

Using Family-Focused Interventions to Promote Child Behavioral Readiness for School

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The Importance of Focusing on Behavioral Readiness

No Child Left Behind has increased recent efforts to understand and promote academic achievement and to reduce socioeconomic and ethnic/cultural disparities in school performance. Academic school readiness—the child’s language, pre-literacy skills, and number concepts at school entry—has emerged as a critical predictor of later academic achievement. This has spurred renewed efforts to develop and evaluate effective early intervention strategies that can promote these critical child competencies. We argue that behavioral readiness for school (a child’s ability to appropriately manage attention, emotions and behavior within the school setting) is equally important, both as a predictor of child school adjustment, and also as a critical domain of socialization that, along with academic attainment, represents a central goal of the educational system.

Predictive Significance of Disruptive Behaviors at School Entry

Campbell and von Stauffenberg (this volume) emphasize the important role played by child regulatory skills in promoting children’s behavioral adjustment to school demands. Children must be able to control attention, inhibit impulsive reactions, delay gratification, cooperate with others, and engage in goal-oriented behavior. If children fail to develop these skills during the preschool years and enter kindergarten exhibiting high rates of disruptive behavior problems, they are at risk for ongoing behavioral maladjustment, mental health problems, antisocial behavior, and substance use (Coie &

Dodge, 1998; Dishion, French, & Patterson, 1997). Once in school, disruptive children are likely to elicit negative reactions from teachers and peers (Coie & Dodge, 1998; Miller-Johnson et al., 2002). Exclusion from positive peer networks and exposure to high rates of problem behaviors among classmates fuel the continuity of problem behaviors in school settings; these contribute to school disengagement, special education placement, and eventual drop-out (CPPRG, 1992; Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1994).

Disruptive behavior problems, which include various forms of oppositional, aggressive, and hyperactive-inattentive behaviors, represent the most prevalent form of mental health problems in childhood (Anderson, Williams, McGee, & Silva, 1987). One review concluded that about 10–15% of all preschool children exhibit mild to moderate behavior problems (Campbell, 1995); some studies have estimated prevalence rates as high as 20–30% among children from socioeconomically disadvantaged families (Hawkins et al. 1999; Lavigne et al., 1996; Qi & Kaiser, 2003). For example, Kaiser et al. (2000) found that 17–21% of the socioeconomically disadvantaged children they studied had behavior problems severe enough to warrant mental health referrals. This was almost four times the rate expected in a representative sample of children. In addition, over 40% of the children in that study demonstrated social skills and language skills that were well below the normal range. Children who live in poverty not only are more likely to have high levels of externalizing problems in preschool, but they also are more likely to experience greater increases in externalizing problems during the first two years of elementary school (Macmillan, McMorris, & Kruttschnitt, 2004). Despite their

prevalence and severity, the mental health needs of disadvantaged preschoolers often go undetected and untreated (Fantuzzo et al., 2003).

Reflecting the stability of these problems over time, teacher ratings of disruptive behavior in kindergarten can be used effectively to identify children who will need special education, mental health, and juvenile justice services later in elementary school (Jones et al., 2002). By the end of first grade, teacher ratings of disruptive behavior problems detect future conduct disorder and oppositional defiant disorder psychiatric diagnoses with sensitivity rates above .50 and specificity rates above .90 (Hill et al. 2004).

Disruptive Behaviors and Academic Difficulties

Not only are children with disruptive behaviors at risk for continuing problems, but they also show academic underachievement with specific delays in language and reading skills (Campbell et al., 1991; Pianta & Castaldi, 1989; Vaughn et al., 1992). In one prospective study, children with conduct disorder were more likely than their nonproblematic peers to have educational difficulties, even after controlling for their intellectual ability and concurrent attention-deficit/hyperactivity disorder symptoms (Kim-Cohen et al., 2005). Specifically, 65% of the children with conduct disorders at school entry had one or more serious academic problems in school two years later (Kim-Cohen et al., 2005). Not surprisingly, when children experience the dual risks of low levels of social competence and high rates of behavior problems, they are more likely to have to repeat a grade early in elementary school (Beebe-Frankenberger, Bocian, MacMillan, & Gresham, 2004). These children also require more school resources, representing a large percentage of children receiving special education services (National

Center for Health Statistics, 2005; Wagner & Blackorby, 2002) and a significant proportion of school districts' high-expenditure pupils (Chambers, Kidron, & Spain, 2004).

To some extent, the frequent co-occurrence of disruptive behavior problems and academic difficulties may reflect the developmental interplay between language and self-regulation skills (Blair, 2002; Greenberg, Kusche, & Speltz, 1991). Normatively, aggressive behaviors appear early in the social repertoire of young children, peaking when children are about two or three years old. The frequency of these behaviors decreases sharply during the preschool years, however, as children develop the verbal, emotional, and social skills that allow them to inhibit their first impulses, comply with social protocol, and "use their words" to voice dissatisfaction and resolve disagreements (Greenberg, Kusche, & Speltz, 1991). Language plays a key role in promoting self and social regulation. Once children are able to use language to describe internal affective states, they can share their feelings verbally with others. This, in turn, fosters new avenues for understanding themselves and others, for coping with frustrations, and for managing conflicts. In addition, the ability to label unpleasant arousal with specific words empowers children to identify cause-effect sequences associated with those feelings, promoting anticipatory problem solving (Cole, Michel, & Teti, 1994). Conversely, low levels of emotional understanding increase the likelihood that children will misinterpret in a negative way the actions of others, thus fueling interpersonal conflicts (Dodge, 1986).

Child attention problems also may be responsible for some of the overlap between academic difficulties and disruptive behavior. For example, child attention problems

predict lower language outcomes in first grade (NICHD Early Child Care Research Network, 2003), academic problems (Spira & Fischel, 2005), and delayed emergent literacy skills in both middle- and low-income families (Lonigan et al., 1999). Attention problems are associated with slower gains in reading through first grade and, more important still, reduce by half the impact of individualized tutoring (Rabiner, Coie, & CPPRG, 2000). Attention problems also are associated with increased risk for behavioral and social adjustment problems in school (Pope & Bierman, 1999). Moreover, severe attention problems appear to co-occur with a wide range of psychiatric diagnoses (Biederman, Newcorn, & Sprich, 1991).

Common Parenting Influences

Given the intertwined development of language skills, emotion regulation, and behavioral control, it is not surprising that some similar family processes are associated with adaptive development across these domains. For example, positive parent-child relationships foster secure attachment, child compliance, the development of joint attention, and positive language learning (Campbell & von Stauffenberg, this volume; Dickinson & Smith, 1994). Similarly, warm involvement and sensitive responding play central roles in promoting the kinds of caregiver-child interactions that promote child language skills. These interactions involve caregiver utterances that expand upon children's comments and provide grammatical input that builds vocabulary and syntax skills (Landry, Smith, Swank, & Miller-Loncar, 2000; Nelson et al., 2001). The child temperament factors associated with low levels of behavioral readiness for school—including negative affect and reactivity, difficulty focusing and maintaining attention, and poor impulse control—may all decrease the child's capacity to engage positively in

conversations with parents. Similarly, sociodemographic and family process risks associated with low levels of behavioral readiness at school entry—including low levels of maternal education, maternal depression, maternal and paternal insensitivity, and a less stimulating home environment—are also factors likely to impair child cognitive and language development.

Implications for Family-focused Interventions to Promote School Readiness

These developmental findings provide a basis for the design of family-focused preventive interventions by identifying protective factors that may promote the child skills associated with school readiness and counteract the risks associated with socioeconomic disadvantage (Coie et al., 1993). As summarized in the Campbell and von Stauffenberg chapter (this volume), sociodemographic risks associated with low levels of behavioral readiness at school entry include low levels of maternal education, single parent status, minority status, and maternal depression. Child characteristics that constitute risks to behavioral readiness include delays in language and cognitive skill development, poor regulation of negative affect, difficulty focusing and maintaining attention, and poor impulse control. Several key family process such as maternal and paternal sensitivity and warm involvement, a stimulating home environment, and appropriate limit-setting could be targeted in early interventions, and could protect children against the risks associated with socioeconomic disadvantage. Interventions targeting these parenting skills might have particularly strong effects on child school readiness if they were designed with a dual focus on the promotion of academic readiness (language and cognitive skills) and the promotion of behavioral readiness (attentional, emotional, and behavioral regulatory control).

To date, family-focused interventions have tended to target either the domain of academic or behavioral school readiness, rather than addressing both skill domains. In the following sections, we illustrate three approaches to family-focused intervention addressing school readiness. Then, we discuss the need to develop a more comprehensive model to guide family-focused interventions that addresses the concurrent cognitive and behavioral needs of children who show delays in behavioral readiness.

Home Visiting Programs to Promote Language and Cognitive Development

A number of home visiting programs have been designed primarily to enrich the home environment to promote child language and cognitive development. For example, the Infant Health and Development Program focused on increasing parental nurturance and sensitive responding as a strategy to protect very young children from the risks associated with preterm birth and corresponding cognitive and social-emotional delays (Landry et al., 2000). In general, home visiting programs have demonstrated capacity to improve maternal sensitive responding; in their review, Brooks-Gunn, Berlin and Fuligni (2000) found that 11 of 13 home-visiting evaluations that observed mother-child interactions found increases in parental sensitivity. Correspondingly, a recent meta-analysis demonstrated that, on average, home visiting programs produced a statistically significant improvement in children's cognitive development and social-emotional functioning, with effect sizes of .18 and .10, respectively (Sweet & Appelbaum, 2004). Three popular home visiting programs have focused specifically on promoting school readiness among low-income children: the Mother-Child Home Program/Parent-Child Home Program; the Nurse-Family Partnership Program, and the Home Instruction Program for Preschool Youngsters (HIPPY).

The Parent-Child Home Program (originally called the Mother-Child Home Program) provides biweekly home visits by paraprofessionals, spread over seven months, for each of two years, usually when children are two and three years old. Altogether, families are expected to receive 92 home visits. The paraprofessionals who conduct these home visits present the parent with a new toy or book at each home visit and show them how they can use the learning material in ways that motivate verbal interactions and improve children's language development.

Quasi-experimental evaluations of the Parent-Child Home Program have been quite promising. Children who participated in the Parent-Child Home Program were much more likely than other poor children in the state of South Carolina to pass a broad assessment battery of cognitive skills (Levenstein, Levenstein, & Oliver, 2002). In fact, participation in the Parent-Child Home Program erased many of the school readiness deficits that low-income children often display in school, making these children comparable to their non-poor classmates (Levenstein, Levenstein, & Oliver, 2002). In another quasi-experimental evaluation, the home visiting program resulted in higher IQ scores as children entered kindergarten and when they were in third grade (Madden, Levenstein, & Levenstein, 1976). Moreover, the effects of the program appeared to be sustained: There is some evidence that the Parent-Child Home Program may have increased the likelihood that children graduated from high school (Levenstein, Levenstein, Shiminski, & Stolzberg, 1998).

Randomized control trials of the Parent-Child Home Program, however, have not been as favorable. Two large-scale trials have failed to demonstrate statistically significant differences in IQ between children who did and did not receive the program

(Madden, O'Hara, & Levenstein, 1984; Scarr & McCartney, 1988). The lack of findings in these trials might highlight problems in the comparison samples of the quasi-experimental evaluations. They also might reflect socioeconomic and cultural differences in the populations studied or the more common use of child care, which may have washed out the effects of improved parental involvement.

Focusing on older children who are preparing to make the transition into school, the Home Instruction Program for Preschool Youngsters (HIPPY) is a two-year program that enrolls 4-year-old children and their parents and spans the transition into kindergarten. Paraprofessionals conduct bimonthly home visits, providing books and activities designed to enhance children's language skills, sensory and perceptual discrimination skills, motor skills and problem-solving skills.

In one quasi-experimental evaluation, a statewide comparison suggested that family participation in this home visiting program enhanced child academic performance in grade-school, promoting higher grades, improved achievement scores, more favorable teacher ratings of social adjustment (Bradley & Gilkey, 2002). A randomized control trial of the HIPPY program, however, revealed meaningful effects for children in one cohort at the end of kindergarten and at the end of first grade, but no effects for children in a second cohort (Baker, Piotrkowski, & Brooks-Gunn, 1998).

Another home visiting program that targets mothers and infants is the Nurse-Family Partnership program. In this program, first-time mothers receive weekly, biweekly, or monthly home visits by registered nurses during pregnancy and the first two years of their child's life, for a total of about 30 home visits. In contrast to the Parent-Child Home Program or HIPPY, the focus of the home visits in the Nurse-Family

Partnership does not focus intensively on enhancing parent-child verbal interactions and cognitive stimulation, but takes a broader approach. In this program, nurses strive to improve mothers' and children's physical health, family life issues—such as economic stability and maternal depression—along with increasing positive parenting practices.

In one experimental evaluation, this program appeared most effective for mothers with the highest level of need, in terms of being young, single, and with limited social support or psychological resources (Olds, Robinson et al., 2004). Among this subgroup of mothers, the program promoted more stimulating home environments for children, and these children had statistically significantly higher scores on tests of language development and executive functioning at age four (Olds, Robinson et al., 2004). The children also displayed better behavioral adaptation during testing sessions, suggesting improved behavioral school readiness. According to mothers' reports, however, these children were not displaying fewer behavior problems at home.

Another experimental trial of the Nurse Family Partnership program produced statistically significant differences in children's intellectual functioning, mathematical achievement, and receptive vocabulary – but not reading achievement – just after children entered school, when they were about six years old (Olds, Kitzman et al., 2004). Although mothers in this trial were less likely to report clinically significant behavior problems at home and children exhibited fewer aggressive social-cognitive biases, teachers' reports of behavior problems at school did not show intervention effects.

Because about 90% of home visiting programs focus on children younger than three years old (Sweet & Appelbaum, 2004) and most programs do not focus specifically on school readiness, the effects of these programs on children's language development,

academic skills, and behavioral regulation at school entry remain unclear. The results of quasi-experimental and experimental evaluations of the home visiting programs that are most relevant to school readiness and that examine outcomes appropriate to this domain are mixed. However, qualitative and quantitative reviews (Brooks-Gunn et al., 2000; Sweet & Appelbaum, 2004) support the hypothesis that parental sensitivity and home stimulation can be increased through home visiting programs, and they suggest that changes in these parenting factors promote child skill development. Hence, the approach warrants further examination and refinement as one potential strategy to enhance parenting in ways that reduce the negative effects of socioeconomic disadvantage on child school readiness.

Interventions Focused on Parent-Child Reading

Another approach to parent interventions targeting child school readiness involves teaching parents to use interactive reading techniques at home with their children. Theoretically, interactive book-reading provides an ideal setting for the types of conversational exchanges that appear most central to supporting child oral language skill development. Furthermore, interventions in preschool classrooms demonstrate positive effects on child vocabulary acquisition, story comprehension, and child oral language skills when teachers use interactive reading techniques (e.g., Wasik & Bond, 2001; Whitehurst, Arnold et al., 1994; Whitehurst, Epstein et al., 1994).

In the reading program developed by Whitehurst and his colleagues (Whitehurst, Arnold et al., 1994; Whitehurst, Epstein et al., 1994), parents are taught to encourage their child to tell the story they are hearing in their own words. Parents are taught to be active listeners, to praise their child's ideas, to ask probing questions about the story, and

to expand on their child's comments as a means of modeling more sophisticated language use (Lonigan & Whitehurst, 1998). The goal of this intervention is to enhance preschoolers' vocabulary, comprehension, and narrative skills in preparation for future literacy.

Direct parent training consists of a group of six to twelve parents and one trainer. During two one-hour training sessions (an initial training session and a later "booster" session), the trainer teaches dialogic reading techniques by showing a video that models dialogic reading skills and role-playing these skills with group members. Video self-instruction alone has also been explored as a parent-training technique, but is significantly less effective in increasing parent dialogic reading behaviors and decreasing other parent reading behaviors (Huebner & Meltzoff, 2005). Parents are then expected to read to their child 10–15 minutes a day, three to five times a week. Home interventions vary in length from four to eight weeks, while school and home combination interventions may last up to 30 weeks.

Whitehurst's dialogic reading program has been shown to significantly improve language skills in typical preschoolers from both middle- and low-income backgrounds (Whitehurst et al., 1988; Whitehurst, Arnold et al., 1994). In addition, this intervention has increased pre-literacy skills in preschoolers who performed significantly below average on tests of expressive and receptive vocabulary (Lonigan & Whitehurst, 1998). More recent work has assessed the efficacy of a combination intervention consisting of Whitehurst's dialogic reading program implemented at home and at school in addition to the phonemic awareness program, Sound Foundations, implemented within the school setting (Whitehurst et al, 1999; Zevenbergen, Whitehurst, & Zevenbergen, 2003).

Although this intervention appeared to improve emergent literacy skills immediately following treatment, there were no sustained intervention effects in first and second grade (Whitehurst et al, 1999; Zevenbergen, Whitehurst, & Zevenbergen, 2003).

In sum, interactive book-reading was designed to target very specific parenting behaviors that enhance child language and pre-literacy skills. As such, this intervention appears to improve children's academic school readiness. Additional studies are needed to determine how intervention effects can be sustained in a way that makes a meaningful difference for children's academic success. In addition, studies have not examined potential cross-over effects of children's academic school readiness on their behavioral school readiness. One might anticipate that cross-over effects could emerge, as improved language skills and reduced frustration with learning tasks at school might promote behavioral regulation.

Parenting Interventions to Reduce Child Disruptive Behaviors

In contrast to those home visiting and dialogic reading programs that target children's academic school readiness, parent training programs target factors related to children's behavioral school readiness. Originally designed as clinical interventions for parents of children with conduct problems, these programs attempt to teach positive interactions and consistent limit-setting. They focus on increasing praise and positive rewards, minimizing criticism, and reducing or eliminating spanking and harsh punishment (Brestan & Eyberg, 1998; McMahon, 1999). Research with clinical samples suggests that parent training programs are one of the most effective ways to reduce children's conduct problems at home (Kazdin & Weisz, 1998).

It is less clear, however, whether changes in parenting and conduct problems at home translate to improvements in children's behavioral school readiness. To examine this possibility, the Incredible Years Parent Training Program has been tested as a prevention strategy in two randomized trials with Head Start families (Webster-Stratton, 1998; Webster-Stratton, Reid, & Hammond, 2001). The program teaches parents to use child-directed play skills, positive and consistent discipline strategies, strategies for coping with stress, and ways to strengthen children's social skills. Parents meet with a certified trainer in small groups that are held weekly for about two or three months, with each session lasting about two hours. To promote consistency across the home and school contexts, Head Start teachers also participate in extensive training in which they learn many of the same behavior management strategies as the parents.

In one trial (Webster-Stratton, 1998), the Incredible Years Parent Training Program improved parenting practices at home. Although there were no treatment effects on parents' reports of children's behavior at home, there were treatment effects on children's observed behaviors at home. Moreover, there were treatment effects on Head Start teachers' reports of children's social competence, but not externalizing problems, at school. One year later, those same treatment effects were still apparent, except the impact on children's social competence at school had disappeared. In another trial (Webster-Stratton, Reid, & Hammond, 2001), participating in the Incredible Years Parent Training Program resulted in increases in positive parenting practices, decreases in negative parenting practices, and reductions in children's conduct problems at home and at Head Start.

It appears that parent training programs, like the Incredible Years, are effective in teaching the kinds of sensitive and responsive parenting practices that should be related to children's school readiness. When implemented with integrity, these programs reliably reduce children's conduct problems at home. It is difficult to determine whether the parent training or teacher training component of this program is responsible for the changes in children's behavior at Head Start. However, in another trial of the Incredible Years for the middle-income families of older children with oppositional defiant disorder, parent training alone resulted in improvements in children's behavior at school (Webster-Stratton, Reid, and Hammond, 2004). Like the home visiting programs and the dialogic reading programs, there is some initial reason to believe that parent training might be able to improve children's school readiness.

Implications for Preventive Intervention Design

Developmental research has confirmed the critical importance of children's behavioral as well as academic school readiness. High rates of disruptive behavior at school entry often are associated with maladjustment and poor academic and social outcomes (Campbell & von Stauffenberg, this volume). To date, most family interventions seeking to reduce disparities among children living in poverty have focused on academic school readiness. In general, they have sought to increase responsive and appropriately stimulating parenting as a means of facilitating children's cognitive development. Relatively fewer family interventions have focused on the developmental pathways associated with low levels of behavioral school readiness in a comprehensive way. Because so many of the children who lag in the acquisition of language skills and executive functioning skills also have problems with emotional and behavioral

regulation, it is critical to consider academic and behavioral school readiness in tandem (Blair, 2002). Effective preventive intervention programs may need to address the multiple developmental needs of children, rather than focusing on cognitive-linguistic or behavioral domains of adjustment in isolation.

More comprehensive interventions could involve multi-component treatment packages, such as those being used in elementary school prevention programs for children with significant conduct problems (e.g., CPPRG, 1992; Dumas, Prinz, Phillips, & Laughlin, 1999; Tremblay et al., 1995). Separate but coordinated efforts could provide academic tutoring, social-emotional skill training, and parent training. Alternatively, given that a core of common parenting practices appear to be associated with children's language development and self-regulation abilities, it might be possible to create an integrated parent training intervention that targets parenting skills associated with both child academic and behavioral readiness for school. Yet a third preventive intervention design option would be the use of an adaptive design (Collins, Murphy & Bierman, 2004), in which parents are offered specific components of treatment based on an individualized assessment of child and family need.

Designing Prevention Trials to Explore Developmental Mechanisms

More prevention trials are clearly needed to identify the optimal strategies for addressing the multiple needs of children with delays in academic and behavioral readiness for school. These trials are likely to be most useful if they are designed to test developmental mechanisms of change, as well as to assess the impact on child outcomes. Our best interventions articulate in advance the mechanisms by which they expect to influence identified risk and protective factors to promote child adaptation (Coie et al.,

1993). When trials are designed in this way, they simultaneously test the efficacy of interventions and contribute to the developmental understanding of the phenomena.

In the area of school readiness, we need to understand better how academic functioning and child behavior are related. In particular, we need to understand how inattention might underlie problems in both areas and might moderate treatment effects. Equally important, we need to understand how common family characteristics, such as sensitive responding, affect both domains of development. By creating and testing more integrated preventive intervention programs, we are most likely to make progress in ameliorating the disadvantages so often experienced at school entry by children living in poverty.

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