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Brief Report

Early interactive behaviours in preterm infants and their mothers: Influences of maternal depressive symptomatology and neonatal birth weight

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ABSTRACT

The study evaluated the quality of preterm infant–mother interactions, considering severity of birth weight (ELBW and VLBW) and maternal depression, compared to full term babies. 69 preterm infants (29 ELBW and 40 VLBW) and 80 full-term (FT) infants and their mothers were recruited. At 3 months of corrected age, the quality of mother–infant interaction was evaluated through Global Rating Scales; moreover, infant level of development and maternal depression were assessed through Griffith Development Mental Scales and Edinburgh Postnatal Depression Scale. Results showed adequate sensitivity in preterm infants' mothers and higher involvement with their infants, compared to full term mothers, but ELBW ones exhibited an intrusive interactive pattern and a higher prevalence of depressive symptoms. The study underlined the relevance of paying special attention to both ELBW infants and their mothers, in order to support the parenting role and the co-construction of early interactions.

1. Introduction

1.1. Mother–infant interaction in preterm infants

The quality of parent–infant interaction, co-constructed since the first weeks after birth, has been widely recognized as a strong mediating factor for the development of skills in the areas of self-regulation, socialization, cognitive and emotional functioning and as a strong predictor of child's developmental pathways (Ainsworth, Blehar, Waters, & Wall, 1978; Feldman, 2007; Murray, Fiori-Cowley, Hooper, & Cooper, 1996; van Ijzendoorn, Schuengel, & Bakermans-Kranenburg, 1999).

Among the elements which can interfere with the building of a synchronous and positive dyadic interaction, the premature birth plays a significant role. Indeed, in the last years, an increasing number of studies have investigated the impact of preterm birth on the early mother–infant interactions, finding more interactive difficulties compared to those with infants born at term (Holditch-Davis, Schwartz, Black, & Scher, 2007; Korja, Latva, & Lehtonen, 2012).

Specifically – as to infant interactive behaviour – preterm infants have been described as more passive, compliant and fretful during the interaction with their mothers (Forcada-Guex, Borghini, Pierrehumbert, Ansermet, & Muller-Nix, 2011;

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Goldberg & Di Vitto, 2002). Due to their biological immaturity, in fact, preterm babies appear less attentive and alert than full-term ones and show more difficulties in providing clear cues to their caregiver (Feldman & Eidelman, 2007; Olafsen et al., 2012).

On the other hand, the results of maternal interactive behaviours are, somehow, inconsistent (Korja et al., 2012): while most researchers have described less sensitive, more intrusive and controlling behaviours in preterm infants' mothers than in those of full-term babies (Feldman, 2007; Forcada-Guex et al., 2011), other studies have found less maternal responsiveness, fewer smiles and lower attention to preterm infants' cues (Feldman & Eidelman, 2007; Schmücker et al., 2005). This poorly investigated inconsistency could be partly due to the diversity of the instruments used to evaluate interactions and to the heterogeneity of sample characteristics; indeed, preterm groups can include infants with significant differences with relation to birth weight, gestational age and level of development reached (Korja et al., 2012).

1.2. Medical factors affecting parenting and parent–child relationships in preterm infants: the comparison between ELBW and VLBW infants

Nowadays the relevant improvements in technology allow the babies who present very severe preterm birth condition, which urgently call for the necessity of a prolonged hospitalization in NICU and different interventions, to survive: in the early 2000s, the survival rates stabilized at approximately 85% for VLBW infants (*very low birth weight*: babies weighing less than 1500 g) and 70% for ELBW ones (*extremely low birth weight*: weight less than 1000 g) (Fanaroff et al., 2007). However, these groups are of major concern because they can present different levels of difficulties in mental and motor development in the long term and higher rates of inattention and hyperactivity at school age (VLBW children: 23–27%; ELBW: 33–37%) (Bhutta, Cleves, Casey, Cradock, & Anand, 2002).

1.3. Parent's psychological distress in VLBW and ELBW infants

A very severe premature birth can impact parents' affective state and their ability to cope with the traumatic situation (Feldman, 2007). With regard to this, the literature has underlined that preterm babies' parents experience high levels of distress, anxiety and depression (Forcada-Guex et al., 2011; Miles, Holditch-Davis, Schwartz, & Scher, 2007; Schmücker et al., 2005); moreover, a higher risk of depression has been detected in preterm infants' mothers compared to full-term infants', especially during the first 12 weeks postpartum (Vigod, Villegas, Dennis, & Ross, 2010).

Depending on the severity of prematurity, an increased amount of stress and emotional burden is expected in those parents who face a more severe condition of preterm birth, associated to higher medical comorbidity, length of hospitalization, etc.; indeed, increased levels of depressive symptoms throughout the first postnatal year (Vigod et al., 2010) have been found in VLBW infants' mothers, compared to low birth weight infants' ones (birth weight < 2500 g). In any way, it is interesting to point out that the presence of depressive symptoms in a severe prematurity condition such as ELBW has been poorly investigated (Miles et al., 2007; Vigod et al., 2010), although it is well known that maternal postnatal depression represents a risk factor for the mother's sensitivity and ability to pick up her infant's signals, with possible negative consequences on the child's attachment and development (Field, 2010; Tronick & Weinberg, 1997).

1.4. The current study

To the writers' knowledge, no study has sufficiently evaluated the relationship among the severity of prematurity (based on the distinction between VLBW and ELBW babies), the presence of depressive symptoms and the quality of early dyadic interactive patterns, including a comparison with a control group. Therefore, this study was aimed at: (1) exploring if depressive symptoms were related to more severe preterm conditions – specifically, a higher presence of symptoms in ELBW infants' mothers were expected, compared to VLBW and control infants' mothers; (2) exploring if dyadic interactive behaviours were influenced by the category of birth weight – the quality of maternal (e.g. sensitivity, intrusiveness) and infants' behaviours (e.g. fretfulness, active communication) were expected to be more compromised in the ELBW group; (3) investigating any influence of the interaction between maternal depression and the severity of birth weight on the quality of interactive patterns.

2. Methods

This is part of a longitudinal research project which followed preterm infant–mother dyads from 3 to 18 months of corrected age. The study protocol was approved by the Ethic Committee of the Hospital and the Department of Psychology (University of Bologna).

During the period between April 2010 and December 2012, all mothers of preterm infants with birth weight under 1500 g and a gestational age < 32 weeks, who had been hospitalized at the NICU in the Bufalini Hospital (Cesena, Italy), were asked to take part at the study. Only 3 mothers refused to participate. A total of 69 infant–mother dyads were recruited: according to their birth weight, 29 infants were ELBW (under 1000 g) and 40 were VLBW (birth weight between 1000 and 1500 g). The exclusion criteria were: infant chromosomal abnormalities, cerebral palsy, malformations and fetopathy, previous or present parents' psychiatric illness and lack of fluency in Italian.