Evidence-based interventions for mother-infant dyads in which there are postnatal MHPs

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Structure of paper

Why is infancy important in terms of the development of emotion regulation;

How do parent-infant interactions contribute to the process of affect regulation;

How do maternal mental health problems affect the interaction and thereby the process of affect regulation;

What should mental health professionals be doing?

Affect regulation in infancy

Infants are born unable to regulate their emotional stages

The capacity for emotion regulation occurs through a process known as the ‘dyadic regulation of affect’

Parents play a key role in facilitating this process which needs them to be able to a) attune to their infants different emotional states; b) be able to think about what such a state might mean (reflective functioning); c) respond in a timely way

Two systems involved – parental caregiving and infant attachment (bio-behavioural)

Prevalence and continuity of affect regulation problems

The Copehenhagen Child Cohort Study (n = 6090) found a population prevalence of mental health problems (for example, emotional and behavioural, eating and sleeping disorders) in children aged 1.5 years to be in the region of 18% (Skovgaard 2008; Skovgaard 2010).

Infant regulatory disturbances such as excessive crying, feeding or sleeping difficulties and bonding/attachment problems represent the main reasons for referral to infant mental health clinics (Keren 2001).

In one study, 49.9% of infants and toddlers (aged 12 to 40 months) showed a continuity of emotional and behavioural problems one year after initial presentation (Briggs-Gowan 2006).

Association with later outcomes

Infant regulatory problems have a strong association with delays in motor, language and cognitive development, and continuing parent-child relational problems (DeGangi 2000a; DeGangi 2000b)

An association between difficult temperament, non-compliance and aggression in infancy and toddlerhood (age one to three years)with internalising and externalising psychiatric disorders at five years of age (Keenan 1998).

See also attachment literature

Aetiology

Infant mental health problems have their origins in the child's early relational context (Skovgaard 2008; Skovgaard 2010); and specifically the parent-infant interaction

Two key models to date:

- Social learning model – emphasised 'coercive' cycles, and parenting that escalates bad behaviour (e.g. Patterson 1982);

- Attachment model – focus on 'unresponsive' caregiving during infancy (e.g. Ainsworth & Bell 1970)

Secure or insecure?

Secure (B) – able to use caregiver as a secure base in times of stress and to obtain comfort (55-65%)
Parent responds sensitively most of the time

Insecure: Anxious/resistant (C) – up-regulates in times of stress to maintain closeness (8-10%)
Parent responds intrusively or erratically

Insecure: Avoidant (A) - down-regulate in times of stress to maintain closeness (10-15%)
Parent responds punitively

(A meta-analysis of 2,000 infant-parent dyads based on studies with non-Western language and different cultures found the global distribution of attachment categorizations to be A – 21%, B – 65%, and C- 14%)

Organised or Disorganised?

Disorganised – unable to establish a regular behavioural strategy

- 15 to19% in population sample
- 40% in disadvantaged sample
- 80% in abused sample

Parent is chaotic or frightening

Internal Working Models

Infants begin ‘mapping’ the world from birth;

A key aspect of the environment that is mapped is interactions with primary caregivers;

Internal maps (IWMs) - enable a person to anticipate and interpret another's behaviour and plan a response

Where the caregiver is experienced as a source of security and support, infant develops a positive self-image and expect positive reactions from others;

Infants with non-attuned or abusive caregivers internalise a negative self-image and generalise negative expectations to other relationships

Attachment Outcomes

Secure attachment – more optimal functioning across all domains scholastic, emotional, social and behavioural adjustment, peer-rated social status etc (e.g. Sroufe 2005)

Insecure attachment and disorganised attachment – associated with a range of later problems (van der Voort et al., 2014), including externalising disorders (Fearon et al., 2010), dissociation (Lyons-Ruth et al., 2006), PTSD (MacDonald et al., 2008) and personality disorder (Steele & Siever, 2010)

Parent-Infant Interaction

Parent-infant interaction

Key aspects of early parenting that promote ‘secure’ attachment organisation and development of ‘self’:

Sensitivity/attunement (Woolf, van Ijzendoorn 1997)

Mid-range contingency (Beebe et al 2010)

Reflective functioning (marked mirroring) (Fonagy 2002)/ Mind-mindedness (Meins et al 2001; 2012)

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Sensitivity and Attunement

Parent responds gently and appropriately to infant using voice or touch

Parent response is a) timely; b) appropriate

Sensitivity accounts for around one-third of the variance in terms of attachment security (Woolf, van Ijzenddorn 1997)

Midrange balance

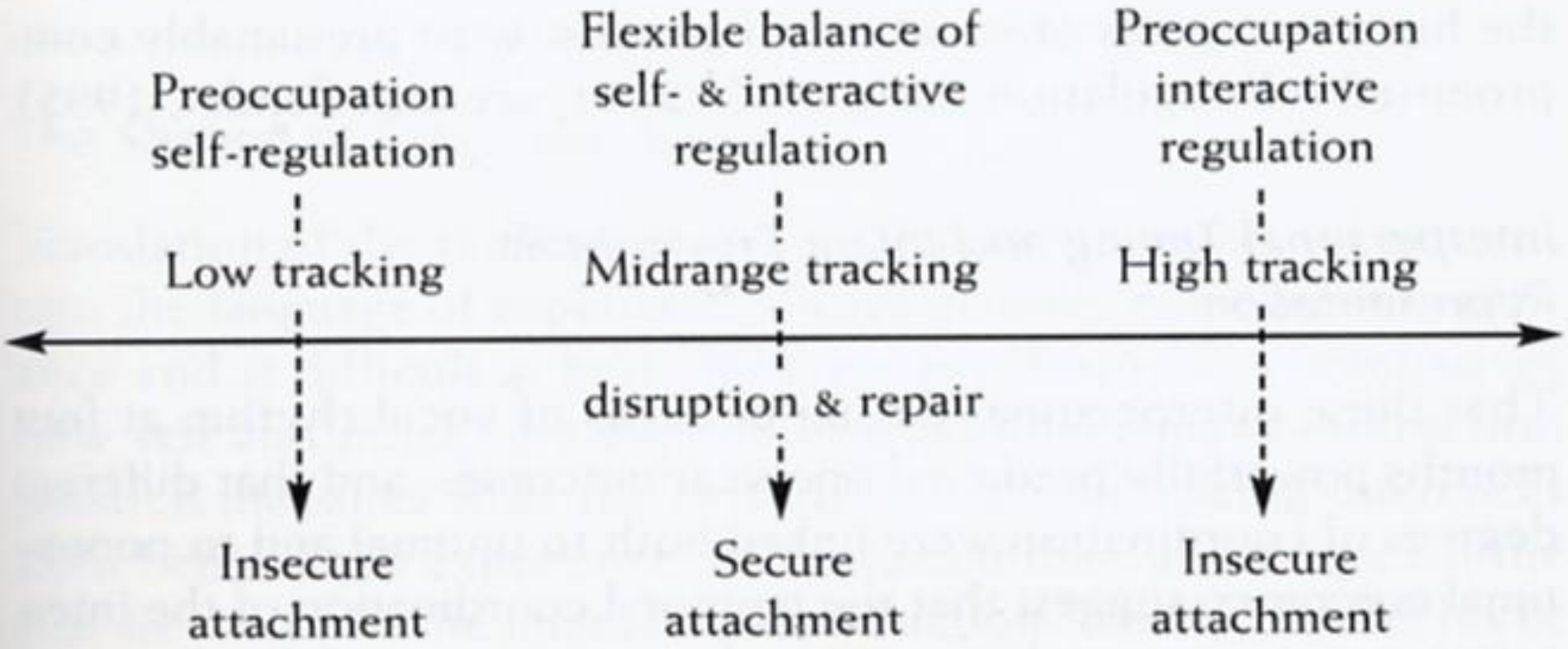
Recent research (Beebe et al 2010) using measures of contingency at 4 months shows secure attachment at 12 months is associated with a 'midrange' of balance between self and interactive contingency;

Mid-range interaction characterised by regular episodes of affect synchrony; rupture; and repair

The particular forms of disturbance of turn-taking (i.e. intrusive or passive) are linked to specific forms of insecure attachment at 1 year - higher tracking associated with disorganised/anxious-resistant and lower with avoidant attachment

Midrange Balance Model

(Beebe and Lachmann 2005)



Videoclip – turntaking

Reflective Function

Capacity to understand the infant's behaviour in terms of internal states/feelings

'The capacity of the parents to experience the baby as an 'intentional' being rather than simply viewing them in terms of physical characteristics or behaviour, is what helps the child to develop an understanding of mental states in other people and to regulate their own internal experiences' (Fonagy, 2004)

Development of self-organization is dependent on the caregiver's ability to communicate understanding of the child's internal states via 'marked mirroring'

Studies of RF (and mind-mindedness)

RF strongly associated with maternal parenting behaviours (e.g. flexibility and responsiveness) and use of mothers as secure base; low RF associated with emotionally unresponsive maternal behaviours (withdrawal, hostility, intrusiveness) (Slade et al 2001; Grienenberger et al 2001)

Improvement in RF using mentalisation parenting programme - improved maternal caregiving and infant regulation 24; 36 (e.g. Suchman et al 2009; 2008)

Studies of 'mind-mindedness' (appropriate and non-attuned behaviours) also show an impact on infant attachment security at 15 months (Meins 2012)

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The impact of maternal mental health problems on the interaction

Parent-infant relationship in the face of parental mental health problems

Mid-range balance reduced with increase in passivity or intrusiveness;

Reflective functioning reduced and inappropriate marked mirroring

Atypical/anomalous parenting behaviours (Lyons-Ruth 2003): threatening (looming); dissociative (haunted voice; deferential/timid); disrupted (failure to repair, lack of response), affective communication errors (mother laughing while child distressed)

Distorted parental projections (e.g. where there is unresolved loss/trauma/toxic trio)

- Problematic – parent misunderstands infant behaviours
- Pathological – infant's behaviour is interpreted is bad

Videoclip –
Severely suboptimal
M-I interaction

Postnatal Depression – impact on interaction

Evidence from a recent meta-analysis that quantified the magnitude of the association between such depression and maternal sensitivity, the latter being defined as contingent and appropriate responding to infant cues, found an effect size of -.35 for studies that involved a control group (Bernard et al 2018)

For example, research suggests that postnatal depression (PND) can result in the mother being less sensitively attuned to her infant and less affirming and more negating of infant experience (Murray et al 1996)

Postnatal depression – impact on child development

There is in addition, evidence about the impact on the development of infants who have experienced interaction that is affected by depression, including deficits in their interpersonal functioning such as less affective sharing, lower rates of interactive behaviour, poorer concentration, increased negative responses with strangers, and reduced secure attachment at 12 and 18 months (Stein et al 2001; Hay 1997; 2003)

Longitudinal research shows an impact on **cognitive and emotional development,** with 42% of such children being more likely to experience depression by age16 (Murray et al 2011)

Maternal anxiety

Evidence is limited but consistent with that for other MHPs

Evidence from one study that examined the characteristics of interactions that are 'anxious' (i.e. as opposed to the mothers having been diagnosed with anxiety) Maternal anxiety biased the interaction toward interactive contingencies that were both heightened (vigilant) in some modalities and lowered (withdrawn) in others (Beebe et al 2010; 2012)

Interactive contingency patterns were characterized by intermodal discrepancies - confusing forms of communication

For example, mothers vigilantly monitored infants visually, but withdrew from contingently coordinating with infants emotionally, as if mothers were "looking through" them.

Cont…

Chronic maternal physiological stress as indicated by raised cortisol levels, was also found in one study to be related to infant cortisol levels, with evidence of more intrusive and lower positive engagement synchrony in the infant, suggesting that maternal stress may contribute to upregulating the infants' developing stress system (Tarullo et al 2017)

The evidence in relation to PTSD is, however, inconsistent in relation to maternal interactional behavior, possibly reflecting methodological limitations in the studies including the use of self-report measures (Cook et al 2018)

Borderline Personality Disorder – impact on interaction

BPD associated with (Laulik et al 2013):

- Less structuring in their interaction with their infants, and their infants were found to be less attentive, less interested and less eager to interact with their mother. Furthermore, mothers with BPD reported being less satisfied, less competent and more distressed (Newman 2007)
- Disrupted communication, frightened and disoriented behaviours (Hobson 2009)
- Impaired sensitivity (Crandell 2005)
- Increased intrusiveness (Hobson 2005)

BPD – impact on infant

A recent study found that by 3 months postpartum, infants of mothers with BPD are more likely to be developing dyadic adaptive mechanisms to dysfunctional interactions through self-regulatory mechanisms that may differ according to gender (Garez et al 2014)

One study found that more babies of mothers with BPD show signs of a disinhibited attachment behavior compared with mothers who are depressed or have no diagnosis (Lyons-Ruth et al 2019)

Eating Disorders

Mothers with eating disorders are more likely to be involved in major episodes of mealtime conflict with their infants; other interactional difficulties

Poor parental responsiveness focuses on:

- detection and responsiveness to infants' signals
- difficulty in allowing their infants to express age-appropriate needs for autonomy through self-feeding and experimentation with food (Stein et al 2006)

Schizophrenia

A recent meta-analysis found evidence of disturbed maternal behavior, and more limited evidence of disturbances in infant behavior and mutuality of interaction (Davidson et al 2015)

For example, a number of studies have found that the interaction is less responsive and sensitive, and more remote, intrusive, and self-absorbed than their counterparts with affective disorders.

A second systematic review found that outcomes, both direct (i.e. interaction) and indirect (i.e. involvement of social services), are affected by the nature of the psychosis (i.e. acute versus chronic) (Ramsauer and Achtergarde 2018)

One further study found that interaction may be partially mediated by the level of cognitive function (Steadman et al 2007)

Summary

- The postnatal period is a key time for infants to begin to establish emotional regulation;
- This is takes place in interaction with the parent and is known as the ‘dyadic regulation of affect’;
- Parental mental health problems can interfere with this process with significant long-term consequences for the child;

What can mental health professionals do?

1. Assess the interaction

Which parents should be assessed - where a parent has a mental health problem always think about whether there is an impact on the baby and in particular the interaction

Ensure that baby is present at at least one meeting and observe the mothers interaction during this meeting – presence of interaction; response to stress; timeliness of response etc

Tools that can be used to assessed interaction:

- parent (PROMS) e.g. Postpartum Bonding Questionnaire (PBQ) or Brief Mother-Infant Interaction Scale (BMIS); or Mother-Object Relationship Scale – Short Form (MORS-SF).
- clinical (CROMS) e.g. PIIOS or NICHD or CARE-Index

Assess whether the interaction is – fine; moderately affected; seriously affected

2. Interaction that is moderately affected

Provide input that will support the interaction

Dyadic interventions that explicitly target the interaction are required

Evidence-based DYADIC interventions for low to moderately affected interaction:

- Infant massage (IM);
- Video-Interaction Guidance (VIG);

Re-assess the interaction

3. Interaction that is seriously affected

Where there are severe parental mental health problems - consider whether an admission to a mother-baby unit is needed or referral to Community Perinatal Team;

- Support in the community should include the delivery of an evidence-based DYADIC intervention:
  - Video-Interaction Guidance (VIG);
  - Parent-infant Psychotherapy (PIP);
  - Mentalisation based home visiting programme (e.g. Minding the Baby)
- Interaction should be reassessed at regular intervals – if no improvement consider involvement of Children's Social Care Services

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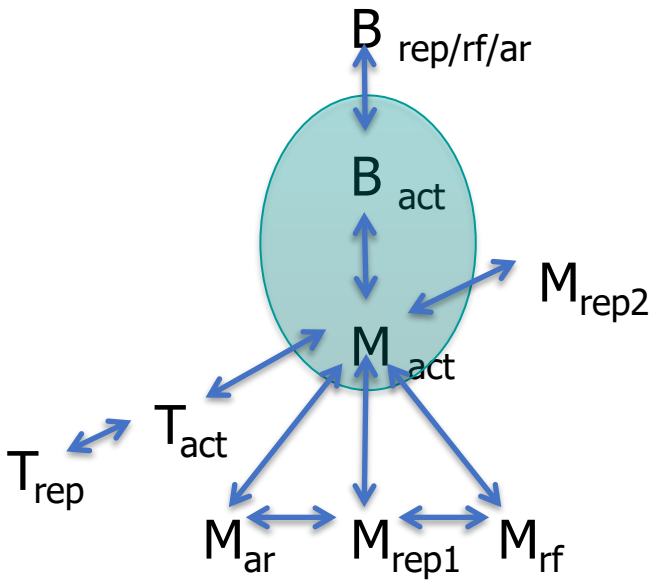
Working dyadically

Key features of dyadic approaches

- Dyadic – work with parent and infant together;
- Triadic – practitioner; parent; infant
- Aimed at improving child attachment security by targeting parental sensitivity/attunement and reflective function, and thereby the interaction
- Provided by trained practitioners receiving ongoing supervision from accessible locations

Ports of entry



KEY
B – baby
M – mother
T - therapist
act – actions/behaviours
rep - representations
rep1 – representations relating to the baby
rep2 – representations relating to therapist
rf – reflective functioning
ar – affect regulation

Key intervention approaches

- **Sensitivity/attachment-based**: Video-feedback; Circle of Security
- **Parenting programmes** – Mellow Babies
- **Mentalisation:** Minding the baby; Mothers and Toddlers Programme
- **Psychotherapeutic:** Parent-child psychotherapy (e.g. Watch, Wait and Wonder)

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Sensitivity/ attachment based interventions

Infant massage

- Group-based intervention delivered over 6-8 weeks
- Main aim to improve maternal responsiveness through the teaching of massage strokes that are attuned to the infants needs in the moment.
- Also provide the opportunity to socialise

Evidence of effectiveness

- Numerous systematic reviews most of which point to the importance of delivering infant massage to targeted groups of women (i.e. experiencing post-natal depression or sociodemographic deprivation)
- Only one RCT to date that explicitly demonstrates that infant massage improves interaction in women with PND (Onazawa et al 2001)
- There is also some evidence to suggest that it might improve the mother's mood or depression

Video feedback

- Video based recordings and coaching of actual interactions
- VIG; VIPP/VIPP-SD
- Attuned, mentalising guider: increases affect regulation; and reflective functioning;
- Viewing of positive interactions: meta-cognitive changes (resulting from the discrepancy between own beliefs and video); empowerment and self-efficacy

Evidence of effectiveness

- Meta-analysis of 29 studies shows statistically significant improvement in parenting sensitivity; behaviour and attitudes; child attachment security (Fukkinks et al 2008;)

—4 of these targeted children older than 5 years;

—17 targeted ‘high risk’ dyads (e.g. low SES 63%; parent clinical problems 17%; child clinical problems 52%)

- Aggregate effect sizes all VFs (Fukkinks et al 2011)

  - parental behaviour 0.49. - parent attitude 0.39. - child outcome 0.33

- VIG only results

  - parental behaviour: 0.76 - parent attitude: 0.56. - child development: 0.42

More recent evidence

- SR includes 22 studies from eight countries in Europe and North America, with a total of 1,889 randomised parent-child dyads or family units.
- **Parental sensitivity:** A meta-analysis of 20 studies (1,759 parent-child dyads) reported a significant impact of video feedback on parental sensitivity compared with a control or no intervention from postintervention to six months follow-up (standardised mean difference 0.34, 95% confidence interval (CI) 0.20 to 0.49, **Parental reflective functioning:** No studies reported this outcome.
- **Attachment security:** A meta-analysis of two studies (166 participants) indicated that receiving a video feedback intervention increased the odds of being securely attached, measured using the Strange Situation Procedure, at postintervention (odds ratio 3.04, 95% CI 1.39 to 6.67; A second meta-analysis of two studies (131 participants) that assessed attachment security using a different measure (Attachment Q-sort) found no effect of video feedback compared with the comparator groups, with a mean difference of 0.01 (95% CI −0.08 to 0.09, very low-certainty evidence).

Circle of Security

CoS Model

- One-to-one and group-based version of the use of video feedback is also available.
- Delivered over the course of 20 sessions of around 90 minutes duration
- Involves the use of individualised treatment plans based on a brief assessment of the interaction between the parent and child, that is used to identify a set of specific issues that are then addressed in the group, using video feedback guidance.

CoS evidence of effectiveness

There is currently no RCT evidence to date regarding the effectiveness of this programme with parents who have mental health problems, and very limited evidence (i.e. pre and post group design) or its effectiveness in improving child outcomes (e.g. attachment) (Hoffman et al 2006)

Parent training

Mellow Babies

- This programme was explicitly developed to support women experiencing depression, and is delivered over the course of 14 weeks in sessions that take place over the course of a day (i.e. 5 hours).
- During the morning sessions babies are cared for in the creche while the mothers take part in a group-based session that is aimed helping women to develop ways of managing depression underpinned by CBT, and development of understanding about the relationship between their current problems and their early life experiences.
- The afternoon sessions involve a range of targeted interactions between mother and baby using infant massage, video feedback, and other play techniques.
- The final part of the day in which babies are returned to the creche, involves the use of videotape modelling to demonstrate sensitive parent-infant interactions.

Mellow Babies - evidence of effectiveness

- This appears to be a promising model of working, with existing evidence from a small RCT involving 20 mothers, suggesting significant improvements in both maternal depression and parent-infant interaction (Puckering et al 2010)
- A further trial is currently underway

- Parenting programmes such as Baby Triple-P are not dyadic, and a recent RCT showed no evidence of effectiveness when delivered to mothers with postnatal depression.

Mentalisation-based approaches

Mothers and Toddlers Programme

- 12 weeks of individual therapy as an adjunct to standard outpatient substantive abuse treatment programme
- Aim to improve maternal capacity for reflective functioning, sensitive and responsiveness to toddler emotional cues
- Early sessions build on strong therapeutic alliance with the therapist on assisting mother to address challenging circumstances
- Next stage involves clarification of the mother's representational world to identify areas of distortion, harshness incoherence and insensitivity
- Attempts made to link these representations with the way in which the mother is interaction with others including her baby
- Aim to engage her in a mentalising process about the mother-child relationship

MPT - effectiveness

Small RCT involving 47 women at their toddlers found:

- Moderately higher mean RF scores for The MTP group;
- Slightly higher scores for coherence, sensitivity and quality of representation;
- Improved caregiving; depression; global distress (Suchman et al 2010)
- Only effects for depression were not maintained at 6 week follow-up (Suchman et al 2011)

Psychotherapeutic

Parent-infant Psychotherapy

Representational

- Focus on mother's representational world (e.g. the way in which the mother's current view of her infant is affected by representations from her own history)
- Linking of ghosts with mother's own history facilitates changes to her representational world and new paths for growth of both mother and infant

Representational and behavioural

- Infant-led (e.g. Watch, Wait and Wonder)
- Mother observes her infant's self-initiated activity whilst being physically accessible to infant
- Discussion of these experiences with therapist as a way of examining the mother's internal working models of herself in relation to her infant

Parent-infant Psychotherapy – evidence of effectiveness

- Recent systematic review 8 RCTs comparing PIP with control (n=4) other treatment (n=4)
- Greater attachment security with parent-infant psychotherapy compared with control
- Fewer avoidant in PIP
- More change from insecure to secure after PIP
- Less depression – not sig; no impact other outcomes
- PIP versus other interventions (e.g. home visits; CBT; counselling; other types of PIP) – no difference

(Barlow et al 2015)

Summary

- Parental mental health problems can interfere with the interaction with significant long-term consequences for the child;
- Practitioners supporting parents experiencing mental health problems should a) assess the interaction; and b) provide an evidence-based dyadic intervention where appropriate; c) consider further actions needed;
- Type of intervention should determined by level of interactional problems experienced; care may need to be stepped