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Positive maternal interaction behavior moderates the relation between maternal anxiety and infant regulatory problems☆

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ABSTRACT

Regulatory problems in infancy are determined by different risk factors. This study aims to examine how psychosocial risk factors are connected, and how they impact the early regulatory ability of 3-month-old infants. In a sample of 57 mother–infant dyads, maternal anxiety and infant crying, sleeping and feeding habits were assessed. As a possible moderator, the role of positive maternal behavior was analyzed by videotaping face-to-face interactions. During the interaction, interactive stress was provoked with the face-to-face still-face paradigm (FFSF). Thus, this study differentiated between the effects of maternal behavior in both an ordinary play context, as well as a stressful interaction context. Results revealed that the relation between maternal anxiety and infant regulatory problems in crying and sleeping varied as a function of positive maternal engagement in stressful situations. However, a significant moderation effect influencing infant feeding problems could not be demonstrated. These findings stress the importance of positive maternal interaction behavior in at least some parts of regulatory adjustment of at-risk infants.

1. Introduction

Regulatory problems of young infants are widespread and challenging for the infant and the family. Core symptoms of regulatory problems in infancy include: excessive crying, sleeping problems and feeding problems; all of which can occur separately or in any combination (German Society of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy [DGKJP], 2007). Prevalence rates vary depending on the definition and methodological approaches applied. Representative samples revealed that about 30% of infants suffered from single or multiple regulatory problems in their first year of life (Schmid, Schreier, Meyer, & Wolke, 2011; Wolke, Meyer, Ohrt, & Riegel, 1995). However, these problems do not just affect an infant's first year, regulatory problems can also have several negative implications in early childhood up to school age children. Behavior problems and externalizing problems indicated by hyperactivity or negative emotionality are said to be linked to early regulatory problems (Hemmi, Wolke, & Schneider, 2011; Larsson, 2004; Wolke, Rizzo, & Woods, 2002).

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1.1. Mother–infant interaction

To prevent the development of regulatory problems and possible sequelae, different risk factors have been studied. One meaningful risk factor is the early parent–infant interaction. Dysfunctional interaction patterns can lead to, aggravate or maintain early regulatory problems (DGKJP, 2007; Papoušek & Papoušek, 1990; von Hofacker & Papoušek, 2008). This becomes clear during interaction-centered counseling sessions focusing on improving sensitive and pleasurable parent–infant interactions with positive reciprocities. These were often successful: sleeping, feeding or crying problems declined rapidly after just 4.2 ± 3.5 sessions (von Hofacker & Papoušek, 1998). Indeed, Esser, Scheven, Petrova, Laucht, and Schmidt (1989) observed in a cross-sectional study that maternal behavior in mother–infant interactions was strongly related to behavioral problems like negative mood and irregular sleeping and eating habits in 3-months-old infants and explained more variance than psychosocial or organic risks together. This is consistent with more current findings of cross-sectional diary studies stating that both fathers and mothers of persistently crying infants showed dysfunctional interaction patterns compared to control dyads (Papoušek & von Hofacker, 1998; Räihä, Lehtonen, Huhtala, Saleva, & Korvenranta, 2002). Less positive child–parent interaction was also experienced by mothers and fathers in dyads with infant feeding problems (Ammaniti, Ambruzzi, Lucarelli, Cimino, & D'Olimpio, 2004; Atzaba-Poria et al., 2010); the feeding situation was characterized by disharmonies and conflicts and mothers showed more dysfunctional behaviors like feeding with pressure (Bodeewes, 2003). Moreover dysfunctional interaction patterns strengthen the development of a vicious circle of hyperarousal and exhaustion; infants are already in a state of hyperarousal, parents become tense and their support becomes dysfunctional (Papoušek & von Hofacker, 1998). By trying to distract and soothe the inconsolable infant, parental support runs the risk of maladaptive patterns of overregulation. In fact, the highest level of infant crying was associated with increased rates of maternal physical stimulation but with decreased rates of maternal looking and talking during crying (Acebo & Thoman, 1992). Thus, dysfunctional interaction patterns do not just affect infant regulatory behavior negatively. Coregulative parental strategies in terms of overregulative behaviors are also linked.

However, research evidence is inconsistent. St. James-Roberts, Conroy, and Wilsher (1998) failed to show group differences in maternal sensitivity, affection and intrusiveness between mother–infant dyads with excessive crying infants and control dyads. Thus, the authors concluded that persistent infant crying is probably not due to inadequate parenting, but occurs in spite of high quality maternal care. Rones (2003) could not find a significant relation between maternal insensitivity and infant sleeping habits either. This is consistent with other findings stating that there were no differences in the quantity and quality of maternal approaches in an interaction situation between control dyads and dyads with infants with regulatory problems (Dale, O'Hara, Keen, & Porges, 2011). One question which has not been answered until now is whether the situational context in which the dyad interacts influences the relation outlined above.

1.2. Maternal anxiety

Not only dysfunctional interaction patterns play an important role in the development of regulatory disorders of young infants. According to statistics of the Munich interdisciplinary research and intervention program the most common psychosocial risk factors are: continuing parental partnership conflicts and psychological illness of the mother (Papoušek & von Hofacker, 1998). One particularly important psychological illness in mothers is the postpartum anxiety disorder. A representative German sample showed a prevalence of this disorder at 11%. This is an occurrence around twice as high as postpartum depression (Reck et al., 2008). Indeed, research evidence exists stating a relationship between postpartum anxiety disorder in mothers, and infant regulatory problems. For example, infants had more sleeping problems when mothers suffered from anxiety disorders (Rones, 2003). This also applied to prepartum anxiety disorders (O'Connor et al., 2007) and to mothers with panic disorders (Warren et al., 2003). Further excessive crying was associated with greater psychological distress and anxiety (Bond, Prager, Tiggemann, & Tao, 2001) and infants of mothers, who felt more anxiety during pregnancy, cried more often in an excessive manner (van der Wal, van Eijsden, & Bonsel, 2007).

1.3. Interrelations of risk factors

The question of how these risk factors are linked arises. Research showed that the cumulative scores of organic and psychosocial risk factors were significantly associated with the average amounts of infant fussing and crying (Papoušek & von Hofacker, 1998). The infants' condition was more severe, the more they and their families were affected by both organic and psychosocial risks. Moreover, dysfunctional feeding interactions in dyads where the infant was suffering from feeding problems did not appear per se but only when coupled with maternal worries about the infants being underweight (Gueron-Sela, Atzaba-Poria, Meiri, & Yerushalmi, 2011). Thus, risk factors do impact and intensify each other. So if anxious mothers interact less sensitively with their infants, a combination of at least two risk factors is present and the likelihood of infant regulatory problems developing increases. On the other hand it is possible that negative effects on children's early regulatory behavior through maternal anxiety could be compensated through a positive mother–infant interaction. Indeed, Laucht, Esser and Schmidt (2002) stated in a longitudinal study that the impact of early risk factors on child behavior varied as a function of mother–infant interaction quality. According to the authors, maternal interactional behavior was found to moderate the effects of postpartum maternal depression on child outcome at school age: 8-year-old children of depressed mothers did not differ from the control group in the number of externalizing problems, if their mothers had been reactive