Parent-child relationships: are health visitors' judgements reliable?

Phil Wilson FRCGP, MRCPCH, MRCP, DPhil
Senior research fellow, University of Glasgow

Lucy Thompson PhD, MPH
Senior researcher, NHS Greater Glasgow and Clyde

Christine Puckering PhD, MPhil, CClinPsychol, CForensicPsychol
Consultant clinical psychologist and senior research fellow, Royal Hospital for Sick Children, Glasgow

Alex McConnachie PhD, MSc
Senior statistician, University of Glasgow

Cathy Holden MN, BA, CertEd, HV, RM, RGN
Senior nurse – children's nursing, Glasgow West Community Health and Care Partnership

Claire Cassidy BA, BSc, RSCN, RGN
Parenting co-ordinator, Glasgow West Community Health and Care Partnership

Chris Gillberg PhD, MD
Visiting professor of child and adolescent psychiatry, University of Glasgow

Abstract

The quality of the parent-child relationship is a strong predictor of outcomes for children, and its assessment is a key element of the work of health visitors. The Glasgow Parenting Support Framework emphasises the importance of relationship assessment, and a feasibility study using a semi-structured approach is being carried out in one area of the city. This paper explores how well health visitors agree in observational assessments of problems in video-recorded mother-child interactions and considers the impact of specific training in observational skills. Variable levels of agreement in judgement were demonstrated by 25 health visitors attending a training day. With little negative interaction between parent and child, agreement was high whether rates of positive interaction were high or low. Less agreement was found where high frequencies of negative behaviours were seen alongside positive behaviours. Assessment training may increase the abilities of health visitors to identify these problems, but more research is required into how this might be done most effectively.

Key words

Parenting, postnatal depression, relationship quality, parent-child interaction, child health surveillance

Community Practitioner, 2010; 83(5): 22-5.

Introduction

Direct observation of parent-child relationship is one of the many approaches health visitors use to assess vulnerability, and many desire formal training in this field.[1,2] The principles of child health surveillance in the UK were laid out in *Health for all children*.[3] Progressive universalism, its underlying approach, depends on the capacity of primary care workers, particularly health visitors, to identify the level of need of families. Observation may be particularly important in relation to families where the mother has postnatal depression. Although postnatal depression is a risk factor for problems in the child, including disruptive behaviour disorders such as ADHD and conduct disorder,[4] the quality of the parent-child interaction may be more important than the severity of the depression in terms of child outcomes.[5] It therefore makes sense that health visitors should be trained to assess problems in the parent-child relationship rather than simply recognise problems specific to the mother or child. Decisions made by health visitors to allocate time to the families of potentially vulnerable children could be made more robust if they were based at least in part on an assessment of possible problems in the parent-child interaction. An ideal assessment would have both good inter-rater reliability and test-retest reliability – assessments should show good correspondence when performed by two different people or the same person over a period of time. There is no published research on the level of agreement between health visitors in their assessment of problems in the parent-child relationship.

There is now good evidence that child 'vulnerability' cannot be assessed accurately in many families before the age of one year[6] using current clinical observations, even by experienced practitioners. A more structured assessment of parent-child interaction at about this age may therefore be a more effective approach to recognising need and targeting rational service provision. Furthermore, one year is the youngest age at which attachment behaviours can be assessed reliably[7] and there has been recent interest in the assessment of attachment by health visitors.[8]

As part of the development of a comprehensive Parenting Support Framework in Glasgow,[9] a feasibility study has been established in one area, where health visitors are asked to perform a home assessment of the relationship between 13-month old children and their principal carer, usually the birth mother. The health visitor is asked to complete a brief checklist following a home visit to identify any areas of concern. As part of the implementation of the Parenting Support Framework, health visitors in this area are being trained in the Solihull Approach to infant mental health,[10] which involves the use of the concepts of containment, reciprocity and behaviour management in the support of families with young children. Solihull training for groups of health visitors takes two days, and there is an on-going requirement for supervision by a trained practitioner, usually a clinical psychologist in monthly group meetings. Implementation of this training and the provision of the supervision network is under way in Glasgow, but is not yet fully implemented.

This paper describes an exploratory study of assessments by health visitors of video clips that involved parent-child interactions, before and after brief training in observational assessment.

Aim of the study

The aim was to assess the extent to which health visitors agreed about whether parent-child relationships were or were not problematic. It was also hypothesised that training would increase identification of problems in parent-child interactions.

Methods

Data collection

The results presented here were obtained at a one-day training meeting for all of the health visitors in Glasgow West Community Health Care Partnership. Part of the aim of the day was to pilot a tool to assist in identification of problems in the

parent-child relationship during a routine contact with families when children are aged 13 months. In that contact, health visitors make an observation of the parent-child relationship during play, a mealtime or a nappy change. Health visitors are asked to make a professional judgement about whether they think there might be problems in the parent-child relationship, and if they do think there are such problems, to identify them using a checklist based on the HOME inventory,[11] with additional items relating to attachment problems (indiscriminate friendliness[12]) and autism spectrum conditions (lack of joint attention[13]).

The day began with the health visitors being asked to make an assessment of the relationship between mother and child in four video clips, each one to three minutes in length. The clips were selected on a pragmatic basis, and were of different lengths because of limited availability of suitable material. In this feasibility study the aim was to present a range of settings that would mirror the opportunities for observation available in everyday clinical work. There were four cases:

- Video 1 was of a severely depressed mother with an Edinburgh Postnatal Depression Scale (EPDS) score of 24 and her one-year-old during a nappy change. There was relatively little social communication between mother and child
- Video 2 was of a severely depressed mother and her one-year-old during a mealtime. There was little evidence of social communication. This mother was involved in child protection proceedings, having had two previous children removed from her care. She was engaged with a support agency because of the poor quality of her interaction with the child and his poor developmental progress
- Video 3 was of a severely depressed mother and her one-year-old during play. This mother had an EPDS score of 26 and a diagnosis of postnatal depression given by a psychiatrist, and was off work with a diagnosis of depression and taking anti-depressant medication. However, there was good evidence of reciprocity, maternal sensitivity and generally positive social interaction
- Video 4 was of a mildly depressed mother and her one-year old twins during a play interaction. This mother and her twins were shown as a part of a broadcast documentary on postnatal depression and she was in treatment for this. Although the mother struggled to attend to one of the twins, there was reasonable social communication between all three.

Videos 1 to 3 were obtained through the clinical work of one of the authors. The mothers had given written permission for the use of this material for training and research purposes. The fourth video was extracted with permission from a BBC programme, *Baby Love*, about postnatal depression and infant mental health. The health visitors were not given any prior information about the nature of any problems in the families, but made their judgements purely on the observed video-taped material. None of the videos displayed rough handling, a lack of regard for child safety or any other aspects of harsh or otherwise abusive parenting.

Assessments were made in 'real time' – while the video material was being shown, with no extra time allotted for completing the form – using the form to be used in the feasibility study. The whole rating session for the four videos took about 20 minutes. Health visitors were asked not to confer or look at each others' responses.

The training day included a 30-minute didactic lecture by a clinical psychologist about the assessment of parent-child interaction using the principles underlying the Solihull Approach. This was followed by small group work in which six to eight health visitors worked collaboratively for one hour to assess two further short videos of parent-infant interaction using the rating forms. Work on other aspects of the feasibility study filled the remainder of the day's activities, at the end of which the original four videos were re-rated using an identical approach to that taken at the beginning of the day.

For comparison purposes, and to provide some insight into the nature of the health visitors' judgements, an experienced clinical psychologist coded the video material using a validated assessment technique, the Mellow Parenting coding system.[14] This is an event-sampled observational system that can be used to describe the interaction between a parent or carer and a child. The observer records every instance of certain key interactional behaviours usually seen in a normal care-taking routine, such as a mealtime. The coding system has been used as a clinical, forensic and research tool. It samples six dimensions, each of which has a positive and a negative pole. Positives and negatives are scored separately and have been shown to be statistically independent. The dimensions are:

- Anticipation
- Autonomy
- Responsiveness
- Co-operation
- Distress and containment
- Control.

Mellow Parenting codes are presented in this paper as simple counts of positive and negative interactions. Low positive scores and high negative scores are both indicative of possible problems in the relationship.

Data analysis

Statistical comparisons of pre-training ratings between Solihull-trained and non-trained health visitors were made with Fisher's exact test. Comparisons between pre- and post-training ratings were made using exact McNemar's test. 'Agreement' is used in this paper to mean the probability that any two raters will give the same rating to the same video. In other words, the proportion of the 300 possible pairings of 25 health visitors who came to the same conclusion. By this measure, lack of agreement among health visitors would occur when half give one rating and half give the other – this would correspond to an agreement of slightly less than 50%. When health visitors all tend to give the same response, the level of agreement would approach 100%.

Ethical considerations

Since the study was deemed to be an evaluation of a service development, rather than a research project, it was not possible to obtain NHS ethics review and consent was not sought from the participating health visitors. The response sheets had no identifiers (apart from numbers that allowed the linking of before and after ratings) and so it was not possible to trace the participants to ask for consent when the researchers decided to seek publication. The authors believe that, given the novel nature of the study, reporting the findings raises fewer ethical problems than not reporting them.

Results

A total of 32 health visitors rated videos, but not all were able to attend for the whole day. Paired ratings were therefore obtained from 25 health visitors, and the results for these participants are presented below. Of

Table 1. Changes in health visitor assessments alongside Mellow Parenting scores

	Pre-training ratings*			Post-training ratings*			Significance of change in rating**	Mellow Parenting scores	
	No apparent problems	Possible problems	Agreement	No apparent problems	Possible problems	Agreement		Positive (count)	Negative (count)
Video 1	6	19	62%	2	23	85%	0.220	2	1
Video 2	1	24	92%	0	25	100%	n/a	5	0
Video 3	25	0	100%	25	0	100%	n/a	26	0
Video 4	21	4	72%	13	11†	48%	0.039	12	15
All videos	53	47	81.5%	40	59	83%	0.004	-	-

* Either 'There don't appear to be any problems with the relationship' or 'There may be problems with the relationship'

**Exact McNemar's test pre-testing versus post-testing

† One missing

these, 16 had received Solihull training and nine had not.

The level of agreement between the health visitors at the beginning and the end of the training day about whether there might or might not be problems in the parent-child relationship varied (see Table 1).

No significant difference in the tendency to identify problems was found between Solihull-trained and non-trained health visitors for any of the videos observed before the training (the smallest significance level for any of the videos was p=0.26 for video 4).

A significant difference was found between the health visitor ratings (before and after the training session) for only one of the individual videos, but numbers were small – the biggest change noted between the before and after ratings was from 4/25 to 11/24 health visitors who identified problems in video 4. This represents a reduction in the level of agreement that there were no problems in this video. Using the data from all of the video ratings, there was a highly significant increase in the likelihood that health visitors would identify problems in the relationship after the training.

The reasons given by the health visitors for their judgements that there might be problems in the relationships also varied (see Box 1).

There was a significant but modest increase in the number of problems identified at the end of the training session compared with the number identified at the beginning – about one new problem identified for every four videos (mean number=1.92 versus 1.68; exact Wilcoxon signed-rank test, p=0.027).

Discussion

There were very high levels of agreement (>92%) among the participating health visitors for two of the videos (2 and 3), corresponding to kappa values of better than 0.85. There was a reasonable consensus (62% before, 85% after training – approximating to kappa values of 0.27 and 0.71 respectively) for one video (1) and a fairly high level of disagreement for video 4 (72% before, 48% after training – approximate kappas of 0.46 and 0.00 respectively). Taken in conjunction with the Mellow Parenting assessments, it appears that there were high levels of agreement when there were either very low or very high frequencies of positive parental interactions with the child, but low levels of negative interactions. On the other hand, it may be that there were lower levels of agreement when there were high levels of both negative and positive interactions. The assessment of problems in the parent-child relationship therefore appears to be reasonably consistent, except when there is a complex mix of positive and negative parenting behaviours. However, it should be noted that only four videos were assessed in this pilot study, and replication with a wider range of material would be desirable before conclusions could be drawn with confidence.

No clear pattern of responses emerged between assessments by health visitors who had and had not been Solihull trained, but numbers were small (16 trained and nine untrained individuals). However, there was a small increase (from 47% to 60%) in the likelihood that health visitors would identify problems in the relationship after the half-hour training delivered by the psychologist and the group work. It appears that this increased level of identification is appropriate, since the training effect was strongest for the videos where negative parenting behaviours were identified in the Mellow Parenting system. Some caution is nevertheless needed in interpreting this

Box 1. Types of problem identified by health visitors

finding, since the same videos were rated before and after the training session and there may have been a practice effect. In more general terms, it would be inadvisable to draw firm conclusions from these pre- and post-training comparisons in this specific situation.

Further work is needed on the factors, such as caseload demographics, involved in setting thresholds for health visitors in deciding whether or not parent-child relationships are potentially problematic, and this is in progress in Glasgow. Educational techniques to further improve the reliability of these assessments need to be developed.

Objective and specific systems that count individual aspects of interaction rather than give a global impression may be helpful to health visitors in this context. In this study, training appeared to have increased the propensity of the health visitors to identify two specific aspects of problems in the parent-child relationship – failure of the mother to speak to her child and lack of eye contact. There were smaller increases in identification of lack of child vocalisation, lack of soothing behaviour and indiscriminate friendliness from the child. It is possible that some of the health visitors may not have been familiar with the formal description of indiscriminate friendliness (a feature of disorganised attachment behaviour) before the training session and so the increased level of identification could perhaps have been predicted, even though the behaviour was only noted in one video. The video material did not contain any examples of some of the items in the checklist, such as lack of joint attention (a feature of autism[13]) or rough handling, so it is not possible to draw any conclusions about these problems at this stage. Data is being gathered in the format reported here on routine 13-month contacts in the community with a view to reporting on the identification of these problems in a 'real life' setting during 2010.

Conclusion

Identification of problems in the parent-child relationship is a central component of health visiting work, but there have been no published attempts to assess the reliability of this aspect of professional judgement. This paper describes an exploratory study in which health visitors were asked to decide whether there may or may not be problems in videotaped interactions between parents and their one-year old children. Participants generally demonstrated reasonable levels of agreement, except when high frequencies of both positive and negative parenting behaviours were seen in the same video. Brief training on assessing parent-child relationships may increase the tendency of health visitors to identify these problems. Further work is required to confirm these findings, to evaluate the approach in the community, and to develop training programmes that will maximise the consistency of professional judgements about problems in the parent-child relationship.

Key points

- The quality of the parent-child relationship is a strong predictor of outcomes for children, and its assessment is important in identifying families' need for support
- This paper explores how well health visitors agree in observational assessments of problems in video-recorded mother-child interactions and the impact of training
- At a training day, 25 health visitors demonstrated reasonable levels of agreement in judgements of whether there were mother-child relationship problems
- Brief training may increase the tendency of health visitors to identify these problems, but more research is required into how this might be done most effectively

Acknowledgments

The authors wish to thank Cath Krawczyk, Helen Minnis and the mothers who gave permission for their videos to be used. They also wish to acknowledge the enthusiastic contribution of the participating health visitors and the contribution of Matt Forde for making this work possible.

References

1 Wilson P, Barbour RS, Graham C, Currie M, Puckering C, Minnis H. Health visitors' assessments of parent-child relationships: a focus group study. *International Journal of Nursing Studies*, 2008; 45(8): 1137-47.
2 Wilson P, Furnivall J, Barbour RS, Connelly G, Bryce G, Phin L, Stallard A. The work of health visitors and school nurses with children with emotional, behavioural and psychological problems. *Journal of Advanced Nursing*, 2008; 61(4): 445-55.
3 Hall DMB, Elliman D. *Health for all children (fourth edition)*. Oxford: Oxford University, 2003.
4 Morrell J, Murray L. Parenting and the development of conduct disorder and hyperactive symptoms in childhood: a prospective longitudinal study from two months to eight years. *Journal of Child Psychology & Psychiatry & Allied Disciplines*, 2003; 44(4): 489-508.
5 Murray L, Kempton C, Woolgar M, Hooper R. Depressed mothers' speech to their infants and its relation to infant gender and cognitive development. *J Child Psychology &.Psychiatry*, 1993; 34(7): 1083-101.
6 Wright CM, Jeffrey SK, Ross MK, Wallis L, Wood R. Targeting health visitor care: lessons from Starting Well. *Archives of Disease in Childhood*, 2009; 94(1): 23-7.
7 van Ijzendoorn MH, Kroonenberg PM. Cross-cultural patterns of attachment: a meta-analysis of the strange situation. *Child Development*, 1988; 59: 147-56.
8 Pettit A. Health visitors' experiences of using a tool in assessing infant attachment. *Community Practitioner*, 2008; 81(11): 23-6.
9 NHS Greater Glasgow and Clyde, Glasgow City Council. *Parenting support framework*. Glasgow: NHS Greater Glasgow and Clyde, 2009.
10 Milford R, Kleve L, Lea J, Greenwood R. A pilot evaluation study of the Solihull Approach. *Community Practitioner*, 2006; 79(11): 358-62.
11 Burston A, Puckering C, Kearney E. At HOME in Scotland: validation of the home observation for measurement of the environment inventory. *Child: Care, Health & Development*, 2005; 31(5): 533-8.
12 Minnis H, Reekie J, Young D, O'Connor T, Ronald A, Gray A, Plomin R. Genetic, environmental and gender influences on attachment disorder behaviours. *British Journal of Psychiatry*, 2007; 190: 490-5.
13 Baron-Cohen S, Allen J, Gillberg C. Can autism be detected at 18 months? The needle, the haystack, and the CHAT. *British Journal of Psychiatry*, 1992; 161: 839-43.
14 Puckering C, McIntosh E, Hickey A, Longford J. Mellow Babies: a group intervention for infants and mothers experiencing postnatal depression. *Counselling Psychology Review*, 2010; 25(1): 28-40.