

A pilot evaluation study of the Solihull Approach

Rebecca Milford

Consultant nurse
Child & Adolescent Mental Health Service
(CAMHS)
Weston Area Health Trust

Liv Kieve

Consultant Clinical Psychologist
CAMHS Weston-Super-Mare

Rosemary Greenwood

Medical Statistician
Research and development support unit,
Bristol

Abstract

The Solihull Approach is a psychotherapeutic and behavioural model for health visitors and other professionals working with children and families to address sleeping, toileting, feeding and behavioural difficulties in young children. This pilot study used quantitative methods to assess the effectiveness of the Solihull Approach compared to standard health visitor practice. At assessment, the parent completed the short form Parenting Stress Index and a visual analogue scale rating how severe the problem was. The health visitor also completed a visual analogue scale rating their perception of the severity of the problem. This process was repeated at the end of the intervention and again at three months follow-up. Results showed statistically significant better outcome on five out of six measures for the experimental group. Results are discussed in context of a small sample size.

Key Words

Behaviour programme, health visitors, pre-school children, Solihull Approach

Community Practitioner 2006; 79; 11: 358-362

Studies have shown that around 30-50% of pre-school children develop a range of behavioural problems, most commonly associated with factors such as poor social and emotional adjustment, sleep problems, over-activity / inattention, eating problems and soiling.¹⁻⁴

Hewitt et al⁵ found that 31% of nine-month-olds and 48% of two-year-olds displayed one or more problem behaviours. They suggested that behaviours like food faddiness, sleeping difficulties, temper tantrums, demanding behaviour and poor concentration should be regarded as normal. These suggestions are supported by studies from other countries, including Hong Kong, Holland and the USA, which all show consistently high rates of problematic pre-school behaviour.⁶

Certain problems, such as aggression, also persist over time. Richman et al,⁷ for example, found that problems identified in three-year-olds continued to be a problem for 63% of the study group at age four and for 62% at age 8. A gender difference was highlighted, with 73% of boys maintaining problem behaviours at eight years compared with 48% of girls.

High prevalence and stability of aggressive behaviour over time have important implications for the child, the family and society.⁸ Significant numbers of children continue to exhibit behaviour problems well into school years, with ramifications for the child's educational and social development. Difficult child behaviour is also associated with an increased risk of child abuse.^{9,10} To reduce these risks it is important that early intervention services are offered. However, high prevalence suggests that specialist child and adolescence mental Health services (CAMHS) will become overwhelmed because of limited resources.

Developing the skills of other professionals through training in models such as the Solihull Approach could help them deal with milder problems and prevent unnecessary referrals to specialist services. This practice is in line with recommendations from *the National Service Framework for Children, Young People and Maternity Services*,¹¹ which emphasises the need for early intervention and parenting. It also meets the recommendations set out in the White Paper *Every Child Matters*¹² and *The Children Act*.¹³ Health visitors, with their unique access to all pre-school children, are well placed as a profession to conduct early interventions. Principles of health visiting include the search for health needs and the stimulation of awareness of health needs.¹⁴

The Council for the Education and Training of Health Visitors¹⁵ state their aim as: 'The health visiting service will provide every family with children under five with a named health visitor who can advise on every day difficulties such as teething, sleeping and feeding... as well as managing difficult behaviour and any special needs a child may have.' (p.12)

A number of studies have evaluated training for health visitors in behaviour management techniques.¹⁶⁻¹⁹ Despite differences in course content and evaluation criteria, the studies reported beneficial outcomes for health visitors in terms of increased confidence. Health visitors therefore benefit from training in behaviour management techniques. There has been some discussion in the literature as to how this service should be implemented, whether all health visitors should be trained, or whether specialist health visitor services should be formed. ▶

Table 1. Type of problem in control and experimental groups

	Control	Experimental	Total
Male:female ratio	3:2	11:4	14:6
Feeding	2 (29%)	3 (20%)	5(23%)
Sleeping	0	6 (40%)	6 (27%)
Toileting	1 (14%)	0	1 (5%)
Behavioural	4 (57%)	6 (40%)	10 (45%)

The Solihull Approach

The Solihull Approach is a psychotherapeutic and behavioural model for health visitors and other professionals working with children and families to address common difficulties in young children. It was originally conceived by health visitors working in collaboration with the local child and adolescent mental health service. It combines three key concepts – containment, reciprocity and behaviour management – into one model. The Solihull Approach is particularly helpful when seeking to resolve sleeping, feeding, toileting and behaviour difficulties.²⁰

Hewitt²¹ advised that prevention schemes should be scientifically proven and not simply purchased on the basis of attractive packaging. It is with this in mind that the current pilot study aims to evaluate the effectiveness of the Solihull Approach. Despite the lack of evaluative research directed at the Solihull Approach as a whole, the individual components are well known concepts.

Containment

This describes the process of helping parents to manage their own anxieties and emotions and, in turn, the parent helps the child process their intense emotions rather than being totally overwhelmed by them. Containment is therefore the notion of another person being able to hold on to these negative feelings and emotions, and then give them back 'detoxified' and 'bearable'.²⁰ Through physically and emotionally 'holding' the baby, the parent can help the child learn how to process overwhelming feelings.

The Solihull Approach draws on the work of Dilys Daws²² who suggests that the health visitor can contain the parent's fears and anxieties, enabling them to think through problems rather than becoming overwhelmed by them.

Reciprocity

This can be described as the process of how parents and infants learn to communicate their needs to one another and is important in the development of a good attachment. Reciprocity was first described by Brazelton et al,²³ who studied the complexity of the interactions between mother and infant.

Table 2. Visual analogue scales (VAS) and short form parenting stress index (sf PSI) group means (range), effect size and p values at assessment, end of intervention and at follow-up

	Control	Intervention	Effect size	p value
Assessment				
Parent's perception of problem	8 (5-9.5)	8(5.4-10)	0.0	0.913
HV perception of problem	4 (2.3-7)	6 (2.9-9.3)	0.5	0.041
Parental Distress	37 (24-50)	31 (18-45)	0.4	0.185
Parent-Child dysfunctional interaction	39 (19-51)	24 (13-41)	0.6	0.011
Difficult Child	43 (27-51)	37 (15-56)	0.3	0.298
Total Stress	120 (76-152)	91 (41-134)	0.5	0.026
End of Intervention				
Parent's perception of problem	7 (2.3-8.4)	3 (0-7.5)	0.6	0.006
HV perception of problem	4 (2.1-6.1)	2 (0-6.2)	0.5	0.082
Parental distress	35 (23-47)	24 (13-35)	0.6	0.009
Parent-child dysfunctional interaction	37 (18-50)	20 (12-34)	0.7	0.005
Difficult child	41 (24-52)	28 (13-47)	0.5	0.026
Total Stress	114 (68-147)	72 (38-104)	0.6	0.014
Follow - up				
Parent's perception of problem	7 (4.8-8.3)	3 (0.8-4.9)	0.8	0.001
HV perception of problem	4 (2.7-5.3)	2 (0.8-6)	0.6	0.049
Parental Distress	39 (26-48)	24 (15-37)	0.7	0.001
Parent-Child dysfunctional interaction	40 (19-49)	19 (13-39)	0.8	0.002
Difficult Child	45 (38-52)	30 (19-42)	0.8	0.001
Total Stress	124 (84-147)	73 (49-115)	0.8	0.000

Statistical Significance = $p < 0.003$

The observation of the 'dance of reciprocity' described by Trevarthen²⁴ and later Murray²⁵ consists of the following components:

- Initiation
- Orientation
- State of attention acceleration
- Deceleration withdrawal or turn away

All these components occur within 16 seconds and the sequence shows complex reciprocal interaction between mother and infant.

The Solihull Approach suggests that health visitors should learn to observe how developed this process is and advise mothers where interaction can be improved.

Jack et al²⁶ suggests that a vital part of public health visiting is to develop reciprocity between the professional and the client by helping the client to identify their fears and feelings of powerlessness. This supportive, reciprocal relationship would then promote empowerment of the client and encourage him/her to move from being a passive recipient of services, towards taking an active role in their own care and the care of their children.

Training health visitors in reciprocity may theoretically have two benefits. Firstly it makes them more aware of the parent-child interactions and secondly it enables them to develop better relationships with parents themselves. The empowerment of the mother may lead to better engagement in the treatment process.²⁷

Behaviour Management

This originates from learning theory and incorporates the concepts of classical²⁸ and operant conditioning. Behaviourism is concerned with observable behaviour that can be modified through appropriate reward of desirable behaviour and punishing/ignoring undesirable behaviour. An important aspect of any behaviour management intervention is consistency. For instance, negative, inconsistent parental behaviour and high levels of family adversity are associated with the emergence of problems in early childhood and predict their persistence to school age.³⁰►

A study by Gardner³¹ looking at parental inconsistency concluded that there was a greater risk of a child developing conduct disorder in families where there was a mother-child conflict. Indeed there was a strong correlation between inconsistency and family conflict.³² Paterson et al^{33,34} concluded that ineffective parenting practices are determinants for childhood conduct disorders and that later in childhood these children are at greater risk of academic failure and peer rejection.

Health visitors should therefore offer behaviour programmes which guide parents to give clear and consistent messages about acceptable behaviours.

The Solihull Approach proposes that the combination of these three components into a single model will create an effective tool in the management of pre-school behaviour problems. The current study was designed to test the effectiveness of health visitors trained in the Solihull Approach compared with routine health visitor practice.

Method

Design

A between-group design was used with pre-post- and three months follow-up assessments using quantitative measures. Data collection took place over a two-year period.

Health Visitors

Health visitors from three primary care trusts (PCT's) in the South-West of England were invited to participate in the study. Participants were recruited either face-to-face meetings with researchers or after receiving information about the study from their line managers. The experimental group (n=15) had attended a training course in the Solihull Approach. The control group (n=7) had not. All health visitors were women.

Clients

Health visitors were asked to recruit their first forthcoming client who experienced behavioural difficulties addresses by the Solihull Approach that is sleep, feeding, toilet or behaviour management problems. In order to avoid the possible impact of

non-specific variables of the health visitors, each health visitor collected data from one subject only.

Data collection tools

Data were collected using three measurement tools. The short form parenting index (sf PSI)³⁵ is a 36-question self-completion questionnaire which measures parental distress, parent-child dysfunctional interaction and difficult child. These scores combine to generate the total stress score.

A total stress score of 90 is considered to denote clinically significant levels of stress. Data from a fourth sub-category, defensive responding, were not used as they were not deemed relevant for the purpose of this study. The PSI has been used in over 50 studies to evaluate outcome measures and is reported to be sensitive to changes in levels of parental stress following interventions.³⁶ The PSI is quick to administer and was derived from the long form PSI, which has been validated in parents with children as young as one month.

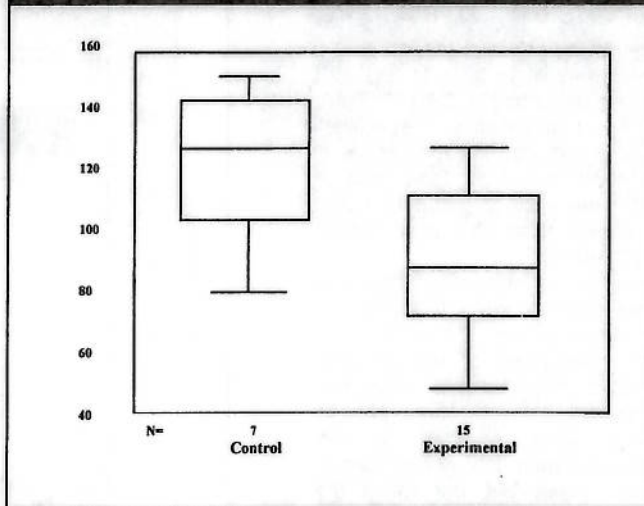
Visual analogue scales (VAS) defining the perceived severity of the problem were also used.³⁷ The scales consist of a 10cm line with anchor points 'Not a problem' and 'couldn't be worse'. These were completed separately both by the parent and health visitor.

Procedure

Ethical approval for the study was gained from the local health trust ethics board (which preceded the Central Office for Research Ethics Committees).

Health visitors identified children with specific behaviour problems that fitted the criteria for the Solihull Approach. Parents were asked by their named health visitor if they would participate in the research programme and were informed that the research was designed to evaluate a new kind of health visitor training for behaviour problems, but were not informed about the nature of the training or whether their health visitor had received it. Completion of the questionnaires was treated as informed consent.

Figure 1. Total stress (sf PSI) reported by parents at assessment



Parents completed the sf PSI and the VAS and health visitors just completed the VAS. Data were collected from parents and health visitor at three time points: the end of the first assessment meeting, immediately after the intervention and again three months later.

Analysis

SPSS was used to analyse data. Due to small group sizes, only between-group analysis was carried out. Numbers were also too small to stratify by gender or problem type. Between-group Mann-Whitney tests were performed for data collected at assessment, end of intervention and three-month follow-up (Table 2). Because 18 comparison tests were calculated there was a greatly increased probability of type one error (false positive). Bonferroni's correction was used to adjust for this and a statistical significance of p<0.003 was used.

The sf PSI produces raw scores for each of the five sub-categories. These data are normally converted into percentiles. The sf PSI considers scores above 112 to be in the 99th percentile. The scores of several participants in this study exceeded the 99th percentile for a number of the sub-groups. To negate this ceiling effect all data were analysed using the raw scores.

Results

In the experimental group (n=15), sleep-related problems were reported as a primary concern in six of the cases, whereas this problem was not highlighted in any of the control group cases. (n=7) (Table 1) ►

Both the control and experimental groups contained more boys than girls; however the gender of two of the control subjects was not recorded. This gender bias towards males is consistent with previous studies.³⁸

The changes over time in the PSI scores are described in Table 2. There are no statistically significant differences between the two groups at assessment; however, there was a trend for the control group to report more stress than the experimental group (Figure 1).

At the end of the intervention there was a strong positive trend favouring the experimental group (Table 2). For parental perception of the problem, parent-child dysfunctional interaction and parental distress, more positive outcomes were reported by the experimental than the control group. However, these did not reach the statistical significance set for this project ($p < 0.003$).

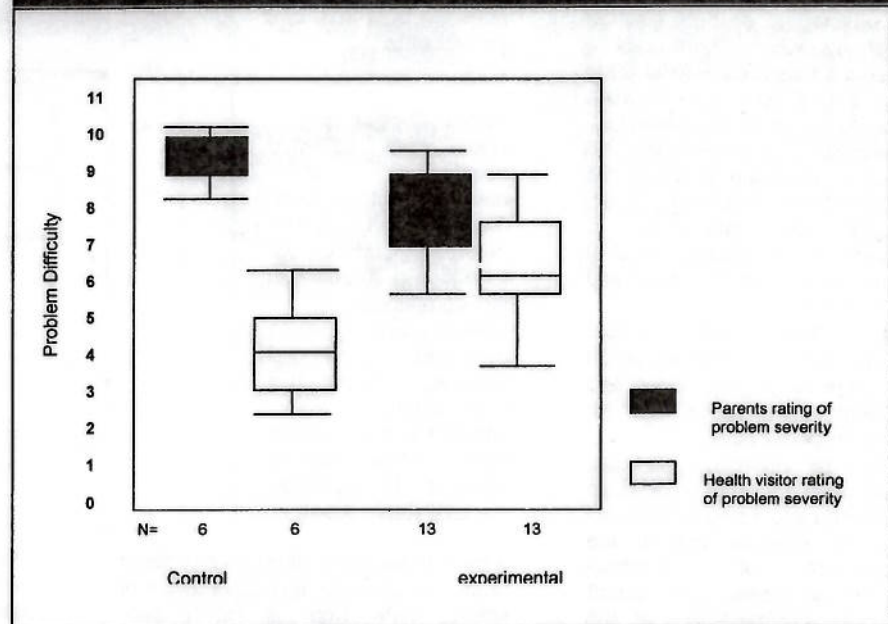
At follow-up many of the group differences were further enhanced (Table 2). Parents in the experimental group reported a statistically significant decrease in distress as well as in dysfunctional interaction with their child and in overall stress compared with parents in the control group. Statistically significant differences were also evident in the ratings on parental perception of child difficulty and problem severity, again with outcomes favouring the experimental group.

At assessment point, the experimental group showed a greater concordance between health visitors' and parents' rating of the severity of the problem compared with the control group, however this group difference was not statistically significant. (Figure 2)

Discussion

The Solihull Approach was designed to give health visitors specific knowledge and skills to help them work with parents to solve various behaviour problems in children. The current pilot study as designed to evaluate its effectiveness in comparison with routine health visitor practice and to determine if a larger study is indicated. At follow-up there was a statistically significant difference favouring the outcomes of the intervention group in relation to parental perception of problem severity, parental distress, parent-child dysfunctional interactions, child difficulty and overall parental stress. The differences between the groups suggest that the Solihull

Figure 2. Health visitor and parental perception of problem severity at assessment (VAS)



Approach may be more effective than standard health visiting in addressing behaviour problems in young children. These data look encouraging but should be viewed with caution. The sample size is small, particularly in the control group. Despite recruiting from several PCT's it proved extremely difficult to recruit sufficient numbers of health visitors to the study given our limited funding and time constraints. In addition, recruitment was affected by the health visitors' perception of their heavy caseload commitments and concerns regarding the sensitive nature of the questions asked in the PSI. This was particularly evident in the health visitors approached to form the control group, who seemed anxious about responding to possible questions from the parent following the use of the PSI. A hypothesis might be that the higher level of anxiety in the control group was due to limited training in dealing with sensitive issues. The experimental group had received this in the Solihull training.

The small sample size limited our analysis to a between-group design, and it was not possible to investigate the different types of behaviour problems separately.

Another potential difficulty with the study was the mix of behaviour problems between the groups. The experimental group included six sleep problems compared with none in the control group.

It may be argued that this type of difficulty is generally more accepted by parents and health visitors as being a 'typical' problem and one that will resolve more easily over time.

Parents tended to report more total stress in the control group than in the experimental group at assessment, which may have clinical implications, particularly in conjunction with the small sample size. The control group may, for instance, have consisted of generally more complex cases. However, this hypothesis is not supported by the health visitors' rating of the problem as the health visitors working with the control group rated the problem at assessment as less severe than those working with the experimental group.

Interestingly, the Solihull-trained health visitors tended to match the parents' view of the problem more closely than the health visitors working with the control group. One hypothesis may be that this variance is due to differences in the assessment process between the groups: the training for the Solihull Approach emphasises containment and reciprocity. Health visitors are encouraged to develop a good rapport with parents and help contain the parents' anxieties through active listening. Health visitors also assess the level of reciprocity between the parent and child and help them to improve this. The assessment process may lead the health visitor to obtain a more precise▶

Assessment of the presenting problem compared with health visitors who do not use these techniques. This assessment process may also allow health visitors to reduce parental stress by putting the problem into perspective, construct a more informed formulation and implement a better, more problem-specific intervention strategy. Thus it may be that health visitors without training in the Solihull Approach underestimate the severity of the presenting problem and the parental distress. This may have led to parents not feeling listened to or understood and therefore becoming more stressed. This in turn may have resulted in an over-reporting by parents of problems in relation to those reported by health visitors. De La Cuesta^{39,40} emphasises the importance of training health visitors in reciprocity, arguing that it encourages parents to take a more active role in their child's care and improves co-operation in behaviour programmes introduced by the health visitor. Our

...the Solihull Approach may be a useful tool in improving health visitors' effectiveness at identifying and helping parents resolve minor behaviour problems in young children

findings suggest that this increase in co-operation may be mediated by the health visitors' improved understanding of the problem, possibly leading to a better tailored intervention programme. The visual analogue data show that health visitors in the control group ended their intervention when their parents were still reporting the problem severity to be high, although health visitors reported it to be less severe. The experimental group stopped their intervention when both the parents and the health visitors were reporting low problem severity. Our data set was too small to examine within-group differences beyond this, but again

it raises important questions pertaining to the assessment process and the skills required to evaluate problems accurately.

Conclusion

The findings suggest that the Solihull Approach may be a useful tool in improving health visitors' effectiveness at identifying and helping parents resolve minor behaviour problems in young children. The experimental group showed significantly superior outcomes compared with controls, and health visitors trained in the Solihull Approach appeared to show more accurate assessment skills. However, several methodological issues must be considered when interpreting the results. In the future it is suggested that a larger study should be carried out to provide more robust findings.

References

- 1 Richman N, Stevenson JE, Graham PJ. Prevalence of behaviour problems in three-year-old children: an epidemiological study in London Borough. *Journal of child psychology and psychiatry* 1975;16,4: 277-287
- 2 Ounsted MK, Simons CD. The first born child: toddlers' problems. *Developmental medicine. Child neurology* 1978; 20,6: 710-719
- 3 Jenkins S, Bax M, Hart H. Behaviours in pre-school children. *Journal of Child Psychology and Psychiatry* 1980;21, 1: 5-17.
- 4 Sonuga-Barke EJS, Thompson M, Stevenson J, Viney D. Patterns of behaviour problems among pre-school children. *Psychological medicine* 1997;27,4:909-918
- 5 Hewitt K, Powell I, Tait V. The behaviour of nine-month and two-year-olds as assessed by health visitors and parents. *Health Visitor* 1989; 62, 4: 52-55.
- 6 Campbell SB. Behaviour problems in pre-school children: a review of recent research. *Journal of child psychology and psychiatry* 1995; 36, 1: 113-149
- 7 Richman N, Stevenson J, Graham PJ. Pre-school to school: a behavioural study. London: Academic press; 1982.
- 8 Panko TL. Pathway from Childhood conduct problems to adult criminality. Rochester, USA: Rochester Institute of Technology; 2005. Available at: www.personalityresearch.org/papers/panko.htm (accessed 9 October 2006)
- 9 Creighton S. Trends in child abuse. London: NSPCC Publications; 1984.
- 10 Maccoby E, Martin, J. Socialisation in the context of the family: parent-child interaction. In: Hetherington EM (ed). *Handbook of child psychology: Vol 4. Socialisation, personality and social development*. New York: Plenum Press; 1983.
- 11 Department of Health. National framework for children, Young People and Maternity Services. London: The Stationery Office; 2004
- 12 Chief Secretary to the Treasury. Every child matters. Green Paper. London: The Stationery Office; 2003.
- 13 Department for Education and Skills. The Children Act. London: The Stationery Office, 2003.
- 14 Cowley S, Twinn S. Principles of health visiting: a re-examination. London: CPHVA; 1991
- 15 Council for the Education and Training of Health Visitors. Handbook for tutors and examiners. London: CETHV; 1974
- 16 Hewitt K, Crawford W. Resolving behaviour problems in preschool children: evaluation of a workshop for Health Visitors. *Child Care, Health and Development* 1988; 14, 1: 1-9
- 17 Bowler JF, Watson PL. A child behaviour workshop. *Health Visitor* 1984; 57: 302-303.
- 18 Scalfie J, Frith J. A behaviour management and life stress course for a group of mothers incorporating training for health visitors. *Child: Care, Health and Development* 1988; 14, 1: 25-50.
- 19 Douglas H, Ginty M. The Solihull Approach: Changes in health visiting practice. *Community Practitioner* 2001; 74, 6: 222-224.
- 20 Douglas H et al. The Solihull Approach Resource Pack. Birmingham: School of Primary health care, University of Central England; 2001
- 21 Hewitt K. Prevention of behaviour problems by health visitors. In: Stevenson J (eds). *Association for child psychology and psychiatry, occasional papers No.2. Health-visitor based services for pre-school children with behaviour problems*. Bournemouth: Bourne Press Ltd; 1990.
- 22 Daws D. Infants' sleep problems. In: Szur R, Miller S (eds). *Extending horizons*. London: Karnac; 1991.
- 23 Brazelton T, Koslowski B, Main M. The origins of reciprocity: the early mother-infant interaction. In: Lewis M, Rosenblum L. (eds). *The effect of an infant on its caregiver*. London: Wiley; 1974.
- 24 Trevarthen C. The foundation of intersubjectivity: development of interpersonal and cooperative understanding in infants. In: Olson DR (ed). *The social foundation of language and thought*. New York: Norton; 1980.
- 25 Murray L, Andrews L. *The Social Baby*. Richmond, Surrey: CP Publishing; 2000.
- 26 Jack S, DicensoA, Lohfield L. A theory of maternal engagement with public health visitors and family visitors. *Journal of Advanced Nursing* 2005; 49, 2: 182.
- 27 De La Cuesta C. Relationships in health visiting: enabling and mediating. *International Journal of Nursing Studies* 1994; 31, 5: 451-459
- 28 Pavlov IP. *Conditioned Reflexes*. New York: Oxford University Press; 1927.
- 29 Skinner BF. *The behaviour of organisms*. New York: Appleton-Century-Crofts; 1938.
- 30 Campbell SB. Behaviour problems in pre-school children: a review of recent research. *Journal of child psychology and psychiatry* 1995; 36, 1:113-149.
- 31 Gardner FE. Inconsistent Parenting: Is there evidence for a link with childrens' conduct problems? *Journal of abnormal child psychology* 1989; 17, 2: 223-223
- 32 Gardner RA. The parental alienation syndrome. Second edition. Creskill NJ: Creative Therapeutics Inc; 1997.
- 33 Paterson GR, deBaryshe BD, Ramsey E. A developmental perspective on antisocial behaviour. *American Psychologist* 1989; 44, 2: 329-335
- 34 Patterson GR. Mothers: The unacknowledged victims. *Monographs of the society for Research in Child Development* 1980; 45, 5:1-47.
- 35 Abidin RR. Parenting stress index. Professional manual. Third Edition. Odessa, USA: Psychological Assessment Resources; 1995.
- 36 Abidin RR. Parenting Stress Index. A measure of the parent-child system. In: Zalaquett CP, Wood RJ (eds). *Evaluating stress*. London: Scarecrow Press Inc; 1997.
- 37 McCormack HM, Horne DI, Sheather S. Clinical Implications of visual analogue scales; a critical review. *Psychological medicine* 1988; 18: 1007-1019.
- 38 Richman N, Stevenson J, Graham PJ. Pre-school to school: a behavioural study. London: Academic Press; 1982.
- 39 De La Cuesta C. Relationships in Health Visiting: enabling and mediating. *International journal of Nursing studies* 1994; 31, 5: 451-459.
- 40 De La Cuesta C. Marketing the Service: basic social process in health visiting. Unpublished Doctoral Thesis. Liverpool: University of Liverpool; 1992.

