

Brief report

**What can make the difference?
Premature birth and maternal sensitivity at 3 months of age:
The role of attachment organization, traumatic reaction and
baby's medical risk**

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Received 20 June 2006; received in revised form 7 December 2006; accepted 2 March 2007

Abstract

The influence of prematurity and maternal attachment organization on sensitivity was investigated in 40 mother–infant dyads. Results show a main effect of attachment and an interaction between attachment and prematurity. Sensitivity was differently associated with medical risk and mothers' traumatic reaction, depending on the quality of attachment.

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Keywords: Attachment organization; Premature birth; Mother–infant interaction; Traumatic reaction; Baby's medical risk

Extensive literature shows how difficult the beginnings of socio-emotional life can be for prematurely born infants because of their neuro-behavioural immaturity (Goldberg & DiVitto, 1995; Minde, 2000). While the effects of premature birth on the baby's early social abilities are well known, the impact of premature birth on maternal interactive style is less clear: the literature on maternal interactive style in preterm dyads is inconsistent and leads to contradictory findings. On one hand, premature birth seems to be a risk factor for mothers' behaviour, as they appear to be more active, intrusive, hyper stimulating and less sensitive with their infants, in comparison with mothers of full-terms. They seem to be less emotionally involved, less contingent and congruent to the infant's signals, show less positive expression and enjoy interacting with the baby less (e.g., Goldberg & DiVitto, 1995; Malatesta, Grigoryev, Lamb, Albin, & Culver, 1986). On the other hand, other studies underline mothers' ability to compensate for the preterm's difficulties, and describe them as more responsive, emotionally involved and more able to support the infant's cognitive and socio-affective achievements (e.g., Greenberg & Crnic, 1983; Singer et al., 2003). The inconsistency of these findings highlight the need to investigate other variables that may play a role in influencing maternal behaviour in preterm dyads. We assume, coherently with the attachment perspective, that it may be fruitful to investigate additionally the influence of maternal characteristics, together with the premature birth, on the quality of her behaviour in interaction with the infant. These,

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in fact, seem to play a more crucial role than infant ones, such as premature birth or physical problems, in shaping the quality of mother–infant attachment relationship (van IJzendoorn, Goldberg, Kroonenberg, & Frenkel, 1992); the maternal characteristic we suggest to take into account is the mother's state of mind with respect to attachment, which appears to be the most powerful antecedent of the quality of a mothers' sensitive behaviour in interaction with the infant (De Wolff & van IJzendoorn, 1997; van IJzendoorn, 1995). This "state of mind" refers to the set of mental representations built upon early attachment experiences that regulates behaviours, expectations and emotions in new intimate relationships (Main, Kaplan, & Cassidy, 1985; van IJzendoorn, 1995). The first aim of the study is to take into account the joint influence of premature birth as well as maternal state of mind with respect to attachment on the mother's sensitivity in interaction with the infant at 3 months of age. Coherently with the transactional model of developmental risk (Sameroff & Fiese, 2000), we expect to find maternal security to be a protective factor against the negative impact of premature birth and a cumulative effect of the two risk conditions – insecurity of attachment and premature birth – on the quality of a mother's interactive behaviour.

Secondly, we argue what could additionally make the difference in maternal sensitivity is not just having experienced the premature birth of the baby, but the intensity of the mother's traumatic reaction to the event on one side, and the severity of the premature birth on the other. Premature birth can be appropriately conceptualized as a traumatic event, according to both the Diagnostic and Statistical Manual of Mental Disorders' (DSM-IV) criteria and the psychoanalytic perspective (Green, 1990; Tracey, 2000), although up to now very few studies refer to maternal reaction in terms of Post-Traumatic Stress Disorder (PTSD) symptoms (e.g., Jotzo & Poets, 2005) and it is still not clear how the trauma can interfere with a mother's behaviour in interaction with the infant. Moreover, high medical risk in premature samples is associated with interactive difficulties between mother and infant (Schmucker et al., 2005; Singer et al., 2003). As it is well known that the state of mind with respect to attachment influences the way adults experience and organize behaviours and emotional resources during attachment relevant experiences, the second aim of the study is to test, only in the sub-sample of premature dyads, if mother's attachment organization moderates the impact of these two factors associated with premature birth on the quality of her subsequent sensitive behaviour. In other words, we expect the patterns of associations of traumatic reaction and baby's medical risk with maternal sensitivity to vary as a function of the quality of mothers' attachment organization.

The sample includes 40 mother–infant dyads subdivided into 2 sub-samples: (a) 20 mother–premature infant dyads [Very Low Birth Weight babies, selection criterion, according to World Health Organization (NHMRC, 2000) was birth weight ranging from 750 to 1499 g]; (b) 20 mother–full term healthy infant dyads as comparison group, matched to the preterms, on the basis of two criteria: the baby's gender and the period of birth. All dyads were recruited in the public hospital in the city of Bari and belong to two parent, middle-class South Italian families. The total sample includes 18 males and 22 females. Nine preterm and 12 full-term infants were firstborns. The mean weight at birth was 1201.25 g ($DS = 166.2$; range = 800–1450) in the preterm sub-sample and 3368 g ($DS = 445.5$; range = 2730–4310) in the full-term sub-sample. The mean gestational age was 29.9 week ($DS = 2.6$; range = 25–35) in the preterm sub-sample and 38.9 weeks ($DS = 0.8$; range = 38–40) in the full-term sub-sample. Preterm babies were hospitalized for an average of 52.8 days ($DS = 18.8$), while full-terms for an average of 3.9 days ($DS = 1.1$).

Four neonatal medical indicators were selected (Gestational Age, Weight at birth, Days of Hospitalization and Hours of Assisted Ventilation) which, according to the literature (Mangelsdorf et al., 1996; NHMRC, 2000), are the mainly relevant with respect to the infant's outcome. Since these were highly correlated, we run a Principal Axis Factoring in order to reduce these variables. All variables loaded on one factor, accounting for 76.38 of the variance. In the analyses, factor scores were used as an aggregated measure for baby's medical risk: higher scores indicated more severe risk in baby's medical condition. Within the first 7 days after birth, all mothers of preterms completed the 15-item self report Impact of Event Scale (Zilberg, Weiss, & Horowitz, 1982) in order to assess the intensity of the traumatic reaction to the premature birth. It consists of two subscales, assessing traumatic avoidance (consciously recognized avoidance of certain ideas, feelings, or situations concerning the event) and traumatic intrusion (the intrusively experienced ideas, images, feelings, or bad dreams about the event). In our sample the Cronbach's alpha for internal consistency between the two sub-scales was very low ($\alpha = .19$), suggesting that they capture different aspects of traumatic reaction. Therefore the scores derived from the two sub-scales were treated separately in the analyses. Between the 30 and 45 days from baby's birth, all mothers were administered the Adult Attachment Interview (Main et al., 1985) in order to assess the state of mind regarding attachment. Interviews were collected and coded by a trained and reliable AAI coder. For the analyses the dichotomous classification (secure versus insecure) was used (rater agreement across two coders, on 20% of the interviews was Cohen's $k = 0.80$). When the infant was three month old (corrected age for pretermes), during a home visit a

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