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The role of child temperament on Head Start preschoolers' social competence in the context of cumulative risk

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Abstract

This study examined the main and interactive effects of cumulative risk and child temperament on teacher ratings of social competence and observer ratings of peer play in a sample of Head Start preschoolers. A cumulative risk index (CRI) was computed by summing the total number of risk factors for each family. There was a difference in the predictive power of the CRI when it consisted of 10 (including child temperament) versus 8 possible risk factors (excluding child temperament) for teacher ratings of social competence. The CRI based on 10 risk factors was related significantly and negatively to social competence. A significant interaction between inhibited child temperament and cumulative environmental risk revealed that highly inhibited children were perceived by their teachers as equally competent under both high- and low-risk, whereas less inhibited children received lower ratings as environmental risk increased. Less inhibited and less impulsive temperament emerged as promotive factors associated with high levels of interactive peer play and teacher ratings of social competence, respectively, regardless of the risk level.

Keywords: Low-income preschoolers; Peer social competence; Interactive peer play; Cumulative risk; Inhibited temperament

1. Introduction

The United States has the highest rate of child poverty among the industrialized nations, with children under six years of age experiencing the greatest risk of economic hardship (National Center for Children in Poverty, 2000). Past studies consistently point to a higher prevalence of childhood injury, learning problems, lower intellectual attainment, school dropout, delinquency, impulsivity, peer rejection, anxiety, and depression among poor children than their middle-class counterparts (Duncan & Brooks-Gunn, 1999; Foster, Lambert, Abbott-Shim, McCarty, & Franze, 2005; Luthar, 1999; Mistry, Vandewater, Huston, & McLoyd, 2002). Repetti and his colleagues' review (Repetti, Taylor, & Seeman, 2002) has documented that emotional, social, and biological risk factors are accumulated in a cascade arrangement for children who grow up in risky conditions such as poverty.

Compared to research on children's behavioral adjustment and cognitive functioning (e.g., Ackerman, Schoff, Levinson, Youngstrom, & Izard, 1999; Burchinal, Peisner-Feinberg, Bryant, & Clifford, 2000; Lengua, 2002; Shaw, Winslow, Owens, & Hood, 1998), the paucity of research on the operation of risk and protective factors to predict

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low-income preschoolers' social competence is striking given the significance of peer relations as an important marker for children's later adjustment (Campbell, 2002; Ladd & Troop-Gordon, 2003). In the current study, the cumulative effect of multiple risk factors on teacher and observer ratings of peer social competence was investigated in a sample of Head Start preschoolers. The main and interactive effects of less impulsive and less inhibited temperament on peer social competence were also examined in the context of cumulative risk to identify promotive and/or protective factors.

1.1. The cumulative risk model

The cumulative risk model requires the examination of multiple settings and systems to obtain a more proximal and differentiated view of environmental influences. Viewed within this framework, the effect of any one risk factor, if it occurs in isolation from other risk factors, is quite small, whereas a cumulative combination of multiple risk factors, regardless of the type of the stressor, increases the likelihood of maladaptive outcomes (Sameroff, Gutman, & Peck, 2003). In studies derived from this model, *demographic* (e.g., ethnicity, maternal education), *family/psychosocial* (e.g., marital discord, harsh parental discipline), *individual* (e.g., low intelligence), and *contextual* (e.g., poor housing and neighborhood quality) risk factors are typically combined into a cumulative risk index (CRI), which is computed by summing the number of risk factors present for each family.

Although there are drawbacks to the use of the cumulative risk approach, such as the loss of variability in risk indices when quantitative variables are categorized and the assignment of equal weight to each risk factor, the use of the CRI proves to be parsimonious. In general, a CRI summarizes background variables from multiple settings, thereby avoids the multicollinearity among individual risk variables in statistical analyses and allows for a satisfactory predictive power, especially when sample sizes are relatively small (Burchinal, Roberts, Hooper, & Zeisel, 2000; Deater-Deckard, Dodge, Bates, & Pettit, 1998; Sameroff et al., 2003). Previous research has revealed linear relations between a CRI and developmental outcomes, such that more risk factors predicted higher levels of behavior problems as well as lower levels of cognitive competence and positive adjustment (Burchinal, Roberts, et al.; 2000; Deater-Deckard et al., 1998; Greenberg, Lengua, Coie, & Pinderhughes, 1999; Lengua, 2002; Lester et al., 1995; Sameroff, Seifer, Baldwin, & Baldwin, 1993; Shaw et al., 1998; Wakschlag & Hans, 1999). Furthermore, when analyzed separately, the association between the CRI and developmental outcomes was obtained for both boys and girls, for African-Americans and Euro-Americans, and for adolescents living in lower-income and in higher-income families (Sameroff, Bartko, Baldwin, Baldwin, & Seifer, 1998). This suggests that although risk factors are primarily found in lower SES groups, they affect child outcomes across all social classes.

1.2. Protective and promotive factors

Individual variation in response to risk and adversity has increasingly been the focus of attention in recent research. Individual characteristics (e.g., high IQ scores, impulse control, self-esteem), relationship characteristics (e.g., parenting quality), and community characteristics (e.g., school quality and neighborhood safety) have been identified as three major sources of factors that attenuate the effects of risk on children's developmental outcomes (Garmezy, 1993). An important distinction is seen in the definition of factors that contribute to positive outcomes in the context of risk. For example, factors have "protective" effects if they have beneficial effects primarily in the context of high-risk but have little or no benefit for those exposed to low-risk (Luthar & Cicchetti, 2000; Masten & Powell, 2003; Rutter, 2000). Alternatively, Sameroff (2000) proposed that factors have "promotive" effects if they exert their positive effects on developmental outcomes under both low- and high-risk conditions. This conceptual difference is also reflected in the statistical models that test the linkages among risk and positive factors and the outcome measures. In the case of a protective factor, data would fit a non-linear/interactive model such that the effect of the factor is magnified in the presence of high-risk. In the case of a promotive factor, data would fit a linear/main effects model such that the factor has an equally positive effect on the outcome measure regardless of the risk level.

1.3. Social competence of preschoolers in the context of cumulative risk

It is commonly agreed that successful engagement with peers and display of socially interactive play with peers are the two primary indicators of preschoolers' social competence (Creasey, Jarvis, & Berk, 1998; LaFreniere & Dumas,