Change in Maternal Representations and Change in Maternal Behaviour in Early Motherhood: A 1-year Follow Along Study

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D.Clin.Psy. Thesis (Volume 1), 2011

University College London

Overview

This thesis examines the role of parental cognitions (representations) and parental behaviour in the formation of the early parent-infant relationship. Part one systematically reviews the parenting programmes that are on offer in the UK that are known to benefit children in the first three years of life. The most commonly used components of these programmes are examined in terms of theoretical underpinnings and programme content. Part two investigates the change and stability in maternal representations over a 12 month study period in early motherhood. Maternal psychopathology is considered in terms of its potential influence on maternal representations of the child, and how these representations may predict the future quality of the mother-infant relationship. This research project assesses the sensitivity of the newly developed 10 PDI (Wain 2010), a dimensional coding system of parental representations for the Parent Development Interview (PDI). Part three details a critical appraisal of the research process, highlighting a number of methodological issues and my personal reflections of conducting this research with this sample of mother-infant dyads.

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Acknowledgements

I would firstly like to thank my internal supervisor Prof. Peter Fonagy for his ongoing patience and support. A thank you also goes to my external supervisor Michelle Sleed whose thoughtful guidance was much appreciated. I would also like to thank Flavia Ansaldo for her diligence and perseverance with data collection. I extend my gratitude to all the researchers at the Anna Freud Centre for their hard efforts with transcribing and coding. I am also grateful to all the mothers and infants who continued their participation in this study over the 12 month period. Lastly, I would like to thank those closest to me; my parents for providing the support and nurturance that I needed, and to Rob for the sacrifices that he made over this research period and for his amazing tolerance.

Part 1: Literature Review

A Content Analysis of Early Years Parenting Programmes

Abstract

Objective: The aim of this review was to examine the key components, including the theoretical underpinnings and program content, of parenting programmes on offer in the UK that are aimed at children aged 0-3 years of age.

Method: Parenting programmes were systematically selected from the Commissioning Toolkit website (http://www.commissioningtoolkit.org/Default.aspx) designed by the National Academy for Parenting Research (NAPR). For inclusion in this review parenting programmes needed to be: aimed at children between the ages of 0-3 years, Academy rated by the NAPR using the Parenting Programme Evaluation Toolkit, and delivered by a trained facilitator in a live setting rather than self-directed learning. Furthermore, the parenting programme had to meet an acceptable NAPR rating on the following four elements: 1) a clearly specified target population, 2) evidence-based content, 3) well-developed training and implementation support, and 4) evidence of successful outcome.

Results: The search strategy identified 29 parenting programmes. Theoretical analysis indicated that nearly all parenting programmes were grounded in attachment theory, with social learning theory and behavioural theory also identified as important. Content analysis of these parenting programmes revealed the optimal strategies for increasing desirable behaviour and managing undesirable behaviour. The need to understand and improve communication in the parent-child relationship was highlighted along with the importance of educating parents about the cognitive and physical development of their child. Lastly, the review emphasises the need for parenting programmes to increase parental self-esteem.

Conclusions: The review creates a theoretical and content framework extracted from those early intervention parenting programmes that are known to produce improvements in the social and emotional well-being of children and their parents.

Introduction

Parent training programmes have increased in their abundance over the previous three decades with the growing evidence of the link between parenting and child behaviour (Lytton, 1990). The expansion of these programmes has been widespread across many countries and has involved organisations of a public, private and voluntary nature. In the 1980's and 1990's many of these parent training programmes were informed by Bandura's (1969) Social Learning theory which emphasised the key role of the parents in modelling desirable and undesirable behaviour to the child. To this day, parent training programmes continue to work on this premise that parents can act as an agent of change within the parent-child relationship.

Early intervention to support families at risk is highly topical in the current UK national policy with the recent Comprehensive Spending Review announcing an Early Intervention Grant to support children at greatest risk of multiple disadvantage. In the government report, 'Early Intervention: The Next Steps' (Allen, 2011) comments that 'the culture of late intervention is both expensive and ineffective' (pg v) and puts forward a case to 'ensure that Early Intervention plays a more central part in UK policy and practice' (pg v). The report emphasises that investment made to support families at risk at a social and emotional level can benefit current and future generations of infants and help their parents (or carers) before problems arise. The key message is neither new nor revolutionary, but repeats the old folk wisdom of prevention is better than cure. The economic drive is to support parents to raise emotionally capable people who are more productive, better educated, tax-paying citizens to help our nation compete in the global economy and make fewer demands on public expenditure (Allen, 2011). It is recommended in the report that the methodologies in existing early intervention programmes should be rigorously

evaluated and that future expansion should favour those programmes that impact on crucial stages of children's social and emotional development. It is also recommended that the new local health and well-being boards should measure investments in early intervention as an indicator of national well-being and as an agent for its improvement.

The parent training programmes that are currently on offer are very heterogeneous in nature and vary enormously in relation to target population (e.g. child age, teenage mothers, welfare populations), content (e.g. communication skills, increasing positive parent-child interaction, behaviour management), delivery setting (e.g. clinic-based, school-based, community-based) method of delivery (e.g. group, individual, role-play), qualification of trainers, and evidence base. The parent training programmes can also vary in the degree to which they draw upon certain theoretical approaches (e.g. attachment theory, social learning theory, cognitive behaviour therapy).

Parent training programmes are of great importance to services that offer early years interventions as they are one of the few ways that health professionals can help parents to provide the social and emotional foundations of future well-being and achievement for their child. Recruiting the parent to act as the modifier of the child's behaviour, emotions and social interactions and experiences can help break the inter-generational cycle of family dysfunction (Barlow & Parsons, 2003). Transactional models of the parent-infant relationship have identified the bi-directionality of behaviours between parent and infant and how this regulatory process can have significant effects on the developing attachment system (Sameroff & Fiese, 2000). From the position of the child, the early parent-infant interactions create the conditions from which the fundamentals of cognitive, emotional and social functioning will develop. The regulatory processes that are established as a result of

these early interactions can have a significant influence on the future development and overall well-being of the child in later years (Johnston, Huebner, Tyll, Barlow, & Thompson, 2004). Poor parent-child relationships at this stage have been found to be associated with increased risk of child psychopathology (Fonagy, 1998), behaviour problems (Downey & Coyne, 1990), and mental health problems into adulthood (Rutter, 1996). Furthermore, these non-optimal parent-child relationships are also predictive of later risk taking behaviours, e.g. criminality, drug and alcohol misuse (Kazdin, 1990) and poor marital and peer relationships (Robins & Rutter, 1990). In contrast, parenting practices that consistently use positive proactive parenting (including praise, encouragement and warmth) are associated with higher child self-esteem, increased social and cognitive competence (Cogill, Caplan, Alexandra, Robson, & Kamar, 1986) and enhanced skills of empathy (Velez, Johnson, & Cohen, 1989).

The beneficial effects of early parent training programmes can equally be observed in the parent. On a practical level, parent training programmes can teach skills to care for and soothe the child which can in-turn lead to an increased sense of self-efficacy and competence (Hartung & Hahlweg, 2010). Even an intervention that focuses solely on managing sleep problems or crying can significantly reduce parental anxiety and protect family relationships that are often under threat from problems in infancy such as these (Smart & Hiscock, 2007).

Some parenting programmes operate on a more educational level and deliver a programme that is more focused around infant development, including the typical cognitive, physical, social and emotional milestones (Johnston et al., 2004). In other parenting programmes, there is a greater emphasis on the parent learning stress management strategies and finding time for self-nurturance which have been found to reduce depression and anxiety symptomatology (Barlow et al., 2010; Day &

Davis, 1999). Collectively, these commonly observed outcomes of parenting programmes encourage the parent to have a greater understanding of the infant's needs that are informed by increased knowledge about age appropriate development. Furthermore, the reduction in parental mental health concerns can create space for increased emotional availability and reflective functioning (Trapolini, Ungerer, & McMahon, 2008).

Regardless of orientation and characteristics, parent training programmes share the common goal of modifying parent's childrearing practices and attitudes with the hope of modifying the behaviour of the child (Lundahl, Risser, & Lovejoy, 2006). In some parenting programmes, e.g. Behavioural-Parent Training, this is implemented with the use of behavioural strategies of reinforcing desirable behaviour (e.g. through praise) and ignoring undesirable behaviour (McCart, Priester, Davies, & Azen, 2006). In other parent training programmes, e.g. attachment based interventions, the focus is more heavily on the parent-child relationship and how, for example, a parent can increase their reflective functioning and attunement with the child (Barlow et al., 2010). Parent training programmes can also be supplemented with components designed to enhance parent emotional well-being including stress management and relaxation.

Many meta-analyses and systematic reviews have looked at the effectiveness of different theoretical approaches, such as behavioural-parent training (Lundahl, Nimer, & Parsons, 2006) or the effectiveness of certain treatment packages offered within a targeted age range of child, (Barlow et al., 2010). What is often less clear is what individual components are contained within these treatment packages and theory driven approaches.

Barlow et al. (2010) carried out a systematic review of health-led interventions designed to guide parenting, support parents and enhance the parent-

infant relationship in the perinatal period to 3 years. A number of interventions were recommended for these age ranges that were found to be effective. However, the review did not describe the individual content items or theoretical components that were found to be common amongst these interventions.

Attempts have been made to examine this further by analysing the key components and content items that are contained within more or less effective parent training programmes for children e.g. the meta-analysis by Wyatt, Kaminski, Valle, Filene and Boyle (2008). However, this meta-analysis was somewhat limited in the number of general component themes that it looked at considering the wealth of information that could have been collected from the 77 parenting programmes included in the meta-analysis.

Findings from component analyses such as the above potentially have important implications for those parents, practitioners and commissioners who seek to find parent training programmes that are most efficacious for a given target population. Given the current economical climate of limited resources in the UK and the increasing drive for early intervention initiatives to tackle cause rather than the more expensive symptoms of dysfunction, there is a great potential for a system that can offer objective advice on the highest quality parent training programmes that are available.

Fortunately in England, the need to collate and examine the wealth of information about these parenting programmes has been recognised. The Department for Children, Schools and families (DCSF) have identified that parents have a right to examine the quality of the parent training programmes that they are being offered. Furthermore, there is a requirement for greater transparency of what can be expected of certain parent training programmes, thereby allowing commissioners to make informed and justifiable decisions of those training programmes that should optimize

returns on expenditures. On behalf of the DCSF, The National Academy for Parenting Research (NAPR) set out to provide an evaluation tool that would systematically examine the quality of parent training programmes available in the England and provide detailed descriptions for the audience of parents, practitioners and commissioners.

The NAPR began with an intensive review of the international literature of parent training programmes. This process enabled the development of a number of criteria against which the parenting programmes could be measured. The finished product of this research was the Commissioning Toolkit which is a searchable online database of national and international parenting programmes and approaches that are available in England (http://www.commissioningtoolkit.org/Default.aspx). The database is aimed at commissioners and provides detailed information of approximately 120 Parenting programmes. The quality and effectiveness is measured using the Parenting Programme Evaluation Tool (PPET) which provides a rating for each of the following four elements; 1) Targeted populations and explicit recruitment processes, 2) Explicit content based on sound theory, 3) Best practice in training, supervision and adherence to the programme, and 4) A robust evidence base.

The presence of the Commissioning Toolkit provides a unique opportunity to review and provide a deep analysis of the content of parent training programmes with a view to identifying common components and providing a framework within which these could be looked at in relation to PPET or other evidence summary tools.

The primary aim of the current review was to analyze the content of parent training programmes and create a systematic framework for representing these programmes based on the NAPR database. We wished to examine the key components, including the theoretical underpinnings and program content of parenting programmes currently offered in relation to their objectives and primary

targets of intervention. In the interest of manageability of information, the review was restricted to programmes aimed at children ages 0-3 years of age.

Parents and commissioners have over 100 evidence based programmes to choose from. It is more than can be reasonably expected from non-experts to study the content of these programmes in detail to identify those programs which contain the combination of components which are recommended for this age group. The present review represents a content analysis of parenting programmes with the aim of identifying the key components in programmes known to benefit children aged 0-3 years.

A secondary aim of the current review was the creation of a framework for looking at the content of the programmes which could be used in future systematic studies of parent training. It is further hoped that the creation of such a content framework can serve to identify components that program developers will want to ensure are included in future programs and also highlight gaps in the provision of parenting programs.

Method

Search Strategy

Parenting programmes were systematically selected from the Commissioning Toolkit that was designed by the National Academy for Parenting Research. The search was conducted in July and August 2010 when there were a total of 120 parenting programmes contained within the database. This database is available online at http://www.commissioningtoolkit.org/Default.aspx.

The content and theory descriptions of the programmes of interest that were published on the Commissioning Toolkit were considered to be accurate and reliable as there were a number of rigorous evaluation stages required by both the programme

developers and the evaluation team. These stages included the developers of each parenting programme completing a submission form describing the detail and self-evaluation of their programme. They were also required to provide all supporting materials such as manuals and handbooks that may be used in the programme. Two members of the evaluation team would then independently rate the materials and evidence provided against the four elements of the PPET (see further details below). The rating would then be submitted to an evaluation panel before being published on the online database.

Inclusion criteria

In order to be included in the current review, a parenting programme had to meet the following criteria;

Criterion 1: The parenting programme was aimed at children between the age range of 0 – 3 years. On the database this meant selecting parenting programmes that were in the 'Children: Age Range' of 'pre-birth and/or Newborn' and/or 'Infant (under 1 year)', and/or '1-3 years'. Out of the total 120 programmes, 66 were excluded because this was not the age range of focus.

Criterion 2: The Parenting programme was Academy rated by the National Academy for Parenting Research (NAPR). The NAPR rating uses the Parenting Programme Evaluation Tool (PPET). Five parenting programmes were excluded because they were listed as 'Self-Rated' and therefore had not yet been evaluated using the NAPR quality ratings.

Criterion 3: The parenting programme had a rating greater than or equal to two on the first three of the key elements: 1) A clearly specified target population, 2) Evidence-based content, 3) Well-developed Training and implementation and support, AND a rating greater than or equal to one on the fourth key element; 4)

Evidence that it works. Nineteen parenting programmes were excluded because the quality rating fell below the specified threshold on these four key elements.

The rationale for employing this inclusion criterion on the basis of the Academy rating for the four key elements is outlined as follows:

- Parenting programmes that are rated as below two on element 1 ‘a clearly defined target population’ are rated by the PPET as having ‘inadequately specified the target population’ in relation to the rating scale. There may also be an inconsistency between the programmes content and the needs and characteristics of the target population. In order to be certain that the age range of the target population is sufficiently specified, any parenting programmes that were rated lower than or equal to one were excluded.
- Parenting programmes that are rated as below two on element 2 ‘Evidence-based content’ are rated on the PPET as having a ‘weak theoretical framework and content’ which is only partially based on scientifically proven psychological theory .e.g. attachment theory, according to the PPET. Furthermore, the programme’s content, materials and format require substantial revisions in order to achieve the intended outcomes of the programme. Given the content-heavy focus of parenting programmes in this current review, it was decided to exclude any programmes that contain contents that are not based in theoretical evidence.
- Parenting programmes that are rated as below two on element 3 ‘Well-developed training and implementation support’ are reported by the PPET to have systems that are not sufficient for faithful implementation across independent settings. The programmes ability to maintain fidelity in settings away from the developers of the programme is therefore questionable. Parenting programmes with a rating lower than two on this element were

excluded on the basis that the delivery of the content elements may be inaccurate if the programme fidelity is difficult to maintain.

- Parenting programmes that are rated as below one on element four 'Evidence that it works', are rated by the PPET to have no current evidence of effectiveness. The decision to lower the rating threshold on element four was to allow for the parenting programmes to be included that may not have had the funding or time to evaluate their outcomes with robust scientific methods. These programmes may still provide useful information about content and theoretical approach despite not being thoroughly evaluated. Examples of the programme evaluation completed to receive this rating may be pre and post studies with insufficient scientific methods or a qualitative method with an indication of positive outcome. See Appendix A for details of the PPET Evaluation rating scale. The *Note* in Table 1 shows a summary of these rating scales.

Criterion 4: The parenting programme was delivered by a trained facilitator in a live setting. One parenting programme was excluded on this principle because it was a self-directed DVD training programme. The rationale behind this inclusion criterion was that media-based parenting programmes (e.g. booklets, video, audiotape) have been found to have variable impact (Montgomery, 2001). However, with the addition of brief therapist input (e.g. 2 hours) this appears to increase the effectiveness of parenting programmes. This is likely to be due to the fact that the presence of a trained facilitator allows for immediate reinforcement and corrective feedback to encourage parents' mastery of parenting skills.

No other search criteria were selected on the online database to further narrow the search. Therefore both 'parent genders' were included, all 'parent characteristics' (e.g. young parents, adoptive parents, Refugee/Asylum seekers) were

included, all ‘parent specific issues’ (e.g. alcohol/substance misuse, mental health issues, learning difficulties) were included, both ‘child genders’ were included, all ‘child specific issues’ (e.g. behaviour related problems, specific developmental disorders, physical illness) were included, all ‘classification level’ (e.g. universal, specialist, tier 4) were included, all ‘level of need’ (e.g. low, moderate, high) were included, and all ‘delivery settings’ (e.g. health centre, family home, community centre) were included.

The resulting pool of 29 parenting programmes were appropriate for analysis in this current review. These 29 programmes, and some key descriptive details are shown in table 1.

Table 1. Parenting programmes, developers, child age of focus, aim of programme and recommended number and length of sessions.

Name of parenting programme	Developer(s)	Child age	Aim of programme	Number of sessions	Length of sessions (hours)	Evidence base rating	References*
Incredible Years Baby	Prof C. Webster-Stratton	- Pre-birth and/or newborn - Infant - 1-3 years	Increasing positive and nurturing parenting and improving parent-child relationships.	13-15	2-3	2	www.incredibleyears.com
New Beginnings-An Experience-Based Programme Addressing The Attachment Relationship Between Mothers And Their Babies In Prisons	T. Baradon	- Pre-birth and/or newborn - Infant - 1-3 years	To improve the parent infant relationship and break the intergenerational cycle of problematic attachment. Enhancing parental self-esteem and self-confidence. Increasing the mother's understanding of and sensitivity to the emotional needs of the infant.	7-9	1-2	3	Baradon et al. (2008)
Parents as first teachers "Born To Learn"® Programme	Parents As Teachers National Centre	- Pre-birth and/or newborn - Infant - 1-3 years	Increasing knowledge of child development and behaviour management skills, enhanced parental self confidence and esteem and promotion of children's cognitive and academic skills.	19+	1-2	2	Wagner et al. (2001); Wagner et al. (2002); Wagner et al. (1999); Zigler et al. (2008)
The Anna Freud Centre - Parent-Infant Project	T. Baradon, The Anna Freud Centre PIP Team	- Pre-birth and/or newborn - Infant	To improve disturbed attachment patterns	40+	1-2	2	Baradon et al. (2008); Fonagy et al. (2002)
PEEP Learning Together (Babies - Fours)	P. Silva, V. Cullen, S. Smith, M. Healey	- Pre-birth and/or newborn - Infant - 1-3 years	To increase children's language, literacy, learning dispositions and self esteem. To increase parental self esteem and confidence and engage parents in adult education and training opportunities.	As needed	Any		
Expectant Fathers Programme	T. Lloyd	- Pre-birth and/or newborn	To build new father's confidence in handling the newborn, increase in knowledge, confidence and practical skills.	4-6	1-2		
Touch - Learn Infant Massage Programme	Ms P. Carpenter, Ms A. Epple	- Pre-birth and/or newborn - Infant - 1-3 years	To enhance the bonding and attachment processes. Improved communications, increased positive interactions, enhanced emotional well-being of the child and increased parental social connectedness.	4-6	1-2		

Name of parenting programme	Developer(s)	Child age	Aim of programme	Number of sessions	Length of sessions (hours)	Evidence base rating	References*
YMTB-Skills for Life Competence-A Programme for Young Mums And Dads To-Be and New Parents of Children up to 6 Months	Louise Pinnel, Sheila King	- Pre-birth and/or newborn - Infant	To modify parental attitudes, increase parental skills, promote healthy lifestyles, improve literacy and numeracy skills, and improve self-esteem and confidence.	19+	1-2		
Incredible Years Toddler (1-3 years)	Prof C. Webster-Stratton	- Infant - 1-3 years	Increasing positive and nurturing parenting and improved parent-child relationships.	13-15	2-3	3	www.incredibleyears.com
Parenting Positively	Dr C. Sutton, Ms D. Hampton	- Infant - 1-3 years	To help parents reduce stress, identify specific troublesome behaviours and respond effectively, and to enhance enjoyment in the child.	10-12	2-3	2	Sutton (1992); Sutton (1995); Sutton (2001)
Solihull Approach Parenting Programme	Dr H. Douglas, Dr K. , J. Delaney, M. Rheeston	- Infant - 1-3 years	To improve parent-child relationships and behaviour management.	10-12	1-2	2	Bateson (2008)
Here's Looking At You, Baby!	Dr T. Rydin-Orwin, Ms L. Lake, Ms C. West	- Infant	To increase parent's responsiveness, sensitivity and nurturing. Enhancing parental self-confidence, self-esteem and increased parent's ability to provide developmentally appropriate care.	7-9	1-2	1	
Mellow Babies	Dr C. Puckering, Ms J. Brown	- Infant - 1-3 years	To increase awareness of child development and enhance parental sensitivity as well as to improve parental mental health and wellbeing.	13-15	4+	2	
Parent Whys	Heart of Birmingham Teaching PCT NHS Under 5's Programme	- Infant - 1-3 years	To increase knowledge of child development and behaviour management techniques, promotion of qualities of warmth and attachment and reduction in parental social isolation.	4-6	1-2		
Parents With Prospects	M Dronsfield, S.M. King	- Infant - 1-3 years	To enhance parental self-efficacy, self-esteem and self-confidence. Increased knowledge of typical child development and behaviour.	19+	2-3	1	

Name of parenting programme	Developer(s)	Child age	Aim of programme	Number of sessions	Length of sessions (hours)	Evidence base rating	References*
Working Together With Parents: The Early Years	G Fitzgerald, P Mayes, K Paul	- Infant - 1-3 years	To improve parental confidence and parent-child relationships. Increasing knowledge of typical child development and behaviour.	7-9	1-2	1	
Enhanced Triple P-Positive Parenting Program	Prof M. R. Sanders	- 1-3 years	To enhance positive parenting strategies. Increasing parental confidence, coping with stress, improved partner relationships and reduced symptoms of emotional and behavioural problems in children.	10-12	1-2	3	Hoath et al. (2002); Sanders et al. (2000); Sanders et al. (2000).
Living With Children (Derbyshire)	Living With Children Service, Derbyshire County Primary Care Trust	- 1-3 years	To enhance parental self confidence and self esteem and improve family communication. Increasing child emotional well-being and reducing symptoms of behavioural problems.	4-6	2-3	2	
Family Links Nurturing Programme	Ms A. Mountford, Dr S. Bavolek	- 1-3 years	To enhance empathy between parent and child leading to more effective and less abusive parenting.	10-12	2-3		
Incredible Years Early Childhood Parenting Programmes	Prof C. Webster-Stratton	- 1-3 years	Increasing positive interactions and improved parent-child relationship	16-18	2-3	4	www.incredibleyears.com
Level 4: Standard Triple P / Group Triple P / Self-Directed Triple P	Prof M.R Sanders, C Markie-Dadds, K.M.T. Turner	- 1-3 years	To increase parental self-efficacy and confidence, enhance parental mental health and decrease child emotional and behavioural problems	7-9	1-2	4	Connell et al. (1997); Feldmann et al. (2007); Markie-Dadds et al. (2006); Sanders et al. (2007).
Fun And Families Parenting Programme	Mr D. Neville, Dr A. Gill, Mr D. Beak	- 1-3 years	To increase parental self esteem, improve family communication and reduce behavioural difficulties.	7-9	2-3	2	www.practicalparenting.org.uk
New Forest Parenting Programme	Dr M. Thompson, C. Laver-Bradbury, A. Weeks, Prof E. Sonuga-Barke	- 1-3 years	To increase the parents understanding of ADHD and improve parent-child relationships, behaviour management and children's attention and concentration	7-9	1-2	3	Daley et al. (2003); Sonuga-Barke et al. (2001); Sonuga-Barke et al. (2002); Sonuga-Barke et al. (2004).

Name of parenting programme	Developer(s)	Child age	Aim of programme	Number of sessions	Length of sessions (hours)	Evidence base rating	References*
Parents Plus Early Years Programme	Dr J. Sharry, Prof C. Fitzpatrick, Ms G. Hampson, Ms M. Fanning	- 1-3 years	To increase parental self-confidence, knowledge of child development and behaviour and reducing symptoms of behavioural and emotional problems in the child.	10-12	2-3	3	Griffin,C (2006); Quinn et al. (2007); Quinn et al. (2006); Sharry et al. (2005)
Primary Care Triple P	Dr K.M.T. Turner, Prof M.R. Sanders, C. Markie-Dadds, Dr A. Ralph	- 1-3 years	To increase parental self-efficacy and confidence, increase the knowledge and use of behaviour management skills and enhance positive parent-child interactions and family relationships.	4-6	1	3	Turner et al. (2006); Karen et al., (2011); Winkler (2006).
Stepping Stones Triple P-Positive Parenting Program	Prof M.R. Sanders, Mr T.G. Mazzucchelli, Ms L.S. Studman	- 1-3 years	To enhance coping and confidence in the parental role. Increasing knowledge and use of behavioural management strategies, improved parent-child interactions and decreased parental stress.	10-12	1-2	3	Plant et al. (2007); Roberts et al. (2006); Whittingham et al. (2008).
Famililife - Parenting Under 11s	Life Education Centres	- 1-3 years	To enhance positive parent-child interactions and increase knowledge and use of behaviour management skills. Increasing self-esteem and confidence in the child and improved family communication.	7-9	2-3	1	
Holding Hands	S Rait	- 1-3 years	Enhancing of parental self-confidence and coping skills, increasing positive parent-child interactions and the reducing of behavioural problems in the child.	7-9	1-2	1	
Raising Children: An Adlerian Approach	Ms S. Pearson, C. Eales	- 1-3 years	To increase parental self-confidence and self-esteem. Improving family communication, increasing respectful assertive parenting and increasing understanding of children's behaviour.	10-12	1-2	1	

* Full reference details in Appendix B.

Note. *Evidence* Rating 4 = Model intervention, The programme is underpinned by a rigorous research design (e.g. a randomised controlled trial) that demonstrates a significant and sustained effect across multiple sites.

Evidence Rating 3 = Effective intervention: At least one programme evaluation suggests a strong positive child outcome via a single randomised controlled trial, or other similarly rigorous research design.

Evidence Rating 2 = Promising intervention: A programme with a pre and post research design that has significant effects and uses scientifically validated assessment methods.

Evidence Rating 1 = Insufficient evidence of effectiveness: A programme with either a pre and post study using insufficient scientific methods, or a descriptive study, that has some effects in expected outcomes.

Summary of the published efficacy and effectiveness of the parenting programmes

The details in Table 1 show that nine percent of the parenting programmes had the highest rating of 4 (Model intervention) on the PPET element 4: "Evidence that it works". It is these programmes that have been found to have lasting positive effect in at least one RCT and in multiple contexts. An evidence rating of three on this element was given to 30% of the parenting programmes (Effective intervention). Thirty-five percent of the programmes received a rating of two (Promising intervention) with the remaining 26% of programmes receiving a rating of one (Insufficient evidence of effectiveness). See Appendix A for more details of the PPET evaluation scale and Appendix B for outcome research references for the parenting programmes.

Component Analysis

a) Theoretical approach

The Commissioning Toolkit provides information of all of the theoretical approaches that underpin each of the parent training programmes. This information can be found in the section named 'content' in the online database. Each programme was coded for the presence or absence (1/0 respectively) into an SPSS 18 database of each of the following theoretical approaches: attachment theory, behavioural theory, social learning theory, cognitive theory, cognitive behavioural theory, family systems theory, social ecological theory of human development, developmental psychopathology, psychodynamically orientated theory, person-centred approach, social psychology of group processes, experiential learning, physical development

milestones, cognitive development milestones, social development milestones, emotional development milestones, Andragogy, transformational learning, stages of change model, neuropsychology, social constructivist theory and Adlerian theory.

b) Content covered

The content items in the parenting programmes generally fell into one of four major categories: i) *behaviour management* ii) the *parent-child relationship* iii) the *child* or iv) the *parent*. Figure 1 represents the tree diagram of the four major categories and each of their sub-categories.

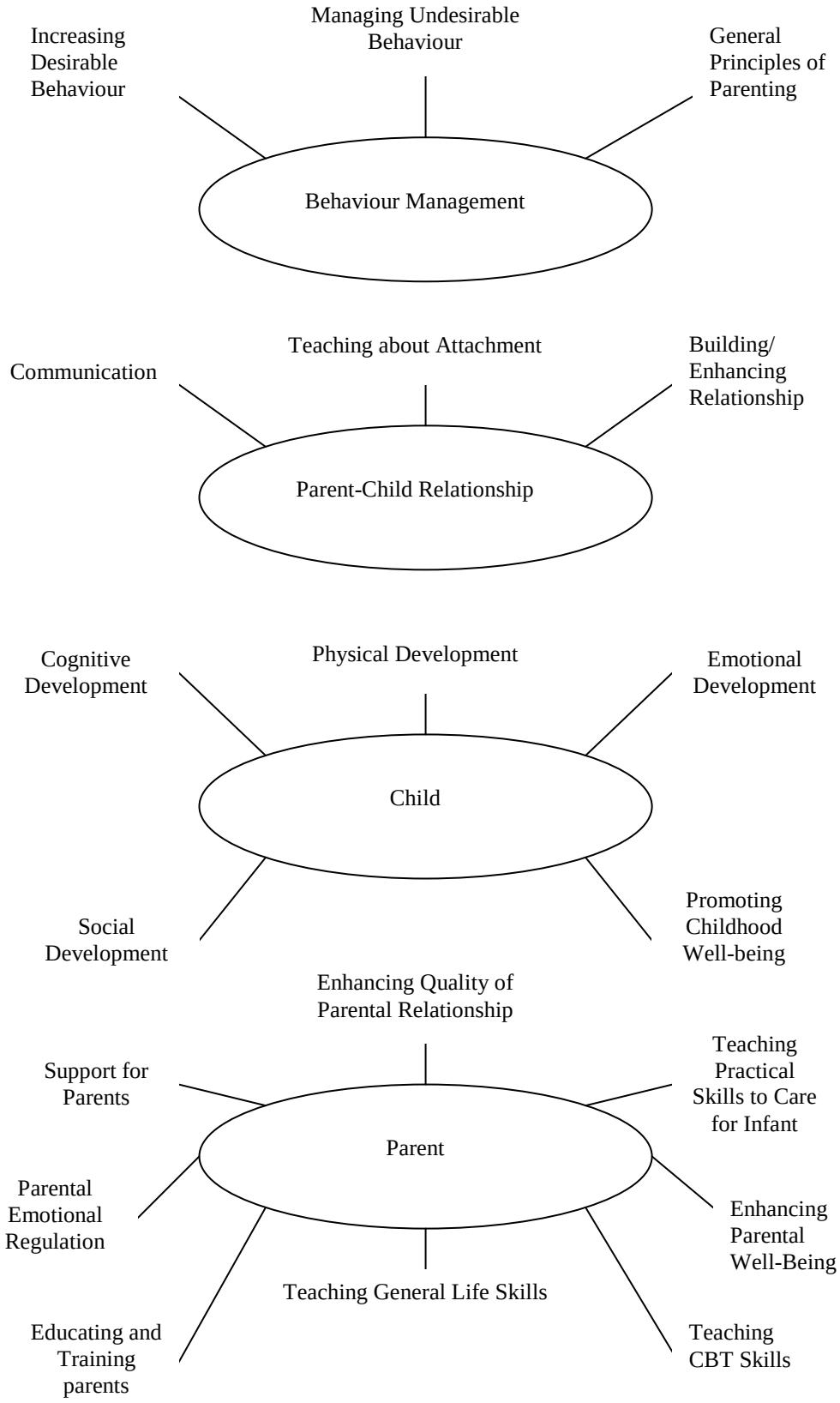

Figure 1. Tree diagram representing the major categories and sub categories

Table 2 shows the four major categories, the sub-categories, category definitions and descriptions of the inclusive components for each sub-category.

The 29 parenting programmes were coded for the presence or absence (1/0 respectively) of each content item at all three levels of the category hierarchy (i.e. Major category, Sub-category and component). A content item was recorded only at a sub-category level if the parenting programme had not specified how this item was approached, for example if a programme content described 'managing undesirable behaviour', but did not specify at a component level if this included, e.g. 'time out', or 'ignoring'. Any single parenting programme could be coded as having multiple components within a single sub-category. However, at the sub-category level of the hierarchy this would only be coded once to avoid double coding and unrepresentative inflation of scores at a sub-category level. An example of this would be a parenting programme with the minor categories of 'feeding', 'managing sleep' and 'managing crying'. These items would all be coded independently at the component level, but the broader sub-category of 'Teaching practical skills to care for infant' which would receive a score of just one.

For the purpose of analysis, parenting programmes were split into two groups: those aimed at parents of infants, and those aimed at parents of toddlers. This meant that 'pre-birth and/or newborn' and 'Infant (under 1 year)' parenting programmes were collapsed together to form one group that spanned the whole infant period (N=16). All parenting programmes aimed at '1-3 years' were categorised in the toddler group (N=13).

Reliability

Cohen's kappa (*k)* coefficient was computed to determine the inter-rater reliability of the binary data (0/1) using 35% of programmes coded by both the author and a trained psychology graduate student. The mean kappa was 0.89 (SD = 0.21) for content covered, with a range of -0.15 to 1. Inter-rater agreement was considered adequate for the purposes of this review. Any disagreements were resolved through discussion.

Table 2. Major categories, sub-categories, category definitions and descriptions of the inclusive components for each sub-category

Category Variable	Category definition	Description of inclusive component (Minor Category)
Major Category: Behaviour Management		
Sub Category: Increasing desirable behaviour	Teaching techniques to increase the frequency of favourable behaviour.	Praise and encouragement, incentives and rewards, anticipating misbehaviour, recording behaviour.
Sub Category: Managing undesirable behaviour	Teaching techniques to discipline child or reduce further occurrence of unfavourable behaviour.	Penalties, consequences of behaviour, ignoring, distraction, time out.
Sub Category: General Principles of parenting	Teaching techniques and underlying principles to create a predictable and age appropriate environment	Limits, boundaries and rules, importance of consistency, importance of routine, different parenting styles.
Major Category: Parent-Child Relationship		
Sub Category: Communication	Learning about the verbal and non verbal interactions within the parent-child relationship	Understanding communications, listening, improving communication
Sub Category: Teaching about attachment	Teaching about the biological and evolutionary theory of attachment and the methods that the infant uses to maintain proximity to their primary caregiver. Encouraging parents/carers to be responsive and sensitive to the child to create a safe base from which they can explore. Explaining to parents/carers what factors can affect attachment within the parent-child relationship.	Attachment cues, separations, reunions, intergenerational transmission of attachment, respect for child autonomy, observing child, containment of child's distress, Mother's representation of child, bonding.
Sub Category: Building/Enhancing relationship	Teaching techniques to increase the playfulness between the parent-child relationship that are developmentally appropriate to the child's level of need.	Positive interactions, play, following child's lead, attunement.
Major Category: Child		
Sub Category: Social Development	Learning about the stages of social development and how this influences interactions with parents/carers and other children.	Sharing or reciprocity
Sub Category: Cognitive development	Learning about the stages of the child's brain development and how this influences information processing, learning, perceptual skills and other fundamentals of cognitive function.	Educating about cognitive development, encouraging cognitive development, teaching techniques to enhance learning.
Sub Category: Physical development	Learning about the developmental milestones of the child and which skills are acquired at each stage. Teaching techniques to increase learning opportunities at each stage.	Sensory development, stimulation, touch or massage.

Category Variable	Category definition	Description of inclusive component (Minor Category)
Sub Category: Emotional development	Learning about the stages of emotional development and how a child may experience, express and be helped to regulate emotions.	Temperament and personality, understanding children's emotions, responding to child's emotions, encouraging emotional literacy and expression, teaching emotional regulation.
Sub Category: Promoting childhood well-being	Learning about the interplay between social, emotional and psychological development and how this affects how the child sees themselves.	Child self-esteem and concept
Major Category: Parent		
Sub Category: Support for parents	Sharing information of how and where to access support to help parents	Gaining support, Accessing resources
Sub Category: Enhancing quality of parental relationship	Learning methods to build a more fulfilling parent-parent relationship that increases the family support system	Developing communication, improving relationship happiness, how to support partner, promoting collaborative parenting, impact on relationships
Sub Category: Teaching practical skills to care for infant	Learning tips for managing the day to day care of an infant	Weening, feeding, teething, holding, bathing, wetting, sleep, changing, crying, managing ADHD, managing developmental disabilities
Sub Category: Enhancing parental well-being	Teaching skills to improve parents sense of self using psychological and physical strategies.	Nurturing ourselves, raising parental self-esteem, identifying parental pressures, reducing stress, exercise, relaxation
Sub Category: Teaching CBT skills	Teaching one or more techniques used within cognitive behaviour therapy to be used for parent self-management or with the child.	Thought challenging, goal setting, problem solving, generalising, self-monitoring, relapse prevention, introduction to CBT
Sub Category: Teaching general life skills	Providing information to parents of how to keep themselves and their children healthy, safe and well supported in the home, community and legal context.	Healthy lifestyle, safety in the home, drug awareness and information, money management, child protection, sexual health, parental responsibility, citizenship
Sub Category: Educating and training parents	Teaching skills to increase access to education, training and work.	Numeracy, written and verbal communication, IT skills, Training education and work
Sub Category: Parental emotional regulation	Teaching skills to help parents manage their feelings so that they can be emotionally available to their child.	Managing and containing emotions, Impact of parent state of mind on child.

Results

Theoretical Approach

The analysis of the theoretical approaches that underpinned the 29 different parenting programmes are presented in Table 3. The most common theory that informed the components delivered across all 29 parenting programmes was attachment theory (90% of programmes). Interestingly, this applied relatively equally to both those parenting programmes that were aimed at infants (94%) and those that were aimed at toddlers (85%) suggesting that it is a theory that holds much importance throughout the first three years of a child's life.

The second most common theoretical approach used across all 29 parenting programmes was social learning theory. However, closer inspection of the proportions once the programmes are split into those aimed at infants and those for toddlers reveals that social learning theory was used in all toddler programmes but only 69% of infancy programmes. The greater emphasis on social learning theory in parenting programmes aimed at toddlers is likely to reflect the fact that a toddler's behaviour, compared to a young infant in the first year of life, is more influenced by behaviour modelled by a parent. A similar explanation may also underpin why 92% of toddler programmes and only 56% of infancy programmes were informed by behavioural theory.

Table 3. Theoretical Approach for total parenting programmes (N=29), Infancy programmes (N=16) and toddler programmes (N=13).

Theoretical Approach	Total		Infancy Programmes		Toddler programmes	
	N	(%)	N	(%)	N	(%)
Attachment theory	26	(90)	15	(94)	11	(85)
Social learning theory	24	(83)	11	(69)	13	(100)
Physical developmental milestones	23	(79)	15	(94)	8	(62)
Social developmental milestones	23	(79)	14	(88)	9	(69)
Emotional development milestones	22	(76)	13	(81)	9	(69)
Cognitive development milestones	20	(69)	12	(75)	8	(62)
Behavioural theory	21	(72)	9	(56)	12	(92)
Family systems theory	17	(59)	9	(56)	8	(62)
Cognitive behavioural theory	17	(59)	7	(44)	10	(77)
Experiential learning	15	(52)	8	(50)	7	(54)
Person-centred approach (Rogers)	13	(45)	8	(50)	5	(38)
Developmental psychopathology	12	(41)	6	(38)	6	(46)
Cognitive theory	11	(38)	4	(25)	7	(54)
Social ecological theory of human development	10	(34)	3	(18)	7	(54)
Social psychology of group processes	9	(31)	5	(31)	4	(31)
Psychodynamically orientated theories	9	(31)	7	(44)	2	(15)
Andragogy	5	(17)	4	(25)	1	(8)
Social constructivist theory	1	(3)	0	(0)	1	(8)
Neuropsychology	1	(3)	0	(0)	1	(8)
Adlerian Theory	1	(3)	0	(0)	1	(8)
Stages of change model	1	(3)	1	(6)	0	(0)
Transformational Learning Constructivist	1	(3)	1	(6)	0	(0)

Two other theoretical approaches, namely cognitive behaviour theory (CBT) and cognitive theory, were more prominent in parenting programmes for parents of toddlers compared to infancy programmes. The difference in use of these theories between the two age groups may represent how some of the underlying principles of cognitive theory and CBT (e.g. awareness of thought processes, problem solving) may become all the more useful to a parent who is learning to manage the challenges of toddler behaviour.

For some theoretical approaches, the reverse pattern was found whereby they were used more commonly in infancy programmes compared to toddler programmes. This applied to the theory of physical development milestones which was used to inform 94% of infancy programmes, but only 62% of toddler programmes. This may represent the proportionally rapid rate of physical growth in the first year of life that is also marked by a number of developmental milestones e.g. sitting, crawling. Psychodynamically orientated theories were also more prominent in parenting programmes aimed at infants.

Content of parenting programmes

The following sections explore the programme content in the four major categories: i) behaviour management, ii) parent-child relationship iii) child, and iv) parent.

Behaviour Management

Descriptive analysis of the major category defined as Behaviour Management and its inclusive sub-categories and components can be found in Table 4. When considering the infant and toddler programmes together, it can be seen that heavy emphasis is placed on the components of ‘praise and encouragement’ and ‘limits,

boundaries and rules'. In comparison to the infant programmes, the toddler programmes had more of a focus on all aspects of behavioural management with 'incentives and rewards' being a popular way to increase desirable behaviour, and 'ignoring' and 'consequences of behaviour' being methods taught to manage undesirable behaviour. A component that appeared to feature more in infant programmes was the 'importance of routine'. Components that were least known to produce benefits to children aged 0-3 years of age were 'penalties', 'recording behaviour' and 'distraction'.

Parent-Child Relationship

Descriptive analysis of the major category defined as parent-child relationship and its inclusive sub-categories and components can be found in Table 5. The three sub-categories, namely, 'communication', 'teaching about attachment', and 'building/enhancing relationship' are of relatively equal importance when all 29 parenting programmes are considered (48%, 41% and 48% respectively). Content that related to 'communication' was covered in approximately half of all infant and toddler programmes. Analysis on a component level revealed that there was greater emphasis on 'understanding communication' in infant parenting programmes and 'improving communication' in those programmes aimed at the parents of toddlers.

Content that related to the overall theme of 'teaching about attachment' were far more prevalent in the infant programmes with 'bonding', 'attachment cues', and 'intergenerational transmission of attachment' as the key components that were taught.

Table 4. "Behaviour Management" sub-categories and minor categories for total parenting programmes (N = 29), infancy programmes (N=16) and toddler programmes (N=13).

Sub-categories and content items	Total (N=29)		Infancy Programmes (N=16)		Toddler programmes (N=13)	
	N	(%)	N	(%)	N	(%)
Increasing desirable behaviour	14	(48)	5	(31)	9	(69)
- Praise and encouragement	7	(24)	3	(19)	4	(31)
- incentives and rewards	4	(14)	0	(0)	4	(31)
- anticipating misbehaviour	4	(14)	1	(6)	3	(23)
- recording behaviour.	2	(7)	1	(6)	1	(8)
Managing undesirable behaviour	13	(45)	3	(19)	10	(77)
- Penalties	1	(3)	0	(0)	1	(8)
- consequences of behaviour	6	(21)	1	(6)	5	(38)
- ignoring	4	(14)	0	(0)	4	(31)
- distraction	1	(3)	0	(0)	1	(8)
- time out	3	(10)	0	(0)	3	(23)
General principles of parenting	15	(52)	5	(31)	10	(77)
- Limits, boundaries and rules	8	(28)	2	(13)	6	(46)
- importance of consistency	5	(17)	1	(6)	4	(31)
- importance of routine	4	(14)	2	(13)	2	(15)
- different parenting styles	4	(14)	1	(6)	3	(23)

Table 5. "Parent-Child Relationship" sub-categories and minor categories for total parenting programmes (N = 29), infancy programmes (N=16) and toddler programmes (N=13).

Sub-categories and content items	Total (N=29)		Infancy Programmes (N=16)		Toddler programmes (N=13)	
	N	(%)	N	(%)	N	(%)
Communication	14	(48)	7	(44)	7	(54)
- Understanding communications	5	(17)	5	(31)	0	(0)
- Listening	4	(14)	1	(6)	3	(23)
- improving communication	7	(24)	2	(13)	5	(38)
Teaching about attachment	12	(41)	11	(69)	1	(8)
- Attachment cues	3	(10)	3	(19)	0	(0)
- Separations	2	(7)	2	(13)	0	(0)
- Reunions	1	(3)	1	(6)	0	(0)
- intergenerational transmission of a...	3	(10)	3	(19)	0	(0)
- respect for child autonomy	2	(7)	2	(13)	0	(0)
- observing child	3	(10)	2	(13)	1	(8)
- containment of child's distress	1	(3)	1	(6)	0	(0)
- Mother's representation of child	1	(3)	1	(6)	0	(0)
- bonding	4	(14)	4	(25)	0	(0)
Building/enhancing relationship	14	(48)	9	(56)	5	(38)
- Positive interactions	7	(24)	5	(31)	2	(15)
- Play	7	(24)	4	(25)	3	(23)
- following child's lead	3	(10)	0	(0)	3	(23)
- attunement.	3	(10)	2	(13)	1	(8)

Within the final sub-category of ‘building/enhancing relationships’, the most prominent component covered in infancy programmes was ‘positive interactions’. In the toddler programmes it can be seen that this was achieved through ‘play’ and ‘following the child’s lead’.

Child

Descriptive analysis of the major category defined as child and its inclusive sub-categories and components can be found in Table 6. The results of all 29 programmes indicate that there is a varied profile across the five sub-categories that are defined within the ‘child’ category, with ‘cognitive development’ (45% of programmes) being the most common. Within the infant programmes, the focus was more on ‘educating about child development’, where as the toddler programmes placed greater emphasis on ‘encouraging cognitive development’. Components that were defined within the sub-category of ‘physical development’ were more prominent within infancy programmes.

Components that were best known to produce benefits within the sub-category of ‘Emotional Development’ in the toddler age group were ‘encouraging emotional literacy and expression’ and ‘teaching emotional regulation’. Toddler parenting programmes also had a greater focus on ‘promoting childhood well-being’ and ‘social development’ compared to infant programmes.

Table 6. "Child" sub-categories and minor categories for total parenting programmes (N = 29), infancy programmes (N=16) and toddler programmes (N=13).

Sub-categories and content items	Total (N=29)		Infancy Programmes (N=16)		Toddler programmes (N=13)	
	N	(%)	N	(%)	N	(%)
Cognitive development	13	(45)	7	(44)	6	(46)
- Educating about child development	8	(28)	5	(31)	3	(23)
- encouraging cognitive development	7	(24)	3	(19)	4	(31)
- teaching techniques to enhance learning	5	(17)	3	(19)	2	(15)
Physical development	5	(17)	4	(25)	1	(8)
- Sensory development	2	(7)	2	(13)	0	(0)
- stimulation	3	(10)	3	(19)	0	(0)
- touch or massage	3	(10)	2	(13)	1	(8)
Emotional development	10	(34)	4	(25)	6	(46)
- Temperament and personality	1	(3)	1	(6)	0	(0)
- understanding children's emotions	3	(10)	1	(6)	2	(15)
- responding to child's emotions	1	(3)	1	(6)	0	(0)
- encouraging emotional literacy and expression	6	(21)	2	(13)	4	(31)
- teaching emotional regulation	5	(17)	2	(13)	3	(23)
Social development	6	(21)	1	(6)	5	(38)
- Sharing or reciprocity	1	(3)	0	(0)	1	(8)
Promoting childhood well-being	10	(34)	3	(19)	7	(54)
- Child self-esteem and concept	6	(21)	3	(19)	3	(23)

Parent

Because of the vast number of components within this category, the detail for each component is included in Appendix C. Table 7 shows a summary of the sub-categories for the total, infant and toddler programmes.

Looking at infant and toddler programmes together, the key components in relation to the ‘Parent’ fell into the following three categories, ‘enhancing parental well-being’ (34%), Teaching practical skills to care for infant (28%), and ‘parental emotional regulation’ (28%). Also rated high, but only in toddler programmes was ‘Teaching CBT skills’ where ‘problem solving’ received the most emphasis.

Within the sub-category of ‘enhancing parental well-being’, the component that had the most emphasis was ‘raising parental self-esteem’. The toddler programmes, also placed ‘nurturing ourselves’,‘ reducing stresses, and ‘relaxation’ as equally important.

The ‘practical skills to care for infant’ that received a great deal of focus in both infant and toddler programmes were ‘feeding’ and ‘sleep’.

Lastly, within the category of ‘parent emotional regulation’, the central theme for infant and toddler programmes was ‘managing and containing emotions’.

Table7. "Parent" sub-categories for total parenting programmes (N = 29), infancy programmes (N=16) and toddler programmes (N=13).

Sub-categories	Total (N=29)		Infancy Programmes (N=16)		Toddler programmes (N=13)	
	N	(%)	N	(%)	N	%
Support for parents	3	(10)	2	(13)	1	(8)
Enhancing quality of parental relationship	3	(10)	2	(13)	1	(8)
Teaching practical skills to care for infant	8	(28)	5	(31)	3	(23)
Enhancing parental well-being	10	(34)	4	(25)	6	(46)
Teaching CBT skills	8	(28)	0	(0)	8	(62)
Teaching general life skills	5	(17)	3	(19)	2	(15)
Educating and training parents	1	(3)	1	(6)	0	(0)
Parental emotional regulation	8	(28)	2	(13)	6	(46)

Discussion

This review examined 29 of the best parenting programmes that are currently available in the UK to parents of children aged 0-3 years. Recent Government incentives for Early Intervention (Allen, 2011) have highlighted the need to rigorously evaluate existing parenting programmes to ensure optimal public expenditure. The aim of this review was to provide information about the key components, including the theoretical underpinnings and program content of the parenting programmes that are known to benefit children in this age group. This framework can be used much like an instruction manual to guide the delivery and design of existing and future parenting programmes.

The paramount importance of the early developing attachment system was reflected in the results of this review which revealed that nearly all of the 29 programmes have attachment theory as a guiding principle in the training of parents. The theory of attachment (Bowlby, 1969) states that an infant is biologically and instinctually pre-programmed to seek proximity to a caregiver who can provide a secure base. This secure base is created through the caregiver responding sensitively and congruently to the needs of the child, therefore creating the experience for the infant that their expressions of distress and pleasure are meaningful and worthy of attention. The transactional nature of these early communications between the parent and child are fundamental for the development of emotional regulation and later cognitive and social development (Barlow & Parsons, 2003). It is therefore not surprising that the vast majority of parenting programmes, regardless of whether they were aimed at infants or toddlers, were informed by this key theory.

The results of the component analysis indicated that attachment theory was taught in infant programmes with an explicit emphasis on ‘bonding’, ‘attachment

cues', and the 'intergenerational transmission of attachment'. These are themes that are in line with 'psychodynamically-orientated' theories which were also found to inform the infant programmes along with attachment theory. Many of the infant parenting programmes that had an explicit focus on increasing the understanding of attachment cues will have introduced the concept of mentalising as a way to help parent's interpret their infant's cues as motivations and desires for interaction. (e.g. The Anna Freud Centre – Parent-Infant Project, Mellow Babies, Solihull Approach Parenting, Incredible Years Baby/Toddler Parenting Programmes). It was not so clear how attachment theory was incorporated into the toddler programmes but it is possible that it was brought into alternative aspects of development such as 'emotional regulation' and 'play'.

Theoretical approaches that were informed by behavioural principles also had a strong emphasis in many of the parenting programmes. In particular, these were social learning theory and behavioural theory which focus on the child learning from the parent, either in terms of imitation (Bandura, 1969) or patterns of reinforcement to shape behaviour (Skinner, 1957). Both of these principles can be observed in well known parenting techniques, such as praise and rewards (for positive reinforcement), penalties and time out (negative reinforcement), and the phrase 'practice what you preach' (social learning theory). These techniques featured more prominently in the toddler programmes which is likely to reflect that they are more effective with toddlers who would have an increased cognitive capacity and more developed frontal lobes to learn patterns of cause and affect in relation to behaviour (Huttenlocher & Dabholkar, 1997).

Component analysis of the parenting programmes indicated that the type of positive reinforcement known to be most effective for children aged 0-3 years of age

is praise and encouragement. Furthermore, many toddler programmes also incorporated incentives and rewards into their teaching schedule. Techniques based on negative reinforcement were not taught in any of the infant programmes, but the toddler programmes regularly featured time out and ignoring as a strategy to manage undesirable behaviour. It is interesting that neither infant nor toddler programmes had much of a focus on punishment as a method of extinguishing undesirable behaviour. This is consistent with research that techniques of positive reinforcement, attending and planned ignoring are more effective ways of shaping behaviour than use of discipline through punishment (Brooks, 2005).

A central theme within the category of behavioural management in all of the parenting programmes was the need to help parents set clear limits, boundaries and rules with their young children. This is perhaps unsurprising given the importance of creating a consistent and predictable environment so that a child can feel safe and develop knowledge of appropriate behaviour (Levy, 2000). Other general principles of parenting such as importance of routine also featured in some parenting programmes which is also seen to be a fundamental building block of a secure attachment system (Bowlby, 1969).

The profile of results in the 'building and enhancing relationships' sub-category (part of the broader major category of 'parent-child relationship') used in this current review showed that there was some discrepancy in the components that were covered in order to help parents enhance their relationship with their child. In the infancy programmes, this was achieved by teaching techniques to increase 'positive interactions'. Admittedly, this is a somewhat ambiguous content item, but is likely to tie in with items such as 'bonding' and 'praise and encouragement', that have already been identified as other prominent themes in infant programmes. In

comparison, the toddler programmes placed greater emphasis on ‘play’ and ‘following the child’s lead’ as techniques to build and enhance the relationship between parent and child. This is unsurprising, given that toddlers are more able to engage in play due to their enhanced cognitive and physical skills. Play in toddlerhood also begins to be one of the methods by which the child learns to explore the environment and negotiate relationships with others (Selman, 1980; Hartup & Stevens, 1997).

Approximately half of all infant and toddler programmes had communication as an explicit focus of their teaching schedule, however, the way in which this topic was approached in the parenting programme age groups differed, with infant programme focussing more on ‘understanding communications’, and toddler programmes focussing more on ‘improving communications’. Considering the typical developmental trajectory of non-verbal and verbal language, it makes sense that infant programmes would have a greater emphasis on recognising and interpreting communication as the infant is limited to non-verbal expression. For some of the infant parenting programmes (e.g. The Anna Freud Centre – Parent-Infant Project, Mellow Babies, Solihull Approach Parenting, Incredible Years Baby/Toddler Parenting Programmes), the skills of understanding infant communication will have been taught by facilitating change in the parent’s mentalising capacity. A typically developing toddler however, will be establishing the fundamentals of language, and therefore a parent should be placing greater attention on enhancing vocabulary and improving communications.

Of the content components that related directly to the ‘child’ and various aspects of typical child development the only sub-category that had equal importance across both infant and toddler programmes was ‘cognitive development’. However,

the way in which the parenting programmes approached this topic varied depending on the age group that the programme was targeting. For infant programmes there was a greater emphasis on 'educating about child development', whereas toddler programmes concentrated more on 'encouraging cognitive development'. This would suggest that infant programmes place more importance on teaching parents about the child's developing brain and how this effects for example, information processing, visual and auditory function, and memory. In comparison, toddler parenting programmes include more content items that relate to building upon these cognitive developing skills which reflects the child's increasing cognitive capacity to learn.

Issues concerning 'physical development' were more commonly covered in infant programmes than toddler programmes. This is consistent with the importance of 'physical development milestones' as one of the key guiding theoretical approaches in infant programmes. This is likely to reflect the fact that the first year of life is a time of rapid growth that is punctuated by a number of developmental milestones e.g. sitting, crawling, increased motor dexterity (Fischer & Rose, 1994). Physical development clearly continues at a fast rate into toddlerhood, but this may take less importance in toddler programmes as a result of increased emphasis on the emotional, cognitive and social development of the child.

Programmes for the parents of toddlers placed more emphasis on emotional development, social development, and promoting childhood well-being. This may be because skills such as emotional literacy and emotional regulation (for 'emotional development'), parallel play and sharing (for 'social development') and self-awareness, self concept and self-esteem (for 'promoting childhood well-being') all begin to develop in toddlerhood and extend on into early childhood (Harter, 1998).

The current review also looked at the components of parenting programmes that related directly to the parent and how the parent can be encouraged to look after their own well-being, that of their partner and of their child. Increasing parental self-esteem was a central area of focus in many of the parenting programmes. Low self-efficacy about the parenting role has been found to correlate with increased feelings of depression and anxiety (Porter & Hsu, 2003). Furthermore, mothers who feel more incompetent in their ability to parent their child are less responsive and less attuned to the needs of their child and more likely to use hostile and forceful discipline (Dix, 1991). In the toddler programmes it was found that parental well-being was encouraged through teaching techniques of stress reduction, relaxation and ways to nurture ourselves.

Talking to parents and supporting them around the issues of sleep and feeding were of high importance in both infant and toddler programmes. This finding suggests that although every child has the basic need to sleep and eat, these tasks of parenting can bring with them significant difficulties and stress if not well managed (Smart & Hiscock, 2007). These difficulties it would appear continue beyond infancy and into toddlerhood.

A number of techniques and strategies that are used in cognitive behaviour therapy were incorporated into many of the programmes for parents of toddlers. Thought challenging, goal setting, and generalising were found to be beneficial for parents to learn to monitor their thoughts and behaviours in relation to the demands of parenting. Furthermore, problem-solving was also a prominent component in the toddler programmes which may reflect the emergence of more problematic and challenging behaviour that is characteristic of the ‘terrible two’s’ where conflicts arise due to the toddler’s increasing desire for independence and autonomy. This

often challenging stage of development may also explain why components relating to parental emotional regulation are also more prominent in toddler programmes as parents with children of this age may need extra support with managing and containing their own emotions that are evoked by testing behaviours.

Limitations and Future Research

There are a number of limitations to this current review. The methodology of the component analysis was reliant on programmes' descriptions on the Commissioning Toolkit website. If the content list of a programme did not mention a component, then this was taken as a lack of use. Furthermore, if components listed were too general (e.g. 'increasing desirable behaviour'), rather than details of how this was taught, (e.g. through praise and encouragement) this could only be coded at a subcategory level. Efforts were made to ameliorate this problem by asking for secondary resources from the website researchers and developers. However, this information could not be made accessible due to the Data Protection Act 1998. There is therefore the potential that some of the components in various parenting programmes were under-reported.

Secondly, a number of parenting programmes had to be excluded during the search strategy because they had not yet been academy rated by the NAPR. These programmes had not be through the rigorous review process by the team of researchers, and therefore self-rating scores may have over or under-estimated the 4 key elements that they were measured on. However, this potentially excluded programmes that would have had useful information to contribute to this review.

This review was heavily based on the data that was published on the Commissioning Toolkit website and despite the fact that the parenting programmes

were rigorously evaluated in terms of evidence base by the NAPR research committee, the meaning of the evidence rating scale can be somewhat ambiguous. There was great diversity between the evaluation processes completed by the various parenting programmes with a variety of methodologies, sample size, experimental rigour, effect size, mode of change (e.g. parent/child), and measures of effectiveness. It is therefore unclear with some low evidence rating scales if the number denotes that a parenting programme did not employ a rigorous research design and therefore received a low score, or if the evaluation method was of a high standard but results showed little positive outcome with the child and/or parent.

In terms of future directions and research, it would be interesting to extend the age group of focus to beyond that of three years of age, to investigate what key components are transferable and equally as valid in parenting older children. It is known that younger age is associated with more optimal outcomes in behaviour management training programmes as children of this age are more responsive to their parents who they look to for guidance (Dodge, 1993). If further reviews were to include older children who have more developed reasoning abilities, it might be expected that there would more emphasis on parent-child communication patterns and the parent would be less of a reinforcing agent (Holmbeck, Greenley, & Franks, 2003).

Given the current Government interest in national well-being and early intervention to support children at greatest risk of multiple disadvantage, it will be important to examine those specific parenting programmes that are most likely to have successful outcomes with this high risk population. Factors such as low socioeconomic status, family adversity, single parent status, maternal mental health problems and unstable housing have all been found to undermine the efficacy of

parenting interventions (Dumas & Wahler, 1983). The Commissioning Toolkit website does have the function of selecting for parent training programmes with particular target populations, e.g. young parents, asylum seekers, substance misuse, social/economic disadvantage. This was not explored in the current review as it would have limited the number of parenting programmes for the component analysis.

Summary

A recent Government report has highlighted the desperate need for early intervention to play more of a central role in UK policy and practice, as the culture of late intervention is both expensive and ineffective. In the current climate of limited resources there is a pressure to optimise public expenditure by investing in those parenting programmes that have been rigorously evaluated and most likely to produce sustainable improvements in the emotional and social well-being of the young generation.

This review endeavoured to examine the key components, including the theoretical underpinnings and program content of parenting programmes currently offered that are aimed at children ages 0-3 years of age. A framework was created which indicated the components that were most prevalent and thought to be most influential in programmes for parents of infants and toddlers. The guidelines suggested below summarise a skeleton structure from which all current and future parenting programmes for this age group should follow.

Parent programmes known to benefit children aged 0-3 years should be grounded in attachment theory and use behavioural principles taken from social learning theory and operant conditioning. Desirable behaviour should be positively

reinforced using praise and encouragement, and undesirable behaviour can be managed in toddlers using time out and ignoring. A general principle that should be taught to parents is the importance of limits, boundaries and rules. Furthermore, routine is also important when parenting young infants.

Teaching skills to understand and improve communication should feature in all parenting programmes for this age group. With infants this can be combined with teaching about attachment cues and bonding. In older infants that can be explored through play between parent and child.

It is important for parents to be educated about the cognitive development of their child so that they have an enhanced understanding of developmentally age appropriate stimulation. In infant programmes there is also the need to provide parents with information about the typical physical developmental milestones that can be expected of their child. Once the child reaches toddlerhood, it is important to also encourage emotional literacy and regulation, adaptive social development and ways to promote childhood wellbeing.

Finally, all parenting programmes for parents of 0-3 year olds should include items that relate to healthy sleep and feeding patterns. Perhaps most importantly, programmes must not forget the significant demands that are placed on a parent and therefore should dedicate a significant proportion of the training programme to teaching methods to increase parental self-esteem through self nurturance and stress reduction and how to manage the difficult emotions that are evoked in the parental role.

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Part 2: Empirical Paper

Change in Maternal Representations and Change in Maternal Behaviour in Early Motherhood: A 1-Year Follow Along Study

Abstract

Objectives: The study examined the way mothers' narratives about her child change during the early years of motherhood and to assess if these changes are meaningfully associated with parent infant relationships and maternal psychopathology.

Method: The study followed 76 mother-infant dyads over a 12 month period from two socially disadvantaged community samples: a normative group and a clinically referred group. Maternal representations were measured using the Reflective Functioning (RF) scale and the 10 PDI (Wain, 2010), a dimensional coding system developed for the Parent Development Interview (PDI). The mother-infant relationship was rated using the Emotional Availability Scale. Maternal psychopathology was measured in terms of depressive symptomatology, parental stress and symptoms of distress. All measures were conducted at baseline and at 12 month follow up.

Results: Maternal psychopathology at both time points was concurrently associated with more evidence of emotional distress, hostility and helplessness, and less evidence of maternal support in PDI narratives. Over the 12 month study period we observed a decrease in levels of maternal psychopathology and increased maternal emotional availability reflected in concurrent adaptive change in the PDI narratives. Behavioural observations of child involvement with mother at Time 2 were predicted by more enmeshed/role-reversed maternal representations at Time 1. However, child responsiveness in mother-infant interactions at Time 2 was predicted by evidence of supportive maternal representations at Time 1.

Conclusions: The results are interpreted in terms of the role of maternal representations in the emerging relationship between mother and infant.

Introduction

A mother's maternal representation of her child begins to develop even before the birth of her baby. These maternal representations of her unborn child are important and salient and enable the mother to begin to see her child as a separate object to herself. Lumley (1982) found that the vast majority of women in the third trimester of pregnancy had developed clear and rich representations of their children.

From the moment that a baby is born, there begins a dynamic process whereby the mother's and baby's experience of each other is in a constant state of flux/change. Even at this young age, the child's characteristics play a significant role in terms of what the child elicits from the surrounding environment. These behaviours are designed to not only fulfil biological needs (e.g. feeding) from the mother, but also the emotional regulation that is essential to this stage of development (Brazelton, 1979). The young infant arrives in the world with its own level of tolerance for arousal and stimulation. The mother then makes attempts to "match" the infant's state of arousal which is influenced by her own beliefs and maternal representations (Stern, Hofer, Haft, & Dore, 1985). Many of these beliefs and representations will have been formed prenatally or in early motherhood and will influence how a mother interprets and responds to her child's display of affect (Benoit, Parker, & Zeanah, 1997a; Mebert, 2004; Zeanah, Keener, Stewart, & Anders, 1985; Zeanah, Keener, & Anders, 1986). The transition from pregnancy to motherhood requires a shift in internal representations whereby the mother begins to imagine herself in the caregiving role. The arrival of the infant acts as the catalyst of this reorganization process and allows for the reality of the infant and associated

caregiving role to be accommodated into the mothers existing maternal representations (Solomon & George, 1996).

Maternal representations which can be considered as the encapsulation of a mother's thoughts and feelings about her infant are known to significantly influence the socio-emotional development of the child (Bowlby, 1982; Solomon & George, 2008). There is a need to better understand the beliefs and representations that mothers bring to their relationship with their infant, and how these beliefs can shape their dyadic interactions. In particular, it is important to identify factors that are linked to non-adaptive change in maternal representations and future disruption in the mother-infant relationship (Benoit et al., 1997a; Huth-Bocks, Levendosky, Bogat, & Von Eye, 2004). Clearer indications of the qualities to be wary of in maternal narratives could potentially highlight those relationships that are indicative of future mental health difficulties in the child.

Literature concerning stability and change in maternal representations is somewhat sparse. The evidence appears to be mixed with some theories and studies advocating that maternal representations are relatively stable over time, yet others suggest that maternal beliefs and representations can be open to revision.

Bowlby (1980) was of the belief that parental representations had a propensity for stability. He developed the theory of Internal Working Models (IWMs), which having been constructed in childhood, would stay with an individual, shaping their experiences of themselves and others throughout their lifespan. It is these IWM's that guide sensitivity and behaviour in caregiving relationships. In accordance with this theory, attachment researchers have described maternal representations as continuous over time in the absence of major change in the situational context (Waters, 1978; Waters & Waters, 2006). Therefore

representational patterns at one point in time are likely to be apparent at a later chronological point in time. This is of clinical interest where maladaptive representations which remain impervious to change may predict those cases that are unlikely to benefit from parenting or therapeutic intervention.

Theran, Levendosky, Bogat, and Huth-Bocks (2005) examined the stability and change of mother's representations of their infants between the first trimester of pregnancy and the child's first birthday using the Working Model of the Child Interview (WMCI) (Zeanah, Benoit, Hirshberg, Barton, & Regan, 1994). Seventy-one percent of the sample were found to have representations that were stable from prenatal measurement across the first year of motherhood.

Evidence of stability on the WMCI was also found in a study by Benoit and colleagues (1997a) where 89% of mothers with balanced representations continued to have this classification of representation from pregnancy, to childbirth and at 11 month follow-up. Mother's classified as having distorted representations had 85% stability over this same time period. Clinically this is of concern as maternal narratives classified as distorted are characterised by role reversal and unrealistic expectations of the child which are associated with poor socio-emotional development in the child (Macfie, Houts, McElwain, & Cox, 2005). Furthermore, mothers classified with distorted representations have difficulty in conceptualising their child as a distinct individual and may seem anxiously overwhelmed or confused by the infant (Zeanah et al., 1997; Benoit et al., 1997a).

A number of studies have considered maternal representations as more fluid in nature reflecting the dynamic interaction between mother and infant. Scott and Hill (2001) measured parenting beliefs 20 weeks prenatally and six months postnatally and found significant adaptive change over time. Nurturance and

knowledge of social learning theory increased, whilst restrictiveness, punitiveness, role reversal and authoritarianism all reduced. Similar findings in support for adaptive change over time were found by Roberts, Block and Block (1984), although they went on to conclude that changes in maternal beliefs were heavily influenced by the developmental needs of the child.

It is unsurprising that change in maternal representation is often dependent on the age of the child and what traits are associated with that stage of development. The very early months postpartum are characterised by infant negativity which can often be accompanied by maternal feelings of fear and uncertainty (Rothbart, 1989). In the ensuing months, the mother-infant relationship generally moves more to a position of growing ease and familiarity that is facilitated by the infant becoming more socially responsive (Porter & Hsu, 2003). Interactions such as these can demonstrate to the mother the role she has in influencing the internal state of her infant, thereby opening the pathway to a relationship more of mutual enjoyment and reciprocity. Over the course of the first year of motherhood therefore, adaptive change might be the most likely trajectory as mother and child develop a repertoire of social communication strategies. Similarly, there are other developmental stages which may challenge existing maternal representations or cause more negative representations to emerge. An example of this could be toddlerhood where the child has a growing need for independence and autonomy. This stage of development, often referred to as the "terrible twos", can be experienced by both the child and the mother as a frustrating time.

Maladaptive change in maternal representations over time was found by Slade, Belsky, Aber, and Phelps (1999) who observed that mothers that evinced more anger in their representation with their child measured at 15 months became less

sensitive and less positive towards their child in their second year of life. It could be suggested that the extra demands of toddlerhood further activated these angry representations. Furthermore, Aber, Belsky, Slade, & Crnic (1999) conducted a study that found that the two major predictors of maladaptive change in parent's representations were the quality of the actual behavioural interaction between the mother and child, and the degree of measured 'daily hassles'. This study followed 125 rural pairs of mothers and sons from infancy to toddlerhood and used the Parent Development Interview (PDI) to measure maternal representations. The results revealed that there was no change in the mother's average level of joy-pleasure/coherence or guilt and separation distress from infancy to toddlerhood. However, there was noted to be a significant increase in the mother's levels of anger over this time period.

Mental health problems during early parenthood transforms an already challenging experience to one that has the potential to be overwhelming (Seifer & Dickstein, 2000). In the existing literature, there is a wealth of evidence that maternal psychopathology can result in mothers being less psychologically available to their infant (Cummings & Cicchetti, 1990; Zahn-Waxler, Cummings, McKnew, & Radke-Yarrow, 1984). The experience of stress can be enhanced in those mothers with mental health problems which can reduce a mother's tolerance for the testing behaviours that an infant may exhibit (Belsky, 1984). Stress can also activate what Bowlby,(1980) called the segregated representational system which can unleash painful and often traumatic memories of the past, leaving the mother feeling helpless and unable to cope (Solomon & George, 1996). Low levels of maternal self-efficacy and competence in pregnancy and early motherhood have been found to relate to higher levels of depression and anxiety (Porter & Hsu, 2003). Typical symptoms of

depression, namely, irritability, sadness, anger and hostility can further interfere with a mother's capacity to respond sensitively to her infant (NICHD Early Child Care Research Network, 1999; Field, 1985; Field, Healy, Goldstein, & Guthertz, 1990; Field et al., 1988; Cohn, Campbell, Matias, & Hopkins, 1990; Easterbrooks, Biesecker, & Lyons-Ruth, 2000).

It has been demonstrated that maternal representations are affected by the cognitive distortions and biases that are stereotypical of depression (Trapolini, Ungerer, & McMahon, 2008). In accordance with Beck's (1987) theory of schemas, an individual will process information about the self, others and the world through the lens of their set of schemas. A depressed mother's self-schemata may be defined by themes of helplessness, failure and incompetence. In addition, the cognitive distortions and biases also associated with depressive symptomatology can result in mothers misinterpreting infant behaviour as deliberate acts of hostility or dislike. Attributions of malevolent intent also feature in narratives classified as distorted on the WMCI (Benoit et al., 1997a). Church, Brechman-Toussaint and Hine (2005) identified a vicious circle that can begin whereby the more mothers perceived themselves as having a difficult infant, the more they negatively appraise their caregiving and the more they evidence depressive symptoms. Also characteristic of the symptoms of depressed mothers is the decreased capacity to experience pleasure and enjoyment within the caregiving role (Trapolini et al., 2008). Collectively, the effects of depression on the maternal role is likely to negatively influence a mother's representation of her infant, such that increasing levels of depression may relate to more negative processes and affect (e.g. helplessness, emotional distress, hostile experience of infant) and less positive processes (e.g. enjoyment).

It is reasonable therefore to expect that maternal psychopathology may interfere and potentially distort the developing representations that a mother creates of her infant. As a result the mother may be more guided by an imagined representation of her infant rather than one that reflects the real quality of her infant's needs and desires. Less adaptive representations such as those classified as distorted on the WMCI (Zeanah et al., 1994) are often more impervious to change meaning that new information about the infant is not readily accommodated (Benoit, Zeanah, Parker, Nicholson, & Coolbear, 1997b). Rigidity of maladaptive representations in the parent-infant relationship is likely to be predictive of future disruption in terms of risk of child psychopathology (Fonagy et al., 1996; Fonagy, 1998), behaviour problems (Downey & Coyne, 1990) and mental health problems into adulthood (Rutter, 1996).

The previously mentioned studies have emphasised how early a mother's representations of her child develop and how these may influence the developing dyadic relationship. What appears to be lacking in the literature however, is research into how maternal representations change over time in high risk populations such as those that are exposed to high levels of social deprivation with the added disadvantage of mental health problems. It would therefore be useful to explore what features of mother's narratives are stylistically characteristic of mothers who are socially disadvantaged and what features are indicative of present and/or future maladaptive mother-infant relationships. Recent Government initiatives (Allen, 2011) and perinatal mental health provisions (Barlow et al., 2010; Barlow & Parsons, 2003; Day & Davis, 1999; Johnston, Huebner, Tyll, Barlow, & Thompson, 2004) have highlighted the desperate need for early intervention to play more of a central role in UK policy and practice. They stipulate the need to identify and support those

families who are most at risk in an attempt to interrupt the developmental trajectory towards mental health problems of children.

Current study

The aim of the current study was to map the trajectory of change in a sample of mothers during a one year period in early motherhood. We were interested to explore how a mother's forming representation of her infant from infancy to toddlerhood might be influenced or distorted by maternal psychopathology. Maternal narratives were examined to identify those features that were stable over time and those that were more open to revision. Lastly, maternal representations and psychopathology in early motherhood were considered as potential predictors of the quality of mother-infant interactions a year later.

In order to capture the subtle changes in maternal narratives over the course of the year, it was essential to choose a measure that would be sensitive enough to identify stylistic features of certain representations, and also one that would authentically illustrate the richness of information communicated. On the basis of these study criteria, a measure called the 10 PDI (Wain, 2010) was selected which is a recently developed coding measure for use on the Parent Development Interview. The 10 PDI is coded along the following 10 dimensions: hostility – parents experience, Hostile/frightening parent behaviour, fearful affect, helplessness, emotional distress, idealisation, enmeshment, incoherence, supportive presence and mutual enjoyment. Exploratory analyses of the 10 PDI coding system has demonstrated strong links with existing measures of parental representations and mother-infant behaviour (Wain, 2010). The further utility of the 10 PDI was

examined by using this recently developed coding system to test the following hypotheses that are well grounded in the literature.

Firstly, in line with previous studies it was hypothesised that maternal psychopathology would be concurrently associated with more negative and fewer positive maternal representations (Cohn et al., 1990; Field et al., 1990; Easterbrooks et al., 2000; Cummings & Cicchetti, 1990; Trapolini et al., 2008). It was further hypothesised that there would be adaptive change over the yearlong study period characterised by a change to more positive and less negative maternal representations (Scott & Hill, 2001; Roberts et al., 1984), increased quality of mother-infant relationship and reduced maternal psychopathology (Porter & Hsu, 2003). However, adaptive change was predicted to be less pronounced in those mothers with mental health problems. Lastly, it was hypothesised that the quality of the mother-infant relationship at the end of the yearlong study (Time 2) would be predicted by maternal psychopathology and maternal representations in the early months (Time 1) (Easterbrooks et al., 2000; Zeanah et al., 1997; Solomon & George, 2008; Field et al., 1988). It was thought that this forward prediction would explain more variance in the quality of this relationship at Time 2 than that of which could be explained purely by the nature of this relationship at Time 1. Those maternal representations found to have predictive value were hypothesised to mediate the relationship between maternal psychopathology at Time 1 and quality of mother-infant relationship at Time 2 (Church et al., 2005).

Method

Participants

Ninety mother-infant dyads were pooled from two existing research projects at Baseline and over the course of the first year of motherhood. Twelve mothers were unable to schedule the 12 month follow up assessment or could not be contacted by the researchers. One mother did not give consent for the interview or video interaction in her follow up assessment and therefore was removed from the data set. Lastly, one mother from the non-clinical sample was identified to have significant mental health issues at her 12 month follow up and therefore was removed from the non-clinical sub-sample. The total sample size for this study was therefore 76 mother-infant dyads. The sample was selected on the basis that they included two groups of mothers exposed to a variety of risk factors thought to influence maternal representations. Approximately half of the sample also had mental health problems which permitted further examination of the influence of maternal psychopathology on maternal representations.

Sample 1: Socially disadvantaged community sample clinical.

Participants were selected from a Randomised Control Trial (RCT) examining the outcomes of Parent-Infant Psychotherapy and Treatment as Usual for mothers with mental health problems and their infants. These participants were recruited from three high risk inner city areas with high levels of social exclusion and deprivation. Mothers were identified by their GP, health visitor, practice nurse, Sure Start worker, psychiatrist as requiring support, or by self referral (see Appendix D for recruitment poster) . Families were eligible for inclusion for the therapeutic trial if, a)

mothers met probable psychiatric caseness criteria based on the General Health Questionnaire, (Goldberg & Hillier, 1979) b) the infant was less than 12 months of age, and c) mothers met at least one of the following further indicators of social exclusion: low income household; long term unemployment (longer than 2 years); temporary or overcrowded accommodations; single or unpartnered; chronic physical illness or disability; early childhood history of foster or institutional care; social isolation associated with recent relocation; less than 20 years of age; or previous diagnosis of non-psychotic psychiatric illness. A social exclusion score was calculated for each mother based upon the sum of the social exclusion indicators. Mothers were excluded from the sample if they were non-English speaking; had a current diagnosis of psychosis, had substance abuse disorders/chronic drug dependence, or an IQ of below 70.

Mother-infant dyads in the clinical group will have been offered a wide variety of support services. This may include psychological therapies such as Parent-Infant Psychotherapy, counselling or family therapy. Alternatively, some mothers may have received pharmacological or social services support.

Sample 2: Socially disadvantaged community sample non-clinical.

Participants were recruited from mother and baby groups and children's centres in areas of a large UK city where there were comparable levels of social exclusion and deprivation to that of the clinical group. Social exclusion scores were calculated on the same basis as the clinical group. However, this was not a clinically-referred sample of mothers identified as having mental health problems. Researchers gave information to those mothers whose infants were under 12 months of age. A financial incentive was offered as part of the invitation to participate.

Approximately half of the sample was drawn from each sub-sample. Demographics are displayed in Table 1.

Table 1. Mean (and SD) of demographics by sub-sample at Time 1

	Non clinical	Clinical	Total sample
	N = 42 (55%)	N = 34 (45%)	N = 76 (100%)
Mother's age (years)	33.34 (4.60)	31.80 (5.86)	32.65 (5.22)
Infants age (months)	7.26 (2.52)	4.58 (3.11)	6.10 (3.10)
Social exclusion score	.88 (.86)	2.79 (1.43)	1.74 (1.50)

The infants in the total sample were aged between 3 weeks and 12 months (mean = 6.10 months, SD = 3.10). Mothers were aged between 21 and 43 years (mean = 32.65 years, SD = 5.22). Infant's average age was significantly greater in the non-clinical sub-sample, $t(63) = 4.06$, $p < .001$. Mother's age did not differ by sample. Despite the attempts to recruit the non-clinical and clinical sample from areas with matched levels of social deprivation, the clinical sample scored significantly higher than the non-clinical sample on the total social exclusion score, $t(51) = -6.86$, $p < .001$.

Table 2. Mean (and SD) of measures of mother's mental health by sub-sample at Time 1

	Non clinical	Clinical	Total sample
	N = 42 (55%)	N = 34 (45%)	N = 76 (100%)
CES-D score	11.67 (9.40)	26.23 (10.85)	17.61 (12.28)
PSI score	67.53 (17.15)	88.04 (19.51)	75.73 (20.64)
BSI score	.50 (.41)	1.22 (.75)	.79 (.67)

Note. CES-D = Centre for Epidemiological Studies Depression Scale, PSI = Parental Stress Index, BSI = Brief Symptom Inventory

Table 2 shows that mothers in the clinical sample had significantly higher scores on the measure of depression (Centre for Epidemiological Studies Depression Scale), $t(69) = -6.02$, $p < .001$, the measure of parental stress (Parental Stress Index), $t(68) = -4.64$, $p < .001$, and the measure of symptom distress (Brief Symptom Inventory), $t(38) = -4.62$, $p < .001$ at Time 1 measurement. There was an association between depressive symptoms and sub-sample, χ^2 (1) = 10.06, p=.002. Based on the odds ratio, mothers in the clinical group were 5.9 times more likely to have scores that were indicative of major depression on the CES-D.

There were proportionally more male infants in both the non-clinical and clinical samples (56% and 68% respectively). Across all infants, 78% were only children in their family at the Time 1 assessment. These demographics did not differ significantly by sub-sample. See Table 3 for details.

Table 3. Frequency (and %) of child gender and position in family by sub-sample and total sample at Time 1.

		Non-clinical N = 42 (55%)	Clinical N = 34 (45%)	Total sample N = 76 (100%)
Gender				
	Male	23 (56)	23 (68)	46 (61)
	Female	18 (44)	11 (32)	29 (38)
Position				
	First	36 (86)	23 (68)	59 (78)
	Second	5 (12)	4 (12)	9 (12)
	Third	1 (2)	5 (15)	6 (8)
	Fourth	0 (0)	2 (6)	2 (3)

Table 4 shows that the majority of mothers were white British or white other (41% and 33% respectively). The frequencies of ethnic group across the two sub-

samples did not differ. Maternal level of education ranged from no qualifications (3%) to postgraduate degree (28%). There was an association between qualification level reached and sub-sample, χ^2 (5) = 24.28, p <.001.

Table 4. Frequency (and %) of Maternal Ethnicity and Education by sub-sample and total sample at Time 1

	Non-clinical N = 42 (55%)	Clinical N = 34 (45%)	Total N = 76 (100%)
Ethnicity			
White British	18 (43)	13 (38)	31 (41)
White Other	16 (38)	9 (27)	25 (33)
Black British	0 (0)	2 (6)	2 (3)
Black African	0 (0)	1 (3)	1 (1)
Black Caribbean	0 (0)	1 (3)	1 (1)
British Asian	2 (5)	2 (6)	4 (5)
Asian	3 (7)	2 (6)	5 (7)
North African/Arabic	1 (2)	2 (6)	3 (4)
Turkish	1 (2)	0 (0)	1 (1)
Mixed	1 (2)	2 (6)	3 (4)
Education			
None	0 (0)	2 (6)	2 (3)
GCSE	2 (5)	9 (27)	11 (15)
A Level	3 (7)	6 (18)	9 (12)
Diploma/NVQ	2 (5)	6 (18)	8 (11)
Degree	15 (36)	9 (27)	24 (32)
Postgraduate Degree	19 (45)	2 (6)	21 (28)

Ethical Considerations

Ethical approval for both research studies was sought and granted from the Local Research Ethics Committee and the UCL Committee for the Ethics of Non-

NHS Human Research (see Appendix E). Participants were given an information sheet which included details of the study and specified that participation was voluntary and withdrawal was allowed at any point of the study without penalisation. Participants were asked to sign a consent form if they were in agreement (see Appendix F and G for participant information sheets and consent forms).

Design

A prospective design was used for this study that assessed mothers at Time 1 when they entered the study and at Time 2, 12 months later. The dependent variables were the scores at Time 1 and Time 2 on the maternal representation measures, the mother-child relationship measure and the maternal psychopathology measures. The independent variables were group (clinical or non-clinical sub group) and time (Time 1 and Time 2).

Procedure

Once eligibility of inclusion and exclusion criteria had been established, the Time 1 assessments commenced with both samples. The same set of measures were administered again at the 12 month follow up. Assessments were carried out either in the mother's home or in the research centre.

Measures

Maternal Representations.

Parent Development Interview (PDI) (Aber, Slade, Berger, Bresgi, & Kaplan, 1985)

The PDI (see Appendix H) is a 45 question semi-structured interview which takes approximately 90 minutes to administer. It assesses parent's representations of their child, of themselves as parents and of the relationship between them. Many of the questions have secondary prompts which are used to illicit further information as necessary. The first section of the interview is devoted to parent's description of their child. Parents are asked to describe 5 adjectives to describe their child and supply evidence that validates such adjectives. It also asks about pleasurable times (e.g. joy, moments where parent and child are "clicking") and difficult times (parental feelings of anger, guilt, neediness, and moments where parent and child are "not clicking"). Parents are invited to reflect on their child's and their own internal experiences at times of heightened emotional arousal. The parent is asked how they feel their experiences with their own parents have impacted on themselves as a parent and how they would like to be like or unlike their parents. Finally they are asked to describe their child's reactions to routine separations. Verbatim transcripts from the PDI were coded with the 10 PDI coding system (Wain, 2010 – See Appendix I) and the Reflective Functioning scale.

The 10 PDI coding system was recently developed and validated on a sample of 95 socially disadvantaged mother-infant dyads (Wain, 2010). Within this sample were clinical and non-clinical sub groups, and also mothers who were in prison. The development of this measure involved taking a systematic exploration of the existing measures of caregiver representations e.g. WMCI (Zeanah et al., 1994), the

Hostile/Helpless coding system (Lyons-Ruth, Yellin, Melnick, & Atwood, 2005) to identify those factors which are considered to be important within the parent-infant relationship. Particular importance was given to the representational constructs which have been linked with disorganized attachment relationships in the literature. This was to ensure that the coding system was sensitive to identifying those parent-infant dyads deemed most at risk. The final coding system consisted of 10 independent dimensions; Hostile Parent Experience, Hostile Parent Behaviour, Fearful Affect, Helplessness, Emotional Distress, Idealisation, Enmeshment, Incoherence, Supportive Presence and Mutual Enjoyment. Each dimension was coded along a 1-5 rating scale indicating both the frequency and intensity of the dimension.

The current author coded all of the PDI's using the 10 PDI coding system of which 33% were double coded by a previous D.Clin.Psy trainee (see Appendix J for author's contributions). The Intraclass Correlations for the 10 PDI coding dimensions ranged between .85 and .93 with little variance (mean = .90, SD = .02). Both coders were blind to all information about the mother infant-dyads with the exception of the infant's age. The sample from which the mothers originated was not explicitly revealed, although this could sometimes be deduced from the content of the interview narratives. Any discrepancies in coding were settled in discussion whereby scores that were 1-point apart were given the score agreed by the coders following discussion.

The PDI was also coded for Reflective Functioning (RF), the ability to understand and anticipate the intentions, thoughts, feelings and desires of ones own mental state and that of another (Fonagy & Target, 1998). Reflective Functioning is the operationalised measurement of mentalisation, which is proposed to represent an

underlying foundation of attachment relationships (Fonagy et al., 1995). RF was measured via the following four categories; the awareness of the nature of mental states, explicit effort to tease out mental states underlying behaviour, recognising the developmental aspects of mental states, and mental states in relation to the interviewer (Slade, Bernbach, Grienenberger, Levy, & Locker, 2004). Interviews are scored on an 11-point scale, ranging from -1 to 9. Limited reflective functioning would receive a score of between -1 to 3 and moderate to high reflective functioning are scores from 5 to 9. Parental RF has been validated through demonstration of relationships to adult and infant attachment (Slade, Grienenberger, Bernbach, Levy, & Locker, 2005) and maternal behaviour (Grienenberger, Kelly, & Slade, 2005). Six coders rated the PDI for RF. They all achieved a good level of overall reliability with the author of the PDI, ICC > .70, 25% of PDI's were double coded. Some of this data is included in previous D.Clin.Psy. projects (Wain, 2010; Gale, 2008; Woollaston, 2010).

Mother-child relationship measure.

Emotional Availability Scales 3rd Edition (EA) (Biringen, Robinson, & Emde, 1998)

The EA scales were used to assess the dynamic quality of the caregiver-infant relationship during a 7-10 minute video-recording of mothers and babies interacting together. The mothers were asked to interact with their child as they normally would. There are four parental dimensions which include; sensitivity (mothers responsiveness, warmth, acceptance of child and ability to negotiate conflicts in a flexible and creative manner); structuring (amount of modelling, direction and control in mothers behaviour towards child); non-intrusiveness (balance between

availability and interference, over-stimulation or over-direction); and non-hostility (degree of covert or overt hostility towards child). Parental dimensions are rated on a 5-point scale, apart from sensitivity which is rated on a 9-point scale. There are two child dimensions which include responsiveness to the parent; (child's pleasure and eagerness during interactions) and involvement with the parent (degree to which child engages with parent). Both child dimensions are scored on a 7-point scale. High scores on all sub-scales are considered more adaptive.

The EA scales have been validated through demonstrating meaningful links with child attachment (Ziv, Aviezer, Gini, Sagi, & Karie, 2000; Easterbrooks et al., 2000), parental representations of childhood attachment experiences (Biringen et al., 2000), parental representations of caregiving and the child (Biringen, Matheny, Bretherton, Renouf, & Sherman, 2000; Lok & McMahon, 2006). These studies have also demonstrated the use of EA scales with a range of high risk populations.

The EA coding was conducted by 4 coders who were blind to all other measures. Some of this data is included in other D.Clin.Psy. projects (Wain, 2010; Woollaston, 2010; Gale, 2008). Coders were self trained through a video course by the author of the EA measure who also certified reliability. Inter-rater reliability was assessed for 18% of the sample. ICCs ranged from .92 to .75 with an overall ICC of .82.

Maternal psychopathology.

Centre for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977).

The CES-D was developed by the Centre for Epidemiologic Studies is a 20-item measure of depressive symptoms suitable for use in community samples. Areas

measured include depressed mood, guilt/worthlessness, helplessness/ hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance. Each item is rated on a scale from 0 to 3 in terms of frequency of occurrence during the past week. The total score may range from 0 to 60, with a score of >26 indicative of major depression (Zich, Attkisson, & Greenfield, 1990). The CES-D has high internal consistency, acceptable test-retest stability, and good construct validity in both community and clinical samples (Radloff, 1977).

Brief Symptom Inventory (BSI) (Derogatis & Melisaratos, 1983).

The BSI is a widely used self-report measure of symptom distress. This 90-item measure yields a Global Severity Index (GSI), an indicator of current overall symptomatology across multiple domains experienced during the preceding 2 weeks. The BSI has been shown to be reliable (coefficient alpha for GSI = .90) and a valid (correlates positively > 0.30 with MMPI) measure of current psychological distress (Derogatis & Melisaratos, 1983). For the purpose of analysis, the General Severity Index was used as the global measure of symptom distress.

Parenting Stress Index (PSI) Short Form (Abidin, 1995).

The PSI is a 36-item questionnaire that measures stress level experienced within the parenting role. Rated on a five-point scale, the measure contains three subscales pertaining to parenting stress; the Difficult Child (DC) subscale, the Parent-Child Dysfunctional Interaction (P-CDI) subscale and the Parental Distress (PD). The PSI subscales have demonstrated concurrent validity (validity coefficient of .55) with maternal depression measured using the CES-D (Whiteside-Mansell et

al., 2007). The Total Stress Score was used in analyses which is the sum of the three subscales.

Power Analysis

On the basis of previous studies of the same domain (Grienenberger et al., 2005; Slade et al., 2005) it was assumed that the association between RF and parenting behaviour would be large (Pearson r>0.4). Using G*Power 3 computer program (Faul, Erdfelder, Lang, & Buchner, 2007) specifying a multiple regression model with up to four independent variables a sample size of 40 would enable the disconfirmation of the null hypothesis with alpha set at 5% and beta at 80%.

Data Analytic Strategy

Preliminary analysis.

Firstly the data was screened in terms of distribution and outliers. Descriptive analysis of each of the measures used in the study was conducted and where needs be was followed by data reduction procedures. Associations within the dimensions and scales were examined for the 10 PDI coding system and the Emotional Availability scales using principle component analysis (PCA). The factors obtained through the PCA were used in further analysis. The relationship between demographics and the study measures (10 PDI coding system, Reflective Functioning, Emotional Availability, and all three of the measures of maternal psychopathology; CES-D, PSI and BSI) were explored via correlations. Demographic variables included social exclusion score, child age and position in family, maternal age and education status.

Main Hypotheses.

Associations between maternal psychopathology and the 10 PDI dimensions were examined via correlational then multiple hierarchical regression analyses. Where parametric assumptions were met (homogeneity of variance and normal distribution of data), Pearson's r was used for correlational analyses, alternatively Spearman's rho was used. Before conducting regression analyses, the data was screened for assumptions (linearity, normally distributed residuals error, homoscedasticity and multicollinearity), although it is recognised that multiple regression is relatively robust in relation to some of these assumptions (Field, 2009). All of the multiple hierarchical regression models in this study used a blockwise entry whereby the demographic variables and any other measures known to be predictors were added first. New predictors were either then added simultaneously, or in a stepwise manner, with the variables suspected to be most important being entered first.

A repeated measures mixed design ANOVA was used to examine change over time in the study measures (10 PDI coding dimensions, Reflective Functioning, Emotional Availability, and all three of the measures of maternal psychopathology; CES-D, PSI and BSI). The within subjects factor was Time (Time 1, Time 2) and the between subjects factor was sub-group (clinical, non-clinical).

Results

Preliminary Analysis

10 PDI coding system.

Distribution of all measures used in this study were checked for normality. Indications of significant non-normality will be appropriately signalled.

In the 10 PDI dimensions, idealisation was found to be significantly positively skewed in the Time 1 and Time 2 data with 80% and 75% of mothers scoring one at Time 1 and Time 2 assessment, respectively. The Helplessness dimension was also significantly positively skewed at Time 2 with at least 75% of mothers scoring one. Scores on all of the 10 dimensions ranged from 1 to 5 at Time 1, and 9 of the 10 dimensions ranged from 1 to 5 at Time 2, with Helplessness ranging between 1 and 4.

A principal component analysis (PCA) was conducted on the 10 dimensions at Time 1 and Time 2 with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin measure (KMO) verified the sampling adequacy for the analysis at both time points (KMO = .73 at Time 1 and Time 2). Barlett's test of sphericity at Time 1, (χ^2 (43) = 261.148, p <.001), and Time 2, (χ^2 (45) = 209.95, p <.001) indicated that correlations between dimensions were sufficiently large for PCA. The solutions obtained at both Time 1 and Time 2 had three factors with eigenvalues over Kaiser's criterion of 1. In combination these factors explained 65.66% of the variance at Time 1 and 61.56% of the variance at Time 2. The dimensions that cluster on the same components suggest that Factor 1 represents a lack of enjoyment, Factor 2 represents distress, and Factor 3 represents enmeshment. The PCA supports the notion that certain maternal representations may be usefully conceptualised in terms of three underlying

dimensions. The factor scores used in further analysis were computed by summing the loadings on each factor, ignoring those eigenvalues below one.

In future sections, analysis will be considered in relation to both the underlying three factors and also the independent 10 PDI dimensions. As the analysis was exploratory, it is still of interest to consider the detail of the different maternal representations in their own right.

Reflective Functioning.

Twenty-eight percent of the full sample at Time 1 scored between 1 and 3 (limited reflective functioning) and 72% scored between 4 and 8 (moderate to high reflective functioning). By contrast, twenty-five percent of the full sample of mothers at Time 2 scored between 2 and 3 (limited reflective functioning) and 75% scored between 4 and 8 (moderate to high reflective functioning).

Emotional Availability.

The Mean ratings and Standard Deviations for each of the 6 Emotional Availability scales are shown in Table 5.

Table 5. Mean (and SD) of the five Emotional Availability Scales at both time points

	Time 1	Time 2
EA Scale (points on scale)	Mean (SD)	Mean (SD)
Sensitivity (9)	5.93 (1.54)	6.34 (1.33)
Structuring (5)	3.60 (1.00)	4.07 (0.77)
Non-Intrusiveness (5)	4.14 (0.99)	4.40 (0.73)
Non-Hostility (5)	4.61 (0.74)	4.72 (0.47)
Responsiveness (7)	4.62 (1.58)	5.50 (1.16)
Involving (7)	4.42 (1.54)	5.30 (1.21)

The EA scales were explored using a principal component analysis (PCA) at Time 1 and Time 2 with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin measure (KMO) verified the sampling adequacy for the analysis at both time points (KMO = .77 at Time 1 and .83 at Time 2). Barlett's test of sphericity at Time 1, (χ^2 (15) = 358.02, p <.001), and Time 2, (χ^2 (15) = 303.51, p <.001) indicated that correlations between dimensions were sufficiently large for PCA. On the basis of the scree plot and retaining all factors with eigenvalues greater than 1, this resulted in one factor explaining 70% of the variance at Time 1 and 71% of the variance at Time 2. The EA summary score (EAS) was therefore computed by summing the six scales together. The scores ranged between 11 and 37 at Time 1, and between 19 and 36.50 at Time 2 .

Maternal psychopathology measures.

Table 6 shows descriptive information of the measure of depression (CES-D Total score), measure of parental stress (PSI- total stress score) and symptom distress (BSI- general severity index) at both time points.

Table 6. Mean (and SD) on Measures of Maternal Psychopathology at Time1 and Time 2

	Non-clinical (N=42)		Clinical (N=34)	
Measure	T1 Mean (SD)	T2 Mean (SD)	T1 Mean (SD)	T2 Mean (SD)
CES-D	11.67 (9.39)	10.43 (9.07)	26.23 (10.85)	17.30 (11.06)
PSI	67.53 (17.15)	68.26 (18.43)	88.04 (19.51)	84.18 (23.45)
BSI	.50 (.41)	.41 (.42)	1.22 (.75)	.97 (.68)

Note. CES-D = Centre for Epidemiological Studies Depression Scale, PSI = Parental Stress Index, BSI = Brief Symptom Inventory

Demographic correlations.

In this section, only correlations were explored with the baseline data as much of the demographic data was not available at the 12 month follow up. Furthermore, a large proportion of demographic information would have stayed constant over the period of 12 months. Only significant relationships are reported. All correlations are significant at $p<.01$, unless specified.

Mothers social exclusion score was found to strongly correlate with maternal age ($r = -.35$) and maternal education status ($r_s = -.60$). Therefore, in this section, correlations with mother's social exclusion score are reported first followed by any further associations having controlled for social exclusion. Mothers who were more socially excluded were more depressed ($r = .61$), more stressed ($r = .45$) and self reported more symptoms of distress ($r = .58$). Furthermore, the greater the severity of social exclusion, the more hostile the mothers were in their experience of their child ($r = .49$), the more hostile they were in their behaviour towards their child ($r = .34$), and the higher their levels of emotional distress ($r = .40$), enmeshment ($r = .43$), fearful affect ($r = .31$) and incoherence ($r = .27$, $p<.05$). Mothers who were more socially excluded were also found to be less emotionally available to their child ($r = -.45$), less reflective ($r = -.23$, $p<.05$) and less able to provide examples of when they had provided support to their child ($r = -.33$) and mutually enjoyed each others company ($r = -.23$, $p<.05$).

Once social exclusion was controlled for, there continued to be a significant association between mother's age, reflective functioning and mutual enjoyment such that older mothers were more reflective ($r = .23$, $p<.05$) and more able to describe moments of mutual enjoyment with their child ($r = .24$, $p<.05$). A significant association was also found between mother's education status and depression score,

whereby more highly educated mothers expressed less depressive symptomatology ($r = -.30$, $p<.05$)

Child age and child position within the family did not correlate with the social exclusion variable and are reported independently. Mothers felt more stressed ($r = -.29$, $p<.05$), more helpless ($r_s = -.30$, $p<.05$) and more hostile in their experience of their child the younger their child was. By contrast, mothers who had older infants were more emotionally available to their children ($r = .42$).

Infants who were first born had mothers who were more emotionally available ($r_s = -.33$) and more reflective ($r_s = -.42$) in relation to their child. These mothers were also more able to be a supportive presence ($r_s = -.37$) to their child and describe moments where they had been mutually enjoying each others company ($r_s = -.35$). Child position in the family was significantly related to Reflective functioning, $F(3,72) = 7.82$, $p<.001$. Post hoc analysis with Tukey HSD identified that children who are first born have mothers who score significantly higher on reflective Functioning ($M = 4.8$, $SD = 1.25$) than mothers in families where the child is second born ($M = 3.83$, $SD = 1.70$), $p = .05$, 95% CI [.01, 1.85], third born ($M = 3.00$, $SD = 1.10$), $p = .01$ [.66, 2.87], and fourth born ($M = 1.5$, $SD = .71$), $p = .001$ [1.41, 5.11].

Main Hypotheses

Maternal psychopathology and dimensional profile of maternal representations in the full sample.

Table 7 shows that at Time 1, five of the 10 PDI dimensions were significantly associated with all three measures of maternal mental health (CES-D, PSI and BSI). Mothers who were more depressed, more stressed and reported more

symptoms of distress evidenced more hostility towards their child (both in experience and behaviour), had greater feelings of helplessness, were more emotionally distressed and were less supportive to their child. In addition, more evidence of enmeshment in the mother-child relationship was found in mothers who were more depressed and reported more symptoms of distress at Time 1.

Table 7. Concurrent Correlations Between the 10 PDI Dimensions and Measures of Maternal Psychopathology (CES-D, PSI, BSI) at Time 1

Dimension	CES - D	PSI	BSI
Hostile Parents Experience	.37**	.47***	.25*
Hostile Parents Behaviour	.37**	.39**	.33**
Fearful Affect	.22	.22	.22
Helplessness	.38**	.55***	.55***
Emotional Distress	.48***	.49***	.49***
Idealisation	.15	-.04	-.04
Enmeshment	.30*	.13	.44***
Incoherence	.07	.01	.01
Supportive Presence	-.39**	-.38**	-.38**
Mutual Enjoyment	-.16	-.04	-.04
Lack of enjoyment factor	.38**	.36**	.33**
Distress factor	.52***	.58***	.49***
Enmeshment factor	.35**	.17	.42***

Note. CES-D = Centre for Epidemiological Studies Depression Scale, PSI = Parental Stress Index, BSI = Brief Symptom Inventory

* $p < .05$. ** $p < .01$. *** $p < .001$.

At Time 2 Table 8 shows that three of the 10 PDI dimensions were significantly associated with all three measures of maternal mental health (CES-D, BSI and PSI). Mothers who were more depressed, more stressed and reported more symptoms of distress reported more feelings of hostility in their experience of their

child, expressed more emotional distress and less examples of providing support to their child. Furthermore, maternal depression and symptom distress were also positively correlated with Helplessness. As evidence of Helplessness increased, so did scores on depression and symptoms of distress. Lastly, mothers who self reported higher levels of stress and more symptoms of distress evidenced more hostility in their behaviour towards their child.

Table 8. Concurrent Correlations between the 10 PDI Dimensions and Measures of Maternal Psychopathology (CES-D, PSI, BSI) at Time 2

Dimension	CES - D	PSI	BSI
Hostile Parents Experience	.46***	.43***	.57***
Hostile Parents Behaviour	.20	.26*	.27*
Fearful Affect	.13	.12	.17
Helplessness	.31**	.24	.26*
Emotional Distress	.48***	.49***	.53***
Idealisation	-.02	-.22	-.02
Enmeshment	.10	.17	.17
Incoherence	.10	.16	.16
Supportive Presence	-.30*	-.36**	-.33**
Mutual Enjoyment	-.20	-.18	-.17
Lack of enjoyment factor	.17	.31**	.33**
Distress factor	.27*	.36**	.42**
Enmeshment factor	.12	.22	.24

Note. CES-D = Centre for Epidemiological Studies Depression Scale, PSI = Parental Stress Index, BSI = Brief Symptom Inventory

* $p < .05$. ** $p < .01$. *** $p < .001$.

In order to reduce the chances of the 10 PDI dimensions sampling the same variance, the three factor solutions that were obtained from the principal component analysis (PCA) in the preliminary analysis (pg 77) were also correlated with each of the measures of maternal psychopathology at both time points. Table 7 shows that at

Time 1 the ‘Lack of Enjoyment’ factor and the ‘Distress’ factor positively correlated with all of the measures of maternal psychopathology. The ‘Enmeshment’ factor positively correlated with depression scores and symptoms of distress scores. At Time 2, the ‘Distress’ factor positively correlated with all of the measures of maternal psychopathology and the ‘Lack of Enjoyment’ factor positively correlated with parental stress scores and symptoms of distress scores. See Table 8 for details. There were no significant associations between the ‘Enmeshment’ factor and the measures of maternal psychopathology at Time 2. Associations were further examined through hierarchical multiple regression analyses to see if maternal psychopathology could predict the newly created factors at either time point. In the first model, social exclusion score was entered, and in the second, CES-D scores, PSI scores and BSI scores. Only one of the models was significant. Table 9 shows that at Time 1 the measures of maternal psychopathology accounted for an additional 14% of the variance in the ‘Distress’ factor after controlling for social exclusion, $F(4,65) = 12.32$, $p < .001$.

Table 9. Hierarchical Multiple Regression Analysis Predicting 'Distress' Factor at Time 1.

	Coefficients			
	Unstandardised		Standardised	Model
	B	*SE B*	β	R^2/ $\mathbf{R^2\Delta}$
Model 1				**.29*** **
Social exclusion	.98	.19	.54***	
Model 2				.43/**14****
Social exclusion	.66	.21	.36**	
CES-D	-.01	.06	-.04	
BSI	-.04	.83	-.01	
PSI	.06	.02	.45**	

Note. CES-D = Centre for Epidemiological Studies Depression Scale, PSI = Parental Stress Index, BSI = Brief Symptom Inventory

* $p < .05$. ** $p < .01$. *** $p < .001$.

Change and stability over time in maternal representations, mental health and mother-infant relationship by full sample and sub-sample.

All effects are reported as significant at $p < .01$ unless specified. The first section will consider those representations and measures that significantly changed over the yearlong study period using a repeated measures mixed design ANOVA. There was a significant main effect of Time on five of the 10 PDI dimensions evidenced in maternal narratives; Hostile Parent's Experience, F (1, 74) = 13.52; Hostile Parent Behaviour, F (1, 74) =4.35, p = .04; Fearful Affect, F (1, 74) = 6.55, p = .01; Helplessness, F (1, 74) = 9.21; and Emotional Distress, F (1, 74) = 16.51. Contrasts revealed that evidence of all of these dimensions significantly reduced from Time 1 to Time 2.

There was also a significant main effect of Time on two of the three measures of maternal mental health in the sample of mothers; CES-D, F (1, 65) = 18.16, and

symptom distress, F (1, 61) = 19.38. Again it was the case that symptoms measured by these questionnaires decreased in the period between Time 1 and Time 2.

Lastly, there was a main effect of Time on Emotional Availability observed in the mother-infant interactions, F (1, 55) = 20.94. Contrast revealed that evidence of Emotional Availability increased in the sample of mothers over the 1 year period.

There was a significant interaction effect between Time and sub-group on the Hostile Parent Behaviour dimension, F (1, 74) = 4.35, p = .04, indicating that scores of Hostile Parent Behaviour at Time 1 and Time 2 differed in the clinical group and non-clinical group. Figure 1 shows that for the mothers in the clinical sub-sample there was a reduction in Hostile Parent Behaviour over time, where as mothers in the non-clinical sub-sample evidenced almost identical levels of Hostile Parent Behaviour at Time 1 and Time 2. Despite the decreased expression of this dimension in maternal narratives in the clinical group, they still did not score as low as their non-clinical counterparts at Time 2.

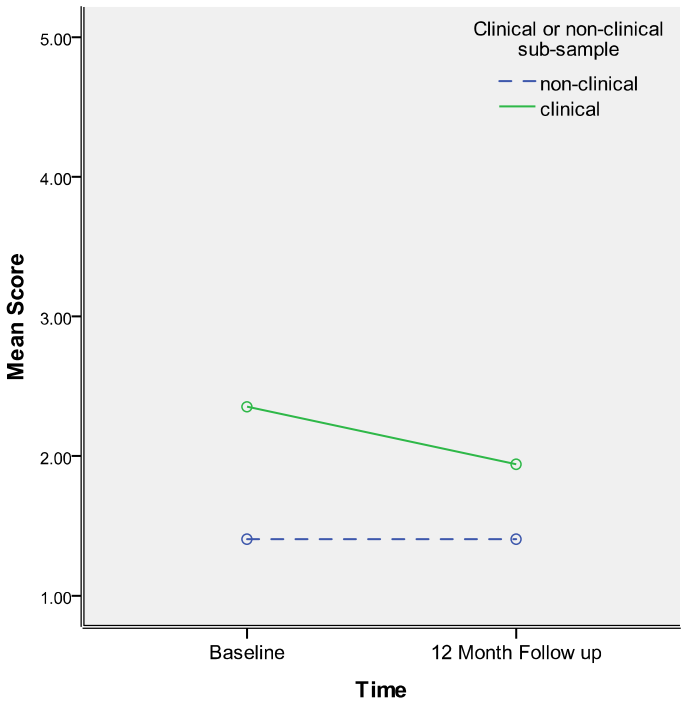

Figure 1. Interaction effect between Time and sub-group on the Hostile Parent Behaviour dimension

There was a significant interaction effect between Time and sub-group on the other measure of maternal representations, Reflective Functioning, F (1, 74) = 6.21, p = .02. Figure 2 reveals that Reflective Functioning scores for mothers in the clinical sub-group increased between Time and Time 2, where as the reverse pattern was seen for the mothers in the non-clinical sub group whose scores slightly reduced over time. Mothers in the clinical sample scored higher on average than mothers in the non-clinical sample at Time 2.

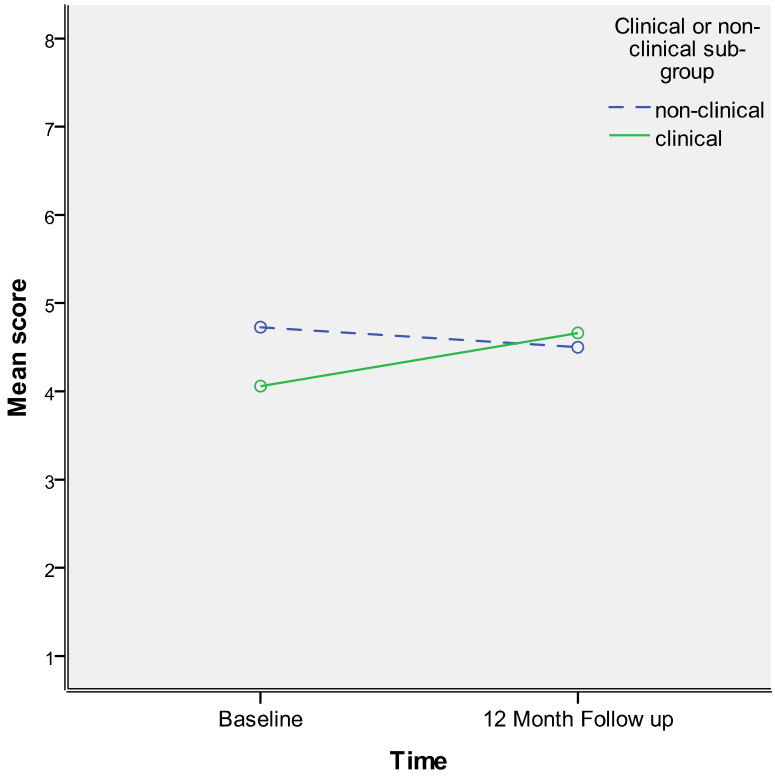

Figure 2 Interaction effect between Time and sub-group in Reflective Functioning.

There was a significant interaction effect between Time and sub-group on all three of the measures of maternal mental health, CES-D, F (1, 65) = 10.48; Symptom Distress, F (1, 61) = 6.60, p = .01; and Parental Stress, F (1, 65) = 4.22, p = .04. Figures 3 and 4 reveal that both depression and symptoms of distress decrease over

the course of the 12 month study period, but this decrease is more pronounced in the clinical sub-group. However, the pattern of change in parental stress over time (see figure 5) suggests that whilst there is a reduction in stress levels in mothers in the clinical sub-sample from Time 1 to Time 2, this is not mirrored in the non-clinical sub-sample whose stress levels remain fairly constant. Nevertheless, Stress levels in the clinical sample do not drop as low as the non-clinical sub-group by the end of the yearlong study period.

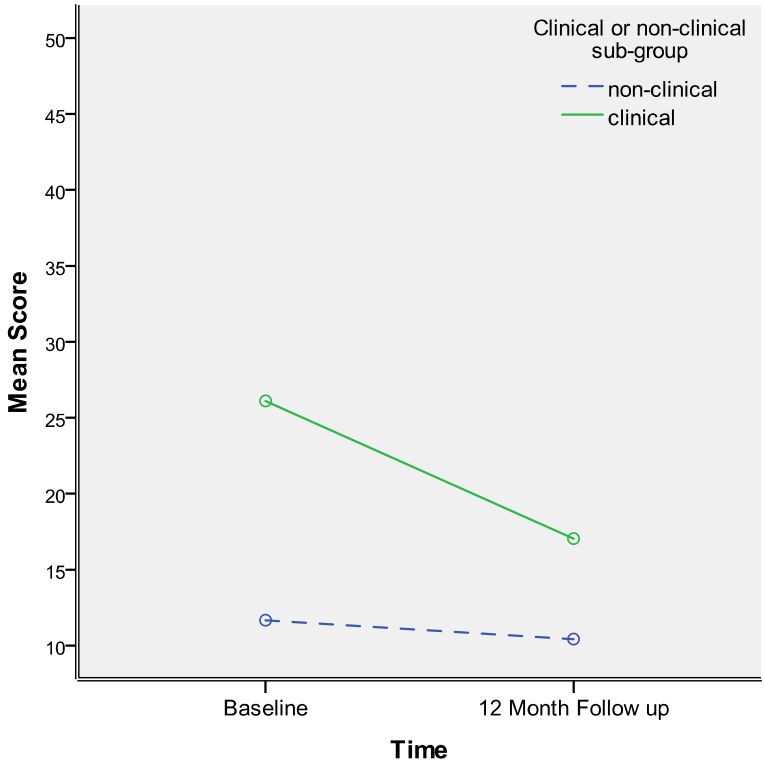

Figure 3. Interaction effect between Time and sub-group in Depression scores.

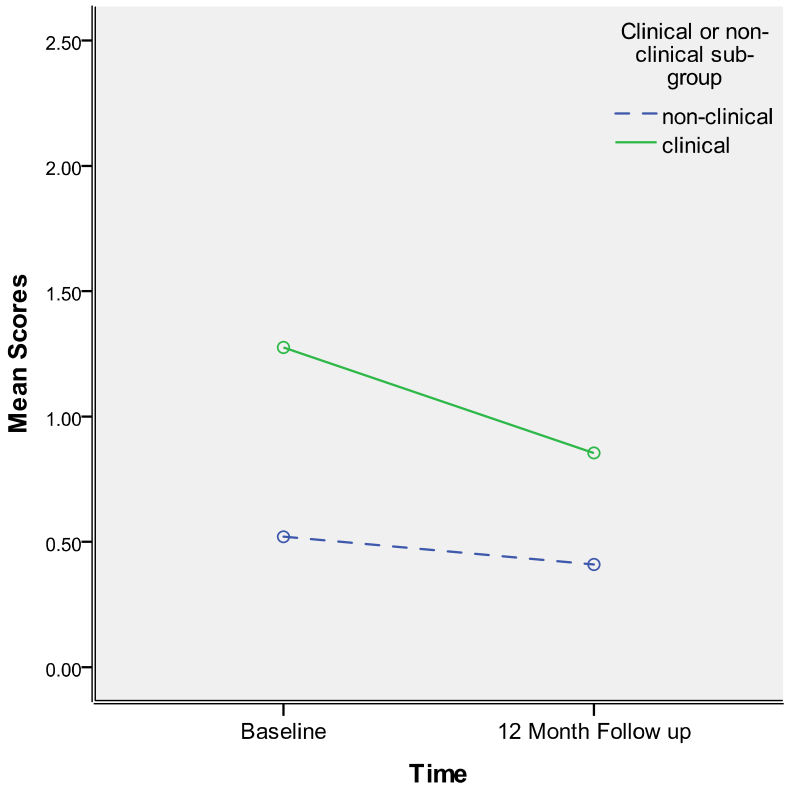

Figure 4. Interaction effect between Time and sub-group in Symptom Distress scores.

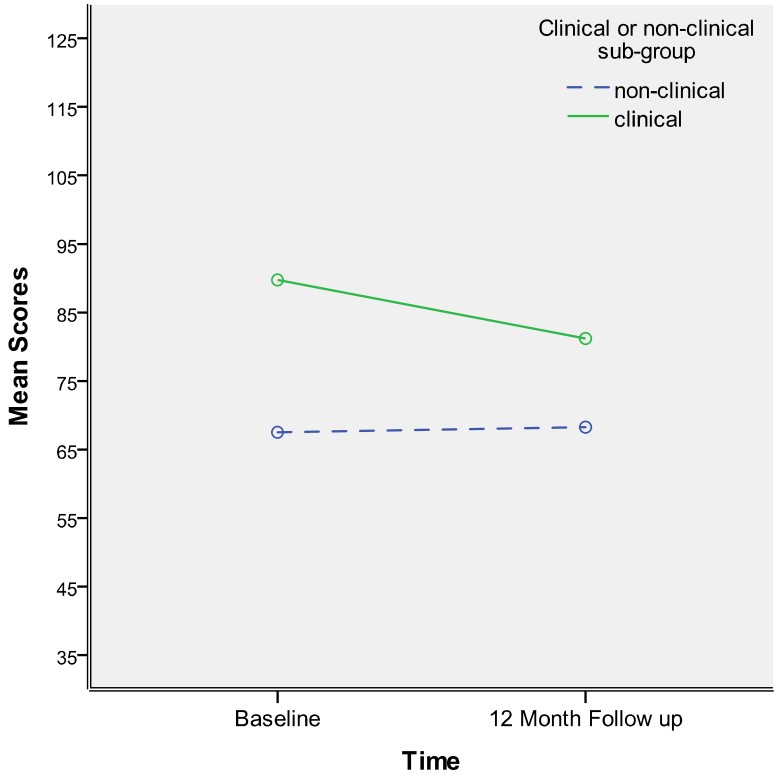

Figure 5. Interaction effect between Time and sub-group in Parental Stress scores.

Lastly, there was a significant interaction effect between Time and sub-group on the measure of mother-infant behaviour, Emotional Availability, F (1, 55) = 6.85, p = .01. Figure 6 shows that scores on Emotional Availability increased over time in both the clinical and non-clinical sub-groups indicating adaptive change. Although the increase was more pronounced in the non-clinical group, the average score at Time 2 was not as high as the non-clinical group at either 1 or 2 time points.

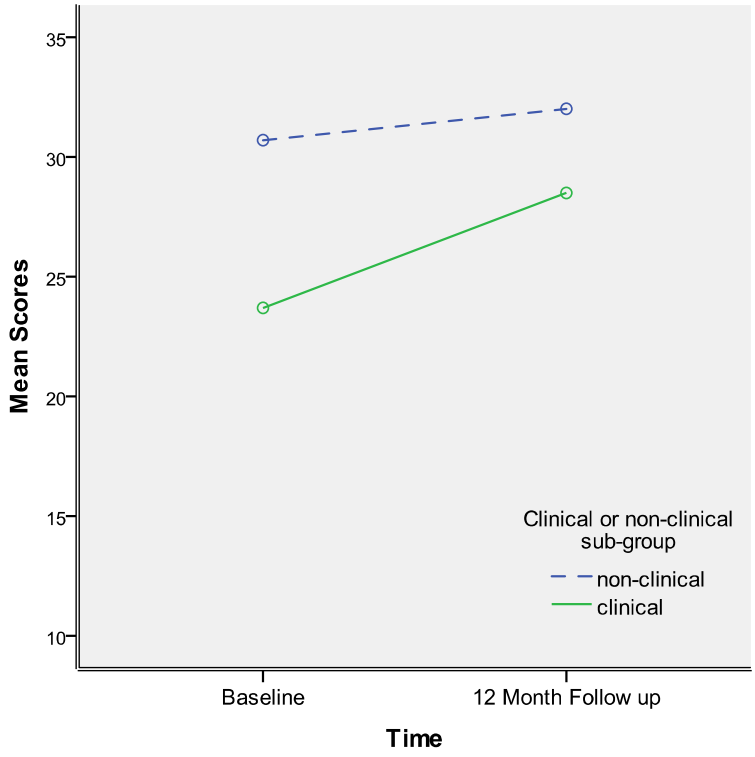

Figure 6. Interaction effect between Time and sub-group in EAS

The next section will consider those maternal representations that remained stable over the 12 month study period. Two of the 10 PDI dimensions were relatively impervious to change. Average scores on the Idealisation dimension changed little over time F (1, 74) = .01, p = .94 with the clinical group having only an average of .3 change on a scale of 1-5. Similarly, the Enmeshment dimension was fairly fixed F (1, 74) = 0.7, p = .787. In fact, the average score on this dimension was identical for the clinical group at both time points.

Maternal psychopathology and maternal representations at Time 1 as predictors of Emotional Availability at Time 2.

A hierarchical multiple regression analysis was conducted to examine if the measures of maternal psychopathology and/or maternal representations at Time 1 could predict Emotional Availability at Time 2 controlling for the effect of Emotional Availability at Time 1. In the first model, social exclusion score and Emotional Availability at Time 1 were entered, and in the second, each of the 10 PDI dimensions in turn. Table 10 shows that when Enmeshment was added in to the model at step two, an additional 5% of the variance in Emotional Availability in the mother-infant dyad at Time 2 could be accounted for beyond that predicted by Emotional Availability at Time 1, $F(3,53) = 14.16$, $p < .001$.

Table 10. Hierarchical Multiple Regression Analysis predicting EAS at Time 2.

	Coefficients			
	Unstandardised		Standardised	Model
	B	*SE B*	β	R^2/ $\mathbf{R^2\Delta}$
Model 1				**.39*** **
Social exclusion	-1.14	.38	-.36**	
EAS at Time 1	.29	.10	.36**	
Model 2				.45/**.05***
Social exclusion	-.80	.40	-.26*	
EAS at Time 1	.32	.09	.40**	
Enmeshment at Time 1	-1.30	.57	-.25*	

Note. EAS = Emotional Availability Summary Score

* $p < .05$. ** $p < .01$. *** $p < .001$.

Supportive Presence also accounted for additional variance in Emotional Availability in the mother-infant dyad at Time 2. Results are detailed in Table 11. The final model accounted for 44% of the variance in Emotional Availability at Time 2, $F(3,53) = 13.78$, $p < .001$.

Table 11. Hierarchical Multiple Regression Analysis predicting EAS at Time 2.

	Coefficients			
	Unstandardised		Standardised	Model
	B	*SE B*	β	R^2/ $\mathbf{R^2\Delta}$
Model 1				**.39*** **
Social exclusion	-1.14	.38	-.36**	
EAS at Time 1	.29	.10	.36**	
Model 2				.44/**.05***
Social exclusion	-.97	.38	-.31*	
EAS at Time 1	.26	.10	.33**	
Supportive Presence Time 1	.97	.46	.23*	

Note. EAS = Emotional Availability Summary Score

* $p < .05$. ** $p < .01$. *** $p < .001$.

The three factors that were created in the PCA of the 10 PDI dimensions and the three measures of psychopathology (CES-D, PSI and BSI) were also added one by one into model two of the hierarchical regression model. None of these factors or measures accounted for any additional variance in Emotional Availability at Time 2 beyond that explained by Emotional Availability at Time 1.

The variance in Emotional Availability at Time 2 accounted for by Enmeshment and Supportive Presence was further examined by exploring which of the five Emotional Availability scales were being predicted. Hierarchical regression analyses were conducted with each of the EA scales at Time 2 looked at in turn as

the dependent variables. In the first model, social exclusion score and corresponding EA scale at Time 1 were entered, and in the second, each of the 10 PDI dimensions in turn. The three factors were also added one by one into model 2 of the regression model. Table 12 shows that Factor 1 at Time 1 (Lack of Enjoyment) could predict the EA scale measuring Child Responsiveness at Time 2 controlling for Child Responsiveness score at Time 1. The final model accounted for 41% of the variance in Child Responsiveness at Time 2, $F(3,53) = 12.76$, $p < .001$.

Table 12. Hierarchical Multiple Regression Analysis predicting Child Responsiveness at Time 2.

	Coefficients			
	Unstandardised		Standardised	Model
	B	*SE B*	β	R^2/ $\mathbf{R^2\Delta}$
Model 1				**.37*** **
Social exclusion	-.39	.09	-.52***	
Child Responsiveness Time 1	.13	.09	.18	
Model 2				.41/**.05***
Social exclusion	-.30	.10	-.40**	
Child Responsiveness Time 1	.11	.09	.14	
Factor 1 Lack of Enjoyment	-.09	.04	-.26*	

* $p < .05$. ** $p < .01$. *** $p < .001$.

Enmeshment and Supportive Presence at Time 1 predicted two of the Emotional Availability scales at Time 2; Child Responsiveness and Child Involvement. In order to reduce the chances of these two PDI dimensions sampling the same variance both dimensions were entered into a hierarchical regression analysis with the most significant predictor added in the second step of the model and the other dimension in the third model. In the first model, social exclusion score and the EA scale of interest at Time 1 were entered. Table 13 shows that when

Supportive Presence was added in to the model at step two, an additional 7% of the variance in the Child Responsiveness scale at Time 2 could be accounted for beyond that predicted by Child Responsiveness at Time 1, $F(4,53) = 14.08$, $p < .001$. However, model 3 was not significant, indicating that the variance accounted for in Child Responsiveness by Enmeshment was shared by the variance explained by Supportive Presence. When Supportive Presence was controlled for, the predictive value of Enmeshment was lost.

Table 13. Hierarchical Multiple Regression Analysis predicting Child Responsiveness at Time 2.

	Coefficients			
	Unstandardised		Standardised	Model
	B	*SE B*	β	R^2/ **$R^2\Delta$**
Model 1				**.37*** **
Social exclusion	-.39	.09	-.52***	
EA Responsiveness Time 1	.13	.09	.18	
Model 2				.44/**.07***
Social exclusion	-.34	.09	-.44***	
EA Responsiveness Time 1	.11	.09	.14	
Supportive Presence Time 1	.29	.11	.29*	
Model 3				.47/**.02**
Social exclusion	-.29	.09	-.38**	
EA Responsiveness Time 1	.14	.08	.18	
Supportive Presence Time 1	.25	.11	.25*	
Enmeshment Time 1	-.22	.14	-.17	

* $p < .05$. ** $p < .01$. *** $p < .001$.

A similar hierarchical regression analysis was conducted with Child Involvement as the dependent variable. In the first model, social exclusion score and Child Involvement at Time 1 were entered, in the second, Enmeshment (as this was the stronger predictor of Child Involvement) and in the third, Supportive Presence. Table 14 shows that when Enmeshment was added in to the model at step two, an additional 9% of the variance in the Child Responsiveness scale at Time 2 could be accounted for beyond that predicted by Child Involvement at Time 1, $F(4,53) = 8.74$, $p < .001$. However, when supportive presence was added to the model at step 3 no additional variance in Child Involvement was accounted for above that caused by Enmeshment.

Table 14. Hierarchical Multiple Regression Analysis predicting Child Involvement at Time 2

	Coefficients			
	Unstandardised		Standardised	Model
	B	*SE B*	β	R^2/ $\mathbf{R^2\Delta}$
Model 1				**.24****
Social exclusion	-.39	.10	-.36**	
EA Involvement Time 1	.17	.10	.22	
Model 2				.33/**.09****
Social exclusion	-.17	.11	-.22	
EA Involvement Time 1	.22	.10	.28*	
Enmeshment at Time 1	-.44	.16	-.34**	
Model 3				.38/**.04**
Social exclusion	-.14	.10	-.18	
EA Involvement Time 1	.18	.10	.24	
Enmeshment Time 1	-.36	.16	-.27*	
Supportive Presence Time 1	.25	.13	-.24	

* $p < .05$. ** $p < .01$.

Maternal representations as mediators of the relationship between maternal psychopathology and Maternal Emotional Availability

Enmeshment and Supportive Presence were considered as potential mediators of the relationship between maternal psychopathology and EA at Time 2. A maternal psychopathology aggregate score was computed to reduce the risk of Type I error in conducting multiple median pathway analyses for each of the three measures of maternal psychopathology. The first mediation analysis including Enmeshment as the mediator was not a valid analysis as it did not meet all of Baron and Kenny's (1986) conditions for mediation analysis. These conditions specify that a variable functions as a mediator only when: (a) variations in levels of the independent variable significantly account for variations in the presumed mediator (i.e., Path a), (b) variations in the mediator significantly account for variations in the dependent variable (i.e., Path b), and (c) when Paths a and b are controlled, a previously significant relation between the independent and dependent variables is no longer significant. The second mediation analysis including Supportive Presence as the mediator was near significance. Figure 7 illustrates that the standardised regression coefficient between maternal psychopathology and maternal Emotional Availability at Time 2 decreased substantially but not significantly when controlling for the effect of Supportive Presence. The other conditions of mediation were met (Baron & Kenny, 1986). The mediational analysis was not quite significant (β = -.16, p = .11) suggesting that the effect of the Supportive Presence representation is not strong enough to fully mediate the relationship between maternal psychopathology at Time 1 and maternal Emotional Availability at Time 2. A larger sample is needed to explore this potential mediation effect further.

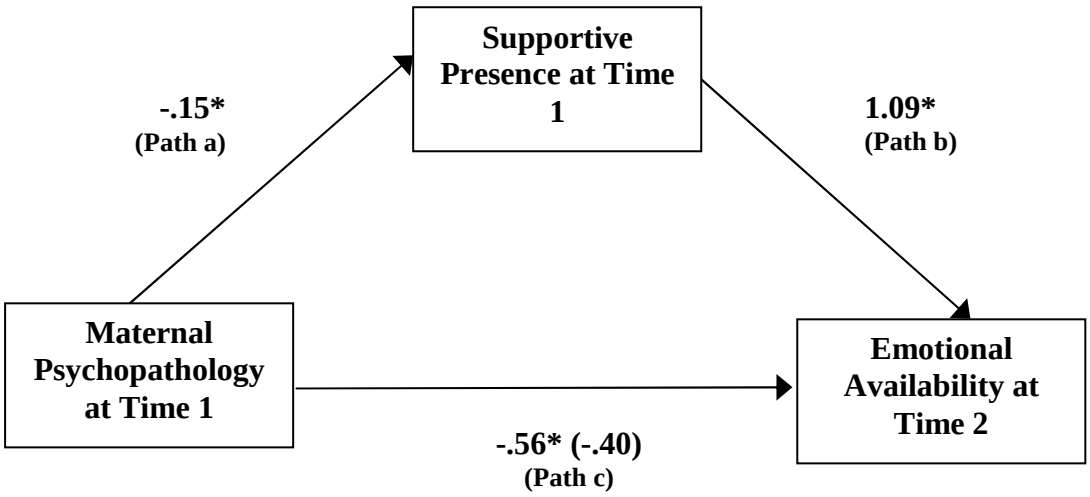

Figure 7. Standardised regression coefficients for the relationship between maternal psychopathology and emotional availability as mediated by Supportive Presence. The standardised regression coefficient between maternal psychopathology and emotional availability controlling for Supportive Presence is in parenthesis.

Discussion

The current study examined the change and stability of maternal representations during a 12 month period in early motherhood within a socially deprived clinical and non clinical sample. The 10 PDI coding system was found to be a valid and meaningful tool in firstly identifying those mother-infant dyads at risk, and secondly in mapping the trajectory of change in maternal representations over the 12 month study period. The dimensional nature of the 10 PDI coding system brought to the awareness of the coder the subtle qualities of a mother's narrative that may be indicative of future disruption in the mother-infant relationship. The implications of these findings would suggest that early interventions should target those mother-infant dyads that present with problematic representations to prevent further threat to their developing relationship.

Associations Between Maternal Psychopathology and Maternal Representations

Maternal psychopathology at Time 1 and Time 2 assessment was found to be concurrently associated with more evidence of emotional distress, hostility (both in behaviour and experience of child) and feelings of helplessness in maternal narratives. Helplessness is the product of deregulation in the information-processing system and leaves the mother feeling bereft of strategies to integrate and regulate her own emotional needs and that of the child (George & Solomon, 1996). The coexistence of helpless and hostile states of mind has been similarly identified by (Lyons-Ruth et al., 2005; Lyons-Ruth, Bronfman, & Atwood, 1999; Lyons-Ruth, Yellin, & Melnick, 2003). They define the Helpless subtype as those maternal narratives that have a pervasive theme of fearfulness and helplessness. In the current

study, mothers scoring highly on the 10 PDI helplessness dimension were those who reported feeling a lack of control over their lives and a sense of victimisation. George and Solomon (2008) have proposed that these emotions can occur when the mother's caregiving representation is activated. It is possible that the enhanced levels of stress experienced by mothers with mental health problems can weaken the defensive strategy of segregating these painful memories of their own caregiving experiences from consciousness. This same underlying process may also explain why the mothers with mental health problems had a greater prominence of emotional distress in their narratives. These mothers were those who were preoccupied with their own struggles to contain their own feelings. The cognitive filter through which depressed mothers view their interactions with their infants can result in failures in the parental role being retained in memory, further strengthening a mother's feelings of helplessness and emotional distress (Goodnow, 1988; Dix, 1991; Porter & Hsu, 2003).

The Hostile subtype in Lyons-Ruth and colleagues (2005) theory of Hostile – Helpless states of mind is characterised by negative descriptions of the attachment figure and the use of darkly humorous language. Hostility on the 10 PDI was measured by two independent dimensions that aimed to separate maternal experience and maternal behaviour. Mothers with mental health problems were more likely to both use negative language to describe their child and report negative behaviour towards their child. Furthermore, these maternal narratives were characterised by mocking or teasing of the child similar to that described by Lyons- Ruth and colleagues as dark humour (2005). The current study findings are consistent with the predictions that mothers with mental health problems are more inclined to misinterpret infant behaviour as intentional acts of hostility (Dix, 1991). Attributions of malevolent intent also appear as a key feature in classifying distorted

representations in the WMCI (Zeanah et al., 1994; Benoit et al., 1997a). It could therefore be concluded that the negative affect associated with maternal psychopathology can bias increased negative expectations, perceptions and evaluations of infant behaviour. The Helpless-Hostile states of mind are known to capture features of narratives that are associated with infant disorganisation (Lyons-Ruth et al., 2005; Lyons-Ruth et al., 1999; Lyons-Ruth et al., 2003). It is highly possible therefore that the 10 PDI could also have predictive validity in identifying those infants at risk of future disorganised attachment.

Maternal narratives that were lacking in descriptions of supportive presence were a distinguishing feature of mothers with mental health problems and may relate to a mother's difficulty to attend to the emotional needs of her infant when preoccupied with her own internal mental state. In order to score highly on the supportive presence dimension of the 10 PDI mother's needed to describe examples of when they had appropriately contained and regulated the emotional needs of their infant. Furthermore, the coder needed to be convinced that accounts of emotional exchanges between mother and child were authentic and affectionate. Maternal psychopathology may constrain the mothers ability to provide this level of supportive presence to her child as is this is already known to interfere with maternal sensitivity (Trapolini et al., 2008) and emotional availability (Field et al., 1990; Field et al., 1988; Cohn, 1983). Maternal depression in particular, predicts those mothers who have difficulty responding sensitively to their child and who struggle to engage in appropriately structured interactions (Easterbrooks et al., 2000).

Contrary to predictions, a mother's descriptions of mutual enjoyment were not found to be significantly associated with maternal psychopathology. Previous findings of depressed mothers having decreased capacity to experience pleasure and

enjoyment within the caregiving role were not replicated in this study (Trapolini et al., 2008). However, the 'Lack of Enjoyment' factor which included Mutual Enjoyment as one of the components was found to positively correlate with all three measures of psychopathology at Time 1 and with parental stress and symptoms of distress at Time 2.

Change Over Time in Maternal Representations, Psychopathology, Reflective Functioning and Mother-Infant Relationship.

Overall, adaptive change was observed in the full sample over the 12 month study period, characterised by a move towards less negative maternal representations as measured by the 10 PDI, lower levels of maternal psychopathology and increased maternal emotional availability. More specifically, hostile experiences of infant and hostile behaviour were found to reduce over time, along with mother's feelings of helplessness, emotional distress and fearful affect. This finding can perhaps be explained by mothers having a growing sense of ease and comfort as the infant becomes more socially responsive (Porter & Hsu, 2003). Fogel (1982) has shown that infant's rate of smiling increases fourfold between the 2nd and 6th month of life. In addition to the advent of smiling, infants in the first year of life develop an increasing repertoire of social cues such as sounds and movements that are more overtly distinguishable to the mother as communications of need, pleasure or dislike. The experience of a developing relationship where mother and infant and able to positively influence each others affective state is likely to be reinforcing for both parties.

Adaptive change over time was also found by Scott and Hill (2001) who observed that mothers showed a stronger recognition of the importance of warmth in

their relationship with their infant and showed a greater awareness of the need to avoid punitive and coercive interactions between pre-natal measurement and six months post partum.

Contrary to predictions adaptive change over the 12 month period was more rather than less pronounced in mothers that were recruited into the study with mental health problems compared to the non-clinical group. Furthermore, two of the study measures, namely parental stress and reflective functioning, were found to have adaptive change in the clinical group, but no change or even maladaptive change in the non-clinical group. With regard to reflective functioning, the results would suggest that the mothers in the clinical group at Time 2 had overtaken the mothers in the non-clinical group in their ability to mentalise about the internal experience of their infant. This is unexpected given the literature that maternal psychopathology interferes with a mother's capacity to understand her own and her infant's behaviour in terms of underlying mental states (Fonagy, Steele, Steele, Moran, & Higgit, 1991).

One could speculate, that the therapeutic interventions that some of the mothers received in the clinical group may underpin the pronounced improvements in this group. Treatments with a focus on transference issues such as Parent-Infant Psychotherapy have been found to contribute to higher levels of reflective functioning (Toth, Rogosch, & Cicchetti, 2008). Similarly, a number of the parenting interventions likely to have been available to the mothers in the clinical group (e.g. Mellow Babies, Solihull Approach Parenting, Incredible Years Baby/Toddler Parenting Programmes) will have had an explicit focus on the concept of mentalising as a tool to help mothers interpret their infant's behaviour as a communication of their internal mental state and need. The knowledge and experience gained from attending these parenting programmes may have facilitated change in the mother's

reflective functioning capacity to a level that is equal to or beyond that of mothers who had not received parenting and/or therapeutic input. Alternatively it is plausible that the natural process of recovery and self healing may have encouraged those mothers who had psychological problems to be more reflective of their interactions with their child and feel motivated to repair any damage caused to this relationship.

However, it is possible that the findings of adaptive change in parental stress and reflective functioning in the clinical group, but no change or even maladaptive change in the non-clinical group could collectively be explained by regression to the mean. This is the name given to the phenomenon that high (or low) scores on a measurement at first measurement tend to be followed by less extreme measurements at follow up (Bland & Altman, 1994; Barnett, van der Pols, & Dobson, 2005). If the results are indeed due to this statistical artefact, it becomes difficult to distinguish real change from that which would be expected due to this natural variation.

There were two maternal representations measured by the 10 PDI that appeared to be fairly stable over time. Idealised and enmeshed/role reversed representations were relatively impervious to change, particularly in the clinical sub-sample. Idealised maternal narratives were those which presented with an overly positive description of the mother-infant relationship that was defensive of any negative affect felt by the mother or child. The quality of these accounts felt unauthentic in nature. This defensive strategy enables 'ideal' images to remain accessible to consciousness, thereby protecting the mother from confronting the reality of her interactions with her child. It is concerning that there is no amelioration of these idealised representations over time as these mothers are more likely to neglect their infant's actual experience of the world and may interact in an intrusive and overwhelming manner (Wain, 2010). Maternal narratives classified as distorted

on the WMCI (Zeanah et al., 1994) can also feature indications that mothers have an unrealistic perception of their child.

It is also of concern that enmeshed and role-reversed representations appear to persist throughout the study period. Similarly, the WMCI classifies role-reversed representations as indicative of risk, as these parents have been found to have little insight of the negative impact these representations can have on the child's development (Benoit et al., 1997a). These mothers describe a real difficulty in viewing their child as a distinct individual. They are also likely to look to their child to fulfil developmentally inappropriate caregiving roles. It could be reasonably assumed that evidence of role-reversal in maternal representations could be translated into role-reversed behaviour between mother and child. Role-reversal in toddlerhood is associated with attachment disorganisation in the infancy period (Macfie, Fitzpatrick, Rivas, & Cox, 2008). It is possible therefore that those infants that at Time 1 would have been classified as disorganised in their attachment style (Main, Goldwyn, & Hesse, 2003) and were already beginning a role-reversed relationship in the eyes of their mothers which continued to be evident at Time 2.

The resistance to change of idealised and enmeshed/role-reversed representations is consistent with the finding that narratives classified as distorted on the WMCI (which include both these representations) are low on 'openness to change' (Benoit et al., 1997b). The openness to change scale indicates the degree to which the parent is able to flexibly accommodate new information about the infant, parenting, and the relationship with the infant. Therefore, parents scoring low on this scale are likely to actively resist information that may contradict or challenge their idealised and/or role reversed perceptions of their child. The current study reiterates the 'fixedness' of idealised and enmeshed/role-reversed representations.

Lastly, narratives that demonstrate role reversal and glorification of the child are akin to what George and Solomon (2008) refer to as constriction in the mother's segregated system. This results in all experiences of caregiving and associated affect being blocked from conscious awareness. The mother's representations of her child become merged with that of her own and any negative affect is defended against. This again results in the mother seriously neglecting the infant's needs and actual experience of the world.

Maternal Representations as Predictors of Future Mother-Infant Relationship

The quality of the mother-infant relationship at the end of the 12 month study period as measured by Emotional Availability was successfully predicted by two of the representations measured by the 10 PDI dimensions at Time 1; Enmeshment and Supportive Presence. These predictions significantly accounted for variance in Emotional Availability above and beyond the influence of Emotional Availability at Time 1. Contrary to predictions, maternal psychopathology at Time 1 was not found to predict Emotional Availability at Time 2 after controlling for the effect of Emotional Availability at Time 1. Similarly, Ziv et al. (2000) found no association between maternal depressive symptoms and indicators of emotional availability in infancy.

Mothers who described their representations and relationship with their infant at Time 1 as one that was characterised with features of enmeshment and role reversal were found to receive lower scores on the emotional availability summary scale at Time 2. Further examination of the independent EA scales revealed that Enmeshment at Time 1 was predicting the EA scale called 'Child Involvement' at Time 2. In order to interpret this relationship, it is necessary to make explicitly clear

what defined the Enmeshment/Role reversal dimension and what the underlying meaning is behind this construct. In the 10 PDI manual (Wain, 2010) the Enmeshment part of the dimension was defined as “boundaries between parent and child appear to be blurred in the parent’s representation. The parent may present themselves and their child as the same, in terms of personality characteristics, feelings or behaviour” (pg 163). Enmeshment at a less extreme level on this dimension can be characterised by a sense of over protection of the child and an expression of the difficulties in leaving the child with other people. Furthermore, the mother may report enjoying the knowledge that their child wants and misses them in their absence. At a more extreme level of enmeshment there may be indications in the mother’s narrative of having a bizarrely attuned relationship with her infant in which she and her infant are able to “read each other’s minds”. Furthermore mothers may talk about how her infant feels or thinks without recognition that this is an estimated guess.

Enmeshment is considered to be a subtype of boundary dissolution which also includes role-reversal, intrusiveness and over-protectiveness (Jacobvitz, Morgan, Kretchmar, & Morgan, 1991). Role reversal formed the other part of this dimension (Wain, 2010) and includes mothers who “appear to struggle with the parental role and find it difficult to allow the child to be a child” (pg 163). At a moderate level, role reversal can be characterised in the 10 PDI manual as the mother seeing the infant as a friend or confidante whereby the mother reports needing the infant more than the infant needing them. At a more extreme level, the mother may explicitly describe her infant in a developmentally inappropriate caregiver role or as a spousal or sexual partner.

Theoretically, it is unsurprising that maternal representations and behaviour such as enmeshment, role-reversal and maternal intrusiveness are associated with lower child involvement (Biringen et al., 1998). A mother who has a representation of her child characterised by themes of enmeshment may translate this into behaviours that limit the child's opportunity to take initiative and may discourage tasks that allow the infant to develop autonomy and individuation (Sroufe, Carlson, Levy, & Egeland, 1999). Mother-infant interactions that received a low score on Child Involvement at Time 2 were characterised either by the infant avoiding and making few attempts to engage the mother in play or the infant being over-involving of the mother through insisting that they cannot not play on their own and constantly seeking physical contact.

The findings of the current study suggest that indications of enmeshment and role reversal in maternal narratives in early motherhood can predict those infants who at 12 month follow up will have difficultly in optimally engaging their mother in observed mother-infant interactions. If role-reversal in maternal representations does map on to role-reversal in mother-infant behaviour, then early identification of this stylistic quality could highlight those relationships that could be indicative of emerging attachment disorganisation (Main & Solomon, 1986). Mothers of these infants describe feeling helpless to protect their infant from danger and depend upon their infant to assert control over the relationship between them (Solomon & George, 1996). The current study has highlighted that enmeshed and role-reversed representations appear to be particularly resistant to change over time, which has a wide reaching impact in terms the ongoing socio-emotional development of the child. In pre-school years, disorganised attachment behaviour can manifest itself in several types of controlling behaviour, for example inappropriate caregiving and

punitive control (Easterbrooks et al., 2000; Main & Solomon, 1986). The longer term effects of early role-reversal and attachment disorganisation in the mother-infant dyad have been well researched with findings that suggest these infants can develop later social problems characterised by difficulties with peer relationships and self-regulation (Macfie et al., 2005), problems with individuation (Sroufe & Rutter, 1984) and attentional difficulties (Macfie et al., 2005; Power & Shanks, 1989).

Supportive Presence was the other 10 PDI dimension that at Time 1 predicted the EA summary score at Time 2, controlling for the effect of EA at Time 1. Closer examination of the EA scales revealed that it was the 'Child Responsiveness' scale that was predicted by Supportive Presence at Time 1. Supportive Presence in the 10 PDI manual (Wain, 2010) was defined by the mother's descriptions of her ability to contain and regulate their infant's affect and emotional wellbeing. This included the ability to recognise and understand the infant's needs and encourage the infant's age-appropriate learning and development. Mother's scoring high on this dimension at Time 1 would have been able to provide examples of affectionate exchanges with their infant. Furthermore, they understand their infant's need for a balance between exploration, comfort and safety. Although the supportive presence dimension was not measured by direct observation of the mother-infant relationship, the quality of the maternal narratives when describing incidences of support was taken as the best aggregate of the mother's ability to emotionally regulate her infant.

The current study found that mother's ability to provide narrative examples of support can predict the responsiveness of her child a year later, such that more optimal levels of maternal support can predict greater child responsiveness at 12 month follow up. This is in keeping with the notion that the child responsiveness scale closely maps on to maternal sensitivity in the mother-infant relationship

(Biringen et al., 1998). An infant scoring high on the responsiveness scale will show pleasure and eagerness in attending to the mother's bids for interaction. These infants are also able to display an age appropriate balance between responding to the mother and engaging in autonomous activities. It makes intuitive sense that an infant displaying these characteristics at the 12 month follow up assessment will have had mothers who were higher scorers on the Supportive Presence dimension at Time 1. These infants will have experienced the mother-infant relationship as safe, warm and congruent with their needs for both protection and exploration. Infants in the clinical group had significantly lower responsiveness scores at Time 2. Maternal psychopathology at Time 1 is therefore likely to have reduced the mother's ability to be emotionally sensitive (Trapolini et al., 2008) and may have distorted maternal representations of support at this crucial time.

It was hypothesised that the maternal representations that were found to be predictive of EA at Time 2 might act as potential mediators of the relationship between maternal psychopathology and EA at Time 2. Mediational analysis indicated that Supportive Presence was near significance as a mediator of this relationship. In other words, a mother with high levels of distress who is, nonetheless, able to consider herself as important for providing a solid emotional environment for her baby, can potentially protect the quality of their relationship from the deleterious effects of her mental illness. A larger sample is needed to further examine this effect.

Lastly, the 10 PDI dimensions that clustered together to represent a broader dimension of 'Lack of Enjoyment' factor was also found to predict the EA summary score at Time 2 when controlling for that effect of EA at Time 1. It was found that maternal narratives that were characterised by little enjoyment in the mother-infant relationship (e.g. low mutual enjoyment, low supportive presence, increased

hostility) could significantly predict lower EA summary scores at 12 month follow up. Maternal narratives of this nature were more characteristic of those mothers in the clinical sub-group where their mental health problems meant that they had reduced ability to experience pleasure and struggled more to be emotionally supportive to their infant.

Limitations and Future Research

Despite the strengths of this study, there are some limitations which require consideration. Firstly, retention of the mother-infant dyads in the study over the 12 month period was sometimes difficult to maintain, and despite significant efforts, 12 of the mothers dropped out before follow the up assessment. The data set was further depleted by a number of mothers not giving consent at Time 2 to be videoed with their child. This happened more predominantly in the clinical group which resulted in missing Emotional Availability data (nine in clinical group and four in non-clinical group). The motives or concerns of those mothers choosing to withdraw consent for video mother-infant behaviour could be questioned. One hypothesis might be that these mother-infant dyads were the most at risk causing mothers to be fearful of scrutiny if their behavioural interactions were to be observed. Within the data set there was also some missing data from the measures of maternal psychopathology at both time points. It is unclear whether these mother's had refused consent for this part of the assessment or whether questionnaires had not been returned. Lack of direct access to participant information meant that this issue could not be explored further by the author as the study re-used data collected for other research projects.

A second limitation was a number of demographic misrepresentations within the sample as a whole and also between the clinical and non-clinical sub sample. A

large proportion (78%) of the full sample were the first born infants to their mothers at the time of entering the yearlong study. This proportion did not differ significantly between the clinical or non-clinical sub samples. It was unsurprising that the demographic correlations indicated that the fewer children a mother had the more emotionally available they were to their infant and the higher their reflective functioning capacity. A large influencing factor in this association is likely to be that mothers with one infant have more time to devote to understanding, attending to, and interacting with their infant. The findings of this study therefore may not accurately reflect the experiences of the mother-infant relationship where the infant is born into a family containing one or more siblings.

The educational status of the mothers in the sample was a demographic variable that was poorly matched between the clinical and non-clinical sub samples. A postgraduate qualification was held by 45% of the non-clinical sample compared to 5% of the clinical sample. Furthermore, approximately a third of the clinical sample had no qualifications or GCSE qualifications as their highest education level reached. Both the 10 PDI scoring system and the RF scale are language based measures that require a certain level of literacy skill and intellectual ability to achieve optimal scores. In order to receive a high score on some of the 10 PDI dimensions and RF scale, the mother needs to richly describe the complexity of their own maternal representation and also how this may influence their interactions with their infant. A mother who has had less access to higher levels of education may have lower emotional literacy levels and be less equipped with a vocabulary that accurately translates her felt experience into words. The more highly educated mother's in the non-clinical group are likely to have had an advantage when

communicating the intricacies of their maternal representations and relationship with their infant and were furthermore able to support these with well defined examples.

A third limitation of this study and one that is hard to avoid is the blindness of the coders to sub-sample and time point. Coders were aware that the sample consisted of both those mothers with and without mental health problems, but this information was not released with each transcript. However, it often became apparent in narratives which mothers were from the clinical sample because of, for example, overt displays of affective arousal or direct reference to the support or therapy they had been receiving. Furthermore, there were frequent indicators of whether the PDI's transcripts were from Time 1 or Time 2 intervals due to the references that were made to the developmental milestones that the child had reached or mothers making explicit reference to remembering the questions from their previous interview. It is difficult to eliminate this problem without losing both the important content and qualitative sense of mother's narratives.

The 10 PDI coding system (Wain, 2010) was found to be an accessible and reliable tool to measure parental representations. However, this previous piece of research emphasised the need to extend use of the measure to other health professionals in order to strengthen the utility of the coding system as a universally applicable measure. This is still a necessary next step as both the coders in this current study were working from a psychological grounding, although did not have expertise in child psychotherapy or developmental psychopathology.

The principal component analysis used as a data reduction technique supported the notion that the 10 PDI dimensions might be usefully conceptualised in terms of three underlying dimensions. Future work may benefit from exploring if purer measures of theoretically derived constructs could be devised. However, the

purpose of this exploration in the current study was purely data reduction and not to devise a new instrument. The detail of each maternal representation was therefore preserved by considering each dimension independently.

Clinical Implications

There are a number of clinical implications that arise from this study. The 10 PDI coding system has the potential utility to firstly identify those mother-infant dyads at risk, and secondly predict the trajectory of change over early motherhood. The use of the 10 PDI has enabled a dimensional profile to be created from maternal narratives that is characteristic of mothers with mental health problems. This study has suggested that certain maternal representations, namely, those characterised as enmeshed, role reversed and idealised, can be impervious to change even in those mothers who may have received therapeutic intervention. The dimensional nature of the 10 PDI enabled discrete subtleties of maternal narratives to be identified and coded, which crucially allowed for future predictions to be made about the quality of mother-infant relationship a year later. Findings of this study would encourage the early detection of maternal representations that have features of enmeshment and role reversal, as these appear to be more resistant to change and can be predictors of future disruption in mother-infant interactions.

This study confirms the importance of early intervention provisions that can identify those families at greatest risk of multiple disadvantage. This is a topic of high interest in a recent Government report that has highlighted the desperate need for Early Intervention to play more of a central role in UK policy and practice. It states that the culture of late intervention is both expensive and ineffective (Allen, 2011). A recommendation from this current study would be to educate parents at

risk about the potential influence that their beliefs and representations of their infant can have on shaping their developing relationship. Interventions would need to sensitively inform parents about the wide reaching impact that negative representations can have on the future quality of their relationship with their child.

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Part 3: Critical Appraisal

Critical Appraisal

This section details a critical appraisal of the empirical research presented in part two of this volume, "Change in maternal representations and change in maternal behaviour in early motherhood: A 1-year follow along study". This critical appraisal is split into two main sections, the first considering the methodological issues arising from the research, and second, my personal reflections of the overall research process. The methodological section begins with an exploration of the potential strengths and limitations of re-using research data. It then considers the obstacles that can be faced with recruiting a non-biased sample and defining sub samples based on measures of mental health. There is the acknowledgement of my involvement in the development of the 10 PDI coding system and how this highlights the need to now further validate the measure on wider groups of health professionals. Lastly, I bring into question the risk of my own idiosyncratic bias over the year of interview coding which may compromise internal validity. The personal reflection section presents my concerns about using language based coding systems such as the 10 PDI and Reflective Functioning with mothers who may not be native English speakers, and lastly, my curiosities about the potential impact that may have been experienced by some mothers as participants in this research.

Methodological Considerations

Re-using data.

The current study re-used research data from other established projects. There are a number of clear advantages of using such data, especially for someone in my position as a trainee on a D.Clin.Psy. course. Firstly, I was given access to a large

and very rich source of data which would not have been feasible to collect as the sole researcher. The nature of my study meant that I needed baseline data to represent the early months of motherhood, and also 12 month follow up data. It would have been extremely time consuming and costly to collect this data over the period of a year, and realistically would have required significant organisation to stagger the assessments according to the study design.

A second merit of re-using data is the maximisation of resources and knowledge. Within the wider research community in clinical psychology there is the expectation that scientific research should parallel clinical practice and that these two areas of our work should mutually influence each other. The process of research from the early stages of literature searching, to applying for ethical approval and on to recruiting of participants can be a lengthy process. In the current financial climate of the NHS where there is even more of a pressure to legitimise spending, it could be argued that pooling of data sets for multiple purposes could be an efficient way of reducing the amount of time and money allocated to the early stages of research. Furthermore, within our professional code of practice, clinical psychologists are reminded that research should maximise the benefits and minimise any potential risk to our research participants (British Psychological Society, 2005). Re-using data can enable further extrapolation of research findings provided by participants without needing to bombard the samples of interest in the community with repeat recruitment drives and assessment appointments. In the field of psychology there has been an historic reticence for the sharing of raw data compared to other research communities (Ausina & Mate, 2010). This is in contrast to other research fields such as the neuroscience community where they have launched a Neuroscience Database Gateway to allow the sharing of Neuroimformatics modelled on the success of the

bioinformatics databases (Liu & Ascoli, 2007). Encouraging more practices of recycling and secondary analyses of raw data could provide increased access to large data sets that can be mined to explore experimental hypotheses. An example of an existing data set being used in such a way was illustrated by Friedman (2007) who examined a number of research reports using the longitudinal data collected by the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (SECCYD).

However, there are a wide variety of limitations that arise from re-using data (Law, 2005). Some of these will be considered in relation to methodological and ethical issues. The pooling of data for multiple research hypotheses could result in a sub-section of research literature developing hypotheses, theories, and measures that are characteristic of a relatively homogenous sample of participants. The generalisability of this research to National and International arenas could therefore be questionable. An example of this in my study could be a large body of literature about the early mother-infant relationship all emerging only from socially deprived areas of London. In addition, this poses a significant threat on future meta-analyses which by incorporating multiple studies using a similar data set, would inadvertently over-represent a group of participants.

A somewhat controversial ethical issue that arises from re-using data is in relation to informed consent (Kalman, 1994). This can be viewed as more problematic in studies that re-use information that is qualitative in nature compared to the numeric data that is shared within the quantitative research communities (Parry & Mauthner, 2004). It could be argued that the transcripts used in the current study, although used to obtain numeric dimensional scores, are more similar in quality to the information held by qualitative communities. The ethical applications (details on

separate CD submitted with this volume), information sheet and consent forms for the participants (see Appendix F and G respectively) were all designed and written with the primary research project in mind. Although the participants were informed in the information sheet that "the information we get from this study will help us in the future to provide the best services to other families with young children experiencing difficulties" (RCT information sheet, Appendix F), it could be argued that participants are not informed to what degree their data may be re-used. The difficulty of course is that often the researchers themselves do not have a clear picture of exactly how the data may be used for secondary purposes. This issue is one that is hard to resolve, but perhaps a compromise can be reached between us as researchers taking efforts to carefully anonymise and remove any identifying information, (British Psychological Society, 2005) and the participants being reassured that by taking part "you will know that you are making a difference for others like you" (RCT information sheet, Appendix F).

Sampling bias.

A critique of this current study and also the research projects from which the data was pooled is the possibility of sampling bias and misrepresentation in participant groups. The current study included mothers who had a mental health problem and were from a socially disadvantaged community, and mothers who did not have a mental health problem who were matched for similar level of social deprivation. It is difficult to know if these two samples were truly representative of mother-infant dyads faced with these life experiences.

Mothers in the clinical sample with mental health problems were recruited as a result of either presenting themselves to health professionals in an effort to seek

help, or by self-referral having decided that they were not feeling as they had "expected", were feeling "sad", "anxious" or "unpredictable" (see Appendix D for recruitment poster) in their new role of motherhood. These mothers, therefore, were able to acknowledge that firstly their affective experience was below what was expected in the early months of motherhood, and secondly, they were motivated to talk about it. There may be many more mothers in the wider community who have no awareness of their poor mental state and how this could negatively impact upon their developing relationship with their infant.

Mothers in the non-clinical sample who did not have mental health problems would have volunteered themselves having read the recruitment posters in children's centres and mother and baby groups. Information provided to the mothers emphasised that mothers "often find the developmental assessments with their baby very interesting as they learn what the expected developmental milestones are" (Non-clinical information sheet, Appendix F). The mothers choosing to enter the study are likely to have been those who were willing and interested to learn more about their child. This collective sample may again, not be a true representation of the lived experience of a mother and infant exposed to this level of social exclusion.

Defining the sub-samples.

Membership to the clinical or non-clinical sample was defined at the point of entering the study. In order to be considered for the clinical sample certain criteria had to be met for psychiatric caseness on the General Health Questionnaire (Goldberg & Hillier, 1979). Conversely, psychiatric caseness on this questionnaire was an exclusion criteria for the non-clinical sample. In my study, maternal psychopathology was measured and monitored using three measures, the Centre for

Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977), the Brief Symptom Inventory (BSI) (Derogatis & Melisaratos, 1983) and Parenting Stress Index (PSI) Short Form (Abidin, 1995). Although it was established that the clinical sub-sample had significantly higher scores on all three of the measures of maternal psychopathology at Time 1 (CES-D, $t(69) = -6.02$, $p < .001$; PSI, $t(68) = -4.64$, $p < .001$; BSI, $t(38) = -4.62$, $p < .001$) and at Time 2 (CES-D, $t(67) = -2.82$, $p < .01$; PSI, $t(68) = -3.17$, $p < .01$; BSI, $t(38) = -3.73$, $p < .01$), these measures were not used to identify those mothers whose scores were in the clinical ranges specified for each measure. For example it has been suggested that scores on the CES-D that are greater than 26 are indicative of major depression (Zich, Attkisson, & Greenfield, 1990). The average CES-D score at Time 1 for the clinical group was a fraction above this cut-off (Mean = 26.23, SD = 10.85) and was below cut-off at Time 2 (Mean = 17.30, SD = 11.06). These scores and the relatively large standard deviations indicate that there was some variety in the extremity of mother's symptoms of depression. Similarly, mother's Global Severity Scores on the BSI could have been examined in terms of which mothers were meeting the recommended clinical cut-off of 0.67 (Swan, Sorrell, MacVicar, Durham, & Matthews, 2004). Splitting the clinical sample data set in accordance with the recommended clinical cut off scores on each measure could have lead to some interesting analyses, but also has the potential to make the data rather unwieldy and further lacking in statistical power. The creation of the psychopathology aggregate score for the purpose of the mediational analysis was one way that the data could be manipulated. However, this technique was avoided in all other analyses as this was considered to be a meaningless amalgamation of distinct mental health constructs. For the purpose of my study, the use of the General Health Questionnaire (Goldberg & Hillier, 1979) as a screening tool for psychiatric caseness

was acceptable as it has been found to be a reliable diagnostic measure in population-based research (Hu, Stewart-Brown, Twigg, & Weich, 2007).

The development and validation of the 10 PDI coding system

I was one of the researchers involved in the original piloting and validating of the 10 PDI (Wain, 2010). As a result I had the benefit of seeing the manual grow and develop through various phases. I was also exposed to the various obstacles that were faced and resolved which ultimately formed an integral part of the manual development. My relative level of expertise with the manual not only put me at an advantage in terms of feeling well practiced at holding all of the 10 dimensions in mind, but also meant that I was able to call upon memories of particular features, words or phrases that had been discussed as characteristic of certain maternal representations. The amount of contact that I had with the author of the 10 PDI is perhaps more than would be expected in the piloting of a new coding system. The opportunity to discuss discrepant scores and hold the author's perspective in mind is quite unusual and really highlights the importance of furthering this research with other coders before firmly claiming that it is an accessible tool for use in multiple disciplines.

Coder/rater drift

The overall process of coding the Parent Development Interviews (PDIs) in this study using the 10 PDI coding system spanned a long period of time. After the piloting phase had been completed, I got to work with coding some of the Time 1 interviews in early December 2010 till late January 2010. I then returned to the task of interview coding in December 2011 and continued until mid March 2011.

Although 33% of the PDI interviews were double coded to test for inter-rater reliability, I was still the primary coder for all 152 PDI interviews. The enormity of this task meant that I had no choice but to spread the coding over a long period of time. This introduced the risk of potential sources of systematic bias that may have compromised the internal validity of my coding. Coder or rater drift applies both to coding information and also the observation of behaviours and can be defined as the implicit changes in code definitions made by observers/raters over time (Smith, 1986). The observers/raters can begin to develop their own idiosyncratic system for classifying what is observed or read through a transcript. This is more likely to occur when raters work alone and when they are fatigued (McLaughlin, Ainslie, Coderre, Wright, & Violato, 2009). It is not uncommon for rater skills to erode over time even when the competence of the rater is certified at training phase (Kobak et al., 2007). However, rater-monitoring programmes can encourage longer-term inter-rater reliability by using follow up training and testing to re-establish rating skills (Warshaw, Dyck, Allsworth, Stout, & Keller, 2001). The reliability and credibility of the 10 PDI would therefore be enhanced by developing adherence criteria for the trained professional to have their coding monitored. This is particularly crucial when encouraging the wider use of the measure amongst multiple professionals who will not have contact with the developer of the coding system.

Personal Reflections

The 10 PDI and Reflective Functioning as language based systems

The method section of the current study indicates that any mothers who were not English speaking were excluded from the study. However, my sense from coding the interviews was that some mothers may not have been native English speakers. As

far as possible I tried to not let this bias my coding on the various dimensions of the 10 PDI. This did not stop me from thinking, however, about how certain subtleties of language may be lost when communicating in a language other than your mother tongue. In my mind, there are dimensions in the 10 PDI, that in order to receive a high score, one needs to richly describe the complexity of their own maternal representation and also how this may influence their interactions with their infant. On the Supportive Presence dimension for example, optimal scores are given to those mothers who are able to clearly define occasions where they have met the emotional needs of their infant that is accompanied by an explicit reference to the affectionate exchange between mother and infant. I would question whether a mother talking in her non-native language would be able to convey the subtle nuances of an intimate exchange with her infant to the same level as a mother who has full access to a wide emotional vocabulary. The brief exert below provides an example of how a mother demonstrates awareness of her infant's mental state but may be at a disadvantage in terms of explaining how she is attuned to the needs of her infant;

"Sometimes when she's not going out or something like that, she'll become a bit moody. I can tell that sort of 'cause she…..she's been all day at home and she needs a bit……I can tell that she wants to do, at the door and "Ok, she wants to go there". And I'll take her to the shops and all that." (413).

My curiosity about the non-native language and more broadly, literacy levels, lead me also to consider if this may also be a confounding variable in Reflective Functioning (RF) coding. RF refers to the ability to understand and anticipate the intentions, thoughts, feelings and desires of ones own mental state and that of another (Fonagy & Target, 1998). However, I would argue that it is one thing to have an understanding of the underlying mental state of another, but quite another to be able

to put this eloquently into words in your non native language. Mothers scoring highly in RF would have been able to demonstrate an awareness that mental states can be ambiguous, can change and de-intensify over time, and that that they can be hidden or disguised (Slade, 2005). Furthermore, high scores on RF are achieved when the mother can demonstrate their awareness of the opaqueness of mental states. These mothers acknowledge the difficulty in being sure of their infant's mental state but are prepared to keep an inquisitive mind as to what it might be. Mental state words and phrases that may orientate the coder to this capacity could be; "I wonder if she/he was thinking…..", "perhaps what he/she was really hoping for was…..", "I imagine she/he experienced it as……", "maybe he/she was trying to communicate that…..". "I was curious to know what was really going on in his/her mind when……..". I again would question if these subtle words which are so crucial in conveying ones high RF capacity are the sorts of words which may be lost in translation. My curiosity in relation to the linguistic requirements for high scores on Supportive Presence (on the 10 PDI) and high RF scores was partially satisfied by the finding that these two measures were indeed highly and positively correlated at Time 1 and Time 2.

Mothers' experience of participating in the study

During the process of reading and coding the mothers' narrative accounts in the PDI's I found myself wondering what it might be like to be asked such questions of the very personal and unique relationship that is shared between mother and infant. My sense from reading the transcripts was that many of the mothers will not have found the questions obscure, difficult or intrusive. These were the mothers that were freely able and well practiced at reflecting upon their own feelings and that of

their infant in a variety of the situations commonly experienced in motherhood. However, for a smaller proportion of mothers I can imagine that the questions were felt to be challenging, confusing and uncomfortable. I think the particular areas of difficulty would have been the questions that asked mothers to talk about a time in the last week when they felt angry (or guilty) then went on to ask "how did you handle your angry (or guilty) feelings" and lastly "What kind of effect do these feelings have on your child? Similarly I imagine that the questions that asked about separation and loss could have been equally as difficult as the mother is asked to describe a time when her and her child are separated. She is then asked "What kind of effect did it have on the child?" and "What kind of effect did it have on you?". For some of the mothers I wonder whether it would have been a somewhat new and bewildering experience to separately consider their infant's emotions. It was my sense from reading the interviews that some mothers seemed defensively unaware that their infant had emotions of their own. Yet other mothers seemed unable to consider that their infant's feelings could be anything other than that of an extension of her own feelings. It was my hope (perhaps rather optimistically) that these sorts of questions, albeit challenging to the mother, may have at least planted the thought that their infant had a distinct internal state that could be influenced by that of its mothers.

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Appendix A: Parenting Programme Evaluation Tool

Evidence Rating Scale

Element IV: Rating Scale

4 MODEL INTERVENTION: The programme is underpinned by a rigorous research design (e.g. a randomised controlled trial) that demonstrates a significant and sustained effect across multiple sites.

Minimum requirements:

- A statistically significant effect verified via appropriate statistical methods and a sufficient effect size (for example Cohen's d, minimum of 0.2) for at least one expected child outcome and/or one parent-child relationship outcome with the target population.
- A sustained positive effect that endures beyond the end of the intervention for at least one year in at least one RCT'.
- At least one successful internal or external replication – i.e. the programme has been found to be effective in randomised controlled trials conducted by the programme developer or an independent investigator in at least two implementation sites.
- The authors have adequately considered the extent to which their findings are valid and generalisable.
- Evaluation findings are collected within the context of an ongoing programme of research and development.
- Observed positive effects are upheld by the majority of the programme's evaluation evidence.
- No negative outcomes.

3 EFFECTIVE INTERVENTION: At least one programme evaluation suggests a strong positive child outcome via a single randomised controlled trial, or other similarly rigorous research design.

Minimum requirements:

- A statistically significant effect verified via appropriate statistical methods and a sufficient effect size (for example Cohen's d, minimum of 0.2) for at least one expected child outcome and/or one parent-child relationship outcome with the target population.
- At least one evaluation: the programme was found to be effective in a randomised controlled trial or a prospective, quasi-experimental research design using well-matched comparison groups conducted by the programme developer or an independent investigator in at least one implementation site.
- The authors have adequately considered the extent to which their findings are valid and generalisable.
- Positive findings are upheld by the majority of the programme's evaluation evidence.
- Evaluation findings are collected within the context of an ongoing programme of research and development.
- No negative outcomes.

2 PROMISING INTERVENTION: A programme with a pre and post research design that has significant effects and uses scientifically validated assessment methods.

Minimum requirements:

- At least one evaluation has observed a statistically significant positive change in at least one child outcome or a parent/child outcome.
- The evaluation design utilised scientifically validated measures which were administered once before and once after the parenting programme.
- The evaluation involved at least 20 families.
- No negative effects were observed.

1 INSUFFICIENT EVIDENCE OF EFFECTIVENESS: A programme with either a pre and post study using insufficient scientific methods, or a descriptive study, that has some effects in expected outcomes.

Minimum requirements:

- The results for the expected child and/or parent-child relationship outcomes are positive.
- The programmes evaluation(s) involved at least one pre and post evaluation or qualitative or quantitative post-intervention evaluation
- No negative effects were observed.

0 NO EVIDENCE OF EFFECTIVENESS

The programme does not meet any of the minimum requirements for higher ratings.

Appendix B: References for outcome studies of Parenting Programmes from the Commissioning Toolkit Website

References for outcome studies of Parenting Programmes from the Commissioning Toolkit Website

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Appendix C: “Parent” Sub-categories and Minor Categories for Parenting Programmes Examined in Literature Review

Table. "Parent" sub-categories and minor categories for total parenting programmes (N = 29), infancy programmes (N=16) and toddler programmes (N=13).

Sub-categories and content items	Total (N=29)		Infancy Programmes (N=16)		Toddler programmes (N=13)	
	N	(%)	N	(%)	N	(%)
Support for parents	3	(10)	2	(13)	1	(8)
- Gaining support	1	(3)	1	(6)	0	(0)
- Accessing resources	1	(3)	1	(6)	0	(0)
Enhancing quality of parental relationship	3	(10)	2	(13)	1	(8)
- Developing communication	1	(3)	0	(0)	1	(8)
- improving relationship happiness	1	(3)	0	(0)	1	(8)
- how to support partner	2	(7)	1	(6)	1	(8)
- promoting collaborative parenting	1	(3)	1	(6)	0	(0)
- impact on relationships	1	(3)	1	(6)	0	(0)
Teaching practical skills to care for infant	8	(28)	5	(31)	3	(23)
- Weening	1	(3)	1	(6)	0	(0)
- Feeding	5	(17)	4	(25)	1	(8)
- Teething	1	(3)	1	(6)	0	(0)
- Holding	1	(3)	1	(6)	0	(0)
- Bathing	1	(3)	1	(6)	0	(0)
- Wetting	1	(3)	1	(6)	0	(0)
- Sleep	4	(14)	3	(19)	1	(8)
- Changing	1	(3)	1	(6)	0	(0)
- Crying	2	(7)	2	(13)	0	(0)
- managing ADHD	1	(3)	0	(0)	1	(8)
- managing developmental disabilities	1	(3)	0	(0)	1	(8)

Sub-categories and content items	Total (N=29)	Infancy Programmes (N=16)	Toddler programmes (N=13)
Enhancing parental well-being	10 (34)	4 (25)	6 (46)
- Nurturing ourselves	3 (10)	0 (0)	3 (23)
- raising parental self-esteem	6 (21)	3 (19)	3 (23)
- identifying parental pressures	1 (3)	0 (0)	1 (8)
- reducing stress	4 (14)	1 (6)	3 (23)
- exercise	3 (10)	1 (6)	2 (15)
- relaxation	3 (10)	0 (0)	3 (23)
Teaching CBT skills	8 (28)	0 (0)	8 (62)
- Thought challenging	1 (3)	0 (0)	1 (8)
- goal setting	1 (3)	0 (0)	1 (8)
- problem solving	5 (17)	0 (0)	5 (38)
- generalising	2 (7)	0 (0)	2 (15)
- self-monitoring	1 (3)	0 (0)	1 (8)
- relapse prevention	2 (7)	0 (0)	2 (15)
- introduction to CBT	1 (3)	0 (0)	1 (8)
Teaching general life skills	5 (17)	3 (19)	2 (15)
- Healthy lifestyle	3 (10)	2 (13)	1 (8)
- safety in the home	3 (10)	2 (13)	1 (8)
- drug awareness and information	3 (10)	2 (13)	1 (8)
- money management	2 (7)	2 (13)	0 (0)
- child protection	1 (3)	1 (6)	0 (0)
- sexual health	3 (10)	2 (13)	1 (8)
- parental responsibility	1 (3)	1 (6)	0 (0)
- citizenship	1 (3)	1 (6)	0 (0)

Sub-categories and content items	Total (N=29)	Infancy Programmes (N=16)	Toddler programmes (N=13)
Educating and training parents	1 (3)	1 (6)	0 (0)
- Numeracy	1 (3)	1 (6)	0 (0)
- written and verbal communication	1 (3)	1 (6)	0 (0)
- IT skills	1 (3)	1 (6)	0 (0)
- Training education and work	1 (3)	1 (6)	0 (0)
Parental emotional regulation	8 (28)	2 (13)	6 (46)
- Managing and containing emotions	7 (24)	1 (6)	6 (46)
- Impact of parent state of mind on child.	1 (3)	1 (6)	0 (0)