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Postnatal depression and infant cognitive and motor development in the second postnatal year: The impact of depression chronicity and infant gender

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Abstract

A large body of literature has investigated the effects of postnatal depression on infant development. However, the particular circumstances in which depression is associated with adverse effects remain unresolved. Factors, such as the nature of depression (e.g., duration and severity) and the context with respect to other risk and protective factors (e.g., socioeconomic status and child gender) have been suggested as moderators of the effects of postnatal depression on infant outcomes. This study examined the impact of brief and chronic depression in a non-poverty sample of 112 mothers and their infants. Infant language development was assessed at 12 months, and at 15 months the Bayley Scales of Infant Development-II were administered. Chronic maternal depression, lasting throughout the first 12 months postpartum and beyond, was associated with lower infant cognitive and psychomotor development, with the effects being similar for boys and girls, while brief depression did not significantly impact the infant performance. Language development and infant behavior during testing were equivalent across the groups. The relatively high rates of motor development delay associated with chronic maternal depression found in this study are discussed along with the methodological issues and models of cumulative risk.

Keywords: Postnatal depression; Maternal depression; Infant development; Chronicity; Gender

Despite the emergence of a large body of literature investigating the effects of postnatal depression on infant and later childhood development, the particular circumstances in which depression is associated with adverse effects remain unresolved. Factors, such as the nature of the depression itself (e.g., duration and severity), the particular developmental outcomes assessed (e.g., cognitive, motor or language development) and the context with respect to other risk and protective factors (e.g., maternal education, socioeconomic status and child gender) have been suggested as moderators of the effects of postnatal depression on infant outcomes. This study assessed the impact of the duration of postnatal depression on child outcomes and expanded the previous research by examining separately the effects on development of brief and chronic maternal depression at 12 and 15 months postpartum in a non-poverty sample of infants.

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1. Duration of postnatal depression

The duration of postnatal depression varies. While most mothers recover by 6 months postpartum (Cooper & Murray, 1995), a significant minority remains depressed one year after the birth of their baby (Campbell & Cohn, 1997). A number of prospective studies have investigated the impact of the duration of postnatal depression on infant outcomes. Some studies report adverse developmental outcomes in the presence of very early postnatal depression with no additional effects of longer-lasting depression. In contrast, other studies find adverse infant outcomes only when depression is chronic.

However, definitions of chronic depression vary in the research literature from depression that lasts beyond the first 6 months postpartum (Campbell & Cohn, 1997; Field, 1992; Kurstjens & Wolke, 2001) to depression throughout the first 2 years of the child's life (NICHD, 1999). Such differences in the definition and the length of the follow-up period, from 6 weeks (Field et al., 2004) to 11 years (Hay et al., 2001), reduce the comparability of the findings across studies and may account for some of the variation in results concerning the effects of depression chronicity on child cognitive development.

Maternal depression confined to the first postnatal year has been associated with adverse infant developmental outcomes, especially in low socioeconomic samples. Indeed, maternal depression in pregnancy has been shown to have adverse effects on physiological indices of infant development in the early postnatal period (Diego et al., 2004; Field et al., 2003). In Field's 1992 study, depression lasting between 6 and 12 months postpartum was found to be associated with significantly lower scores on the developmental assessments at 12 months of age, with no adverse effects of depression of less than 6 months duration. Two studies with longer follow-up periods (Cogill, Caplan, Alexandra, Robson, & Kumar, 1986; Sharp et al., 1995) have reported lasting impacts of depression in the first postnatal year on cognitive development at 4 years of age for their low SES samples. In the study by Sharp et al., (1995), however, adverse outcomes at 4 years were only found for boys of depressed mothers. When this sample was followed up at 11 years of age, striking long-term effects of brief maternal depression were reported (Hay et al., 2001). Both boys and girls of postnatally depressed mothers demonstrated significantly lower scores on the assessments of intellectual functioning than children whose mothers had not been depressed, with the effects being stronger for boys.

On the other hand, a number of studies have found that only infants of chronically depressed mothers show decrements in cognitive or language development in the toddler and preschool years (e.g., Kurstjens & Wolke, 2001). A study by the NICHD group (1999) reported significantly lower expressive language (ELQ) scores for children of mothers who were chronically depressed (at least 24 months) compared with children of never or sometimes depressed mothers, when assessed at 3 years of age. Brennan et al., (2000) also reported lower ELQ development scores only for children of chronically depressed mothers in their large Australian sample.

The complexity of the relationship between the duration of postnatal depression and infant outcomes is further exemplified in a prospective study by Murray (1992) and Murray, Hipwell, Hooper, Stein, and Cooper (1996). They reported no effect of postnatal depression on cognitive or language development at 18 months in a high socioeconomic sample. However, when specific vulnerable groups were examined, that is, boys of depressed mothers and infants of mothers who were depressed and of lower socioeconomic status, significant negative effects were found. At the 5-year follow-up, no effects of brief or chronic postnatal depression on the children's cognitive development were identified, even for the vulnerable subgroups (Murray, Hipwell, et al., 1996).

1.1. Infant gender

Infant gender has also been suggested as a moderator of the effects of postnatal depression on infant outcomes. Some studies have found male infants to be more vulnerable than female infants to the impact of maternal depression on cognitive and language development (e.g., Hay, 1997; Murray, 1992). In the study by Sharp and co-workers, 4-year-old boys of mothers who were depressed in the first postpartum year scored approximately one standard deviation lower on measures of cognitive development than boys of well mothers, while no effect of depression was found for girls. Kurstjens and Wolke (2001), on the other hand, found lower cognitive development scores for male infants only when male gender was combined with a cluster of other risk factors including chronic maternal depression and low socioeconomic status. It has been suggested that gender-specific responses to maternal depression may result from a magnification of already normative developmental gender differences (Hops, 1995).