



## Parent–child interaction, task-oriented regulation, and cognitive development in toddlers facing developmental risks



Hyun-Joo Jeon <sup>a,1</sup>, Carla A. Peterson <sup>b</sup>, Jamie DeCoster <sup>c</sup>

<sup>a</sup> College of Education, University of Nevada, Reno, United States

<sup>b</sup> Human Development and Family Studies Dept., Iowa State University, United States

<sup>c</sup> Center for Advanced Study of Teaching and Learning, University of Virginia, United States

### ARTICLE INFO

#### Article history:

Received 5 August 2011

Received in revised form 12 August 2013

Accepted 16 August 2013

Available online 7 October 2013

#### Keywords:

Parent–child interaction

Emotion and behavior regulation

Cognitive development

Developmental risk

Toddler

### ABSTRACT

The importance of supportive parent–child interactions and the development of regulatory abilities with regard to growth in children's cognitive abilities has been established. This study investigated the longitudinal relations among parental supportiveness, child task-oriented regulation, and cognitive development for low-income children facing developmental risks. Interlocking growth models were fit to these variables based on measurements made when the children were 14, 24, and 36 months of age. Results showed that growth rates of child cognition were related to baseline (14 months) parental supportiveness and changes in child task-oriented regulation. We additionally found that baseline levels of cognition were related to the baseline levels of child task-oriented regulation. This study suggests that both parental supportiveness during infancy and the concurrent development of child task-oriented regulation are related to cognitive development among children facing developmental risks.

© 2013 Elsevier Inc. All rights reserved.

Children living in poverty are more likely to have disabilities and developmental delays than those from middle-income populations (Brooks-Gunn & Duncan, 1997; Fujitara & Yamaki, 2000; Scarborough, Spiker, Mallik, & Hebbeler, 2004). For example, the low-income children in the Early Head Start Research and Evaluation Project (EHSREP) were more likely to receive early intervention services before age 3 (Peterson et al., 2004) than those in the general U.S. population (National Early Childhood Technical Assistance Center, 2007). In addition to those receiving early intervention services, even more children in the EHSREP were identified as having suspected developmental delays though they did not receive early intervention services (Peterson et al., 2004). The importance of studying these children is emphasized by the fact that they had lower school readiness skills at kindergarten entry (Jeon et al., 2011) relative to children who did not have a suspected delay. In addition, children identified with developmental delays typically receive early intervention services at later ages than those identified with other disabilities, such as sensory, physiological, motor, or neurological impairments, regardless of their family's socio-economic status (Scarborough et al., 2004). This is especially unfortunate as children with developmental delays may benefit more from early intervention services than those with other disabilities (Carlson et al., 2008; Jeon et al., 2011). A better understanding of the development of children who have developmental delays at early ages and live in poverty

could, therefore, be helpful for development and implementation of effective early intervention services.

The recent trend of examining longitudinal relations in child development research is underpinned by the Bioecological model (Bronfenbrenner & Morris, 1998, 2006) which emphasizes that developmentally-relevant environments and children's characteristics contribute to their development across time. Sameroff's Transactional model also considers how the bidirectional relations among the child's emotional regulation skills (Zeman, Cassano, Perry-Parrish, & Stegall, 2006), other biological characteristics, and the social environment affect the child's development (Sameroff, 1975; Sameroff & Mackenzie, 2003). Longitudinal analyses, such as latent growth modeling, can be employed to better understand the relations of children's development with parent–child interactions, biological characteristics, temperament, and emotion/behavior regulation factors, as the Bioecological and Transactional models suggest. Latent growth models can simultaneously estimate intra-individual growth trajectories as well as inter-individual differences in the growth parameters, accommodating both within-child and between child variability (Wu, West, & Taylor, 2009). The aim of the current study was to examine the longitudinal relations of parent–child interaction and child emotion regulation with cognitive development for low-income children who have developmental risks.

#### Parent–child interactions

The quality of parent–child interactions is one of the most powerful environmental influences on child development according to the

E-mail address: [hjoojeon@gmail.com](mailto:hjoojeon@gmail.com) (H.J. Jeon).

<sup>1</sup> College of Education, University of Nevada, Reno, 3035 WRB Mail Stop 0281, Reno, NV 89557, United States. Tel.: +1 775 784 7005; fax: +1 775 784 1990.

Bioecological and Transactional models. This has prompted researchers to use the quality of parent–child interactions to predict outcomes for children with developmental delays (e.g., Croft et al., 2001), disabilities (e.g., Hauser-Cram, Warfield, Shonkoff, & Krauss, 2001), low-birth weight (e.g., Halpern, Garcia Coll, Meyer, & Bendersky, 2001; Landry, Smith, Swank, Assel, & Vellet, 2001), and developmental risks (e.g., Rutter, & the English and Romanian Adoptees (ERA) Study Team, 1998), as well as for children developing typically (e.g., Hirsh-Pasek & Burchinal, 2006; Lemelin, Tarabulsky, & Provost, 2006; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004; van Bakel & Riksen-Walraven, 2002). For example, Hauser-Cram et al. (2001) found that the quality of parents' interactions with their children with disabilities, measured at age 3, predicted children's mental development from infancy to age 10.

Unfortunately, parents living in poverty are typically less responsive, sensitive, and warm; more punitive; and provide less stimulating home-learning environments for their children (Aber, Jones, & Cohen, 2000; Magnuson & Duncan, 2002; McLoyd, 1998), which may lead to poor developmental outcomes (Blau, 1999; Duncan & Brooks-Gunn, 2000; Duncan, Yeung, Brooks-Gunn, & Smith, 1998; Kohen, Leventhal, Dahinten, & McIntosh, 2008; Votruba-Drzal, 2006). Among a sample of low-income parents, those with children with suspected developmental delays displayed lower levels of warmth and engaged in parent–child activities less frequently than parents of children without disabilities (Eshbaugh et al., 2011). Despite the fact that early poverty has been shown to influence development more than poverty experienced during later childhood (Duncan et al., 1998; Votruba-Drzal, 2006), there is lack of longitudinal research investigating cognitive development among low-income children facing developmental risks, especially those with developmental delays. A set of studies examining longitudinal relations between parent–child interactions and child development among low-income children who were born prematurely suggests the importance of such investigation (e.g., Landry, Smith, Miller-Loncar, & Swank, 1998; Landry et al., 2001). One of these studies showed that consistent and responsive parenting of children before age 3 led to greater cognitive growth compared to those who did not receive consistent parenting (Landry et al., 2001). Longitudinal investigation allows us to examine the relations between initial levels and rates of change of quality of parent–child interactions and children's cognitive development; this allows examination of the relative importance of parent–child interactions at different times.

#### *Task-oriented regulation*

Recognition of the importance of emotion regulation in children's development and school readiness has been growing (Blair, 2002; Cole, Martin, & Dennis, 2004; Howse, Lange, Farran, & Boyles, 2003; McClelland et al., 2007). Emotion regulation is defined as the ability to regulate feelings, physiological responses, attention, motivation, or the behaviors associated with emotion to accomplish goals (Eisenberg & Spinrad, 2004). Emotion regulation starts to develop during the infant and toddler periods (Grolnick, Bridges, & Connell, 1996; Kopp, 1989; Tronick, 1989). As children get older, their early emotion regulation extends to behavior regulation which is related to executive functioning (McClelland et al., 2007; Ponitz, McClelland, Matthews, & Morrison, 2009). Through its influence on executive functioning, emotion regulation is a critical requirement for the unfolding of behaviors important to learning through early childhood (Calkins, 2004). Preschoolers' behavioral regulation has been shown to predict school readiness (McClelland et al., 2007) and elementary school achievement (McClelland, Acock, & Morrison, 2006). Kindergarten children's emotional and behavioral regulation has also been shown to predict later academic outcomes (Ponitz et al., 2009).

Even though emotion regulation is an important childhood characteristic influencing children's development, school readiness, and

school achievement, it has been challenging to identify a common research measure due to broad and diverse characteristics of emotion regulation and the different styles displayed depending on the specific demands of the situation (Zeman et al., 2006). A variety of different measures have been used to capture emotion regulation (Adrian, Zeman, & Veits, 2011). In the current study, we assessed task-oriented regulation using Bayley's Behavior Rating Scale (BRS; Bayley, 1993) which measures children's emotion and behavior regulation during administration of the Bayley Scales of Infant Development II (BSID-II; Bayley, 1993). Infants' and toddlers' task-oriented regulation has been related to their concurrent cognition (Baroni, 1992), cognitive development between 8 and 22 months of age (Lowe, Woodward, & Papile, 2005), and cognition at age 4 (Sajaniemi, Hakamies-Blomqvist, Katainen, & Wendt, 2001). However, few investigators have examined the longitudinal relations between infants' and toddlers' cognitive development and emotion or task-oriented regulation. Because children from low-income families have been shown to have lower emotion regulation than those from middle and upper-income families (Howse et al., 2003), it would be helpful to understand how early development of task-oriented regulation, as part of emotion regulation, is related to cognitive development for children living in poverty.

#### *Parent–child interaction and task-oriented regulation*

Magnuson and Duncan (2002) argued that individual child characteristics, such as emotion/behavior regulation and developmental risks, should be included as prominent factors in research models examining the effects of parent–child interactions and poverty on child outcomes. According to the Transactional model, the quality of parent–child interactions plays a central role in the development of child emotion regulation (Zeman et al., 2006). Several researchers have found that parent–child interactions are related to infants' emotion regulation (e.g., Braungart-Rieker, Hill-Soderlund, & Karrass, 2010; Conradt & Ablow, 2010), and toddlers' emotion and attention (Gaertner, Spinrad, & Eisenberg, 2008; Glögler & Pauli-Pott, 2008), as well as child behavior regulation (Eisenberg, Gershoff, et al., 2001; Eisenberg, Losoya, et al., 2001) and child effortful control (Eisenberg et al., 2003). Mothers providing supportive interactions had more persistent toddlers who were less likely to avoid challenging tasks a year later (Kelley, Brownell, & Campbell, 2000). Mothers' supportive interactions with toddlers were also related to children's later emotion regulation (Spinrad et al., 2007) and self-regulation (Feldman, Greenbaum, & Yirmiya, 1999).

Some investigators, however, have not found clear support for the relations between parent–child interactions and child emotion regulation. For example, Calkins, Smith, Gill, and Johnson (1998) did not find a relation between positive mother–child interactions and toddlers' emotion regulation, even though they found that negative maternal controlling behavior was associated with less adaptive emotion regulation in toddlers. Calkins et al. argued that lack of relation between positive parent–child interaction and child emotion regulation in their study was due to lack of variability in the parent–child interaction behavior, and that parent–child interaction behaviors of middle-income families were generally positive. Similarly, a meta-analysis did not reveal significant associations between parent–child interactions and children's emotion regulation (Karreman, van Tuijl, van Aken, & Dekovic, 2006). Further, a recent study reported that the mother–child interactions during the toddler period were not associated with children's later emotion regulation (Blandon, Calkins, & Keane, 2010). These mixed results regarding relations between parent–child interactions and child emotion regulation suggest the need for further investigation to understand these relations. Additionally, most studies to date have focused on relations among concurrent variables or data at one later time point. One longitudinal investigation (Eisenberg et al., 2003) failed to find a relation between parent–child interactions and child regulation due to strong stability of the same

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات