

**BIRTH AND BEYOND:
A Review of the Evidence about Antenatal Education**

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Executive Summary

Background

Antenatal education has traditionally been aimed at preparing parents-to-be for pregnancy and labour, but recent research about the psychological and biologically-driven processes that both men and women face as part of what has been defined as the *transition to parenthood*, has raised questions about the focus of current provision, and its adequacy in supporting parents.

Aim

This aim of this study was to synthesise published evidence concerning the cost and effectiveness of antenatal education, alongside evidence about stakeholder perspectives

Methods

A systematic review was undertaken of a wide range of medical and social science electronic databases to identify published studies addressing: i) costs and effectiveness of group-based antenatal education; ii) stakeholder perspectives about the role and benefits of such education.

Findings of review

- **Preparation for childbirth**

There is little evidence that the techniques taught in traditional childbirth classes can reduce pain in labour. There is also limited evidence that such education is associated with a higher incidence of vaginal birth or reduction in use of epidurals.

There is limited evidence, based on a small number of studies that adjunctive interventions such as antenatal music therapy is associated with increased relaxation in labour.

- **Satisfaction with birth experience**

There is evidence that participation in ANE is associated with higher levels of satisfaction with the birth experience.

- **Breastfeeding promotion**

Effective interventions to support initiation and continuation of breastfeeding include: peer support schemes (such as 'Best/Breast/Bosom Buddy'), antenatal group work which has an interactive component and involves local experienced breast feeders as volunteers; and the combination of multimodal education/social support programmes combined with media campaigns.

- **Low birth weight (LBW)**

Evidence about the effect of antenatal social support on LBW is mixed: one rigorous systematic review found no evidence that any psychosocial support (with the exception of smoking reduction programmes) reduced LBW, but more recent studies in the US found that one form of antenatal parent education (the CenteringPregnancy programme) was associated with reduction of LBW.

Overall, the evidence suggests that the prevention of LBW requires a longitudinal and integrated strategy to promote optimal development of women's reproductive health, not only during pregnancy, but over the life course.

- **Health behaviours**

There is some evidence of the benefits of antenatal education on health promotion behaviours including a range of health promotion behaviours, health responsibility, exercise, and nutrition.

- **Prevention/treatment of antenatal depression**

There is no evidence that participation in ANE prevents the onset of

depression or is effective in its treatment. However, group-based social support including antenatal preparation for parenthood classes can be effective in supporting women with sub-threshold symptoms of depression and anxiety. There is also some evidence, based on a limited number of small-scale studies, that massage and music therapy, when provided as adjuncts to antenatal education and support, can reduce anxiety and improve mood in depressed pregnant women.

- **Parents in high risk groups**

There is some evidence of the value of multifaceted support and education for adolescent mothers. This includes, for example, the combination of nurse home visiting and/or enhanced Doula programmes with group-based social support. Multimodal interventions should, as far as is possible, be tailored to meet the needs of individual young parents in terms of their developmental stage, coping strategies and exposure to stressful situations. There is evidence of the effectiveness, for adolescent fathers, of men-only preparation for fatherhood groups that begin in the antenatal period and continue postnatally.

There is no evidence of the effectiveness of group-based antenatal education as a stand-alone support for drug-dependent pregnant women. The needs of women who are in remission from drugs can be best served through individualised programmes that include a parent-education component.

Although there are numerous studies highlighting the increased health and mental health risks of women in prison, there is limited research on antenatal preparation for this vulnerable population. The evaluation of one programme shows that women in prison, like women elsewhere, value participative learning methods, providing the possibility of social support, and learning about feeding and early child care, as well as the acquisition of knowledge about labour and childbirth.

- **Parenting programmes that focus on the transition to parenthood**

More recently antenatal group-based parenting programmes aimed at promoting the transition to parenthood (focusing in particular on issues such as the emotional changes that parents experience at this time, the couple relationship, parenting skills, and issues such as bonding and attachment; and problem-solving skills) have been developed and evaluated. There is some evidence of the effectiveness of these interventions on maternal psychological well-being, parental confidence, and satisfaction with the couple and parent-infant relationship in the postnatal period. Programmes of this nature (e.g. 'PIPPIN' and 'Preparation for Parenthood'), that focus on strengthening the couple relationship in preparation for pregnancy, and programmes that are responsive to individual participant needs (e.g. CenteringPregnancy), are associated with high levels of consumer satisfaction.

- **Preparation for fatherhood**

Fathers-to-be benefit from participation in adjunctive, men-only sessions within standard antenatal classes, and adolescent fathers benefit from participation in men-only *preparation for fatherhood* groups. There is evidence that men value guidance by experienced fathers and participation in discussion groups in which there are opportunities to focus on their own experiences and psychosocial needs including coping with depression and anxiety.

- **Stakeholders' views**

Interviews with parents before and after birth highlight the following themes:

- ✓ **The need for antenatal education that will help them through the transition to parenthood:** the findings of interviews with parents suggest that standard antenatal classes do not prepare parents adequately for the changes in their relationship or for early childcare;
- ✓ **Parents value the opportunity to meet and make friends with other parents-to-be:** participants value the opportunity to meet other

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parents-to-be and speak highly about antenatal education that facilitates this process (e.g. National Childbirth Trust) through the use of small classes that incorporate opportunities to establish relationships, and that continue beyond the birth;

- ✓ **Parents value participative forms of learning (i.e. as opposed to didactic learning):** participative learning is valued by both high and low-risk groups;
- ✓ **Men need opportunities to talk to other men and to take part in classes that focus on preparation for fatherhood:** small-scale studies suggest that men may have unrealistic expectations of their ability to help their partner through labour and childbirth, and that childbirth education and antenatal classes in general are perceived by many men to be 'women's space', and from which they are excluded. Several studies show that men value adjunctive sessions for men only, under the guidance of more experienced fathers.
- ✓ **Adolescent mothers prefer to learn in peer groups:** pregnant adolescents can feel inhibited in groups in which a majority of the attending women are different from themselves (i.e. perceived to be older, more affluent and to have partners). The evidence suggests that adolescent girls benefit from interventions that combine one-to-one support (e.g. nurse home visiting) with ANE that is designed specifically for teenagers, and that continues after childbirth.
- ✓ **Women in prison value the same things as other parents-to-be:** this group of women who are often profoundly isolated, want opportunities to get to know other pregnant women and to be able to offer each other mutual support. They value participative learning processes, want to be treated with respect, and to learn about childbirth and early childcare.
- ✓ **Parents from minority ethnic groups value culturally sensitive antenatal education:** the research highlights the need of parents-to-be from minority ethnic groups for information that addresses the potential conflicts that may arise between cultural mores and the standard messages communicated in antenatal classes; it shows that minority

ethnic parents-to-be also value the opportunity to attend classes in community-based settings rather than city centre hospitals.

There is limited UK-based research on the views of other stakeholders.

Research elsewhere has found that healthcare providers of childbirth preparation classes can feel unprepared to help parents focus on the transition to parenting. However, the limited available evidence suggests that providers of such services increasingly value participative learning processes in which parents can voice their own concerns.

- **Cost-benefit analysis**

There is no research addressing the cost-benefits of antenatal care in the UK. However, recent evidence from evaluations of group-based interventions directed at other groups of parents (i.e. with children who have conduct problems) found that the costs of running such groups is modest, and that such interventions typically show strong clinical effects, suggesting that they represent good value for money (Edwards 2007; NICE, 2007).

Conclusions

- There is limited evidence of the effectiveness of standard antenatal care on clinical outcomes;
- Antenatal education appears to be associated with a more positive birth experience and improvement in some health-related behaviours;
- Antenatal education that centres on the transition to parenthood, with a focus on the relationship between partners and the development of a positive parent-infant relationship, shows promising results in terms of both parent and child outcomes. However, there is limited high quality research addressing its effectiveness in the UK;
- Participative and responsive forms of antenatal education are associated with high levels of participant satisfaction;

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- Antenatal education is perceived to be directed at women, limiting the participation of men. Emerging models of antenatal education that include sessions for men, and that are led by experienced fathers, appear to be more successful in engaging and addressing the needs of fathers-to-be;
- Antenatal education has an important role in creating social support for parents both through the facilitation of groups that permit interaction between group members, and through the offer of support that continues after childbirth;
- Adolescent mothers-to-be prefer to learn with peers rather than in groups comprised primarily of older women. Adolescents benefit from groups that begin antenatally and continue into the postnatal period, and that are specifically designed to address their needs. They benefit from a combination of one-to-one (e.g. home visiting) and group-based support;
- There is a lack of high-quality UK-based research on the provision of group-based antenatal care for minority ethnic groups, but the limited available evidence points to the importance of culturally sensitive provision. There is also very little research on antenatal education with more marginal populations, such as travellers, or more vulnerable populations including asylum seekers, refugees and women in prison.

Further research

There is an urgent need for further UK-based research in a number of areas:

- The most effective content and methods of providing antenatal preparation for the transition to parenthood;
- Methods of supporting fathers;
- Methods of supporting parents from minority ethnic groups including asylum seekers and refugees;
- Methods of supporting alcohol and drug-abusing parents; parents with serious mental health problems; women in prison;

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- Factors associated with 'engagement' in ANE and 'retention' or programme completion, particularly of lower SES and younger parents;
- Cost-benefit of different forms of antenatal education.

The views expressed in this report are the authors' and do not necessarily reflect those of the Department of Health

1. BACKGROUND

1.1 Introduction

The origins of antenatal education lie with the goal of using psychological or physical non-pharmaceutical means to prevent or reduce the pain associated with childbirth.¹ Recent policy documents have emphasised the fact that antenatal education also has a key role to play in preparation for childbirth, improving maternal health behaviours, increasing confidence and self-efficacy, and preparation for infant feeding and care.^{2,3} Antenatal education, including 'childbirth education programmes', 'prenatal' or 'antenatal classes', and a range of other prenatal or antenatal groups, is as such aimed at preventing complications of pregnancy and ensuring the wellbeing of mother and child.⁴ It is underpinned by recognition of the importance of preparing women for labour and birth, and in particular the significance of women achieving optimal physical health during pregnancy, and of having access to good social support.

More recently, however, there has been an increase in knowledge about the psychological and biologically-driven processes that both men and women face during the transition to parenthood. This highlights the importance of a much wider range of factors than has been recognised to date, in terms of the health and wellbeing of the infant. Dieter (2008),⁵ for example, provides evidence about the impact of maternal emotional states (which can be undermined by health and social inequalities) on foetal and infant physiological and behavioural functioning. This has raised questions about the focus of current provision, and its adequacy in supporting parents through what has been described as being a psychologically stressful period.⁶

Furthermore, while antenatal classes are one of the main sources through which parents-to-be obtain information and preparation for parenthood,⁷ the reality may be somewhat different, and the purpose of such classes has been questioned, with some suggestion that they function to 'programme' women

for a 'passive acceptance of medicalised childbirth',⁸ and that the teaching approaches used 'often promote dependency amongst clients rather than nurturing the decision-making skills required by a consumer-driven maternity service'.⁹ Indeed, it has been suggested that '...less than half of pregnant women attend any sort of class, needs and service provision are mismatched, certain parents are missing out, men are excluded, the focus of the classes is too narrow, aims are unclear, the quality is poor and there is lack of specialised training, management and support for those providing the services'.¹⁰

1.2 Current Provision of ANE

Two of the main providers of antenatal care are the NHS and the National Childbirth Trust (NCT), but the extent and nature of the services provided are currently unclear. The most recent evidence comes from two surveys of service users.^{11,12} The first, a survey of the experiences of a random sample of 4,800 UK women, showed that 'most first-time mothers reported being offered NHS antenatal classes (89%), though only two-thirds actually attended these classes. Offer (59%) and uptake (20%) were lower for women having their second or subsequent babies'.⁹

The review of maternity services conducted by the Healthcare Commission a year later¹⁰ found that the provision of antenatal care was not being adequately addressed by many trusts. This survey found that '60% of women were offered classes, 3% reported that the classes were all booked and 37% reported not being offered any at all'.¹³ However, this excluded women who attended private classes, those who said they did not need to attend, and women who did not attend for other reasons. The last two groups making up more than 40% of the whole sample comprised mostly women who had previously given birth. It was also found that 'the proportion of women who wished to attend antenatal classes and were able to do so varied quite markedly'.¹⁴ For the median trust this was 60% of all women and 84% for first-time mothers. Of those women who did attend classes, 15% reported that they were not at a convenient time of day, and a few found that they were not

conveniently located (6%) and their partner or someone of their choice was not allowed to attend (5%). Larger proportions of women, particularly first-time mothers, reported that there was an insufficient number of classes in the antenatal course (28%) and that they did not cover the topics the women wanted (20%).¹⁵ Furthermore, when asked directly, 86% of trusts advised that they offered all first-time mothers an opportunity to attend antenatal courses, while somewhat fewer trusts (71%) offered all women who had previously given birth a place on a course. In terms of flexibility of provision, the Healthcare Commission found that 'for those that did offer classes, almost all of them (95%) offered at least some outside the normal working day'.¹⁶

In terms of the needs of specific groups of pregnant women, while the Healthcare Commission reported that some form of antenatal education was available for teenage parents and other groups, more detailed information is needed to clarify the extent of the provision better.

The report concludes that '...many trusts need to improve the availability of classes and to review the extent to which they are addressing women's requirements'.¹⁷

1.3 Differential uptake of antenatal services

A recent systematic review of uptake of antenatal services concluded that there is little good quality evidence on social and ethnic inequalities in attendance for antenatal care in the UK.¹⁸ The review identified five studies looking at antenatal attendance and social class, three of which found that 'women from manual classes were more likely to book late for antenatal care and/or make fewer antenatal visits than other women. All four studies reporting on antenatal attendance and ethnicity found that women of Asian origin were more likely to book late for antenatal care than white British women'.¹⁹ One study showed that women from social classes 4 and 5, and very young women, were almost entirely unrepresented at antenatal classes in either the voluntary or statutory sectors.²⁰ There is as such consensus that 'women who do not attend classes are younger, poorer, more likely to have

left school before completing secondary education, and less likely to be married.²¹

Further findings from the 2006 survey indicate that UK and non-UK born women from the BME groups were less likely to be offered or to attend classes, and women not living with partners and from the most deprived areas, while equally likely to be offered these, were also less likely to attend. However, following adjustment for factors that could have differed between the groups such as parity, mode of delivery and maternal age the only significant difference that remained was that women from BME groups who were born outside the UK were less likely to be offered antenatal classes.²²

1.4 Aims

The aim of this review is to contribute to the promotion of universal access to high-quality evidence-based antenatal care, education and preparation for parenthood through the identification of evidence about ‘what works’ and ‘stakeholder perspectives’.

This report comprises the first of two reports examining antenatal education.¹

1.5 Objectives

To identify published evidence about:

- i) the effect of group-based antenatal education on a range of outcomes for parents-to-be;
- ii) the perspectives of key stakeholders about current provision.

¹ The second report comprises ten cases studies of current provision and is entitled: ‘Birth and Beyond – Stakeholder perspectives about current provision of Antenatal Education in England’.

2. METHODOLOGY

2.1 Databases searched

The following key electronic health, social science and education databases were searched: Embase, CINHAL, PsychInfo, Medline and the Cochrane Database of Systematic Reviews, Google and Google Scholar, using a combination of medical subject headings (MeSH) and free text search. Contact was made with the National Childbirth Trust (NCT) which provided additional materials.

2.2 Inclusion criteria

Reviews or reviews-of-reviews that met the following criteria were included:

2.2.1 *Population* – Parents-to-be or other stakeholders (e.g. providers of antenatal education);

2.2.2 *Interventions* – Group-based antenatal education aimed at preparing parents-to-be for any aspect of pregnancy or early parenthood *and* that begins during the antenatal period. Studies evaluating interventions that *continue* into the postnatal period were included, but studies evaluating interventions that *begin* in the postnatal period were excluded;

2.2.3 *Outcomes of interest* – studies including any objectively or subjectively evaluated mental or physical health outcomes for parents; children up to the age of five years; or families were included;

2.2.4 *Years* – Studies were included from 1990 to date.

2.3 Search terms

A broad set of terms were used to increase the sensitivity of the search:

- Terms to identify population: parent* or father* or mother*

- Terms to identify the nature of the intervention: AB=(((Antenatal group*) OR (antenatal class*)) or ((ante-natal group*) or (ante-natal class*)) or ((prenatal group) or (prenatal class*))) or AB=((pre-natal group*) OR (prenatal class*)) or AB=((perinatal group*) OR (perinatal class*)) or AB=((parentcraft)

2.4 Critical appraisal

No critical appraisal of individual studies was undertaken, but all studies have been classified according to the rigour of the study design:

Group A – Systematic Reviews;

Group B – Randomised Controlled Trials;

Group C – Controlled Studies;

Group D – One-Group Pre- and Post-Intervention Studies;

Group E – Surveys and Qualitative studies.

2.5 Data management and extraction

Studies were selected for inclusion by two reviewers based on abstracts and full papers. Disagreements were resolved through consultation with the expert group.

A range of data was extracted from each of the included reviews using a standard data extraction form. The following data was extracted:

- Descriptions of the interventions; services and programmes being reviewed;
- Description of study findings;
- Summary of the authors' conclusions about what works, under what conditions, for whom.

2.6 Data synthesis

Data extracted from each of the included reviews have been summarised using a narrative presentation and organised using the following themes:

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- i) What is known about the effectiveness of group-based antenatal to postnatal support?
- ii) What are stakeholder's views on antenatal to postnatal support?
- iii) What are the cost-benefits of antenatal education?

3. RESULTS

The initial search yielded over 2,500 publications of potential interest. A total of 69 papers were finally included: 6 comprised systematic reviews and 2 comprised reviews-of-reviews. A further 61 additional papers (i.e. studies not in the systematic reviews), are included:

The findings have been organised using the following headings:

- i) Effectiveness of group-based antenatal education;
- ii) Stakeholder perspectives about antenatal education;
- iii) Cost-effectiveness of group-based antenatal education.

3.1 EFFECTIVENESS OF GROUP-BASED ANTENATAL EDUCATION

3.1.1. Labour and childbirth

One review-of-reviews, two systematic reviews, and a further 12 primary studies measured the impact of antenatal education on labour and childbirth. Primary studies comprise 5 RCTS (7 papers); 4 non-randomised pre-post intervention studies, and 3 surveys.

Reviews-of-reviews and systematic reviews: The NICE²³ review-of-reviews and individual studies of antenatal care for healthy pregnant found little evidence that attendance at ANE improves birth outcomes (such as mode of birth or use of analgesia). There is some evidence that women's experience of childbirth may be improved if they attend client-led classes compared with more traditional classes.

A Cochrane review²⁴ evaluated the effectiveness of individual and/or group-based antenatal education for childbirth and/or parenthood in improving a range of outcomes for pregnant women. The results were inconclusive and it is suggested that the effects of antenatal education for childbirth are largely unknown, partly because of heterogeneity in the interventions evaluated and the range of outcomes measured.

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The findings of one further systematic review²⁵ also found inconclusive evidence about the effect of antenatal education on labour and childbirth.

Randomised controlled trials (RCTs): One study (2 papers) assessed the effect of a US-based, multisite RCT of CenteringPregnancy²⁶ on 1047 low-SES primiparous women. CenteringPregnancy is a group-based programme which begins in the antenatal period and offers the possibility of integration into a postnatal CenteringParenthood group for up to 24 months postnatally. The study found that women assigned to group-based care were significantly less likely to have preterm births compared with those in standard care. Effects were stronger for African-American women. Women taking part in group sessions were also less likely to have suboptimal prenatal care, and had significantly better prenatal knowledge: they felt more ready for labour and delivery and had greater satisfaction with care. The authors conclude that group-based prenatal care resulted in equal or improved perinatal outcomes at no added cost.

One Canadian RCT (60 women) assessed the effects of brief instruction in imagery and birth visualization on state anxiety and childbirth experience.²⁷ The study found no evidence to support the hypothesis that birth visualization would improve memory for information about labour and the delivery provided in prenatal classes, and there were no significant differences between the visualization and control conditions.

One UK RCT compared the effects of the teaching of enhanced coping strategies with the effects of coping strategies usually taught in National Health Service (NHS) antenatal education, in terms of women's experience of pain and emotions during labour.²⁸ The findings showed that women who attended the enhanced strategies classes used enhanced coping strategies for a larger proportion of their labour than women who attended standard classes. Birth companions were also more involved in women's use of enhanced as opposed to standard strategies. There were no differences

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between groups, however, in terms of self-efficacy in the use of coping strategies and subsequent experiences of pain and emotions during labour.

One RCT compared outcomes for natural childbirth and traditional childbirth preparation among primiparous women in Sweden.²⁹ The study found an epidural rate of 52% in both groups. 70% of the women in the natural childbirth group reported having used psychoprophylaxis (relaxation techniques) during labour compared with 37% of women in traditional classes. There were no statistically significant differences in the experience of childbirth or parental stress between the two groups for either women or men. Compared with a standard form of antenatal education, natural childbirth preparation did not improve the birth experience or affect parental stress in early parenthood.

One Australian RCT³⁰ compared the effects of a new antenatal education programme ('Having a Baby') with standard care. The 'Having a Baby' programme' was developed from needs assessment data collected from expectant and new parents, and was designed to be responsive to parents needs. One important feature of the programme was the recognition that pregnancy, labour, birth and early parenting all form part of the childbearing experience, and should not be treated as separate topics. Birth outcomes were similar for both groups, but maternal self-efficacy was considerably

Pre-post intervention studies: One Australian non-randomized trial compared standard antenatal education with a participative pilot programme grounded in adult learning theory.³¹ The pilot antenatal education program was aimed at better preparing couples for the early weeks of lifestyle changes and parenting. The programme included facilitated gender-specific discussion groups. While there were no significant differences on women's management of pain, choice of delivery or other labour-related outcomes, women in the participative programme were significantly more likely to be satisfied with the management of labour and childbirth and the parenting experience, than women receiving routine care.

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One UK pre and post-intervention study assessed emotional, medical and control aspects of labour, including identification of differences between 81 primiparous attenders and non attenders of antenatal classes.³² Expectations were assessed antenatally and compared with women's postnatal reports of what they had actually experienced. Attenders and non-attenders at antenatal preparation classes showed no significant differences in their experiences or personal satisfaction levels.

One small-scale Canadian pre-post intervention study³³ assessed the effect of music therapy on relaxation and the fear-tension-pain syndrome. Eleven women were provided with childbirth education classes, music therapy sessions, coaching in relaxation and breathing techniques, and a coach/partner along with music therapy during labor were compared with primiparous women who had the same treatment but no music therapy prior to or during labor. An hourly relaxation assessment based on the Trippet Muscle Relaxation Inventory revealed that women in the music therapy group were significantly more relaxed than those in the control group during the 3 hours prior to delivery. Women in the music therapy group experienced significantly more personal control during their labour than those in the control group.

A small-scale pre-post intervention study involving 11 Swedish women found that that women's fear as seemed to block acquisition of new knowledge, in antenatal classes, that could potentially reduce anxiety about childbirth.³⁴ Authors stressed the importance of stress the importance of individual assessment of expectations of and experiences of childbirth education and for the provision of consistent information before and during childbirth.

Surveys: A large scale Italian population-based survey of 9004 women (of whom 23% had attended antenatal classes), included an assessment of the association between attendance at antenatal classes and a range of birth outcomes.³⁵ Findings indicate a positive association between ANE attendance and improved birth and breastfeeding outcomes, and maternal satisfaction with the birth experience. Women who attended antenatal classes, especially

at Mother-Child Health clinics, had a lower risk of caesarean section. Women who attended classes and were able to apply the techniques learnt had a reduced risk of being dissatisfied with the experience of childbirth.

In contrast, a large-scale Swedish survey (n=1197)³⁶ found that participation in childbirth and parenthood education classes was not associated with first-time mothers' experience of childbirth and assessment of parental skills. Participants had a higher rate of epidural analgesia, which suggests that participation in classes made women more aware of available pain relief techniques, rather than their capacity to cope with pain.

A survey of 1193 Australian women examined associations between attendance at childbirth preparation classes and health behaviours, birth events, satisfaction with care, and later emotional well-being of primiparous women.³⁷ The survey found few differences between women who attended classes and those who did not with respect to measures of pain and to the use of procedures, interventions, and pain relief. There were, however, differences between the groups in terms of their satisfaction with the provision of information through pregnancy, birth, and the postnatal period.

3.1.2 Infant birth weight

One systematic review, one RCT, and one quasi-experimental study measured the relationship between ANE and infant birth-weight.

Systematic review: The systematic review³⁸ assessed the effectiveness of a range of psychosocial interventions on reduction of low birth-weight. The only effective interventions were found to be smoking cessation programmes, the overall impact of which was found to be modest. No effect on low birth weight was found for antenatal groups or preterm birth education, or for home visiting, counselling, nutrition focused programmes or work counselling.

RCTs: One RCT assessed the effect of massage therapy on 84 US depressed pregnant women.³⁹ Participants were recruited during the second

trimester of pregnancy and randomly assigned to a massage therapy group, a progressive muscle relaxation group or a control group that received standard prenatal care alone. The findings showed that the massage group had reduced fetal activity and lesser incidence of prematurity and low birth-weight, as well as better performance on the Brazelton Neonatal Behaviour Assessment.

Quasi-experimental studies: One quasi-experimental, comparison group design evaluated the effectiveness of the BabyTalk programme⁴⁰ using historical controls. BabyTalk comprises a voluntary programme of 9 – 10 sessions led by a health educator who specializes in adolescent health. The protocol of sessions follows an emergent curriculum model that responds to the immediate needs of the participants. This study found that BabyTalk participants were significantly less likely than adolescents in the historical comparison group to receive inadequate prenatal care or to have a low-birth-weight infant.

3.1.3 Breastfeeding

One review-of-reviews, and a further RCT (2 papers), 2 pre-post intervention studies, and one survey examined the effectiveness of antenatal classes on breastfeeding.

Review-of-reviews: NICE⁴¹ guidelines on breastfeeding are based on a comprehensive and detailed meta-review of four systematic reviews and comprise a total of 210 primary studies of interventions to promote initiation and continuation of breastfeeding. Some of the interventions evaluated begin in the antenatal period, and findings show that group-based, interactive, culture-specific, antenatal to postnatal classes can be effective in promoting the initiation of breastfeeding by women from low-income groups. Antenatal group-based or individual peer support programmes can be effective in increasing rates of initiation among women on low incomes who have expressed a wish to breastfeed.

Randomised controlled trials: One large scale (n=1047) study⁴² showed that the CenteringPregnancy model (CPM) was associated with higher uptake of breastfeeding than standard care. Breastfeeding initiation was higher in group care: 66.5% compared with 54.6% (p<.001).

Pre-post intervention studies: Increased breastfeeding rates were reported in a one-group pre- and post-intervention study involving 110 women.⁴³ Compared to women receiving individual care, women participating in CenteringPregnancy had significantly more prenatal visits, increased weight gain, increased breastfeeding rates, and higher overall satisfaction. No significant between-group differences were found in a study of CPM with Hispanic women.⁴⁴ Higher rates of consumer satisfaction were reported for CPM compared to traditional care in all three studies.

Surveys: A large-scale survey of women in Italy (n=9004)⁴⁵ found a positive association between ANE attendance (36% in hospitals, 51% in mother-child health clinics and 13% private) and reduced likelihood of bottle-feeding while in hospital (OR = 0.45).

3.1.4 Maternal self-care and health behaviours

The impact of antenatal education on self-care and health behaviours was assessed in one systematic review, one RCT, two pre-post intervention studies, and one survey.

Systematic review: One systematic review⁴⁶ including 5 studies assessed the effect of ANE on self-care and health promotion behaviours. It is concluded that there is some evidence of the effect of childbirth education on health promotion behaviours, health responsibility, exercise, and nutrition.

RCTs: One large scale (n=1047) RCT⁴⁷ found evidence that the CenteringPregnancy model is (CPM) associated with higher uptake of

breastfeeding than individual antenatal care. Breastfeeding initiation was higher in group care: 66.5% compared with 54.6%.

Pre-post intervention studies: Increased breastfeeding rates were reported in a low quality pre-post intervention study involving 110 women.⁴⁸ Compared with women receiving individual care, women in the CenteringPregnancy Programme had significantly more prenatal visits, increased weight gain, increased breast feeding rates, and higher overall satisfaction. No significant between-group differences were found in a study of CPM with Hispanic women.⁴⁹ Higher rates of consumer satisfaction were reported for CPM compared to traditional care in all three studies.

Survey: A survey of 1193 Australian women who had and had not taken part in ANE⁵⁰ found significant between-group differences, favouring ANE, on four health behaviours: cigarette smoking, missed antenatal appointments, breastfeeding, and alcohol consumption during pregnancy.

3.1.5 Maternal mental health

Two systematic review, three RCTs and one survey evaluated the effectiveness of ANE on the prevention and treatment of depression, and the treatment of sub-threshold symptoms of depression.

Systematic reviews: The NICE systematic review⁵¹ evaluated the effectiveness of psychosocial interventions (e.g. psycho-education) in preventing the onset of depression and its treatment during the ante-natal (and post-natal) period.⁵² It included 16 studies (RCTs) of interventions aimed at preventing the development of mental health problems in populations with specific risk factors. The review found no evidence that psychosocial interventions can prevent the onset of depression but recommends social support (individual, including support through antenatal home visiting, or group-based interventions) for women with sub-threshold symptoms of depression who have not had a previous episode of depression or anxiety.

There is no evidence that psychosocial interventions, including group-based antenatal care, can alleviate the symptoms of more severe depression. NICE recommends interpersonal behavioural therapy or psychotherapy for the treatment of diagnosed depression or for women who have had depression.

A second review⁵³ found no studies that met the inclusion criteria.

Randomised controlled trials: Evidence from one RCT⁵⁴ shows that massage therapy could have a beneficial effect on the mood of depressed mothers. Participants were recruited during the second trimester of pregnancy and randomly assigned to a massage therapy group, a progressive muscle relaxation group or a control group that received standard prenatal care alone. The findings showed that the massage group had higher dopamine and serotonin levels and lower levels of cortisol and norepinephrine. The data suggest that depressed pregnant women can benefit from massage therapy.

There is also some evidence that music therapy as an adjunct to ANE, can affect the mental health of depressed pregnant women. One RCT examined the effects of music therapy on stress, anxiety and depression in Taiwanese pregnant women.⁵⁵ Two hundred and thirty-six pregnant women were randomly assigned to music therapy (n = 116) or a control (n = 120) group. The music therapy group received two weeks of music intervention. The control group received only general prenatal care. The music therapy group showed significant decrease in measures of stress, anxiety and depression after two weeks. The control group showed a significant but lower decrease in stress after two weeks.

One RCT evaluated the STEEP Project (Steps Towards Effective, Enjoyable Parenting), a parenting programme that begins in late pregnancy and involves bi-weekly home visits starting pre-natally until the infants' first birthday.⁵⁶ Mother-infant group sessions were offered in parallel, with the aim of promoting healthy parent-infant relationships and preventing socio-emotional

problems. At the 19-month follow-up, intervention mothers had lower depression and anxiety scores and were more competent in managing their daily life than control mothers.

Surveys: A survey of 1193 primiparous Australian women⁵⁷ found no differences between women who did and did not take part in ANE on measures of emotional well-being. Attenders were no more confident about looking after their infants at home or less likely to have symptoms of depression eight months after birth.

3.1.6 Men's preparation for childbirth and fatherhood

One systematic review, one RCT, and six pre-post intervention studies (seven papers) examined the benefits of antenatal classes on men's preparation for their partner's labour, birth and early fatherhood.

Systematic review: One systematic review⁵⁸ identified interventions that are primarily directed at fathers, or in which the intervention included a significant component in terms of preparation for fatherhood. This review covered both the antenatal and postnatal periods, and included one US RCT (2 papers) of an intervention in the antenatal period evaluating the effectiveness of a prenatal intervention programme designed to provide young, low SES fathers-to-be with information, insights, and clinically appropriate techniques in responsive care for infants. Intervention group fathers received two intensive 1¹/₂-hour sessions emphasising the natural capabilities of the baby before birth and as a newborn, and the need for sensitive responsiveness to infant partner cues. The results showed that post-intervention fathers were rated as being significantly more sensitive during feeding interactions with their newborn infants. This difference was, however, not present at the one-month follow-up.⁵⁹

Randomised controlled trials: One RCT⁶⁰ compared a standard 6-session hospital-based antenatal programme ('Preparation for Parenthood') with (i)

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the same intervention enhanced with additional sessions on postpartum psychosocial difficulties; and (ii) an enhanced session on play with babies. Both expectant fathers and mothers took part. The intervention was associated with mothers' reporting greater satisfaction with men's involvement in domestic and child care tasks at 6-weeks postpartum. No other main effects were found.

Quasi-experimental studies: One quasi-experimental study⁶¹ found a significant increase in support-seeking behaviours (e.g. contacting their partner's physician, seeking information) among fathers who took part in father-focused discussion classes, compared to men who took part in 'traditional' antenatal classes.

Pre-post intervention studies: One Australian pre-post intervention study involving 212 'new fathers', explored men's postbirth views of antenatal classes.⁶² Men were asked to indicate to what degree antenatal classes had prepared them for childbirth, support to their partners and for lifestyle and relationship changes after the birth. The post-birth findings were compared with a previous exit survey of male attenders at antenatal classes in which fathers-to-be predicted that the antenatal classes had prepared them well on all fronts. Men reported that the antenatal classes had prepared them for childbirth but not for lifestyle and relationship changes after the birth and fathers also reported being less familiar than mothers with family-related services.

An Australian pre-post intervention study of 617 men, evaluated the effect of an all-male discussion forum for expectant fathers led by a male facilitator.⁶³ Men took part in an all-male discussion forum which was offered as an adjunctive component to standard couple-focused antenatal classes. Men were unanimous in their agreement about the benefits of the forum, and in particular the opportunity to discuss issues of importance to them with other men in a similar situation. Men valued the format (i.e. discussion group) in which they could talk about their personal experiences, and recommended

the addition of additional, men-only sessions as an adjunct to standard antenatal classes.

One New Zealand study (2 papers) evaluated men's experience of antenatal classes and of 'fathers-only' sessions within these.⁶⁴ The study involved the use of questionnaires with a group of 134 fathers, followed by focus groups. Focus groups were used to explore fathers' experiences of the antenatal programme that they attended. The findings showed that fathers perceived antenatal classes to be directed primarily at women and to have ignored their needs, that they had found difficulty in expressing themselves openly in what they felt was a woman-oriented setting, and they perceived the father-only group as being accessible and friendly. They also recommended that women take part in a session that focuses on fathers and their role. Men observed that the needs of fathers differ markedly from those of mothers in relation to course content and teaching process. For example, men identified a range of differences from their partners in terms of the process of 'bonding' with their child, which occurs differently for men both in its nature and timing, with several participants stating that this sometimes occurred well after birth. This has important implications in terms not only of the provision of antenatal education but also in terms of addressing the needs of fathers-to-be postnatally.

One UK-based pre-post intervention survey of 78 fathers⁶⁵ examined fathers' willingness to seek information and their level of attendance at antenatal classes in terms of their association with childbirth experiences, relationship with the baby, and depressive symptomatology. Men completed several questionnaires within 6 days of childbirth and at 6-weeks postpartum. The study found that although fathers' attendance at antenatal classes may have positive consequences for them and their partner, for some fathers, attendance at classes was associated with less positive reports of the experience of childbirth. The study also found that the way in which men experience childbirth may have some influence on their subsequent emotional functioning.

A small-scale Swedish pre-post intervention study involving 11 men explored men's expectations and experiences of childbirth preparation and childbirth.⁶⁶ The study involved three tape-recorded interviews before and after childbirth preparation, and between one and three weeks after the baby was born. The study found that participation in childbirth was more demanding than had been expected. Men felt unprepared for an unpredictable process, the experience of time and pain, the woman's action, and their own reactions. It is recommended that midwives meet men individually, design childbirth preparation to address the needs of men, discuss expectations with regard to their role, and assess their experiences during the birth process.

One pre-post intervention study assessed the effect of Parentcraft classes with and without adjunctive sessions with a male facilitator.⁶⁷ Men and women who attended sessions where there was a male facilitator reported favourably on the innovation in practice. While opinion among midwives was divided over the merits of this development, both men and women were reported to talk more freely in single-sex groups.

3.1.7 Transition to parenthood: partner relationship, parenting and child outcomes

Four RCTs and two quasi-experimental studies assessed the effectiveness of antenatal classes that focus on the transition to parenthood. Outcomes examined include the quality of partner relationship/partner support; early childcare/parenting skills; and child outcomes.

Randomised controlled trials:

One Canadian RCT⁶⁸ assessed the effect of two second-trimester classes facilitated by two social workers. Seventy primiparous, low-risk couples were randomised to receive didactic sessions, role playing and values-clarification exercises or to a standard treatment control group. Classes were based on a previous assessment of the educational needs of postpartum couples. The experimental group scored significantly lower in anxiety and higher on dyadic

adjustment at both postpartum time periods compared with the no-treatment control group. The experimental group also reported better postpartum adjustment.

One US RCT⁶⁹ evaluated the effect of the Family Foundations programme on 169 primiparous couples in terms of partner relations, family interaction and child behaviour. Intervention couples participated in videotaped family observation tasks at pretest (during pregnancy) and one-year postpartum. Evidence of significant program effects at follow-up emerged for coparenting, parenting, couple relationship, and child self-regulatory behaviours. The authors conclude that targeting the co-parenting relationship during the transition to parenthood represents an effective, non-stigmatising way of promoting parenting quality and child adjustment.

One US RCT evaluated the STEEP-Project (Steps Towards Effective, Enjoyable Parenting), which comprises a parenting programme that begins in late pregnancy and involves bi-weekly home visits starting pre-natally until the infants' first birthday.⁷⁰ Mother-infant group sessions were offered in parallel, with the aim of promoting healthy parent-infant relationships and preventing socio-emotional problems. At the 19-month follow-up, intervention mothers had a better understanding of their infants' needs and provided a more stimulating and organised home environment than controls.

One RCT conducted in Turkey investigated the effect of including men in antenatal education.⁷¹ An antenatal clinic-based education programme for women and for couples was compared to a community-based antenatal education programme for expectant mothers and expectant fathers. The study found positive effects of including men in clinic-based programmes in the area of post-partum family planning. In the community-based programme positive effects among men were also seen in the areas of infant health, infant feeding and spousal communication and support. The authors concluded that free antenatal education should be made available to all

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expectant mothers and when possible, men should be included, either together with their wives or in separate groups.

Quasi-experimental studies: One non-randomised controlled trial evaluated the effectiveness of PIPPIN (Parents and Infants in Partnership), which comprises an attachment-based parenting programme involving both fathers and mothers, beginning in the antenatal period and continuing beyond childbirth.⁷² PIPPIN compared the adjustment of couples who participated in the programme with a waiting-list control group. The findings suggest that participation in the programme led to a significant increase in psychological well-being, parental confidence, and satisfaction with the couple and parent-infant relationship in the postnatal period.

One non-randomized controlled study assessed the effect of a prenatal couple and group-based intervention on parent-child interaction post-birth.⁷³ The study compared treatment group (TG) couples who attended an additional prenatal three-class series with a control group (CG) comprising standard childbirth education classes on measures of videotaped parent-child interaction. The intervention class focused on individual and couple changes in meaning/identity, roles, and relationship/interaction during the transition to parenthood. It addressed mother/father roles, infant communication abilities, and patterns in the first 3 months of life, using a mutually enjoyable, strengths-based focus. The study found higher scores for treatment group mothers in sensitivity to cues, for fathers in social-emotional growth, for couples in social-emotional growth and for couple response to child distress. The authors conclude that this intervention helps couples to see themselves as developing with their infants over time, and to view their infants in new ways that will help develop satisfying, self-reinforcing patterns of interaction, and reduce the risk of child maltreatment or neglect. The findings also suggested, however, that both men and women would have preferred more information about the postnatal period to be provided by antenatal classes. Eighty-six percent of participants expressed the wish for more information about caring for the new baby.

3.1.8 Transition to parenthood: adolescents

One RCT and two non-experimental studies evaluated the effect of ANE preparing adolescent parents-to-be them for parenthood (see also Fathers, above).

Randomised controlled trials: The STEEP (Steps Towards Effective, Enjoyable Parenting) programme is designed for teenage mothers at high risk. It begins in late pregnancy and involves bi-weekly home visits starting pre-natally until the infants' first birthday. An RCT conducted in the US⁷⁴ showed that at 19-months follow-up, intervention mothers had lower depression and anxiety scores and were more competent in managing their daily life compared with control mothers. They also had a better understanding of their infants' needs and provided a more stimulating and organised home environment.

Controlled Studies: One quasi-experimental study used historical controls to evaluate the effectiveness of the BabyTalk programme.⁷⁵ BabyTalk is a voluntary programme of 9 – 10 sessions led by a health educator who specializes in adolescent health. The protocol of sessions follows an emergent curriculum model that responds to the immediate needs of the participants. The study found that BabyTalk participants were significantly less likely than adolescents in the historical comparison group to receive inadequate prenatal care or to have a low-birth-weight infant, but that they did not differ in maternal weight gain.

Non-experimental studies: One pre-post intervention study of the effects of PREP for Effective Family Living program (PREP) on self-esteem and parenting attitudes⁷⁶ found that teenagers who completed both the prenatal class and the PREP program scored higher on democratic parenting attitudes than did participants in the 2 comparison groups.

3.1.8 Enhancement of social support

One RCT and 2 surveys measured the effectiveness of antenatal education in terms of its impact on levels of social support outside the family.

Randomised controlled trial: One RCT conducted in the US, evaluated the effects of a nursing intervention on prenatal and postpartum maternal role adaptation among 47 military wives (Baby Boot Camp).⁷⁷ Women married to men in the military may experience difficulty during the transition to motherhood attributable to the additional stressors of military life and inability to access traditional support systems. The strategies used in Baby Boot Camp included identification of non-traditional external resources and development of internal resources to facilitate maternal role adaptation. The study found that Baby Boot Camp participants experienced an increase in external and internal resources immediately after the intervention. However, these differences in resources were not sustained at 6-weeks postpartum.

Surveys: A postal survey of 1197 Swedish (or Swedish-speaking) women concluded that while participation in childbirth and parenthood education classes did not seem to affect first-time mothers' experience of childbirth and assessment of parental skills,⁷⁸ it was associated with an expansion in the social network of new parents. One year after giving birth, 58% of the mothers had met with other class participants. This outcome was appreciated by participants who had otherwise made no significant gains.

A UK survey undertaken at Birmingham Women's Hospital⁷⁹ assessed the effect of National Childbirth Trust's courses on parents' knowledge, empowerment to make choices, and confidence in caring for the baby. The survey found that classes had limited impact on the development of social support (friendship with other new parents) even though this was something which participants had desired and expected.

3.2 COST-BENEFIT OF GROUP-BASED ANTENATAL EDUCATION

The provision of antenatal education and support to parents is based on the belief that a positive birth experience will improve maternal and paternal mental health and create a basis for better physical and mental health of infants. As with other parent support interventions, such services are underpinned by the premise that early advantages in terms of children's cognitive and emotional development will carry on into later life, and that these benefits accrue not only to the individual, but also to society through improved health and mental health, reduced crime rates and lower use of costly public services. Further, early childhood interventions are increasingly seen as an important economic investment in human capital that can generate large future benefits through the creation of a highly qualified and productive workforce.⁸⁰

However, while there has been extensive research on the effectiveness of antenatal care on a range of maternal and child health outcomes, there is limited evidence of the cost-benefit or cost-effectiveness of group-based antenatal parent education that is relevant to the UK.

Two studies of the cost-benefit of parenting interventions were identified, of which the most pertinent (because of its narrower focus) is a review by NICE (2006) of the cost-benefit of group-based parent education and parent training aimed at treating children's conduct disorders.⁸¹ Cost-estimates are based on assumed improvements in quality of life. Current estimates of costs for group-based programmes range from £500 per family attending a clinic-based programme to £720 per family attending a community-based programme: both estimates are based on a 2-hour session each week for 10 weeks, in a group of 10 families. Assuming a typical programme improves quality-of-life by 5%, the incremental cost-effectiveness ratio (ICERs) is estimated to be in the region £12,600 per quality-adjusted life year (QALY) for a group clinic-based programme. Assuming a typical programme improves quality of life by 10%, ICERs range from £6300 per QALY for a group clinic-based programme to £38,400 per QALY for an individual home-based programme.

3.2 STAKEHOLDER PERSPECTIVES

3.3.1 The need for preparation for the postnatal period

One systematic review, 2 surveys, and 3 qualitative studies examined stakeholder perspectives about the role of ANE in preparing women for childbirth.

Systematic review: The NICE systematic review of antenatal care included 7 descriptive studies of women's views about ANE. These show that although most women appear satisfied with the content of the classes (in terms of information on pregnancy, labour and birth) women expressed a wish for more information relating to postnatal issues, including general baby care.

Surveys: One postal survey involving 1188 pregnant women randomly selected from different locations in the UK,⁸² obtained a 70% response-rate to a follow-up questionnaire sent approximately four months after birth. Findings show that women wanted more information and support about a range of pregnancy topics, labour and the birth, feeding, and postnatal issues. Young women, those from minority ethnic groups and lower social class households, and first-time mothers expressed the greatest desire for additional information and support.

A UK survey undertaken at Birmingham Women's Hospital⁸³ assessed the effect of National Childbirth Trust's courses on parents' knowledge, empowerment to make choices, and confidence in caring for the baby. Postnatal findings (albeit with a small proportion of the original sample group) found that both men and women would have preferred more information about the postnatal period, about the practicalities of caring for a baby and on the ways in which childbirth and early parenting affect the couple's relationship.

Qualitative studies:

One UK-based qualitative study, explored how primiparous mothers and their partners could be better supported during the antenatal period, particularly in relation to the transition to parenthood and parenting skills.⁸⁴ The study involved 24 women, who were interviewed antenatally (at around 28 weeks gestation) and between 3-4 months post-partum. Knowledge about the transition to parenthood was poor. Parents had been unaware of, and surprised at, the changes in the relationship with their partners. They would have liked more information about a range of aspects of parenting and baby care, relationship changes and partners' perspectives prior to becoming parents.

One Australian qualitative study (two papers) used in-depth interviews and a grounded theory approach to explore 13 women's experiences of antenatal classes, what they considered to be important, and how useful they found the information provided.⁸⁵ Four participant-guided interviews were undertaken, three during pregnancy and one post birth. In terms of their experience of antenatal classes in the third trimester, most women were satisfied with the amount of information provided about labour and pain relief. However, for some women the emphasis placed on labouring without drugs was a cause of concern. Women were also less pleased with the amount of information provided concerning breastfeeding and care of the new baby, and they contrasted this lack of information with the large amount of information given about labour and birth. The data also suggest that women would have welcomed more practical advice about breastfeeding and what to expect when feeding.

One UK qualitative research study explored women's expectations about childbirth and motherhood, and compared these to actual experiences, in order to identify where expectations were not being met and to inform the improvement of services.⁸⁶ The study involved two focus groups comprising a midwife, health visitors, a community psychiatric nurse and a nursery nurse, and individual semi-structured interviews with 11 first-time mothers. These

were used to explore ante- and post-natal services and maternal expectations. The study found a need for greater involvement by fathers and health visitors (continuity of care), and more information on practical, emotional and relationship changes.

3.3.2 Participative learning processes

3 qualitative studies and 3 surveys explored stakeholder perspectives about participative processes. Qualitative data about participative processes was also collected as part of one randomised controlled trial, and two pre-post intervention studies.

Qualitative studies: One study investigated 11 Hong Kong Chinese women's perceptions of the effectiveness of antenatal education in their preparation for motherhood.⁸⁷ One of the points to emerge is that large class sizes and didactic mode of teaching inhibited learning.

One observational, descriptive study compared antenatal education of adolescent women with the application of the same intervention on substance abusing pregnant women.⁸⁸ Participants were encouraged to provide feedback about the curriculum for each class by offering suggestions for additions or deletions of content. At the end of the study period, the pregnant adolescent group had been most involved with the class exercises; members of the group provided feedback about content. They were consistently positive in evaluating the entire six-class curriculum and recommended some additional topics. However, this participative programme appears to have had limited effect in engaging substance-abusing women.

Evaluation of the study of antenatal drop-in sessions held at a women's prison⁸⁹ also showed that incarcerated women like to be given space to contribute and the opportunity to express their views and experiences.

Surveys: A postal survey involved 1188 pregnant women randomly selected from different locations in the UK.⁹⁰ 70% also responded to a follow up questionnaire sent approximately four months after birth. One of the findings

was that not all women receive 'woman-centred' care; they wanted an opportunity to talk about their concerns and have their questions answered.

A Canadian study aimed at creating the evidence base for a Ministry of Health led antenatal education programme for the region of Western Quebec. Authors worked with 15 groups of 2–13 participants, using a semi-structured interview guide⁹¹. Participants preferred an interactive, participative learning environment that fostered parents' autonomy and choice, and that prepared them for parenthood, rather than dictated procedure to follow or top-down advice. It was recommended that the teaching process involve processes such as visualisation, relaxation, assertiveness, decision making, problem-solving in small groups, resource-seeking etc. Curriculum could be planned by collaboration between educators and parents rather than educators alone.

Qualitative studies:

Qualitative data collected as part of a non-randomised trial in Australia. This compared standard antenatal education with a participative pilot model grounded in adult learning theory.⁹² In open-ended questions, participants expressed appreciation for relationships with other expectant parents and for gender-specific discussion groups.

A longitudinal, mixed-methods needs assessment was conducted to gain data from first-time expectant and new parents (251 women and 251 male partners).⁹³ Ss were scheduled to have a baby at one of two participating hospitals in Sydney, Australia. A majority of participants were of median/higher SES and white English speaking Australian. Data collection methods were in-depth interviews, focus groups, surveys, and participant observation. The types of programs that these women and men recommended divided into three categories, each with its own "essential ingredients." Two of these categories (which the authors summarised as 'hearing detail and asking questions' and 'learning and discussing' focused on participative learning / discussion methods. (The third category, 'Sharing and Supporting' focused on building relationships with other parents – see Social supports, below). A study by the same authors identified a mismatch

between some of parents' desires with the views of healthcare providers: see Stakeholders perspectives, below).

Pre-post intervention studies:

A desire for client-centred, participative processes also emerged in studies involving fathers. For example, one pre-post intervention study, of 617 men in Australia, evaluated the effect of an all-male discussion forum for expectant fathers, led by a male facilitator.⁹⁴ Men valued the fact that this was a discussion group in which anyone could talk about their own experience and have questions answered.

3.3.3 Opportunities to interact with other parents

Data about opportunities to interact with other parents was collected as part of two qualitative study and two surveys. Qualitative data was also collected as part of one non-experimental study.

Qualitative studies: One Finnish study of both mothers and fathers perspectives found that both parents reiterated their wish that their views and expectations are given due attention in the planning of family training.⁹⁵ Both mothers and fathers agreed that they had had ample opportunity to talk with their group leaders and that there had been enough lectures. By contrast, it was widely felt that there was not sufficient opportunity to talk with other group members.

One UK qualitative study⁹⁶ which involved focus groups comprising a midwife, health visitors, a community psychiatric nurse and a nursery nurse, and interviews with 11 first time mothers, explored different perspectives of antenatal and postnatal services and maternal expectations. Among the themes to emerge from interviews with mothers was their need for opportunities to meet and support other mothers-to-be.

In the longitudinal, mixed-methods needs assessment of primiparous expectant and new parents (251 women and 251 male partners) in Australia⁹⁷ respondents identified three 'essential ingredients', two of which

involved participative learning methods (see previous section) and the third on 'Sharing and Supporting each other' building relationships with other parents).

Surveys: A postal survey of 1197 Swedish (or Swedish-speaking) women concluded that participation in childbirth and parenthood education classes did not seem to affect first-time mothers' experience of childbirth and assessment of parental skills, but that women valued the fact that these classes had given them opportunities to expand their social network.⁹⁸ A year after giving birth, 58% of the mothers had met with other class participants and this outcome was associated with the number of sessions attended. As noted above, the UK survey of women attending classes at the UK Birmingham Women's Hospital⁹⁹ reported respondents' disappointment in not having established the relationships they would have liked with other parents.

Non-experimental trials: One Australian study compared standard antenatal education with a participative pilot model grounded in adult learning theory.¹⁰⁰ In response to open-ended questions, participants expressed appreciation for relationships with other expectant parents and for gender-specific discussion groups.

3.3.4 A focus on fathers

One survey explored stakeholder perspectives about the benefits of antenatal education for men and the transition to fatherhood. Father's views were also assessed as part of 6 pre-post intervention studies, 1 qualitative study in the postnatal period and 1 qualitative study using focus groups that took place in the antenatal period only.

Qualitative Studies: One Australian qualitative study involved 53 men attending antenatal classes with their primiparous partners.¹⁰¹ Men discussed their experiences in focus groups run by male midwives who were also experienced fathers. The findings suggest that many first-time fathers felt

confused as their relationship with their partner changed, and that their roles in relation to the baby and other people were unclear. They described feeling threatened and felt that they responded negatively to the challenges they experienced and were distanced from their partners. Men appeared to be alienated by the manner in which antenatal education was presented. The men also felt that services focused on their partner's labour and the birth of the child and neglected their greatest concerns, which were with their changing identity, their relationships, and their future role as fathers.

Surveys: One antenatal postal survey of 817 UK men¹⁰² in which 57% of men responded to a follow-up questionnaire 3-5 months after the birth found that men showed high levels of dissatisfaction, with one man in three wanting information on nineteen possible topics after antenatal classes were over. This study found that many men perceived ANE to be oriented largely at women and that it pays limited attention to their role and their information and support needs. The survey found that men:

- Want to be involved in their partner's pregnancy and pregnancy care and to learn more about pregnancy, childbirth and life with a new baby;
- Work commitments limit many men's involvement in their partner's pregnancy care, the number of antenatal classes and appointments that they can attend;
- Information and support needs to be targeted towards men in a way that is accessible and appropriate. Young men, ethnic minorities, first-time and socio-economically deprived fathers have specific information and support needs.

Pre-post intervention studies: One pre-post intervention study of 617 men in Australia, evaluated the effect of an all-male discussion forum led by a male facilitator directed at fathers-to-be (see *What Parents Want: Participative Processes*, above).¹⁰³ Men took part in an all-male discussion forum, which was an adjunctive component to standard couple-focused antenatal classes.

Men were unanimous in their agreement about the benefits of the forum, in particular the opportunity to discuss issues of importance to them with other men in a similar situation. They also valued the fact that this was a discussion group in which men could talk about their own experience and have questions answered. Most recommended the addition of more than one men-only session as an adjunct to antenatal programmes.

One British pre-post intervention study (2 papers)¹⁰⁴ explored the needs of first-time fathers in relation to the care, support and education provided by healthcare professionals during the antenatal period, particularly in relation to their preparation for the transition to fatherhood. The study found a lack of support mechanisms for men, lack of involvement in antenatal provision and the need for more information given in the antenatal period on parenting, baby care and relationships.

One further UK-based pre-post intervention study also examined the association between fathers' willingness to seek information and their level of attendance in antenatal classes with childbirth experiences, relationship with the baby, and depressive symptomatology.¹⁰⁵ The study involved a pre-post intervention survey of 78 fathers. Men completed several questionnaires, some within 6 days of childbirth and others at 6 weeks postpartum. The study found that although fathers' attendance at antenatal classes may have positive consequences for them and their partner, for some fathers, attendance at classes may be associated with less positive reports of experiencing childbirth and that the way which men experience childbirth may have some influence on their subsequent emotional functioning.

A Swedish pre-post intervention study explored 11 men's expectations and experiences of childbirth preparation and childbirth.¹⁰⁶ The study found that participation in childbirth was more demanding than any of the men had anticipated. Antenatal education had not prepared them as they had expected, either for the degree of pain involved in labour, for women's experience or for their own reactions. Some men felt that they had not been able to help their partners as they had expected to. The ability to manage

overwhelming emotions was higher among men who had felt most involved in the antenatal period, and who were able to ask for and receive help from the midwife. The authors argue for importance of taking men's needs into account, design childbirth education with men in mind, discuss expectations with regard to men's role and assess their experience during childbirth.

Similar findings were reported in a second, small scale qualitative Swedish study.¹⁰⁷ 10 fathers were interviewed 2–4 months after the birth of their first child. The 'secondary role' assigned to fathers in childbirth and early childrearing complicates fathers' transition to parenthood. The authors highlight the need for information that addresses the specific needs and concerns of fathers, and for male group discussions in order to build networks for first-time fathers.

An Australian pre-post intervention study¹⁰⁸ explored men's postbirth views of antenatal classes. The study found that men reported that the antenatal classes had prepared them for childbirth but not for the lifestyle and relationship changes after the birth, and that fathers were less familiar than mothers with the family-related services.

A New Zealand pre-post study evaluated men's experience of antenatal classes and of 'fathers-only' sessions within these.¹⁰⁹ The study involved the use of questionnaires with a group of 134 fathers, followed by focus groups. Focus groups asked one question only: 'what was your experience of the antenatal programme you attended.' The findings showed that fathers perceived that antenatal classes were directed primarily at women and ignored their needs; they found difficulty in expressing themselves openly in what they felt was a woman-oriented setting; and that they perceived the fathers' only group as being accessible and friendly. They recommended that women take part in a session that focuses on fathers and their role. Men observed that the needs of fathers differ markedly from those of mothers in relation to course content and teaching process, and they identified differences such as, 'bonding' with their child which may occur differently both in form and timing, with several participants stating that this occurred well after birth.

3.3.5 Antenatal education for adolescents

One survey, and one qualitative study, explored the views of young mothers on antenatal classes.

Qualitative study: One qualitative study explored UK teenagers' views on what they wanted from antenatal education.¹¹⁰ The study found that teenagers would have been more likely to attend prenatal classes if they had coincided with their prenatal care visits, suggesting that classes should be offered at a time and venue suitable to their circumstances. The findings also found that teenagers wanted antenatal classes to cover issues such as sexual health and contraception. The authors suggest that these findings point to the need for prenatal classes specifically designed for adolescents to reduce stigmatization and increase attendance.

The small-scale survey (in the UK) of 50 newly delivered women aimed to understand why some did and some did not take part in National Health Service antenatal classes of first-time mothers in the indigenous white population of a large northern city.¹¹¹ The survey was followed by interviews with 18 respondents. Survey using questionnaires, and selected participants were then given an in-depth interview. There was a clear hierarchy in attendance and non-attendance based on social class, with middle class women being the most regular attenders, closely followed by older, married, working class women. However, overwhelmingly, the non attenders were young, unmarried, working class women. Older, married, working class women were found to have attendance patterns which were close to their middle class counterparts, and what differences there were seemed to be based on material factors. Most majority of women felt that antenatal classes were too technical and did not address emotional and psychological issues. However, young, single unmarried women perceived the classes most negatively. If midwives are to attract such young women, their fears and their need for peer support will have to be recognised.

3.3.6 Specific needs of non-European populations/minority ethnic parents

One qualitative study and two surveys examined the perspectives of non-European and minority ethnic groups.

Qualitative studies: One study investigated 11 Hong Kong Chinese women's perceptions of the effectiveness of antenatal education in their preparation for motherhood.¹¹² The study found that women had experienced difficulties making sense of advice (especially dietary advice) that conflicted with traditional beliefs, suggesting the need for the culturally sensitive groups. Women expressed a desire for antenatal educators to work within a framework of adult Chinese learning styles and to address areas where clinical advice may conflict with cultural practice. Studies on the antenatal care needs of other minority populations¹¹³ also highlights the ways in which mainstream antenatal care conflicts with Traveller family orientation, and practices around breastfeeding, rooming-in and the role of men as birth companions.

Surveys: A postal survey involving 1188 pregnant women randomly selected from different locations in the UK¹¹⁴ found that women from minority ethnic groups, as well as young women, primiparas, and women from lower social class households expressed the greatest desire for additional information and support.

A UK survey undertaken at Birmingham Women's Hospital¹¹⁵ assessed the effect of National Childbirth Trust's courses, for parents from minority ethnic groups, and poorer parents, found a need for antenatal classes to be provided at accessible, community-based venues. These findings support those of other studies about the wider antenatal care needs of refugee and asylum-seeking women.¹¹⁶

3.3.7 Providers perspectives and parents expectations

One systematic review and 2 qualitative studies explored the perspectives of service providers.

Systematic review: A systematic review identified one US based study that contrasted parents and educators' priorities.¹¹⁷ Significant differences were found between parents' and educators' priorities in terms of educational topics. The parents rated information regarding pregnancy, the fetus, nutrition, and infant care the highest while the educators rated the tour as the highest priority.

Qualitative studies: One study of midwives found that while most believed that 'women were unable or unwilling to be realistic about the changes and difficulties a baby brings' (i.e. preferring to focus on the birth), they nevertheless contrasted traditional directive/lecture type approaches to provision, with more client-centred/facilitative approaches that could enable participants to discuss their fears and anxieties about the transition to parenthood more openly.¹¹⁸ This study found that midwives believed that group facilitation training 'should be an integral part of midwifery training'.

A qualitative study, in two maternity hospitals in Australia, aimed to understand healthcare professional's views on antenatal education. The study engaged 73 professionals in focus groups.¹¹⁹ Their views were divided into three interrelated categories: "need to know...what's happening," "they won't listen," and "balanced information." Antenatal educators' preferred focus was on pregnancy and only the first couple of weeks after the birth, grounded in their views of what parents needed and were capable of learning at that point. The delineation was counter to that required by the expectant and new parents of the needs assessment. Health professionals' ideas for improving antenatal education were limited and a reluctance to change practice was identified by the authors.

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In contrast, the providers of a new model of antenatal class, developed for fathers and focusing on the transition to fatherhood argued that men were feeling 'ill-equipped to fulfil expectations of them during pregnancy and childbirth'.¹²⁰ Providers observed that in one in three cases male domestic violence towards women begins when the woman is pregnant. Men need to learn to identify and manage fear and anxiety and antenatal classes prepare men for childbirth and beyond.

4. DISCUSSION

4.1 Childbirth and obstetric outcomes

Surveys show that parents-to-be want information about relaxation and pain management, but that the techniques taught in many childbirth classes (e.g. breathing and relaxation) may not in fact reduce the pain experienced in labour, the use of epidural anaesthesia, or improve clinical outcomes. The evidence about the effect of antenatal education on mode of birth is inconclusive.

There is some evidence from a small number of studies that (i) the combination of antenatal education and music therapy was associated with increased relaxation in labour; and (ii) women who took part in standard classes with an additional component aimed at enhancing the use of coping strategies, used such strategies for a larger proportion of their labour than women who attended standard classes.

There is also, evidence that preparation for childbirth, particularly when it has involved participative processes (see below for further discussion), can enhance women's overall satisfaction with the childbirth experience. Women's satisfaction may also be influenced by their sense of control, based in part on having knowledge about the processes involved including information about what to expect, and by their partner's involvement and support.

4.2 Health behaviours, breastfeeding and infant birth weight

There is evidence of an association between engagement in group-based antenatal education and improvement in maternal health behaviours. A large-scale survey in Australia found associations between attendance at ANE and decreased risk of cigarette smoking, fewer missed antenatal appointments, reduced alcohol consumption during pregnancy, and increased likelihood of breastfeeding.

There is also evidence to suggest that group-based education and individual peer-support programmes can be effective in increasing rates of breastfeeding initiation among women on low incomes who have expressed a wish to breastfeed. Large-scale population surveys in Italy and Australia suggest increased uptake of breastfeeding among women who engaged earlier and more fully in antenatal care. The evidence supports the use of the following breastfeeding interventions: peer support schemes, antenatal group-work that has an interactive component and involves local experienced breast feeders as volunteers; and the combination of multimodal education and social support programmes, combined with media campaigns.

Although findings from a high-quality systematic review found no effect for any psychosocial intervention (other than smoking prevention) on low birth weight, two recent studies report promising results: the CenteringPregnancy model of antenatal care was associated with decreased risk of premature birth and of low birthweight, and there is some evidence, based on a single study, that the combination of group-based antenatal care and massage therapy for depressed pregnant women may both relieve symptoms of depression (discussed below) and reduce the risk of infant low birthweight. However, the findings suggest that prevention of LBW is likely to require a long-term comprehensive strategy aimed at promoting women's reproductive and nutritional health, not only during pregnancy, but over the life-course.

Mental health: maternal depression and anxiety

Antenatal education does not appear to be effective in preventing the onset of antenatal anxiety or depression, but there is some evidence that social support (including group-based antenatal education) can improve mood in women with sub-threshold symptoms of depression/anxiety. There is evidence from one study that the STEEP model of antenatal care - a parenting programme for teenagers that begins in late pregnancy and involves bi-weekly home visits starting pre-natally until the infants' first

birthday – is associated with lower levels of depression at the 19-month follow-up. There is also limited evidence, based on a small number of good quality studies, that antenatal education combined with massage therapy or with music therapy can relieve symptoms of depression in pregnant women.

Participative forms of learning

Evidence from qualitative research shows that both mothers- and fathers-to-be desire participative small-group forms of antenatal education in which their own needs and concerns can be addressed. There is evidence from the US that participative classes, such as the CenteringPregnancy model of group-based antenatal care, are associated with improved health outcomes and better preparation for parenthood than standard antenatal care. Qualitative studies included in the NICE review (2008) and additional studies identified in this review provide some evidence that women’s overall experience of childbirth may be improved if they attend client-led classes rather than traditional classes.

The need for client-led, participative classes also emerged from studies of other users including fathers-to-be and ethnic minority parents-to-be. In some studies men expressed the feeling that antenatal classes are geared almost exclusively towards women, with little importance given to their needs. Several studies, particularly in Australia, describe men’s increased satisfaction with antenatal classes that include sessions about fatherhood, men-only sessions in which men can raise questions and concerns, and sessions that are led by older, more experienced fathers.

Preparation for parenthood that begins in the antenatal period

More recently antenatal group-based parenting programmes aimed at promoting the transition to parenthood (focusing in particular on issues such as the emotional changes that parents experience at this time, parenting skills, and issues such as bonding and attachment) have been developed and evaluated. Such interventions aim to be responsive to the priorities of participating parents and generally include sessions addressing the transition

to parenthood; the couple relationship and preparation for new roles and responsibilities; the parent-infant relationship; problem-solving and conflict-resolution skills.

There is increasing evidence of the effectiveness of parenting programmes that begin in the antenatal period and continue beyond it, in terms of maternal psychological well-being, parental confidence, and satisfaction with the couple and parent-infant relationship in the postnatal period. Evidence suggests that targeting the relationship between parents and co-parenting can be an effective, non-stigmatising way of promoting better individual, couple and child adjustment.

Social support

Surveys in the UK have shown a gap between participants' expectations and their experiences in terms of the need of parents-to-be for opportunities to establish supportive relationships as part of antenatal education. The research suggests that a number of factors are associated with the level of support that participants experience including number and size of groups, social mix, the facilitation of opportunities for interaction, and classes that continue beyond childbirth. Classes provided by the voluntary sector (e.g. NCT) appear to provide exemplary models of such provision.

Stakeholder Perspectives

Fathers: The benefit of traditional antenatal classes to men is hard to assess. Large-scale studies show high levels of dissatisfaction with both their content and delivery. However, the evidence suggests that men's engagement in antenatal classes can increase both the emotional and practical support that they provide to their partner, which in turn enhances the overall quality of their relationship with both their partner and newborn infant.

Qualitative studies suggest that antenatal classes need to be completely inclusive of fathers-to-be, who need the opportunity to focus on their own experiences, on changes in their relationship, and on the preparation for

fatherhood. Like women, men value participative learning processes and a focus on the transition to parenthood and early parenting.

There is consistent evidence that men value the opportunity to speak to other men about issues that concern them and that first-time fathers value sessions that are facilitated by experienced fathers. Small-scale studies involving low-income adolescent fathers-to-be show the potential promise of male-only parenting preparation classes with these potentially vulnerable young men. There is also evidence of the value of including separate, men-only sessions in mainstream antenatal education and of sessions for both men and women on the transition to fatherhood. Men benefit from opportunities to focus on their experiences including that of depression and anxiety.

One study showed that although most men benefit from attendance at classes, for some it may be associated with less positive reports of about the childbirth experience, which may in turn affects subsequent emotional functioning.

Women in high-risk groups

Qualitative research in the UK suggests that adolescents have difficulties accessing antenatal education, due in part to concerns about being stigmatized. There is also some evidence that antenatal education, which is designed specifically for and with adolescent girls, that is participative, and that continues into early parenthood, can improve breastfeeding, health, and maternal mental health, and can improve child outcomes postnatally. There is evidence that pregnant adolescent girls benefit from integrated programmes with support from a range of sources (e.g. combination of nurse home visiting or enhanced Doula Programmes, and group-based support including antenatal classes).

There is no evidence of the effectiveness of group-based antenatal education as a stand-alone support for drug-dependent pregnant women. The needs of women who are in remission from drugs can be best served through the provision of individualised, multimodal programmes that include a parent-

education component. One example of such a programme, not included in this review because it does not necessarily begin antenatally, is the Parenting Under Pressure (PUP) programme.²

Although there is limited research on antenatal preparation for women in prison, numerous studies have highlighted the increased health and mental health risks of this vulnerable population. The evaluation of one programme shows that women in prison, like women elsewhere, value participative learning methods, the possibility of social support, and learning about early child care as well as the acquisition of knowledge about labour and childbirth.

Parents from non-European backgrounds

A limited number of studies addressed the need for awareness of cultural context and sensitivity in the delivery of antenatal education.³ One study of community-based antenatal education in Turkey suggests a need to provide separate groups for men and women on the grounds that this may encourage men's participation in what is traditionally seen as 'women's space'. Similarly, educators need to be aware of the conflict between biomedical perspectives that conflict with traditional knowledge. Hong Kong Chinese women highlighted the difficulties in reconciling dietary instructions provided in didactic parenting classes and the advice they received from their relatives. Similarly, conflicts between the expectations of antenatal healthcare providers and traditional knowledge and culture have been observed in Traveller communities in Ireland.

Although few empirical studies were identified, there is emerging evidence of the differential needs, within antenatal care, of refugees and asylum seeking women.¹²¹ The research highlights the many obstacles faced by such women in accessing antenatal care, and other barriers such as language. The authors point to the need for the provision of information in a variety of languages and

² Practice and evidence base on <http://www.pupprogram.net.au/>

³ Purely descriptive studies were excluded as they contain no outcome measures. An example of a culturally specific form of parent education is included in Malata, A., Hauck, Y et al (2007). Development and evaluation of a childbirth education program for Malawian women. *Journal of Advanced Nursing*, 60(1), 67-78.

community-based classes, as part of wider measures to integrate refugee women into the healthcare system.

Future Research

There is a lack of high-quality UK-based research about the nature and effectiveness of interventions delivered during the antenatal period in supporting parents to promote optimal outcomes for children. There is an urgent need for further UK-based research in the following areas:

- The best methods of providing antenatal preparation for the transition to parenting;
- Best methods of supporting fathers;
- Best methods of supporting parents from minority ethnic groups;
- Methods of supporting high-risk parents including alcohol and drug abusing parents, and parents with serious mental health problems.

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5. TABLES

(1) Systematic reviews of antenatal education

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Gagnon (2000)	Individual and/or group-based antenatal education	To help prospective women/couples prepare for childbirth	Educators, primarily nurses/health professionals	Interventions ranged from one/two contacts, to a series of sessions delivered over several weeks. Session length ranged from one hour to two and a half hours	Expectant mothers and fathers; Primarily hospital based	Antenatal
Koehn (2002)	Antenatal classes – focus on preparation for childbirth	To help prospective women/couples prepare for childbirth.			Expectant mothers and fathers; Primarily hospital based	Antenatal
Magill-Evans (2006)	Interventions aimed at increasing fathers support to partners and capacity to engage sensitively with infants in postnatal period	To promote positive parent- child relationships and optimal child development.	Health professionals; self administered; unspecified.	Variety of interventions ranging in duration from once only to activities over several months	Fathers (not exclusively) of children <5 years old, predominantly middle class families, although 2 studies specifically addressed low income families; Clinic, community or home setting.	From antenatal period to child age 5+
NICE (2008)	Antenatal classes – focus on preparation for childbirth	To help prospective mothers prepare for childbirth.	To help prospective mothers prepare for childbirth.		Expectant mothers/couples; Primarily hospital based.	Antenatal

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Critical Appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results
Gagnon (2000)	Yes	RCTs	Yes	Yes	Meta-analysis	Confidence intervals
Koehn (2002)	Yes	Primarily descriptive and qualitative.	Yes	No	Narrative	Narrative
Magill-Evans (2006)	Yes	Range of study designs. 1 RCT (2 papers) of group based antenatal classes for men.	Yes	Yes	Effect of individual studies	No measures of precision provided
NICE (2008)	Yes	RCTs, pre-post intervention studies, systematic review; qualitative studies of stakeholder views.	Yes	Yes	varied	Significance levels of individual studies where possible; narrative for qualitative studies

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Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Gagnon (2000)	Five trials of antenatal education focused on childbirth and care of baby in the immediate postnatal period; Four studies of interventions that included focus on parenting as well as preparation for childbirth, and which involved either fathers alone, or fathers and mothers	Knowledge acquisition; anxiety; maternal self confidence; labour pain and use of medication; partner involvement at birth; breastfeeding; infant care abilities; general social support; psychological adjustment to parenthood; obstetric interventions	Increased vaginal birth among women who had had caesarean delivery, as a result of face to face or media based education. Otherwise no consistent results found	There is a lack of high quality evidence and the effects of antenatal preparation for childbirth remain largely unknown
Koehn (2002)	12 studies evaluating childbirth education	Health promotion behaviours; influences on self-care; impact on coping/anxiety; quality of birth experience; Ss experience and recommendations for antenatal education.	Evidence that antenatal education can affect health behaviours; inconsistent evidence on effects relating to self-care; evidence of effect on reduction of anxiety. Difficulties in measuring effect on perceptions relating to birth experience. Stakeholder's views: participants wanted antenatal classes to include more content on parenting.	No included studies addressed multiple factors, as opposed to childbirth education alone, limiting reliability of results

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Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Magill-Evans (2006)	14 papers, including 1 study (2 papers) of a group-based preparation for fatherhood class in the antenatal period	Primary outcomes included: father's sensitivity, engagement with child, parenting, self-efficacy, knowledge of childcare, anxiety; In one included study of antenatal education, paternal sensitivity was the principal outcome measured	Evidence in one study (2 papers) of increased sensitivity in fathers who took part in a brief antenatal preparation for parenthood class, over controls. Effects measured at two points in the early postnatal period. No significant difference after one month	More research is needed to determine the appropriate dose of effective interventions, their impact over time, and the differential impact of interventions with mothers and fathers
NICE (2008)	1 systematic review and 9 trials of antenatal education focused on childbirth and care of baby in the immediate postnatal period; Seven qualitative studies of women's experience and opinions about antenatal classes	Knowledge acquisition; obstetric interventions labour pain and use of medication; anxiety; maternal self confidence; breastfeeding; Ss experience and recommendations for antenatal education.	Little evidence that attendance at ANE improves birth outcomes (such as mode of birth or use of analgesia); Some evidence that women's experience of childbirth may be improved if they attend client-led classes compared with more traditional classes; <i>Stakeholder's views:</i> Although most women appear satisfied with the content of the classes (in terms of information on pregnancy, labour and birth) women expressed a wish for more information relating to postnatal issues, including general baby care.	Although there is little evidence that attendance in ANE affects any birth outcomes, available evidence shows that, for women and their partners, knowledge regarding pregnancy, birth and parenting issues is increased following attendance at antenatal classes, and that the wish to receive this information is a strong motivator for attending classes.

(2) Additional selected systematic reviews

(i) Breastfeeding

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
NICE (2006)	<p>4 systematic reviews of health-sector led interventions to promote breastfeeding;</p> <p>Peer support programmes; professional support. Health education; combined health education and professional support; combined professional and peer support;</p> <p>Professional training; hospital practices; multisectoral interventions; media programmes; breastfeeding literature.</p>	To promote initiation/ continuation of breastfeeding	Health professionals; peers/volunteers; media campaigns; multimodal.	Varied	Pregnant women, mothers of newborn infants and women who may decide to breastfeed in future. Variety of settings including home; clinic/hospital	Women during ante-natal and/or postnatal period

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Critical appraisal

Author (Year)	Focus of the review	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results
NICE (2006)	Effectiveness of interventions on initiation and/or continuation of breastfeeding.	Systematic reviews	Yes	Yes	Quantitative - Effect sizes, not combined	No measures of precision provided

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
NICE (2006)	<p>4 systematic reviews of interventions to promote breastfeeding (antenatal and postnatal period) included - 210 studies;</p> <p>Studies included: health sector initiatives; training of health professionals; social support from health professionals; peer support; media campaigns; multifaceted interventions</p>	<p>Primary outcome: initiation of breastfeeding;</p> <p>Secondary: duration and exclusivity of breastfeeding</p>	<p>Three types of intervention have been shown to be effective in promotion of breastfeeding:</p> <ul style="list-style-type: none"> -Interactive health education in small groups for women who have decided to breastfeed; -One-to-one health education for women who have not decided to breastfeed; -Interventions that involve peer support; - Packages of interventions (combinations of the above) in addition to with structural changes to the health sector, and/or health education initiatives can be effective 	Peer support programmes, particularly for women from low income groups; implementation of a package of interventions with emphasis on peer support, good practice health education activities and structural changes to maternity practices; revision of good practice guidance on breastfeeding

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(ii) Psychosocial interventions to prevent low birth weight

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Lu (2003)	Prenatal care for preventing low birth weight. Clinical, psychosocial and health promotion interventions included	Prevention of low birth weight	Mainly unspecified; some clinicians	Unspecified	Targeted at pregnant women. Setting largely clinical	Antenatally

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Design of included studies	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results
Lu (2003)	Yes	Not specified	Yes	Yes	Quantitative - Effect sizes, not combined	Confidence Intervals provided

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Lu (2003)	Not specified; Early and continuing risk assessment; health promotion; medical and psychosocial interventions	Clinical and psychosocial outcomes; Very varied	Neither preterm birth nor intrauterine growth restrictions can be effectively prevented by prenatal care in it's present form	Preventing LBW requires a longitudinally and contextually integrated strategy to promote optimal development of women's reproductive health, not only during pregnancy, but over the life course

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(iii) Antenatal mental health

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Dennis (2007)	Psychosocial and psychological interventions	The treatment of antenatal depression	Trained therapist	16 x 45 minute weekly individual sessions	Depressed pregnant women, setting not identified	Delivered during antenatal period
NICE (2007)	Psychological and psychosocial interventions for prevention / treatment of depression in the antenatal and postnatal period ⁴	Identification and treatment of mental health problems including anxiety and depression in the ante/postnatal period	Wide ranging, primarily health professionals. See full report	Varied	Women with or at risk of mental health problems in the ante/postnatal period	Antenatal and/or postnatal period

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Design of included studies	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?
Dennis (2007)	Yes	RCTs	Yes	Yes	Individual test statistics

⁴ NICE systematic review/ guidelines also cover pharmacological treatments, and prevention / treatment of a range of mental health problems including psychosis, schizophrenia which are beyond the scope of this review.

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NICE (2007)	Yes	Range of study designs, including RCTs, cohort studies, non-randomised controlled trials.	Yes	Yes	Quantitative - Effect sizes, not combined
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Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Dennis (2007)	One RCT comparing psychosocial and psychological interventions	Maternal outcomes relating to depressive symptomatology	Interpersonal psychotherapy effective in reducing depressive symptoms in pregnant women	Evidence is inconclusive regarding the use of interpersonal psychotherapy for the treatment of antenatal depression
NICE (2007)	<p>16 studies of psychological and psychosocial treatments of populations at identified risk</p> <p>16 studies of psychological and psychosocial interventions aimed at preventing mental health disorders for women at no identified risk</p>	Maternal mental health, maternal-infant interaction.	<p>Brief identification measures (e.g. 3 questions) effective in identifying symptoms of depression in ante- post-natal period;</p> <p>Some evidence that psychosocial interventions to prevent the onset of depression are effective with women in women at risk, particularly those who have sub-threshold symptoms of depression/anxiety;</p> <p>No evidence that such interventions are effective with women at low risk;</p> <p>Brief psychological treatment e.g. interpersonal psychotherapy or CBT effective in alleviation of symptoms of depression/anxiety; Very little evidence of differential effectiveness; Good evidence for individual therapy; Mixed results for group treatment.</p>	<p>CBT or interpersonal therapy for treatment</p> <p>Psychosocial interventions for women with sub-threshold symptoms and at identified psychosocial risk</p>

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Individual studies

(ii) Effectiveness of antenatal education

Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Baglio (2000)	Retrospective study. A knowledge, attitude and practise (KAP) survey on care during pregnancy, delivery and in the post-natal period was carried out by the National Institute of Health in Italy	9004 women	Preparation for childbirth classes, in hospitals, clinics or private 23% had attended antenatal classes. (36% in hospitals, 51% in Mother-child Health clinics and 13% privately Italy	Obstetric outcomes Breastfeeding Knowledge of family planning Overall satisfaction with childbirth experience	Women who attend antenatal classes, especially at MCH clinics, have a lower risk of: (i) Caesarean section (ii) Bottle feeding while in hospital (iii) Receiving no information on contraception (iv) Being dissatisfied with the experience of childbirth Italian women attending ANE via any provider tend to be well-educated, primigravidae and resident in the North of Italy
Baldwin (2006)	Two-group, pretest/posttest design	98 women	CenteringPregnancy model (CPM) gives patients extended time with the provider in a group setting. Participants selected either CPM (n = 50) or standard prenatal care (n = 48) US	Knowledge of pregnancy Social support Health locus of control Overall satisfaction	Significant differences favouring CPM group in knowledge of pregnancy. High pre-test scores for social support and health locus of control contributed to a ceiling effect, which limited the potential for change. There was no significant difference on overall satisfaction. Elements of study design (e.g. self-selection) may limit reliability of these results

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Bergström (2009)	Randomised controlled multicentre trial	1087 primiparous women and 1064 of their partners at fifteen antenatal clinics .. .	<p><i>Natural</i> group: Antenatal education focussing on natural childbirth preparation with training in breathing and relaxation techniques (psychoprophylaxis).</p> <p><i>Standard care</i> group: Standard antenatal education focussing on both childbirth and parenthood, without psychoprophylactic training.</p> <p>Both groups: Four 2-hour sessions in groups of 12 participants during third trimester of pregnancy and one follow-up after delivery</p> <p>Sweden</p>	<p>Experience of psychoprophylaxis on:</p> <p>Epidural analgesia</p> <p>Experience of childbirth</p> <p>Parental stress</p>	<p>No significant between group differences among women or men in:</p> <p>(i) the experience of childbirth (ii) parental stress</p> <p>The epidural rate was 52% in both groups</p> <p>70% of the women in the natural childbirth group reported having used psychoprophylaxis during labour. A minority in the Standard care group (37%) had also used psychoprophylaxis. Subgroup analysis where these women were excluded did not change the principal findings</p> <p>Natural childbirth preparation including training in breathing and relaxation did not decrease the use of epidural analgesia during labour, nor did it improve the birth experience or affect parental stress in early parenthood in primiparous women and men, compared with a standard form of antenatal education</p>

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Browning (2000)	RCT	11 primiparous women	<p>Childbirth education classes, prior music therapy sessions, coaching in relaxation and breathing techniques.</p> <p>Coach/partner along with music therapy during labor.</p> <p>Control group received intervention and coach/partner, but no music therapy prior to or during labour.</p> <p>Canada</p>	<p>Relaxation</p> <p>Pain management</p> <p>Experience of childbirth</p>	<p>Significant between-group differences favouring adjunctive music therapy in: (i) Relaxation three hours prior to delivery (ii) Personal control during labour and childbirth</p> <p>No between-group difference in the amount and frequency of medication requested or accepted</p>

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Bryan (2000)	Non-randomized trial using a convenience sample	Treatment group (TG) couples (n = 35) who attended an additional prenatal three-class series was compared to a control group (CG) from childbirth education classes	<p>The intervention class series was based on individual and couple changes in meaning/identity, roles, and relationship/interaction during the transition to parenthood. It addressed mother/father roles, infant communication abilities, and patterns of the first 3 months of life</p> <p>US</p>	Parent-child interaction using the videotaped NCATS tool	<p>Significant differences favouring preparation for parenthood treatment group in:</p> <ul style="list-style-type: none"> • mothers sensitivity to infant cues, • fathers social-emotional growth fostering • couple mean scores in social-emotional growth fostering • couple mean scores in response to child distress • caregiver total • caregiver-child total <p>Higher contingency scores were also found in the TG group. Fewer TG mothers and fathers fell below NCATS lower cut-off scores</p> <p>Interventions that enhance mutual parent-child interaction through increased sensitivity to cues and responsiveness to infant needs or signals are important avenues for facilitating secure attachment, father and mother involvement, optimal development, and prevention of child abuse and neglect</p> <p>This intervention invites couples to see themselves as developing with their infants over time, and to view their infants in new ways that will help develop satisfying, self-reinforcing patterns of interaction</p>

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Chang (2008)	RCT	<p>236 pregnant women</p> <p>Participants were randomly assigned to music therapy (n = 116) and control (n = 120) groups. The music therapy group received two weeks of music intervention. The control group received only general prenatal care</p>	<p>Music therapy as an adjunct to antenatal preparation for childbirth classes.</p> <p>Taiwan</p>	<p>Stress</p> <p>Anxiety</p> <p>Depression</p>	<p>Sig. difference favouring adjunctive music therapy intervention in decreased:</p> <ul style="list-style-type: none"> (i) perceived stress (ii) state and trait anxiety (iii) postnatal depression <p>The control group only showed a significant decrease in PSS after two weeks. This decrease was not as substantial as in the experimental group</p> <p>Results provide preliminary evidence that two-week music therapy during pregnancy provides quantifiable psychological benefits</p>
Covington (1998)	Quasi-experimental, comparison group design	<p>Cohort study with controls. Intervention group: 184 adolescents in Baby Talk programme</p> <p>Historical cohort : 191 adolescents</p> <p>312 geographically close controls recruited from two neighbouring county health departments</p>	<p>Baby Talk is an antenatal preparation programme designed for adolescents.</p> <p>US</p>	<p>Quality of care</p> <p>Maternal weight gain</p> <p>Infant birth weight</p>	<p>When controlling for education appropriate for age, marital status, race, and parity significantly favouring Baby Talk adolescents over historical comparison controls on (i) risk of inadequate prenatal care (ii) infant low birth weight. No significant differences on maternal weight gain</p> <p>Differences between Baby Talk and geographically close controls did not reach statistical significance</p>

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Diemer (1997)	Quasi-experimental study	108 couples (83 completed)	Father-focused discussion classes. US	Men's stress/ psychological symptom status Coping strategies, social support Spousal relations (both supportive behaviour toward their partners and couple-conflict behaviour)	Significant differences favouring father-focused classes found on men's: (i) use of reasoning during conflicts (ii) involvement in housework Both groups of fathers reported significant increase in (i) social network support (ii) baby/pregnancy-related activity Although fathers attending father-focused perinatal classes had higher psychological distress scores at pre-test, they did not differ from fathers attending traditional classes at post-test Neither group substantially increased their overall coping responses, although men in the father-focused group significantly changed their coping efforts by seeking more social support, particularly from their partner's physician
Egeland (1990)	RCT	154 primiparous mothers. 74 randomised into STEEP, 80 into control group	A preparation for parenthood / parenting programme (STEPP) that combines group work and home visits. It begins in the antenatal period and continues into early years. US	Home environment Mother-infant attachment Social support Maternal sensitivity Depression	At the 19-month follow-up, intervention mothers had lower depression and anxiety scores and were more competent in managing their daily life than control mothers

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Emmons (1994)	Pre-post intervention study with controls	28 pregnant adolescent	Prenatal course with an adjunctive component, the PREP for Effective Family Living program (PREP) on self-esteem and parenting attitudes among US	Self-concept Parenting attitudes	Significant differences favouring treatment group on democratic parenting attitudes No significant difference was found among the three groups in terms of self-concept
Escott (2005)	RCT	20 women in enhanced CSE group; 21 women in standard National Health Service (NHS) class control	NHS antenatal education where courses that included either a new method of Coping Strategy Enhancement (CSE) vs. NHS classes with standard taught coping strategies UK	Use of coping strategies Experience of pain and emotions during labour Involvement of birth companions	Women who attended CSE method classes used coping strategies for a larger proportion of their labour than women who attended standard classes Birth companions were more involved with women who learned and used enhanced coping strategies Self-efficacy for use of coping strategies and subsequent experiences of pain and emotions during labour were equivalent between groups

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Fabian (2005)	Prospective survey. Ss completed three questionnaires: during early pregnancy, 2 months, and 1 year after giving birth	A national cohort of 1197 Swedish-speaking women	State-funded preparation for childbirth/parenthood classes developed in Sweden. Sweden	<p>Participants views about antenatal childbirth and parenthood education</p> <p>Differences between participants and non participants on:</p> <ul style="list-style-type: none"> • pain relief • experience of pain • mode of delivery • childbirth overall • breastfeeding • assessment of parental skills 	<p>No statistical differences were found concerning:</p> <ul style="list-style-type: none"> • memory of labour pain • mode of delivery • overall birth experience • duration of breastfeeding • assessment of parental skills <p>ANE participants had a higher rate of epidural analgesia than controls, possibly because of increased knowledge of pain management options</p> <p><i>Participants views</i> 74% of Ss felt ANE helped prepare for childbirth 40% of Ss felt it prepared them for early parenthood</p> <p>Social support: 1 year postpartum, 58% of the mothers had met with other class participants. These outcomes were associated with the number of class sessions</p> <p>Mothers who were young, single, with low level of education, living in a small city, and smokers were less likely to find the classes helpful</p>

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Feinberg (2009)	RCT	169 primiparous couples	Family Foundations, a series of 8 preparation for parenthood classes, delivered before and after birth US	Coparental relationship Parental mental health Parent-infant relationship Infant emotional and physiological regulation	<p>Intent-to-treat analyses indicated significant effects for the Family Foundations programme on:</p> <ul style="list-style-type: none"> • coparental support • maternal depression and anxiety • distress in the parent-child relationship • several indicators of infant regulation <p>Intervention effects were not moderated by income</p> <p>Greater positive impact of the programme was found for (i) lower SES parents and (ii) for families with a father who reported higher levels of insecure attachment in close relationships</p> <p>These findings support the view that co-parenting is a potentially malleable intervention target that may influence family relationships as well as parent and child well-being</p>
Field (2004)	RCT	84 depressed pregnant women recruited in second trimester of pregnancy	Standard prenatal care alone; Standard care with enhanced massage therapy; Standard care with enhanced muscle relaxation US	Symptoms of depression Neonatal outcomes including prematurity and birth weight	<p>Immediately after the massage therapy sessions on the first and last days of the 16-week period the women reported lower levels of anxiety and depressed mood and less leg and back pain</p> <p>By the end of the study the massage group had higher dopamine and serotonin levels and lower levels of cortisol and norepinephrine</p> <p><i>Neonatal outcomes:</i> Changes may have contributed to the reduced foetal activity and the better neonatal outcome for the massage group (i.e. reduced incidence of prematurity and low birthweight), as well as their better performance on the Brazelton Neonatal Behaviour Assessment. The data suggest that depressed pregnant women and their infants can benefit from massage therapy</p>

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Ickovics (2003)	Prospective matched cohort study	458 pregnant women, half received the group prenatal care with women of the same gestational age	CenteringPregnancy Model of group prenatal care compared to standard individual antenatal care. Hospital based US	Premature birth Infant birth weigh Neonatal loss	Birth weight significantly higher in group vs. individual prenatal care. Preterm infants of CPM parents were significantly larger than infants of individual care infants. No significant differences on other outcomes
Ickovics (2007)	Multisite RCT Structured interviews were conducted at study entry, during the third trimester, and postpartum	1,047 primiparous low SES women Mean age of participants was 20.4 years; 80% were African American	Standard care vs. CenteringPregnancy Model (CPM) form of group based antenatal care US	Pregnancy outcomes Psychosocial functioning Client satisfaction Potential cost differences	Using intent-to-treat analyses, significant differences favouring group care were found for: <ul style="list-style-type: none"> • Increased prenatal knowledge , • Preparation for labour and delivery • Increased and had greater satisfaction with care • Increased breastfeeding initiation was higher in group care: 66.5% compared with 54.6%, • Reduced risk of preterm births compared with those in standard care: 9.8% compared with 13.8%, with no differences in age, parity, education, or income between study conditions. Effects were strengthened for African-American women: 10.0% compared with 15.8% • Reduced risk of suboptimal care <p>There was no significant between-group differences in birth weight or in costs associated with prenatal care or delivery</p>

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Klima (2009)	Focus groups	110 low SES predominantly African American pregnant women.	CenteringPregnancy Model (CPM) of group antenatal care. Clinic based. US	Prenatal care Weight gain Breastfeeding overall satisfaction	Compared to women in individual care, women in CenteringPregnancy had - significantly more prenatal visits - increased weight gain - increased breast feeding rates - higher overall satisfaction
Korol (1992)	RCT (prenatal instructors were randomly assigned to groups)	60 pregnant women	Classes either with or without a 1-hr session presenting imagery and visualization techniques to promote relaxation and to present information about the birth process Canada	State anxiety Childbirth experience.	No post class differences in state anxiety were apparent between the imagery and control conditions The hypothesis that a birth visualization format improves memory for information about labour and delivery provided in prenatal classes was not supported
Lumley (1993)	Postal survey	Population based cohort of 1193, of which 292 were primiparous Classes were attended by 245 (83.9%) of primiparous women	Childbirth preparation classes Australia	Differences between primiparous attendees of ANE and primiparous non-attenders on: <ul style="list-style-type: none"> • health behaviours • birth events • satisfaction with care • later emotional well-being of primip women 	Attendance at childbirth preparation classes in Victoria was not associated with differences in birth events, satisfaction with care, or emotional well-being among women having their first child Significant differences occurred between the groups on four health behaviours: cigarette smoking missed antenatal appointments, breastfeeding, and alcohol consumption during pregnancy Differences between women who attended classes and those who did not, with respect to measures of pain and to the use of procedures, interventions, and pain relief, were rare and minor

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Matthey (2004)	<p>A 3*3 between subjects RCT</p> <p>Interview data and self-report information was collected from 202 women at 6 weeks postpartum, and from 180 women at 6 months postpartum</p>	268 men and women recruited antenatally	<p>Participants randomly allocated to one of three conditions: usual service ('control'), 'Preparation for Parenthood' experimental ('empathy'), or non-specific control ('baby-play')</p> <p>The intervention consisted of a session focusing on psychosocial issues related to becoming first-time parents</p> <p>Participants discussed possible postpartum concerns in separate gender groups for part of the session, and then discussed these issues with their partners</p> <p>In the non-specific control condition, the session focused on the importance of play with a baby, with videotapes and discussion around how parents can play with infants</p> <p>Australia</p>	Postpartum psychosocial adjustment	<p>At 6 weeks postpartum women with low self-esteem prior to intervention were significantly better adjusted on :</p> <p>(i) measures of mood and (ii) sense of competence than low-self-esteem women in either of the two control conditions</p> <p>This effect was related to women's increased feeling of being supported by their male partners. Men's increased sensitivity was related to an increased level of awareness of how women were experiencing the early postpartum weeks</p> <p>Preparation for Parenthood was effective in reducing postpartum distress in some first-time mothers at 6 weeks postpartum</p>

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Midmer (1995)	RCT	70 primiparous, low-risk couples	Antenatal parenting communication classes based on a previous assessment of the needs of participating couples vs. standard care controls. Canada	Anxiety Dyadic adjustment	Significant differences favouring experimental group on lower anxiety and increased dyadic adjustment at both postpartum time periods The experimental group also reported a higher degree of postpartum adjustment
National Childbirth Trust and Birmingham Women's Hospital (2007)	Survey with additional interviews and focus groups	Women and men in the antenatal and postnatal period. 666 Ss contacted. Assessment of pre-course expectations; 274 / 666 respondents Post-course/antenatal feedback 655 / 666 respondents Assessment 6 months after course completion. 56/666 respondents. Interviews (36, mainly women) and discussion groups (30 parents) with non-attenders recruited through referrals and snowballing.	National Childbirth Trust (NCT) childbirth preparation course at a large public hospital. UK	Awareness about types of birth Empowerment to make choices Confidence about being parents Confidence in making decisions about baby feeding and baby care	<i>Post-natal assessment:</i> Only 56 / 666 parents returned questionnaires 6 months post-birth, limiting generalisability of findings The following % of participants used information 'a lot' or a little Breastfeeding - 70% Feeding the baby - 70% Changing nappies - 34% Coping with tiredness - 56% Realities of life with baby - 34% Managing crying and sleeping - 44% Sex after childbirth - 26% Changes in relationship - 28% Accessing help - 34% Knowing where to meet new parents - 23%

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Parr (1997)	Non-randomised controlled trial	212 men and women (98 in intervention group, 114 in waiting group control)	Attachment based preparation for childbirth, transition to parenthood and early parenting. UK	Couples psychological well-being Parental confidence Satisfaction with the couple relationship Satisfaction with the parent-infant relationship	Participation in the PIPPIN programme led to a significant increase in: -psychological well-being -parental confidence -satisfaction with the partner relationship -satisfaction with the parent-infant relationship in the postnatal period
Redman (1991)	Pre-post intervention questionnaire.	325 women	Preparation for childbirth classes. 82% of Ss attended antenatal classes, the majority (83%) hospital based Australia	Knowledge acquired at classes Satisfaction with the antenatal programme Non-attending participants reasons for non-attendance at antenatal classes	Effect on knowledge and behaviour: Increased knowledge of issues relating to pregnancy and childbirth Attendees also more likely to plan for breast feeding, to be non-smokers and to know of a greater number of community organizations to help new mothers. However, with the exception of number of community organizations known, these differences were attributable to demographic differences between attendees and nonattendees rather than the effect of ANE

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Robertson (2008)	Quasi-experimental prospective comparative design	49 Hispanic women (24 in CPM; 25 in traditional antenatal care)	Centering Pregnancy Model (CPM) to those receiving prenatal care via the traditional model and determine acceptability of the CPM US	Health behaviours Prenatal/postnatal care knowledge Self-esteem Depression Mode of delivery Breastfeeding initiation and continuation Infant birth weight Gestational age at delivery .	No between group differences on any outcomes Greater participant satisfaction in CPM group CPM also lower cost than one to one antenatal care Knowledge deficits and health behaviours were similar between groups. No differences were found for infant outcomes Knowledge deficits and health behaviours were similar between groups. No differences were found for infant outcomes
Schachman (2004)	RCT	47 primiparous military; 47 in a traditional childbirth education program; 44 in Baby Boot Camp	Baby Boot Camp is a 4-week childbirth-parenting preparation program based on a resilience paradigm tailored for military wives US	Prenatal and postpartum maternal role adaptation	Significant differences favouring Baby Boot Camp in participants' prenatal and postpartum adaptation Baby Boot Camp participants experienced an increase in external and internal resources immediately after the intervention Differences in social support were not sustained at 6 weeks postpartum

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Schmied (2002)	<p>Convenience sample</p> <p>Eight weeks after birth, data were collected by questionnaire</p>	31 primiparous couples. 19 couples completed the pilot program and 14 couples who were enrolled in a routine hospital program.	<p>A pilot antenatal education program intended to better prepare couples for the early weeks of lifestyle changes and parenting vs. standard care. Intervention programme included gender-specific discussion groups.</p> <p>Australia</p>	<p>Experience of labour management and delivery</p> <p>Satisfaction on parenting experiences</p>	<p>Women in the intervention group were significantly more likely to be satisfied with the parenting experience than women in the routine programme</p> <p>N/S differences on other outcomes</p>
Slade (1993)	Pre-post intervention study	81 primiparous women	<p>Antenatal preparation for childbirth classes</p> <p>UK</p>	<p>Differences between attenders and non attenders of antenatal classes on:</p> <ul style="list-style-type: none"> • Experience of childbirth • Personal satisfaction levels 	Attenders and non-attenders at antenatal preparation classes showed no significant differences in their experiences or personal satisfaction levels

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Spiby (1999)	Exploratory research design; women were interviewed within 72 hours of the birth of their first child	121 primiparous women	Antenatal classes providing information on three psychoprophylactic coping strategies: breathing technique, postural changes, relaxation technique UK	Confidence Effort required to use coping strategies Involvement of birth companions and midwives Satisfaction with the amount of practice of coping strategies	The effects of the coping strategies investigated varied widely among participants. Common aspects of care, changes of environment, and use of pharmacological pain relief affected women's discontinuation of coping strategies. The implications of study findings for clinical practice include the need for caregivers to provide women with accurate information about the effects of coping strategies and to be alert to aspects of care that may disrupt women's use of strategies.
Svensson (2009)	RCT Data were collected using self-report questionnaires	170 women (91 in 'Having a baby' programme ; 79 into standard childbirth preparation classes)	'Having a Baby' programme, which has a focus on the transition to parenthood vs. standard antenatal care. Hospital based. Australia	Maternal self-efficacy Parenting knowledge Worry about the baby Birth outcomes	Significant differences favouring the 'Having a Baby' programme on: - maternal self-efficacy - perceived parenting knowledge. No significant difference on worry scores or birth outcomes

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Author and date	Design	Participants	Location and nature of intervention	Outcome measured	Summary of key findings
Turan (2001)	RCT	First-time expectant mothers and fathers living in low and middle-income areas. 279 women and 235 men in clinic based programme 142 women and 36 men in the community-based programme	An antenatal-clinic-based education programme for women and for couples was compared to a community-based programme Turkey	Knowledge of pregnancy Preparation for childbirth Infant care (including some discussion of infant emotional needs) Postnatal health care of mother; contraception	In the short term, both clinic and community based programmes had positive effects on women and men's reproductive health knowledge, attitudes and behaviours. In the community-based programme positive effects among men were also seen in: -infant health -infant feeding -spousal communication and support Authors conclude that free antenatal education should be made available to all expectant mothers and when possible, men should be included, either together with their wives or in a culture such as that of Turkey, in separate group

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(ii) Stakeholder's views (see also Koehn, 2002; NICE 2008, in Systematic reviews, above)

Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Augood (2009)	Qualitative, with an 'evaluation discussion' at the end of the project	78 incarcerated women	19 drop in sessions, run by the NCT, in a women's prison UK	To evaluate participants views of pilot antenatal drop-in programme in a women's prison	<p><i>Themes to emerge at class end:</i> Incarcerated pregnant women valued:</p> <ul style="list-style-type: none"> - getting information about pregnancy from the antenatal sessions - having an opportunity to get together with other pregnant women. - being given space to contribute and express their views and experiences. <p>Women attending the evaluation session felt less frightened as a result of taking part in the sessions</p> <p>Participants would have liked more opportunities to spend time together so they could support each other</p>
Barclay (1996)	Qualitative - focus groups run by male midwives	53 men partners of primiparous women	Standard antenatal classes Australia	Evaluation of ANE by first time fathers	<p><i>Themes to emerge at class end:</i> Men alienated by: Presentation of antenatal education Neglect of their greatest concerns: changing identity, relationships, future role as fathers</p>

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Beger (1996)	2 group survey	7 educators and 134 parents	Preparation for childbirth in a midwestern urban university hospital US	Differences between what childbirth educators' and parents' learning objectives	<p>Differences were found in the interests and preferred learning methods of primiparous and older parents, and of men and women</p> <p>Compared to experienced parents, significantly more of the first-time parents rated many topics as more important: growth and development, characteristics of the newborn, care of the infant, adjunct to life after birth, and partner relationships.</p> <p>Parents who had never attended classes rated infant care and relationships as important/very important far more frequently than did parents who had taken part in childbirth education</p> <p>The differing needs of men and women should be addressed</p> <p>Curriculum evaluation requires a formal assessment of client needs</p>
Carrington (1994)	Observational and descriptive Narrative summary of main points to emerge during and at completion of curriculum	Pregnant adolescents and substance-abusing women. Numbers not stated	6 week, participative preparation for childbirth programme designed (i) for adolescents (ii) for substance abusing women US	Engagement and effect of ANE on adolescent and drug using pregnant women.	<p>The pregnant adolescents were most involved with the class exercises; members of the group provided feedback about content</p> <p>Adolescents consistently positive in evaluating the entire six-class curriculum and recommended some additional topics</p> <p>The programme had limited effect in engaging substance-abusing women who wanted one-to-one advice in private</p>

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Chapman (2000); Mitchell (n/d)	Questionnaires and focus groups	124 fathers	Standard antenatal classes with and without 'father only' sessions Australia	Fathers experience of antenatal programme	Fathers perceive antenatal classes to be directed at women Men found difficulty in expressing themselves in a mixed sex setting – valued father-only groups Recommended that women take part in sessions that focus on fathers
Cliff (1997)	A survey followed by interviews with 18 respondent.	50 first-time mothers	NHS antenatal classes UK	Women's reasons for attendance and non-attendance in NHS ANE classes	There was a clear hierarchy in attendance and non-attendance based on social class. Middle class women were the most regular attenders, closely followed by older, married, working class women Non-attenders comprised young, unmarried, working class women Most women felt that antenatal classes were too technical and did not address emotional and psychological issues Young, single unmarried women perceived the classes most negatively; young women's fears and need for peer support needs to be addressed
Deave (2008a)	Purposive sampling; semi-structured interviews	20 primiparous men, partners of primiparous women	Childbirth preparation classes UK	Evaluation of healthcare and ANE by first time fathers particularly in relation to preparing them for the transition to fatherhood	<i>Themes to emerge from ante- and postnatal data:</i> <ul style="list-style-type: none"> • lack of support mechanisms • involvement in antenatal provision • need for more information on parenting, baby care and relationships

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Deave (2008b)	Semi-structured interviews pre and post intervention	24 primiparous women	No specific programme; SS views sought UK	Couples views on how they could be better supported during the antenatal period, particularly in relation to the transition to parenthood and parenting skills	<p>Women were better prepared for childbirth than men, as they had a wider range of social supports (especially female relatives).</p> <p>Men only had other health professionals and work colleagues</p> <p>Men felt excluded from antenatal appointments and antenatal classes</p> <p>Both men and women were unprepared for changes in their relationship and recommended more information on elements of parenting and baby care, relationship changes and partners' perspectives prior to becoming parents</p>
Fabian (2005)	Pre-post intervention survey Ss completed three questionnaires: during early pregnancy, 2 months, and 1 year after giving birth	1197 primiparas	Childbirth preparation classes Sweden	To investigate first-time mothers' views about antenatal childbirth and parenthood education and their contact with other class participants after birth, and to compare participants and non-participants.	<p><i>Postnatal findings:</i> 74% of participants felt ANE had prepared them for childbirth 40% felt ANE had prepared them for early parenthood</p> <p><i>Findings 1 year post-partum:</i> 58% of participants had met with other class participants; these outcomes were associated with the number of class sessions</p> <p>Participants who were young, single, with low level of education, living in a small city, and smokers were less likely to find the classes helpful</p>

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Fletcher (2004)	Pre-post intervention survey	212 new fathers (men whose partners had recently given birth)	Childbirth preparation classes Australia	New father's postbirth views of antenatal classes: to what degree antenatal classes had prepared them for childbirth, for their role as support persons, and for lifestyle and relationship changes after the birth	Antenatal classes had prepared them for childbirth but not for lifestyle and relationship changes after the birth Fathers were less familiar than mothers with the family related services.
Friedewald (2005)	Pre-post intervention survey	617 fathers	Childbirth preparation classes with adjunctive all male discussion groups Australia	Evaluation of ANE by first time fathers	<i>Themes to emerge at class end:</i> Ss unanimous in value of discussion forum Ss recommended addition of several men-only adjunctive sessions
Greenhalgh (2000)	Pre-post intervention survey Participants completed several questionnaires, some within 6 days of childbirth and others at 6 weeks postpartum	78 fathers	Childbirth preparation classes UK	Childbirth experiences, relationship with the baby, and depressive symptomatology	<i>Themes to emerge post-natally:</i> Participants reported some positive consequences as a result of attendance in ANE For some participants attendance was associated with less positive reports of experiencing childbirth Negative experience of childbirth affected subsequent emotional functioning

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Hallgren (1995)	<p>Pre-post intervention survey – interviews</p> <p>Qualitative, using tape-recorded interviews to collect data. Interpretation was performed from Antonovsky's concept sense of coherence</p>	11 primiparas	<p>Childbirth preparation classes</p> <p>Sweden</p>	To evaluate women's perceptions of childbirth and childbirth education before and after education and birth	<p>The women adopted the content of the education in different ways</p> <p>Fear as well as unreflected knowledge seemed to block acquisition of new knowledge. Factors which contributed to a childbirth experience that was worse than expected were lack of or inconsistent information. Increased knowledge about childbirth and experiences of confirmation during childbirth contributed to a good or better experience than expected</p> <p>Findings stress the importance of individual assessment of expectations of and experiences of childbirth education</p> <p>Consistency in information given before and during childbirth supports a sense of comprehensibility, manageability and meaningfulness</p>

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Hallgren (1999)	Pre-post intervention study	11 men who participated with their partners in antenatal classes	Childbirth preparation classes Sweden	To discover the expectations and experiences of childbirth preparation and childbirth of Swedish men in order to contribute to a basis of reflections in the midwifery profession	<p>Participation in childbirth was more demanding than expected for the eleven men. Men felt unprepared for an unpredictable process, the experience of time and pain, the woman's action, and their own reactions</p> <p>The men who were regarded by the authors as deeply involved seemed to manage overwhelming feelings of helplessness during childbirth, to support the women, and experience the meeting with the baby positively</p> <p>Authors recommend that midwives meet men individually, design childbirth preparation from men's perspective, follow up interpretations of the content, discuss expectations with regard to the men's role, and assess their experiences during the birth process</p>

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Ho (2002)	Participant observation of antenatal classes using an observation guide 2 focus groups using a semi-structured interview guide	11 women	Childbirth preparation classes Hong Kong	Evaluation of ANE by mothers	<i>Themes to emerge at class end:</i> (i) Large class sizes and didactic mode of teaching inhibited learning. (ii) Lack of realistic preparation for breastfeeding (iii) Lack of preparation for baby care and motherhood (iv) Conflicting advice from antenatal educators (v) Difficulty in reconciling some aspects of content with Chinese cultural norms
Howie (2005)	Questionnaires and interviews	29 adolescent primiparas	Childbirth preparation classes UK	What adolescent primiparas wanted from antenatal education	Participants wanted to take part in antenatal classes with and for teenager mothers; at accessible venues e.g. to coincide with prenatal care visits; Classes should include issues such as sexual health and contraception

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
National Childbirth Trust and Birmingham Women's Hospital (2007)	Survey with additional interviews and focus groups	<p>Women and men in the antenatal and postnatal period. 666 Ss contacted</p> <p>Assessment of pre-course expectations; 274 / 666 respondents</p> <p>Post-course/antenatal feedback 655 / 666 respondents</p> <p>Assessment 6 months after course completion. 56 / 666 respondents. Interviews (36, mainly women) and discussion groups (30 parents) with non-attenders recruited through referrals and snowballing.</p>	<p>National Childbirth Trust childbirth preparation classes at a large public hospital</p> <p>UK</p>	<p>To assess the effect of courses on parents' knowledge, confidence, empowerment, capacity to care for baby</p>	<p><i>Post course assessment:</i></p> <ul style="list-style-type: none"> - 4/10 parents wanted to know more about pain management, life with the new baby, life after birth. - 1/10 parents wanted the introduction of more practical exercises (e.g. changing nappies) and information on diet, relaxation; access to benefits/entitlements. - Parents wanted more opportunities to get to know each other and make new friends. This was particularly important for parents aged 30+ <p><i>Post-natal assessment:</i> (Only 56 / 666 parents returned questionnaires 6 months post-birth)</p> <p>The study did not assess pain management or obstetric outcomes</p> <ul style="list-style-type: none"> -66% of parents said the course had made them more confident about feeding their baby. - 34% felt it had made no difference. <p>-Classes had limited impact on other aspects of parenting, e.g. changes in their relationship and social support from new parents</p> <ul style="list-style-type: none"> -49% of parents felt that courses should have more information about postnatal periods -16% wanted courses to be longer or have more sessions so that other topics could be covered in greater depth. -16% wanted detailed information about feeding and more practical exercises on e.g. changing nappies and positioning for feeding

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Premberg (2006)	Interviews with fathers in the postnatal period	10 first time fathers	Childbirth / preparation for parenthood classes Sweden	Father's experience, needs and recommendations	Childbirth education creates preparedness for birth and fatherhood, but fathers perceived to have a secondary role. Limited, if any, attention is given to men's transition to parenthood. Fathers-to-be need the opportunity to receive information that addresses their needs and concerns and to build networks and support the transition to fatherhood The use of men-only discussion groups is recommended
Ratnaike (2007)	Interview with a provider of parent education for fathers	1 antenatal educator	'Fathers to be' 'Preparation for fatherhood classes.' UK	Father's needs for ANE and appropriate ways to provide ANE.	Need to focus on preparing fathers for an active role in childbirth as 'a transformation in the role of fathers has left many feeling ill-equipped to fulfil expectations of them during pregnancy and childbirth'. Need to engage fathers in decision making and help men identify and deal with their fears: a third of domestic abuse begins during pregnancy
Redman (1991)	Pre-post intervention questionnaire. All primiparous women giving birth in a large teaching hospital in a 4 month period invited to complete a questionnaire within 3 days of giving birth.	325 primiparous women A final sample of 325 women (response rate 91%) completed this phase of the study.	Childbirth preparation classes Australia	Effect on women's knowledge and behaviour: (i) three health-related behaviours (breastfeeding, cigarette smoking and knowledge of community services), (ii) five aspects of satisfaction with childbirth and three intrapartum interventions (use of pethidine, epidural and forceps birth).	Reasons for non attendance: Attendees were older, of a higher educational level, more likely to be married or living as married, and more likely to have private health insurance than nonattendees. The most common reasons for non-attendance: no need for information (18%); no time(15%) Overall satisfaction of the 24 items included, 17 were rated as very or quite useful by at least 70% of participants. Items relating to labour were rated as very or quite useful by over 90% of participants. Items with fewer ratings of very or quite useful were family planning, baby health centres, and nutrition and weight gain.

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Schmied (2002)	<p>Pre-post intervention survey - Semi-structured interviews; purposive sampling</p> <p>Recruitment at 28 weeks gestation. Semi-structured interviews in the last trimester of pregnancy and between 3-4 months postpartum.</p>	24 primiparous women	<p>Childbirth preparation classes</p> <p>UK</p>	Assessment of education and support needs of primiparous parents, with focus on transition to parenthood	<p><i>Themes to emerge from ante- and postnatal data (women)</i></p> <p>Women's needs include: support mechanisms, information and antenatal education, preparation for breastfeeding, preparation for practical baby-care preparation for relationship changes; preparation for transition to parenthood</p> <p><i>Themes to emerge from ante- and postnatal data (men)</i></p> <p>More limited range of information and support; fewer social supports than women; excluded from ANE classes</p> <p>Men also wanted to discuss and prepare for: - relationship changes - the transition to parenthood</p>
Schneider (2001, 2002)	<p>Pre-post intervention survey – Interviews</p> <p>Tape recorded, individual interviews were held with the women in their homes for about one hour on four occasions</p>	13 primiparous women	<p>Childbirth preparation classes</p> <p>Australia</p>	Evaluation of ANE by primiparous mothers	<p><i>Themes to emerge from antenatal data:</i></p> <p>Participants generally positive experience of ANE</p> <p><i>Themes to emerge from postnatal data:</i></p> <p>Classes had limited impact on childbirth experience.</p>

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Singh (2000a)	<p>Pre- and post intervention survey</p> <p>Postal survey of women randomly selected</p> <p>70% also responded to a follow up questionnaire sent approximately four months after the birth</p>	1188 women	<p>National Childbirth Trust (NCT) childbirth preparation classes</p> <p>UK</p>	To identify the information and support needs of primiparous mothers	<p><i>Themes to emerge from ante- and post-natal data.</i></p> <p>Women want</p> <ul style="list-style-type: none"> - more information about pregnancy topics, labour and birth, feeding, postnatal issues. - 'woman-centred' care. <p>Women who are young, from ethnic minorities, low SES and primiparous express greatest desire for information and support</p>
Singh (2000b)	<p>Pre- and post intervention survey</p> <p>Postal survey of men randomly selected</p> <p>57% also responded to a follow up questionnaire sent approximately four months after the birth.</p>	817 men	<p>National Childbirth Trust (NCT) childbirth preparation classes</p> <p>UK</p>	To identify the information and support needs of primiparous men and their opinions about maternity health care professionals	<p><i>Themes to emerge from ante- and post-natal data</i></p> <p>Men want:</p> <ul style="list-style-type: none"> - involvement in partner's pregnancy and pregnancy care - to learn more about pregnancy, childbirth and life with a new baby. <p>Information and support needs to be targeted towards men in a way that is accessible and appropriate.</p> <p>Men who are young, from ethnic minorities, low SES and primiparous have specific information and support needs</p>

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Svensson (2007)	Focus groups	73 healthcare professionals	No specific intervention – assessment of Ss views Australia	To assess healthcare provider's views on antenatal parent education	Healthcare providers' preferred focus was on pregnancy and only the first couple of weeks after the birth, grounded in relatively fixed views of what parents needed The delineation was counter to that required by the expectant and new parents reported in a separate study (Svensson 2008, below) The health professional ideas for improving antenatal education were limited and identified a reluctance to change practice

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Svensson (2008)	Mixed qualitative methods, including interviews, focus groups and participant observation	251 primiparous women and their male partners Most Ss white and median/higher SES	No specific intervention – assessment of Ss views Australia	To assess parents' views on antenatal parent education	<p>"Essential ingredients" of ANE classes recommended by men and women are:</p> <ul style="list-style-type: none"> • "Hearing Detail and Asking Questions" "a series of lectures" with a "guest speaker talking about his or her speciality and answering questions." • "Learning and Discussing" where an educator gives information and teaches skills which we all discuss and practice, and it [the program] goes over several weeks." This description was like that of a closed group program with a defined number of sessions and group members remaining constant. • "Sharing and Supporting Each Other" - many participants thought a regular, informal meeting, such as a monthly or second-monthly informal coffee morning/meeting, would be "such a good idea" during the childbearing year. " <p>Authors note that the teaching and learning methods identified may or may not be suitable for parents with special needs (e.g., adolescents, single women, and women from minority cultures)</p> <p>It is recommended that the needs of minority groups be examined, and that effective antenatal education be developed based on these needs</p>

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Symon (2003)	<p>Pre-post intervention study. A short evaluation form filled in by men antenatally; some also did so postnatally</p> <p>Interviews with male facilitators and midwives assessed the value of the project</p>	53 men	<p>Parentcraft classes</p> <p>Scotland</p>	To assess women's and men's opinion of Parentcraft classes with and without adjunctive sessions with a male facilitator	<p><i>Themes to emerge from ante- and post-natal data:</i></p> <ul style="list-style-type: none"> - men only sessions with male facilitator valued as opportunity for discussion - both men and women spoke more freely in single sex groups <p>Experience in group facilitation is an important factor</p>

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Vehviläinen-Julkunen (1995)	Questionnaire submitted about 9 weeks after the birth of a child. The same questions were asked of the participants who responded	189 mothers and 127 fathers	Family training in the transition to parenthood Finland	To assess education and support needs of fathers and mothers and how antenatal family training supports them in the transition to parenthood.	<p><i>Themes to emerge from post-natal data:</i></p> <ul style="list-style-type: none"> - Parents views need to be given attention in planning of family training - Priority information: actual process of childbirth, pain alleviation during labour, abnormal childbirth. themes related to parenthood - Less importance was attached to the themes of sex, contraception and certain aspects of health education - Need for more opportunity to interact with other group members - Need for more informal discussion
Wiener (2008)	Postal survey	144 midwives in a Hospital NHS Trust - 58% return rate	Childbirth preparation classes UK	To assess midwives' views about ANE content and mode of provision	<p>48% of respondents thought that pregnant women were not interested in postnatal topics. They believed that 'women were unable or unwilling to be realistic about the changes and difficulties a baby brings' (i.e. preferring to focus on the birth)</p> <p>Midwives did advocate more client-centred/facilitative approaches that could enable participants to discuss their fears and anxieties about the transition to parenthood more openly</p> <p>Midwives believed that group facilitation training 'should be an integral part of midwifery training'</p>

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Author and date	Design	Participants	Location and nature of intervention	Focus of the review	Summary of key findings
Young (2008)	Qualitative study using focus groups with healthcare providers and individual semi-structured interviews with mothers.	Midwife, health visitors, community psychiatric nurse, nursery nurse, 11 first-time mothers	Childbirth preparation classes UK	To assess women's ANE needs by contrasting antenatal expectations with actual experience of childbirth and motherhood	Mothers expressed a need for greater involvement from fathers and health visitors, opportunities to debrief about labour, more information on practical, emotional and relationship changes, and more opportunities for mothers to support each other

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