Interventions in primary care to promote breastfeeding: an evidence review for the U.S. preventive services task force

Chung M, Raman G, Trikalinos T, Lau J, Ip S

CRD summary
This review concluded that breastfeeding interventions are more effective than usual care for increasing short-term and long-term breastfeeding and that combined prenatal and postnatal interventions and interventions including peer support may be beneficial. The authors' conclusions appear reliable but are of uncertain clinical significance because of the heterogeneity of included interventions and uncertainty about which components of interventions are effective.

Authors' objectives
To evaluate the effectiveness of primary care-initiated interventions to promote breastfeeding with respect to breastfeeding and child and maternal health outcomes.

Searching
The authors searched MEDLINE, the Cochrane Central Register of Controlled Trials, CINAHL and the Cochrane Database of Systematic Reviews from September 2001 to February 2008. Search terms were reported. Only English language articles were sought. References included in a related systematic review were also checked.

Study selection
Randomised controlled trials (RCTs) that included any counselling or behavioural intervention initiated from a clinician's practice and designed to improve breastfeeding initiation or duration were eligible for the review. Eligible participants were healthy mothers (or others involved in supporting the mother and child, for example partners or grandparents) with healthy term or near-term infants. Studies had to report rates of breastfeeding initiation, duration of breastfeeding or exclusivity of breastfeeding. The review focused on studies in developed countries but RCTs of the Baby-Friendly Hospital Initiative (BFHI) conducted in Brazil and Belarus were included. Interventions in included studies incorporated one or more of the following: system-level breastfeeding support, formal breastfeeding education, professional support, lay support, motivational interviews, delayed or discouraged pacifier use, and skin-to-skin contact. Control interventions were usual care as defined in each study. Participant characteristics varied widely among the included studies.

Abstracts retrieved from the searches were screened by one reviewer using broad criteria and those considered potentially relevant were screened by a second reviewer using the review inclusion criteria. The authors did not state how final decisions on inclusion or exclusion were reached.

Assessment of study quality
Validity was assessed using criteria developed by the US Preventive Services Task Force, including randomisation method, allocation concealment, clear definition of outcomes, intention-to-treat analysis and statistical methods.

Two independent reviewers assessed validity and disagreements were resolved by a third reviewer.

Data extraction
Data on numbers of participants with breastfeeding outcomes in each group were used to derive rate ratios (RRs) and 95% confidence intervals (CIs). Duration of breastfeeding was classified as short-term (1 to 3 months), intermediate (4 to 5 months), long-term (6 to 8 months) or prolonged (9 months or more).

Data were extracted by one reviewer and checked by a second.

Methods of synthesis
Studies were combined by meta-analysis using a DerSimonian and Laird random-effects model. Heterogeneity was assessed using the Cochran Q test and $I^2$ statistic. Meta-regression was used to explore the relationship between intervention effectiveness and breastfeeding duration. Subgroup analyses were performed by study quality, timing of intervention and different intervention components.

**Results of the review**

Thirty-eight RCTs (n = 29,020) were included, of which 11 were rated good, 14 fair and 13 poor quality.

Of three RCTs that reported on child health, one found a significant benefit of BFHI for gastrointestinal infections and atopic dermatitis but not for respiratory tract infections, while the other two reported discordant results. Breastfeeding interventions were associated with statistically significant increases in initiation (RR 1.04, 95% CI: 1.00, 1.08) and short-term feeding (RR 1.10, 95% CI: 1.02, 1.19) and in short-term exclusive breastfeeding (RR 1.72, 95% CI: 1.00, 2.97), with significant heterogeneity for all three outcomes. Other differences were not statistically significant. When RCTs in Brazil and Belarus were excluded, differences were significant for short-term (RR 1.28, 95% CI: 1.11, 1.48) and long-term (RR 1.44, 95% CI: 1.13, 1.84) exclusive breastfeeding, with significant heterogeneity for the short-term outcome.

Subgroup analyses suggested that interventions with both prenatal and postnatal components increased intermediate and long-term breastfeeding compared with usual care, whereas prenatal or postnatal interventions alone did not. Interventions with a component of lay support were significantly more effective than usual care in increasing short-term breastfeeding (RR 1.22, 95% CI: 1.08, 1.37 for any breastfeeding and 1.65, 95% CI: 1.03, 2.63 for exclusive breastfeeding).

**Authors' conclusions**

Breastfeeding interventions are more effective than usual care for increasing short-term and long-term breastfeeding rates. Combined prenatal and postnatal interventions and inclusion of lay support in interventions may be beneficial.

**CRD commentary**

This review had clear inclusion criteria for participants, outcomes and study designs. Inclusion criteria for interventions were broad and, as noted by the authors, whether an intervention was defined as initiated in primary care could depend on the quality of reporting in the study report. This suggests that the review could have been influenced by subjective decisions in study selection, as does the decision to include two studies from countries that were otherwise excluded. The search covered a number of sources but was limited to English language publications, suggesting possible language bias. Unpublished studies were not sought and risk of publication bias was not assessed. Study validity was assessed and the results were exploited in the analysis. Attempts were made to reduce errors and bias in validity assessment and data extraction, but methods of study selection were not clearly reported. Relevant details of included studies were provided. Studies were pooled by meta-analysis and heterogeneity was assessed and possible sources explored. Significant heterogeneity was present for most breastfeeding outcomes, reflecting heterogeneity in study participants and interventions. Only a few studies reported direct effects on health outcomes. The authors' conclusions reflect the evidence presented and are likely to be reliable but their clinical significance is uncertain. Their recommendation for further research appears appropriate.

**Implications of the review for practice and research**

Practice: The authors did not state any implications for practice.

Research: The authors stated that more methodologically rigorous cluster RCTs are needed to evaluate the effectiveness of breastfeeding interventions.

**Funding**

Agency for Healthcare Research and Quality, US Department of Health and Human Services, contract number 290-02-0022.

**Bibliographic details**

PubMedID
18936504

Original Paper URL
http://www.annals.org/cgi/reprint/149/8/560

Additional Data URL

Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
Behavior Therapy; Breast Feeding; Counseling; Family; Female; Health Promotion; Humans; Infant, Newborn; Infant, Newborn, Diseases /prevention & control; Pregnancy; Primary Health Care /methods; Time Factors

AccessionNumber
12008106870

Date bibliographic record published
31/03/2009

Date abstract record published
15/04/2009

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.