

Original contribution

The parent-child relationship in the context of maternal depressive mood

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Summary

The aim of this study was to examine parent-child interactions 15–18 months postpartum, in families where the mother either showed depressive symptoms two months postpartum or did not. Maternal mood was assessed with the Edinburgh Postnatal Depression Scale (EPDS). Eleven women scoring >12 (signs of depressive mood) and 14 women scoring <10 (no signs of depressive mood) on the EPDS and their partners were videotaped in parent-child interactions, assessed by the Parent Child Early Relational Assessment (PCERA). Our results indicate that children of high EPDS-scoring mothers showed less persistence in play with, and less joy in reunion after separation from, their mothers than children of low EPDS-scoring mothers. In contrast, most fathers in families where the mothers scored high on the EPDS seemed to establish joyful relationships with their children and secure child-father attachment 15–18 months postpartum, as if the father “compensated” for the mothers’ depressive symptoms.

Keywords: Postnatal depression; parent-child; father-child; mother-child interaction; attachment.

Introduction

In Sweden, family policy is very supportive of fathers. Like mothers, fathers can take parental leave during the first year (Hwang, 1987) and they are strongly encouraged by society to take part in activities during pregnancy and birth (Hallgren et al., 1999). Although Swedish official statistics show that fathers’ use of paternal leave is relatively low (12.4% of the total family insurance) (RFV, 2001), many Swedish fathers have begun to realize that they are important for their infants and that the infants are important for them (Hwang, 1987). In a perspective that suggests gender as socially constructed, fathering is created and sustained through interactions that focus on the needs of the people in the

family (Tiedje & Darling-Fisher, 1996). When a mother experiences depressive symptoms, such as sadness, self-preoccupation, loss of interest and low energy (Stein et al., 1991), a newborn child is very much in need of a sensitive and responsive father. This is particularly important during the first six months, when according to Stern (1985) the “sense of core self” is being formed. It has been suggested that the mechanism behind the adverse cognitive and emotional child-outcomes reported for children of postnatally depressed mothers is a result of disturbances in the mother-child interactions during a period when the children are very dependent on a sensitive environment (Murray and Cooper, 1997).

Although research has provided evidence that fathers can be as equally competent as mothers in care-giving (Parke, 1996), and that most children have established focused and discriminating affectionate bonds with their fathers by the end of the first year (Belsky, 1996), only a few studies have paid attention to the father’s importance for the child in the context of maternal depressive mood. Chabrol et al. (1996) studied 10 depressed mothers and their non-depressed spouses as well as 10 non-depressed mothers and their spouses, interacting with their 3–6 month-old children. No differences in the parents’ behaviour were found, and the children interacted equally well in the two groups. Hossain et al. (1994) found that non-depressed fathers of 3–6 month-old children interacted more positively with their children than did the depressed mothers. This result was repeated by Field et al. (1999), when four groups were compared (depressed mother/depressed father, depressed mother/non-depressed father,

non-depressed mother/depressed father, and non-depressed mother/non-depressed father). Furthermore, depressed fathers received better interaction ratings than did depressed mothers. Children were not found to be more adversely affected by having both parents depressed, because family dynamics were already disturbed by the parent who had first become depressed (Field et al., 1999). These studies were carried out during the mothers' on-going depression. The importance of the father-child relationship on the long-term effects for the child has not yet been explored. A preliminary hypothesis was that fathers with partners experiencing postpartum depression would assume an increased responsibility for the child earlier and thus compensate for the mother's emotional unavailability during the depression. Thus, the aim of the present study was to compare differences in parent-child interactions 15–18 months postpartum. In particular, the study will focus on the father-child interactions in families where the mother showed depressive symptoms two months post partum, and in families where the mother did not show depressive symptoms at that time.

Method

Participants

A community sample of 576 women was screened for depressive symptoms using the Edinburgh Postnatal Depression Scale (EPDS) (Cox et al., 1987) two months postpartum. Forty-two women (7%) scored more than 12 on the EPDS and were thus identified as having depressive symptoms. At 15–18 months postpartum, 25 (59%) of the 42 women scoring more than 12 on the EPDS, and 11 of their partners consented to be videotaped during a parent-child interaction. For comparison, 25 women from the same postnatal population scoring less than 10 on the EPDS at two months, and matched on parity and sex of the child were asked to participate in the study on parent-child interactions. Twenty-one women and 14 of their partners agreed. Since this study focuses particularly on the father-child relationships, only families with both parents willing to participate were selected. Thus, the final sample consisted of 11 families, where the mother scored more than 12 on the EPDS (the index group), and 14 families where the mother scored less than 10 on the EPDS two months postpartum (the comparison group). Fathers' in the families were not screened for depressive symptoms. The Ethics Committee at Karolinska Institute approved the study (KI dnr 93:154).

Procedure

At the 15–18 months assessment, parent-child interactions were videotaped in the families' homes according to the Parent Child Early Relational Assessment Scale (PCERA) (Clark, 1985). The mother-child and father-child interactions were videotaped on different days to avoid tiring the children. The observations consisted of three different situations for 5 minutes each in order

to tap different areas of conflict and parental competence. (Clark, 1985; Clark et al., 1993). The different situations were the following:

1. A situation where the parent was instructed to play with the child using a standard set of toys.
2. A free play session during which the child and the parent could choose toys to play with.
3. A separation/reunion situation, arranged directly after the free play session.

The parent was instructed to leave the room and tell the child that he/she would be absent for a short while. If the child started to cry, the parent might return on his/her own initiative, or be called by the researcher. The videotaping went on for a couple of minutes after the reunion, in order to study the child's recovery from the experience. Some children failed to carry out the entire PCERA-procedure, particularly on the second occasion of the videotaping. Therefore, data are missing in the structural play from one father of the index group and in the free play from two mothers and one father of the comparison group. Separation/reunion were missing from two fathers in the comparison-group.

Two senior psychologists, trained by the authorised Swedish trainer in the use of the PCERA, who were blind to the EPDS score of the mothers, scored the three 5-minute videotaped segments of (1) structured play (2) free play and (3) separation/reunion situation. The two coders did simultaneously independent ratings. In case of disagreements when comparing their written notes, the tape was rewound and the coders reassessed the variable and a consensus score was noted in the PCERA-protocol. According to Clark (1985), a low score of 1–2 indicates an area of concern; a score of 3 indicates an area of some concern; and a score of 4–5 indicates an area of strength. The videotaped parent-child interactions were initially scored according to all the 65 PCERA variables. For the purpose of the present study, eight variables of the 29 variables that related to the parents' behaviour and mood were selected to measure *positive parental involvement*. Seven variables were chosen to assess the *child's behaviour* and seven variables to assess the *child's mood*. Thus, 14 of 28 variables related to the child were selected, and dyadic variables were omitted. These variables were selected in advance of the analysis, partly based on a report given Roseanne Clark at the World Association for Infant Mental Health (WAIMH) seventh world congress in Montreal 2000. Another reason for excluding items was that the occurrences of some items were too infrequent to permit analysis e.g. negative parental behaviour. Furthermore, according to the coders, some variables of the PCERA were difficult to assess due to perceived cultural differences when using an American tool among Swedish families. Table 1 shows the variables included and the Cronbach alpha in each of the three composite variables in the two play-situations.

The *separation situation* followed by reunion was analysed by the coders' detailed, written agreements of what happened during the parent's absence, at and after the reunion. Using the attachment theory derived from Bowlby (1997), the data were then classified (by the second author) as:

1. Secure attachment with enjoyment and pleasure – the children greeted their fathers or mothers with obvious signs of relief and joy, accepted being comforted and soon returned to their earlier interaction with the parent or started a new game.

Table 1. The 23 PCERA-variables assessed in the three PCERA-composite variables and Cronbach alpha in the structural and the free play situation

PCERA-composite variables	PCERA-variables assessed	Cronbach alpha (structured task)		Cronbach alpha (free play)	
		Mother	Father	Mother	Father
Paternal involvement (eight variables)	Expressed positive affect Enjoyment and pleasure Physical positive contact Visual contact Quality of verbalisation Structuring the environment Reading the child's cues Mirroring	0.82	0.88	0.86	0.86
Child behaviour (seven variables)	Alertness/interest Quality of explorative play Attentional abilities Robustness Persistence Communicative competence Readability	0.95	0.91	0.94	0.94
Child mood (eight variables)	Expressed positive affect Expressed negative affect Happy/cheerful Apathic/withdrawn Anxious/tense Irritable/angry Sober/serious	0.89	0.76	0.78	0.82

- Secure attachment but restricted in terms of expressed enjoyment and pleasure – the children seemed to regard their fathers or mothers as a secure base i.e. greeted their fathers or mothers with obvious signs of relief, but showed little of the joy and vitality, which would be expected as part of secure attachment behaviour upon reunion.
- Insecure attachment – at the reunion, the children showed signs of avoidance, i.e. they looked at the parent, but did not give him/her a smile or greeting; or showed signs of resistance behaviour, i.e. ambivalence between rejecting and clinging to the parent.

Background data on parity, parental age, socio-economic status (SCB, 1982), and sex of the child were collected through interviews at the same time period.

Statistics

To compare the parent-child interactions between the index- and comparison-groups, separate multivariate analysis of variance (MANOVA) assessments were conducted on the mother-child and father-child interactions, both in the structural and the free play sessions. *Group belonging* based on maternal depressive symptoms (index- and comparison-group), was used as the independent variable in each of the four MANOVA. Composite variables of *positive parental involvement* (eight variables), *child behaviour* (seven variables), and *child mood* (seven variables), were used as dependent variables in the mother-child and the father-child interactions in the structural task and free play, respectively. Differences in the child's attachment to the mother and the father were examined with the Chi Square Exact Test

and differences between background variables with t-tests and Chi-Square test.

Results

No significant differences were found in the background variables of parity ($t = -0.94$; $p = 0.36$ for mothers; $t = -1.25$, $p = 0.22$ for fathers), parental age ($t = -0.9$, $p = 0.93$ for mothers, $t = 1.55$, $p = 0.13$ for fathers), socio-economic status ($t = -1.51$ $p = 0.14$ for mothers; $t = -1.9$, $p = 0.07$ for fathers) and sex of the child ($\chi^2 = 0.02$, $p = 0.99$) between the index- and comparison-groups. All fathers had been present at the birth. Three fathers in the index group and two in the comparison group had taken parental leave over the 10 days all new fathers in Sweden are entitled to around the birth of their child.

Influence of maternal depressive symptoms on the mother-child interaction

As seen in Table 2, no significant effect of maternal depressive mood was found in the mother-child interaction, neither in the mothers' nor in the children's behaviour or mood during the structured play. However, in the free play situation, a significant effect of maternal depressive mood was seen in the children's behaviour

Table 2. Effect of maternal depressive mood on the mother-child- and father-child interactions assessed according to the PCERA-composite variables; parent positive involvement, child behaviour and mood in the two play situations, structural and free play respectively, comparing index- and comparison-groups (MANOVA)

PCERA-composite variables	Structural play			Free play		
	n	F-value	p-value	n	F-value	p-value
Mother-child interaction						
Mother's positive involvement	25	2.01	0.1117	23	2.54	0.0576
Child's behaviour	25	1.52	0.2274	23	4.35	0.0081
Child's mood	25	0.71	0.6796	23	1.29	0.3218
Father-child interaction						
Father's positive involvement	24	2.89	0.0364	24	1.62	0.2009
Child's behaviour	24	0.70	0.6705	24	0.51	0.8131
Child's mood	24	2.82	0.0396	24	1.55	0.2219

when they interacted with their mothers. Follow-up analysis using ANOVA showed that children of mothers with high EPDS scores showed a low level of persistency in play ($F = 4.11$, $p = 0.05$). A tendency to more positive involvement was seen in the index mother-child interactions in the free play (Table 2). The results indicated that mothers with high EPDS scores had more positive physical contact with their children ($F = 5.39$, $p < 0.04$) than mothers with low scores.

Influence of maternal depressive symptoms on the father-child interaction

In the father-child interaction, a significant effect of maternal depressive mood was found regarding the fathers' positive involvement in the structured task (Table 2). Follow-up ANOVA showed significantly more enjoyment and pleasure ($F = 7.39$, $p < 0.02$), and a tendency toward more visual contact ($F = 3.74$, $p < 0.07$) among fathers in families with a high EPDS scoring mother. Consequently, in the index group, a significant effect of maternal depressive mood was also present in the children's mood when they interacted with their fathers (Table 2). Follow-up ANOVA indicated that children of high EPDS scoring mothers expressed less negative affect ($F = 4.16$, $p = 0.05$), and a tendency to be less serious ($F = 3.73$, $p < 0.07$) than children in the comparison group when they interacted with their fathers. Contrary to the mother-child interaction, no effect of maternal depressive mood was found in the father-child interaction on the children's behaviour in free play (Table 2).

The influence of maternal depressive symptoms on the child's attachment to his/her parents

No significant difference between the index- and comparison mothers or the index- and comparison fathers

Table 3. Number of children assessed at the reunion with and without expressed joy in relation to secure and insecure child-mother- and child-father attachment 15–18 months postpartum

	Index group		Comparison group	
	Mothers N = 11	Fathers N = 11	Mothers N = 14	Fathers N = 12
Reunion with expressed joy				
Secure attachment	2	10	8	8
Reunion without expressed joy				
Secure attachment	5	0	1	0
Insecure attachment	4	1	5	4

Index- vs comparison mothers Chi Square Exact test = 6.11, $p < 0.07$
 Index- vs comparison fathers Chi Square Exact Test = 1.98, $p < 0.32$
 Index mothers vs index fathers Chi Square Exact test = 13.18, $p < 0.002$

was found in the children's attachment either to their mothers or their fathers (Table 3). The most striking difference was that children of high EPDS scorers were reported by the coders to display little joy and pleasure at the reunion with their mothers after separation compared to children of low EPDS scorers, irrespective of assessment as securely or insecurely attached to the mother (Table 3). Thus, only two children of high EPDS scoring mothers showed joyful and secure attachment behaviour at the reunion with their mothers compared to ten children who demonstrated secure and joyful attachment to their fathers (Chi Square Exact test = 13.18, $p < 0.002$). Secure attachment without expressed joy was not seen at the children's reunion with their fathers and only in one case at the child's reunion with a comparison-mother. This mother was diagnosed as having seasonal-related depression, but did not score high on the EPDS at 2 months postpartum.

Discussion

Our results indicate that fathers in our study in families with a high EPDS-scoring mother at two months were more positively involved in the father-child interaction 15–18 months post-partum in comparison to fathers whose partners did not score high on the EPDS. Children of high EPDS scoring mothers were also more likely to be securely attached to their fathers without any restriction of joy, in contrast to the children's attachment to their mothers. Since a child's attachment to a parent mirrors the nature of their past interaction (Main, 1996), these findings indicate in accordance with Soliday et al. (1999) that the fathers' early positive influence on the child may act like a buffer against the mothers' depressive symptoms. Early contact is known to positively influence the father-child relationship and attachment (Pruett, 1988). Although all fathers in our study had been present at birth and had possibilities for early contact, our results indicate that fathers in families with a high EPDS-scoring mother might establish a more joyful way to interact with their children than fathers of children with a low EPDS-scoring mother. The fact that this finding was only shown during the structured task, and not in the free play situation, is consistent with findings in other studies trying to discern an association between sensitivity of paternal interaction and attachment security (e.g. Cox et al., 1992). Belsky (1996) suggested that fathers had to be observed under highly structured conditions for this association to be discerned.

No significant effect of maternal depressive mood at two months was seen during the mothers' involvement in the two play situations. In addition, during the free play session, a tendency was found for the mothers with high EPDS scores at two months to show more warm and sensitive ways of touching their children. This finding is consistent with Stein et al. (1991), who found a considerable variability of warmth among the formerly depressed women. This was explained by the fact that reduced warmth was not associated with postnatal depression, but with severe and chronic marital and social difficulties. The participants in our study came from a fairly stable population with few multi-problem families. It has also been shown that fathers' participation in childcare could increase the mothers' sensitivity toward the child (Cooper et al., 1999; Feldman, 2000). Thus, an explanation for our finding of more positive physical contact between index mothers and their children compared to comparison mothers and their children, might be that partners of index mothers were more involved in childcare compared to partners of

comparison mothers. Another explanation could be that the former high EPDS-scoring mothers, during their period of depressed mood, could not express feelings through facial mimic and instead had to use touch as an expression of feelings. Thus, these mothers may have needed to employ more physical contact with their child to get the child's attention and concentration. However, despite these mothers' attempts to catch their infants' attentiveness with touch, children of high EPDS-scoring mothers were more easily distracted during the free play situation with their mother than children in the comparison group. Since according to Clark (1985) parents' capacity to be playful with, and enjoy their child is assessed in free play, this finding may indicate that high-scoring mothers were less successful getting their children interested in and persist in play than comparison-mothers. Similarly, the lack of joy and pleasure in attachment behaviour during the reunion with their mothers was characteristic of children with high EPDS-scoring mothers and was not seen in these children's attachment to their fathers. Thus, the child's early experiences with a mother that has had depressive symptoms may have given the child an "internal working model" (Bowlby, 1998) of the mother as a less joyful person, since the index mother-child interaction is associated with less positive feelings than the index father-child interaction. Our results are supported by Field et al. (1999), who concluded that non-depressed fathers' behaviour, was not negatively affected by the depressed mothers, and by Hossain et al. (1994) who suggested that non-depressed fathers may compensate for "depressed" mother-child interactions. Given the explorative nature of the study, the small numbers of participating families, and perhaps a biased sample of couples who are motivated for parenting, the results have to be interpreted with caution. Other limitations include not measuring paternal depressive symptoms and not following maternal depressive mood throughout the study. Although the EPDS is known to be a reliable and valid way of measuring mood in men today (Matthey et al. 2001), during this study the EPDS was not sufficiently validated for men (Areas et al 1996). Furthermore, the severity, timing and course of maternal depression is important for the outcome for a child (e.g. Campbell and Cohn, 1997) but this study measured maternal depressive symptoms for only two months. Nevertheless, the study indicates that children are vulnerable to their mothers' depressive symptoms and that fathers are very important for children in these family situations. These findings highlight the importance for health professionals to reach these families early in parenthood

and to be able to emotionally support the fathers in their role as caregivers to their children.

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