Effects of postnatal depression on infant development

There is good evidence that parental psychiatric disorder has a deleterious effect on child development. Rutter has outlined a number of possible reasons for this. First, there may be a direct pernicious impact on the child of exposure to the parental disorder. Second, there may be an indirect impact via the effect of the parental disorder on interpersonal behaviour in general and parenting in particular. Finally, the impact may be via third factor variables, such as the social adversity commonly associated with psychiatric disorder, or genetic or constitutional factors. Depression arising in the postnatal period could have a direct pernicious impact on the child of exposure, or genetic or constitutional factors could contribute to the development of postnatal depression. There is good evidence that parental psychiatric disorder, or genetic or constitutional factors, could contribute to the development of postnatal depression. The impact of postnatal depression on maternal and infant development is complex and multifactorial. Maternal depression at this time in particular has the potential to affect both the child and the mother. The developmental impact of postnatal depression on the child is likely to depend on a number of factors, including the severity and duration of the depression, the presence of other psychiatric disorders, and the degree of psychosocial support available to the mother.

Cognitive development

Two studies have reported on the cognitive outcome of 12 to 18 month old infants of mothers who had a postnatal depression. Lyons-Ruth et al, in a comparison of American mothers and infants who had been referred to an infant intervention service with matched community controls, found that increased levels of maternal depression were related to poorer infant mental development. Similarly, Murray et al, in a comparison of the development of a British community sample of full term healthy infants of primiparous women who had either remained well or who had been depressed postnatally, found a significant difference between the two groups of infants in terms of a number of indices of cognitive development. Thus, at an 18 month follow up, compared with the infants of postnatally well mothers, infants of mothers who had had postnatal depression were significantly more likely to fail on stage V of Piaget’s object permanence task, a key measure of the infant’s capacity for mental representation; and on the Bayley scales of mental development, an interaction was found between maternal mental state and infant gender: the boys of mothers who had had postnatal depression performed particularly poorly.

Emotional development

The impact of postnatal depression on the emotional development of infants has been studied in three ways.

(1) An examination has been made of the quality of the infant’s interpersonal functioning when in direct communicative engagement with the mother. Stein and colleagues made standardised ratings of the quality of mother-infant interactions in free and structured play in the home in a community sample of mothers who had had a postnatal depression and their 19 months old infants, together with well controls. Compared with the latter group, the children of the index mothers showed less affective sharing, a lower rate of overall interactive behaviour, less concentration, and more negative responses. These infants also showed less sociability to a stranger.

(2) Assessments have been made of the quality of infant attachment (assessed by means of the Ainsworth strange situation procedure). Four longitudinal studies have been carried out on postpartum samples where systematic assessment of infant attachment has been made. Lyons-Ruth and colleagues found an association between insecure attachment at 12 months and high levels of maternal depression. Similarly, Murray found a significant association between the occurrence of depression in the postnatal period and insecurity of attachment at 18 months postpartum, with avoidance being the prominent insecure attachment profile. This association between the postnatal depression and child development is complex and multifactorial. Maternal depression at this time in particular has the potential to affect both the child and the mother. The developmental impact of postnatal depression on the child is likely to depend on a number of factors, including the severity and duration of the depression, the presence of other psychiatric disorders, and the degree of psychosocial support available to the mother.

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mood disorder and insecure infant attachment to the
mother was also found in a study conducted by Teti and
colleagues in which clinically referred mothers with
depression and their infants were compared with a
non-depressed control group. In contrast to these
three reports, Campbell and Cohn, in a low risk community
sample, found no association between attachment status
and maternal depression. However, some caution is
required when considering this last result as the rate of
follow-up was low, and high rates of insecurity were present
in both case and control groups. Finally, although Stein and
colleagues made no formal assessment of attachment, they
did make observations of the infant’s reaction to being
separated from the mother when in the presence of a
stranger: distress was evidenced by significantly fewer of
the children of the mothers who had had a postnatal
depression, possibly indicative of a higher rate of avoidant
attachments.

(3) Finally, account has been taken of the level of behav-
ioral problems. Murray interviewed mothers when their
children were 18 months of age using a modified version
of the behavioral screening questionnaire and found that,
compared with women who had been well in the postnatal
period, those who had experienced postnatal depression
were more likely to report behavioral difficulties in the
child. These principally concerned sleeping and eating
problems, temper tantrums, and separation difficulties.

Taken together these studies attest to a significantly
raised level of emotional disturbance in late infancy in the
children of mothers who have had a postnatal depression.

Mediating mechanisms
As noted above, a number of mechanisms may mediate the
association between the occurrence of postnatal depression
and adverse infant outcome.

(1) The most direct environmental route to be
considered is the child’s exposure to the mother’s depressive
symptoms. It is certainly the case that, in the study of
Lyons-Ruth and colleagues, infant outcome in terms of
both cognitive development and attachment security was
more compromised in the context of severe, rather than
mild, maternal depression. In addition, Campbell et al
found poor infant behaviour to occur in the context of
interactions with the mother where the mother was chronic-
ally, but not more briefly, depressed. In contrast, other
studies have found adverse infant outcome to obtain in
spite of maternal remission from depression some months
before the infant assessment. Thus, Stein et al found poor
infant behaviour at 19 months to obtain in cases where
the mother had been depressed postnatally, whether or not she
had recovered by the time of the infant assessment. Similarly,
Murray found the insecure attachment, behaviour
problems, and poorer cognitive outcome associated with
the occurrence of postnatal depression to obtain in infants of
18 months even though, in the great majority of cases, the
mother’s depression had remitted by around six to
eight months postpartum. In this study, moreover, there
was no association between infant outcome and the severity
of the mother’s postpartum depressive episode. These
latter findings indicate, therefore, that although the infant’s
exposure to severe and prolonged depressive symptoms
may contribute to poor outcome, other aspects of the
infant’s environment may also be important.

(2) The second causal route is via parenting difficulties
associated with the occurrence of maternal depression. It is well
established that depression is associated with a range of
persistent difficulties in interpersonal functioning. Weiss-
man and Paykel described, for example, how women who
had experienced depression, but remitted, continued to
show raised levels of irritability or withdrawn behaviour in
the context of their close family relationships. It may be
the case, therefore, that the experience of postpartum
depression sets in train a pattern of relating to the infant
that remains compromised in the longer term, in spite of
the relatively brief duration of the initial episode. Support
for this hypothesis comes from the study of Stein et al, who
found the quality of maternal interactions with the infant to
differ between well control group mothers and index
mothers who had recovered from depression by the time of
the assessment.

In the study of Murray and colleagues, assessments were
made of the quality of the maternal interactions with the
infant at two months postpartum. As expected, the responsi-
veness of the depressed mothers was generally poorer
than that of the well controls; and when the nature of this
caregiver interactional behaviour was considered, it was
found to account for the differences in the cognitive
outcome at 9 and 18 months of the depressed and well
mothers’ infants. The interactive style associated with
the occurrence of depression, therefore, rather than expo-
sure to depressive symptoms per se, carries the major
explanatory force. This conclusion is supported by studies
of mother-infant interactions conducted in the US. Cohn
and colleagues, for example, found that, within a postpar-
tum depressed group, the form of the infant’s response was
systematically related to the particular quality of maternal
behaviour: those with disengaged mothers showed high
rates of protest behaviour, while those whose mothers were
involved were avoidant. Such specificity in the associa-
tions between maternal and infant behaviours has been
confirmed by Field et al. Finally, the study of Teti and
Gelfand showed that maternal cognitions associated with
depression were more important in explaining the quality
of the mother-infant relationship than the occurrence of
depression itself. Together these studies indicate that the
primary determinant of the infant behaviour and outcome
is the particular form of maternal responsiveness rather
than the presence of depression per se.

(3) The third possible causal route is via third factor
variables:

(A) Environmental adversity: as noted by Cooper and
Murray, postnatal depression often occurs in the context of
social and personal adversity. Since there is good evidence
that such factors in themselves are associated with poor
child outcome, it is possible that any association between
postpartum depression and adverse infant development
arises as a function of factors such as overcrowding,
poverty, or marital discord, independent of the maternal
mood disorder. Comparison of populations of depressed
mothers in very differing social circumstances lends
support to the idea that social adversity may well be of sig-
nificance in understanding the adverse outcome of the
offspring of postnatally depressed women. Thus, a number of
studies conducted with very disadvantaged groups by Field
and Cohn and colleagues have found depressed mothers’
interactions with their infants to evidence high rates of
marked disturbance. In contrast, those conducted with low risk samples found the interaction difficulties of
depressed mothers to be less extreme. The impact of
adversity has also been discernible within samples. Thus,
Teti and colleagues found that, within a sample of postna-
tally depressed women, deficits in maternal feeding and
play with the infant were significantly related to the
presence of adversity. Similarly, Murray et al found that
non-depressed women experiencing significant adversity
showed similar interaction deficits to depressed women;
nevertheless, in remained the case that depressed women
experiencing no adversity still showed significant interac-
tion deficits compared with controls. In sum, while it is
certainly the case that adversity is associated with more
adverse mother-child relationships, and that adversity tends to stack up in depressed samples, the occurrence of depression itself is pernicious.

(B) Genetic/constitutional factors: while it has generally been assumed that associations between maternal depression and poor child outcome arise because of the impact of maternal factors on the child, recent research has highlighted the fact that relations between parents and their children are bidirectional in their influence. The possibility therefore needs to be addressed that poor child outcome, parenting difficulties, and even maternal depression itself may all be influenced by infant factors.

This question is difficult to address since it requires prospective investigation of the infant, independent of maternal functioning. However, Cutrona and Troutman found that the presence of irritable behaviour in the infant contributed to the persistence of depression. Similarly, Murray and colleagues found that certain infant characteristics (irritability and poor motor control), measured before the onset of any maternal depression at 10 days postpartum, significantly increased the risk that the mother would become depressed. Nevertheless, there was no evidence from the study of Murray and colleagues that infant factors had an independent impact on the quality of the mother-infant relationship at two months, and nor was there evidence for an impact of early infant characteristics on the longer term cognitive and emotional outcome of the child. Both the quality of maternal responsiveness and child outcome were, as noted above, principally affected by the presence of depression and social adversity.

Conclusion

It is evident that postnatal depression poses a risk for the mother-infant relationship and infant developmental outcome. The adverse effects of postnatal depression appear to be mediated through its association with maternal cognitions and parenting. The impact is likely to be more pernicious where the depressive episode is severe and prolonged, and where it occurs in the context of personal and social adversity.

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