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Maternal self-regulation, relationship adjustment, and home chaos: Contributions to infant negative emotionality

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ABSTRACT

There has been increasing interest in the direct and indirect effects of parental self-regulation on children's outcomes. In the present investigation, the effects of maternal self-regulation, home chaos, and inter-parental relationship adjustment on broad and specific indicators of infant negative emotionality (NE) were examined. A sample of maternal caregivers and their 4-month-old infants ($N = 85$) from a rural community participated. Results demonstrated that better maternal self-regulation was associated with lower infant NE broadly, as well as with lower infant sadness and distress to limitations/frustration and better falling reactivity (i.e., emotion regulation), specifically. Maternal self-regulation also predicted less chaotic home environments and better maternal inter-parental relationship adjustment. Findings also supported the indirect effects of maternal self-regulation on broad and specific indicators of infant NE through home chaos and maternal relationship adjustment. Some differential effects were also identified. Elevated home chaos appeared to specifically affect infant frustration/distress to limitations whereas maternal relationship adjustment affected broad infant NE, as well as several specific indicators of infant NE: frustration/distress to limitations, sadness, and falling reactivity. In conjunction with other recent investigations that have reported the effects of maternal self-regulation on parenting, the findings in the present investigation suggest that parental self-regulation may influence children's outcomes through several proximal environmental pathways.

1. Introduction

The importance of temperament (i.e., biologically based, individual differences in self-regulation, attention, and emotionality reactivity, that are influenced by maturation, heredity, and the environment; Goldsmith et al., 1987; Rothbart, Derryberry, & Posner, 1994) in models of developmental psychopathology has been increasingly recognized (Caspi, Henry, McGee, Moffitt, & Silva, 1995; Gartstein et al., 2010; Nigg, 2006; Oldehinkel, Hartman, De Winter, Veenstra, & Ormel, 2004; Olson, Sameroff, Kerr, Lopez, & Wellman, 2005). In particular, negative emotionality (NE), one aspect of temperament that emerges in the first year of life (Rothbart, 1989), has been consistently associated with adverse child outcomes. Higher NE in early childhood has been associated with subsequently elevated levels of behavioral and social adjustment problems, as well as academic difficulties (Caspi et al., 1995; Crawford, Schrock, & Woodruff-Borden, 2011; Kim, Walden, Harris, Karrass, & Catron, 2007; Stright, Gallagher, & Kelley, 2008). Similarly, there is increasing evidence that elevated NE early in life may compromise children's developing attentional and self-regulatory skills (Bridgett et al., 2009; Leve et al., 2013; Stifter & Spinrad, 2002).

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Given the implications of elevated levels of early NE for later child outcomes, as well as evidence that temperament early in life may be particularly malleable (van den Akker, Dekovic, Prinzie, & Asscher, 2010), prior work has examined and identified a number of predictors of infant NE, such as maternal depression and anxiety (Gartstein et al., 2010; Pauli-Pott, Mertesacker, & Beckmann, 2004). However, the contributions of other maternal characteristics, such as maternal self-regulation, have not received as much attention. Likewise, other more proximal influences that may contribute to infant NE, such as home chaos and inter-parental relationship adjustment, particularly when children are infants, have also been infrequently considered. Finally, while the effects of maternal self-regulation on infant NE may be direct, such effects could be mediated by aspects of the proximal environment that are themselves influenced by maternal self-regulation (e.g., home chaos and inter-parental relationship adjustment). However, to the best of our knowledge, no studies have considered this possibility. Thus, the goal of the current investigation is to examine the direct contributions of maternal self-regulation, home chaos, and maternal relationship adjustment to infant NE. Furthermore, the indirect effects of maternal self-regulation on infant NE through inter-parental relationship adjustment and home chaos will be examined.

1.1. Development of negative emotionality in infancy

During infancy, measures of broad NE are frequently comprised of discrete negative emotions such as sadness, frustration/distress to limitations, and fearfulness (Gartstein & Rothbart, 2003; Goldsmith et al., 1987; Putnam, Gartstein, & Rothbart, 2006). Factor analytic work has also identified falling reactivity, or the ability to recover/calm down from peak levels of distress, as an additional component of early NE (Gartstein & Rothbart, 2003). Insomuch as falling reactivity reflects the ability to recover from distress, this construct may also be considered an early marker of emotion regulation (i.e., the ability to maintain, decrease, or increase the intensity of an emotional experience; Cole, Martin, & Dennis, 2004).

Developmentally, NE is one of the earliest emerging manifestations of temperament, and can be measured within the first few months of life (Lemery, Goldsmith, Klinnert, & Mrazek, 1999; Putnam, Ellis, & Rothbart, 2001; Rothbart, 1989). Prior to 24 months of age, several studies have noted that NE appears to increase across development (e.g., Bridgett et al., 2009; Leve et al., 2013), reaching relative mean level stability by the time children are approximately two years of age. Importantly, during this early period of development, studies have found that changes in NE may be under the influence of environmental mechanisms, such as maternal characteristics (Bridgett et al., 2009; Pauli-Pott et al., 2004; Tronick & Reck, 2009; van den Akker et al., 2010). However, the influence of some characteristics have been more often considered (e.g., maternal depression) than others, such as maternal self-regulation.

1.2. Maternal self-regulation: links with infant NE, home chaos, and maternal relationship adjustment

Broadly, self-regulation represents an individual's ability to regulate their emotions, behaviors, and cognitions (Karoly, 1993; Rueda, Posner, & Rothbart, 2005). Self-regulation also encompasses the ability to engage in organized, goal-directed behavior and monitor one's actions, in addition to being able to think and behave flexibly (Burges, 1997). In adults, better self-regulation has been linked with fewer feelings and expressions of negative affectivity (e.g., Bridgett, Oddi, Laake, Murdock, & Bachmann, 2013), increased self-esteem, and more intimate personal relationships (Busch & Hofer, 2012). Similarly, better self-regulation has been associated with lower aggression, fewer symptoms of psychopathology, and higher grade point averages (DeWall, Baumeister, Stillman, & Gailliot, 2007; Tangney, Baumeister, & Boone, 2004). Thus, self-regulation is important for a range of behaviors.

Given that self-regulation emerges early in life (Gartstein, Bridgett, Young, Panksepp, & Power (2013); Rothbart, Posner, & Kieras, 2008; Rothbart, Sheese, Rueda, & Posner, 2011) and undergoes significant development and organization between early childhood and adulthood (Best, Miller, & Jones, 2009; Bridgett & Mayes, 2011; Casey, Giedd, & Thomas, 2000; Williams, Ponesse, Schachar, Logan, & Tannock, 1999), by the time most adults have children, they are potentially equipped with several mature self-regulatory mechanisms that can be employed to influence children and aspects of the family environment. One way that parental self-regulation may influence children is through more direct effect mechanisms. For example, Davenport, Yap, Simmons, Sheeber, and Allen (2011) noted an association between maternal effortful control and adolescent NE. Similarly, Leve et al. (2013) reported a negative zero-order association between maternal inhibition, an aspect of executive functioning, and toddler NE at 27 months of age. Although mechanisms of direct effects have not frequently been considered, two possibilities include prenatal (e.g., Schuetze and Eiden, 2007) or genetic (e.g., Bell & Deater-Deckard, 2007) mechanisms. However, indirect, or mediated effects, wherein parental self-regulation influences aspects of the home environment, which subsequently act to influence children, represents another potential mechanism of influence.

Most existing work examining the influence of parent self-regulation on children has focused on maternal parenting (e.g., Bridgett et al., 2011; Deater-Deckard, Sewell, Petrill, & Thompson, 2010), noting that better maternal self-regulation is associated with more adaptive parenting practices. However, parental self-regulation may provide support for other important aspects of the environment, such as less chaos in the home. Chaotic homes tend to be noisier, less organized, more crowded, and tend to have fewer structured routines relative to less chaotic homes (Wachs & Evans, 2010). Parents with better self-regulation will likely be better equipped to provide regular routines, structure, and general management of the home environment (e.g., monitor noise levels) in ways that promote child development. Nevertheless, only two studies have considered these possibilities. Valiente, Lemery-Chalfant, and Reiser (2007) found that better parental effortful control, a key self-regulation construct within a temperament framework (Evans & Rothbart, 2007), was associated with less chaotic