL TRIAL.pt.
 39. exp CLINICAL TRIALS
 40. (clin\$ adj25 trial\$).ti,ab.
 41. ((singl\$ or doubl\$ or trebl\$ or tripl\$) adj25 (blind\$ or mask\$)).ti,ab.
 42. PLACEBOS/
 43. (placebo\$ or random\$).ti,ab.
 44. RESEARCH DESIGN/
 45. COMPARATIVE STUDY/
 46. exp EVALUATION STUDIES/
 47. exp CASE-CONTROL STUDIES/ or exp COHORT STUDIES/
 48. (control\$ or prospective\$ or volunteer\$).ti,ab.
 49. (latin square or latin-square).ti,ab.
 50. (cross-over\$ or cross over\$).ti,ab.
 51. factorial\$.ti,ab.
 52. CROSS-OVER STUDIES/
 53. 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52

54. (animal not (human and animal)).sh.
 55. 53 not 54
 56. 55 and 31

N.B. for searching The Cochrane Controlled Trials Register please substitute “*” for “\$” and “near” for “adj”

EMBASE (OvidWeb 1980-2001 August)

1. exp COUNSELING/
 2. exp HEALTH EDUCATION/
 3. SEXUAL EDUCATION/ or TEACHING/ or PATIENT SATISFACTION/
 4. (counsel\$ or debrief\$ or educat\$ or teach\$).ti,ab.
 5. 1 or 2 or 3 or 4
 6. exp POSTNATAL CARE/
 7. exp MATERNAL CARE/
 8. MATERNAL BEHAVIOR/
 9. HOSPITAL DISCHARGE/
 10. (postnatal\$ or postpartum or post-partum or post partum or postpartal\$).ti,ab.
 11. (maternity or maternal or mother\$).ti,ab.
 12. puerperium.ti,ab.
 13. 6 or 7 or 8 or 9 or 10 or 11 or 12
 14. exp BIRTH CONTROL/ or exp CONTRACEPTION/
 15. exp CONTRACEPTIVE DEVICE or exp CONTRACEPTIVE AGENT/
 16. exp GESTAGEN/
 17. ((family adj6 planning) or contracept\$ or (pregnan\$ adj6 prevent\$)).ti,ab.
 18. (birth adj6 control).ti,ab.
 19. 14 or 15 or 16 or 17 or 18
 20. 5 and 13 and 19
 21. CLINICAL STUDY/ or CLINICAL ARTICLE/ or CASE CONTROL STUDY/ or LONGITUDINAL STUDY/ or MAJOR CLINICAL STUDY/ or PROSPECTIVE STUDY/ or CLINICAL TRIAL/ or MULTICENTER STUDY/ or PHASE 3 CLINICAL TRIAL/ or PHASE 4 CLINICAL TRIAL/ or RANDOMIZED CONTROLLED TRIAL/ or CONTROLLED STUDY/ or CROSSOVER PROCEDURE/ or DOUBLE BLIND PROCEDURE/ or INTERMETHOD COMPARISON/ or SINGLE BLIND PROCEDURE/ or PLACEBO/
 22. (allocat\$ or assign\$ or compar\$ or control\$ or cross over\$ or crossover\$ or factorial\$ or latin square or latin-square or followup or follow up or placebo\$ or prospective\$ or random\$ or trial\$ or versus or vs).ti,ab.
 23. (clinic\$ adj25 study).ti,ab.
 24. (clinic\$ adj25 trial).ti,ab.
 25. (singl\$ or doubl\$ or trebl\$ or tripl\$) adj25 (blind\$ or mask\$)).ti,ab.
 26. 21 or 22 or 23 or 24 or 25
 27. NONHUMAN/ OR ANIMAL/ OR ANIMAL EXPERIMENT/

28. HUMAN/ AND (NONHUMAN/ OR ANIMAL OR ANIMAL EXPERIMENTATION/)
29. 27 not 28
30. 26 not 29
31. 20 and 30

POPLINE (1970-2001 August, accessed via the NLM Internet GratefulMed service <http://igm.nlm.nih.gov/>)

1. COUNSELING/
2. CLINIC ACTIVITIES/
3. COUNSELORS/
4. FAMILY PLANNING EDUCATION/
5. HEALTH EDUCATION/
6. POPULATION EDUCATION/
7. FAMILY PLANNING PROGRAMS/
8. SEX EDUCATION
9. FAMILY PLANNING CENTERS/
10. TEACHING MATERIALS/
11. counsel\$ or debrief\$ or educat\$ or teach\$ or birth control\$ or family planning
12. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11
13. POSTPARTUM PROGRAMS/
14. PUERPERIUM/
15. POSTPARTUM WOMEN/
16. MATERNAL-CHILD HEALTH SERVICES/
17. MATERNAL HEALTH SERVICES/
18. postnatal\$ or post-partum or postpartum or postpartal\$ or puerperium
19. maternity or maternal or mother\$
20. 13 or 14 or 15 or 16 or 17 or 18 or 19
21. 12 and 20

CINAHL (SliverPlatter 1982-2001 October)

1. "Counseling"/ all topical subheadings / all age subheadings
2. "Sexual-Counseling"/ all topical subheadings / all age subheadings
3. "Patient-Education"/ all topical subheadings / all age subheadings
4. "Patient-Discharge-Education"/ all topical subheadings / all age subheadings
5. "Health-Education"/ all topical subheadings / all age subheadings
6. "Sex-Education"/ all topical subheadings / all age subheadings
7. "Health-Promotion"/ all topical subheadings / all age subheadings
8. "Teaching"/ all topical subheadings / all age subheadings
9. (counsel* or debrief* or educat* or teach*) in ti,ab
10. "Postnatal-Care"/ all topical subheadings / all age subheadings
11. "Postnatal-Period"/ all topical subheadings / all age subheadings
12. "Puerperium"/ all topical subheadings / all age subheadings
13. "Maternal-Health-Services"/ all topical subheadings / all age subheadings

14. "Maternal-Child-Health"/ all topical subheadings / all age subheadings
15. "Maternal-Behavior"/ all topical subheadings / all age subheadings
16. (postnatal* or post natal* or post-natal* or post-partum or post partum or postpartum or postpartal*) in ti,ab
17. (maternity or maternal or mother*) in ti,ab
18. puerperium in ti,ab
19. discharg* in ti,ab
20. #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9
21. #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19
22. explode "Contraception"/ all topical subheadings / all age subheadings
23. explode "Contraceptive-Agents"/ all topical subheadings / all age subheadings
24. explode "Contraceptive-Devices"/ all topical subheadings / all age subheadings
25. explode "Family-Planning"/ all topical subheadings / all age subheadings
26. ((family near6 planning) or contracept* or (pregnan* near6 prevent*) or (birth near6 control*)) in ti,ab
27. #22 or #23 or #24 or #25 or #26
28. #20 and #21 and #27

PsycINFO SilverPlatter 1899-2001 October

1. "Counseling-" in DE
2. "Sex-Education" in DE
3. "Client-Education" in DE
4. "Health-Education" in DE
5. "Health-Promotion" in DE
6. "Teaching-" in DE
7. (counsel* or debrief* or educat* or teach*) in ti,ab
8. #1 or #2 or #3 or #4 or #5 or #6 or #7
9. "Postnatal-Period" in DE
10. (postnatal* or post natal* or post-natal* or postpartum or post partum or post-partum or postpartal*) in ti,ab
11. (maternity or maternal or mother*) in ti,ab
12. puerperium in ti,ab
13. #9 or #10 or #11 or #12
14. explode "Birth-Control"
15. explode "Contraceptive-Devices"
16. "Family-Planning" in DE
17. explode "Sterilization-Sex"
18. (family near6 planning) or contracept* or (pregnan* near6 prevent*) or (birth near6 control*)
19. #14 or #15 or #16 or #17 or #18
20. #8 and #13 and #19

SIGLE SilverPlatter 1980-2001 June

1. (counsel* or debrief* or educat* or teach*)
2. postnatal* or post natal* or post-natal* or postpartum or post partum or post-partum or postpartal*
3. maternity or maternal or mother*

4. puerperium
5. #2 or #3 or #4
6. (family near6 planning) or contracept* or (pregnan* near6 prevent*) or (birth near6 control*)
7. #1 and #5 and #6

ASSIA Bowker Saur CD-ROM 1987-2001 November

1. ft=educat\$
2. ft=advice
3. ft=advise\$
4. ft=debrief\$
5. ft=teach\$
6. ft=counsel\$
7. cs=1 or cs=2 or cs=3 or cs=4 or cs=5 or cs=6
8. ft=postpartum
9. ft=postnatal\$
10. ft=puerperium
11. cs=8 or cs=9 or cs=10
12. ft=pregnan\$ prevent\$
13. ft=contracept\$
14. ft=family planning
15. ft=abstinen\$
16. ft=birth control\$
17. ft=fertility regulat\$
18. ft=fertility control\$
19. cs=12 or cs=13 or cs=14 or cs=15 or cs=16 or cs=17 or cs=18
20. cs=7 and cs=11 and cs=19
21. cs=7 and cs=11
22. cs=11 and cs=19

I

METHODS OF THE REVIEW

Included trial data were processed as described in (Clarke and Oxman, 2000).

Trials under consideration were evaluated for inclusion and methodological quality, without consideration of their results. The three reviewers independently assessed the studies to determine which were suitable for inclusion in the review. In the event of disagreement, the reviewers resolved the differences by discussion. Descriptions of the method of randomisation, concealment of allocation, masking and reasons for any exclusions of women from the analyses were recorded. Reasons for exclusion of trials were clearly described. The reviewers independently extracted data from the trials and checked for agreement; differences were dealt with by discussion.

Data were entered into Review Manager (RevMan) and treatment effects assessed using odds ratios and proportional and absolute risk reductions, using the fixed effect model. Sensitivity analyses were carried out, through separate analyses of trials with adequate concealment of allocation.

DESCRIPTION OF STUDIES

Three trials were identified that met the prespecified selection criteria for this review (Sayegh 1976; Foreit 1993; Bolam 1998). The study samples included 450 predominantly Moslem women, of lower socio-economic status who received maternity services in a Beirut medical centre, 4448 Peruvian women who received maternity services at a hospital associated with the Peruvian Social Security Institute, and 540 women from two communities around Katmandu who delivered in the main government maternity hospital in that city. In each of these trials, education about the use of lactation as a family planning strategy did not appear to be included in the intervention. The primary outcome measures were ascertained at different times postpartum. In the trial by Bolam et al (Bolam 1998), education about family planning was one element of a postpartum education package that also included information about infant feeding, diarrhoea, symptoms and response to acute respiratory infection and immunisation.

Although one trial assessed endpoints at both three and six months postpartum (Bolam 1998), analyses of longer-term outcomes in this review include only data from a subset which did not receive an additional educational visit at three months.

METHODOLOGICAL QUALITY

An inadequate method of randomisation was used in two of the included trials (Foreit 1993; Sayegh 1976). See 'Method' section in the 'Characteristics of Included Studies' table. The unit of randomisation in the Foreit study was the postpartum ward rather than the individual women. This potentially creates a unit of analysis problem. Women were allocated to a particular ward on a haphazard basis, depending on availability of beds. The comparison intervention was standard care in both studies. There is no indication that the outcomes assessors were blinded to intervention group in these two studies. Losses to follow-up were 2% in Sayegh but much higher in Foreit (30% at 40 days and 73% at six months). In the Foreit study an attempt was made to follow-up a randomly selected 33% of the study population at either 40 days or six months postpartum.

The most recent study (Bolam 1998) was of higher quality. The unit of randomisation was the individual mother and sealed envelopes containing randomly ordered treatment assignments were used to inform the research team of the allocation. Although blinding of assignment was not possible given the nature of the intervention, the outcome assessors were blind to group of allocation. Losses to follow-up were substantial, e.g. 25% at three months and 27% at six months postpartum.

RESULTS

The included trials reported data on three of the pre-specified out-

come measures; attendance at family planning clinics, cessation of breast feeding at three months postpartum, and use of contraception at either 40 days, nine weeks or three months postpartum. In addition, two trials (Foreit 1993; Bolam 1998) provided data about the use of contraception at six months postpartum. As two of the four treatment groups in the study by Bolam et al (Bolam 1998), had received an additional health education intervention at three months, six month data are presented comparing the mothers who received postpartum education with those who received no education about contraceptive use either in the immediate postpartum period or at three months.

There are limited data on the effect on unplanned pregnancies. Total pregnancy rate was reported at six months for 10% of the study participants on whom data were available in one study (Foreit 1983). Given the size of the sub-sample on which these data were collected, these results are difficult to interpret.

There was no effect on the rate of non-attendance at family planning clinics (Odds Ratio (OR) 0.82, 95% Confidence Interval (CI) 0.56 to 1.21). Nor was there any evidence of an effect on the rate of breast feeding at three months postpartum (OR 1.00, 95% CI 0.67 to 1.48).

The data on none use of contraception within a relatively short period of time (40 days, nine weeks or three months) following discharge indicated that there was a benefit of treatment (OR 0.47, 95% CI 0.39 to 0.58). A sensitivity analysis was conducted, using the higher quality trial (Bolam 1998). The benefit of postpartum education was no longer apparent (OR 0.67, 95% CI 0.40 to 1.13).

Data were reported on longer term contraceptive use at six months postpartum in two trials (Bolam 1998; Foreit 1993). These data indicate that there is longer term benefit (OR 0.52, 95% CI 0.37 to 0.74). When only data from the higher quality trial (Bolam 1998) were analyzed, there was no clear evidence of effect on longer-term contraceptive use (OR 0.59, 95% CI 0.33 to 1.06).

DISCUSSION

The effectiveness of postpartum education about contraceptive use has not been evaluated adequately. Although there is some indication from the three trials of short term benefit in terms of contraceptive use, no data are available from randomised controlled trials to demonstrate that such education has an impact on unplanned pregnancies, the most important outcome measure. Data on pregnancies at six months postpartum (Foreit 1993) which do not differentiate between planned and unplanned pregnancies, are based on follow-up of a very small proportion of the original study population and therefore are not valid estimates of effect.

One trial (Sayegh 1976) reported on a predominantly Moslem population with little formal education but with access to hospital

services for delivery and postnatal care. The second trial (Foreit 1993) was based in Lima, Peru among women who were better educated than average for their country. The third trial (Bolam 1998), conducted in Nepal, included a socio economically heterogeneous population. The results therefore are more likely to be generalisable to less developed countries than would those from a single trial conducted in a developed country. Nonetheless, generalisability is limited especially to populations with little access to hospital care for delivery.

AUTHORS' CONCLUSIONS

Implications for practice

There is insufficient evidence on which to base recommendations to either introduce or eliminate programs offering postpartum education on contraception.

Implications for research

Postpartum education on contraceptive use including lactational amenorrhea, which has become a standard component of postpartum care in many countries, should be assessed using randomised controlled trials for its effectiveness particularly in terms of important outcomes such as unplanned pregnancies, contraceptive use and knowledge, and breast feeding.

In addition, postpartum delivery of contraceptive education should be compared with other patterns of delivery such as antepartum family planning education and/or the integration of family planning services with mother and child health services (Bender 1994, Bulut 1995). Given the growing evidence of the efficacy of lactational amenorrhea, it is appropriate to evaluate the effectiveness of family planning strategies that combine postpartum education on contraceptive use with education about the contraceptive and health benefits of breast feeding. It may also be important to explore the role of social context eg. maternal education in modifying the potential effectiveness of postpartum education on contraceptive use.

POTENTIAL CONFLICT OF INTEREST

None known.

ACKNOWLEDGEMENTS

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SOURCES OF SUPPORT

External sources of support

- Cochrane Health Promotion and Public Health Field AUSTRALIA

Internal sources of support

- Adelaide University AUSTRALIA
- Health Services Research Unit, University of Aberdeen (August–December, 1997) UK

REFERENCES

References to studies included in this review

Bolam 1998 {published data only}

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Foreit 1993 {published data only}

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Hay-Smith J. Education on contraceptive use by postpartum mothers. [revised 27 January 1994] In: Enkin MW, Keirse MJNC, Renfrew MJ, Neilson JP, Crowther C (eds.). *The Cochrane Collaboration; Pregnancy and Childbirth Module* 1994, Issue 2.

* Indicates the major publication for the study

T A B L E S**Characteristics of included studies**

Study	Bolam 1998
Methods	<p>Single site study.</p> <p>Randomisation: Individual women were randomly allocated to one of four intervention groups either when in labour or shortly after delivery.</p> <p>Placebo: No health education during the postpartum period.</p> <p>Patients and health educators unblinded; outcome assessors were blind to the group of assignment.</p> <p>Loss to follow-up: 25% at three months and 27% at six months.</p> <p>Exclusions: Two women whose deliveries resulted in still births were withdrawn post randomisation but prior to the intervention.</p>
Participants	<p>Geographic region: Kathmandu, Nepal.</p> <p>Study setting: Main public maternity hospital in Kathmandu with 15,000 deliveries per annum. Women admitted to the hospital for delivery who resided in two communities were eligible for entry.</p> <p>N = 540</p> <p>Entry characteristics: Mean age 23.4 (SD 4.0 years). Education: 28% illiterate, 24% primary, 49% at least secondary. Socioeconomic status: 5% low, 81% medium, 15% high. Area of living: 37% periurban, 63% urban. Parity: 53% primigravida, 47% multigravida.</p>
Interventions	<p>Experimental: One to one 20 minute health education session designed to be interactive and supportive covering issues of infant feeding, treatment of diarrhoea, management of acute respiratory infection in infants, immunisation and contraception. The intervention was provided before discharge from hospital with a second education session in the mothers' homes three months post-delivery. There were four intervention groups:-</p> <p>Group A: Health education immediately after birth and at three months.</p> <p>Group B: Health education immediately after birth.</p> <p>Group C: Health education at three months.</p> <p>Group D: No health education.</p>
Outcomes	<p>Primary: Duration of exclusive breast feeding, appropriate immunisation of infant, knowledge of appropriate management of diarrhoea, knowledge of signs of pneumonia, uptake of postnatal family planning.</p>
Notes	<p>Exclusions from analysis: 10 infant deaths spread across all intervention groups.</p> <p>Co-interventions: None</p>

Characteristics of included studies (Continued)

Other: The intervention was designed to cover a range of important issues for maternal and infant health in Nepal. Results are presented in the paper comparing the effects of any immediate postpartum education with either education at three months or no education at all.

Allocation concealment A – Adequate

Study	Foreit 1993
Methods	<p>Single site study.</p> <p>Randomisation: Quasi-random method of allocation whereby two maternity floors and their associated outpatient clinics were randomly selected and randomly assigned to treatment and control groups. Women were assigned to a maternity floor based on availability.</p> <p>Placebo: Normal care</p> <p>Patients and providers unblinded; outcomes assessors blinding unclear.</p> <p>Loss to follow-up: 30% at 40 days and 73% at six months.</p> <p>Exclusions: 18 sterilisations prior to discharge, one control claiming to have received contraception in hospital, 26 'outliers' (no education, no living children and/or older than 44). Exclusions are not reported by intervention group.</p>
Participants	<p>Geographic region: Lima, Peru.</p> <p>Study setting: Largest hospital in Lima which provides services to the Peruvian Social Security Institute (IPSS) which covers members of the formal labour force and their dependents.</p> <p>N = 4448</p> <p>Entry characteristics: 64% aged 25-34. 94% had completed at least secondary education. Average number of living children: 1.9.</p>
Interventions	<p>Experimental: Visit by health educators before leaving hospital to discuss family planning and offer contraception. The importance of breast feeding was stressed. Family planning counselling in the outpatient prenatal clinic assigned to the experimental ward was discontinued as most women who received the counselling were admitted to other wards.</p> <p>Control: Normal maternity services which did not include counselling on family planning.</p>
Outcomes	<p>Primary: Contraceptive use at 40 days and six months postpartum.</p> <p>Data are presented on breast feeding and pregnancies although it is not clear whether these were pre-specified outcomes.</p>
Notes	<p>Losses to follow-up are poorly described. In the paper it states that the names of 72% of the 4448 participants were selected at random to be interviewed either at 40 days or at six months. 1121 were interviewed at 40 days (a response rate of 70% calculated by the reviewers) and 439 were interviewed at six months (a response rate of 27% calculated by the reviewers). The response rate did not appear to vary by intervention group. Although the unit of randomisation was the maternity floor, the unit of analysis was the individual patient. Allocation of women to a particular maternity floor was based on availability rather than any socio-demographic or clinical characteristics of the women.</p>
Allocation concealment	C – Inadequate

Study	Sayegh 1976
Methods	<p>Single site study.</p> <p>Randomisation: Alternate rooms allocated to educational program using a coin toss to determine starting point. Patients were allocated to one of 10 two-bed rooms based on availability.</p> <p>Placebo: Normal care.</p> <p>Patients unblinded; providers unblinded; outcomes assessors blinding unclear.</p> <p>Loss to follow-up: 2%</p> <p>Exclusions: Puerperal sterilisation, stillbirth, 'medical complications needing close supervision', could not speak Arabic or Armenian, intending to leave the country within one month.</p>
Participants	<p>Geographic region: Beirut, Lebanon.</p>

Study setting: Maternity service of medical centre.

N = 450

Entry characteristics: Age: <20:16%; 20-29: 54%; 30-39: 28%; 40+ 2% Religion: 61% Moslem; 8% Druze; 31% Christian; Ethnicity: 87% Arab; 13% Armenian; Education: 16% None, 52% 1-6 year, 32% > six years. Socioeconomic status: 56% low, 32% Middle, 12% High History of contraceptive use: 54% Number of living children: 50% 1-2, 30% 3-4, 20% 5+.

Interventions	Experimental: Individualised 20-minute educational visit by a 'trained worker' on the second postpartum lying-in day. Followed by a five minute follow-up visit the next day. The educational approach was individualised based on a pre-interview with all participants (the day after delivery) to assess their knowledge, attitude and prior family planning practices. The educational visit was designed to influence awareness, attitudes and practice. Control: Not specified. Standard post-natal care. All participants received a pre-intervention interview.
Outcomes	Primary: Return to postpartum family planning clinic within nine weeks of discharge, acceptance of contraception. Secondary: Return to postpartum family planning clinic and acceptance of contraception in subgroups defined by socio-demographic variables (age, religion, area of residence and years of education), level of readiness for family planning assessed prior to intervention and nature of lifestyle (modern, traditional or transitional).
Notes	Exclusions from analysis: Nine exclusions (moving away from study area, death in family or divorce). Co-interventions: None.
Allocation concealment	C – Inadequate

Characteristics of excluded studies

Study	Reason for exclusion
O'Sullivan 1992	Intervention occurred over a period of time commencing either at two weeks post discharge or two weeks post delivery (unclear from paper). Thus there was no educational intervention in the immediate post-partum period.

ANALYSES

Comparison 01. Postpartum education about contraception vs normal care

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Unplanned pregnancies	0	0	Peto Odds Ratio 95% CI	Not estimable
02 Non-attendance at family planning clinics	1	441	Peto Odds Ratio 95% CI	0.82 [0.56, 1.21]
03 Non-use of contraception			Peto Odds Ratio 95% CI	Subtotals only
04 Lack of knowledge about contraception	0	0	Peto Odds Ratio 95% CI	Not estimable
05 Cessation of breastfeeding - three months postpartum	1	403	Peto Odds Ratio 95% CI	1.00 [0.67, 1.48]
06 Maternal dissatisfaction with postnatal care	0	0	Peto Odds Ratio 95% CI	Not estimable

Comparison 02. Postpartum education about contraception vs normal care (High quality trials)

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Unplanned pregnancies	0	0	Peto Odds Ratio 95% CI	Not estimable
02 Non-attendance at family planning clinics	0	0	Peto Odds Ratio 95% CI	Not estimable
03 Non-use of contraception			Peto Odds Ratio 95% CI	Subtotals only
04 Lack of knowledge about contraception	0	0	Peto Odds Ratio 95% CI	Not estimable
05 Cessation of breastfeeding - three months postpartum	1	403	Peto Odds Ratio 95% CI	1.00 [0.67, 1.48]
06 Maternal dissatisfaction with postnatal care	0	0	Peto Odds Ratio 95% CI	Not estimable

INDEX TERMS

Medical Subject Headings (MeSH)

*Contraception; *Patient Education; *Postpartum Period; Program Evaluation

MeSH check words

Female; Humans

COVER SHEET

Title	Education for contraceptive use by women after childbirth
Authors	Hiller JE, Griffith E, Jenner F
Contribution of author(s)	JEH and EG contributed to the preparation of the protocol. JH, EG and FJ examined trials found after the literature search and the finalisation of the report. JEH and EG abstracted data for the original version of this review. JEH was responsible for the literature search, examination of literature used for background information, input of the data into Revman and drafting the report.
Issue protocol first published	1998/1
Review first published	1999/4
Date of most recent amendment	24 August 2005
Date of most recent SUBSTANTIVE amendment	01 March 2002
What's New	An up-dated search was conducted using the Cochrane Controlled Trials Register, Medline (OvidWeb), Embase (OvidWeb), Cinahl (Silver Platter), PsychINFO (Silver Platter), Popline (via NLM Internet Grateful Med), SIGLE (Silver Platter), and ASSIA (CD-Rom). The searches on Medline, Popline, and Cochane Controlled Trials Register were conducted in August 2001. ASSIA was searched in November 2001 while other searches were completed in October 2001. We contacted subject experts to identify additional research that may have been conducted since our last review, searched relevant web sites and examined reference lists.
Date new studies sought but none found	07 March 2002

Date new studies found but not yet included/excluded	Information not supplied by author
Date new studies found and included/excluded	Information not supplied by author
Date authors' conclusions section amended	Information not supplied by author
Contact address	Dr Janet Hiller Senior Lecturer Public Health University of Adelaide Adelaide South Australia 5005 AUSTRALIA E-mail: jhiller@medicine.adelaide.edu.au Tel: +61 8 8303 3573 Fax: +61 8 8223 4075
DOI	10.1002/14651858.CD001863
Cochrane Library number	CD001863
Editorial group	Cochrane Fertility Regulation Group
Editorial group code	HM-FERTILREG

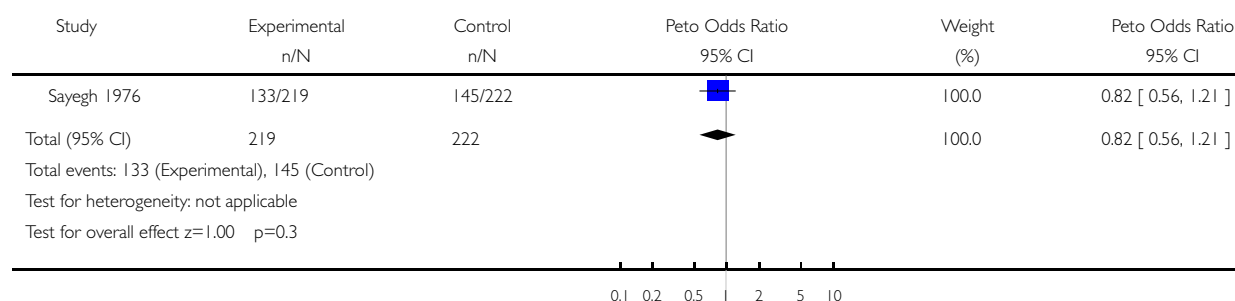
GRAPHS AND OTHER TABLES

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Review: Education for contraceptive use by women after childbirth

Comparison: 01 Postpartum education about contraception vs normal care

Outcome: 02 Non-attendance at family planning clinics

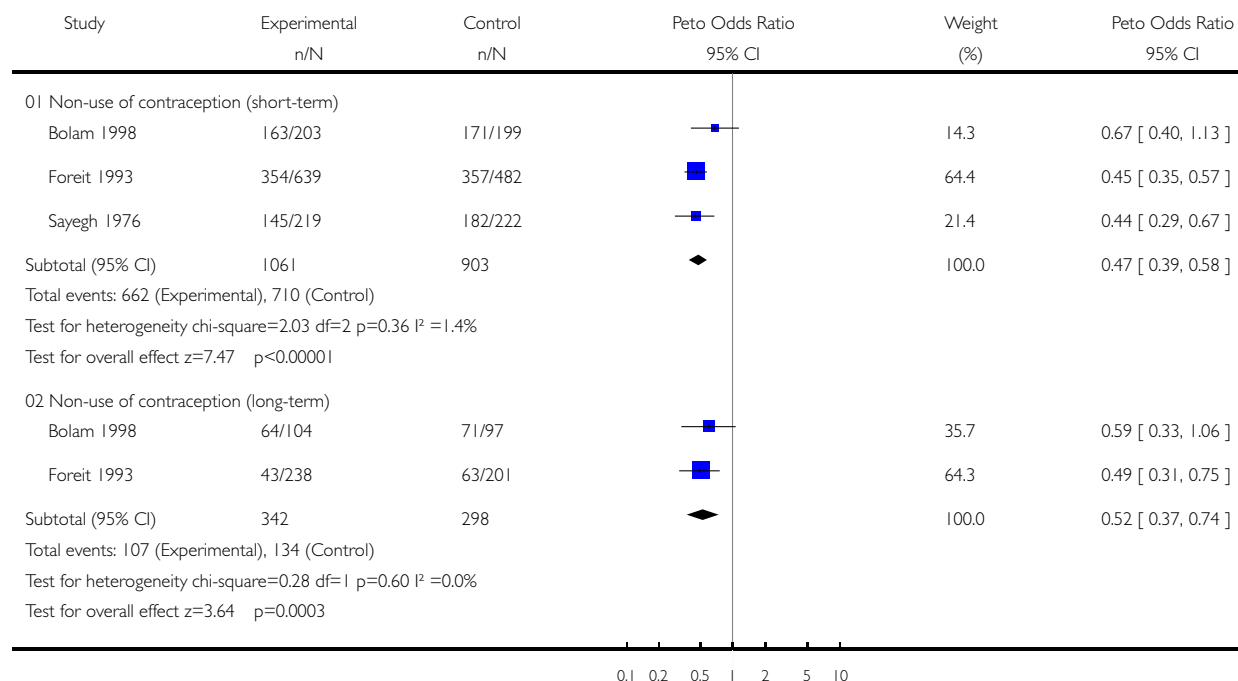


Analysis 01.03. Comparison 01 Postpartum education about contraception vs normal care, Outcome 03 Non-use of contraception

Review: Education for contraceptive use by women after childbirth

Comparison: 01 Postpartum education about contraception vs normal care

Outcome: 03 Non-use of contraception

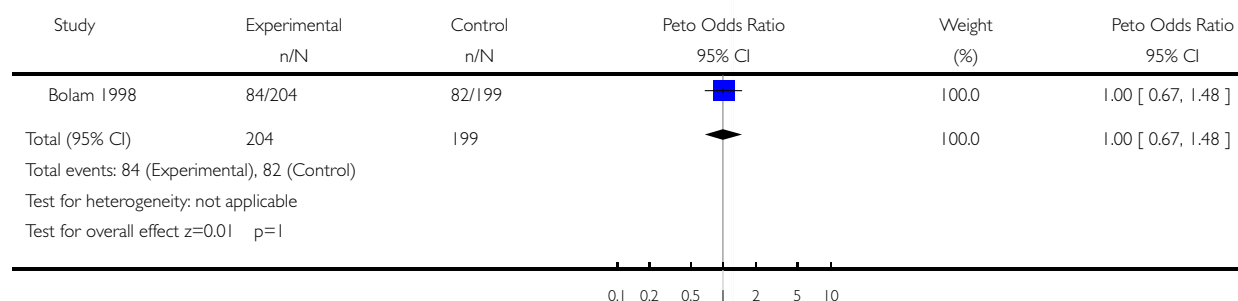


Analysis 01.05. Comparison 01 Postpartum education about contraception vs normal care, Outcome 05 Cessation of breastfeeding - three months postpartum

Review: Education for contraceptive use by women after childbirth

Comparison: 01 Postpartum education about contraception vs normal care

Outcome: 05 Cessation of breastfeeding - three months postpartum

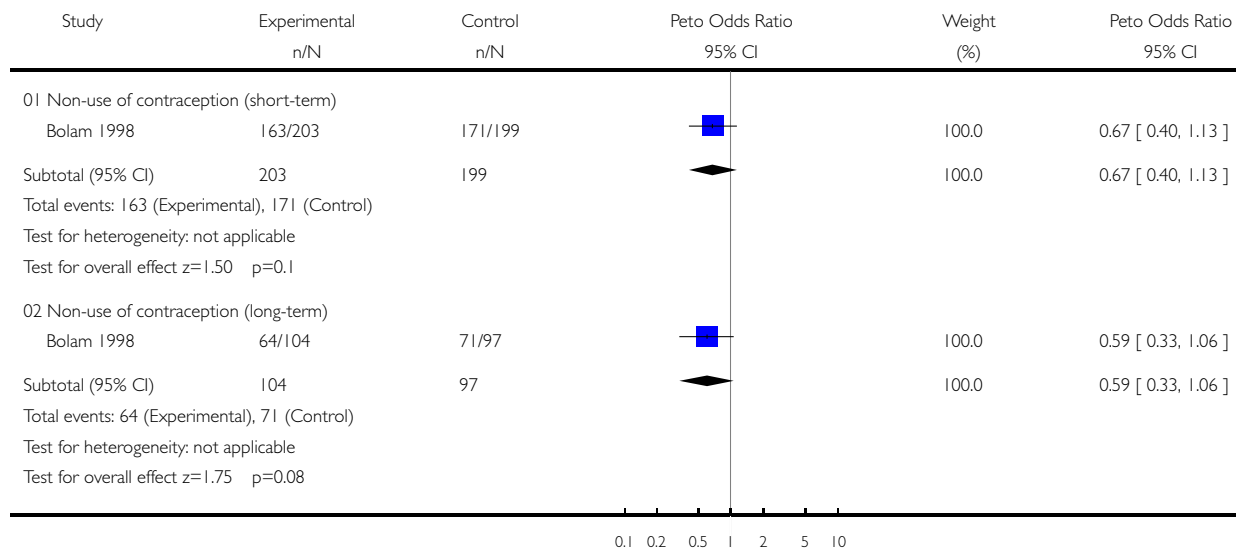


Analysis 02.03. Comparison 02 Postpartum education about contraception vs normal care (High quality trials), Outcome 03 Non-use of contraception

Review: Education for contraceptive use by women after childbirth

Comparison: 02 Postpartum education about contraception vs normal care (High quality trials)

Outcome: 03 Non-use of contraception



Analysis 02.05. Comparison 02 Postpartum education about contraception vs normal care (High quality trials), Outcome 05 Cessation of breastfeeding - three months postpartum

Review: Education for contraceptive use by women after childbirth

Comparison: 02 Postpartum education about contraception vs normal care (High quality trials)

Outcome: 05 Cessation of breastfeeding - three months postpartum

