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REVIEW ARTICLE

# Outreach and integration programs to promote family planning in the extended postpartum period

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ABSTRACT

*Background:* WHO recommends birth spacing to improve the health of the mother and child. One strategy to facilitate birth spacing is to improve the use of family planning during the first year postpartum. *Objectives:* To determine from the literature the effectiveness of postpartum family-planning programs and to identify research gaps. *Search strategy:* PubMed and the Cochrane Central Register of Controlled Trials were systematically searched for articles published between database inception and March 2013. Abstracts of conference presentations, dissertations, and unpublished studies were also considered. *Selection criteria:* Published studies with birth spacing or contraceptive use outcomes were included. *Data collection and analysis:* Standard abstract forms and the US Preventive Services Task Force grading system were used to summarize and assess the quality of the evidence. *Main results:* Thirty-four studies were included. Prenatal care, home visitation programs, and educational interventions were associated with improved family-planning outcomes, but should be further studied in low-resource settings. Mother–infant care integration, multidisciplinary interventions, and cash transfer/microfinance interventions need further investigation. *Conclusions:* Programmatic interventions may improve birth spacing and contraceptive uptake. Larger well-designed studies in international settings are needed to determine the most effective ways to deliver family-planning interventions.


## 1. Introduction

An estimated 222 million women in lower-income regions of the world want to avoid a pregnancy but use either a low-efficacy family-planning method or no method, indicating an unmet need for family planning [1]. A 2010 analysis of Demographic and Health Survey data from 17 countries [2] demonstrated that 50–88% of women in the first year postpartum would like to avoid pregnancy but are not using contraception.

Policy efforts for providing family-planning services to postpartum women have primarily focused on the first 6 weeks after delivery, but the extension of services through the first year postpartum is likely to further improve birth spacing. WHO [3] recommends an interval of 24 months or more before attempting a next pregnancy after a live birth, to reduce the risks of adverse outcomes for mother and child.

Various interventions have been pursued to improve postpartum family planning; however, a systematic synthesis of the efficacy of these programs is not available. Therefore, we conducted a systematic review of the literature to describe and classify the existing literature and programs, to determine the efficacy of the various programs, and to assess the quality of research on these programs. The present systematic review summarizes postpartum family-planning interventions in order to inform program design and identify priorities for future research activities.

## 2. Materials and methods

Studies evaluating the effectiveness of interventions to prevent short interpregnancy intervals or to increase postpartum contraceptive use were included in the present review. Informed consent was not needed for this research because no human subjects research was conducted. Inclusion criteria for the present review included the following study designs: randomized controlled trials, case–control studies, cross-sectional studies, and cohort studies. The primary outcome of interest was the interpregnancy interval. A secondary outcome was contraceptive use.

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines [4] were followed. The PubMed and Cochrane Central Register of Controlled Trials databases were systematically searched for articles published between inception of the respective database and March 31, 2013. Articles in all languages were accepted. Abstracts of conference presentations, dissertations, and unpublished studies were also considered. Reference lists of identified articles and

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relevant review articles were hand-searched for additional citations. The search strategy appears in Supplementary Material S1.

Two authors (S.S., S.M.) summarized and systematically assessed the evidence. The quality of each individual piece of evidence was assessed using the US Preventive Services Task Force grading system [5]. Risk of bias was assessed by considering the randomization method, allocation concealment, blinding, control for potential confounding factors, adequacy of statistical procedures, and losses to follow-up and early discontinuation.

Studies were included if interventions took place in the prepartum period or within the first year postpartum, and if the family-planning outcomes of pregnancy or contraception uptake/use were assessed. Studies that did not compare the effectiveness of an intervention with that of a control were excluded. Information on study design, funding source, location, duration, population, inclusion and exclusion criteria, intervention, comparison group, and outcomes was extracted using a standard abstract form [6]. Owing to heterogeneity across study populations and evaluated interventions, it was not possible to conduct a meta-analysis.

## 3. Results

### 3.1. Study selection

The search yielded a total of 1198 citations, whose titles and abstracts were reviewed. In addition, 16 records were identified via hand-searching, and 1 was found through a conference presentation. Thirty-four articles met the review inclusion criteria (Fig. 1). Supplementary Material S2 summarizes all studies included in the present review. The articles were organized by type of intervention.

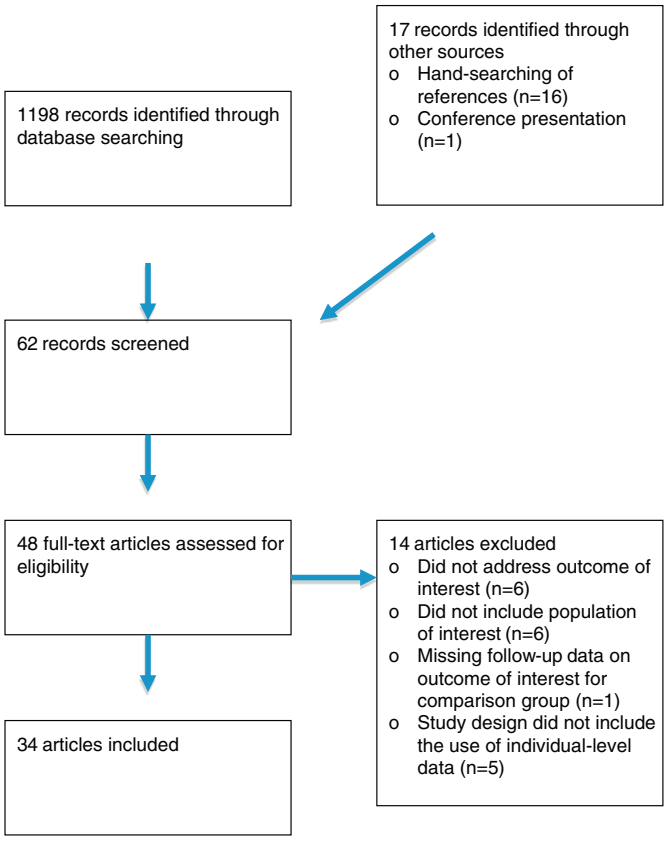


**Fig. 1.** Flow chart of study selection process.

### 3.2. Prenatal care

A good-quality retrospective cohort study [7] using a birth records database of 113 662 women examined the association between the timing and adequacy of prenatal care and the subsequent birth interval (less than 18 months versus 60 months or more). The study showed increased odds of having a short birth interval (less than 18 months) for women who initiated care at 4–6 months (odds ratio [OR] 1.19; $P < 0.001$) or 7–9 months (OR 1.26; $P < 0.001$) of pregnancy, and for those who had no prenatal care (OR 1.61; $P < 0.001$), compared with those who initiated care at 1–3 months of pregnancy. No differences between the groups were seen for the outcome of a birth interval of 60 months or more. The study also evaluated the adequacy of prenatal care, taking into consideration both the month of prenatal care initiation and the disparity between the actual and recommended numbers of prenatal care visits. The odds of having a birth interval of less than 18 months were increased for women who received inadequate prenatal care (OR 1.23; $P < 0.001$) or no prenatal care (OR 1.53; $P < 0.01$), compared with those who received adequate care. The content of family-planning counseling during the prenatal care visits was not described.

### 3.3. Home visitation

Twelve randomized controlled trials [8–19], ranging from fair to good quality, investigated the impact of home visitation during the postpartum period on repeat birth, repeat pregnancy, or contraceptive use. Ten were conducted in the USA [8,9,11–18], whereas the other studies came from Syria [10] and Australia [19]. Seven of these studies [8,9,11,15,17–19] focused on women aged 19 or younger.

Four fair-quality studies [9,11,13,14] reported that home visitation improved birth spacing outcomes. Barnet et al. [9] used a computer-assisted motivational intervention (CAMI) for teenagers with biweekly to monthly home visits for up to 24 months postpartum versus CAMI with a single home visit, compared with usual care. The second study [11] involved an intervention that included 19 home-based lessons during the 2 years postpartum. Both of these trials showed a decrease in "rapid repeat birth" (repeat birth within 2 years) ($P < 0.05$) (Supplementary Material S2). Two trials [13,14] among a high-risk African American nulliparous population compared 4 arms: prenatal care with no home visitation, prenatal care and referral to services for the children, prenatal care plus intensive prenatal home visits and 1 postpartum home visit, and prenatal care with intensive home visits prepartum and postpartum. In these trials, conducted in the same study population, the odds of subsequent pregnancies and live births in the intervention groups were decreased at a 2-year follow-up assessment (OR of a subsequent pregnancy: 0.6, 95% confidence interval [CI] 0.4–0.9, $P < 0.001$; OR of a subsequent live birth: 0.6, 95% CI 0.4–0.9, $P < 0.01$) [13] and at a 4.5 year follow-up assessment (difference in the mean number of new pregnancies: 0.19, 95% CI 0.01–0.35, $P < 0.05$; difference in the mean number of new live births: 0.11, 95% CI, –0.02 to 0.25, $P > 0.05$) [14] (Supplementary Material S2).

An Australian trial [19] of good quality evaluated the efficacy of home visits at 1 week, 2 weeks, 1 month, 2 months, and 4 months in a teenage population, and showed an increase in contraceptive use at 6 months (adjusted relative risk of contraceptive use at 6 months: 1.35, 95% CI 1.09–1.68; $P = 0.007$).

### 3.4. Mother–infant care integration

Six studies [20–25] evaluated pregnancy or contraceptive use outcomes when mother and infant care is integrated to include family-planning counseling. Interventions varied considerably in character and counseling intensity, and were not described consistently. Four studies conducted interventions at infant vaccination visits: 2 studies [20,23] involved family-planning counseling and referral to a family-planning clinic, 1 study [24] provided education on breastfeeding and family planning, and another study [25] included multidisciplinary