



Published in final edited form as:

Infant Behav Dev. 2010 February ; 33(1): 1. doi:10.1016/j.infbeh.2009.10.005.

Postpartum Depression Effects on Early Interactions, Parenting, and Safety Practices: A Review

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Abstract

In this paper studies are reviewed from the last decade on postpartum depression effects on early interactions, parenting, safety practices and on early interventions. The interaction disturbances of depressed mothers and their infants appear to be universal, across different cultures and socioeconomic status groups and, include less sensitivity of the mothers and responsivity of the infants. Several caregiving activities also appear to be compromised by postpartum depression including feeding practices, most especially breastfeeding, sleep routines and well-child visits, vaccinations and safety practices. These data highlight the need for universal screening of maternal and paternal depression during the postpartum period. Early interventions reviewed here include psychotherapy and interaction coaching for the mothers, and infant massage for their infants.

The significance of continuing research on postpartum depression is highlighted by the increasing incidence of postpartum depression and some longitudinal studies that have reported long-term negative effects of postpartum depression on children's health and their social, emotional, cognitive and physical development. Statistics from large sample studies have placed postpartum depression at about 20–40% in mothers and a somewhat lower percentage in fathers (Goodman, 2004; McCoy, Beal, Shipman, Payton, Watson, 2006). In these samples, similar rates of postpartum depression were noted for the mothers and fathers in families where the mother was experiencing postpartum depression symptoms.

The long-term negative outcomes, including behavioral, emotional and health problems, have been frequently attributed to disturbed mother-infant interactions, although more recent data suggest that poor parenting and safety practices are also risk factors. This paper is a review of studies from the last decade on postpartum depression effects on early interactions, parenting and safety practices and on early interventions.

Early Interactions

As already mentioned, researchers have attributed the long-term effects of maternal depression including behavior problems, cognitive delays and physical health problems to disturbed early interactions (Beardslee, Versage & Gladstone, 1998). In a meta-analysis of studies on the early

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interactions of postpartum depressed mothers, the mothers who were depressed across their infants' first 3 months of life were noted to be more irritable and hostile, to be less engaged, to exhibit less emotion and warmth and to have lower rates of play with their 3-month-old infants (Lovejoy, Graczyk, O'Hare & Neuman, 2000).

Most of the mother-infant interaction studies have focused on infants between three and six months because that seems to be the primary form of play for infants that age. Non-depressed parents are noted to engage in face-to-face interaction play behavior that features vocalizing, smiling, imitation and gameplaying (Field, 2006). These interactions, in turn, are thought to be the "playing field" for infants learning communication skills such as turntaking. Fewer of these behaviors have been noted in depressed mothers and their infants, which may contribute to their interaction disturbances (Field, 2006). The interaction disturbances of depressed mothers and their infants appear to be universal across different cultures and socioeconomic status groups. For example, less vocal and visual communication and less smiling have been noted in depressed mother-infant interactions in Switzerland (Righetti-Veltema, Conner-Perreard, Bousquet & Manzano, 2002). Similarly, in England, depressed mothers are less sensitively attuned to their infants (Murray, Fiori-Cowley, Hooper & Cooper, 1996). These early interactions disturbances have also been noted, for example, in Arabic cultures (Eapen et al, 2005) and Turkey (Danaci et al, 2002).

Depressed mothers appear to have at least two different styles of interacting including an intrusive, controlling and over-stimulating style or a withdrawn, passive and under-stimulating style (Malphurs, Raag, Field, Pickens & Pelaez-Nogueras, 1996). Postpartum depressed mothers in comparison with non-depressed mothers touch their infants less frequently and in a less affectionate manner (Ferber, Feldman & Makhoul, 2008) and a more negative manner (e.g. rough pulling, tickling and poking) (Fergus, Schmidh & Pickens, 1998 ;Malphurs et al, 1996). Infants of depressed mothers spend more time touching their own skin, which may compensate for their receiving less positive touch from their mothers (Hentel, Beebe & Jaffe, 2000; Herrera, Reissland & Shepherd, 2004).

Depressed mothers also differ on their vocal behavior, including the use of longer utterances, less repetition, more negative affect, fewer explanations, suggestions and questions and fewer references to their infants' behavior (Herrera et al, 2004; Kaplan, Bachorowski & Zarlengo-Strouse, 1999). Others have noted differences in the vocal timing of depressed mothers' responses to their 4-month-old infants' vocalizations (Zlochower & Cohen, 1996). In this study, the duration of switching pauses in depressed mothers was longer, more variable and less predictable than the timing mechanism of the non-depressed mothers. The authors suggested that depression may play a role in reducing synchrony in depressed mothers' and infants' interactions, affecting the mother's ability to coordinate her vocal behavior with her infant's vocalizations and non-verbal behavior. Consistent with the observation that depressed mothers have less infant-directed speech is a finding that they do not show a shorter mean length of utterance for younger versus older babies, in contrast to non-depressed mothers (Reissland, Shepherd & Herrera, 2003). It is not surprising, then, that the infants of depressed mothers later show less expressive language and perform more poorly on measures of cognitive-linguistic functioning (NICHD Early Child Care Research Network, 1999).

In a study on a very large sample (N=5,089) of both depressed mothers and fathers, depressive symptoms were also associated with less enrichment activity with the infant including less reading, singing songs, telling stories and playing games (Paulson, Dauber & Leiferman, 2006). Mothers who were depressed were less likely to tell stories and play peek-a-boo with their infants (according to their self-report), and depressed fathers were less likely to sing songs and play with their infants. However, in another study, paternal depression did not affect at least the fathers' frequency of interactions (Lyons-Ruth et al, 2002).

Postpartum paternal depression has been noted to exacerbate maternal depression effects on later child behavior problems but only if the father has spent significant amounts of time caring for the child during infancy (Mezulis, Hyde & Clark, 2004). In addition, being exposed to a non-depressed father did not buffer the effects of maternal depression, even if the father spent significant amounts of time with his infant.

All of these interaction activities are important for later cognitive, social, emotional and physical development (Britto, Fuligni & Brooks-Gunn, 2002; Bus, van Ijzendoorn & Pellegrini, 1995). Thus, the lesser amount of time spent by depressed parents in these activities does not augur well for their infants' later development. This may be particularly true for male infants inasmuch as they are noted to have even more difficult interactions with their depressed mothers. For example, in a recent study, male infants as compared to female infants were more vulnerable to high levels of maternal depressive symptoms, and high symptom mothers and their sons had more difficult interactions (Weinberg, Olson, Beeghly & Tronick, 2006).

Inadequate Caregiving Practices

Several caregiving activities also appear to be compromised by postpartum depression effects on the developing parenting roles including feeding practices, most especially breastfeeding, sleep routines and well-child visits and vaccinations. These would seem to be even more basic functions of parenting, although they have received less attention than the effects of postpartum depression on mother-infant interactions.

Breastfeeding

Most studies on parenting practices have reported reduced odds of continuing breastfeeding for mothers who are postpartum depressed (Dennis & McQueen, 2007; McLearn, Minkovitz, Strobino, Marks & Hou, 2006). In both of these studies, the mothers with high postpartum depression scores were significantly more likely to discontinue breastfeeding at 4 to 16 weeks postpartum and were giving the infant water, juice or cereal during that time (McLearn et al, 2006; Paulson, Dauber, & Leiferman, 2006). These undesirable feeding practices may have, in turn, led to the feeding difficulties noted in infants of depressed mothers (Righett-Veltema et al, 2002).

In the Dennis and McQueen (2007) study, the mothers also reported being unsatisfied with breastfeeding and having experienced significant breastfeeding problems and lower levels of breastfeeding self-efficacy. Similarly, in another study based on high Edinburgh depression scores, an inverse relationship was noted between depressive symptoms and breastfeeding at 6 weeks postpartum (Hatton, Harrison-Hohner, Coste, Dorato, Curet & McCarron, 2005), although, the inverse relationship did not continue beyond 12 weeks. In at least one study, however, depression was surprisingly not related to breastfeeding (McCarter-Spaulding & Horowitz, 2007).

Sleep problems

In the same large sample study reporting undesirable practices and infant feeding problems, undesirable sleep practices and sleep problems were also noted (Mc Learn et al, 2006). The sleep practices associated with maternal depression included placing the infant to sleep in the prone position instead of the recommended supine position. In other samples, sleep problems included the infant sleeping in the parents' bed, being nursed to sleep, taking longer to fall asleep and waking more often and for longer periods (Hiscock & Wake, 2001). The same sleep problems were associated with high depression scores and tended to increase as depression scores increased. In still another study on disturbed sleep patterns, mothers with major depressive symptoms at 4 and 8 weeks were more likely to report that their infant cried often,

woke up 3 times or more between 10pm and 6am, and received less than 6 hours of sleep in a 24 hour period during the past week (Dennis & Ross, 2005). The infants' sleep problems also did not allow the mothers to get a reasonable amount of sleep. Consistent with these findings, the mothers with high depression scores were more likely to report that they often felt tired.

Similarly, in another study, problematic sleep patterns included 1) parental disagreement regarding managing the infants' sleep; 2) the infant sleeping in the parents' room; 3) the mothers nursing the infants to sleep at the beginning of the night; and 4) the infants waking 7 nights per week (Hatton, et al 2005). In addition, the mothers who reported infant sleep problems had poor mental and physical health as compared to those not reporting sleep problems.

Healthcare

Maternal depressive symptoms have also been noted to affect children's receiving health care during infancy. In a cohort study of data collected prospectively as part of the National Evaluation of Healthy Steps for Young Children, infants whose mothers had depressive symptoms at 2–4 months had increased use of acute care later in infancy including emergency department visits in the past year (Minkovitz, Strobino, Charfstein, Hou, Miller, Mistry & Swartz, 2005). The infants of depressed mothers also had received fewer preventive services including age-appropriate well-child visits at 12 months and up-to-date vaccinations at 24 months.

Safety Practices

Safety practices have also been affected by maternal depression symptoms. In a secondary analysis from the Health Steps National Evaluation, interviews given at the end of infancy provided information about safety practices including using an infant car seat, having electric outlet covers, having safety latches on cabinets and having lowered the temperature on the water heater (McLearn, et al, 2006). In this sample, the mothers with depressive symptoms at 2–4 months had a reduced odds of using car seats and lowering the water heater temperature. Mothers with concurrent depressive symptoms had a reduced odds of using electric outlet covers and using safety latches. In a similar large database in England, however (Mulvaney & Kendrick, 2006), maternal depression did not appear to be related to safety practices including the safe storage of medicines, the use of smoke alarms and the safe storage of sharp objects. These discrepant findings may relate to cross-cultural differences or simply the assessment of different safety practices by the two studies.

Thoughts of Harming Infants

Thoughts of harming infants are also more frequent among depressed mothers. In one sample, 41% of depressed mothers compared to 7% of control mothers admitted to thoughts of harming their infant (Jennings, Ross, Popper & Elmore, 1999). More than half the depressed mothers had a problem with thoughts of harming their infant, fear of being alone with the infant and an inability to care for the infant.

Punishment

Mothers with depressive symptoms have also been noted to use harsh punishment (McLearn et al, 2006). Again, taken from the Healthy Steps sample, those with depressive symptoms had increased odds of using harsh punishment by slapping the child on the face or spanking the child with an object.

Clinical Implications

The findings from these studies on early interaction problems and inadequate caregiving and safety practices have important clinical implications for pediatric healthcare professionals. One of the implications is the need for universal screening of maternal and paternal depression by pediatricians during the postpartum period, inasmuch as pediatric professionals have frequent contact with families at that time. Several pediatric organizations have suggested that pediatric professionals not only be involved in the universal screening but also in guidance and referrals for maternal depression treatment (Murray et al, 1996). The US Preventive Service Task Force has recommended 2-item screeners to be used by primary care professionals to detect depression symptoms (US Preventive Services Task Force, 2002). In a recent study, for example, a significant increase was noted in the detection of depression symptoms among mothers during the first postpartum year following the implementation of the universal postpartum depression screening during well-childcare visits (Chaudron, Szilagyi, Kitzman, Wadkins & Cornwell, 2004). Secondly, pediatricians are being encouraged to provide anticipatory guidance to mothers with depression symptoms, including discussions of parenting practices such as continuing breastfeeding, playing, talking and providing routines and book-reading. The screening and interventions should also be directed at depressed fathers and partners of depressed mothers.

Behavioral Interventions

Most intervention programs for postpartum depressed mothers have focused on providing pharmaceuticals or psychotherapy for the mothers. Although the psychotherapy studies have suggested positive effects, the literature on antidepressants is mixed and generally suggests that antidepressants should not be used at least by breastfeeding mothers (see Field, 2008 for a review).

In a review on the different types of psychosocial and psychological interventions for postpartum depression, several databases were searched for these kinds of interventions (Dennis & Creedy, 2004). Basically this review suggested that women who received psychosocial interventions were equally likely to develop postpartum depression as those receiving standard care. The only promising intervention in this review was intensive postpartum support by public health nurses or midwives. Identifying mothers at-risk assisted the prevention of postpartum depression, although, surprisingly, interventions with only a postnatal component appeared to be more beneficial than interventions that also incorporated a prenatal component. In addition, while individually-based interventions were more effective than those that were group-based, the women who received multiple-contact interventions were again, surprisingly, just as likely to experience postpartum depression as those who received a single-contact intervention.

In a study on psychotherapy to help postpartum depressed mothers interact with their infants, the depressed women were randomly assigned to interpersonal psychotherapy or to a waitlist control group (Foreman, O'Hara, Stuart, Gorman, Larsen & Coy, 2007). At 6 months, the depressed mothers were less responsive to their infants, they experienced more parenting stress, and they viewed their infants more negatively than non-depressed mothers did. The treatment only reduced parenting stress, although parenting stress was still higher in the depressed versus the non-depressed mothers. At an eighteen month follow-up, the depressed mothers who received interpersonal psychotherapy still rated their children lower on attachment security, higher on behavior problems and more negative on temperament than the children of non-depressed mothers. Thus, it would appear that treatment of the mothers' depression symptoms is not sufficient. Early interventions may need to also focus on mother-infant interactions.

Interaction coaching has been developed to help mothers improve their interaction behaviors by providing them video feedback, by giving them instructional sets such as having them imitate their infants' behavior and by using "bug-in-the-ear" second-by-second suggestions as the interactions occur (see Field 2006 for a review). These interventions have been effective with postpartum depressed mothers in several studies reviewed by Field (2006). A recent study by another group targeted mother-infant interactions to help parents understand and respond to their infants' behaviors with the goal of increasing positive affect in the infants (Jung, Short, Letourneau & Andrews, 2007). The intervention was carried out in 5 weekly group sessions beginning when the infant was 3 months of age. The dyads were videotaped during face-to-face interactions. Following the intervention, the infants showed more interest and joy expressions when interacting with their mothers. Even though the mothers' depression ratings did not change, the authors concluded that the intervention had helped the mothers focus on what they were doing with their infants rather than simply how they were feeling.

Finally, teaching depressed mothers to massage their infants has resulted in less irritability and fewer sleep problems in the infants and better mother-infant interactions (Field, Grizzle, Scafidi & Abrams, 1996). The mothers' depression has also been reduced by massaging their infants (Goldstein-Ferber, 2004).

Methodological Limitations

Many of these studies have the limitation that they used self-report measures (the CES-D and the Edinburgh Depression Scales) to assess parental depression. Although these self-report measures are not typically used for clinical diagnoses, the self-report depression scales do reflect a range of depressive symptoms that are typically associated with the diagnosis of depression, and they are reliable measures. Further, they are cost-effective measures that could be used for universal screening to identify postpartum depressed mothers and fathers for early interventions.

The measures used for assessing parent caregiving activities and safety practices were also completed by self-report. Although parent reports have been correlated with observational measures in some studies, the self-reports are typically completed by the mothers, not the fathers. This may, in part, explain the data on paternal depression effects. More detailed parenting style and behavior observations may be needed and on both mothers and fathers in future studies.

Finally, it is not clear how the data from these studies have been affected by confounding interventions such as the anticipatory guidance intervention designed by the American Academy of Pediatrics. Inasmuch as most parents are being seen by pediatricians, which would suggest that they are receiving some anticipatory guidance, this may be a confounding factor in the assessment of the parents' behaviors.

Summary

This paper reviewed studies from the last decade on postpartum depression effects on early interactions, parenting, and safety practices, and on early interventions. The interaction disturbances of depressed mothers and their infants appear to be universal across different cultures and socioeconomic status groups and include less sensitivity of the mothers and responsivity of the infants. Several caregiving activities also appear to be compromised by postpartum depression including feeding practices, most especially breastfeeding, sleep routines and well child visits, vaccinations and safety practices. These data highlight the need for universal screening of maternal and paternal depression during the postpartum period. Early interventions reviewed here include psychotherapy and interaction coaching for the mothers

and infant massage for their infants. Further observational research and studies on educational and therapeutic interventions are needed.

Acknowledgments

We would like to thank the parents and infants who participated in these studies. This research was supported by a Merit Award (MH # 46586) and NIH grant (AT# 00370) and Senior Research Scientist Awards (MH#00331 and AT# 001585) and a March of Dimes Grant (# 12-FYO3-48) to Tiffany Field and funding from Johnson and Johnson Pediatric Institute to the Touch Research Institute.

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