Arch Womens Ment Health (2003) 6[Suppl.2]: s71–s77 DOI 10.1007/s00737-003-0007-7

### Special topic

### Mental health of parents caring for infants

### L. Murray<sup>1</sup>, P. Cooper<sup>1</sup>, and A. Hipwell<sup>2</sup>

<sup>1</sup>Winnicott Research Unit, School of Psychology, University of Reading, U.K. <sup>2</sup>Pittsburgh Girls Study, Western Psychiatric Institute and Clinic, U.S.A.

Received February 19; accepted March 9, 2003 Published online May 21, 2003 © Springer-Verlag 2003

#### Summary

The postpartum period is a sensitive time due to the presence and demands of the developing infant. The care provided by a mother to her infant during this period may be compromised if she is suffering from postnatal depression or postpartum psychosis. Evidence has been emerging which suggests that postnatal depression and postpartum psychoses have adverse effects on the quality of the mother-infant relationship and also on the infant's subsequent cognitive and emotional development. Presented is a review of the literature relating to how these conditions impact on parenting and infant outcomes, what measures are in place to detect these conditions and evidence-based models of best clinical practice are proposed.

*Keywords:* Postnatal depression; postpartum psychoses; parenting; child development.

### Introduction

Infants are entirely dependent for their health and well-being on those who care for them. Research over the past two decades has shown that, from birth, infants engage socially with their caretakers and are sensitive to the quality of their communication. There are many influences on a parent's ability to meet their infant's needs. For example, if the parent is preoccupied by worries (e.g. about finances or housing) or difficulties with their partner or family, it can be hard to focus on the baby's experience. Another common source of difficulty that can interfere with the parents' being able to care for the baby is mental ill health. The postpartum period is a sensitive time due to the presence and demands of the developing infant. Consequently, the care provided by mothers who are mentally unwell to their infants is an important issue, and highlights the need to develop sound interventions for the prevention of postpartum mood disorders. This paper first sets out evidence of the impact of postnatal depression and postpartum psychoses on parenting and child development. Second, the implications of these findings for intervention are considered, along with proposals for evidence-based models of best practice.

### **Postnatal depression**

## Prevalence, course and nature of postnatal depression

A number of epidemiological studies in the UK and the US have found that around 10-15% of women experience an episode of depression in the months following childbirth (O'Hara and Swain, 1996). The incidence of depression in the first postnatal year is highest in the first three months, with the peak time of onset being in the first four to six weeks. If left untreated, most women recover from their depression within three to six months. Nevertheless, around 10% still show evidence of depression one year after delivery (Cooper and Murray, 1995). Depression after childbirth resembles that occurring at other times: it is characterized by pervasive low mood, or loss of interest and enjoyment, as well as a range of other symptoms, including a change in appetite, difficulty in sleeping, low energy, an s72

inability to concentrate, and excessive feelings of guilt or low self worth.

### Risk factors for postnatal depression

Certain factors have consistently been found to be associated with the occurrence of postnatal depression (Boyce, 2003). The strongest predictors are a previous history of depression, and the absence of close, confiding relationships. Feelings of depression and anxiety during pregnancy are also commonly associated with postnatal depression. Difficulties, such as low income, or poor housing, are also risk factors, as is rapid return to work (by six weeks postpartum) (Lowe-Vandel et al., 1997). Other risk factors may only be evident in the perinatal period. These include a particularly marked experience of the "Blues", finding the infant difficult to manage (Murray et al., 1996a), and infant health problems (Henshaw, 2003).

## Impact of postnatal depression on parenting and child development

Depression does adversely effect a mother's capacity to care well for her infant and increases the risk that difficulties will arise. For example, in terms of general care taking, depressed mothers are more likely than those who are well to give up breast feeding early (Cooper et al., 1993), and are more likely to report difficulties managing their infants' crying and demands (Seeley et al., 1996).

Much research has shown, for example, that postnatal depression is associated with difficulties in responding to the baby in social interactions. On the one hand, the mother may find it hard to focus on her baby's experience and instead remains preoccupied with her own feelings, causing her to miss infant cues and appear withdrawn and disengaged. On the other hand, depression is sometimes associated with intrusive and even hostile play, when the mother may fail to recognize the baby's discomfort, and persist in trying to gain the baby's attention, possibly poking the baby roughly or being otherwise over-stimulating. These two quite marked kinds of insensitive behavior are much more common when depression occurs in the context of other difficulties, typically being found in populations of high risk, multi-problem mothers (Field, 1992). Nevertheless, even in very difficult circumstances, it is not inevitable that mothers who are depressed will have these kinds of interaction problems (Williams and Carmichael, 1985). In contrast to the marked problems that can arise among disadvantaged groups, when depression occurs in low risk samples any difficulties in social interactions with the baby tend to be more subtle. Nevertheless, the same basic pattern still occurs more frequently than in well mothers (Murray et al., 1996b), particularly in cases where the depression persists (Campbell et al., 1995).

A number of researchers have conducted followup studies of the children of mothers who were postnatally depressed. Some have found evidence of relative delays in cognitive development even when the effects of later depression are taken into account (Cogill et al., 1986). However, this cognitive delay has not always been found (Murray et al., 1996c). It is likely that any effects of postnatal depression on child intelligence will be most apparent when other risk factors are also present, such as low educational qualification in the parents (Hay and Kumar, 1995), or neonatal risk factors (Kurstjens and Wolke, 2000).

With regard to the child's emotional and behavioral development, there is also evidence that postnatal depression may be associated with later difficulties in the child's adjustment. In late infancy, example, children whose mothers were for postnatally depressed have consistently been found to have higher rates of insecure attachment to their mother than children of well mothers (Martins and Gaffan, 2000), and a pattern of reduced child responsiveness, associated with the development of insecure attachment in infancy may persist in relation both to the mother and to peers (Murray et al., 1999). Three longer-term follow up studies have shown that children of mothers who were depressed in the postnatal year had increased problems when they started school, including higher rates of anxiety (Alpern and Lyons-Ruth, 1993; Essex et al., 2001), and, in boys, higher rates of conduct difficulties and hyperactive symptoms (Sinclair and Murray, 1998). There have also been reports of increased difficulties in child behavior at home (Wrate et al., 1985). However, it is important to note, that these difficulties did not occur in all the children whose mothers had been postnatally depressed, and indeed, in some follow-up studies, the impact of current family difficulties has been found to be more important (Caplan et al., 1989; Ghodsian et al., 1984).

An important question concerns the nature of the factors connected with postnatal depression that may have brought about any later difficulties in child development. Evidence on this front is indirect, but in relation to child cognitive development, four processes are likely to be important. First, the lack of contingency in the parent's responses may make it more difficult for the infant to sense connections between his/her own behavior and events in the environment, a fundamental aspect of learning abilities. Second, insensitive or unresponsive parental behavior may interfere with the development of the infant's capacity to sustain attention. Third, any hostility or markedly intrusive behavior on the parent's part may cause infant distress and interfere with cognitive and memory functions. Finally, the fact that depression reduces the level of parental imitation of infant expressions during interactions has been linked, theoretically, to a potential adverse effect on the child's ability to make self/other distinctions.

With regard to the child's later emotional and conduct problems, somewhat different processes have been proposed. One particularly important component of the early mother-infant relationship seems to be the hostility that depressed mothers sometimes express towards their infant. This may directly cause infant distress and dysregulated behavior, and can set up difficult cycles of relating and longer-term conflictual interactions (Morrell and Murray, 2003).

There is little research assessing the impact of interventions on improving parenting style and infant outcomes. Interventions are aimed at enhancing the mother-infant relationship by either developing parenting skills (e.g. instructing the mother on how to pick up and respond to her infants' cues, cognitive behavioral therapy, psychodynamic attachment therapy) or elevating maternal mood (e.g. non-directive counseling and supportive home visits). In terms of the impact of interventions, studies to date have not distinguished any particular intervention as better than another (Cooper et al., 2003), but the evidence suggests that the incidence of infant behavioral problems are reduced and insensitive interactions are less likely to develop (Murray et al., 2003).

### Detection of postnatal depression

Around 40–50% of episodes of postnatal depression go undetected in the UK (Seeley et al., 1996). This situation may arise for a variety of reasons. First, unless formal screening procedures are instituted, clinicians may rely on the mother herself to volunteer any difficulties she is experiencing. However, people who are depressed often experience considerable guilt, and feel they ought to cope better, and this can make them reluctant to admit how they are feeling. A depressed mother may fear that health professionals, or even other mothers, will judge her as inadequate and also fear that, at the extreme, their baby may be removed from them.

The evidence that postnatal depression is often not detected, and that depressed women may be reluctant to make use of clinic-based health care services, points to the need for professionals to receive training in the detection of depression, and to have the resources to make repeated home visits to vulnerable mothers.

## Models of best practice for treatment of postnatal depression

Psychological treatments of postnatal depression have been reviewed by Stuart et al. (2003). Given the research evidence now available, it is possible to suggest evidence-based strategies for best practice in primary care for mothers vulnerable to postnatal depression. Questionnaires are now available that could be used routinely by midwives antenatally to help identify women who are at increased risk for depression (e.g. Cooper et al., 1996). Since, in the UK, the health visitor is the primary care professional who will have long-term contact with families, antenatal contacts should be formed between the midwives and health visitors.

Midwives are also ideally placed to detect risk factors for depression that may become evident only following the birth, such as infant irritability, or the fact that the mother seems particularly emotionally fragile. Apart from giving good support themselves in these situations, it would be helpful for midwives to inform the health visitor of any such difficulties so that extra time can be set aside early on, and weekly home visiting can be considered.

It is advisable to use a screening questionnaire, such as the EPDS (Cox et al., 1987), routinely at the six-week postnatal check. This may be done by the health visitor or the GP. If a mother's score is high, or if there are other reasons for concern, systematic enquiry to check whether the mother is depressed should be made. Should a mother be diagnosed as depressed by a health visitor, the GP should also assess the mother in case there is an immediate need for antidepressant medication. In most cases this is unlikely to be necessary, and home visiting support by the health visitor may be sufficient. At this point, helping the mother attend mother-and-baby groups, where networks of wider support can be built up, is valuable. Given the evidence that home visiting support is not only effective in alleviating symptoms of depression, but is also of benefit in terms of the mother-infant relationship and child development, this kind of approach stands to make an important contribution to the welfare of children.

### **Postpartum psychoses**

# Prevalence, course and nature of postpartum psychoses

Between 1 and 2 women in every 1,000 develop a postnatal mental illness that is sufficiently severe to warrant in-patient psychiatric care. The majority of episodes occur within the first four weeks following delivery. Postpartum psychoses often have a variable course. Although hospital admissions can last a year or more, the majority of women are able to leave hospital after about two months (Kumar et al., 1995), although it may take some time before they feel fully recovered (Hipwell, 1992).

Postpartum psychoses are similar in their presentation to affective psychoses arising at other times - i.e. depression, or manic depression (Brockington et al., 1981), with a fairly equal representation of each subtype. However, formal diagnostic classifications do not do justice to the heterogeneity and complexity of psychotic disorders arising in the postnatal period. For example, there may be transient or alternating episodes during which women express delusions of guilt, persecution, grandiosity or worthlessness; the experience of ideas of reference, auditory and other hallucinations; delirium-like symptoms and confusion; and symptoms of either over-activity or motor retardation. A significant minority of women express delusions that relate directly to their infants, typically that the infant is possessed, has special powers, or is medically unwell (Kumar et al., 1995), raising additional concerns about the mother's potential to cause harm, intentionally or otherwise, to her infant.

#### *Risk factors for postpartum psychoses*

Predicting the onset of postpartum psychoses has proved difficult, not least because of the relative infrequency of these conditions. The risk of a postpartum psychotic episode is increased from the base rate of 1 to 2per 1,000 to 1 in 5 to 7 in the context of a personal or family history of manic-depressive illness (Marks et al., 1992). Women who have a pre-existing diagnosis of schizophrenia, by contrast, do not appear to be at risk of relapse in the postpartum month (Davies et al., 1995). In contrast to postnatal depressive disorders, postpartum psychoses appear to arise independently of general environmental adversity.

As a result of their close temporal proximity to childbirth, abrupt onset, relative dissociation from social adversity, and the high risk of recurrence following subsequent delivery, biological factors are thought to be important in etiology. However, little research is known about the particular physiological and hormonal mechanisms involved.

# Impact of postpartum psychoses on parenting and child development

Compared with well women, those experiencing an episode of postpartum psychosis demonstrate more disorganized, and poorer quality care taking of their infant (Margison, 1990). Mothers often find it difficult to respond in a sensitive and consistent manner to their child, as a result of preoccupation with their symptoms, poor concentration, fatigue, or agitation. In general they may have little insight into the effects of their behavior on the infant, little sense of self-efficacy, and little awareness or understanding of the child's emotional and physical needs.

The form of disturbance in care taking varies according to the mother's diagnosis. Women with schizophrenic illness show the least engagement with their infants, followed by women who experience manic, and then severe depressive symptoms (Riordan et al., 1999). Assessment of a woman's parenting difficulties should take into account the various effects of her treatment, and indeed, the extent of contact that can realistically be achieved between the mother and her baby at this time. For example, the mother may be heavily sedated by psychotropic medication, may have had to discontinue breastfeeding, or may have only limited access to her infant, either because staff are concerned about risk to the child, or because of the constraints on in-patient facilities (Hipwell et al., 2000).

Studies have found that the prognosis of parenting for women suffering from acute isolated postpartum

episodes compared with women suffering from chronic psychosis may be dependent on psychosocial risk factors. Although women who experience acute episodes of psychosis of an affective nature show substantial improvement in their style of interaction with their infant on recovery (Thiels and Kumar, 1987), outcome studies concerned with the care giving ability of women with schizophrenic illnesses suggest a rather poor prognosis, particularly if the mother is single and has no social support to assist her in providing care for the child (Appleby and Dickens, 1993).

Few studies have examined the impact of postpartum psychoses on the child but, at present, there is little evidence to suggest that these acute episodes have enduring adverse effects. Findings from a Swedish longitudinal study, for example, demonstrated that the children of mothers who had experienced a postpartum psychotic breakdown were no different from children of well mothers on measures of attachment and maternal perceptions of infant temperament at one year (McNeil et al., 1988). Furthermore, at age 6, these children did not differ in terms of their cognitive functioning and mental health. Other follow-up studies of children who were admitted to hospital with their mentally ill mothers in the postnatal period have similarly revealed an absence of cognitive impairment both at 12 months (Hipwell, 1992), and at four years (Hipwell et al., 1997).

Although the negative findings of these few studies are encouraging, it is important to bear in mind that the samples have varied widely in terms of the mother's clinical care, and it is possible that the absence of adverse effects on index children arises because the infant's exposure to the maternal illness is often limited.

### Detection of postpartum psychoses

Due to the severe and often florid nature of the symptoms of postpartum psychosis, it is unlikely that these episodes will go undetected by health professionals. However, as diagnostic issues have yet to be resolved, postpartum psychoses may be documented in a variety of ways that do not reflect the postpartum context and the unique clinical features (Brockington and Cox-Roper, 1988). Inconsistencies in the recording of these disorders may well have implications for the individual, not only in terms of the type of clinical care offered at the time of illness, but also for the speed and accuracy with which high risk women are identified in the future when they present for antenatal care in a subsequent pregnancy.

### Treatment of postpartum psychoses

Most cases of postpartum psychosis are considered to be psychiatric emergencies, necessitating admission to hospital, and treatment with mood stabilizers and antipsychotic medication, or ECT. Nevertheless, there is some evidence that intensive community nursing may provide an alternative to admission for women who have reliable social support, are not actively suicidal, and do not express delusional ideas that focus on the infant (Oates, 1988).

In many countries, such as England, France, Australia and New Zealand, admission to a specialist mother-and-baby unit (MBU) is considered the most appropriate form of management postpartum psychoses. However, this is not a treatment option in countries such as USA and Canada. To date, there have been no controlled trials examining the efficacy of different systems of clinical management. Comparative studies of conjoint versus separate care of mothers and infants are difficult to conduct, given the substantial differences in the quality and nature of services available (Royal College of Psychiatrists, 1992). Nevertheless, a number of benefits of MBU admissions over traditional woman-only inpatient treatment have been suggested (Wisner et al., 1996). These include a greater willingness to comply with admission, thus ensuring earlier access to appropriate treatment. In addition, such admission may minimize disruption to the mother-infant relationship, breastfeeding can be maintained, and the mother's confidence and skills in care giving can be supported (Margison and Brockington, 1982).

Admission to an MBU appears to speed up the rate of recovery and reduce the risk of relapse (Baker et al., 1961). However, the sustained contact between the infant and a mother experiencing psychotic depressive symptoms that may occur in the MBU may not be in the infant's best interests in the longer term (Hipwell et al., 2000). There is also a concern about placing a young infant in an institution where there are many caregivers to help, and thus the child is more likely to experience discontinuous care and perhaps repeated, temporary separations from the mother. It is, therefore, important that MBUs are able to provide good continuity of nursing care for the infant, and have procedures to monitor the mother's ability to care well for her infant. While MBUs appear to be generally safe there is also a small, but worrying, risk that a mother may harm, or even kill her child (Margison, 1982). This is generally more likely in cases where the mother is suffering from schizophrenia.

### Anticipation of psychotic episodes

Kumar (1990) highlighted the importance of careful personal history taking by obstetric staff during pregnancy, and effective liaison between health professionals involved in antenatal care and mental health services. This is particularly important where the mother has had a previous episode of postpartum psychosis. However, because first-time mothers are most likely to be affected, and many of these women do not manifest obvious signs of vulnerability prior to the birth of the child, it is also advisable that information about family psychiatric history be taken to identify those who may be vulnerable. In this way, the possibility of psychotic breakdown can be considered, and awareness raised on the part of obstetric staff who can then be vigilant about the mother's psychological well being, and well placed to react quickly and appropriately to any signs of a psychotic illness.

### References

- Alpern L, Lyons-Ruth K (1993) Preschool children at social risk: chronically and timing of maternal depressive symptoms and child behavior problems at school and at home. Dev Psychopathol 5: 371–387.
- Appleby L, Dickens C (1993) Mothering skills of women with mental illness. Br Med J 306: 348–349.
- Baker A, Morison M, Game J, Thorpe J (1961) Admitting schizophrenic mothers with babies. Lancet 2: 237–239.
- Boyce P (2003) Risk factors for postnatal depression: a review and risk factors in Australian populations. Arch Womens Ment Health 6(3) Suppl 2.
- Brockington I, Cox-Roper A (1988) The nosology of puerperal mental illness. In: Kumar R, Brockington I (eds) Motherhood and mental illness 2: causes and consequences. Academic Press, London, 1–16.
- Brockington I, Cernik K, Schofield E, Downing A, Francis A, Keelan C (1981) Puerperal psychosis. Arch Gen Psychiatry 38: 829–833.
- Campbell SB, Cohn JF, Myers T (1995) Depression in first-time mothers: Mother-infant interaction and depression chronicity. Dev Psychol 31: 349–357.
- Caplan H, Cogill S, Alexandra H, Robson K, Katz R, Kumar R (1989) Maternal depression and the emotional development of the child. Br J Psychiatry 154: 818–823.

- Cogill S, Caplan H, Alexandra H, et al. (1986) Impact of postnatal depression on cognitive development in young children. Br Med J 292: 1165–1167.
- Cooper PJ, Murray L (1995) The course and recurrence of postnatal depression. Br J Psychiatry 166: 191–195.
- Cooper PJ, Murray L, Stein A (1993) Psychosocial factors associated with the early termination of breastfeeding. J Psychosom Res 37: 171–176.
- Cooper PJ, Murray L, Hooper R, West A (1996) The development and validation of a predictive index for postpartum depression. Psychol Med 26: 627–634.
- Cooper PJ, Murray L, Wilson A, Romaniuk H (2003) A controlled trial of the long-term effect of psychological treatment of postpartum depression: I impact on maternal mood. Br J Psychiatry 182: 412–419.
- Cox JL, Holden JM, Sagovsky R (1987) Detection of postnatal depression: development of the Edinburgh Postnatal Depression Scale. Br J Psychiatry 150: 782–786.
- Davies A, McIvor R, Kumar R (1995) Relationship of schizophrenia and childbirth: the effects of diagnostic stringency. Schizophr Res 16: 25–31.
- Essex MJ, Klien MH, Miech R, Smider NA (2001) Timing of initial exposure to maternal major depression and children's mental health symptoms in kindergarten. Br J Psychiatry 179: 151–156.
- Field T (1992) Infants of depressed mothers. Dev Psychopathol 4: 49–66.
- Ghodsian M, Zajicek E, Wolkind S (1984) A longitudinal study of maternal depression and child behavior problems. J Child Psychol Psychiatry 25: 91–109.
- Guedeney N, Fermanian J, Guelfi JD, Kumar RC (2000) The Edinburgh Postnatal Depression Scale (EPDS) and the detection of major depressive disorders in early postpartum: some concerns about false negatives. J Affect Disord 61: 107–112.
- Hay DF, Kumar R (1995) Interpreting the effects of mothers' postnatal depression on children's intelligence: a critique and re-analysis. Child Psychiatry Hum Dev 25: 165–181.
- Henshaw C (2003) Mood disturbance in the early puerperium: a review. Arch Women's Ment Heal 6(3) Suppl 2.
- Hipwell A (1992) Postpartum mental illness and the psychological development of the infant. unpublished PhD thesis, University of London.
- Hipwell A, Davies L, Kumar R (1997) A four year follow-up study of children exposed to severe maternal mental illness in the puerperium. Presentation at the Royal College of Psychiatrists' Winter Meeting, Cardiff, Wales.
- Hipwell A, Goossens F, Melhuish E, Kumar R (2000) Severe maternal psychopathology and infant-mother attachment. Dev Psychopathol 12: 157–175.
- Kumar R (1990) Childbirth and mental illness. Triangle 29: 73–81.
- Kumar R, Marks M, Platz C, Yoshida K (1995) Clinical audit of a psychiatric mother and baby unit: characteristics of 100 consecutive admissions. J Affect Disord 33: 11–22.
- Kurstjens SW, Wolke D (2000) Effects of maternal depression on cognitive development of children over the first 7 years of life. J Child Psychol Psychiatry 42: 623–636.
- Leverton TJ, Elliot SA (2000) Is the EPDS a magic wand?: 1. A comparison of the Edinburgh Postnatal Depression Scale and health visitor report as a predictor of diagnosis on the Present State Examination. J Reproduct Infant Psychol 18: 279–296.
- Lowe Vandel D, Hyde JS, Ashby Plant E, Essex MJ (1997) Fathers and "others" as infant-care providers: predictors of parents' emotional well-being and marital satisfaction. Merrill-Palmer Quarterly 43: 361–385.

Mental health of parents caring for infants

- Margison F (1982) The pathology of the mother-child relationship. In: Brockington I, Kumar R (eds) Motherhood and mental illness. Academic Press, London, pp 191–219.
- Margison F (1990) Infants of mentally ill mothers: the risk of injury and its control. J Reproduct Infant Psychol 8: 137–146.
- Margison F, Brockington I (1982) Psychiatric mother and baby units. In: Brockington I, Kumar R (eds) Motherhood and mental illness. Academic Press, London, pp 223–237.
- Marks M, Wieck A, Checkley S, Kumar R (1992) Contribution of psychological and social factors to psychotic and non-psychotic relapse after childbirth in women with previous histories of affective disorder. J Affect Disord 29: 253–264.
- Martins C, Gaffan EA (2000) Effects of early maternal depression on patterns of infant-mother attachment: a meta-analytic investigation. J Child Psychol Psychiatry 41: 737–746.
- McNeil T, Persson-Blennow I, Binett B, Harty B, Karyd U-B (1988) A prospective study of postpartum psychoses in a high risk group: VII. Relationship to later offspring characteristics. Acta Psychiatr Scand 78: 613–617.
- Morrell J, Murray L (2003) Parenting and the development of conduct disorder and hyperactivity in childhood: a prospective longitudinal study from 2 months to 8 years. J Child Psychol Psychiatry 44: 489–508.
- Murray L, Stanley C, Hooper R, King F, Fiori-Cowley A (1996a) The role of infant factors in postnatal depression and motherinfant interactions. Dev Med Child Neurol 38: 109–119.
- Murray L, Fiori-Cowley A, Hooper R, Cooper PJ (1996b) The impact of postnatal depression and associated adversity on early mother-infant interactions and later infant outcome. Child Dev 67: 2512–2526.
- Murray L, Hipwell A, Hooper R, Stein A, Cooper PJ (1996c) The cognitive development of five year old children of post-natally depressed mothers. J Child Psychol Psychiatry 37: 927–935.
- Murray L, Sinclair D, Turner P, Ducournau P, Stein A, Cooper P (1999) The socio-emotional development of five year old children of postnatally depressed mothers. J Child Psychol Psychiatry 40: 1259–1272.
- Murray L, Cooper PJ, Wilson A, Romaniuk H (2003) A controlled trial of the long-term effect of psychological treatment of postpartum depression: II impact on the mother child relationship and child outcome. Br J Psychiatry 182: 420–427.

- O'Hara MW, Swain AM (1996) Rates and risks of postpartum depression – a meta-analysis. Int Rev Psychiatry 8: 37– 54.
- Oates M (1988) The development of an integrated community oriented service for severe postnatal illness. In: Kumar R, Brockington I (eds) Motherhood and mental illness 2: causes and consequences. Academic Press, London, pp 133– 158.
- Riordan D, Appleby L, Faragher B (1999) Mother-infant interaction in post-partum women with schizophrenia and affective disorders. Psychol Med 29: 991–995.
- Royal College of Psychiatrists (1992) Report of the general psychiatry section working party on postnatal illness. Psychiatr Bull 16: 519–522.
- Seeley S, Murray L, Cooper PJ (1996) The detection and treatment of postnatal depression by health visitors. Health Visit 64: 135–138.
- Sinclair D, Murray L (1998) The effects of postnatal depression on children's adjustment to school: teacher reports. Br J Psychiatry 172: 58–63.
- Stuart S, O'Hara MW, Gorman LL (2003) The prevention and psychotherapeutic treatment of postpartum depression. Arch Women's Ment Health 6(3) Suppl 2.
- Thiels C, Kumar R (1987) Severe puerperal mental illness and disturbances of maternal behavior. J Psychosom Obstet Gynaecol 7: 27–38.
- Williams H, Carmichael A (1985) Depression in mothers in a multi-ethnic urban industrial municipality Melbourne: etiological facts and effect on infants and preschool children. J Child Psychol Psychiatry 26: 277–288.
- Wisner K, Jennings K, Conley B (1996) Clinical dilemmas due to the lack of inpatient mother-baby units. Int J Psychiatry Med 26: 479–493.
- Wrate RM, Rooney AC, Thomas PF, Cox JL (1985) Postnatal depression and child development: a three-year follow-up study. Br J Psychiatry 146: 622–627.

Correspondence: Lynne Murray, Winnicott Research Unit, School of Psychology, University of Reading, 3 Early Gate, Whiteknights, Reading, Berkshire, RG6 6AL U.K.; e-mail: lynne.murray@reading.ac.uk