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ORIGINAL ARTICLE

Maternal depressed mood moderates the impact of infant sleep on mother–infant bonding

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Abstract Parent–infant bonding has long-term consequences for the psychological wellbeing of the child. Considering the centrality of infant sleep patterns in infant–caregiver interactions in the first year of life, we propose that infant sleep patterns act as a catalyst or disruptor for mother–infant relationship, such that infant sleep patterns contribute to maternal mood, maternal sleep quality, perception of infant temperament, and her bonding experience. One hundred fifty-two Israeli mothers, of 5–8-month-old infants, responded to Internet-based questionnaires regarding their sleep, their mood, their infant's sleep, the infant's temperament, and their bonding experience. Eight percent of the mothers reported clinically significant depression, while 67 % reported significant sleep difficulties. Infant sleep difficulties correlated with maternal mood and sleep quality, infant fussiness, and bonding. Structural equation modeling demonstrated that maternal sleep partially mediated the relationship between infant sleep and maternal mood. Additionally, 22 % of the variance in bonding was explained by infant sleep problems and temperament. Notably, maternal depression moderated this effect such that infant sleep problems correlated with bonding only in those mothers who were depressed. The results suggest that infant sleep is a vector by which maternal cognitions and mood are transmitted to her child, with long-term implications for psychological development.

Keywords Postpartum depression · Bonding · Sleep · Infant temperament

Introduction

There is broad agreement in the field of child development that bonding of the primary caregiver with her infant, in early infancy, has long-term impact on the child's psychological wellbeing. Bonding, however, is an ill-defined concept (Chess and Thomas 1982; Eyar 1994; Altaweli and Roberts 2010), with the focus of bonding research almost entirely on mothers, whether for socially constructed reasons (i.e., mothers more often are the primary caregivers), methodological limitations (recruitment bias due to socially constructed gender roles), or theory-driven motivations (i.e., gender differences in rates of psychopathology) (Phares 1992). With this critique in mind, Billings (1995) defined bonding as reliable reports that a mother loves her child, feels responsible for the child, and experiences a sense of closeness with it. Similarly, Kinsey and Hupcey (2013) defined maternal–infant bonding as “an affective state of the mother” and suggested that maternal–infant bonding can be measured using maternal self-report instruments.

Feelings of attachment to the infant, competency, and gratification in mothering do not necessarily appear immediately postpartum but instead develop dynamically through engagement with the newborn child (Koniak-Griffin et al. 2006). Thus, the emergence of bonding is co-mingled with infant development and hence linked to other developmental processes and parental and home environment characteristics. Indeed, the literature linking bonding with multiple dimensions of maternal and infant traits reveals a variety of associations, depending on the theoretical framework of the study and the attributes of the investigated sample.

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1030

I.S. Hairston et al.

Several studies have found that impaired mother–infant relationship is associated with maternal psychopathology and sleep quality (Moehler et al. 2006; Saleh et al. 2010; Hairston et al. 2011; Muzik et al. 2013; Tikotzky 2014). Further, infant characteristics such as sleep difficulty (Dennis and Ross 2005; Hiscock et al. 2008) and difficult temperament (Cutrona and Troutman 1986) have been linked to maternal depression, which in turn may lead to impaired bonding.

Given that infant sleep is a locus of parent–infant interactions, especially in the early months of life, assessing the relationship between infant sleep, infant temperament, and ma-

ternal return for completing the questionnaires, participants were provided a coupon of 50 NIS (approx. \$13).

Instruments

Questionnaires and data output were generated using Qualtrics software © 2015 Qualtrics (Qualtrics, Provo, UT, USA; <http://www.qualtrics.com/>).

Demographic questionnaire Nineteen items provided information on sociodemographic details such as age, education,