

Interventions to support early relationships: mechanisms identified within infant massage programmes

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Abstract

The sensitivity of early interactions conveyed through eye contact, voice tone, facial expression and gentle touch plays a crucial role in healthy infant development. Infant massage has been adopted as an early intervention because touch offers a unique opportunity to support early interaction.

This evaluation used a mixed-methods research design and a range of quantitative and qualitative data to identify the context, mechanisms and outcomes of eight infant massage programmes being delivered in socio-economically deprived communities. This paper reports the findings with regard to the mechanisms that were identified to be necessary for the successful delivery of infant massage programmes.

From these findings, 14 mechanisms were identified as important in influencing the uptake and success of infant massage programmes, but there was considerable variability in the extent to which these were realised across programmes. Women and infants with a high level of need were offered infant massage programmes that were lacking in terms of the key mechanisms identified to bring about change.

Key words

Infant massage programmes, dyadic therapies, early relationships, infant mental health

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Introduction

The sensitivity of early interactions, conveyed through eye contact, voice tone, facial expression and gentle touch is an essential element in the development of neural connections, affect and behavioural regulation, and secure attachments (eg Schore, 1994; Fonagy et al, 2004; Glaser, 2000). The UK Healthy Child programme recommends offering observational assessment, and coaching where needed, to stimulate sensitive reciprocal parent-infant interaction, and points to the potential value of evidence-based 'dyadic therapies' such as infant massage to increase sensitivity (DH, 2009: 42).

Infant massage programmes are now provided routinely during the postnatal period in a variety of settings including Sure Start and children's centres. However, a survey of parenting support provided as part of Sure Start provision found that although infant massage was one of the most commonly provided perinatal interventions, there was little data regarding uptake, quality or output of these programmes (Barlow et al, 2007).

In order to bring about change, interventions and treatment programmes must be underpinned by appropriate 'mechanisms of change'. Mechanisms of change refer to the factors that have been identified theoretically as playing a part in the aetiology of particular problems, and so need to be addressed to facilitate change. For example, sensitive and reciprocal interactions are underpinned by an awareness of the infant's cues. This suggests that in order to improve parent-infant interaction, it is necessary to help parents to recognise and respond to such cues. Similarly, maternal mood and in particular postnatal depression has been identified as being a key factor influencing poor mother-infant interaction, with postnatally depressed mothers being less sensitive and more intrusive (Murray, 1996). This points to the potential benefits of using infant massage to provide opportunities for parents to socialise with one another.

This paper reports the findings of a study that aimed to use both data and theory to identify the potential mechanisms of change that should underpin the delivery of infant massage programmes to socio-economically deprived families, alongside the extent to which such mechanisms were being offered across a small number of programmes.

Aim of the study

The overall aim of this study was to examine what factors influence the uptake, delivery and outcomes of infant massage programmes delivered to mother-infant dyads living in socio-economically deprived areas. This paper reports on mechanisms identified as being necessary to the successful uptake and delivery of such programmes, and the extent to which such mechanisms were provided.

Design and methodology

A mixed-methods concurrent triangulation research design was used involving the collection and iterative analysis of both quantitative and qualitative data.

Setting

Eight infant massage programmes being delivered on a weekly basis to mother-infant dyads in Sure Start children's centres located in areas of socio-economic disadvantage.

Sample and recruitment

The sample consisted of 39 mother-infant dyads, and 10 infant massage programme facilitators. Mothers who had agreed to attend an infant massage class were invited to take part in the research.

Infant massage intervention

The infant massage programmes comprised between four and six 90-minute weekly sessions, led by 10 facilitators to groups ranging in size from one to 18. The facilitators included health visitors, midwives, addiction workers, nursery nurses and independent massage teachers.

Data collection

Qualitative data was collected using observations and interviews with a range of stakeholders. Eight infant massage programmes were observed and video-taped, and semi-structured in-depth interviews were conducted with all programme facilitators and participating mothers.

Quantitative data from participating mother-infant dyads were collected using a range of standardised measures including the Edinburgh Postnatal Depression Scale (EPDS) (Holden, 1994), Parenting Stress Index (PSI) (Terry, 1991), Working Model of the Child Interview (WMCI) (Zeanah, 1994), and Infant Temperament Scale (ITS) (Carey and McDevitt, 1978). Three minute video-clips of mother-infant interaction were coded using the CARE-Index (Crittenden, 2001). A range of demographic data was collected.

Consenting mother-infant dyads were visited at home by the researcher prior to their first attendance at the infant massage programme. Demographic details were collected, the WMCI was conducted and mothers completed the EPDS, PSI and ITS questionnaires, and a three-minute clip of video of mothers and infants playing as they

'normally do' was recorded and analysed using the CARE-Index. The EPDS, PSI, ITS and video recording were repeated following completion of the four- to six-week infant massage programme. All massage programmes were attended and videotaped by the researcher with the consent of participating parents.

Data analysis

Qualitative interview data from all stakeholders were entered into NVivo and analysed thematically. Quantitative data were entered into SPSS and analysed using a range of descriptive statistics including means, standard deviations, chi-squared and correlational matrices. The two types of data were examined alongside each other to elaborate and clarify the findings.

Research governance

Permission to conduct the research was secured from the local research ethics committee, and it was conducted in accordance with the research governance procedures required by the University of Warwick. Honorary research contracts were provided by the participating primary care trusts.

Discussion of findings

Theory, research, observation and stakeholder interviews were used to identify key mechanisms for effective support and/or bringing about change in the development of sensitive reciprocal interactions (see Table 1).

While some mechanisms were easy to classify, such as whether singing was part of the programme (M14) and whether the same person facilitated all the sessions (M3), others were complicated because they comprised a number of components. For example, assessment of whether the setting met physical needs (M4) could be assessed using a number of factors such as crowding and room temperature. If a programme was in a comfortable setting that mostly met participants' physical needs, M4 was considered available, even if a component (such as clear directions to the programme) was missing. While most facilitators created a containing atmosphere (M5), this was considered variable if there was a lack of continuity of facilitators in different sessions.

Personal invitations and inviter facilitates group (M1 and M2)

The results indicate that while higher socioeconomic status mothers were able to actively seek out high quality services, disadvantaged and vulnerable mothers were unlikely to attend infant massage unless they had a trusting relationship with a practitioner who issued a personal invitation (M1), and who then facilitated the group enabling them to ensure that the women's individual needs were met (M2). For example, two highly vulnerable mothers attended after they experienced support from a practitioner who consistently addressed small details related to their individual needs, such as welcoming them at the door and reserving spaces for them together within the circle:

'I think it's making them feel welcome and just each week kind of thinking of the benefit of massage... what they might enjoy and what they'll give to the group... lots of reminders young mums tend not to have, you know calendars or whatever... they might put a reminder on their phone... reminding them the week before... "Don't forget we're looking forward to seeing you", "Hope you can make it", "Don't worry if you're late, it's OK"...'

Four mothers who consented to the research did not access any sessions, two of whom were high-risk in terms of their interaction with their baby. For example, the pre-programme video-clip of one of the high-risk dyads indicated that the infant was passive and avoiding eye-contact, and the mother described the baby as undemanding:

Table 1. Identified mechanisms present in programmes

Mechanisms	Infant massage programmes							
	A1	A2	A3	A4	A5	A6	B7	C8
M1 Personal invitations	Y	Y	Y	Y	Y	Y	Y	N
M2 'Inviter' facilitates group	V	V	V	V	N	V	V	N
M3 Consistent facilitator	N	Y	N	N	N	N	Y	Y
M4 Setting meets physical needs	Y	Y	N	Y	N	Y	Y	N
M5 Containing atmosphere affirms mothers and infants	V	V	N	V	N	Y	Y	Y
M6 Learning massage strokes	V	Y	V	V	N	Y	Y	Y
M7 Optimum group size (four to eight dyads)	Y	Y	N	Y	N	N	Y	N
M8 Provision for social engagement	Y	Y	Y	Y	Y	Y	N	Y
M9 Facilitator has necessary technical skills	Y	Y	N	Y	N	Y	Y	Y
M10 Facilitator has necessary personal qualities	V	V	N	V	N	Y	Y	Y
M11 Facilitator models sensitive interactions with doll	N	N	N	N	N	N	Y	Y
M12 Teaching about infant states	N	N	N	V	N	N	Y	Y
M13 Teaching about infant cues	N	N	N	N	N	N	Y	Y
M14 Use of singing within group	N	N	N	N	N	N	Y	Y
Total out of 14	5	7	2	5	2	7	11	10

Y=Yes, N=No, V=Variable. There were six programmes in location A and one each in B and C.

'It was hard because I had to come home and I was tired all the time. But he's pretty good now because he only wakes up about once during the night. He just sleeps, he sleeps all day, all night, he just wakes up for his bum and his bottle.'

This infant was under-stimulated and unresponsive, and his non-attendance at the programme resulted in a missed opportunity to support the early relationship. A range of reasons were given for non-attendance, such as having no bus fare and being 'overtaken' by other demands on time.

The mismatch between need and uptake was reflected in one site located in one of the most deprived estates in England, where the quality of the programme was high in terms of the number of mechanisms available, but where virtually no local mothers attended and the programme was primarily populated by older professional mothers and infants from the surrounding areas.

Consistency of facilitators (M3)

Only three programmes had a consistent facilitator (M3) throughout the duration of the programme, and one programme was delivered by four different facilitators. This resulted in facilitators having less opportunity to identify or support dyads experiencing difficulties. For example, one infant was continually dysregulated and other mothers remarked on the situation:

'No problems at all, apart from one of the other mums had a baby that cried constantly and I think that really it affected the other babies.'

However, inconsistent facilitators were not able to appreciate the full extent of the difficulties that this mother experienced in not being able to contain her son's distress. Post-intervention, the video-clip revealed a passive infant who avoided eye contact. Active prolonged avoidance of eye contact is sometimes adopted by infants in an attempt to self-regulate their stress levels (Beebe, 2002). This represented a missed opportunity to identify the needs of the vulnerable parent and infant, and to offer support.

Other mothers described how the inconsistency of facilitators meant professionals took less ownership of the programme:

'The thing I didn't like we started with [one facilitator] who was then sick... obviously she went off so we had a different person and we had another person and another person, it was quite confusing – each person was doing it differently so that was a bit confusing.'

Setting meets physical needs (M4)

M4 refers to the extent to which the setting valued participants by meeting their physical

needs, and ensuring that they were comfortable during the sessions. An optimal setting included the need for practitioners to be able to predict and address potential barriers. One facilitator explained:

'There's a rule here that you don't bring your buggies in and sometimes the secretary can be a bit... you know... so just saying "I'm really sorry... this buggy's coming in, I want these girls to come". Trying to be there at the door to meet them because again if they get a face that's not smiling, it's very easy for them to just sort of turn round and go away. I think acknowledging the effort that they make to get here.'

Three settings did not meet the criteria for this mechanism and this was often linked with inconsistent facilitators taking less 'ownership' of the programme. One setting was difficult to locate, resulting in one high risk-mother having an embarrassing walk around the edge of the building as those inside the room signalled toward the entrance. She was greeted by an unfamiliar facilitator, her baby was dysregulated throughout, and she did not attend again.

In another setting, the room was cold. One mother described this as follows:

'It was freezing all the time. In a way, even though I knew it wasn't the people who were running it's fault, I thought it was badly run because of the room being so cold all the time.'

Containing affirming atmosphere (M5)

M5 refers to the need for participants to feel 'contained'. The 'container-contained' model (Bion, 1962) highlights the way in which mothers are enabled to contain their babies' distress, by the presence of a parallel affirming atmosphere that is created by facilitators 'containing' the mothers' anxieties. Most facilitators created an affirming atmosphere in which mothers felt able to attend to their babies' needs. One told the mothers:

'Your baby is more important... if your baby is feeding or sleeping just let them carry on, your baby may need snuggling or cuddling, you know your baby best.'

Mothers also played a role in creating affirming atmospheres, helping adaptation to new roles and containing anxieties. One mother explained:

'The atmosphere was lovely... don't feel like you're the only one going mad [laughs]... I can't remember her name... she was telling me that she hadn't slept for a couple of weeks a full night and she didn't feel that her partner understood and that he had to go to work and I get a bit of that [laughs] and it was nice to feel that I wasn't the only one that didn't have a huge amount of help and you were struggling a bit... it reassured me.'

Teaching the massage strokes (M6)

M6 refers to the importance of teaching parents how to use physical strokes to massage their baby. For example, one mother whose depression and sensitivity had both improved after the programme described feeling more confident after learning massage strokes:

'Learning to massage because I got taught how to massage him so that I can deal with his colic that he had and that helped him a lot... Yeah it did, it calmed it right down. I was more relaxed because I knew I could deal with it.'

However, observations indicated that only half of the programmes provided this mechanism effectively throughout the programme, and that there was considerable variability in terms of the skills of the facilitators in teaching the massage strokes. For example, a lack of skill was reflected by one facilitator who had not run a session for some time who struggled to remember the strokes. She told the mums:

'I haven't done baby massage for a while so I am hoping you experienced mums might help me through the steps... I have got it written down here. I'm qualified for baby massage.'

Optimum group size (M7)

M7 highlights the importance of having an optimum number of mothers and babies in each class, to enable facilitators to observe and support individual interaction, which is more difficult in large groups. The optimum composition appeared to be in the region of five to eight dyads, which enabled participants to chat and enjoy individual time with the facilitator.

One infant massage programme frequently had 17 or 18 dyads attending, and a large number was on the whole an indication that the programme was both popular and, ironically, also high quality in terms of the number of other mechanisms present. However, one participant said:

'It was just too many people, too much going on you know to... I mean I think [the facilitator] was fantastic because she... she really kind of kept it... going...'

High quality provision attracted larger numbers and this contrasted with another group in which there were often only two mothers present, and where the environment was less welcoming and the room temperature too cold.

Provision for social interaction (M8)

The data suggest that support from other mothers, alongside having an opportunity to discuss issues with peers and the facilitator, were important to programme participants,

many of whom were isolated in flats in disadvantaged areas. Several isolated mothers began to develop support networks as a result of meeting other mothers at the programme. One mother explained:

'For me I think when you have a baby you need to go out and I thought if it wasn't for that I would have been inside all the time and like you need something to do, to belong to and it made me feel a bit better about myself as well so that was good for me... Well I'm getting quite chatty with one of the ladies so I usually sit next to her and then you know we exchange views about things.'

One mother described how attending the programme had encouraged her to go out:

'It wasn't a very nice place to live... and then I just thought "No I've got to do something" and... because literally my baby was stuck inside... all the time and we are in a flat and you know it wasn't doing him any good.'

Mothers had also enjoyed watching their babies' responses and social interactions with others. One mother described the best thing about the programme as being:

'Probably the fact that it was something you know that... for her and she really, really enjoyed it and she... well she enjoyed looking at the other babies and talking to them.'

One mother who participated in a programme that did not offer the opportunity for social engagement at the end of the programme, and whose depression had worsened at the end of the programme said:

'I suppose it would have been quite nice if we'd have had some time afterwards, perhaps had a cup of tea, biscuits and a chat... a bit social at the end of it... I think she's only got the room for so long... it was sort of straight in, get started, I mean obviously she doesn't want you really talking as she's doing the massage so...'

Facilitator has necessary technical (M9) and personal skills (M10)

All programme facilitators were qualified infant massage practitioners, but experience of other post-qualifying professional training varied, with two practitioners having special interests in perinatal depression and attachment. The training undertaken by staff were either provided by the International Association of Infant Massage (IAIM) or by Peter Walker (PW) and these varied in their focus and duration (see below for further detail).

While the majority of facilitators had the technical expertise (M9) to teach the massage strokes, observations indicated some variability. For example, one facilitator was unsure of the direction of the massage. She told the group:

'It's got clockwise here... No, I should imagine the intestines are nearer the front aren't they. I've been on – I mean I'm not... Right. Not coming from a health visiting background I wouldn't know – any ideas? I've no idea, but it definitely says massage clockwise round the lower back.'

One mother expressed concern about the facilitator's technical skills:

'The first session was really poor, it was a different lady doing it, it wasn't [the facilitator]... to be honest if I'd have gone and was a bit dubious about it, because I knew I wanted to do it, if I was a bit dubious about it, I wonder if I would have gone back.'

Three programmes were assessed as variable with regard to whether the facilitator possessed the necessary personal qualities and this masked a complex picture. For example, in one programme a friendly and warm facilitator who believed in the impact of infant massage led two sessions of a programme, but the remaining sessions were led by a colleague whose lack of enthusiasm was evident. She described her feelings about teaching infant massage as follows:

'Erm... it's not really what I would choose to do if I had a choice. I don't... I don't dislike it in so much that I dread it, it's just I would rather be working you know with the families.'

Mothers were also able to identify facilitators who had the necessary personal qualities (M10):

'It was nice and the [facilitator] who ran it, she was really nice, very sort of... her personality and her nature was just very calm and very gentle and she just came across really well.'

The above quotation refers to the personal skills and qualities of a facilitator who explained her enthusiasm for infant massage in the following way:

'Sometimes you get a very shy, perhaps withdrawn or erm... mum come in and they sort of keep themselves to themselves and don't make a lot of eye contact with the baby but after a few weeks, they've come out of that and then if I know that they've had a baby with reflux or sleepless nights, then hopefully you can win it round and when a new mum comes in, they're the ones giving advice and it's fantastic to watch.'

Her sessions contrasted with the low energy sessions of facilitators who felt uncomfortable and unsure about demonstrating infant massage.

Facilitator models sensitive interaction with doll (M11)

Some facilitators named and gave personalities to their dolls, using this relationship as a tool for modelling reciprocity, containment

and respect. One facilitator described how she mirrored what she was noticing in the group, conveying relevant learning about cues and signals indirectly through the doll. Talking to a doll within a group requires confidence, and this facilitator reported happily that the mothers 'thought she was bonkers' and that this added to the relaxed atmosphere and encouraged mothers to talk to their infants.

Observations indicated that when facilitators actively communicated with their dolls throughout the session, mothers copied, talking more with their babies. Not all facilitators were comfortable with a doll, and one session was typified by long silent periods on the part of a facilitator who used a doll from the supply at the children's centre. She described her feelings as follows:

'You feel that... daft doing it on a doll and these dolls... you've seen our dolls, they're not overly good... Er... it's all a bit as I say a bit stupid really...'

Teaching about infant states (M12) and cues (M13)

Facilitator training was a key factor influencing whether participants were taught about infant states and cues. The four-day IAIM facilitator training focused on the importance of facilitators encouraging mothers to observe infant behavioural states and interpret cues when conducting massage (that is, communication-based training). The two- to three-day PW training took a developmental approach to teaching massage, focusing particularly on developing flexibility and muscular coordination. IAIM-trained facilitators encouraged mothers to be led by their babies' cues and signals, and highlighted the importance of not massaging babies unless it was the 'right' time for them. This created a relaxed, supportive atmosphere as the following quotation illustrates:

'Yes it was, it was really nice. I liked the way it was very informal and that the teacher makes it absolutely OK for babies to be crying while doing their thing, and you know she emphasises that and I think that really helped you feel relaxed. Because I know the first time I went it... you know I was a bit tense because I knew [the baby] wasn't going to be the perfect model lying there being massaged but she made it really OK so that was good.'

Observations of the classes showed that IAIM facilitators were also more active in encouraging mothers to observe their infants' emotional and behavioural states, responding to cues and asking their baby's permission to massage:

'And the bit about asking permission is that it builds on the relationship. It increases self-esteem for the baby in the end and respect between the two people sort of involved, if you like, in that way. You look for all the cues. Even if they pull an arm away when you're actually massaging an arm, that's them actually saying, well I'm not sure whether I want you to do this. And if they pull it away and hold it in a certain position you then have to go with it and then massage the bit that they're giving you, rather than actually pulling the arm back.'

PW-trained facilitators started the massage by encouraging mothers to cuddle their babies, stretching their legs around the mothers' bodies, and to kiss them. One facilitator told the mothers:

'We will start then, what we normally do is start by lifting up your baby, bring them up to you and give them a nice hug, if the baby is old enough and you can get the arms round here that is even better [baby facing parent, arms around parent's waist] get the legs around your waist, that's right [laughter] give them lots of kisses, just to calm them down and get them used to what is going on.'

One mother intrusively kissed her infant on the lips in the pre- and post-programme video clip, and the strategies used by the PW-trained facilitator failed to support the development of reciprocity through the observation of her infant's cues.

Facilitators trained in developmental massage were also more inclined to treat infants as passive receivers of massage. For example, one facilitator told the group:

'I'm going to start with baby's left leg because that's on my right-hand side so that's easier for me, so my left hand round the back of baby's knee and with the right hand with lots of oil on, round the buttock and pull straight down through the leg and then the other hand follows suit without the... round the buttocks at the top... And then when you're ready just shake that leg gently, let the knee bend outwards and bring the foot up onto the tummy... They're so much more flexible now aren't they?'

Whereas communication-based training highlighted the infant as an active participant with ownership of their bodies:

'Now just place your hands around the leg and say "right we're going to massage this leg now, is that alright?" and see what response you get. If you can, get eye contact and talk to them whilst you do it.'

Use of singing within the group (M14)

Singing was intrinsic to the communication-based infant massage programmes, and was used to create fun and 'containment' for infants, as one mother described:

KEY POINTS

- Parental sensitivity is key to infant mental health, and infant massage programmes have been highlighted in the HCP as supporting sensitive parent-infant interaction
- Infant massage is offered widely in Sure Start and children's centres to socio-economically deprived parents who are at high risk of poor parent-infant interaction
- 14 mechanisms were identified as being important to bring about change using infant massage, but most programmes did not involve the provision of many of the mechanisms
- Mechanisms to encourage high-risk parents to access and participate in infant massage programmes were fragmented, with missed opportunities to support early relationships

'Singing... I think that's great... it just kind of shuts everyone up and brings them back to the point.'

The facilitator effectively used singing to 'contain' the whole group. One mother adapted this mechanism, singing quietly until the baby stopped crying and listened intently. This mother told the group that soft singing always worked in containing her baby's distress.

Observations showed that the environment in classes varied considerably with some mothers experiencing lively sessions with singing and chatter, and some experiencing low-energy sessions provided by an unenthusiastic facilitator, in a poor environment.

Encouraging 'reflective function' (M15)

M15 was developed primarily from recent theory, which strongly suggests the importance of parental 'reflective function' (Slade, 2005, 2006). Reflective function or 'mentalisation' (Fonagy, 2004) refers to the 'capacity to understand one's own and others' behavior in terms of underlying mental states and intentions' (Slade, 2005:269), and has been identified as playing a fundamental role in infant affect regulation. Infant massage classes provide an optimal environment in which to introduce strategies that are specifically aimed at promoting maternal

reflective function, including encouraging mothers to reflect on their infant's individual traits, alongside helping parents to understand the link between mental states and subsequent behavior. For example, one facilitator who observed that a mother appeared to feel rejected by her infant looking away, reframed this by describing the infant's curiosity (mental state) and her need to look around the room (behavior). Slade (2005) suggests that reflective functioning should be treated as an explicit intervention target, with facilitators describing infant emotional and behavioural states, and framing them in terms of normal attention needs. This involves helping parents to build on observing behaviour by encouraging them to engage in 'wondering' about their infant's internal experience (Slade, 2006).

Limitations

The findings of this research are based on only a small number of infant massage programmes, and involved a relatively small number of programme facilitators and mother-infant dyads. Although further large-scale research is now needed to explore the proposed mechanisms further, the results were consistent across the sampled programmes and families and are strongly linked with the theoretical literature.



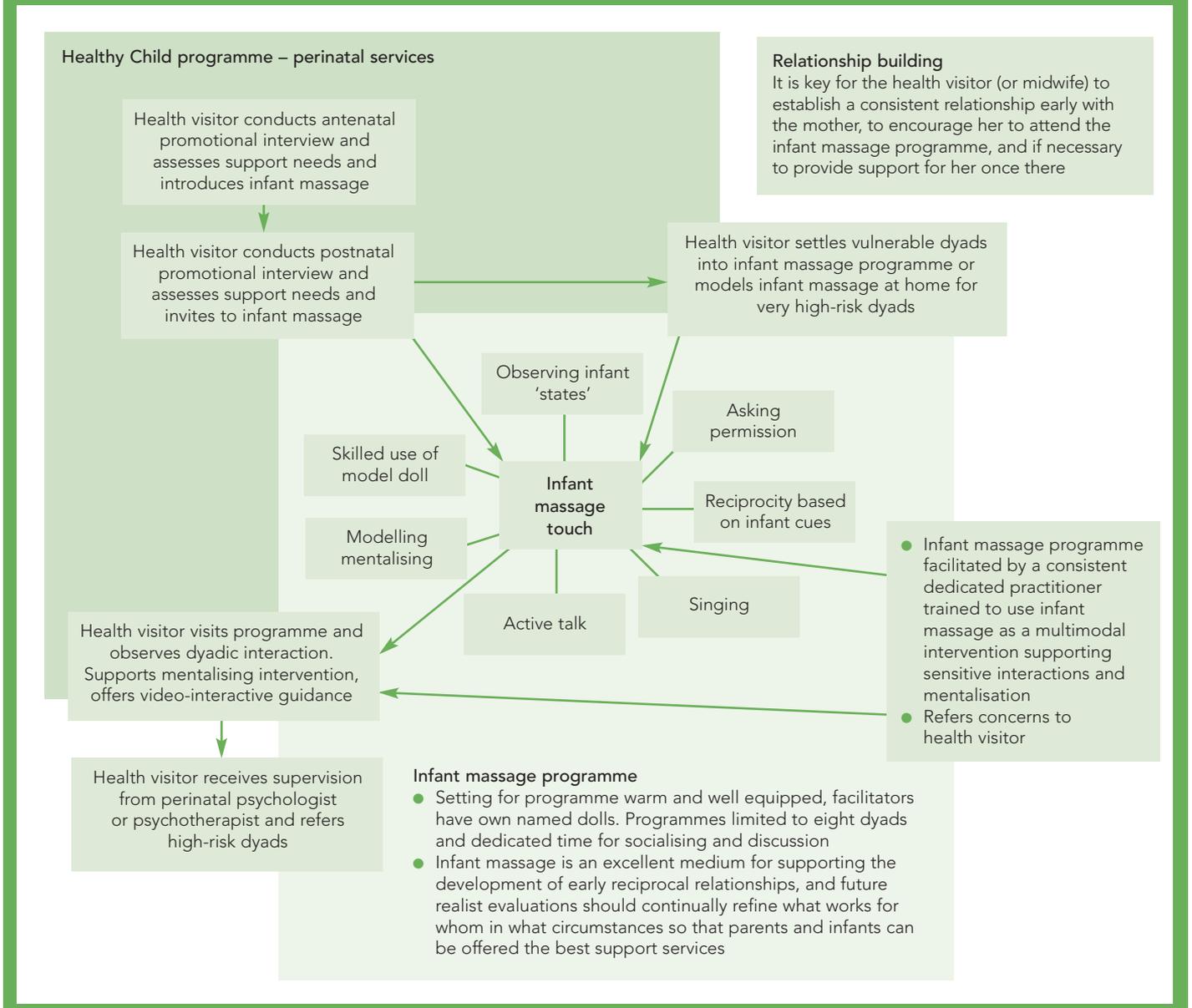
Return to practice

The government's new vision for health visiting means that between now and 2015 we can expect to see more health visitors being trained and returning to practice.

The return to practice (RTP) scheme will run across the country, with education and training places made available in each region. Two SHAs are already running RTP pilots, and these have helped us learn about the training needs of ex-health visitors, and given other SHAs an idea of the best way to structure courses. Pilot results have been promising – in London alone, 47 people are due to return to health visiting this year.

If you know anyone who is interested in returning to practice, please tell them to contact NHS Careers on 0345 60 60 655

Figure 1. Infant massage as a multimodal intervention to promote infant mental health within universal services



Conclusion

Although infant massage programmes are being widely provided in the UK, the findings of this study suggest that there is a serious mismatch between need and provision, with inadequate attention being paid to the way in which disadvantaged women, who have a range of needs, are invited to take part in such services and the ensuing quality of provision. The findings suggest the need for infant massage facilitators to be aware of the mechanisms that are necessary to effectively support parent-infant interaction and to bring about change, and for managers to be aware of the need for infant massage facilitators to have been trained by organisations that focus on infant communication rather than prioritising infant physical development and flexibility. Infant massage programmes

could be offered to maximise support for crucial early relationships (see Figure 1).

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