Infant massage: developing an evidence base for health visiting practice

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In common with most complementary interventions, infant massage has not received a great deal of attention from evaluative research, and what little research has been done has been quite equivocal. Its use as an intervention within Health Visiting practice has received even less attention. This modest study sought to evaluate the process and impact of one Health Visitor’s use of infant massage. Data were collected in three forms. Firstly, a postal questionnaire was distributed to those who had accessed the infant massage programme and to a ‘non-intervention’ group (94 and 60 were returned from each group, respectively). This questionnaire included the previously validated Self-Esteem Scale and the Parenting Sense of Competence Scale in addition to biographical and infant massage related questions that were designed for this study. Secondly, those parents attending the programme were invited to complete a programme evaluation questionnaire (n = 100). Thirdly, three focus group interviews were held with one group of programme participants— at the start and end of the five-week programme and three months later. This study did not demonstrate any statistically significant impact of infant massage on the selected outcome measures. However, the more qualitative data provided considerable support for the intervention, both in relation to the perceived direct benefits of infant massage and in relation to the health promotion and social benefits of attending the infant massage programme. Indeed, the need to disaggregate the intervention from the mode of delivery in order to demonstrate effectiveness, together with the diffuse effects of massage, render such a study methodologically challenging.

INTRODUCTION

Therapeutic or nurturing touch, which includes infant massage, is suggested to be of benefit both psychologically and physically. It is claimed to promote health and development in infants and to enhance the parent–child relationship, strengthening the emotional attachment needed for a feeling of security and for optimum development (Schneider 1996). There is some anecdotal evidence of the effectiveness of infant massage on infant well-being (Barnard & Bee 1983; Paterson 1990; Curran 1996; Dellingier-Bavolek 1996; Field 1993) and the mental health of mothers with post-natal depression (Adamson 1996). However, a systematic review has cast doubt on the claim that it is efficacious in promoting the growth and development of pre-term babies (Vickers et al. 1999). As in all areas of complementary, alternative or integrated healthcare, infant massage has been starved of funding to establish its effectiveness (Rees & Weil 2001) and outcome studies are methodologically challenging (Nahin & Strauss 2001). At a time when healthcare is increasingly focusing on evidence-based practice within a framework of Clinical Governance (Department of Health 1997), there is a pressing need for outcome studies, which demonstrate the value of nursing and health visiting interventions.

The health visiting principles of raising clients’ awareness of health needs and facilitating health enhancing activities (Twinn & Cowley 1992) are embodied in the teaching of infant massage skills to
new parents. Teaching infant massage in a group setting is also likely to promote social contact between parents as well as between parent and child. This in turn may help to prevent post-natal depression in some women (Adamson 1996). However, although there are some descriptive accounts of the Health Visitor’s role in teaching infant massage (e.g. Adamson 1993), there is a dearth of outcome evaluations.

This study evaluated the process and impact of infant massage taught by one Health Visitor in areas of socio-economic deprivation (Areas of Special Action, ASAs) in one town in the North-East of England. The town has approximately 2345 births each year (Office of National Statistics (ONS) Birth Extract 1997) and a Standard Mortality Rate of 115 (ONS Death Extract 1992-6). The infant massage was delivered in a five-week programme, involving group classes for one session each week. At the time of the evaluation, 146 parents and their babies had participated in one of a number of the programmes. The sessions were held in a variety of health centres, community rooms, and neighbourhood centres with the number attending ranging from 5 to 31. The Health Visitor had been prepared for the infant massage programme by completing the Certified Infant Massage Instructors course run by the International Association of Infant Massage.

**EVALUATION DESIGN**

This study was designed to explore the impact of an infant massage programme, focusing both on the mothers’ experiences of the process of receiving the sessions and on some outcomes (described below). Many of the outcomes of infant massage that are indicated in the literature are beyond the scope of this study (for example, impact on child–parent relationship during later childhood). It was, however, possible to understand infant massage in relation to other concepts that share the implication of infant–parent intimacy such as breastfeeding and ‘reading and chatting.’

**Aims**

1. To analyse parents’ experiences of the programme at the start, end and three-months following the programme.
2. To describe the programme and infant massage in the context of parenthood.
3. To analyse the impact of infant massage, breastfeeding, and reading and chatting on parental self-esteem and sense of competence.

Ethical approval for the study was secured from the Local Research Ethics Committee. All parents who were interviewed received an information leaflet beforehand as did those who received a postal questionnaire. All participants were invited to ask further questions about the study if they wished. The data was managed in a way that protected the confidentiality of the participants, for example the returned questionnaires had no identifying features included such as postcode.

The evaluation used three approaches to collect a range of data. Firstly, an Infant Social Interaction Questionnaire (ISIQ) was posted to all parents who had participated in the infant massage programme (the intervention group) and to a matched sample from an area that did not routinely offer infant massage sessions (the non-intervention group). In the intervention group, 146 questionnaires were distributed and 94 returned (64.4% response rate). In the non-intervention group, 200 questionnaires were distributed and 60 returned (30% response rate). A letter describing the study accompanied the questionnaire and no reminders were distributed. The parents in the intervention group were identified through records of programme attendance held by the Health Visitor who managed the programme. In the non-intervention group, parents were identified by the Directorate of Child Health of the local NHS Trust.

In both the intervention and the non-intervention groups, mothers returned 99.4% of the questionnaires and only 8.3% (13 parents) indicated that they had health problems (including post-natal depression, longstanding clinical depression, back problems, diabetes, and asthma). The majority of parents were aged 30–39 years (55%) and 33% had more than one child. Sixteen babies (10.2%) were reported to have health problems, including eczema, asthma, cleft palate, congenital talipes, chronic chest infections, otitis media, umbilical hernia, kidney infections, and allergy to dairy products.

It was intended that the two groups would be matched by demographic variables and, crucially, by socio-economic group and age of the baby. The infant massage programmes in the intervention group were held in ASAs so that they would be accessible to more socio-economically disadvantaged parents. Consequently, the parents in the non-intervention group were identified by postcode as residing in other ASAs. However, in the intervention group many parents accessed the infant massage programme by travelling and did not reside in an ASA. As a result the socio-economic profiles of the two groups differed, for example 8.5% of partners in the intervention group and 15% in the non-intervention group being unemployed. In addition, whilst all the babies were under the age of 24 months, in the intervention group the majority were aged 6–18 months whilst the non-intervention group were all aged either under 6 months or 18–24 months old. Also, 63.3% of the non-intervention group stated that they did massage their babies, learning about it from books, magazines, or private
sessions. These sample group variations and commonalities resulted in the analysis between the groups being of limited value.

The questionnaire was presented on a four-sided A4 sized leaflet with a covering explanatory letter. It contained 60 items, divided into five sections:

1. Items about the baby
2. The Parenting Sense of Competence Scale (Rosenberg 1965)
3. The Self-Esteem Scale (Johnston & Mash 1989)
4. Items about infant massage, breastfeeding, and reading and chatting
5. Items about the parents.

Sections 1, 4, and 5 included questions designed for this study and that sought brief details about the health of the family, socio-economic factors, and brief information about levels of activity and the perceived benefits of infant massage, breastfeeding, and ‘reading and chatting.’ Section 3 was the Self-Esteem Scale (Johnston & Mash 1989), containing 10 items, rated on a four point scale indicating the extent to which respondents agreed or disagreed with the statements presented. Total scores are calculated by summing the responses. Higher scores indicate higher self-esteem. The scale has a coefficient of reproducibility of 93%, coefficient of scalability for items of 73%, scalability for individuals of 72%, and an internal consistency coefficient of 0.84–0.87 (Rosenberg 1965). McVeigh and Smith (2000) used the Self-Esteem Scale in their study comparing adult and teenage mother’s self-esteem. They report the internal consistency reliability of the Self-Esteem Scale, when used in their study, to be 0.88 for adult mothers and 0.85 for teenage mothers.

Section 2 of the postal questionnaire was the Parenting Sense of Competence (PSOC), a 16-item scale developed by Gibaud-Wallston and Wandersman (1978) to assess parental efficacy and satisfaction in parents of infants. Each item is answered on a six-point scale ranging from ‘strongly agree’ to ‘strongly disagree.’ Total scores are calculated by summing the responses, with higher scores indicating higher parental sense of competence. The PSOC contains two sub-scales of ‘efficacy’ and ‘satisfaction.’ Gibaud-Wallston and Wandersman (1978) reported Cronbach’s alpha coefficients of 0.82 and 0.70 for the satisfaction and efficacy scales, respectively. Further studies have used the PSOC scale with older children, including Johnston and Mash (1989) who reported an alpha of 0.79 for the total score.

A total of 154 of the 60-item questionnaires were returned (45% response rate across both intervention and non-intervention groups). These quantitative data were entered into a SPSS database and analysed using standard non-parametric statistical tests.

Secondly, a Programme Evaluation Questionnaire (PEQ) was completed by the programme participants at the end of their course and distributed by the Health Visitor who managed the programme. Questions included: ‘the instructor was well prepared each time; ’the instructor encouraged discussion within the group; ‘the instructor clearly demonstrated the strokes.’ The questionnaire was completed by 100 parents with no-one refusing to complete it. The variation between the number completing this questionnaire and those sent the ISIQ results from the non-attendance of some parents at the final sessions of the infant massage programme. These data were entered into an Excel database with the more qualitative comments grouped into themes.

Thirdly, focus group interviews were held with the same group of parents at the start and end of their five-week course and three months later. The focus groups were attended by seven, seven and three mothers, respectively. The interviews were audio-taped, which posed particular challenges given the presence of several wakeful babies in the room at the same time. The tapes were transcribed and analysed using a process of open coding and thematic analysis.

**RESULTS**

**Impact of social interaction in parenting**

In analysing the ISIQ, three factors were statistically significant in the indicators used. For the reasons described above, this analysis combined the two group that received the study. More detailed results are presented in Tables 1 and 2.

1. More frequent reading and chatting to their infant correlated with higher scores on the Self-Esteem measure ($p = 0.012$) and the Parenting Sense of Competence measure ($p = 0.003$), and in particular on the efficacy sub-scale of the Parenting Sense of Competence measure ($p = 0.003$).

2. The older the baby the greater the Parenting Sense of Competence measure score ($p = 0.014$), with a trend in the satisfaction sub-scale of the Parenting Sense of Competence measure ($p = 0.091$).

3. The higher the respondent’s own socio-economic category the lower the score on the Parenting Sense of Competence efficacy sub-scale ($p = 0.003$), although partner’s socio-economic group was not significant.

In the ISIQ, parents were asked about three forms of social interaction: massage, breast feeding, and reading and chatting. Nearly three quarters of the parents (73.7%) felt that reading to their baby promoted their development, and a quarter (25.6%) indicated that it stimulated their baby’s interest.
Some parents (42.3%) indicated that reading to their baby improved their relationship with the baby. Another reported benefit of reading to the baby was that it made the baby happy and content when they were read to (26.3%).

A large number of parents (61.5%) gained a sense of achievement from reading to their child, indicating that they felt they were doing something positive for their baby. Related to this, 17.3% responded that they were fulfilling the role of mother when they read to their baby. Nearly one half of parents (49.4%) felt that reading to their baby improved their relationship and the communication between parent and baby. Eleven parents (7.1%) reported that reading to their baby had a calming effect.

**Becoming a parent**

For the mothers who participated in the three focus groups, motherhood brought a mixture of joy and
responsibility such as they had not experienced outside of parenthood. The mothers spoke of the enormous impact a child had on their lives, at times this being overwhelming as a result of being so tied to meeting the minute by minute needs of a baby. Part of the process of adapting to parenthood included an increasing ability to know what the baby’s needs were. The mothers reported how, at first, it was so difficult to understand what a baby needed: ‘Can’t be hungry, so it must be wind so you try and wind, it’s not wind you must be tired, not tired it must be nappy changing’ (Focus Group 1). The mothers described how, over time, they developed the ability to ‘just know’ when their baby is well or not, taking their baby to a clinic or GP to be ‘checked over’ if they thought necessary.

The infant massage programme

The parents found the infant massage courses to be of a high quality, with over 90% of parents rating each question in the PEQ either very good or excellent. Over one third of the parents (37.8%) indicated that they had enjoyed meeting other parents on the infant massage course and 28.6% had found the course to be generally beneficial and enjoyable. They valued access to a Health Visitor who took the time to explain things and who created opportunity at the end of each session to discuss the well-being of themselves and their baby: ‘The bonus was the chats after the massage definitely’ (Focus Group 3). One parent summed it up thus: ‘I’ll certainly recommend it to others. Lots of advice given, enjoyable and a great chance to meet other mums’ (PEQ).

The Experience of massage

There were four main (interrelated) areas of the impact of infant massage identified by parents.

1. The opportunity to be close to their baby, enabling the parent to know their baby in greater detail, and enhancing their responsiveness to them. 54.8% of the PEQ and 46.7% of the ISIQ respondents indicated that massaging their baby had brought them closer to their child and deepened the relationship between them. One parent wrote that massage had brought about: ‘a special bond and intimacy no one else can give the baby’ (PEQ).

   I mean, it wasn’t until I started doing this (massage) that I thought ‘eh, she’s got my toes’ you know! I hadn’t bothered to look at her feet you know. They were just there. So you notice things about them. (Focus Group 2)

2. The physical and psychological benefits of massaging, enabling the parents to respond constructively and confidently to the needs of their baby. The mothers mentioned the benefits of massage on the physical well-being of their babies a number of times.

   I was able to ask advice you know, what can I do, how can I get rid of it (wind) and how can I help him and it’s like quite soothing... even now I still (massage) because if he seems a little constipated and (Health Visitor) would explain what I could do with his legs and you know just rubbing his tummy in a certain way, it was brilliant...so it’s really, really well worth it. (Focus Group 3)

6.1% of parents (PEQ) indicated that infant massage had helped with specific problems that their baby had, for example colic and poor sleep. One parent noted how: ‘certain massages helped with baby’s digestive system especially during illness, helped calm him when stressed’ (PEQ). 28% of parents (ISIQ) reported that they felt they were now communicating better with their baby and understood their baby’s needs much better. This was summed up by one parent thus: ‘the course has been great because I feel that we are communicating in many more ways’ (PEQ). Parents also reported feeling more confident in their parenting role, which they attributed to attending the infant massage programme.

3. An opportunity to have a specific intervention or activity, creating purposeful and satisfying interaction with their child. Infant massage gave the parents a specific activity to do that they felt was of benefit to both themselves and their baby. It provided the mother with an activity that they grew in confidence in doing, feeling that they were ‘doing something right,’ particularly with young babies when they were so uncertain about how best to manage their baby. The benefits were often described in quite broad terms, such as being ‘nice,’ but the parents also indicated how the intervention helped both of them to be relaxed and increased their sense of positive activity with their baby.

   I think what I like about it (massage) is you think you’re doing something good for them. You feel like you’re actually doing something, although there’s no sort of medical thing in it but you feel like you’ve done something for them. (Focus Group 2)

24.7% of parents in the PEQ indicated that they and their baby found massage enjoyable and generally beneficial. In the ISIQ, 34.9% of parents felt more relaxed as a result of massaging their baby. About a quarter of parents replied that they can see that their baby enjoyed being massaged and that contributed to their own happiness.

4. Creating protected time between the mother and the baby, enhancing their relationship. One mother described massaging as the only time she spent with her daughter while she was awake because during other wakeful periods she was occupied with housework or cooking. For another
mother this was particularly important since her first child was still very young when her second child was born.

All of the second focus group participants felt that the infant massage activity was between themselves and their baby and other people were quite peripheral to it: 'this is something purely for me and him (baby) to enjoy, not anybody else to come along and do it' (Focus Group 2). Similarly, 23.7% of respondents in the PEQ identified that massage provided them with quality, protected time with their baby—‘time to put aside for loving touches, instead of just feeding and changing all day’.

**Summary**

The data collected in this study illustrates several aspects of infant massage education. Firstly, the parents located such education in the context of parenting, itself a challenging activity filled with uncertainty. Secondly, the parents articulated the strengths of infant massage and of the programme for themselves and their child. Some of the things they emphasised were how massage helped to develop the relationship they have with their child, created protected time to spend together, provided social contact with other parents, and was an opportunity for health education. The quality of the infant massage programme was rated highly. Thirdly, the study sought to comment on the difference that infant social interaction makes to parental sense of competence and self-esteem. Reading and chatting made a significant impact on these measures, although such a clear link was not so evident for massage or breastfeeding. The following quote seems to sum up the general opinion of most parents about infant massage.

I feel much more confident about interacting with and understanding my baby. I feel that massage has contributed greatly to developing the bond between us. It’s wonderful to be able to make my baby smile just by touch! (PEQ)

**DISCUSSION**

**Limitations of the study**

Firstly, it is important to make a clear distinction between infant massage as an activity of the parent with their child, and the classes in the infant massage programme that are a social occasion and health promotion opportunity in addition to a source of instruction about massage. Most of the data collected in this study, including that obtained through the focus groups and the PEQs, is comment of massage in the context of the programme itself. However, some of the data from the ISIQs concerns massage with a less explicit link to the means of learning about how to massage. Indeed, the holism of complementary interventions, compared to the reductionist and focussed interventions of Western healthcare, creates particular problems in seeking to attribute change to an intervention (Nahin & Strauss 2001). Furthermore, the study has sought to evaluate the work of just one Health Visitor. Without a more extensive study that includes a number of facilitators of infant massage, it is not possible to know how influential the individual facilitator is in parents’ experiences of the programme.

Secondly, some of the outcomes of infant massage may not be realised for many years. For example it may lead to improved communication between parent and child during the years of adolescence. Knowing of such impact over such a timescale is clearly outside the scope of this evaluation. Furthermore, the sense of competence and self-esteem of the parents are only two selected indicators of the difference that infant massage may make and we do not know that these are the right indicators. Nor do we know whether the tools used are sensitive enough to detect differences caused by infant massage classes over the short timescale of the evaluation. Certainly, massage and breastfeeding were not demonstrated to be making a statistically significant difference to sense of competence or self-esteem, although reading and chatting did. However, it is not possible to know from this data that they would not make any difference over a longer time period or if using different indicators (Bowling 1997). Thirdly, the non-intervention group was not well matched with the intervention group so that comparison between the groups is very limited. Nor is it possible to know how influential the indicators of the difference that infant massage may make and we do not know that these are the right indicators. It is reasonable to assume that those who responded are likely to be less socially excluded than the non-respondents. It is reasonable to assume that those who responded are likely to be less socially excluded than the non-respondents such that the profile reported in this study is possibly a conservative picture of the accessibility of the massage programme and in fact more socially excluded parents may have attended the sessions than have been identified.

**The infant massage programme**

Without doubt, those parents who participated in the programme were supportive of the intervention, with over 90% of parents rating the quality indicators of the programme as either very good or excellent: ‘a very good teacher who clearly loves her subject.’ The parents reported gaining a great deal from being together with other parents. They were able to share parenting experiences and attending the classes reduced their isolation from other parents and provided an opportunity to be away from the domestic environment. The mutual support and learning obtained in this way enriched
their parenting experiences: ‘being able to discuss problems with other people and finding everyone else goes through them.’

The parents also reported how they felt that the classes benefited their relationship with their baby. In addition, parents felt that massage helped to alleviate some of the more common infant problems of poor sleep and gastrointestinal disturbances such as colic. None of the babies involved in this study had major health problems and the massage programme was not targeted at low birth-weight babies. Although Vickers et al. (1999) has questioned the effectiveness of massage on growth and development of pre-term babies, there is a dearth of information about the use of massage on healthy full-term infants. Some of the points raised in this study mirror those raised by Schneider (1996), particularly in relation to strengthening, bonding, and emotional attachment to optimise infant development.

Many parents know of infant massage, and indeed 53.3% of parents in the non-intervention group identified learning about massage from magazines and books. The infant massage programme provides more than instruction about massage however, and parents evidently gained a great deal from the social support and the additional health promotion activity. Holden et al. (1989), Adamson (1996) and Onozawa et al. (2002) all suggest that the social interaction with infant and other parents that is promoted by the massage programme may have a beneficial effect on the mental health of the mother.

Some parents indicated that they felt more confident in their parenting role since starting to massage. This study found that the more socio-economically advantaged had a lower score on the Parenting Sense of Competence Efficacy Sub-scale. Therefore, it is important to make a distinction between socio-economic disadvantage and parental disadvantage when providing health promotion activities.

The nature and effect of infant social interaction

Massage is just one form of social interaction between a parent and infant, and this study also asked about breast feeding and reading and chatting. The parents who participated in the infant massage programme spoke of how they tried to routinise massage of their babies so that it became part of their daily routine. When their babies were young, this was something that was achievable, but as their babies aged, becoming more mobile, and as they returned to employment it was an activity that became harder to sustain. Parents reported finding massage very valuable as something positive to do with a young baby, an activity that gave a purpose and legitimacy to spending time together. As one mother reported, massaging her baby was the only waking time that they spent just being together.

Parents emphasised the benefits of massage on relaxation and bonding, an activity essential to the early stages of the developing relationship between a baby and its parents (Schneider 1996). Infant massage was a way of creating a special and enjoyable time together with their baby. It was also a way of learning about their baby, appreciating how responsive the baby could be to them as a parent and learning to recognise what their baby was trying to communicate to them. In contrast, parents placed an emphasis from reading and chatting with their baby on the promotion of the child’s development. For both these forms of social interaction the parents highlighted how the activities improved their relationship with their baby and made their baby happy and content.

Neither infant massage nor breastfeeding showed any impact on the Parenting Sense of Competence and the Self-Esteem scales. However, frequency of reading and chatting did indicate a positive association with the Parenting Sense of Competence scale (p = 0.003) and the Self-Esteem scale (p = 0.012). There is probably a complex interrelationship between massage, breast feeding, and reading and chatting such that they cannot be considered as fully discrete items. For example, for older babies the proportion of parents massaging decreases but the frequency of reading and chatting increases. As the baby ages, forms of social interaction other than massage may become more prominent.

For such a diffuse intervention as social interaction through infant massage, it is not appropriate to accept only statistically significant evidence as support for the intervention. Indeed, such a form of evidence would serve only to strip the intervention from the context in which it occurs, and yet that context is perhaps of very great importance (Trinder 2000). It is more appropriate to think about there being a threshold level of impact that would support the continuation of infant massage. In determining that threshold level, evidence from the more qualitative data in this study and from other studies must be taken into account. A number of studies and accounts provide support for infant massage, if sometimes equivocally (Vickers et al. 1999). This includes the promotion of health of the infant and enhanced mental well-being of mothers (Adamson 1996; Onozawa et al. 2002).

CONCLUSION

The infant massage programme provided opportunity for more than learning about massage—it was also providing social support and health promotion opportunities. Parents reported considerable benefit from these activities that were subsumed within the
massage sessions. An infant massage programme is a vehicle for developing parent–child relationships and for delivering health promotion activity—whether there are direct benefits from massaging becomes less relevant although many parents indicated that there are such direct benefits for their own well-being and the health of their child. The promotion of parent–child relationships in order to increase parental confidence in their own skills and to encourage self-management of health is entirely consistent with the principles of health visiting practice described by Twinn and Cowley (1992). In an area where there is very little evaluative work, it is hoped that this modest study of one Health Visitor’s practice has been able to demonstrate the potential that an infant massage programme has as an intervention by Health Visitors to promote the health of parents and their young children.

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