A review of nursing interventions to foster becoming a mother

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CRD summary
The authors concluded that interactive nursing interventions are the most effective way of enhancing mother-infant interactions and maternal knowledge about infant care. Evidence on fostering preparation for the maternal role and maternal-infant attachment was limited. Given the major limitations in the methods and reporting of the review, and the questionable interpretation of the findings, these conclusions do not appear reliable.

Authors' objectives
To evaluate nursing interventions that foster maternal self-confidence, sense of competence and attachment to the infant.

Searching
PubMed and CINAHL were searched to June 2005; the search terms were reported. The reference lists of relevant articles were also checked and expert knowledge was utilised. The search was restricted to articles published in English.

Study selection
Randomised controlled trials (RCTs) were eligible for inclusion, but the review also included non-randomised studies.

The participants in eligible studies were pregnant and postnatal women. The primary studies included primiparous or multiparous women, in most cases of White or African American ethnicity (where stated). In some studies their partners were also participants. Some women belonged to at-risk groups (e.g. adolescents, low socioeconomic groups, mothers of pre-term babies).

Eligible studies were required to compare a nursing intervention that focused on the process of becoming a mother with a control condition. Interventions were required to be delivered in pregnancy or the first 4 postnatal months. Studies with interventions that focused on preparation for childbirth, management of maternal mental health problems or infant outcomes were excluded. The interventions in the included studies varied widely and included education (e.g. on child care, on infant behavioural capabilities and/or on role transition during pregnancy), training in baby massage, and a therapeutic nurse-client relationship. Nursing input to interventions varied from nil or minimal involvement to long-term intensive support, and the duration of the interventions varied from a single instruction session to up to 2.5 years. Some educational interventions were delivered electronically. Control conditions included care as usual, attention placebo and no intervention.

Studies were eligible if they reported a measured maternal outcome. Components of becoming a mother were defined as maternal self-confidence, sense of competence and attachment to the infant, and changes in these characteristics appeared to be the primary outcomes of the review. The review reported a wide range of outcomes including maternal knowledge of infant care, maternal confidence, breast-feeding, maternal-child interaction, maternal behaviour during feeding, knowledge of infant behavioural capabilities, maternal attachment behaviours and maternal adaptation.

The authors did not state how the studies were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
The authors did not state that they assessed validity

Data extraction
Descriptive data on outcomes of interest were extracted from the primary studies and reported in the text and tables. The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Methods of synthesis
The studies were combined in a narrative and in tables. They were classified according to the nature of the intervention: five different types of intervention were identified in the review.

**Results of the review**

Twenty-eight studies (n=1,622) were included: 21 RCTs (n=1,436), 3 non-randomised controlled studies (CTs; n=166) and one pre-test post-test study (n=20).

Education on infant care giving education (5 RCTs, n=421).

Audiotaped and videotaped instruction (3 RCTS, n=286) was not associated with increased maternal knowledge of infant care, and in one RCT (n=25) telephone audiotapes appeared to increase difficulty in adjusting to the maternal role. Individualised self-instruction (using booklets and slides) and individualised nursing help with breast-feeding were associated with significantly greater infant care knowledge and higher breast-feeding rates, respectively (2 RCTs, n=135).

Education on infant interactive capabilities (10 RCTs, n=575; 1 CT, n=31).

Improved maternal interactive behaviour and/or improved perception and knowledge about the infant were reported in the intervention group in 7 RCTs (n=363), some conducted on all or partially among at-risk populations (3 RCTs, n=190). However, a larger RCT of pregnant adolescents (n=121) reported no such benefit. Moreover, the intervention did not improve maternal confidence (2 RCTs, n=66), competence (1 RCT, n=61) or ease of transition into the maternal role (1 CT, n=31). Nursing demonstration of interactive behaviour and/or maternal stimulation of the infant were more effective than information alone or other control conditions (4 RCTs, n=139).

Interventions focused on fostering maternal-infant attachment (6 RCTs, n=171).

Two RCTs (n=30) reported improved maternal-foetal attachment as a result of guided maternal-foetal activities, but 2 larger RCTs (n=91) reported no statistically significant effect. An RCT (n=20) of extended skin-to-skin contact after childbirth also reported no statistically significant effect from the intervention. An RCT (n=30) of an in-home teaching intervention 2 to 4 days after discharge reported improved maternal perceptions of the infant at 1 month in the intervention group.

Interventions focused on maternal/social role responsibilities (1 RCT, n=91; 2 CTs, n=135).

Two studies reported that the intervention group had improved maternal adaptation (1 RCT, n=91) and more favourable interaction with the infant (1 CT, n=77) 10.5 months later. However, the intervention was not associated with self-reported improvement in confidence or resilience (1 RCT, n=91; 1 CT, n=58). The RCT (n=91) found that better-educated mothers benefited less from the intervention than those less well educated.

Interactive therapeutic nurse/client relationship (2 RCTs, n=178; 1 pre-test post-post study, n=20).

Improvement in maternal competence was reported in at-risk populations receiving this intervention, which was delivered by specially trained professional nurses. No statistically significant effect on maternal role attitudes was found (1 RCT, n=31).

Other results were reported in the review.

**Authors' conclusions**

Interactive nursing interventions are the most effective way of enhancing mother-infant interactions and maternal knowledge about infant care. Evidence on fostering preparation for the maternal role and maternal-infant attachment is limited.

**CRD commentary**

The review question and inclusion criteria were wide and non-specific, and the primary outcomes were not stated.
clearly. The search was limited and only studies published in English were considered, thereby creating the potential for selection and publication biases. It is unclear whether measures were taken to reduce the risk of reviewer error and bias during the study selection, validity assessment and data extraction processes, such as decisions being made independently by more than one reviewer. The decision to vary the inclusion criteria post hoc and include 3 non-randomised studies increases the likelihood of selection bias.

There was insufficient information about the primary studies (e.g. setting, nursing intervention, outcome measures) and no statistical data to indicate the strength of the findings. The clinical heterogeneity of the studies, the large number of findings reported and their indirect relation to the (apparent) primary outcomes make the evidence very hard to interpret. Moreover, the authors’ conclusions do not appear well supported by the data presented. Given the major limitations in the methods and reporting of the review, and the questionable interpretation of the findings, the authors’ conclusions do not appear to be reliable.

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

Practice: The authors stated that short-term one-off interventions do not appear to enhance maternal self-confidence or competence. However, nurses interacting with women long-term during pregnancy, postnatally and during well child care enhance maternal competence.

Research: The authors stated that research is needed on the best combination of interventions to support becoming a mother and how to identify which women are likely to find maternal development problematic. They noted that interventions and outcome measures should be tested in diverse populations.

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