Psychological and social aspects of pregnancy, childbirth and early parenting after assisted conception: a systematic review

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CRD summary
This review assessed psychological and social consequences of pregnancy, childbirth and early parenting after assisted conception and concluded that there was a potential cumulative negative effect on antenatal psychological functioning and post-partum adjustment. Given poor reporting of individual study results and poor quality of included studies, the authors' conclusion should be interpreted with caution.

Authors' objectives
To assess the psychological and social consequences of pregnancy, childbirth and early parenting following assisted conception.

Searching
MEDLINE and PsycINFO were searched for peer-reviewed English-language studies to November 2007; search terms were reported. Reference lists of included studies were handsearched to identify additional studies.

Study selection
Eligible studies investigated perinatal psychological or social functioning after assisted reproductive technology treatment. Interventions comprised: oocyte retrieval, including in vitro fertilization (IVF); intracytoplasmic sperm injection with fresh or cryopreserved embryos; and gamete intra-fallopian transfer. Excluded were intrauterine insemination with partner or donor sperm or ovulation induction. Mixed samples including assisted reproductive technology and intrauterine insemination with partner, donor sperm or ovulation induction were eligible. Excluded studies also comprised clinical case reports, investigations of sex selection, disclosure of use of donor gametes, multi-foetal reduction, single and lesbian mothering, surrogacy, pre-implantation genetic diagnosis, parenting of children older than 12 months and child health and development.

Included studies mostly compared an assisted reproductive technology group with a comparison group presumed to have conceived spontaneously. Most included studies were prospective cohort studies; various recruitment strategies were used within the included studies (including consecutive cohorts of assisted reproductive technology participants or non-systematic sampling). Comparison groups varied: some were drawn from large populations of presumed fertile childbearing women and others were drawn from smaller and more homogenous populations. Outcomes included emotional well-being, anxiety and attitude to pregnancy and a variety of other measures. Included studies investigated women; just under half recruited couples and some reported data for men. Recruitment rates of at least 75% of the eligible assisted reproductive technology populations were achieved in most studies.

Two reviewers independently selected studies for inclusion in the review.

Assessment of study quality
Study quality was assessed according to the following criteria: systematically recruited sample of adequate size that was representative of the assisted reproductive technology population; appropriate comparison group; and high recruitment and retention rates.

The authors did not state how the validity assessment was performed.

Data extraction
The authors stated neither how data were extracted for the review nor how many reviewers performed the data extraction.
Methods of synthesis
A narrative synthesis was provided, supported by tables. Differences between studies were discussed in the text.

Results of the review
Twenty eight studies were included in the review (sample sizes varied from 10 women to 367 couples): 17 prospective cohort studies; three cross-sectional studies; five retrospective studies; and three studies that used qualitative methods. Six studies met the stated criteria for methodological rigour.

Pregnancy (25 studies): During either early or late pregnancy, levels of general anxiety for assisted reproductive technology groups appear similar to those of spontaneous conception groups (four studies). Lower rates of antenatal depressive symptoms were reported in assisted reproductive technology groups (three studies); some studies reported no significant difference (four studies); scores above clinical cut-offs were rare (two studies). Low rates of antenatal depressive symptoms were reported in men (three studies). Ante-natal self-esteem scores did not differ between the groups (three studies), although increases in self-esteem scores for assisted reproductive technology women were noted between early and advanced pregnancy (two studies). Marital satisfaction Among assisted reproductive technology couples appeared significantly better than satisfaction reported for spontaneous conception couples (two studies). There were no significant differences between the groups regarding antenatal attachment (three studies).

Parenting in the first post-partum year (28 studies): Assisted reproductive technology primiparous mothers of twins had lower well-being post partum (two studies). Comparisons between the groups of depression, anxiety or mixed mood symptoms found no difference for mothers (six studies) or fathers (four studies). Mood disturbance was more common in primiparous than multiparous assisted reproductive technology mothers of twins (three studies). Findings on self-esteem or maternal self-efficacy varied: some (two studies) reported no difference between the two groups and other studies reported lower self-esteem and maternal efficacy or lower sense of parenting competence among assisted reproductive technology mothers compared with spontaneous conception mothers. No differences between the groups were noted for mean parenting stress index scores (three studies). Higher levels of parenting stress were noted among primiparous assisted reproductive technology mothers of multiple infants (four studies). There were no differences between the groups for parent-infant attachment up to 12 months (three studies).

Authors' conclusions
The potential cumulative negative effect of infertility and assisted reproductive technology on antenatal psychological functioning and post-partum adjustment should be considered by healthcare professionals involved in care of patients during pregnancy and after birth.

CRD commentary
The review question was clear. There were broad inclusion criteria for participants and intervention, but not for outcomes and study design. Two electronic databases were searched for peer-reviewed English-language studies; therefore, publication and language biases may have been present and some studies may have been missed. Study selection was undertaken in duplicate; it was not stated how data extraction was undertaken. The authors stated that methodological quality of included studies was assessed, but the results were not reported in the review; most studies, according to the authors, were poor quality. Given the heterogeneity across studies, a narrative synthesis was appropriate. Due to poor reporting of individual study results and poor quality of included studies, the authors' conclusions should be interpreted with caution.

Implications of the review for practice and research
Practice: The authors did not state implications for practice.

Research: The authors stated that future research should undertake a systematic recruitment of participants, minimise exclusions and use the same data collection measures for appropriate comparison populations.

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