Use of Video Feedback Intervention in an Inpatient Perinatal Psychiatric Setting to Improve Mother-Infant Interaction

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Running Title: Video intervention and mother-infant attachment

Use of Video Feedback Intervention in an Inpatient Perinatal Psychiatric Setting to Improve Maternal Parenting

Running Title: Video intervention and maternal parenting

ABSTRACT

Background

This study utilises video-feedback to improve maternal parenting behaviour in clinically depressed mothers admitted to a perinatal inpatient psychiatric unit.

Methods

Depressed mothers (n = 74) were randomised to 'video' (n = 25), 'verbal' (n = 26) or 'standard care' (n = 23). 'Video' mothers were taped playing with their infant; interaction was reviewed with a mental health specialist. 'Verbal' mothers only discussed interaction with their infant. 'Standard care' mothers received only routine inpatient care. Mothers were assessed for mental health status, perceptions of baby behaviour and parenting competence.

Results

There was significant improvement in mental health status of all participants, regardless of intervention. Neither intervention had an advantage, compared to standard care, in improving parenting confidence or perceptions of infant behaviour. Video mothers were more likely to report no change in their parenting confidence the more feedback sessions completed.

Discussion and Conclusion

The number of intervention sessions for each participant was limited by the duration of their inpatient admission. Most participants were on simultaneous pharmacotherapy and psychotherapy, as well as receiving intensive mother-craft assistance; this may have influenced intervention effectiveness. Results suggest this type of intervention may be beneficial, but in the current format does not add sufficiently to standard care to be detected by the measures used.

Key Words

Postnatal depression, inpatient, mother-infant, video, intervention

Introduction

Postnatal depression (PND) affects between 15-20% of women following childbirth (Buist et al. 2008; Leahy-Warren et al. 2007; O'Hara et al. 1996). PND has been demonstrated to have significant negative effects on the mother-infant relationship and infant cognitive and behavioural development (Luoma et al. 2001; Murray et al. 1997; O'Connor et al. 2002; Pilowsky et al. 2008; Rahman et al. 2004; Weissman et al. 2006). Whilst the literature is not entirely consistent, in part because of the complex interplay of factors influencing maternal depression and child adjustment (Elgar et al. 2007), there is evidence the timing, duration and intensity of a maternal depressive illness is one of the major factors influencing poor child neurodevelopmental outcomes (Luoma et al. 2001; Pilowsky et al. 2008; Weissman et al. 2006).

Although symptoms of PND can be addressed by early identification (Austin et al. 2005; Buist et al. 2002) and introduction of a range of medical or psychological interventions (Dennis 2004 ; Dennis et al. 2007; Dennis et al. 2004), evidence suggests that as maternal mood recovers, the quality of relationship between mother and infant does not automatically improve, parenting stress may remain elevated and attachment may remain poor (Neilson-Forman et al. 2000). Persistent issues include maternal negativity towards the infant, reduced enjoyment in interacting with infant, more negative emotions during interaction, insensitivity to infant needs and, intrusive and punitive behaviours (Field et al. 1985; Forman et al. 2007; Goodman et al. 1999; Meredith et al. 2003; Robbins Broth et al. 2004 ; Wan et al. 2009). Thus, for women with chronic or remitting PND, particularly if their own early childhood difficulties were a risk factor in their depression, treating the mood disorder alone is unlikely to improve infant outcomes.

Many studies have proposed a caregiver's ability to read infant behavioural and emotional signals accurately, promptly and respond appropriately, termed 'sensitive responsiveness', is crucial in promoting security of attachment and better outcomes for the child (Ainsworth et al. 1978; Bakermans-Kranenburg et al. 2003; De Wolff et al. 1997). There are numerous reports in the literature of interventions that are effective in improving or developing maternal responsiveness to infant behaviour (Bakermans-Kranenburg et al. 2003). However, measuring attachment is time consuming and costly; high risk women are often difficult to engage and maintain within intense or long programs.

One type of intervention which is particularly effective includes 'video-feedback' which has been used in various settings, either by itself or in combination with other initiatives (Bakermans-Kranenburg et al. 1998; Bakermans-Kranenburg et al. 2003; Juffer et al. 2005; Juffer et al. 2008; Kalinauskiene et al. 2009; Marvin et al. 2002; Rusconi-Serpa et al. 2009; van Ijzendoorn M et al. 1995; van Zeijl et al. 2006). These interventions involve video-taping sessions of mother and infant playing together (Rusconi-Serpa et al. 2009). These recordings are used in a variety of ways, most commonly reviewed by the mother with the assistance of an experienced therapist who provides feedback and facilitates discussion thereby allowing mothers the opportunity to focus on, and attempt to understand, their infant's expressions, verbal and physical signals whilst reflecting upon their internal working models of their attachment experiences (Beebe 2005; Rusconi-Serpa et al. 2009). This approach is designed to strengthen maternal observational skills, increase empathy and sensitivity to the baby's needs as well as reinforcing positive parenting behaviours observed on the video (Koren-Karie et al. 2002; van Zeijl et al. 2006; Velderman et al. 2006).

Video-feedback interventions have been implemented and assessed in a variety of specialised, outpatient programs or in the community (Marvin et al. 2002; Oppenheim et al. 2007). There is currently no data on their use in a clinically depressed *inpatient* population (Buultjens et al. 2008) and formal evaluation through randomized-controlled trials of outpatient populations has yet to be completed. The current study utilises many of the ideas and intervention strategies explored in outpatient interventions for improving mother-infant interaction, but in a much shortened and less intensive version catering to an inpatient parent-infant psychiatric setting.

The aims of the current study were to assess if video feedback of mother-infant play was effective in improving maternal parenting confidence and perceptions of infant behaviour, in women receiving inpatient treatment for PND, compared with a similar population receiving verbal-only feedback (ie no video-tapping) or standard care. This study also explores acceptability and applicability of these interventions in the targeted populations.

Methods

Participants and Setting

Participants were recruited from women admitted to the Parent Infant Programs at Austin Hospital and Northpark Private Hospital. These hospitals are located in metropolitan Melbourne, Victoria approximately 15-20kms from the central business district. To be included in the study, women were required to have a diagnosis of major clinical depression (DSM-IV criteria) or adjustment disorder with anxious or depressed mood; able to read and write English and; able to provide informed consent. Women were excluded from the study if they were diagnosed with a psychotic disorder (i.e. bipolar disorder, postpartum psychosis or schizophrenia); unable to read or write English; or unable to provide informed consent.

Recruitment

Women were recruited for either intervention from those under clinical care of the senior investigator (AB). The recruitment procedure as described below was administered by two associate investigators (FW and NRZ) who were not involved in provision of either intervention. Standard care participants were recruited from those under the care of other psychiatrists in the aforementioned hospitals or whilst the senior investigator was on annual leave.

Video/Verbal Feedback

Within three days of admission, mothers were provided with written and oral information about the study and formally invited to take part. Those who agreed to participate signed a consent form and completed a set of 'pre-intervention questionnaires' and then randomly allocated to either a video-only feedback or verbal-only feedback intervention via a computer generated randomization schedule. Participants in both intervention groups were provided

with information on attachment and styles of mother-infant interaction, which were discussed with respect to their infant's needs.

Standard Care

Standard care women were invited to participate by the associate investigators (FW and NRZ) within three days of admission. Suitable participants were identified with the assistance of nursing staff or the treating psychiatrist. Women were advised they would complete a series of questionnaires and would receive the same standard care as the other two groups of women, except they would not participate in the feedback sessions. All standard care women received general information about parenting skills and mother-infant interaction.

Interventions

Video/Verbal Feedback

The current study utilised an intervention which draws on the concept of secure base/secure haven (Marvin, et al., 2002) but in a much shortened, less intensive and more flexible version catering to an inpatient mother-baby psychiatric setting. The purpose of the intervention was to help mothers become better perceivers of their infant's verbal and nonverbal cues, as well as teach them to respond quickly and appropriately to these signals, identify potentially improper responses and reinforce established sensitive behaviours. The intervention was administered by the senior investigator (AB).

The first video session focused on helping mothers understand the importance of mother-infant attachment and how the relationship between mother and infant develops. This also included a discussion of past and present attachment experiences to help increase awareness of insecure mental presentations of attachment. During this initial session, mothers were also

asked to reflect on their own emotions toward the baby at different times (ie whilst feeding, baby sleeping, interacting with baby, when baby is difficult to settle, separated from baby etc) At the conclusion of the first session, mothers were asked to nominate any area of their relationship with their infant they wished to explore.

Following sessions involved 10 minutes of baby play in which the mother was video-taped interacting with her infant in anyway she wished. Once completed, the mother reviewed the video with a trained mother-infant therapist and discussed the interaction between her and her infant, particularly behaviours that increased the responsiveness of the infant and possible modifications of behaviour to increase interaction with her infant. Particular focus was given to any areas of concern that were raised by the mother at the completion of the first session.

Each session was facilitated by a therapist trained in mother-infant therapy and experienced in conducting this type of intervention in a postnatally depressed population. Sessions were conducted on a weekly basis for the period the mother was admitted to the inpatient unit. Each session lasted approximately 30 minutes – 10 minutes of baby play and 20 minutes of reflection/discussion.

The verbal only-feedback group involved a similar procedure (ie introductory session following by baby-play sessions) but without video-taping. That is, during the review session, feedback was only discussion-based.

Standard Care

Standard care mothers received the same inpatient care as the other two groups of mothers, but did not participate in any type of baby-play/feedback sessions. This included one to one sessions with a nurse focusing on practical baby care and settling skills and participation in a

range of group activities including discussion on issues related to adjustment to motherhood, cognitive-behaviour therapy, music and art therapy. In addition, as a majority of women were also on antidepressant medication, this was regularly reviewed by a psychiatric registrar.

Measures

Prior to the commencement of each intervention, current mental health status of all participants was assessed using the Edinburgh Postnatal Depression Scale (EDPS). Demographic and psychosocial history was collected using a self-report measure developed following a comprehensive literature review and clinical experience of the investigators. Maternal perceptions of infant behaviour and parenting confidence were assessed using the Neonatal Perception Inventory (NPI) and Parenting Sense of Competence Scale (PSCS). Quality of social support was assessed using the Sarason Social Support Questionnaire (SSQ). Maternal attachment style was assessed using the Adult Attachment Scale (AAS).

Once the intervention was completed, participants re-completed the EPDS, NPI and PSCS. Mothers who undertook either the video-only or verbal-only feedback intervention also completed an evaluation questionnaire to assess their acceptability and perceived usefulness of the feedback sessions.

All questionnaires were administered by the associate investigators (FW and NRZ) who were also involved in the recruitment of participants, but not in provision of either intervention or standard care protocols.

Ethical Considerations

Ethical approval for this study, in accordance with the Helsinki Declaration of 1975 and local requirements. This project was approved by Austin Health Human Research Committee (Approval Number H2008/03167) and Healthscope Research Ethics Committee (Approval Number 156). All participants provided informed consent prior to their inclusion in the study.

Data Analysis

Data analysis was completed in five stages:

- statistical description of demographic and psychosocial history data, collected via the demographics / psychosocial risk factor questionnaire;
- within group, pre and post intervention comparison of mental health status, maternal perceptions and parenting confidence using paired-samples t-tests;
- between group, pre and post intervention comparison of mental health status, maternal perceptions parenting confidence using one-way ANOVA testing with a Dunnett 2-Sided t-test post hoc analysis;
- play-intervention (ie pooled video and verbal-only data) and standard-care, pre and post intervention comparison of mental health status, maternal perceptions and parenting confidence between using independent samples t-test;
- between group, evaluation of maternal attitudes to the effectiveness of the feedback sessions. Quantitative differences in responses were compared using a Mann-Whitney t-test.

Results

Participants

Of the 90 women invited to participate, 83 accepted (response rate = 92%). Due to incomplete or unreturned questionnaires, either at the time of recruitment or at completion of the intervention, data from 12 women was excluded. The final sample size was 74 (52 from Northpark and 22 from Austin). The final group allocation was: 25 to video intervention group, 26 to verbal intervention and 23 to standard care. Of these women, 20 from the video group, 20 from the verbal group and 16 from standard care completed all pre and post intervention questionnaires.

The mean number of baby play sessions, for the video and verbal feedback groups, was 3.2 (range 1-7) and 2.8 (range 1-5), respectively. All women had a diagnosis of major depressive disorder (DSM-IV criteria); in addition, three were diagnosed with a co-morbid borderline personality disorder and one with a co-morbid panic disorder.

The mean length of stay for the video women was 3.3 weeks; the verbal women 3.4 weeks and; the standard care women 2.8 weeks. The average age of baby for all admissions was 5.8 months $\pm$ 3.1 months.

Demographic and psychosocial characteristics

The majority of women participating in the study were married or in a de facto relationship (92%), spoke English as their main language at home (99%) and were born in Australia (85%). Notably, 57% of women reported suffering from a physical illnesses during their most recent pregnancy, and 74% had experienced a major life event that caused them distress during the previous 12 months. A significant proportion of women reported experiencing

depression (39%) and anxiety (42%) during their most recent pregnancy. Additionally, 74% and 39% of women had been diagnosed with depression and anxiety, respectively, during their lifetime; 51% of women reported abuse as a child and 68% of women consumed alcohol prior to pregnancy compared to 18% during pregnancy.

Pre vs. post intervention within group analysis

As described in Table 1, significant improvements in maternal mental health as measured by improvements in EPDS scores were observed ($p < 0.001$) at completion of the three interventions. Improvements in parenting sense of competence were reported verbal ($p = 0.005$), and standard care ($p = 0.034$) groups at conclusion of the study but not in the video intervention group.

Effect of intervention between groups analysis

Pre-intervention there were no significant differences between the three study groups (ie, video vs standard; verbal vs standard; video vs verbal) in terms of mental health status, parenting confidence, neonatal perception, attachment style and quality of social supports (data not shown). Overall, both the video and verbal interventions had no greater effect on improving women's mental health, parent sense of competency or neonatal perception than standard care (data not shown). Similarly, no significant differences were noted in women's mental health, PSCS and NPI between the two interventions.

There were no significant improvements in any of the outcome measures when the combined verbal and video intervention group was compared with standard care.

Evaluation of the usefulness of intervention

Table 2 outlines the feedback received from participants of their experiences from video or verbal feedback sessions. A majority of women in the video (79%) and verbal (83%) groups had conceptualised the intervention programs to be somewhat useful. Videotaped mothers were more likely to have strong feelings regarding their play sessions and reported feeling more uncomfortable (26% vs. 5.6% verbal group) reviewing their baby play sessions. There was no difference between those who felt very comfortable (56% vs. 58%) between the verbal and video groups, respectively. Of the video group women, 15% reported feeling neither comfortable nor uncomfortable compared to 39% of verbal group women. For both groups, feelings of comfort increased the more review sessions that were completed, although this was greater in the verbal group (39% vs. 22% video group). Both groups of mothers reported they felt the feedback sessions were very useful in helping them understand their baby. (50% verbal vs. 53% video). However, a majority of women (89%) participating in verbal feedback sessions reported greater parenting confidence the more sessions they completed, while 10% of video group participants said they did not gain increased confidence as a parent at all as a result of their feedback sessions.

Discussion

The reasoning and purpose driving this study was based on the observation that treatment of depressive symptoms alone in women experiencing PND, does not improve the relationship between mother and infant (Forman et al. 2007). Even more compelling is the observation many adults with psychopathology possess insecure adult attachment behaviours reflected in their childhood experiences of family relationships (Riggs et al. 2002; Ward et al. 2006) and this may be a mechanism of transmission of psychopathology (Bowlby 1980), especially in depressed mothers (Wan et al. 2009).

This study sought to address two key attributes of the mother-infant relationship: to help mothers become more sensitive to their infant's verbal and non verbal cues, and increase awareness of their infant's needs through video-feedback. This intervention approach was designed to foster sensitive parenting and enhance parenting competence by combining feedback sessions with discussions of past and present attachment experiences to improve insecure mental representations of attachment (Juffer et al. 2008). Importantly, because of the environment the intervention was conducted – two inpatient psychiatric units – this required it to be as flexible as possible to quickly focus on the needs of each individual participant. A highly structured and intensive intervention would have been inappropriate given the relatively short length of admission for each mother and the overarching clinical need to treat their acute depressive disorder.

Mothers in this study were admitted for inpatient treatment of PND. Results indicate a significant improvement in the mental health of all participants, as demonstrated by improvement in EPDS scores pre and post intervention. However as improvements were

observed in both intervention and standard care groups, this suggests being admitted into a specialised parent-infant unit – where intense input into the practical care of the infant is provided by highly trained nursing staff – improved mental health status regardless of whether or not women participated in an additional intervention program. Also, neither intervention led to greater improvements in the mother's confidence and comfort as a parent or perceptions of infant behaviour, compared to standard care.

These findings reflect that whilst the mother is still depressed, and may gain benefits from one-on-one assistance with practical care of the infant, she is too internally focused to work on more abstract concepts. For some of the depressed women, the ability to explore ideas such as attachment style and relationship with their own parents was limited by their illness; that is, they were not at a point in their illness where they were able to reflect with any clarity how they were raised as a child and what this meant for their relationship with their own child. In addition, where mothers had abuse histories – as half the current sample did – these memories, especially in the early postnatal months, may have contributed to the depression, interfering with the treatment of the mother-infant relationship and shift in attitude to the infant. This is especially relevant as women with abuse histories are more likely to have borderline personality traits or disorders, which have been associated with high rates of disorganised attachment (Agrawal et al. 2004; Holmes 2004) and require intensive treatment to repair, outside what the current intervention was able to provide.

There have been reported limitations to the video-feedback approach and there is now an understanding that improvement in sensitivity alone does not always equate better attachment (Berling 2007). It has been described that a mother's state of mind regarding attachment (e.g. insecure, dismissing, or unresolved) has greater correlation with mother-infant attachment

compared with maternal sensitivity and attachment (Berling 2007). This is problematic as it results in a ‘...transmission gap...’ in the mainstream model of transmission of attachment insecurity: that is, the mother’s internal working model of attachment affects her parenting sensitivity which is the main determinant of mother-infant attachment security. Some have suggested attachment security can be influenced by other factors such as the quality of spousal relationship, social support, mother’s personality and disciplinary behaviours, and contextual factors such as stress and mental illness (Belsky 1984; Berling 2007; Crockenberg et al. 2003; Simpson et al. 2003). Consequently, more research is called for to refine the transmissions model and intervention programs such as video-feedback (Berling 2007; van Zeijl et al. 2006), opening up new directions in attachment theory and putting into practice to improve outcomes (Shaver et al. 2010).

The assessment of maternal parenting confidence and perceptions of infant behaviour used in this study relied on self report questionnaires, both before and after intervention. One of the limitations associated with the use of self report measures to assess these types of paradigms such as these include difficulties in capturing variations in women’s interpretation and understanding of the questionnaires. Whilst the questionnaires are constructed to be objective and without apparent goals, it is possible the participants constructed their own beliefs and representations of what these questionnaires meant to them. Additionally the questionnaires used may have been inadequately sensitive to changes in the particular interest areas. A participant’s mood at the time of completing each questionnaire may also have influenced how she answered questions requiring personal evaluation of her feelings towards her baby and her relationship with the baby. A woman might report more positive feelings regarding her infant when she is happy; conversely, more negative feelings if depressed or under stress.

As such, it is highly likely changes in a woman's mood and circumstances affected how she responded to the questions.

A range of measures have been developed for assessing the mother-infant relationship/attachment which use a variety of theoretical framework to measure maternal attachment. This makes direct comparison of the findings of this study with other research into initiatives to improve mother-infant attachment difficult. The gold standard for assessing mother-infant attachment is the Ainsworth 'Strange Situation Protocol'. Ideally this would have been used in the current study to assess mother-infant attachment but the infants in this study were too young. Other video assessments have been trialled for younger infants, for example Tronick's Face-to-Face Still-Face procedure (Tronick et al. 1978) and whilst sensitive to subtle changes, are intensive and costly. The current study focused on evaluation of changes in the mother alone and not on infant emotional development or interaction specifically due to funding limitations. However, to achieve the 'bigger, stronger, wiser, kinder' parent, as described by Marvin *et al*, (Marvin et al. 2002) it is important that change comes from the mother's increased attunement to her infants behaviour, rather than the child adapting where it can, to the mother's sensitivities which can result in mother-infant miscues and the development of an insecure attachment profile.

Furthermore, the length of the both study interventions is limited to the period of inpatient admission, which is variable, but usually no more than 6 weeks. Consequently, many of the women in the intervention groups participated in an average of 3 sessions, some as little as just one session of video or verbal feedback, compared to an equivalent 20 week-long outpatient intervention (Marvin et al. 2002). As a consequence of administrative pressures (for example, limiting the length of bed stay, accelerating patient turnover and in the private service, insurance rates) it is difficult to increase the length of time women are admitted. A

previous evaluation of the Parent Infant Program at Austin Hospital found that the average length of stay (LOS) was, on average, 23 days (Nair et al. 2009). Although comparable with other Australian-based services (Buist et al 1994), it is significantly shorter than international MBUs particularly in United Kingdom (Elkin et al. 2009) and France (Glangaud-Freudenthal et al. 2011) where the average LOS ranges from 8 to 11 weeks, respectively.

This difference in LOS is an important one to consider, particularly in relation to the number of intervention sessions required to observe changes in mother-infant interaction/behaviour. Bakermans-Kranenburg et al in their meta-analysis of sensitivity and attachment interventions in early childhood concluded fewer than five sessions was optimal in changing insensitive parenting and infant attachment insecurity (Bakermans-Kranenburg et al. 2003). Conversely, in order to bring about some permanency in effect to attachment quality, a mother's mental representations of attachment need to be changed. This has only been achievable via interventions that use discussion to restructure maternal beliefs and feelings about childhood attachment experiences (Egeland et al. 2000). Such intervention programs require repetition and many sessions for a prolonged period, which is rarely possible in an inpatient setting. In the current study, the average number of video feedback sessions was three; we conclude this is too few in severely depressed or anxious mothers such as those who participated, and post-discharge follow-up is required to further enhance maternal sensitivity (Nair et al. 2010).

Comparison of how the participants evaluated the video and verbal feedback interventions yielded interesting feedback. Women in the video-feedback group were more likely to report feeling uncomfortable watching recordings of themselves interacting with their infants; interestingly, none of these women reported this to the study investigators at the time of the intervention, and this was only discovered once the intervention evaluation questionnaires

were reviewed. As a result it is difficult to determine the significance of this finding as women were not able to be followed-up once discharged. However, this has important implications for the design of future interventions using a similar protocol; consideration would need to be given to either 'hiding' the camera (eg filming through a one-way mirror or a less obtrusive camera) and/or including discussion early in the debriefing process, the mother's feelings about the presence of the camera. Women who reviewed their play sessions without video playback tended to have more moderate feelings about the process. Perhaps this is because being confronted with a renewed perspective of themselves and their babies had greater impact on the mothers, triggering more profound emotions. Neither intervention appeared to have greater usefulness in helping mothers understand their baby in comparison to verbal intervention; some video intervention participants reported they did not gain greater parenting confidence with increasing sessions. It may be that whilst video-feedback is effective in prompting women to evaluate and appreciate their relationship with the infant due to the unique opportunity to observe their interactions, the intervention can actually reduce confidence in parenting skills initially and either introduce or reinforce existing perceptions that they are not good mothers. This, however, may be a more realistic and real assessment of the changes that need to be made.

In conclusion, although maternal depression in the perinatal period can be treated successfully, avoiding a range of poor maternal outcomes and its underlying effects on the mother's relationship with her baby is less obvious and provides a greater challenge. Depression in a mother may be a manifestation or symptom of adult attachment insecurity that leads to an intergenerational transmission of attachment insecurity that has profound ramifications for the infant. Early intervention strategies are believed to be ideal in promoting a secure attachment pattern in infants of mothers suffering from PND. Although, given the

described design limitations and clinical population under investigation, the implementation of a video-feedback attachment intervention for a clinically depressed group of women in a perinatal inpatient psychiatric appears currently to have little effect, there remains potential for research in this setting. Perhaps screening for certain higher risk dyads (such as borderline personality disorders), focusing on narrower outcomes (such as improvement in specific attachment-related domains), or even exploring more sensitive measurement systems that control for contextual factors may yield results which support the implementation of video-intervention protocols in acute inpatient psychiatric settings..

References

- Agrawal H, Gunderson J, Holmes B, Lyons-Ruth K (2004) Attachment studies with borderline patients: a review. *Harv Review Psychiatry* 12: 94-104.
- Ainsworth M, Blehar M, Waters E, Wall S. (1978). *Patterns of attachment: a psychological study of the strange situation*. Hillside, New Jersey: Earlbaum.
- Austin M-P, Priest S (2005) Clinical issues in perinatal mental health: new developments in the detection and treatment of perinatal mood and anxiety disorders. *Acta Psychiatr Scand* 112: 97-104.
- Bakermans-Kranenburg M, Juffer F, van IJzendoorn M (1998) Intervention with video feedback and attachment discussions: does type of maternal insecurity make a difference? *Infant Ment Health J* 19: 202-219.
- Bakermans-Kranenburg M, van IJzendoorn M, Juffer F (2003) Less is more: meta-analysis of sensitivity and attachment interventions in early childhood. *Psychol Bull* 129(2): 195-215.
- Beebe B (2005) Mother-infant research informs mother-infant treatment. *Psychoanal Study Child* 60: 7-46.
- Belsky J (1984) The determinants of parenting: a process model. *Child Dev* 55: 83-96.
- Berling L J. (2007). Interventions to enhance early attachments: The state of the field today. In L.J. Berlin, Y. Ziv, L. Amaya-Jackson & M.T. Greenberg (Eds.), *Enhancing Early Attachments: Theory, Research, Intervention and Policy*. Part1: Theoretical and research bases for interventions to enhance early attachments. (pp. 3-33). New York: The Guilford Press.

- Bowlby J. (1980). *Attachment and Loss: Volume III: Loss, Sadness and Depression*. London: The Hogarth Press and the Institute of Psycho-Analysis.
- Buist A, Austin M, Hayes B, Speelman C, Bilszta J, Gemmill A, Brooks J, Ellwood D, Milgrom J (2008) Postnatal mental health of women giving birth in Australia 2002-2004: findings from the beyondblue National Postnatal Depression Program. *Aust N Z J Psychiatry* 42: 66-73.
- Buist A, Barnett B, Milgrom J, Pope S, Condon J, Ellwood D, Boyce P, Austin M-P, Hayes B (2002) To screen or not to screen - that is the question in perinatal depression. *Med J Aust*(7/10/02 Issue): S101-S105.
- Buultjens M, Robinson P, Liamputtong P (2008) A holistic programme for mothers with postnatal depression: pilot study. *A holistic programme for mothers with postnatal depression: pilot study*. 63(2): 181-188.
- Crockenberg S, Leerkes E (2003) Parental acceptance, postpartum depression and maternal sensitivity: mediating and moderating processes. *J Fam Psychol* 17(1): 80-93.
- De Wolff M, van IJzendoorn M (1997) Sensitivity and attachment: a meta-analysis of parental antecedents of infant attachment. *Child Dev* 68: 571-591.
- Dennis C (2004) Treatment of Postpartum Depression: Part 2. A clinical review of nonbiological interventions. *J Clin Psychiatry* 69(9): 1252-1264.
- Dennis C, Hodnett E (2007) Psychosocial and psychological interventions for treating postpartum depression. *Psychosocial and psychological interventions for treating postpartum depression*. 4.
- Dennis C, Stewart D (2004) Treatment of postpartum depression: Part 1. A critical review of biological interventions. *J Clin Psychiatry* 65(9): 1242-1251.
- Egeland B, Weinfield N, Bosquett M, Cheng V. (2000). Remembering, repeating, and working through: lessons from attachment based interventions. In J. Osofsky & H.

- Fitzgerald (Eds.), WAIMH Handbook of Infant Mental Health Vol. 4. Infant Mental Health in Groups at High Risk (pp. 35-98). New York: Wiley.
- Elgar F J, Mills R S, McGrath P J, Washbusch D A, Brownbridge D A (2007) Maternal and paternal depressive symptoms and child maladjustment: The mediating role of parental behaviour. *J Abnorm Child Psychol* 35: 943-955.
- Elkin A, Gilburt H, Slade M, Lloyd-Evans B, Gregoire A, Johnson S, Howard L (2009) A National Survey of Psychiatric Mother and Baby Units in England. *Psychiatr Serv* 60(5): 629-633.
- Field T, Sandberg D, Garcia R, Vaga Lahr N, Goldstein S, Guy L (1985) Prenatal problems, postpartum depression and early mother infant interactions. *Dev Psychopathol* 12: 1152-1156.
- Forman D, O'Hara M, Stuart S, Gorman L, Larsen K, Coy K (2007) Effective treatment for postpartum depression is not sufficient to improve the developing mother-child relationship. *Dev Psychopathol* 19: 585-602.
- Glangaud-Freudenthal N, Sutter A, Thieulin A, Dagens-Lafont V, Zimmermann M, Debourg A, Massari B, Cazas O, Cammas R, Rainelli C, Poinso F, Maron M, Nezelof S, Ancel P, Khoshnood B (2011) Inpatient mother-and-child postpartum psychiatric care: Factors associated with improvement in maternal mental health. *Europ Psychiatry* 26(4): 215-223.
- Goodman S, Gotlib I (1999) Risk for psychopathology in the children of depressed mothers: a developmental model for understanding mechanisms of transmission. *Psychol Rev* 106: 458-490.
- Holmes J (2004) Disorganized attachment and borderline personality disorder: a clinical perspective. *Attach Hum Dev* 6(2): 181-190.

- Juffer F, Bakermans-Kranenburg M, van IJzendoorn M (2005) The importance of parenting in the development of disorganized attachment: evidence from a preventive intervention study in adoptive families. *J Child Psychol Psychiatry* 46(3): 263-274.
- Juffer F, van IJzendoorn M, Bakermans-Kranenburg M. (2008). Attachment-based interventions in early childhood: an overview. In F. Juffer, M. Bakermans-Kranenburg & M. van IJzendoorn (Eds.), *Promoting Positive Parenting* (pp. 37-58). New York: Taylor and Francis.
- Kalinauskienė L, Cekuoliene D, Van IJzendoorn M, Bakermans-Kranenburg M, Juffer F, Kusakovskaja I (2009) Supporting insensitive mothers: the Vilnius randomized control trial of video-feedback intervention to promote maternal sensitivity and infant attachment security. *Child Care Health Dev*: doi:10.1111/j.1365-2214.2009.00962.x.
- Koren-Karie N, Oppenheim D, Dolev S, Sher E, Etzion-Carasso A (2002) Mothers' insightfulness regarding their infants' internal experience: relations with maternal sensitivity and infant attachment. *Dev Psychol* 38(4): 534-542.
- Leahy-Warren P, McCarthy G (2007) Postnatal depression: prevalence, mothers' perspectives, and treatments. *Arch Psychiatr Nurs* 21(2): 91-100.
- Luoma I, Tamminen T, Kaukonen P, Laippala P, Puura K, Salmelin R, Almqvist F (2001) Longitudinal study of maternal depressive symptoms and child well-being. *J Am Acad Child Adolesc Psychiatry* 40(12): 1367-1374.
- Marvin R, Cooper G, Hoffman K, Powell B (2002) The Circle of Security project: attachment-based intervention with caregiver-pre-school child dyads. *Attach Hum Dev* 4(1): 107-124.
- Meredith P, Noller P (2003) Attachment and infant difficulties in postnatal depression. *J Fam Issues* 24(5): 668-686.

- Murray L, Cooper P (1997) Postpartum depression and child development. *Psychol Med* 27: 253-260.
- Nair R, Bilszta J, Salam N, Shafira N, Buist A (2010) Client evaluation of a specialist inpatient parent-infant psychiatric service. *Australas Psychiatry* 18(6): 573-578.
- Nair R, Bilszta J, Sharfira N, Salam N, Buist A (2009) Review of patients admitted to a specialist inpatient parent-infant psychiatric service. Review of patients admitted to a specialist inpatient parent-infant psychiatric service. *Austral Psychiatry* 18: 567-572.
- Neilson-Forman D, Videbech P, Prince M, Kumar R (2000) Postpartum depression: identification of women at risk. *Br J Obstet Gynaecol* 107: 1210-1217.
- O'Connor T, Heron J, Golding J, Beveridge M, Glover V, ALSPAC Study Team (2002) Maternal prenatal anxiety and children's behavioural/emotional problems at 4 years. *Br J Psychiatry* 180: 502-508.
- O'Hara M, Swain A (1996) Rates and risks of postpartum depression - a meta-analysis. *Int Rev Psychiatry* 8: 37-54.
- Oppenheim D, Goldsmith D. (2007). Attachment theory in clinical work with children: bridging the gap between research and practice. New York: The Guildford Press.
- Pilowsky D, Wickramaratne P, Talati A, Tang M, Hughes C, Garber J, Malloy E, King C, Cerda G, Sood A, Alpert J, Trivedi M, Fava M, Rush A, Wisniewski S, Weisman M (2008) Children of depressed mothers one year after the initiation of maternal treatment: findings from the STAR*D Child Study. *Am J Psychiatry* 165: 1136-1147.
- Rahman A, Iqbal Z, Bunn J, Lovel H, Harrington R (2004) Impact of maternal depression on infant nutritional status and illness: A cohort study. *Arch Gen Psychiatry* 61: 946-952.
- Riggs S, Jacobvitz D (2002) Expectant parents' representations of early attachment relationships: associations with mental health and family history. *J Consult Clin Psychol* 70(1): 195-204.

- Robbins Broth M, Goodman S, Hall C, Rynor L (2004) Depressed and well mothers emotion interpretation accuracy and quality of mother-infant interaction. *Depressed and well mothers emotion interpretation accuracy and quality of mother-infant interaction* 6: 37-55.
- Rusconi-Serpa S, Rossignol A, McDonough S (2009) Video-feedback in parent-infant treatments. *Child Adolesc Psychiatr Clin N Am* 18: 735-751.
- Shaver P, Mikulincer M (2010) New directions in attachment theory and research. *J Soc Pers Relat* 27(2): 163-172.
- Simpson J, Rholes S, Campbell L, Tran S, Wilson C (2003) Adult attachment, the transition to parenthood and depressive symptoms. *J Pers Soc Psychol* 84(6): 1172-1187.
- Tronick E, Als H, Adamson L, Wise S, Brazelton T (1978) The infant's response to entrapment between contradictory messages in face-to-face interaction. *J Am Acad Child Psychiatry* 17(1): 1-13.
- van IJzendoorn M, Juffer F, Duyvesteyn M (1995) Breaking the intergenerational cycle of insecure attachment: a review of the effects of attachment-based interventions on maternal sensitivity and infant security. *J Child Psychol Psychiatry* 36(2): 225-248.
- van Zeijl J, Mesman J, van IJzendoorn M, Bakermans-Kranenburg M, Juffer F, Stolk M (2006) Attachment-based intervention of enhancing sensitive discipline in mothers of 1-to-3 year-old children at risk of externalizing behaviour problems: a randomized-control trial. *J Consult Clin Psychol* 74(6): 994-1005.
- Velderman M, Bakermans-Kranenburg M, Juffer F, van IJzendoorn M (2006) Effects of attachment-based interventions on maternal sensitivity and infant attachment: differential susceptibility of highly reactive infants. *J Fam Psychol* 20(2): 266-274.
- Wan M, Green J (2009) The impact of maternal psychopathology on child-mother attachment. *Arch Womens Ment Health* 12: 123-134.

Ward M, Lee S, Polan H (2006) Attachment and psychopathology in a community sample.
Attach Hum Dev 8(4): 327-340.

Weissman M M, Wickramaratne P, Nomura Y, Warner V, Pilowsky D, Verdeli H (2006)
Offspring of depressed parents: 20 years later. *Am J Psychiatry* 163: 1001-1008.

Use of Video Feedback Intervention in an Inpatient Perinatal Psychiatric Setting to Improve Mother-Infant Interaction

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Running Title: Video intervention and mother-infant attachment

Table 1. Comparison of mean scores of all measures within group pre vs. post intervention

	Mean Score $\pm$ Std. Error Mean		
Video (N =20)	Pre-intervention	Post-Intervention	p-value *
<i>EPDS (n = 17)</i>	19.4 $\pm$ 1.0	12.3 $\pm$ 1.1	<0.0001
<i>NPI (n=20)</i>	2.4 $\pm$ 0.7	3.2 $\pm$ 0.9	0.401
<i>PSCS (n=20)</i>	56.1 $\pm$ 3.0	61.5 $\pm$ 2.5	0.100
Verbal (N=20)			
<i>EPDS (n=20)</i>	19.6 $\pm$ 1.3	10.9 $\pm$ 1.1	<0.0001
<i>NPI (n=20)</i>	1.1 $\pm$ 1.1	2.4 $\pm$ 1.1	0.085
<i>PSCS (n=17)</i>	57.6 $\pm$ 2.6	67.3 $\pm$ 3.1	0.005
Standard care (N=16)			
<i>EPDS (n=11)</i>	17.6 $\pm$ 1.1	11.0 $\pm$ 1.0	0.002
<i>NPI (n= 14)</i>	-0.2 $\pm$ 1.4	1.9 $\pm$ 1.3	0.106
<i>PSCS (n=16)</i>	55.3 $\pm$ 3.0	62.3 $\pm$ 3.1	0.034
* = Paired Samples T-Test			

Table 2. Comparison of participants' evaluation of the usefulness of interventions.

	Verbal Mothers (%), n= 18	Video Mothers (%), n = 22	Difference in Response Ranking Between Groups*
Perceived usefulness of feedback prior to 1st session?			0.37
<i>Moderately / Somewhat</i>	83	79	
<i>Very much</i>	17	16	
Did you notice the camera / other person in the room?			0.28
Yes	89	83	
Did this influence how you interacted with your baby?			0.17
Yes	78	73	
How did you feel reviewing the baby-play sessions?			0.68
<i>(Very) Uncomfortable</i>	6	26	
<i>(Very) Comfortable</i>	55	58	
<i>Neither</i>	39	16	
Did the level of discomfort get better the more sessions you completed?			0.25
Yes	39	22	
Were the feedback sessions useful in helping you to understand your baby?			0.80
<i>Moderately / Somewhat</i>	50	42	
<i>Very Much</i>	50	53	
Did your confidence as a parent increase the more sessions you completed?			0.78
<i>Very much / Moderately</i>	89	67	
<i>Not at all</i>	0	10	

* = *Mann-Whitney U Test*

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