The feasibility of delivering Group Family Nurse Partnership

Running head: Feasibility of Group Family Nurse Partnership

Jacqueline BARNES, Professor of Psychology, BSc, MSc, PhD

Institute for the Study of Children, Families and Social Issues, Department of Psychological Sciences, Birkbeck, University of London

Jane STUART, Research Fellow, BA, MPhil, PhD

Institute for the Study of Children, Families and Social Issues, Department of Psychological Sciences, Birkbeck, University of London

Accepted for publication 3 January 2016

Journal of Children's Services

Abstract

Title The feasibility of delivering Group Family Nurse Partnership

Purpose To evaluate the feasibility of delivering the Group Family Nurse Partnership (gFNP) programme, combining elements of the Family Nurse Partnership programme and Centering Pregnancy and offered from early pregnancy to 12 months postpartum to mothers under 25.

Design/methodology A mixed method descriptive feasibility study. Quantitative data from anonymised forms completed by nurses from November 2009 to May 2011 (pilot 1) and January 2012 to August 2013 (pilot 2) reporting referrals, attendance and client characteristics. Qualitative data collected between March 2010 and April 2011 (pilot 1) and November 2012 and November 2013 (pilot 2) from semi-structured interviews or focus groups with clients and practitioners.

Findings There were challenges to reaching eligible clients. Uptake of gFNP was 57% to 74%, attendance ranged from 39% to 55% of sessions and attrition ranged from 30% to 50%. Clients never employed attended fewest sessions overall compared to those working full time. The group format and the programme's content were positively received by clients but many struggled to attend regularly. FNP practitioners were positive overall but involving community practitioners (pilot 2) placed more stress on them.

Research implications Further feasibility and then cost and effectiveness research is necessary to determine the optimal staffing model.

Practical implications The content and style of support of the home-based FNP programme, available only to first time mothers under 20, could be offered to women over 20 and to those who already have a child.

Social implications A range of interventions is needed to support potentially vulnerable families.

Originality/Value This new complex intervention lacks evidence. This paper documents feasibility, the first step in a thorough evaluation process.

Keywords: Group support, pregnancy, early infancy, nurses, parent-child relationship

Paper type: Research paper

Introduction

This paper presents evidence from two pilot feasibility studies of Group Family Nurse Partnership (gFNP), a new intervention aimed at helping young parents develop their health, well-being, confidence and social support in pregnancy and their children's health and parenting in the first year of life (FNP National Unit, 2015). In addition the programme aims to raise aspirations about future education and employment to increase support for the family in the future.

Early intervention is promoted as a means of improving child and family outcomes (Allen, 2011). With a strong US evidence base, the Nurse Family Nurse Partnership (NFP) programme offers home-visiting to potentially vulnerable first-time mothers from a specially trained family nurse, starting early in pregnancy until infants are 24 months of age, using a manualised curriculum (Olds, 2006). US evidence indicates that it improves maternal self-concept, parenting skills, family relationships and future life-course development, with some support from research in the Netherlands (Mejdoubi *et al.,* 2015) though as yet the UK evidence has failed to support this (Robling *et al*., 2015). NFP was introduced into England in 2007, renamed the Family Nurse Partnership (FNP, Barnes *et al.,* 2008) and is offered widely to first-time teen mothers (FNP National Unit, 2012). Responding to enquiries for a programme that could be offered to women ineligible for FNP, a group delivered structured learning programme based on FNP was developed in England in collaboration with the NFP National Office at the University of Colorado, Denver (FNP National Unit, 2015). The programme was designed on the basis that group care prenatally can improve pregnancy outcomes (Ickovics *et al*., 2007; Williams *et al.,*, 2009), may be less costly than individual support (Serçekuş and Mete, 2010) and that postnatal groups have been proposed as a way to support potentially vulnerable mothers (de Jonge, 2001, Stevenson *et al*., 2010). Meeting in a group with other mothers can be perceived by non-teenage mothers as more helpful than one-

to-one support (Hoddinott *et al.,* 2006). However young mothers can be uncomfortable in groups and are less likely than older mothers to attend, especially if they include predominantly older mothers (Public Health England, 2015). The main difference from existing group support in the UK, such as that offered by midwives and health visitors delivering the universal Healthy Child Programme (Shribman and Billingham, 2009) and other support provided in Start Children's Centres (Anning and Ball, 2008) is that gFNP spans both pregnancy and infancy with ongoing support over 18 months. Other group services are more time limited and focus either on pregnancy well-being or on specific infant issues such as sleep problems or breastfeeding, although the Preparation for Birth and Beyond materials (Department of Health, 2011) are designed to address this by incorporating approaches to supporting families in pregnancy that are holistic and practical.

The gFNP programme uses the materials and approach of the NFP programme (Olds, 2006), aiming not only to improve maternal and infant health but also to promote close mother-infant attachment, develop sensitive parenting and effective family relationships and to help women to explore life choices as they become parents (Barnes and Henderson, 2012). In addition, it includes aspects of Centering Pregnancy, an intervention developed in the USA which provides groups of 8-12 women with antenatal care during nine 2 hourly sessions, with time for discussion about issues such as smoking, healthy eating and breastfeeding and allowing women to understand their own health status by encouraging them to be actively involved in all the health checks (Ickovics *et al.,* 2007). It is reported that the group-based Centering Pregnancy is preferred to traditional (individual) antenatal care (Ickoviks *et al*, 2003; 2007; Robertson *et al.,* 2009) and has led to improved prenatal outcomes such as fewer preterm births among high risk women (Grady & Bloom, 2004; Williams *et al.,*2009). As part of the gFNP programme, during pregnancy clients receive routine midwifery care in accordance with UK NICE guidelines (NICE, 2008) and in the postnatal phase infants are

monitored according to the Healthy Child Programme (Shribman and Billingham, 2009) guidelines. To allow for this one of the nurses delivering the programme must also be a practising midwife and family nurses are trained to deliver the Healthy Child Programme. While NFP (Kitzman *et al.,* 1997, Olds *et al.,* 1997, Olds 2006) and Centering Pregnancy (Baldwin, 2006, Grady and Bloom, 2004, Ickovics *et al.,* 2007, Robertson *et al.,* 2009) have substantial evidence outside the UK, it was necessary to provide evidence for gFNP, merging and adapting the two approaches. The gFNP programme is a complex intervention made up of many components designed, through education, nurse contact and peer support to change parent behaviour (Craig *et al.,* 2008, MRC, 2000). According to Medical Research Council (MRC) guidelines (Craig *et al.* 2008, MRC, 2000) and in line with a framework proposed for developing and evaluating NFP innovations (Olds *et al.,* 2013), the stages for effectively evaluating and implementing complex interventions are: 1. programme development; 2. piloting for feasibility; 3. evaluation of effectiveness and cost effectiveness, ideally with an RCT; and 4. translation into mainstream practice.

Following programme development, the UK Department of Health and the FNP National Unit commissioned two feasibility evaluation studies of gFNP. Based on these two pilot studies, the aim of this paper is to evaluate the feasibility of delivering the Group Family Nurse Partnership programme for young mothers from approximately 16 weeks pregnancy to 12 months postpartum, by addressing the following questions:

- Are there barriers to reaching the intended population?
- Are any client factors related to attendance?
- Can programme delivery be sustained over 18 months?
- Is the programme acceptable to different stakeholders?

Each pilot study using a mixed method design (Creswell and Plano Clark, 2011) with quantitative information on attendance and client characteristics and semi-structured

interviews or focus groups (depending on resources and participant availability) to provide contextual understanding of the specific study questions. Quantitative data documented the outcome of referrals to gFNP, characteristics of clients and their attendance. Qualitative data covered experiences of the programme and reflections on programme delivery from a range of stakeholders.

Method

The intervention

Based on the same theoretical foundations as FNP, attachment (Bowlby, 1969), self-efficacy (Bandura, 1977) and ecological theory (Bronfenbrenner, 1979), gFNP aims to: improve maternal health and pregnancy outcomes, improve child health and development by helping parents provide more sensitive and competent care; and to improve parental life course by helping parents develop effective support networks, plan future pregnancies, complete their education, and find employment (Olds, 2006). The FNP curriculum materials and activities were modified to reflect group administration and the shorter time-frame, and sessions also incorporate routine antenatal care and a focus on self-monitoring following the Centering Pregnancy model (Ickovics *et al.,* 2007; Robertson *et al*., 2009).

Group FNP (gFNP) starts in the first trimester of pregnancy, continuing until infants are 12 months old with 44 meetings in the curriculum, 14 covering pregnancy and 30 cover infancy (Barnes and Henderson 2012). It is delivered to a group of 8 to 12 women living in relatively close proximity to each other with similar expected delivery dates, ineligible in the UK for FNP either because of the number of live births (under 20, at least one child) or age (20 to 24, expecting first child; Barnes and Henderson, 2012). In the second pilot (Barnes and Stuart, 2014) an additional low education eligibility criterion was required for 20 to 24 first-time mothers (<5 GCSE qualifications at grade A* to C) to draw in more economically disadvantaged women. Meetings lasting 2 hours are held in a children's centre or health

centre in the local area served by the FNP team, facilitated in pilot 1 by two experienced FNP Family Nurses (FNs) one of whom was also a qualified midwife. In pilot 2, due to the small number of FNP teams including a qualified midwife, the programme was delivered was by one FN plus a local community midwife for pregnancy meetings and a family support worker from a local children's centre for infancy sessions. While following NICE (2008) guidelines, the community midwife followed the approach based on Centering pregnancy, encouraging self- monitoring. The community practitioners received a week-long training from FNs who had previously delivered gFNP to familiarise them with both the content of the programme and the mode of delivery, working together to run a group with another professional.

Participants

All gFNP groups were situated in medium to large cities; participating clients were from the local area within walking distance or a short bus/tram/train ride of the Children's Centre or health centre where the meetings took place. Two FNP teams (4 FNs and 2 supervisors) were involved in pilot 1, delivering gFNP to 23 clients (groups of 11 and 12). Four teams (4 FNs, 4 supervisors, 4 community midwives, and 4 family support workers) were involved in pilot 2, offering gFNP to 38 clients (2 groups of 10, 2 groups of 9). Details of the 61 gFNP clients can be found in Table 1. The eligibility criteria for the two pilot studies differed with respect to educational qualifications, reflected in client characteristics; pilot 2 participants had fewer GCSE qualifications, were more likely to be smoking in pregnancy and were slightly younger (see Table 1).

Insert Table 1 here

The studies were approved by NHS Research Ethics Committees 09/H0401/71 and 12/NE/0390. Permission for researchers to contact clients was gained by FNs once the groups had begun. All clients and professionals gave full written informed consent, for the use of their anonymised data (clients) and for participation in interviews and/or focus groups.

All quantitative data were completely anonymised for computer storage. Qualitative interviews and focus group discussions were transcribed with full anonymity.

Measures

Attendance data for all 61 clients came from anonymised data forms completed by FNs from November 2009 to May 2011 (pilot 1) and January 2012 to August 2013 (pilot 2). Forms covering client demographic characteristics and maternal health related behaviour were completed by FNs for 46 clients, those who attended during early pregnancy sessions when the forms were administered (November/December 2009 and January/February 2012). Researchers completed digitally recorded client interviews with 35 clients (N=19 pilot 1; N=16 pilot 2) administered at three time points and lasting between 30 to 45 minutes. Interviews covered experiences of the programme in pregnancy, early infancy, and late infancy respectively. For pilot 1, of the 19 clients 14 were interviewed all three times, 4 were interviewed twice (pregnancy and early infancy) and 1 client only once (pregnancy); for pilot 2, of the 16 clients 9 were interviewed all three times, 3 twice (pregnancy and early infancy) and 4 only once (pregnancy). Partners were not involved in pilot 1 and were not separately invited to take part in interviews for pilot 2 due to limited resources but some were present when clients were interviewed. However that due to the small number involved their views are not likely to be representative so are not presented.

Some questions were common across time - attendance, group dynamics, friendships with group members and relationship with the nurses. Others were phase specific (e.g. recall of being recruited, the first groups, self-care in pregnancy, attendance since giving birth, the presence of infants). Clients in pilot 2 were also asked about partner presence at sessions and the change-over of professionals between pregnancy and infancy. Interviews with FNs (N=8) covered reflections of the programme at similar time-points to client interviews, training, supervision and workload issues and (pilot 2) working with community practitioners. For

pilot 2 interviews were also conducted with the 4 community midwives involved in programme delivery and the 4 Family Support workers. Supervisors (N=4) were interviewed about their role and supervision requirements.

Data analysis

Quantitative data were analysed using IBM SPSS (Statistical Package for Social Sciences) version 20.0. Mean attendance for each phase (pregnancy, infancy) and in total were calculated and compared between pilots using independent samples t-tests. Pearson correlation coefficients tested associations between continuous client characteristics and attendance and ANOVA test examined differences for categorical demographic factors. To identify predictors of attendance, multiple regression analysis was conducted including all factors significantly related to attendance in pregnancy, in infancy, and in total.

Simple content analysis of interviews and focus group transcripts (Robson, 2011) was conducted by two researchers in each study (pilot 1 JB and JH; pilot 2 JB and JS) identifying comments relevant to three of the four pre-defined research questions: barriers to identifying participants; feasibility of delivery and maintaining attendance; and acceptability of the programme to stakeholders. Quotes from clients are numbered, and indicate which pilot (e.g. C12-P2, client 12 in pilot 2). Quotes from professionals indicate their role (Family Nurse FN; Supervisor S; Community Midwife CMW; Family Support Worker FSW) and by pilot (P1, P2).

Results

Are there barriers to reaching the intended population?

Reaching sufficient eligible women required establishing an efficient recruitment pathway. Notifications of potentially eligible women which all came from community midwifery, were required early in pregnancy and in sufficient numbers for a viable group to be formed in a short period to time so that women would have similar delivery dates. In both studies names

were received relatively slowly which posed a problem meaning that groups sometimes started without the target figure of eight members, but added more clients whose expected delivery dates were within the required 10 week range in the second or third week of the programme, meaning that they missed some of the earliest content. In pilot 2, a second issue was that many of the names received were not eligible, due to the educational qualification criterion (fewer than 5 GCSEs at C grade or above). Qualifications are not recorded in midwifery records so FNs needed extra questioning when they contacted potential clients. In one area midwives were not able to screen for the relevant postcodes covered by the FNP team so a very large number of names was provided, which then had to be filtered by the FNP administrator based on the address given.

In the first pilot (two sites) 47 names were received and FNs were able to reach 33 by telephoned to check eligibility (gestation, age and parity). All but 2 (who had miscarried) were eligible. After home visits, 23 of the 31 eligible women (74%) agreed to attend gFNP. The remainder (14) were not contacted since the required group sizes had been achieved. In the second pilot, which was taking place across four sites, 237 names were received and 208 were reached by telephone to check eligibility. More than two thirds of those reached (141/208, 68%) were ineligible, predominantly due to having exceeded the educational qualification criterion (58) or because they lived outside the FNP delivery area (55) with 67 definitely eligible. Of those 38 (57%) agreed forming two groups of 9 and two groups of 10. The remainder (29) were not contacted as groups had reached the required size.

The process of getting the group together was discussed in the FN interviews. It was reported that referral was facilitated if the FN midwife was known to the local midwife team.

We had plenty of referrals. It was a personal relationship really and they trusted us with their caseloads. FN-P1

If too few referrals were received the group dynamics such as the agreement to group 'terms of reference', the formation of friendships and initial sharing of personal information could

be disrupted when the group started with a small number of women but recruitment continued, adding additional clients in the second or third week, until it reached a sufficient size:

The first sessions were for the mums getting to know each other and to trust the nurses. That plan didn't work because of insufficient numbers, we had to integrate new people and modify the group quite a lot. S-P1

Family nurses delivering gFNP were also involved in the home-based (one to one) FNP and they found that the referral pathway for gFNP was more challenging, mainly due to the time pressure involved in getting the group together speedily, and also having to address with potential clients the more detailed eligibility criteria.

…much more challenging [than referrals to FNP], we had a lot of issues with communication with community midwifery, so right at the beginning we weren't getting the referrals through. FN-P2

Maybe we got just a name and how many weeks pregnant; we didn't know if she'd got other children. FN-P2

Confirming eligibility could be challenge for the FNs, particularly in the second pilot with the need to ensure the additional low education criterion for 20 to 24 year olds. Both Family Nurses and community midwives found making the telephone calls stressful and thought at times that they were not getting accurate information:

When you rang them and questioned them further, they didn't meet the criteria. There were just so many obstacles. FN-P2

Sometimes you got the idea that some girls were making up one or two qualifications because they didn't want it to appear they hadn't got any. FN-P2

I don't usually feel uncomfortable asking anybody anything, but I just couldn't understand why it [educational criterion] was in there really. CMW-P2

Factors related to attendance

Insert Table 2 here

Across the six sites delivering gFNP the mean number of sessions delivered was 38.2. One pilot 2 site ended the programme prematurely, offering only 22 of the planned 44 meetings, due to high attrition but in the remaining sites provision ranged from 36 to the maximum of

44. Across both pilots the average attendance was 20.0 (S.D. 13.1; see Table 2) with a small difference in the attendance between the two ($t=2.07$, $p<.05$). Pilot 1 clients (N=23) attended on average 24.4 sessions (S.D. 13.7), representing just over half the possible 44 (55%); two thirds of pregnancy sessions (9.6/14, 69%) and half of the infancy sessions (14.8/30, 49%) (see Table 2). While some clients attended almost the maximum number two never attended (mode 28, range 0-41). Pilot 2 clients (N=38) attended on average fewer than half (17.3/44, 39%, s.d. 12.3), similar to pilot 1 in pregnancy (7.8/14, 56%) but lower in infancy (9.6/30, 32%). Again, there was a wide range (mode 19, range 0-42) with two never attending any sessions (see Table 2). Recorded for the 36 clients who attended any sessions, partner attendance in the second pilot was low overall (mean 2.9 sessions S.D. 5.2); 14 of the partners did not attend at all while the remaining partners (N=22) attended on average 4.7 sessions (S.D. 6.0, range 1 to 22) with only six attending more than 3 sessions.

Attrition in pilot 1 was 7/23 (30%), three (13%) leaving in pregnancy and four (17%) during infancy. Attrition was greater in pilot 2 (19/38, 50%) with more stopping in pregnancy (11, 29%) than in infancy (8, 21%). The group that ended after only 22 sessions, due to high attrition, did so in agreement with the clients and programme termination occurred at the end of the calendar year with a suitable celebration. Given the small number of differences in client characteristic between pilots (see Table 1), analyses to identify whether they were related to attendance were conducted combining the samples. Most client characteristics were not related to attendance (see Table 3). Clients with more educational qualifications attended more sessions. Those living alone attended the fewest sessions compared to those living with partners and/or other adults and those who had never been employed attended fewer sessions that those who had been employed. Taking both pilot studies into account and including all relevant client factors in a multiple regression, the only significant predictor of total low attendance was having never been employed (versus employed full time) while attendance in

pregnancy was significantly lower for women living alone compared to those living in a household with other adults (see Table 4).

Insert Tables 3 and 4 here

Can delivery and attendance be maintained?

Enrolment is based on a meeting between the potential client and family nurse and should ensure that there is good understanding of the required time commitment, but this was not always achieved:

A few people at the beginning thought it was just going to be some ante-natal care and they would just leave afterwards. FN-P2

However, if a client had attended more than one or two sessions strong commitment was typical in both pilots.

I have only missed one day and that was the day I had her [baby]. C15-P1

I missed a couple of times - once when I was heavily pregnant and once when my grandma was ill. C6-P2

Nevertheless, several participants explained why they had missed sessions. Transport problems were sometimes mentioned in terms of non-attendance:

I didn't go when it was raining. It's about half an hour's walk away. It wasn't really worth going by bus, it wasn't a direct route. C4-P2

After babies had been born some found it too tiring to organize getting to meetings, or had employment or educational opportunities:

It just feels like I am too busy …when I am in the house with him I have everything that I need to hand. If I go out and forget something I start panicking. C2-P1

At the start I was able to attend every one, then I went back to work. They wanted me to work extra time if I left early to attend the group. C7-P2

People started to return to work and things started to change in their family life which possibly affected their commitment. FSW-P2

Is the programme acceptable to stakeholders?

Acceptability was examined based on comments made by clients and practitioners focussing on four specific aspects of the programme identified in the interview schedule: the group context for receiving support; topics in the curriculum; midwifery care and encouragement to be involved in self-checks; and for the practitioners working with another professional, particularly roles taken by FNP and community practitioners.

(i) The group context

A few women doubted whether they would do well in a group with other mothers:

I was unsure at first because I am not a people person. At first we didn't know each other, but now we all chat. C4-P1

However in infancy the presence of other mothers and other babies could be a considerable draw. Many clients reported gaining support from others and enjoying the fact that they could share their baby's progress with other parents. They also believed that this helped in their baby's developmental progress

I love it. I love showing off with her, I don't know why. C14-P1

He was quite shy and it brought him out of his shell being around other children. C8-P2

One change in Pilot 2 was that partners were included as group members and most clients considered this to be positive. However, some would have liked a female only group.

My partner came and he enjoyed it, he didn't feel pushed out, which you can be in some groups because it's just for mums. C5-P2

I think it's better just girls cos a few partners have been before and it's awkward…. I like it just girls. C1-P2

While based on FNP, FNs acknowledged that they could not cover content in the same way in a group as they could in one-to-one work, but instead needed to allow the group to discuss issues and share their views which meant the FNs needed to manage group members holding differing opinions and exhibiting differing behaviours.

It is impossible in a group to give what we give to people one-to-one because of the constraints of them wanting to discuss it. FN-P1

Weaning has been quite controversial; budgeting too as half the group work and half are on benefits, there was this political overtone. FN-P1

At the beginning, some of them did smoke but now at least they go outside and don't smoke around their babies. FSW-P2

(ii) The curriculum

Clients' had many positive comments about topics covered and they particularly appreciated strategies that engaged them actively, more likely to take place in a group than if they had been receiving support at home:

We were blindfolded and someone had to put food in our mouth, we didn't know what it was, it shows what babies think. C2-P1

When we've done hands-on activities, not just sat talking about it. C1-P2

In infancy many aspects of baby care were recalled favourably, in particular baby massage, ways to communicate more effectively and how to stimulate infant development.

The baby massage was good because it relaxes her. C15-P1

Talking about how the brain connects and how they learn things and how you have to repeat things. C9-P1

He wasn't into singing but when we did it as a group, he really enjoyed it. C5-P2

However not all topics were received positively. For example a session focussing on domestic violence received some negative remarks and a video about cot death was also criticised.

I wouldn't have gone to the domestic violence session if I had known in advance what it was about. It was too long winded and in-depth. C17-P1

I didn't like it when we did the cot-death video, I knew it could happen but I don't think it were appropriate to show it to young pregnant girls who were worried anyway. C1-P2

(iii) Pregnancy self-care and infant checks

The majority of clients considered that the inclusion of routine midwifery care in the group was a bonus when deciding to accept the programme, expecting that it would allow more contact with a midwife and health visitor than would be the case if receiving routine services.

It is not an ordinary antenatal group it is much different and that is what I like about it. C3-P1

I like the fact that we got to know our midwife and health visitor on a more personal basis…I think it's more support. C6-P2

Mothers generally reported that they liked the self-care aspect of the programme (blood pressure checks, foetal heart rate and urine samples), but some were reluctant to take responsibility for the checks themselves, preferring that the midwife to do them.

A fantastic idea because you feel so much more in control when you do it yourself. C14-P1

I haven't had the guts to try it. C13-P1

I understand the dip test, the sugars, the protein and what they mean, and my blood pressure and what's normal for me, and I enjoy that. C5-P2

I didn't really do the blood pressure, and I just used to wee on a stick and show it to the midwife. C10-P2

The community midwives (in pilot 2) were positive about the concept of encouraging self-care but noted that time restrictions caused problems, and they had some anxieties.

I think it was a brilliant idea…women are capable of testing their urine and actually they loved being involved... (but) because of the time frame it made it very difficult. CMW-P2

I think it made me slightly nervous, it probably still does…from the accountability point of view, it's my registration on the line CMW-P2

(iv) Working with another professional

For pilot 1 two equally experienced FNs delivered the groups, which allowed them to develop work in the group according to their preferred, possibly contrasting, styles although this proved a challenge if one was absent.

We are different personalities. I think [x] tends to deliver the emotional part talking about trust and relationships whereas I do more of the clinical side. FN-P1

It is always more difficult on your own because there is none of the usual banter between us. FN-P1

In the second pilot an experienced FN was accompanied by a community midwife in pregnancy and a family support worker in infancy, neither of whom was very familiar with FNP - its content, paperwork requirements and style of delivery. Both community midwives and family support workers noted that they would have like more training to understand the programme more fully.

We could have done with just a little bit more time of preparing *how* we were going to talk to people, *how* we were going to deliver this service to them. CMW-P2

Their lesser knowledge of the FNP approach placed a heavier burden on the FNs. Division of responsibilities was most evident during pregnancy, community midwives being more concerned with health checks but taking a more back-seat role for other programme content. In addition they felt less confident in the strength-based style of delivery based on motivational interviewing.

I'm used to the programme, I knew what was coming, I knew how to do it, but the CMW wasn't. FN-P2

Sometimes you realised that you'd done it wrong, you'd said something you shouldn't have done, but it were really nice for us to reflect afterwards. CMW-P2

In contrast, during infancy the division between FNP and non-FNP professionals was not so clear, both FNs and FSWs worked with mothers on infant health checks and they were more equal in running the group.

We had quite a few discussions [in supervision] about the roles that they both played; it was a very interesting because when it was the CMW and the FN it was two separate roles. With the FSW, the group members saw them both as group facilitators. S-P2

However, like the midwives, delivering gFNP represented a different way of working for the support workers, more used to brief contacts with families in Children's Centres, solving problems, giving information and providing solutions.

You want to save time, you want to stop the distress and I realise now through gFNP that we try to encourage them to do it for themselves. FSW-P2

Clients were generally happy with the change- over of professionals. The location of the group at the Children's Centre could enable the Family Support Worker to become a familiar face.

Yes it was absolutely fine because when FN and CMW used to run the group FSW used to always pop in anyway, so we all saw her face then as soon as CMW went FSW just came in. C12 –P2

It was noted that they sometimes took differing roles depending on the content being discussed.

Certain topics the CMW would talk about, certain ones the FN, then they did the same again [after the change to the FSW], certain topics FSW would talk about and…they took it in turns talking. C9 –P2.

It was also noted that participation in delivering gFNP could be more challenging for the CMW than the FSW.

I think FSW made more of an impact on the group than CMW because CMW was just there really for the antenatal, it seemed like she had too much on her plate – she had a lot of things on and she seemed always like in a rush. Don't get me wrong she is a lovely person but FSW doesn't care how long she takes, she will stay and chat. C10-P2

The relationship between the FN and the community professionals was generally seen as good, however some clients noted the greater responsibility taken by the FN who appeared to take the lead in presenting the programme's content.

They get on all right but FN does most of the talking, FSW would write on the board and stuff like that. C7-P2

Discussion

This paper investigated the feasibility of delivering gFNP, specifically any barriers to reaching the intended population for gFNP, any client factors related to attendance, whether programme delivery could be sustained over 18 months, and whether the programme was acceptable to different stakeholders?

Looking at barriers to reaching potential clients, the programme starts early in pregnancy and there were many issues to overcome with midwifery services in order to identify the relevant population in a timely manner, a barrier also identified in an ongoing effectiveness randomised trial (Stuart *et al*., 2015). Any future delivery of gFNP may depend in part on developing better communication systems with midwifery colleagues. This is particularly important given that the most vulnerable mothers, including young mothers, are likely to be ?maybe? slower to access maternity services and therefore become identifiable for gFNP.

While there have been improvements with only 78% of women seen by 12 weeks in 2008, recent figures (NICE, 2015) indicated that 8% of women do not see a maternity professional within 12 weeks and late bookings are more prevalent in London or other large cities, and in minority ethnic groups. Recruitment for programmes such as this, initiated early in pregnancy, may need to develop additional routes for identifying potential clients rather than relying on booking information, such as community outreach and extensive outreach with professionals working with young mothers, such as schools or colleges and social workers. Once reached, client refusal of the programme offer can be a further barrier. Take up of any group support can be a challenge (Wiggins *et al*., 2005) but once eligible women had been identified for gFNP the take-up was moderately good suggesting initial acceptability. The slightly lower rate in the second pilot may be associated with the need to ask about additional eligibility criteria. Questioning about (the lack of) educational qualifications may have deterred potential clients who perhaps wondered why they were being targeted. The UK Sure Start intervention for vulnerable families offered programmes to all those in defined areas rather than specific families to avoid stigma (Belsky *et al.,* 2007). When FNP was launched a review identified many risk indicators that would be useful to determine vulnerability including lack of educational qualifications (Hall and Hall, 2007) but eventually only age and parity were used, which did not require extensive enquiry and were not perceived as stigmatising (Barnes *et al.,* 2008). Attaining a balance between efficient recruitment and identifying the most suitable participants may need further consideration if gFNP is to be offered more widely since slow referral rates had a negative impact on group size and subsequent group sustainability. Eligibility may also need to be re-considered in view of the fact that the more educated women, with full-time employment, were likely to be among the best attenders compared to more vulnerable clients The UK Sure Start programme attempted to avoid stigma by using a ‘targeted universal’ approach, but outcomes were better for the

less vulnerable families (Rutter, 2006). It has been demonstrated that giving more attention to client accessibility and engagement can lead to positive outcomes of parenting interventions for the most vulnerable families, demonstrated in a UK trial of the Incredible Years programme with parents of pre-schoolers living in disadvantaged neighbourhoods (Gardner *et al.*, 2010). Phone calls were made to ?gFNP clients who missed sessions and many clients received financial support to cover travel but it may be necessary to use more outreach, or possibly involve group members in supporting each-other to attend, coordinating their travel or making 'buddy' telephone calls prior to meetings.

What factors affect attendance and can it be sustained over 18 months? While clients reported strong commitment in interviews, attendance data revealed that not many attended consistently. This can have a negative impact for all group members. The nurses made an effort to give some information about missed content to any client who did not attend a previous meeting but they also need to continue with the planned flow of the curriculum. If several clients miss a session, or if many members attend erratically, it can quickly become less viable in that the participants cannot build on accumulated knowledge, leading in one case to programme delivery being terminated prematurely. In addition the smaller the group becomes over time, the less cost-effective it is likely to be as a means of supporting parents. Only a few client factors were identified that could be linked to attendance. Those who lived alone or who had never been employed attended fewest sessions. Group services are often conceived as a means to limit social isolation for young mothers (De Jonge, 2001; Keys, 2008) but those living alone may not always have the personal resources to organise themselves for regular group attendance. To increase viability, group sessions might need to be supplemented by some home visits from nurses for the more vulnerable group members.

Finally is the programme acceptable both the professionals involved and to the clients? The FNP professionals found the programme acceptable, they liked working in a group context

and it required them to be flexible and creative since, by definition with the range of expected delivery dates, some women in the group would have delivered their babies while others were still pregnant. Nevertheless, this style of programme had disadvantages compared to their home-based work when attendance was poor or erratic. While they were skilled in 'agenda matching' if too many were absent then much time could be taken with 'catch-up' when clients re-attended. Issues also emerged when non-FNP community based midwives and support workers were involved alongside FNP nurses. This service delivery model (pilot 2) was developed as a way to make the programme more widely available, due to the limited number of FNs across the UK who also hold midwifery qualifications. Community-based practitioners were less confident about the programme's content and midwives in particular focussed on delivery of antenatal routine care leaving the FNs to focus on the programme content. Additional training would address this, but would also add to the cost of programme delivery.

Clients liked having a consistent midwife for antenatal care and enjoyed learning to monitor their own health but it is one aspect of gFNP that may make wider roll-out challenging. Centering Pregnancy has a strong evidence base in the US (Ickovics *et al*., 2007) and a UK feasibility study (Gaudion *et al.,* 2011a; 2011b) concluded that it was well received. However, given the high quality of universal midwifery in the UK, one possible option for future delivery of gFNP in the UK to facilitate wider applicability may to plan for the programme to be limited to the FNP content, without the inclusion of this style of midwifery care, which would mean that more FNP teams could deliver the programme. Nevertheless this change may reduce uptake as some mothers indicated that the possibility of seeing one midwife consistently through pregnancy was a reason for accepting the programme. A future trial could assess the benefits of gFNP with and without the routine midwifery care.

Clients also liked to meet with parents who were similar to themselves, in terms of where they lived and the similar expected delivery dates of their babies. They reported much enjoyment from seeing their infant with others of a similar age, and sharing views about parenting. The idea of supporting them is this way, with peers who could provide additional support, could be a useful way to both extend social networks and involve parents in other services in the children's centres. Future research may investigate issues such as the optimal group size, the frequency of meetings and extent of time. For example weekly meetings but only until infants are 6 months might both improve both initial take-up and ongoing attendance?

Limitations

Conclusions about the viability of gFNP and the feasibility of delivering it within the context of the NHS in the UK cannot be drawn conclusively. Each pilot involved only small numbers of participants and was limited to densely populated locations and the two pilots differed slightly in terms of the intended population and the staffing model. In addition it was not possible for the researchers to interview clients who dropped out of the programme early since consent for participation was only sought once groups had started. Contact with them would have provided more information about how to convene groups of the required size and maximise dosage so that the programme is more sustainable. For instance they might have responded better to a programme with fewer sessions, over a shorter time-frame. Fidelity measures for delivery, which are well defined for the FNP programme, have not yet been developed for gFNP. It will be important to construct initial guidelines for use with any future research. Finally, future research will need to look at the cost of delivery and the programme's effectiveness in achieving the expected outcomes, particularly in view of finding that FNP in the UK has not led to the expected outcomes (Robling *et al.,* 2015).

Conclusions

These feasibility pilot studies indicate that gFNP can be delivered to the target population, though success depends in particular on a good referral strategy so that groups start with sufficient participants. However, offering a group programme that extends over 18 months may expect too much of participants' commitment. There was variable attendance related in part to client characteristics and attrition was high in some sites. Once the results of the effectiveness RCT study (Barnes *et al.,* 2013), with a wider geographical coverage, are known they may further illuminate how to refine the programme. Then, in line with MRC guidelines, before the programme can be offered widely further feasibility research is likely to be necessary, followed by a second effectiveness trial. Changes may relate to programme eligibility, the ideal number of group sessions, optimal staffing mix, and the inclusion of midwifery care. In terms of policy it will be necessary to balance the need to support more vulnerable families with the practicality of identifying them. It will also be important to consider the feasibility of delivery given current work-force in FNP and in Midwifery, and the reduction in Children's Centre Services (4Children, 2015).

Acknowledgements

We would like to express our thanks to all the clients, their partners, the FNP Family Nurses and other professionals who took the time to take part in our interviews and to the FNP Family Nurses, supervisors and administrators who made sure that all relevant programme forms were completed and submitted while they delivered this new programme. We would also like to express our thanks to Mary Griffiths, FNP National Unit Service Development and New Projects Lead with responsibility for managing the development and refinement of gFNP, for her ongoing discussion about gFNP delivery and to Samantha Mason, FNP National Unit Research and Implementation Director for her feedback on all research reports. Thanks are also due to Beth Howden for organising and converting data from the various forms, to Juliet Henderson for conducting and interpreting pilot 1 interviews and to Elizabeth Klauber for conducting some Pilot 2 interviews.

Conflict of Interest

No conflict of interest has been declared by the author(s).

Funding

Pilot 1 was funded by a grant to Professor Barnes from the Department of Health (ITT 53166) and Pilot 2 was funded by grants to Professor Barnes from the Department of Health (ITT 58587) and the Family Nurse Partnership National Unit at the Tavistock and Portman NHS Trust.

References

4Children (2015), *Children's Centre Census 2015*, 4Children, London, UK. Available at: http://www.4children.org.uk/Resources/Detail/Childrens-Centre-Census-2015 (accessed 30 October 2015).

Allen, G. (2011), *Early intervention: the next steps,* Cabinet Office, HM Government, London, UK.

Anning A. and Ball M. (2008), *Improving services for young children. From Sure Start to Children's Centres,* Sage, London, UK

Baldwin, K.A. (2006), "Comparison of selected outcomes of Centering Pregnancy versus traditional prenatal care", *Journal of Midwifery and Women's Health,* Vol. 51 No. 4, pp. 266-272.

Bandura, A. (1977), "Self-efficacy: toward a unifying theory of behavioral change", *Psychological Review,* Vol. 84 No.2, pp. 191-215.

Barnes, J., Aistrop, D., Allen, E., Barlow, J., Elbourne, D., Macdonald, G., Melhuish, E., Petrou, S., Pink, J., Snowdon, C., Spiby, H., Stuart, J. and Sturgess, J. (2013), "First Steps: study protocol for a randomized trial of the effectiveness of the Group Family Nurse Partnership (gFNP) program compared to routine care in improving outcomes for high-risk mothers and their children and preventing abuse", *Trials* Vol. 14 No. 1, pp. 285.

Barnes, J., Ball, M., Meadows, P., McLeish, J., Belsky, J. and the FNP Implementation Research Team (2008), *Nurse-Family Partnership: First year pilot sites implementation in England. Pregnancy and the post-partum period.* Research Report DCSF-RW051. Department for Children, Schools and Families, London, UK.

Barnes, J. and Henderson, J. (2012), *Summary of the formative evaluation of the first phase of the group-based Family Nurse Partnership programme.* Department of Health, London, UK,

Barnes, J. and Stuart, J. (2014), *Evaluation of Group Family Nurse Partnership. Phase 3*

Institute for the Study of Children, Families and Social Issues, Birkbeck, University of London, London, UK, available at: http://www.iscfsi.bbk.ac.uk/projects/Barnes_and_Stuart_2014_gFNP_Phase_3.pdf (accessed 27 November 2015).

Belsky, J., Barnes, J. and Melhuish, E. (2007), *The National Evaluation of Sure Start. Does area-based early intervention work?,* Policy Press, Bristol, UK.

Bowlby, J. (1969), *Attachment and loss. Volume 1. Attachment,* Basic Books, New York.

Bronfenbrenner, U. (1979), *The ecology of human development: experiments by nature and design,* Harvard University Press, Cambridge, MA, USA.

Craig, P., Dieppe. P., Macintyre, S., Michie, S., Nazareth, I. and Petticrew, M. (2008), "Developing and evaluating complex interventions: the new Medical Research Council guidance", *BMJ*, Vol. 337 No. a1655.

Creswell J.W. and Plano Clark V.L. (2011), *Designing and conducting mixed methods research* (2nd Ed.) Sage, Thousand Oaks, CA, USA.

De Jonge, A. (2001), "Support for teenage mothers: a qualitative study into the views of women about the support they received ad teenage mothers", *Journal of Advanced Nursing* Vol. 36 No. 1, pp. 49-57.

Department of Health (2011), *Preparation for birth and beyond. A resource pack for leaders of community groups and activities,* Department of Health, London, UK, available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/215386/dh_134728.pdf (accessed 30December 2015).

Family Nurse Partnership National Unit (2012), *The Family Nurse Partnership Programme. Information Leaflet,* Department of Health, London, UK, available at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216864/The-Family-Nurse-Partnership-Programme-Information-leaflet.pdf (accessed 27 November 2015).

Family Nurse Partnership National Unit (2015), *Research and Development. Group FNP*, available at: http://fnp.nhs.uk/evidence/developments (accessed 27 November 2015).

Gardner, F., Hutchings, J., Bywater, T. and Whitaker, C. (2010), "Who benefits and how does it work? Moderators and mediators of outcome in an effectiveness trial of a parenting intervention", *Journal of Clinical Child and Adolescent Psychology*, Vol. 39 No.4, pp.568-580.

Gaudion, A., Bick, D., Menka, Y., Demilew, J., Walton, C., Yiannouzis, K. and Robbins, J. (2011a), "Adapting the Centering Pregnancy ® model for a UK feasibility study", *British Journal of Midwifery,* Vol. 19 No.7, pp. 433-438.

Gaudion, A., Menka, Y., Demilew, J., Walton, C., Yiannouzis, K., Robbins, J., Risling, S.S. and Bick, D. (2011b), "Findings from a UK feasibility study of the Centering Pregnancy ® model", *British Journal of Midwifery,* Vol. 19 No. 12, pp. 792-802.

Grady, M.A. and Bloom, K.C. (2004), "Pregnancy outcomes of adolescents enrolled in a Centering Pregnancy program", *Journal of Midwifery and Women's Health,* Vol. 49 No. 5, pp. 412–20.

Hall, D. and Hall, S. (2007), The "Family-Nurse Partnership": developing an instrument for identification, assessment and recruitment of clients. Research report DCSF-RW022, Department for Children, Schools and Families, London, UK.

Hoddinott P., Chalmers M. and Riosin P. (2006), "One-to-one of group-based peer support for breastfeeding? Women's perceptions of a breastfeeding peer coaching intervention", *Birth,* Vol. 33 No. 2, pp.139-146.

Ickovics, J.R., Kershaw, T.S., Westdahl, C., Rising, S.S., Klima, C., Reynolds, H. and Magriples, U. (2003), "Group prenatal care and preterm birth weight: results from a matched cohort study at public clinics", *Obstetrics and Gynecology,* Vol. 102 No.5, pp. 1052-1057.

Ickovics, J.R., Kershaw, T.S., Westdahl, C., Magriples, U., Massey, Z., Reynolds, H. and Rising, S.S. (2007), "Group prenatal care and perinatal outcomes: a randomized controlled trial", *Obstetrics and Gynecology,* Vol. 110 No. 2, pp. 330-339.

Keys, D. (2008), *Optimizing wellbeing: Young mothers' participation in parents' groups*, Key Centre for Women's Health in Society, School of Population Health, University of Melbourne, Melbourne, Victoria, Australia.

Kitzman. H., Olds, D.L., Henderson, C.R. Jr, Hanks, C., Cole, R., Tatelbaum, R., McConnochie, K.M., Sidora, K., Luckey, D.W., Shaver, D., Engelhardt, K., James, D. and Barnard, K. (1997), "Effect of prenatal and infancy home visitation by nurses on pregnancy outcomes, childhood injuries, and repeated childbearing. A randomized controlled trial", *JAMA,* Vol. 278 No. 8, pp. 644-652.

Medical Research Council (MRC) (2000), *A framework for the development and evaluation of RCTs for complex interventions to improve health,* MRC, London, UK.

Mejdoubi, J., van den Heijkant, S.C.C.M., van Leerdam, F.J.M., Heymans, M.W., Crijnen, A. and Hirasing, R.A. (2015), "The Effect of VoorZorg, the Dutch Nurse-Family Partnership, on child maltreatment and development: a randomized controlled trial", *PLoS One* 10, pp. 1–14.

National Institute for Health and Care Excellence (NICE) (2008), *Antenatal care for uncomplicated pregnancies. Clinical guideline.* National Institute for Health and Care Excellence, London, UK, Available at: https://www.nice.org.uk/guidance/cg62 (accessed 30 October 2015).

National Institute for Health and Care Excellence (NICE) (2015), "Antenatal care briefing paper", National Institute for Health and Care Excellence, London, UK, Available at

http://www.nice.org.uk/guidance/qs22/documents/antenatal-care5 (accessed 30 December 2015).

Olds, D.L. (2006), "The Nurse-Family Partnership: an evidence-based preventive intervention", *Infant Mental Health Journal,* Vol. 27 No. 1, pp. 5-25.

Olds, D.L., Eckenrode, J., Henderson, C.R. Jr, Kitzman, H., Powers, J., Cole, R., Sidora, K., Morris, P., Pettitt, L.M. and Luckey, D. (1997), "Long-term effects of home visitation on maternal life course and child abuse and neglect. Fifteen-year follow-up of a randomized trial", *JAMA,* Vol. 278 No. 8*,* pp. 637-643.

Olds, D., Donelan-McCall, N., O'Brien, R., MacMillan, H., Jack, S., Jenkins, T., Dunlap, W.P. 3rd, O'Fallon, M., Yost, E., Thorland, B., Pinto, F., Gasbarro, M., Baca, P., Melnick, A. and Beeber, L. (2013), "Improving the Nurse-Family Partnership in community practice", *Pediatrics,* Vol. 132 Supp. 2, pp. S110-S117.

Robertson, B., Aycock, D.M. and Darnell, L.A. (2009), "Comparison of Centering Pregnancy to traditional care in Hispanic mothers", *Journal of Maternal and Child Health,* Vol. 13 No. 3, pp. 407-414.

Robling, M., Bekkers, M-J., Bell, K., et al. (2015), "Effectiveness of a nurse-led intensive home-visitation programme for first-time teenage mothers (Building Blocks): a pragmatic randomised controlled trial", *Lancet,* online October 14.

Robson, C. (2011). *Real World Research, Third Edition*. Wiley, Chichester, UK.

Serçekuş P. and Mete, A. (2010), "Effects of antenatal education on maternal prenatal and postpartum adaptation", *Journal of Advanced Nursing,* Vol. 66 No. 5*,* pp. 999-1010.

Rutter, M. (2006), "Is Sure Start an effective preventive intervention?", *Child and Adolescent Mental Health,* Vol. 11 No. 3, pp.135-141.

Shribman, S. and Billingham, K. (2009), *Healthy Child Programme. Pregnancy and the first 5 years of life,* Department of Health, London, UK.

Stevenson, M.D., Scope, A., Sutcliffe, P.A., Booth, A., Slade, P., Parry, G., Saxon, D. and Kalthenthaler, E. (2010), "Group cognitive behavioural therapy for postnatal depression: a systematic review of clinical effectiveness, cost-effectiveness and value of information analyses", *Health Technology Assessment*, Vol 14, No. 44.

Stuart, J., Barnes, J., Spiby, H. and Elbourne, D. (2015), "Understanding barriers to involving community midwives in identifying research participants; experience of the First Steps Randomised Controlled Trial", *Midwifery,* Vol. 31 No. 8, pp. 779-786.

Wiggins, M., Oakley, A., Roberts, I., Turner, H., Rajan, L., Austerberry, H., Mujica, R., Mugford, M. and Barker, M. (2004), "Postnatal support for mothers living in disadvantaged inner city areas: a randomised controlled trial", *Journal of Epidemiology and Community Health,* Vol. 59 No.4*,* pp. 288-295.

Williams, K.J., Zolotor, A. and Kaufmann, L. (2009), "Does group prenatal care improve pregnancy outcomes?", *Journal of Family Practice,* Vol. 58 No.7, pp. 384a-384c.

Table 1. Characteristics of enrolled gFNP clients and differences between pilot 1 and pilot 2 (mean scores and standard deviations in brackets for continuous characteristics, Ns and percentages in brackets for categorical characteristics)

Characteristic	N[1]	Pilot 1 N=23	N[1]	Pilot 2 N=38	Difference
Continuous characteristics					
Age (years)	23	21.8 (2.0)	36	20.7 (1.7)	F 4.89*
Range	23	19 – 25	36	18 – 24	
Gestation at enrolment (weeks)	23	14.0 (4.0)	18[2]	14.9 (4.0)	F 0.56, n.s.
Range	23	6 – 23	18	7 – 19	
GCSE qualifications, all grades	19	6.9 (3.6)	25	4.4 (3.7)	F 5.23*
Range		0 – 11		0 – 13	
GCSEs at grade A* to C	19	4.9 (4.0)	25	1.3 (2.3)	F 13.76**
Range		0 – 11		0 – 10	
Cigarettes smoked, last 2 days	19	0.5 (2.3)	28	8.4 (8.2)	F 16.43***
Range		0 – 10		0 – 30	
Categorical characteristics					
Marital status	19		27		χ^2 4.605, n.s.
Single/separated		9 (47.4)		11 (40.7)	
Co-habiting		6 (31.6)		15 (55.6)	
Married		4 (21.0)		1 (3.7)	
Has partner currently	19	15 (78.9)	27	22 (81.4)	χ^2 1.079, n.s.
Current partner is baby's biological father	15	13 (86.7)	22	21 (95.5)	χ^2 0.336, n.s.

Contact with baby's biological father	19		27		χ^2 4.163, n.s.
Daily		15 (78.9)		21 (77.8)	
At least weekly		2 (10.5)		2 (7.4)	
Less than weekly		0		3 (11.1)	
Never		2 (10.5)		1 (3.7)	
Household (lives with)	19		27		χ^2 2.602, n.s.
Partner/husband		6 (31.6)		11 (40.7)	
Partner/husband and other adults		4 (21.0)		5 (18.5)	
Other adults, not partner/husband		7 (36.8)		5 (18.5)	
Alone		2 (10.5)		6 (22.2)	
Ethnic background	19		27		χ^2 5.860, n.s.
Asian		2 (10.5)		1 (3.7)	
Black		2 (10.5)		1 (3.7)	
Mixed		5 (26.3)		2 (7.4)	
White British		10 (52.6)		23 (85.2)	
Employment status	19		27		χ^2 5.161, n.s.
Never employed		2 (10.5)		10 (37.0)	
In past, not currently		7 (36.8)		10 (37.0)	
Part-time		3 (15.8)		2 (7.4)	
Full-time		7 (36.8)		5 (18.5)	
Smoking behaviour	19		28		χ^2 18.153***
Never a smoker		15 (78.9)		6 (21.4)	

Smoker, not in pregnancy		3 (15.8)		4 (14.3)	
Smoked during pregnancy		1 (5.3)		18 (64.3)	

n.s. not significant, * p<.05, ** p<.01, *** p<.001

GCSE - General Certificate of Education qualifications, usually gained at age 16 years.

1 For most characteristics the N is less than the total sample. Information is based on forms completed by Family Nurses. If clients never attended or did not attend on the day that the form was completed, they have missing information.

2 Gestation at enrolment was only recorded in two of the four Pilot 2 sites.

Table 2. Sessions delivered and mean client attendance in total and for each pilot study

	Total sessions (curriculum = 44)	Pregnancy sessions (curriculum = 14)	Infancy sessions (curriculum = 30)
Sessions held (range)	22-44	14-17	7-29
Mean attendance, both pilots (N=61)	20.0 (13.1)	8.4 (4.4)	11.5 (9.4)
Mean attendance, clients attending any sessions (N=57)	21.4 (12.4)	9.0 (3.9)	12.4 (9.2)
Pilot 1 (2 sites)			
Mean attendance (N=23)	24.4 (13.7)	9.6 (4.5)	14.8 (9.8)
Mean attendance, clients attending any sessions (N=21)	26.7 (11.8)	10.5 (3.4)	16.2 (9.0)
Range	1 - 41	1 - 16	0 - 29
Pilot 2 (4 sites)			
Mean attendance (N=38)	17.3 (12.3)	7.8 (4.3)	9.6 (8.8)
Mean attendance, clients attending any sessions (N=36)	18.3 (11.9)	8.2 (4.0)	10.1 (8.7)
Range	1 – 42	1 – 15	0 – 28

Table 3. Relationships between client characteristics and attendance (Pearson correlation coefficients for continuous characteristics, mean values and ANOVA for categorical characteristics)

Characteristic	N	Pregnancy sessions	Infancy sessions	Total sessions
Continuous characteristics		Correlation coefficient	Correlation coefficient	Correlation coefficient
Age (years)	59	.05	.17	.14
Gestation at enrolment (weeks)	41	.12	-.02	.04
All GCSEs	44	.08	.23	.21
GCSEs at grade A* to C	44	.17	.40**	.36*
Number of cigarettes, last 2 days	47	.17	.12	.14
Categorical characteristics		Mean (standard deviation)	Mean (standard deviation)	Mean (standard deviation)
Marital status	46			
Single/separated	20	10.4 (3.5)	16.2 (9.7)	26.6 (12.6)
Co-habiting	21	9.6 (2.4)	13.0 (7.8)	22.6 (9.4)
Married	5	10.6 (3.5)	14.0 (8.9)	24.6 (10.9)
ANOVA F [2 ,43 df]		.43 n.s.	.68 n.s.	.66 n.s.
Partner currently	46			
Yes	37	9.9 (2.9)	14.1 (8.3)	24.0 (10.3)
No	9	10.7 (3.6)	16.0 (10.8)	26.7 (14.0)
ANOVA F [1,44 df]		.44 n.s.	.34 n.s.	.42 n.s.

Current partner is baby's biological father	37			
Yes	34	9.9 (2.9)	14.0 (8.1)	23.9 (10.0)
No	3	10.3 (3.2)	15.3 (12.6)	25.7 (15.5)
ANOVA F [1,35 df]		.07 n.s.	.07 n.s.	.08 n.s.
Contact with baby's biological father	46			
Daily	36	9.9 (2.9)	13.3 (8.4)	23.1 (10.7)
At least weekly	4	9.0 (4.6)	16.3 (11.3)	25.3 (14.5)
Less than weekly	3	11.0 (2.0)	14.7 (5.9)	25.7 (6.5)
Never	3	13.0 (1.0)	26.0 (3.6)	39.0 (3.4)
ANOVA F [3,42 df]		1.30 n.s.	2.17 n.s.	2.08 n.s.
Household (lives with)	46			
Partner/husband	17	9.4 (2.7)	12.7 (8.5)	22.1 (10.7
Partner/husband and other adults	9	10.9 (2.5)	15.0 (7.0)	25.9 (7.5)
Other adults, not partner/husband	12	12.1 (1.7)	19.8 (7.4)	31.8 (8.6)
Alone	8	7.6 (3.7) ↓	9.6 (10.1)	17.3 (12.9) ↓
ANOVA F [3,42 df]		5.31**	2.82*	3.91 *
Ethnic background	46			
Asian	3	10.3 (3.1)	14.3 (10.8)	24.7 (13.6)
Black	3	7.3 (3.1)	6.3 (9.3)	13.7 (11.9)
Mixed	7	10.1 (3.2)	17.1 (11.1)	28.0 (13.6)
White British	33	10.1 (3.0)	14.6 (8.0)	24.8 (10.0)
ANOVA F [3,42 df]		1.00 n.s	1.09 n.s.	1.23 n.s.
Employment status	46			

Never employed	12	8.5 (2.9)	6.8 (7.1) ↓	15.3 (8.9) ↓
In past, not currently	17	10.7 (2.9)	17.6 (8.4)	27.7 (10.7)
Part-time	5	9.6 (4.0)	16.4 (10.1)	26.0 (12.7)
Full-time	12	11.0 (2.4)	17.7 (5.8)	28.7 (7.8)
ANOVA F [3,42 df]		1.83 n.s.	5.49**	4.96**
Smoking behaviour	47			
Never a smoker	21	10.5 (2.6)	16.2 (8.5)	26.7 (10.5)
Smoker, but not in pregnancy	7	8.6 (3.6)	8.6 (8.9)	17.1 (12.2)
Smoked during pregnancy	19	10.2 (2.6)	14.3 (8.6)	24.5 (9.4)
ANOVA F [2,44 df]		1.30 n.s.	2.20 n.s.	2.26 n.s.

n.s. not significant * p<.05, ** p<.01, *** p<.001; df degrees of freedom

↓ significantly lower than other categories

Table 4. Standardized Beta for predictors of gFNP attendance in pregnancy, infancy and in total based on multiple regressions (N=42)

Predictor	Pregnancy attendance	Infancy attendance	Total attendance
Pilot 2 vs. pilot 1	-.071	.006	-.015
Number of GCSEs at C or higher	-.042	.327(*)	.246
Lives with other adults, not partner (vs. lives alone)	.595**	.224	.343(*)
Lives with other adults and partner (vs. lives alone)	.330(*)	.005	.096
Lives with partner (vs. lives alone)	.228	.024	.083
Never employed (vs. employed full time)	-.264	-.414*	-.400*
Previously employed (vs. employed full time)	-.139	-.003	-.041
Employed part-time (vs. employed full time)	-.158	-.116	-.136
Adjusted R Square	.168	.254	.252
Anova F value (degrees of freedom 8,34)	2.06(*)	2.78*	2.79*

(*) p<.10, * p<.05, ** p<.01