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## Infant Behavior and Development

journal homepage: www.elsevier.com/locate/inbede

Full length article

# Examining pathways linking maternal depressive symptoms in infancy to children's behavior problems: The role of maternal unresponsiveness and negative behaviors



Infant Behavior & Development

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### ARTICLE INFO

Keywords: Maternal depression Internalizing behaviors Externalizing behaviors Maternal unresponsive behaviors Maternal negative behaviors Temperament Negative emotionality

## ABSTRACT

The extent to which maternal depressive symptoms in the first 6 months of life is linked with internalizing and externalizing behaviors in childhood through specific insensitive maternal behaviors (unresponsive and overtly negative behaviors) was examined in a sample of 259 mother-infant dyads. In addition, the extent to which these paths were moderated by infant negative emotionality was also examined. Maternal depressive symptoms were assessed prenatally and when infants were 6 months and 2 years old. Maternal unresponsive and overtly negative behaviors and infant negative emotionality were observed when infants were 6 months old. Mothers reported on infant's internalizing and externalizing behaviors when infants were 2 years old. Maternal depressive symptoms were directly associated with higher internalizing behaviors; this path was not mediated by maternal behaviors. Depressive symptoms were unrelated to externalizing symptoms. Infant negative emotionality did not moderate these effects, but was related positively to overtly negative maternal behaviors, and temperament interacted with maternal depressive symptoms to predict unresponsive maternal behaviors. Results suggest that early maternal depressive symptoms, infant negative emotionality, and negative maternal behavior pose risk for infants' later internalizing behaviors, but the proposed moderated mediation model was not supported.

#### 1. Introduction

Maternal depression is a common psychological disorder, affecting mothers while pregnant and during the postpartum period, with a prevalence ranging from 8%–13% (Field, 2010). Approximately 16–23% of new mothers experience moderate to severe depressive symptoms, and mild symptoms are seen in another 11–15% throughout the first year following childbirth, all of which may undermine functioning (Mayberry, Horowitz, & Declercq, 2007). Infants of mothers with elevated depressive symptoms are at greater risk for subsequent psychopathology, including internalizing and externalizing behaviors (Sellers et al., 2014; Vafai, Steinberg, & Shenassa, 2016), and early child psychopathology can extend to adulthood (Moffitt, 2003). Thus, identifying the pathways linking depressive symptoms to specific types of child psychopathology has important implications for the development of appropriate screening, prevention, and intervention efforts.

Prior research has demonstrated that mothers with elevated depressive symptoms sometimes engage in distinct types of maladaptive behaviors (e.g. withdrawn or intrusive; Field, 2010), each of which may have different implications for subsequent outcomes

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http://dx.doi.org/10.1016/j.infbeh.2017.09.009

Received 27 January 2017; Received in revised form 28 May 2017; Accepted 18 September 2017 0163-6383/ © 2017 Elsevier Inc. All rights reserved.



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(Goodman, Rouse, Long, Ji, & Brand, 2011). Additionally, infants may vary in the extent to which they elicit maladaptive maternal behaviors, and are adversely affected by negative environmental experiences as a function of their temperamental dispositions (Cicchetti, 2010). The goal of this study is to examine a moderated mediation model in which the associations between early maternal depressive symptoms and subsequent internalizing and externalizing symptoms are mediated by unresponsive and overtly negative maternal behaviors and moderated by infant negative emotionality. This model is consistent with Goodman and Gotlib's (1999) developmental psychopathology model such that maternal insensitivity and compromised maternal mental health, particularly depressive symptoms, have been implicated as precursors of child psychopathology, especially for infants with vulnerability characteristics. The proposed model is also consistent with the transactional model of development in that infant characteristics may also contribute to individual differences in the quality of caregiving, which may in turn explain variations in infant outcomes (Sameroff, 2009). In the following sections, we describe each path in this moderated mediation model.

#### 1.1. Maternal depressive symptoms and sensitive maternal behavior

Sensitive caregiving refers to the mother's ability to notice, understand, and respond consistently and appropriately to an infant's cues, in a manner that prioritizes the infant's needs (Ainsworth & Bell, 1970). A variety of evidence indicates that elevated depressive symptoms undermine a mothers' ability to engage in sensitive behavior. For example, mothers with depressive symptoms may focus on their own emotional and physical needs ahead of their infants' needs, and struggle to read infant cues, leading to less adaptive behaviors (Dix, Moed, & Anderson, 2014; Schuetze & Zeskind, 2001). Such mothers may also experience hostility towards their infants, which may also undermine caregiving quality (McCabe, 2013).

Furthermore, depressive symptoms are linked with lower maternal self-efficacy, which may contribute to less maternal involvement in caretaking and lower quality parent-infant interaction (Leerkes & Crockenberg, 2002; Weaver, Shaw, Sishon, & Wilson, 2008). In a meta-analytic review, Lovejoy, Graczyk, O'Hare, and Newman (2000) found that mothers with elevated depressive symptoms are less responsive to child behavior, including positive and negative behaviors, and have more negative interactions with their infants. Next, we describe specific patterns of insensitive maternal behavior, which may characterize the interactions between mothers with elevated depressive symptoms and their infants.

#### 1.2. Subtypes of insensitive maternal behaviors and links with child psychopathology

Although most researchers focus on the extent to which mothers are low or high on sensitivity, it is important to note that there are different styles of insensitive behavior, which may have different implications for child outcomes and for intervention efforts. In fact, maternal depression has been linked with two distinct types of insensitivity: intrusive (overtly negative) and withdrawn (unresponsive) behaviors (Hart, Jones, Field, & Lundy, 1999; Wang & Dix, 2013). However, not much is known as to which type of insensitive behavior is linked specifically to internalizing and externalizing behaviors. There is reason to expect both types of insensitivity (unresponsive and overtly negative) could contribute to both types of child outcomes simultaneously as described below.

Unresponsive maternal behavior is characterized by indifference, withdrawn affect, distracted actions, limited responsiveness to infant cues, and a lack of interaction (Field, 2010; Hart et al., 1999; Taylor, Eisenberg, Spinrad, & Widamann, 2013). Unresponsive mothers engage in less infant-directed speech, are low in energy, touch their infants less frequently, and engage in a less affectionate manner than more responsive mothers (Field, 2010). Consequences from unengaged and indifferent maternal behavior may include children's development of low self-esteem, feelings of emotional insecurity, somatic complaints, sadness, and anxiety (Mayberry et al., 2007). Further, infants begin to mimic their mothers' flat, withdrawn affect and socially engage less with others (Field, 2010). As such, unresponsive maternal behavior is likely to be linked with child internalizing symptoms.

On the other hand, unresponsive maternal behavior may contribute to infant difficulties in regulating emotions. Initially they may learn to suppress the expression of negative emotions, (Cassidy, 1994), but over time this pattern of over control may come at a cost physiologically that cannot be maintained (Shaw, Owens, Givanelli, & Winslow, 2001). As such, some infants of unresponsive mothers may shift to a pattern of emotion under-control over time, leading to reactive, aggressive, and impulsive behaviors, which serve as indicators of externalizing behaviors (Cicchetti, 2010; McCullough & Shaffer, 2014).

Overtly negative maternal behavior is a second type of insensitive parenting, defined as controlling, harsh, and intrusive behaviors (Sellers et al., 2014; Taylor et al., 2013). Indicators include speaking to an infant harshly, expressing negative affect towards the infant, intrusiveness (i.e. mothers forcing own agenda onto the infant), persistent use of ineffective behaviors even if an infant's signals suggest a modification is warranted, and mismatched affect such as laughing at a distressed infant. Such behaviors may be frightening or anxiety provoking for infants, and could instill feelings of inadequacy, all of which could increase infants' internalizing symptoms (Feng, Shaw, & Moilanene, 2011).

Overtly negative maternal behaviors may also put infants at risk for externalizing behaviors. When mothers engage in aggressive, impatient, intrusive behaviors, infants may begin to model these behaviors, creating a coercive pattern of interaction. Such maternal behaviors may also increase infant frustration, which has been linked with elevated externalizing symptoms, including impulsiveness and defiance as infants seek to assert their own will (Chang, Schwartz, Dodge, & McBride-Chang, 2009; Haskett & Willoughby, 2006). In addition to maternal behavior, infant characteristics also contribute to later maladaptive outcomes.

#### 1.3. Child temperament as a moderator

The mother-child relationship consists of reciprocal, on-going interaction in which each partner influences the other. Child

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