Effect of educational and support interventions to increase long-term breastfeeding rates in primiparous women: a systematic review protocol

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Review question/objective: The objective of this review is to identify the effects of educational and supportive interventions provided by health professionals on long-term breastfeeding rates at six months and up to two years post partum among primiparous women who intend to breastfeed.

Keywords Breastfeeding; interventions; long-term breastfeeding rates; post partum; primiparous women


Background

Breastfeeding is encouraged globally as it has health benefits for both babies and mothers.\(^1-7\) Long-term breastfeeding including exclusive breastfeeding for six months and continuation of breastfeeding with complementary food until two years of age has been recommended by the World Health Organization (WHO).\(^2\) Long-term breastfeeding for six months and more has health benefits for both babies and mothers.\(^2,3\) The incidence of several health problems, including gastrointestinal disease, upper and lower respiratory infection and otitis media, have been reported to be significantly reduced among children who were only breastfed for six months.\(^4\) Being breastfed also reduces the risk of obesity\(^3\) and chronic illnesses like diabetes later in life.\(^6,7\) Women also enjoy benefits of breastfeeding. Evidence suggests that long-term breastfeeding reduces the risk of depression, pre-menopausal breast cancer,\(^3\) ovarian cancer,\(^4\) osteoporosis\(^3,4,6\) and hypertension.\(^7\) There is a strong relationship between breastfeeding and positive maternal–infant bonding.\(^3,4\)

Despite the clear benefits of breastfeeding, the rates of breastfeeding continue to be well below the WHO-recommended level and seem to be resistant to change.\(^8\) Low breastfeeding rates at six months have been reported globally, especially in Western countries.\(^1,8-10\) In Australia, there is a high breastfeeding initiation rate (90%), but only slightly more than half of these women continue breastfeeding until six months.\(^11,12\) Rates of breastfeeding among primiparous women (women who have completed one pregnancy to 20 weeks\(^13\)) are consistently lower than multiparous women\(^11\) (women who have completed two or more pregnancies to 20 weeks or more).\(^13\)

Various strategies have been implemented to support and promote breastfeeding but the majority have focused on initiation and short-term duration of breastfeeding. There is no systematic review that has investigated the effectiveness of interventions on prolonged breastfeeding (breastfeeding at six months or beyond). The available evidence demonstrates that those interventions that relate to increased breastfeeding duration are categorized at institutional and non-institutional levels.

The main institutional level interventions are related to WHO Baby Friendly Health Initiatives (BFHIs).\(^14\) In a Joanna Briggs Institute systematic review, Beak et al.\(^14\) reviewed 26 studies that included only one randomized controlled trial (RCT). They found that BFHI-related interventions had positive effects on duration of breastfeeding at six months post partum. However, they acknowledged the poor
Evidence indicated that women who received any form of support were less likely to stop exclusive breastfeeding before five months, but there was no effect after five months. However, in this review, the definition of support was not clear, and the role of the women’s own social network, including the baby’s father, family members and friends, was not addressed.

McDonald et al.\textsuperscript{32} conducted an RCT using a post-natal focused intervention with 849 Australian women. They offered one-to-one post-natal education and weekly home visits until six weeks post partum, but the intervention was not effective at increasing breastfeeding rates at six months. An RCT (\( N = 450 \)) in Singapore was conducted by Su et al.\textsuperscript{33} to identify the effectiveness of a single antenatal breastfeeding education intervention from a separate post-natal supportive intervention. Neither antenatal education nor post-natal support was effective at increasing any breastfeeding rates at six months, although the interventions were effective at increasing exclusive breastfeeding rates at six months.\textsuperscript{33}

The effectiveness of interventions including both antenatal and post-natal components aiming to increase breastfeeding rates at six months is slightly mixed. A quasi-experimental study among 990 American women (including multi- and primiparous) demonstrated effective results. Women in the intervention group were provided a program of intense antenatal educational home visits, post-natal home visits with weekly phone calls for the first week and monthly phone calls up to six months.\textsuperscript{34} Women in the intervention group were six times more likely to breastfeed at six months compared to the standard-care group (OR = 6.2, 95\% CI 0.01, 0.13; \( P = 0.008 \)). The results were still significant after adjusting for confounding factors such as age, education, income, smoking and having a previous pregnancy. In addition, a multi-phased intervention called The Milky Way Program demonstrated successful results at increasing breastfeeding rates at six months among primiparous women.\textsuperscript{35} Kaunonen et al.\textsuperscript{36} in a systematic review reported that continuous breastfeeding support from the antenatal to post-natal periods by professionals and peers is effective in the continuation of breastfeeding, but not effective at increasing breastfeeding rates at six months. De Oliveria et al.’s\textsuperscript{15} systematic review of 37 studies found that the most effective strategy for prolonging breastfeeding duration was to start...
breastfeeding education antenatally and continue it post-natally using the combination of group education sessions, home visits and individual support.

Based on a preliminary search, no systematic review has investigated or planned to investigate the effectiveness of support and education on long-term breastfeeding outcomes among first-time mothers who are more at risk of breastfeeding cessation. Therefore, there is a need for a systematic review with meta-analysis to identify the best recommendations to support prolonged breastfeeding for primiparous women. By supporting women to succeed with their first breastfeeding experience, they become confident breastfeeders in the future, which will enhance women’s and children’s health and wellbeing in the community.

Inclusion criteria

Types of participants

The current review will consider studies that include primiparous women aged 18 years and over who intended to breastfeed antenatally or post-natally.

Types of interventions

The current review will consider only studies that investigate the effect of educational and support interventions provided by health professionals and support interventions provided by health professionals. Health professionals will include a variety of nursing, medical and allied professionals like nutritionists. Educational interventions are defined as breastfeeding information being imparted during the pregnancy and/or post-natal period in a variety of forms. Support interventions are defined as contact with individuals giving appropriate guidance and encouragement, which is supplementary to standard care with the purpose of facilitating continued breastfeeding. Any standard care will be considered as the comparator.

Outcomes

The current review will consider studies that include the following outcomes: exclusive, fully, complementary breastfeeding and any breastfeeding rates from six months up to two years post partum. Types of breastfeeding are defined in Table 1. Breastfeeding rates will be reported by percentage or proportion of the breastfeeding women in the intervention group compared to the standard care group at the end of each month. Any study that reports breastfeeding outcomes as duration in days or weeks will be excluded from the review.

Types of studies

The current review will consider only RCTs. But in the absence of RCTs, this review will consider high-quality non-RCTs, quasi-experimental and before and after studies.

Search strategy

The search strategy aims to find both published and unpublished studies through electronic databases and reference lists. A three-step search strategy will be utilized in this review. An initial search of MEDLINE and CINAHL will be undertaken followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe the article. Terms within each search category will be used in combination using the Boolean term “OR”. Then, a search will combine each category using the Boolean term “AND”.

A second search using all identified keywords and index terms will be undertaken across all included databases: Cochrane Central Register of Controlled Trials, Scopus, MEDLINE CINAHL, Embase and PsycINFO.

Third, the reference list of all identified reports and articles will be searched for additional studies. Studies published in the English language will be considered for inclusion in this review. Databases will be searched from database operation year to May 2016. The search for unpublished studies includes ProQuest Dissertations & Theses. The following keywords will be used for the initial search: breastfeeding, prolonged breastfeeding, antenatal education, post-natal education, support and professional support.

Assessment of methodological quality

Papers selected for retrieval will be assessed by two independent reviewers for methodological validity prior to inclusion in the review using standardized critical appraisal instruments from the Joanna Briggs Institute Meta-Analysis of Statistics Assessment and Review Instrument (JBI-MAStARI) (Appendix I). Any disagreements that arise between the reviewers will be resolved through discussion.
Data extraction

Data will be extracted from papers included in the review using the standardized data extraction tool from JBI-MAStARI (Appendix II). The data extracted will include specific details about the interventions, populations, study methods, statistical data, outcomes of significance to the review question, and specific objectives. Authors of primary studies will be contacted for clarification or missing information.

Data synthesis

Quantitative data will, where possible, be pooled in statistical meta-analysis using RevMan software (The Nordic Cochrane Centre, Cochrane; Copenhagen, Denmark). All results will be subject to double data entry. Effect sizes expressed as odds ratio (for categorical data) and weighted mean differences (for continuous data) and their 95% CIs will be calculated for analysis. Heterogeneity will be assessed statistically using the standard $I^2$ test. Where statistical pooling is not possible, the findings will be presented in narrative form including tables and figures to aid in data presentation where appropriate.

References


Appendix I: Appraisal instruments

**MASTARI appraisal instrument**

**JBI Critical Appraisal Checklist for Randomised Control / Pseudo-randomised Trial**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
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<td>1. Was the assignment to treatment groups truly random?</td>
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<td>2. Were participants blinded to treatment allocation?</td>
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<td>3. Was allocation to treatment groups concealed from the allocator?</td>
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<td>4. Were the outcomes of people who withdrew described and included in the analysis?</td>
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<td>5. Were those assessing outcomes blind to the treatment allocation?</td>
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<td>6. Were the control and treatment groups comparable at entry?</td>
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<td>7. Were groups treated identically other than for the named interventions</td>
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<td>8. Were outcomes measured in the same way for all groups?</td>
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<td>9. Were outcomes measured in a reliable way?</td>
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<td>10. Was appropriate statistical analysis used?</td>
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Overall appraisal: Include ☐ Exclude ☐ Seek further info. ☐

Comments (Including reason for exclusion)

________________________________________________________________________

________________________________________________________________________
Appendix II: Data extraction instruments

MAStARI data extraction instrument

**JBI Data Extraction Form for Experimental / Observational Studies**

Reviewer ........................................ Date ................................
Author ........................................ Year ................................
Journal ........................................ Record Number ...

**Study Method**

RCT ☐ Quasi-RCT ☐ Longitudinal ☐
Retrospective ☐ Observational ☐ Other ☐

**Participants**

Setting

Population

**Sample size**

Group A ___________________ Group B ___________________

**Interventions**

Intervention A

Intervention B

**Authors Conclusions:**

**Reviewers Conclusions:**
### Study results

#### Dichotomous data

<table>
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<tr>
<th>Outcome</th>
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#### Continuous data

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