

Resilience/Risk

Profiles of Approaches to Learning in Head Start Preschoolers

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This study used cluster analysis to identify profiles of approaches to learning among preschoolers enrolled in Head Start. Approaches to learning (ATL) is a school readiness domain composed of learning-related skills such as persistence, problem solving flexibility, curiosity, and cognitive inhibition (Kagan, Moore, & Bredekamp, 1995). The goal of the study was to identify groups of children based on ATL skills, and to determine whether those groups differed on school readiness outcomes. A sample of 182 preschool children was assessed on their approaches to learning using a battery of 4 structured tasks. School readiness was directly assessed using the Bracken Basic Concepts Scale-Revised (Bracken, 1998). Teacher-reported school readiness (language and literacy and early math) was assessed using a skills checklist (Bergan et al., 2003). Data were cluster analyzed using McDermott's (1998) megacluster analytic strategy. Differences between groups were analyzed using analysis of variance and multivariate analysis of variance. Results revealed 5 stable ATL profiles which differed in their school readiness outcomes. The most adaptive profile was persistent, curious, flexible, and had low cognitive inhibition. One profile, with very high inhibition scores, was at risk for poor outcomes on both the directly assessed and teacher reported school readiness measures. This research highlights the importance of ATL profiles to school readiness in Head Start preschoolers. The identification of ATL subgroups will allow interventions to be tailored to meet the needs of different children, increasing school readiness and improving academic achievement.

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Quantity Versus Quality: The Role of Socio-Cultural Risks in Predicting Academic Achievement Among Head Start Graduates

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Children living in poverty constitute the largest group of children in the United States at risk for low academic achievement and school failure (Ramey & Ramey, 1990). Many studies have examined the relationship between poverty and academic achievement (e.g., Brooks-Gunn & Duncan, 1997; Walker, Greenwood, Hart, & Carta, 1994). Duncan and Brooks-Gunn (2000) identified pathways through which poverty may affect children including poor quality of the home environment, inadequate out of home childcare, economically based conflict within the home, deficient parent health and parent-child interactions and poor neighborhood quality. Masten and Coatsworth (1998) have found that such risk factors tend to cluster around certain individuals. As such, Wachs (2000) concluded that no single factor was sufficient to explain developmental outcomes and that risk factors must be studied in a multiple risk-factor framework.

More than twenty years ago, Michael Rutter (1983) argued that it was not the quality but rather the quantity of childhood risk factors that led to psychiatric disorder. Sameroff and his colleagues (Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987) used the cumulative risk index approach, a dichotomous classification of risk exposure either by a statistical cutoff (e.g., lower 25% of sample) or on the basis of a conceptual categorization (e.g., being a teenage mother, single parent) in analyses of longitudinal data from the Rochester Project. Later, Sameroff, Seifer, Baldwin and Baldwin (1993) explored the quality versus quantity debate by examining whether specific patterns of risk were better predictors of child outcomes (Sameroff, et al., 1987). Study families fell into five groups distinguished by differing combinations of high-risk conditions, yet despite these differences, developmental competencies were the same for all of the children. Deater-Deckard and colleagues (Deater-Deckard, Dodge, Bates, & Pettit, 1998) also found that different combinations of risks led to similar outcomes when examining externalizing behavioral problems.

Given these findings, the objectives of the current study were: 1) To examine the cumulative effects of risk on academic achievement after controlling for child's intelligence; 2) To determine if certain patterns of risk are more predictive of academic achievement above and beyond the impact child's intelligence and the cumulative effects of risk; 3) To determine if particular patterns of risk are more predictive of academic achievement for subpopulations (males vs. females and various grade levels), after controlling for child's intelligence and the cumulative effects of risk. The results of our first two research question will confirm or challenge what has been documented in the literature reviewed above. The third research question examines subpopulations in relation to risk patterns that, to our knowledge, have not been yet been examined.

Subjects included 80 low-income, mostly ethnic minority Head Start graduates in a large urban school system. The children were originally selected based on their reading achievement

scores (half were drawn from the top quartile of reading achievement and half were drawn from the second quartile - between the 25th and the 50th percentiles). Measures included Average GPA over 3 years, Child's IQ on the Information and Block Design subtests (Sattler, 1992), and a cumulative risk index. Guided by the work of Sameroff et al. (1987), a cumulative risk index was created by summing the six dichotomous risk variables.

A series of hierarchical multiple regression analyses were conducted. Child's IQ and the cumulative risk index were included in Model 1. Model 2 consisted of the variables in Model 1, plus various combinations of the dichotomous cluster variables representing the different patterns of high risk. Overall, Model 1 accounted for 24% of the variance in average GPA and the results of this analysis were significant, $F(2, 68) = 10.478, p < .01$. When the effect of child's IQ on average GPA was partialled from the analysis, the number of risk factors remained a significant predictor of average GPA ($\beta = -.394, t = -3.466, p < .01$). Overall, Model 2 accounted for 26% ($\Delta R^2 = 2\%$) of the variance in average GPA and the results were significant ($F(5, 68) = 4.529, p < .01$). However, once the effects of child's IQ and the effects of cumulative risk on average GPA were partialled out, none of the dichotomous cluster variables were significant.

When these hierarchical multiple regression analyses were employed within male and female subgroups and within grade level subgroups, the pattern of results remained the same, such that none of the dichotomous cluster variables representing different patterns of risk were found to be significant predictors of average GPA, after controlling for the effects of child's IQ and cumulative risk.

The results of this study indicate that cumulative risk is related to academic achievement even after controlling for child's IQ. This supports previous findings by Rutter, 1979; Sameroff et al, 1993; Deater-Deckard et al., 1998. The results also indicate that different patterns of risk appear not to be associated with academic achievement for the whole sample or any subgroup (males vs. females and elementary vs. middle vs. high school students). Therefore, in this particular study, the quantity of risk outweighs quality of risk when predicting academic achievement. Future studies should examine patterns of high risk within different subgroups (i.e. socioeconomic class and race) as well as utilize more sophisticated statistical methods, such as latent class modeling, to identify clusters of risk.

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Child, Family, and Neighborhood Predictive Factors of Early Child Cognitive and Social Outcomes in Multi-Risk Families

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Early patterns of social interaction and care are central in children's formative years and in their later developmental outcomes (e.g., Cummings, Davies, & Campbell, 2000; Shaw, Owens, Vondra, Keenan, & Winslow, 1996; Wieder, Jasnow, Greenspan, & Strauss, 1983). But there are inconsistent findings regarding when risks in these patterns first become associated with child outcomes. It is also unclear how well each of several domains of risk factors independently predicts cognitive and social developmental outcomes for children over the first few year of life, and whether the pattern of influence changes over development. Additionally, it is unclear as to whether these risks are differentially mediated by a number of parenting factors. The current study addressed these issues using 140 predominantly African-American, low SES families participating in the Early Head Start Project (EHS) in Pittsburgh. Families were administered a questionnaire constructed by EHS to obtain demographic data, family stress, parenting competence, and neighborhood safety (Administration of Children and Families, 2002). Maternal psychopathology (Center for Epidemiological Studies Scale for Depression – Short Form; Radloff, 1977), parenting stress and parent-child dysfunction (Parenting Stress Index – Short Form; Abidin, 1995), child temperament (Emotionality Activity Sociability Questionnaire; Buss and Plomin, 1984), child cognitive and emotion regulation abilities (Bayley Scales of Infant Development 2nd Edition; Bayley, 1993), and child aggression (Child Behavior Checklist for Ages 2-3; Achenbach, 1993) also were assessed. With the exception of demographic data, collected only at baseline, and child aggression, collected at 24- and 36-months of age, all assessments were completed when children were 14, 24, and 36-months of age. Bivariate correlations and hierarchical regressions were used to examine both concurrent and longitudinal associations between risks and outcomes. Baron and Kenny's (1986) method of mediation analyses was used to examine mediation by parenting variables. As predicted, it was found that parenting variables were the best concurrent and longitudinal predictors of child cognitive and socioemotional outcomes, with cognition being best predicted early and aggression and emotional regulation being predicted at later ages. Contrary to prediction, neighborhood safety showed an early association with cognition, and family context variables were not consistently predictive of child outcomes. As expected, parenting variables, particularly parenting distress and parent-child dysfunction, appeared to differentially mediate the relations between family context variables and later child aggression. Preliminary analyses suggest that race was not a significant moderator of these relations. Future studies should utilize longitudinal designs with large, representative samples, assessing risks and protective factors at multiple contextual levels, using measures that adequately represent the risks being examined. Additionally, it appears that researchers should consider various dimensions of parenting attitudes and behaviors, as opposed to focusing on a composite measure of parenting. It also will be important to continue to explore cultural differences in parenting that can lead to moderating effects of race on early risks and outcomes. Finally, the findings suggest the importance of intervening on multiple levels, targeting not only the deficits in the child, but also the parenting factors influencing these outcomes.

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Cognitive, Language, and Social Emotional Development Among Infants and Toddlers in Early Head Start: The Role of Cumulative Risk

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From a cumulative risk perspective, risk factors can be understood as having a cumulative effect on child development (Lester, McGrath, Garcia-Coll, Brem, Sullivan, & Mattis, 1995; Seifer, Sameroff, Anagnostopolou, & Elias, 1992; Sameroff, Seifer, Baracos, Zax, & Greenspan, 1987), such that as the number of risks increases, the effects on children become more pronounced. Moreover, the number of risk factors present has been found to be a better predictor of developmental outcomes than the kind of risk that is involved (Sameroff & Seifer, 1995; Sameroff, Seifer, Baldwin, & Baldwin, 1993). Some researchers have also proposed that various risk factors interact with each other, and may have effects in combination that they would not have in isolation (Lester et al. 1995; Rutter & Sroufe, 2000; Sameroff & Seifer, 1995; Sameroff, Seifer, Baldwin, & Baldwin, 1993; Seifer et al., 1992).

Some local studies and secondary analyses of EHS data focus on cumulative risk as a predictor of child developmental outcomes, however, these studies used five characteristics to constitute risk factors: being a single parent, receiving public assistance, being neither employed nor in school or job training, being a teenage parent, and lacking a high school diploma. Theoretical models of cumulative risk by Sameroff and colleagues (1993, 1987) have identified a more extensive listing of factors that should be considered as determinants of children's outcomes, such as demographic characteristics, parental mental health, and familial/home risks (family functioning/conflict, home environment, parent-child interactions). The cumulative risk index (CRI) that was used in this study included the five demographic risks that have previously been utilized in EHS studies – maternal education, teenage mothers, marital status, ever unemployed or on welfare, and receiving public assistance - as well as the following risk factors: higher parental stress, higher maternal depression, lower maternal knowledge of child development, higher family conflict, negative parenting behaviors, and poorer quality of home environment. The CRI was examined in relation to children's cognitive and language development, and social emotional well-being (emotional regulation, orientation/engagement, and aggressive behavior).

All outcomes were examined at the 36 month time period and the analyses included a sample of approximately 900 participants (participants without any missing data). It was predicted that there would be a negative association between the CRI and cognitive, language, and positive aspects of social emotional development outcomes (emotional regulation and orientation/engagement) and a positive association between the CRI and negative aspects of social emotional development (aggressive behavior). This hypothesis was supported for all outcomes. It was also predicted that the CRI will explain a greater proportion of variance in each of the developmental outcomes than that explained by the individual risk factors. This hypothesis was not supported; the individual risk factors (entered in regression analyses) accounted for a greater amount of the variance in each developmental outcome than did the CRI score. The results of this research have important implications for the cumulative risk framework and provide valuable insight into the individual factors that critically impact children's

developmental outcomes, particularly for high risk, low-income infants and toddlers and their families.

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