Systematic review and meta-analysis of randomized controlled trials evaluating primary care-based interventions to promote breastfeeding in low-income women

Ibanez G, de Reynal de Saint Michel C, Denantes M, Saurel-Cubizolles MJ, Ringa V, Magnier AM

CRD summary
The review concluded that educational programmes delivered in the context of ongoing personal contact with a health professional could improve breast feeding initiation and duration rates in low-income women. The authors’ conclusions reflect the evidence presented but the variation in the included studies and small sample sizes means the reliability of the conclusions is uncertain.

Authors’ objectives
To identify effective programmes that could be implemented by general practitioners (GPs) to promote breast feeding in low-income women.

Searching
MEDLINE, The Cochrane Library and Banque de Donnees en Sante Publique databases were searched from 1985 to March 2009 for articles in English or French. Search terms were reported. Reference lists of related systematic reviews were scanned for additional articles.

Study selection
Randomised controlled trials (RCTs) of programmes to promote breast feeding conducted in a primary care setting by a health care professional were eligible for inclusion. Studies had to be conducted in pregnant women who intended to breastfeed or women already breast feeding and who had no associated pathologies. Studies also had to be set in developed countries or populations. Outcomes of interest were initiation and duration of breast feeding including short-term (six weeks to two months) and long term (three to six months) duration.

Most of the studies were conducted in the USA and one was conducted in England. Over half the studies conducted programmes involving multiple visits or appointments. Other studies provided a brochure, telephone support or showed a video. Most studies provided standard care for control groups. One study provided the control group with additional support in out-patient departments. Participants included women on low income, of low socioeconomic status or on Medicaid benefits. Outcomes measured varied and included exclusive breastfeeding, partial breastfeeding, initiation or duration.

Two reviewers independently selected study for inclusion, any disagreements were resolved through discussion.

Assessment of study quality
Study quality was assessed using the French National Authority for Health criteria which included assessment of type of study, participants and outcomes; sample size calculation; representativeness of the patient sample; confounding factors; statistical methods; intention-to-treat analysis, interpretation and generalisability of results.

The authors did not state how many reviewers assessed study quality.

Data extraction
Data were extracted for breast-feeding outcomes and used to calculate relative risks and 95% confidence intervals. The authors did not state how many reviewers extracted the data.

Methods of synthesis
Pooled relative risks and 95% confidence intervals were calculated using a DerSimonian and Laird random-effects model where there was evidence of statistical heterogeneity. In the absence of statistical heterogeneity a Mantel-Haenszel fixed-effect model was used. Heterogeneity was assessed using I².

Results of the review
Ten RCTs (1,445 participants) were included. Sample sizes ranged from 48 to 583. All included RCTs used a prospective design, gave an adequate description of study outcome, used adequate statistical methods, reported results relating to the primary outcome, and interpreted results which were deemed to be generalisable. Nine RCTs reported appropriate outcomes and confounding factors. Only three RCTs reported using an intention-to-treat analysis.

Educational programmes were effective for promoting the initiation of any form of breast feeding in low-income mothers (RR 1.46, 95% CI 1.03 to 2.08; seven RCTs; $I^2=86\%$), and reported greater effects for exclusive breast feeding (RR 1.72, 95% CI 1.34 to 2.21; four RCTs; $I^2=50.5\%$). Programmes that encouraged mothers to continue breast feeding also reported significant rates at three to six months postpartum (RR 1.15, 95% CI 1.01 to 1.30; five RCTs; $I^2=0\%$). But there were no significant differences between intervention and control groups for breast feeding at six weeks to two months post partum (seven RCTs). The successful programmes usually involved multiple short (less than 20 minutes to 30 minutes) follow-up appointments (four RCTs).

**Authors’ conclusions**

Educational programmes delivered in the context of ongoing personal contact with a health professional could improve breast feeding initiation and duration rates in low-income women.

**CRD commentary**

The review question was clear with broadly defined inclusion criteria. Several relevant sources were searched. Only published studies in French and English were included so it was possible that some studies were missed. Study quality was assessed and results for individual studies were reported. Appropriate methods to reduce reviewer error and bias were reported for study selection, but not for quality assessment or data extraction. Methods of analysis appeared appropriate but statistical heterogeneity was high for the results of initiation of breast feeding.

Almost all the studies were conducted in the USA and so results may not be generalisable to other developed country health-care settings. The authors comment on the variation between studies in terms of interventions, outcomes and participants.

The authors’ conclusions reflect the evidence presented but the variation in the included studies and small sample sizes means the reliability of the conclusions is uncertain.

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

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

**Research:** The authors stated that further studies using high quality methods were needed. In particular research was needed to determine whether specific programmes would have an impact on social inequalities in health.

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