



EVALUATION OF THE BABY STEPS PROGRAMME: PRE- AND POST-MEASURES STUDY

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This report is part of the NSPCC's Impact and Evidence series, which presents the findings of the Society's research into its services and interventions. Many of the reports are produced by the NSPCC's Evaluation department, but some are written by other organisations commissioned by the Society to carry out research on its behalf. The aim of the series is to contribute to the evidence base of what works in preventing cruelty to children and in reducing the harm it causes when abuse does happen.

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KEY FINDINGS: YOUNG PEOPLE'S VERSION

Baby Steps is a programme designed to help new parents during the mother's pregnancy and after they have their babies. The NSPCC has done some research to find out how the programme has helped parents. These are the main things we found:

- Parents said that they felt close to their baby during the pregnancy and that this continued after the baby was born.
- Babies seemed to be a good weight when they were born and not many babies were born too early. Mothers were also likely to have natural births.
- Parents said that they felt happy in their relationship with their partner.
- Parents felt less anxious because they had attended the programme and some parents also felt less depressed.
- Parents felt that they became more self-confident through attending the programme.

KEY FINDINGS

The NSPCC has been running a new antenatal programme for vulnerable parents called Baby Steps, which aims to support mothers and fathers during pregnancy and in the weeks after birth. Self-report questionnaires were used to look at the changes experienced by parents who had attended the programme. Positive changes across a range of outcomes were reported, including:

- Both mothers and fathers reported an increase in their attachment to their unborn baby.
- Parents' feelings of warmth towards their baby increased during the programme, but the change was greater for mothers than for fathers.
- Mothers who had completed Baby Steps reported lower rates of adverse birth outcomes (ie premature birth, low birth weight and Caesarean section) compared with the general population, though it is not known whether this was representative of all mothers who attended the programme.
- Parents' relationship satisfaction with their partners remained stable throughout the programme, for those who had the lowest levels of relationship satisfaction at the start of the programme their satisfaction improved.
- Both mothers and fathers reported a decrease in anxiety between the start and the end of the programme.
- Parents with moderate or high levels of depression reported a decrease in symptoms by the end of the programme.
- Parents' self-esteem had increased slightly by the end of the programme.

Research suggests that such improvements will increase the capacity of parents to care for and nurture their baby, and will ultimately lead to better outcomes for children. Overall, the findings indicate that Baby Steps is a promising intervention. However, as the study did not include a comparison group, more research is needed to be sure that improvements in outcomes were the direct result of the programme.

EXECUTIVE SUMMARY

Background

There is growing evidence from the US and Australia that attending group-based perinatal classes focusing on the transition to parenthood can lead to a range of positive outcomes for parents as individuals, in their relationship as a couple, and in terms of their parenting skills. Little is known, however, about the effectiveness of such programmes in a UK context (Schrader McMillan et al, 2009).

The NSPCC has been running a new education programme for vulnerable parents called Baby Steps. The programme is based on the latest science, theory and research. It has been developed to support mothers and fathers as they transition into parenthood, with a particular emphasis on the relationship between parents and the development of positive parent–infant relationships. It is hoped that the programme will improve the capacity of parents to care for and nurture their baby. The programme also seeks to strengthen parents' support networks.

Baby Steps was designed in partnership with parenting experts at Warwick University and draws upon the *Preparation for Birth and Beyond* framework developed by the Department for Health (DH, 2011).

Baby Steps started running in 2011 and is now being delivered by the NSPCC in nine locations across the UK. Around 3,000 parents have already enrolled in the programme. Groups are run for mothers and fathers at NSPCC service centres, children's centres, and in prisons. The programme was developed to meet the needs of parents who require additional support, including those who may have chaotic lifestyles and who traditionally might be called 'hard to reach'. Such families might include young parents; those who have been in the care system; parents who misuse alcohol or drugs; parents who have been involved in crime or anti-social behaviour; gypsies or travellers; recent migrants, asylum seekers or refugees; parents who have been a victim of domestic violence; parents who live in poverty; parents who lack strong social networks, and parents with low-level mental health problems.

Referrals for Baby Steps come from a range of referrers across the health and social care sectors, including midwives, children's services, probation services, children's centres and prisons. Some parents also self-refer to the programme. Once a referral is received, NSPCC staff contact the family and arrange a home visit. This visit is an opportunity to describe the programme to the parents, address any

concerns they have, and to engage parents who might not otherwise feel comfortable attending group sessions. Following the home visit, parents attend six weekly group sessions before their baby is born, and three more after the birth.

The programme is jointly delivered by a health practitioner (a midwife or health visitor) and a children's services practitioner (family support worker or social worker). The skills mix of these two professionals is important to enable the programme to deal effectively with families' emotional, social and physical needs. They deliver the programme using a range of engaging approaches, such as discussions, creative activities and film.

The programme covers the topics that parents expect from traditional antenatal education, such as birth, breastfeeding and practical baby care. It also aims to:

- strengthen parent–infant relationships
- strengthen couples' relationships
- build strong support networks
- improve feelings of self-confidence, and reduce anxiety and depression
- help parents to understand babies' development.

Methods

The programme was evaluated during the first three years of delivery, applying a two-tiered approach. During the first year, a formative approach was used, which demonstrated that the programme had the potential to be beneficial to parents, and that they appreciated it.¹

As a result of these encouraging findings, a second stage of the evaluation was conducted. The programme's envisaged outcomes were measured using self-report psychometric measures. These are tools designed to measure a particular characteristic or trait, such as relationship quality, by asking respondents a series of questions. The answers to the questions are combined to form a score and the scores for each measure are compared at different points to see if there has been an improvement or deterioration. Routine data were also collected from parents to look at birth outcome as an indicator of the mother's physical health and pregnancy experience. This report presents the quantitative findings from this second stage of the evaluation.

1 The findings from this earlier evaluation are available as a separate report on the NSPCC website - <http://www.nspcc.org.uk/fighting-for-childhood/our-services/services-for-children-and-families/baby-steps/evidence/>

Key findings

Positive changes across a range of outcomes were reported, including:

- Both mothers and fathers reported an increase in their attachment to their unborn baby.
- Parents' feelings of warmth towards their baby increased during the programme, but this change was greater for mothers than for fathers.
- Mothers who completed Baby Steps reported lower rates of adverse birth outcomes (i.e. premature birth, low birth weight and Caesarean section) compared with the general population of parents, though it is not known whether this was representative of all mothers who attended the programme
- Parents' relationship satisfaction remained stable throughout the programme, for those who had the lowest levels of relationship satisfaction at the start of the programme their satisfaction improved.
- Both mothers and fathers reported a decrease in anxiety between the start and the end of the programme.
- Parents with moderate or high levels of depression reported a decrease in symptoms by the end of the programme.
- Parents' self-esteem had increased slightly by the end of the programme.

Recommendations and next steps

Overall the evaluation indicates that there have been positive changes in parents' self-reported satisfaction with their relationships with their partners, their self-esteem and a reduction in their symptoms of anxiety and depression over the time they attended the programme. There were also improvements in parents relationships with their babies both during the antenatal phase and after the baby was born. Research suggests these improvements will increase the capacity of parents to care for and nurture their baby and ultimately will lead to better outcomes for children.

Further evaluations should focus on whether the changes experienced by parents are sustained over time and if there are differences in how particular parents experience these changes. It will also be important to identify more explicitly which outcomes are attributable to Baby Steps, and whether it is more cost-effective than other programmes. A randomised controlled trial would allow clear attributions about the impact of the programme to be made.

MAIN REPORT

Chapter 1: Introduction

1.1 Background

Pregnancy and the first few months of life are a critical time for families. For babies, this is a period of rapid growth that will shape their later development and wellbeing. During pregnancy, a woman's mental and physical health, behaviour, relationships and her living environment all influence the intrauterine environment and the developing foetus (National Scientific Council on the Developing Child, 2004). All of these factors can have a significant impact on the baby's wellbeing and long-term outcomes (Talge et al, 2007; O'Donnell et al, 2014). After birth, babies continue to develop rapidly and early adversity has also been found to be associated with long-term and far-reaching impacts (Brand and Brennan, 2009).

Although having a baby is usually a happy event, it is also a time of great change that can be challenging for parents. For both mothers and fathers, pregnancy and the birth of a baby are a time of transition: of changing roles, and psychological and social reorganisation (Hock et al, 1995). While it is important to remember that becoming a parent is often a rewarding, fulfilling experience, this period has also been referred to as a 'crisis', during which couples are at risk of experiencing stress and their relationship becoming strained (Cox et al, 1999). The challenges faced by new parents as they adapt to different roles can shape later co-parental and parent-child interactions (McHale et al, 2004). Research indicates that the way people negotiate the transition to parenthood often lays the foundations for subsequent family relationships (Teubert and Piquart, 2010). It is, therefore, important that parents receive the support they need during this crucial time.

During this life stage parents can be vulnerable, but also engaged and motivated to make positive changes in their lives. They often express a desire to be a good parent and to ensure that their baby leads a better life than they themselves may have experienced (Condon et al, 2004; Edvardsson et al, 2011), so pregnancy is an opportune time for professionals to engage with them. There is growing evidence from the US and Australia that attending group-based classes focusing on the transition to parenthood can lead to a range of positive outcomes for parents as individuals, in their relationship as a couple, and in terms of their parenting skills. Little is known, however, about the effectiveness of such programmes in a UK context (Schrader McMillan et al, 2009).

Despite the clear need in this area, antenatal education does not always reach those that would benefit most. Evidence shows that disadvantaged parents and those who have additional needs are least likely to access antenatal education. A survey by Netmums and the Royal College of Midwives (RCM, 2011) suggested that nearly three quarters of mothers in low-income households did not attend antenatal classes². Redshaw and Heikkita (2010) found that black and Asian women were less likely to be offered antenatal classes, and less likely to take them up when they were on offer. In addition to the problem of access, antenatal education itself often focuses on the medical aspects of birth and does not attempt to prepare parents for their new parenting role. Antenatal education also struggles to engage and support fathers (Schrader McMillan et al, 2009).

This was reflected in a comprehensive review commissioned by the Department of Health on the effectiveness of antenatal education in the UK (ibid). Limited evidence was found for the effectiveness of standard antenatal education on clinical outcomes, and very little was found for programmes that met the needs of certain groups of disadvantaged parents. Similarly, few antenatal education programmes were found to promote protective factors, such as reflective function and social support. However, classes that did focus on the transition to parenthood were found to show the most promising outcomes for parents and infants. The authors of the review noted that there was limited high-quality research in this area, and none in the UK. They felt that there was an urgent need for further UK-based research into the most effective content and method of delivery for the ‘transition to parenthood’ model of antenatal education, which focuses on ways to engage and support new fathers as well as mothers.

This was subsequently backed up with a number of policy drivers in the UK (e.g., DH, 2010; Underdown and Barlow, 2012), which have yet to be integrated into current practice. Therefore, there are a large number of families whose needs are not being met at a crucial time for them and their babies. With this in mind, the NSPCC and Warwick University co-developed a perinatal education programme that would address the traditional elements of antenatal education that parents may expect, but also focus on the psychosocial components of the transition to parenthood – and be open to both mothers and fathers. This programme is now called Baby Steps and its objectives are to support parents in being better able to provide appropriate, consistent and sensitive care for their babies, and to improve maternal birth outcomes.

2 <https://www.rcm.org.uk/news-views-and-analysis/news/low-income-women-poorly-served-by-midwifery-services>

Baby Steps started running in 2011 and is being delivered by the NSPCC in nine locations across the UK. Around 3,000 parents have already enrolled in the programme. Groups are run for mothers and fathers at NSPCC service centres, children's centres, and in prisons. The programme was developed to meet the needs of parents who need additional support, including those who may have chaotic lifestyles and who traditionally might be called 'hard to reach'. Such families might include young parents; those who have been in the care system; parents who misuse drugs or alcohol; parents who have been involved in crime or anti-social behaviour; gypsies or travellers; recent migrants, asylum seekers or refugees; parents who have been a victim of domestic violence; parents who live in poverty; parents who lack strong social networks; and parents with low-level mental health problems.

Referrals for Baby Steps come from a range of referrers across the health and social care sectors, including midwives, children's services, probation services, children's centres and prisons. Some parents also self-refer to the programme.

1.2 Programme structure

The programme starts with a home visit, which takes place when the mother is at least 20 weeks pregnant. Group sessions start at around the 26th to 30th week of pregnancy and meet weekly for two hours. Baby Steps groups consist of up to eight families. Mothers are encouraged to come with their partner wherever possible. However, they can bring another supporter or come alone if they prefer. The sessions are led by two facilitators, one of whom is a midwife or health visitor and the other a children's services practitioner (a social worker or family support worker). There is a break of about eight to 12 weeks when the mothers are having their babies (the length depends on the spread of expected delivery dates in the group, and when women actually give birth).

A practitioner will also visit the family at home shortly after the baby is born and film the baby with his or her parents. By watching this film back with the practitioner, parents can enjoy, reflect on and improve their early interactions with their baby. When the youngest baby in the group is about four weeks old, the postnatal sessions begin. There are three postnatal group sessions, which parents attend with their babies.

The programme has been designed to attract and engage families with additional needs in a number of ways. The home visits enable practitioners to engage parents who might not otherwise attend group programmes, and the content and style of the group sessions are designed to make them accessible for parents with additional needs.

The sessions are also designed to engage parents, including those who may have become disaffected and uninterested in education, by focusing on participatory learning rather than didactic teaching. This is done by using a range of methods, including:

- whole-group and same-sex group discussions
- creative activities
- films
- quizzes
- practising listening, communication and conflict resolution skills
- activities between sessions.

1.3 Programme aims

Baby Steps is based on the Department for Health's *Preparation for Birth and Beyond* framework (DH, 2010); the systematic review of Schrader McMillan et al (2009) that preceded it, and an additional literature search of MEDLINE, PsychINFO and other databases. Five key themes were then identified that reflected the latest evidence of risk and protective factors in the perinatal period. These key themes were used as the basis for the programme and are described in more detail below.

Parent couple relationship

Baby Steps seeks to strengthen the couple relationship by encouraging listening, developing conflict resolution skills, and helping them to manage relationship changes. This is seen as an important aim as the transition to parenthood can be a difficult and disruptive time, which can have a negative effect on a parent's relationship with his or her partner (Lawrence et al, 2008; Mitnick et al, 2009; Nomaguchi and Milkie, 2003; Petch and Halford, 2008). Family discord can then have an adverse impact on child development, in part because relationship conflict makes it harder for parents to be attuned to their children's needs (Owen and Cox, 1997; Teubert and Pinguart, 2010). Couple relationships are also important during pregnancy and after birth because a father can play an important role in influencing the wellbeing of his partner, and in supporting her to maintain healthy behaviours that benefit their baby. Women whose partners remain involved during pregnancy are more likely to attend antenatal care, take better care of their health and deliver healthier babies (Fletcher et al, 2014; Penn and Owen, 2002; Meedya, Fahy and Kable, 2010). Good partner relationships also provide parents with a degree of protection from anxiety and depression (Matthey et al, 2004; Misri et al, 2000).

Emotional wellbeing

Baby Steps aims to improve parental emotional wellbeing by supporting mothers and fathers to negotiate the emotional and physical transition to parenthood and helping them to keep healthy and relaxed. Pregnancy and childbirth can also be challenging due to high rates of associated mental health difficulties. Maternal perinatal depression and anxiety are common, with prevalence rates for major and minor depression reaching almost 20 per cent during pregnancy and the first three months after childbirth (O’Hara and Wisner, 2014). Additionally, at least an equivalent proportion of new mothers experience a sub-clinical level of depression during this period, which is also likely to impact on parenting and child outcomes (ibid). Fathers are also at risk of experiencing depression throughout the perinatal period, in part due to changes in sleep patterns, social support networks and changes in their relationship with their partner (Domoney et al, 2014).

Maternal stress, anxiety and depression in pregnancy are associated with adverse obstetric, foetal and neonatal outcomes (Alder et al, 2007). Perinatal anxiety and depression have also been shown to have a significant deleterious effect on developing maternal-foetal attachment (Bloom, 1998; Yarcheski et al, 2009) and on paternal-foetal attachment (Campbell et al, 1995; Condon et al, 2013). Anxiety and depression can also influence a parent’s capacity to care for their baby, as the ability to be emotionally available and attuned to the infant can be impaired (Milgrom et al, 2004). These factors can potentially have long-lasting results for infant outcomes, which have been found to extend into adolescence and beyond (Sanger et al, 2014).

Baby Steps aims to improve parents’ confidence and self-esteem. This is important because positive improvements in self-esteem have been found to lead to increased confidence and greater parenting efficacy (Leerkes and Crockenberg, 2002).

Parent–infant relationships

Baby Steps seeks to strengthen the parent–infant relationship by encouraging the development of a sensitive, reflective relationship with the infant to promote bonding and attachment. Evidence shows that this relationship is incredibly important for healthy development, which begins in the womb – the relationship with the unborn baby is a significant predictor of future relationships and important for early development (Benoit et al, 1997). The mother’s level of prenatal attachment to the baby is associated with her making health-promoting choices, such as giving up smoking and alcohol, which will provide the unborn baby with a healthier environment (Goecke et al, 2012).

After babies are born, they need their caregivers to recognise and respond appropriately to their feelings and needs (Wolff and van Ijzendoorn, 1997). Evidence shows that parents' awareness of, and ability to recognise, their baby's mental states (capacities known as 'reflective function' or 'mind-mindedness') are important to enable them to respond sensitively to their baby and form a healthy relationship (Slade et al, 2005; Meins et al, 2001).

Social support

Baby Steps group sessions are designed to build supportive networks between members of the group. Social support is important for parents' emotional wellbeing, and is associated with positive parenting behaviour. The quality of a mother's social support, both prenatally and postnatally, has been found to be associated with her sensitivity towards her infant, and the security of the infant-mother attachment, particularly when the family is under stress (Orr, 2004). It is thought that social support can act as a buffer for stress, enabling parents to be more available to their baby. Support from family and friends has also been associated with babies' health at birth, mothers' mental health, and breastfeeding initiation and duration (Dennis, 2002).

Knowledge about pregnancy, birth and babies' development

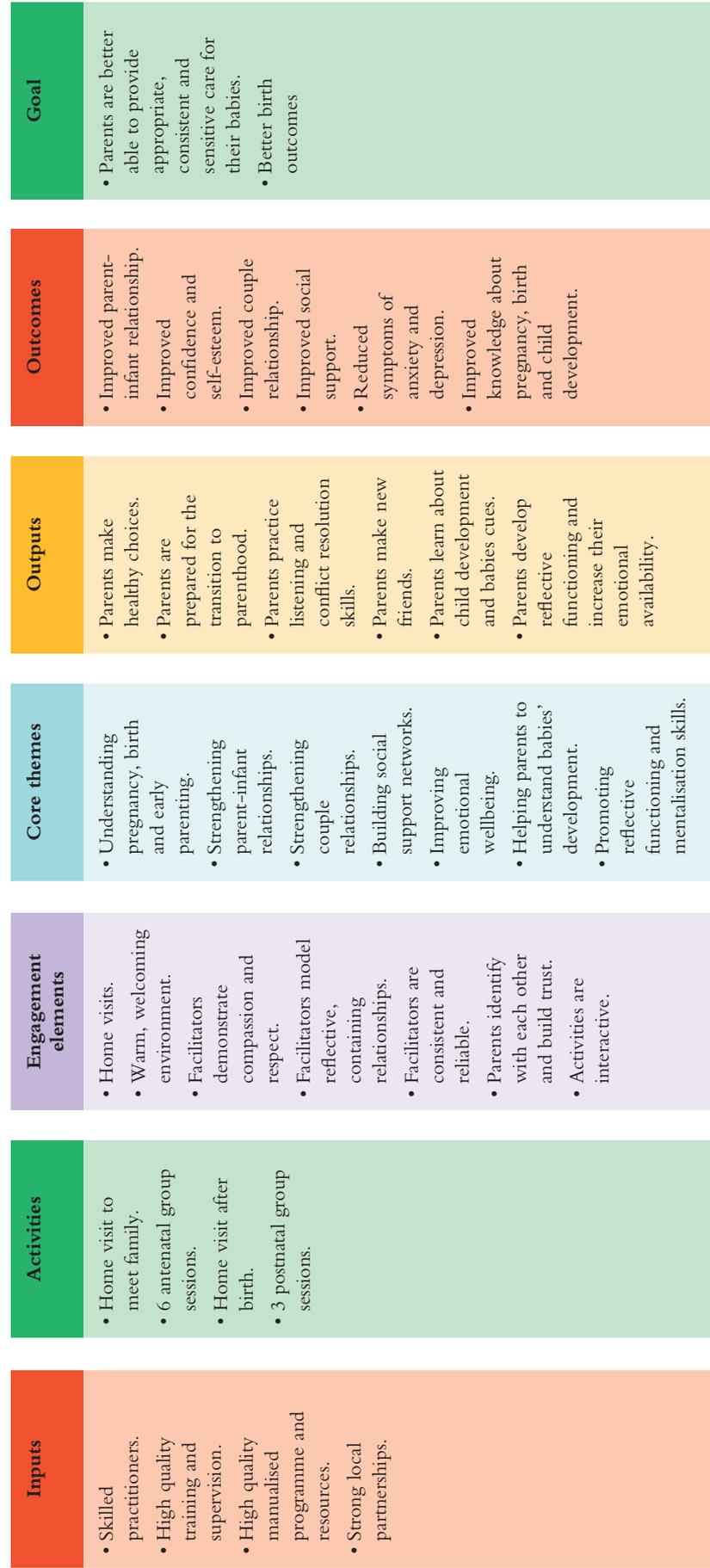
Baby Steps aims to improve parental knowledge about child development and care by telling parents what to expect during pregnancy and birth, and how best to look after themselves and their babies. By ensuring that parents understand how infants develop, it is hoped that they will have realistic expectations of their babies, and so interact with them in an appropriate way, providing the important care they need. It should also help parents to make sense of their baby's behaviour: for example, understanding why babies cry and what can be done to soothe them. This will help parents to cope with the stress they may feel when their baby cries, and know how to soothe him or her more effectively.

1.4 Theory of change

Figure 1 demonstrates the *Theory of Change* Model for the Baby Steps programme. It details how the content and structure of the programme relate to the key areas it is seeking to influence, and states the envisaged outcomes from the programme. This model is used as a framework for the intervention and guided the outcome measures used in this pre- and post-measures evaluation.³

3 Although improved social support and knowledge about a baby's development are important outcomes, they were not measured in the pre- and post-measures study but captured in a previous qualitative evaluation.

Figure 1 Theory of Change Model for the Baby Steps programme



Chapter 2: Evaluation methodology

During the first year, the programme was evaluated using a formative approach, which demonstrated that the programme had the potential to be beneficial to parents and was appreciated by them. The second stage of the evaluation was designed to examine the outcomes of the improved programme.

2.1 Sampling and recruitment

All parents who attended Baby Steps were asked to complete evaluation questionnaires. Parents were included in the analysis if they had consented to the evaluation and completed the questionnaires at more than one time point.

2.2 Outcomes measured

Five of the programme's key outcomes were assessed using self-report psychometric measures. These are tools designed to measure a particular characteristic or trait, such as relationship quality, by asking respondents a series of questions. The answers to the questions are combined to form a score and the scores for each measure are compared at different points to see if there has been an improvement or deterioration. The measures were obtained at four time points: before the programme started (T1); at the end of the last antenatal session (T2); at the post-birth home visit (T3); and at the last postnatal session (T4). In addition to the psychometric measures, data on birth weight, length of gestation, and delivery mode were collected from parents at the first home visit following birth as indicators of healthy birth outcomes. The measures used and the time point at which they were collected are shown in Table 1. More information about each of the psychometric measures can be found in Appendix 1.

Table 1 Measures and timings

Outcome	Measure	T1 – Baseline before parents start the programme	T2 – Last antenatal session (session 6)	T3 – Post-birth home visit	T4 – Final session (session 9)
Improved parents relationship	Relationship Quality Index	×	×		×
Decreased anxiety and depression	Hospital Anxiety and Depression Scale (HADS)	×	×		×
Improved self-esteem	Rosenberg Self-Esteem Scale	×	×		×
Improved parent-foetal relationship	Prenatal Attachment Inventory (PAI) for mothers. Adapted measure for fathers	×	×		
Improved parent-infant relationship	Mothers' Object Relations (MORS-SF) Scale			×	×
Maternal birth outcomes	Routine data collected on length of pregnancy in weeks, type of delivery and birth weight				×

2.3 Analysis

The measures and routine data were entered into SPSS, a statistical analysis software package. A range of descriptive statistics (means and frequencies) was calculated, and T-tests and ANOVA (analysis of variance) were used to assess whether the changes identified were statistically significant.⁴ National administrative data from the Health and Social Care Information Centre (HSCIC, 2013) were used to compare the data collected on Baby Steps parents with national averages.

⁴ A statistically significant result is one where there is a high probability that the difference observed between the samples is genuine and not random.

2.4 Limitations

There are a number of limitations to the study. As there was no comparison group, we cannot be confident that any changes identified were the result of parents attending the programme. The comparison of the routine data on birth outcomes with national data is limited, as parents on the programme were not necessarily representative of the whole population of parents in the UK. Additionally, for some indicators that were used to compare outcomes for Baby Steps parents with national rates, the data may have been collected differently. Finally, a lack of data on attrition means that those who completed the measures may not be representative of parents on the programme as a whole.

Chapter 3: Findings

3.1 Couple relationship quality

Overall, parents' self-reported relationship satisfaction with their partner remained stable from the beginning of the programme to the end.⁵ However, when the data were explored in more detail, some interesting patterns emerged. When comparing relationship quality of the total sample collected at baseline to that collected at the end of the antenatal sessions, a statistically significant improvement for both mothers and fathers was reported. This improvement was found to be particularly marked for fathers.

Within the total sample, the scores for 18 parents indicated that they had particularly low levels of relationship satisfaction at the start of the programme, and were, therefore, identified as an 'at-risk' group. For this subgroup of parents, a statistically significant increase in their relationship satisfaction was found across the programme at all of the time points. Their scores indicated that their satisfaction with their relationship also continued to improve after their baby was born.

3.2 Parental self-esteem, anxiety and depression

The findings indicated a small but statistically significant increase in parents' self-esteem by the end of the programme.⁶ However, when these findings were split by parental gender, the improvement in self-esteem was found for mothers but not for fathers. As with relationship satisfaction, the programme was found to be most effective in improving self-esteem for the 33 parents who started Baby Steps with 'clinically' low self-esteem.

A statistically significant decrease in parents' self-reported anxiety symptoms was also found between the start and the end of the programme. Looking further at the impact of parental gender, again this decrease in anxiety was only found to be significant for mothers and not for fathers. Anxiety improvements were most marked for those that started the group with anxiety symptoms in the 'borderline' or 'high' range.

For the total sample, there was no significant change in levels of depression between the start and end of the programme, with average scores remaining in the normal range at all time points. No differences were found according to parental gender. However, for the small number of parents whose scores had been in the clinical range for depressive symptoms at the start of the programme (there were only

5 See Appendix 2 for tables

6 See Appendix 2 for tables

five in this category), a significant decrease in symptoms was found. This is in line with the finding for other outcomes, that those most in need also benefited the most from the programme, but the sample size was too small to be confident about this finding.

3.3 Parent-infant and parent-foetal attachment

Both mothers and fathers showed statistically significant increases in attachment to their unborn baby between the first home visit and just before the birth.⁷ Along with increased prenatal attachment, parents also showed improvements in their relationship with their baby after the birth. Two aspects of parents' relationships with their babies were measured: perceived invasiveness and warmth of the infant towards the parent. Across the total sample, there were no significant changes in invasion scores, although for fathers there was a non-significant decrease. However, for all parents there was a significant increase in mean warmth scores between the first measurement – just after parents had had their baby – and the end of the programme.

3.4 Birth outcomes

Babies of parents who had attended Baby Steps were found to have a lower incidence of premature birth than that recorded for all births in England. In England during 2012–13, 7.2 per cent of births were preterm (HSCIC, 2013), compared with only 1.3 per cent for parents who attended Baby Steps.⁸ Mothers who attended Baby Steps were more likely than those in the general population to have a vaginal delivery. For the Baby Steps group, 80 per cent of mothers had a vaginal delivery, while 20 per cent had a Caesarean section. This compares with national figures of respectively 75 per cent and 25 per cent (HSCIC, 2013). Of the babies in the Baby Steps sample, 1.3 per cent had birth weights less than 2.5 kg, compared with a national rate of 5 per cent (HSCIC, 2013).⁹ However these comparisons do need to be treated with caution because of lack of robust data on the programme's attrition rate.

7 See Appendix 2 for tables

8 The World Health Organisation defines extremely preterm as less than 28 weeks, very preterm as 28 to 32 weeks and moderate to late preterm as 32 to 37 weeks.

9 Having a birth weight of less than 2.5 kg is defined as having a low birth weight.

Chapter 4: Conclusion

The aim of Baby Steps is to support parents to negotiate the transition to parenthood by helping them to maintain healthy relationships with their partner, build secure attachments with their baby and improve their emotional wellbeing. It also seeks to equip parents with knowledge about how best to look after themselves and their infant, what to expect during pregnancy, birth and the early years, and to help them access support both from their peers and other agencies. The evaluation found evidence of positive results across a number of these outcomes.

The findings indicate that relationship satisfaction remained stable for the overall sample. This finding is promising because, on average, we expect many parents to experience a decline in relationship quality during the perinatal period and the transition to parenthood (Cowan and Cowan, 2000; Doss et al, 2009). For those who had the lowest levels of relationship satisfaction at the start of the programme, self-reported relationship quality significantly increased. This suggests that the programme may have more impact on those who experience a lower quality in their relationship with their partner to begin with. Taken together, it seems that Baby Steps may protect against some of the potential negative impacts of having a baby on the couple relationship and, for some, it is associated with their relationship improving.

The evaluation also found improvements in parental emotional wellbeing, including reduced anxiety and depression among parents. This is important as the research evidence shows that pregnancy can be a particularly anxious time for parents (Domoney et al, 2014; O'Hara and Wisner, 2014). It seems that parents who attend Baby Steps become less anxious – particularly those with the highest levels of anxiety to begin with.

Encouragingly, it also seems that parents who had been suffering from some degree of depression or low self-esteem at the start of the programme experienced a reduction in their symptoms. The number of parents who participated in Baby Steps who had these symptoms was small and therefore these findings should be interpreted with caution. Nevertheless, not only are they positive for the mothers and fathers who took part in the programme, but they also indicate that the programme has the potential to interrupt the adverse emotional, cognitive and behavioural development of their children that is associated with poor parental wellbeing (Brand and Brennan, 2009; Sanger et al, 2014; Talge et al, 2007).

Alongside the improvements to parents' psycho-social outcomes, the evaluation also found increases in prenatal attachment. This indicates that parents developed a greater bond with their unborn babies over the period of the programme. This is not entirely unexpected as parental foetal attachment is known to increase with gestational age (Barone et al, 2014). The process, however, may be more difficult for parents who are experiencing challenging circumstances, as is the case for the parents on the Baby Steps programme. This finding is encouraging, as high levels of parent-foetal attachment have been found to be associated with mothers who take better care of themselves and make health-promoting choices, such as giving up smoking or alcohol use; thus providing the foetus with a healthier environment (Goecke et al, 2012).

In addition, the findings suggest that parents experienced increasing feelings of warmth towards their baby during the postnatal period of the programme, and no increase in feelings of invasion. Higher scores in warmth combined with lower scores in invasion show that a parent has good reflective functioning, which means that they can think about their child's inner world and show this in their behaviour and speech. This, in turn, promotes secure attachment of the child to the parent (Simkiss et al, 2013).

Lastly, there is tentative evidence from the evaluation that birth outcomes for mothers who had attended Baby Steps were better than the national average. This is encouraging, as stress during pregnancy – as experienced by many of the Baby Steps parents – is associated with low birth weight and preterm delivery (Alder et al, 2007). It may be that attending Baby Steps buffered parents against some stressors and resulted in a lower incidence of premature birth than normally present in the general population. Similarly, the birth outcome findings suggest that the Caesarean rate among mothers who had completed Baby Steps was below the national rate. This is surprising, as it may have been expected that this rate would be higher for them – there is some evidence that women from lower socio-economic groups are more likely to have C-sections (Essex et al, 2013;) (Lindquist et al, 2014).

Overall, the evaluation indicates that, despite the vulnerabilities of the group of parents attending Baby Steps, there were positive changes across a wide range of outcomes that the programme aims to improve. These findings suggest that Baby Steps is a promising intervention, that it is helping to improve factors that influence early parenting, and that these changes could ultimately lead to a range of positive impacts for children. The fact that the findings from the evaluation to date are very encouraging suggests that Baby Steps is ready for further research in the form of a randomised controlled trial in order confirm that the improvements in outcomes are the direct result of the programme.

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APPENDICES

Appendix 1: Outcomes measures

Relationship Quality Index

The quality of the relationship between couples was measured using the Relationship Quality Index (RQI) (Norton, 1983). The RQI, also known as the Quality of Marriage Index, is a measure of relationship satisfaction using a six-item index that uses global items (eg, 'we have a good relationship'). The first six items are rated on seven-point scales and the final item, a global measure of happiness in the relationship, is rated on a 10-point scale. The total score is calculated by summing the ratings on each of the six items. A minimum score of six and a maximum score of 45 are possible, with higher scores representing greater relationship satisfaction. A score lower than 29 indicates poor relationship satisfaction. Parents were asked to complete the measure at three time points; before they started the course, at the end of the antenatal sessions and at the end of the postnatal sessions.

Hospital Anxiety and Depression Scale

The Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith, 1983) was used to explore parents' level of anxiety and depression. This is a self-rating scale that measures anxiety and depression both in hospital and community settings. The one-page questionnaire features seven questions for anxiety and seven for depression. Parents were also asked to complete this measure at three time points: before they started the course, at the end of the antenatal sessions and at the end of the postnatal sessions. The clinical ranges defined by the authors were used in this study: scores between 0–7 were considered normal, scores between 8–10 were considered borderline, and scores between 11–21 were considered to be in the clinical range.

Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1989) was used to measure parents' self-esteem. This is a commonly-used measure of global self-esteem, an important element of mental health. The 10 items are answered on a four-point scale, ranging from strongly agree to strongly disagree. Parents completed the measure at three time points; before they started the course, at the end of the antenatal sessions and at the end of the postnatal sessions. A score of 15–25 is considered normal and anything below 15 indicates low self-esteem.

Prenatal Attachment Inventory

Prenatal attachment was measured using the Prenatal Attachment Inventory (PAI) (Muller, 1989). Muller developed the PAI based on testing with a sample of 336 pregnant women, all of whom were beyond the 20th week of gestation. She defined prenatal attachment as the unique affectionate relationship that develops between a woman and her foetus. The scale consists of 21 items scored on a four-point scale. A higher score indicates a good attachment to the infant, with possible scores ranging between 21 and 84.

A paternal attachment questionnaire was devised by the NSPCC for fathers to measure their attachment to their unborn baby. Parents were asked to complete this measure at the beginning and the end of the antenatal sessions.

Mothers' Object Relation (MORS-SF) Scale

Parents' bonds with their babies were measured using the Mothers' Object Relation (MORS-SF) Scale (Oates and Gervais, 1984). This is a 14-item questionnaire, which was designed to be used in primary health care settings to give a simple measure of the quality of the parent-infant relationship. It assesses parents' models of their infants on two axes: perceived invasiveness-withdrawal, and warmth-coldness of the infant towards the parent. A higher score on the warmth-coldness axis indicates a higher perceived level of warmth of the infant towards the parent. A higher score on the invasiveness-withdrawal axis indicates a higher level of perceived invasiveness of the infant towards the parent. There is currently no 'cut-off' that would indicate problematic attachment. Parents were asked to complete this measure at the beginning and end of the postnatal sessions.

Appendix 2: Tables of results

Table 1: Average parent scores (and standard deviations) of self-report measures for all parents

Measure	Before the programme (T1)	Final antenatal session (T2)	Post-programme (T4)	Difference between T1 and T4
Relationship Quality Index, N=79	38.6 (8.0)	39.0 (7.0)	39.3 (9.4)	0.7
Rosenberg Self-Esteem Scale, N=101	19.8 (4.8)	20.8 (5.5)	22.5 (5.1)*	2.7
HADS (anxiety), N=99	7.6 (4.5)	7.6 (3.9)	5.9 (3.9)**	1.7
HADS (depression), N=99	4.7 (3.7)	4.8 (3.6)	5.4 (10.1)	-0.7

* Statistically significant difference at the 5% level ($p < .05$)

** Statistically significant difference at the 1% level ($p < .01$)

Table 2: Mean parent scores (and standard deviations) for foetal attachment

PAI	Before the programme (T1)	At the end of the antenatal sessions (T2)	Difference
Mothers, N=188	65.8 (10.7)	70.5 (10.4)**	4.7
Fathers, N=43	54.7 (8.3)	59.9 (17.1)**	5.2

** Statistically significant difference at the 1% level ($p < .01$)

Table 3: Mean parent scores (and standard deviations) for parents' relationship with their baby

Measure	At the start of the postnatal sessions (T3)	At the end of the postnatal sessions (T4)	Difference
MORS (warmth) N=138	21.16 (6.0)	28.18 (4.8)	6.92**
MORS (invasion) N=138	6.2 (4.6)	6.2 (4.5)	0

** Statistically significant difference at the 1% level ($p < .01$)

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