Early Predictors of Behavior Problems

Two Years after Early Intervention

Darcy B. Mitchell
Penny Hauser-Cram
Boston College

Positive outcomes for children with developmental disabilities (DD) can be affected by children’s behavior problems. This study examined the family environment of 125 children with DD at age 3, and the extent to which that environment, as well as children’s cognitive and adaptive functioning, predicted the problematic behaviors that children with DD exhibited at age 5. The family environment included marital status, poverty status, stressful life events, and family climate, consisting of the extent of cohesiveness, expressiveness, and conflict in the family. Analyses indicated that children’s behavior problems at 5 were predicted by the numbers of stressful events experienced by their families when the children were 3 years old. Consistent with developmental systems models, family climate added significant unique variance in predicting both externalizing and internalizing behavior problems. The findings support the need for practices in early intervention programs that promote the positive climate of families of children with DD.

Keywords: child development; disabilities and development delays; at risk for school readiness and disabilities and development delays; cerebral palsy and disabilities and development delays; down syndrome and disabilities and development delays; mental retardation and disabilities and development delays

Improving positive outcomes for children with developmental delays and their families has been a longstanding goal of early intervention programs (Turnbull et al., 2007). Nevertheless, positive outcomes may be undermined by young children’s behavior problems, also known as challenging behavior. Children’s problem behaviors have been found to affect their school adjustment (e.g., Campbell, 2002; Campbell, Spieker, Burchinal, Poe, & NICHD Early Child Care Research Network, 2006; Kaiser, 2007) as well as outcomes in adolescent and adult life (e.g., Kroes et al., 2002; Reid & Patterson, 1989). Unfortunately, the prevalence of challenging behaviors in young children has appeared to be increasing (e.g., Kaiser, Cai, Hancock, & Foster, 2002; Webster-Stratton, 2000), and children with developmental delays are more likely to demonstrate these problems than children without

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Developmental delays (Baker et al., 2003; Einfeld & Tonge, 1996). In a synthesis about identification and service delivery for young children with behavior problems, Powell, Fixsen, Dunlap, Smith, and Fox (2007) found that challenging behavior of young children with developmental delays was both underidentified and insufficiently addressed in early intervention programs. In addition, Kaiser (2007) asserted that practitioners’ attempts to improve children’s pre-academic skills (e.g., fine motor, language, cognitive development) have taken priority over behavioral interventions in numerous early childhood programs. As a result, many children with developmental delays may make the transition to school-based IDEA Part B services exhibiting challenging behaviors and beginning a developmental trajectory for later school difficulties.

Researchers have proposed several reasons for the common finding that children with developmental delays are more likely to exhibit behavior problems than similar-age peers. For example, Eisenhower, Baker, and Blacher (2005) reported that as early as age 3 challenging behaviors were associated with certain syndromes and conditions. Specifically, they determined that children with cerebral palsy or autism exhibited the highest levels of behavior problems. The lowest ratings for challenging behaviors were demonstrated by children without developmental delays and children with Down syndrome, and ratings for those groups were similar to one another. Children with undifferentiated developmental delays were rated between the other groups in the level of behavior problems exhibited. The investigators speculated that the association had a neurological basis that influences distinct patterns of behavior. Second, researchers have proposed that children’s cognitive functioning may be related to behavioral difficulties (Guralnick, 1999). Specifically, investigators have found that children who are delayed in their development have difficulties in the self-regulatory skills necessary to maintain appropriate behavior (Baker, Fenning, Crnic, Baker, & Blacher, 2007; Wilson, 1999). Researchers focusing on children without developmental delays but with challenging behaviors have noted a third reason for children’s behavior problems. Specifically, family factors have been associated with challenging behaviors exhibited by children (Campbell, 2002). Hence, family behavioral patterns along with their social and economic circumstances have been related to children’s social and behavioral development.

From a developmental systems perspective, families have been considered the proximal environmental context for young children’s optimal development (e.g., Bronfenbrenner & Morris, 1998; Guralnick, 2005). For example, Shonkoff and Phillips (2000) concluded that relationships within families influence their children’s social-emotional functioning. Hence, supporting families has been a primary aim of early intervention services (cf., McWilliam & Scott, 2001), and family support has been inherent in Part C of IDEA (Hauser-Cram & Warfield, in press; Meisels & Shonkoff, 2000).

Behavior problems of children with and without developmental delays are more likely to occur in families who undergo adverse events or who live in difficult circumstances. Specifically, death of a family member or limited employment (e.g., Campbell, 2002; Laucht et al., 2000), single-parent families (e.g., Carlson & Trapani, 2006; Hilton & Desrochers, 2002), or families with fewer economic resources (e.g., Dwyer, Nicholson, & Battistutta, 2003; McLeod & Shanahan, 1996; Shaw, Vondra, Hommerding, Keenan, & Dunn, 1994) may affect young children’s social emotional development. These difficult family
circumstances place stress on families, perhaps diverting attention of family members from their children’s well-being and possibly affecting the mental health of individual family members. Moreover, McHale and Rasmussen (1998) reported that when relationships in families were disrupted through lack of harmony, young children were likely to demonstrate aggressive behavior several years later. Some investigators have argued (e.g., Cox & Paley, 2003; Minuchin, 2002) that family climate serves as an emotional regulator for individual family members, and either poor regulation or disruption in regulation is likely to affect the young children’s self-regulation and result in maladaptive behavior.

Researchers studying children with developmental delays have considered one aspect of families, parenting stress, and its relation to children’s challenging behaviors. These investigators have found a bidirectional relationship between parental stress and children’s behavior problems (e.g., Baker et al., 2003; Hastings, Daley, Burns, & Beck, 2006). Although these findings have been important, parenting stress may be an indicator of the dyadic relationship between parents and their children, not the family systems more generally.

Investigations into family systems have yielded valuable information about the social-emotional development of children with developmental delays. For example, Mink, Nihira, and Meyers (1983) categorized families of children with intellectual disabilities into distinct types based on the (a) emotional climate, (b) management style, and (c) value orientation of the family. They found that children exhibited higher levels of socio-emotional functioning when they lived in families in which relationships were harmonious and cohesive. Hauser-Cram, Warfield, Shonkoff, and Krauss (2001) also reported a similar result in their longitudinal analyses of children’s adaptive skills. Specifically, we determined that the family climate (i.e., the family relational environment) when children with developmental delays were age 3 predicted children’s growth in social skills to age 10. Given the theoretical model posed by family system theories in its relation to emotional regulation, we expect that when family climate (e.g., family members’ actions to promote cohesion, express emotions, and deal with conflict) has been well regulated, it predicts lower levels of deleterious social-emotional outcomes such as challenging behaviors.

Because we investigated children who transitioned out of the early intervention system at age 3, we focused on families with children age 3 and followed them until age 5, when many children enroll in kindergarten. We reasoned that if family process indicators of later behavior problems were evident, then practitioners may be better informed about interventions directed at those transitional difficulties. We hypothesized that family climate was associated with children’s challenging behaviors. Four research questions guided our investigation. Specifically, the questions were as follows:

1. To what extent does children’s cognitive and adaptive functioning relate to their behavior problems?
2. To what extent are behavior problems of children with developmental delays predicted by structural aspects of the family system, such as poverty and marital status?
3. Over and above the effects of child characteristics and family demographics, what role do stressful life events play in the development of behavior problems in children with disabilities?
4. While statistically controlling for significant correlates in the first three analyses (i.e., cognitive and adaptive skills, poverty and marital status, and stressful life events), to what extent does the family climate predict children’s behavior problems?
Method

Participants

The children and families represented in our study were enrolled in the Early Intervention Collaborative Study (EICS), a longitudinal investigation of 190 children with disabilities and their families (Hauser-Cram et al., 2001; Shonkoff, Hauser-Cram, Krauss, & Upshur, 1992). Families were recruited when they entered early intervention services in Massachusetts or New Hampshire because of the special needs of their infants or toddlers (less than 24 months of age). The current investigation focused on data collected when the children were 3 and 5 years old. A total of 179 mothers continued to participate in the EICS investigation when children were age 3 and 159 participated at age 5. Of these, only those families who completed all measures used in these analyses were included in our final sample, for a total of 125 mothers and children.

The sample included 40 children with Down syndrome, 41 children with motor impairments, and 44 children who had demonstrated delays (of unknown etiology) in two or more areas of development at time of enrollment in the original study and again at age 3 years. The average cognitive performance, as measured by test composite scores on the McCarthy Scales of Children’s Abilities (McCarthy, 1972) or the Mental Scale of the Bayley Scales of Infant Development (Bayley, 1969), for the children at age 3 was 62.5 (SD = 23.7), and the Vineland Adaptive Behavior Scales (Sparrow, Balla, & Cicchetti, 1984) was 65.9 (SD = 13.2). Fifty-five percent of the participants were boys, and the children were predominantly European American (90%). The child demographics for our study were not significantly different from those of the larger sample of 179 children at age 3. In regards to family characteristics, the average family income was between $25,000 and $30,000, and reported income ranged from less than $5,000 per year to greater than $40,000. Twenty-two participating families (i.e., 18%) were living in poverty according to federal guidelines. Mothers had completed an average of 14.1 years of education (SD = 2.4), with a range of 10 to 19 years, and 80% of them were married at the time of data collection. Similar to child demographics, parent demographics were not significantly different from those reported for the larger sample of parents (N = 179).

Procedure

Families were contacted prior to the children’s birthdays and asked for their continued participation in the EICS study. Interview dates typically were scheduled with parents within a month. Data were collected through home visits by trained staff members who were blinded to our hypotheses. During home visits, one staff member conducted interviews with mothers while another one completed multidimensional and structured child assessments. Mothers also completed self-administered questionnaires. Home visits ranged from 2 to 3 hours in length. If children were ill or their mothers determined that their children’s behavior was not typical during the initial home visits, second home visits were conducted.
Measures

Child behavior. We administered the Child Behavior Checklist for Ages 2-3 (CBCL/2-3; Achenbach & Edelbrock, 1983), which is a 100-item measure of young children’s behavioral problems. Items were scored 0 to 2, depending on the degree to which each statement about children’s behavior characterizes the child being assessed. We used the six subscales of the CBCL to establish two commonly employed dimensions of problem behaviors: externalizing (aggressive and destructive behavior) and internalizing (withdrawn, somatic complaints, and anxious/depressed) behaviors. T-scores for each behavioral dimension were used for subsequent analyses. The Cronbach’s alphas for externalizing and internalizing behavior problems for our sample were .94 and .82, respectively.

Child disability and gender. We established participants’ type of disability from their initial information at the time of their enrollment in the study and again at age 3. The children were categorized into three disability groups: (a) Down syndrome, (b) motor impairment, and (c) developmental delay. We confirmed children’s diagnoses through medical record reviews and by interviews with the primary caregivers. In addition, participants’ genders were also drawn from their demographic data.

Cognitive and adaptive skills. We based participants’ cognitive scores on their standard scores from their individual assessments with either the McCarthy Scales of Children’s Abilities (McCarthy, 1972) or the Bayley Scales of Infant Development (Bayley, 1969). The Cronbach’s alpha for these scales were .92 and .98, respectively. Children’s adaptive skills were measured with the Vineland Adaptive Behavior Scale (Sparrow et al., 1984), which was completed by mothers during home interviews. The Cronbach’s alpha for the Vineland Adaptive Behavior Scale was .95. Given that the cognitive and adaptive behaviors scores were highly correlated in our sample (r = .78), we combined standard scores for each of the two scales and averaged them to form a composite measure of child skills.

Poverty status. We used the United States Department of Health and Human Services (2009) poverty guidelines for the year in which participants’ data were collected, and families were coded as “1” if living below the poverty guidelines or “0” if not living in poverty. Information from mother interviews was used to determine annual family income and number of persons living in the households.

Stressful life events. We assessed the number of stressful life events in the lives of mothers with the Abidin Life Events Scale (Abidin, 1983). The Life Events Scale measured the occurrence of 19 stressful life events over the previous 12 months in the lives of mothers. Items were added to create a total number of stressful life events.

Family climate. We evaluated family climate with the family relations index from the Family Environment Scale (FES; Moos, 1974). This index is calculated by summing the scores of the Cohesion and Expressiveness subscales and subtracting the score for the Conflict subscale. Cronbach’s alpha for this index was .72.
Statistical Analyses

Because of the modest sample size and resulting power considerations, we conducted initial analyses to determine if specific child characteristics were related to the outcomes of interest. We reasoned that if such relations were not significant, then a more limited set of family and child characteristics could be controlled for in the final analyses to test our hypothesis about family context. Correlations among variables were tested to determine multicollinearity prior to the primary analyses. Specifically, we employed hierarchical multiple regression analysis to test hypothesized relations between family climate and the two outcome variables, externalizing and internalizing behavior problems. We selected the order of variables in the equations based on the theoretical model proposed, with child variables entered first and family variables entered next followed by the main variable of interest, family climate (Pedhazur, 1997).

Results

Descriptive Statistics

We performed descriptive statistics on all variables of interest (see Table 1). Clinical cutoffs for externalizing and internalizing child behavior problems (i.e., scores above which one recommends referrals) were not used in these analyses but are reported here for descriptive purposes. The mean total score of externalizing behavior problems on the CBCL was 48.6 (SD = 11.3); 17% of children scored above the clinical cutoff of 60. The most commonly reported externalizing behavior problems for this sample were not being able to wait (80%), quickly shifting between activities (72%), becoming frustrated easily (71%), inability to concentrate (69%), and disobedience (69%). For internalizing behavior problems, the mean score was 55.0 (SD = 9.5), with 32% of children scoring above the cutoff of 60. As expected for a sample of children with developmental delays, the most common internalizing problem was acting too young for one’s age (82%), followed by speech problems (75%). Other frequently reported internalizing problems included constantly seeking help (66%), being afraid to try new things (57%), and being disturbed by any change in routine (56%). Parent reports of stressful life events in the past year ranged from none to 12 stressful events, with an average of 2.6 (SD = 2.3). Stressful events included loss of income (19%), going into debt (19%), death in the family (14%), death of a friend (11%), marital separation (11%), legal problems (11%), alcohol or drug problems (8%), and divorce (8%).

Statistical Analyses

Preliminary analyses included group comparisons using Analysis of Variance (ANOVA) to determine if children’s challenging behaviors varied by the children’s type of disability and gender. For internalizing problems, main effects for gender, $F(1, 123) = .68, p = .411$, and type of disability, $F(2, 122) = 1.19, p = .309$, were not significant, nor was their interaction, $F(2, 119) = 1.05, p = .352$. Similarly, no differences were found for externalizing problems by children’s gender, $F(1, 122) = .13, p = .719$, type of disability, $F(2, 122) = .32, p = .730$, or their interactions, $F(2, 119) = .32, p = .725$. 
We analyzed the two criterion measures, children’s internalizing and externalizing behavior problems, separately despite their correlations ($r = .67, p < .001$) to determine if a different pattern of predictors emerged for either one. Regression analyses were conducted to predict the extent to which variables (i.e., children’s cognitive and adaptive skills, family poverty, maternal marital status, family stressful life events, and family climate) added prediction in turn to children’s internalizing and externalizing behavior problems.

### Externalizing Behavior Problems

Patterns of correlations can be found in Table 2, and results from the regression equation can be found in Table 3. Externalizing behavior problems at age 5 were not predicted by children’s cognitive or adaptive skills ($\beta = –.13, p = .153$) or by family poverty ($\beta = .05, p = .646$). Mother’s marital status ($\beta = –.20, p = .027$), and reports of stressful life events ($\beta = .361, p < .001$), however, related to externalizing behavior problems, with unmarried mothers and families experiencing greater numbers of stressful events reporting more child behavior problems. Finally, the family climate added significantly in the last step of the equation ($\beta = –.24, p = .005$). Mothers who reported a more positive family climate at the end of early intervention at age 3 had children who exhibited fewer externalizing behavior problems 2 years later when children were 5 years of age.

### Internalizing Behavior Problems

Internalizing behavior problems at age 5 were predicted by the children’s cognitive and adaptive scores ($\beta = –.32, p < .001$), with higher scores predicting fewer internalizing problems (Table 4). Family poverty ($\beta = .01, p = .949$) and maternal marital status ($\beta = –.20, p = .814$) did not add significantly to predicting internalizing behavior problems. Reports of stressful life events in the family also added significant variance ($\beta = .28, p = .003$), as greater numbers of life events predicted more internalizing problems. Finally, the family climate added significantly ($\beta = –.22, p = .009$) over and above the other predictors. Mothers who reported a more positive family climate at the end of early intervention when
Table 2  
Correlations Among Predictor and Outcome Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cognitive/adaptive skills</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. Marital status</td>
<td>-.087</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Poverty status</td>
<td>.044</td>
<td>-.504**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Parent stressful life events</td>
<td>-.045</td>
<td>-.188*</td>
<td>.407*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Family climate</td>
<td>.006</td>
<td>.150</td>
<td>-.170</td>
<td>-.222*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Child internalizing problems at 5</td>
<td>-.319**</td>
<td>.008</td>
<td>.000</td>
<td>.250**</td>
<td>-.257**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>7. Child externalizing problems at 5</td>
<td>-.128</td>
<td>-.186*</td>
<td>.129</td>
<td>-.358**</td>
<td>-.314**</td>
<td>.607**</td>
<td>1</td>
</tr>
</tbody>
</table>

*p < .05 (2-tailed). **p < .01 (2-tailed).

Table 3  
Summary of Hierarchical Regression Analysis for Variables Predicting Externalizing Behavior Problems at Age 5 (N = 125)

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>ΔR²</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cognitive and adaptive score</td>
<td>-1.55</td>
<td>1.01</td>
<td>-.13</td>
<td>.02</td>
<td>.02</td>
</tr>
<tr>
<td>2. Marital status</td>
<td>-5.56</td>
<td>2.48</td>
<td>-.20</td>
<td>.04*</td>
<td>.06</td>
</tr>
<tr>
<td>3. Poverty status</td>
<td>1.39</td>
<td>3.01</td>
<td>.05</td>
<td>.00</td>
<td>.06</td>
</tr>
<tr>
<td>4. Stressful events</td>
<td>1.78</td>
<td>0.45</td>
<td>.36</td>
<td>.11**</td>
<td>.17</td>
</tr>
<tr>
<td>5. Family climate</td>
<td>-.70</td>
<td>0.25</td>
<td>-.24</td>
<td>.05**</td>
<td>.22</td>
</tr>
</tbody>
</table>

Note: Overall model: $R^2 = 0.22$, $F = 8.16$, $p = .005$, $R^2$ adjusted = 0.19.

*p < .05. **p < .01. ***p < .001.

children were 3 years of age had children who exhibited fewer internalizing behavior problems at 5 years of age.

Discussion  
We hypothesized that children’s family climate is related to their challenging behaviors at age 5. For young children with developmental delays in our sample, the results underscore the importance of a family systems approach to better understand the developmental course of behavioral difficulties. Although no differences emerged in these analyses of challenging behaviors for children with three categories of developmental delays or by children’s gender, two aspects of families’ circumstances related to children’s externalizing and internalizing problem behaviors. Both stressful life events and family climate, even after controlling for stressful life events, were related to and appear to be especially important to the development of challenging behaviors of young children with developmental delays.

Stressful life events in the lives of adults (Esbensen & Benson, 2006) and children (Dekker & Koot, 2003) with disabilities have been shown to be strong predictors of behavior problems. Our study replicates previous findings and shows that adverse family events
are predictors of both externalizing and internalizing problems in young children with developmental delays as they transition from early intervention programs into preschools. Simply put, stressful life events, particularly multiple episodes, are likely to destabilize the families, putting pressures on family relationships and possibly adding to children’s emergent behavioral difficulties.

When families are functioning well, the family climate, especially as defined here as consisting of harmonious relationships, may serve to provide additional support to children even when stressful events affect family members. If family members cope adaptively to stressful life events and maintain positive relationships with each other, their young children may be protected from factors that promote the development of challenging behaviors.

We considered two structural aspects of the family climate in our study: (a) marital status and (b) poverty. Marital status has been shown to be related to the emotional outcomes of children without developmental delays (American Academy of Pediatrics, 2002) and to the level of their behavior problems (Sanders, Markie-Dadds, Rinaldis, Firman, & Baig, 2007). Similarly, with our sample of children with developmental delays, we determined that children of unmarried mothers were more likely to exhibit externalizing behavior problems. With respect to internalizing behavioral difficulties, marital status was not found to be related. We believe that unmarried mothers found parenting their children to be more stressful without the support of significant partners to provide emotional support and respite from day-to-day activities. Moreover, we speculate that single parents may have been less effective in their parenting and had perceptions of more behavioral problems in their children with developmental delays than two-parent families.

Poverty has been shown to be an important factor in the development of behavior problems of children without developmental delays (e.g., Dodge, Pettit, & Bates, 1994; McLeod & Shanahan, 1996; Raadal, Milgrom, Cauce, & Mancl, 1994). Nevertheless, the relationship of poverty to challenging behaviors has not been studied frequently in children with developmental delays. We did not find higher levels of problem behaviors among young children with developmental delays living in poverty. Contemporary evidence indicates that persistent poverty is more detrimental to children’s development and behavior than transient poverty (e.g., Dearing, McCartney, & Taylor, 2006; McLeod & Shanahan, 1996). This common finding indicates that behavioral problems of children living in chronic

### Table 4

Summary of Hierarchical Regression Analysis for Variables Predicting Internalizing Behavior Problems at Age 5 ($N = 125$)

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>ΔR²</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cognitive and adaptive score</td>
<td>−3.24</td>
<td>.87</td>
<td>−.32</td>
<td>.10***</td>
<td>.10</td>
</tr>
<tr>
<td>2. Marital status</td>
<td>−.48</td>
<td>2.04</td>
<td>−.02</td>
<td>.00</td>
<td>.10</td>
</tr>
<tr>
<td>3. Poverty status</td>
<td>.16</td>
<td>2.48</td>
<td>.01</td>
<td>.00</td>
<td>.10</td>
</tr>
<tr>
<td>4. Stressful events</td>
<td>1.15</td>
<td>.38</td>
<td>.28</td>
<td>.06**</td>
<td>.17</td>
</tr>
<tr>
<td>5. Family climate</td>
<td>−.55</td>
<td>.21</td>
<td>−.22</td>
<td>.05**</td>
<td>.21</td>
</tr>
</tbody>
</table>

Note: Overall model: $R^2 = 0.21$, $F = 7.06$, $p = .009$, $R^2$ adjusted = 0.18.

*p < .05. **p < .01. ***p < .001.
poverty might become evident as they age. Although child characteristics are often considered to be important predictors of children’s challenging behaviors, with our sample we did not find evidence for those relationships. Researchers have shown variation in the level of behavior problems demonstrated by children with different developmental delays (e.g., Cormack, Brown, & Hastings, 2000; Eisenhower et al., 2005), but we did not determine any robust differences in either the externalizing or internalizing behavior problems of children with Down syndrome, motor impairment, or developmental delay. We note, however, that our study included very few children diagnosed with autism spectrum disorder (ASD) and that children with ASD often display high levels of challenging behaviors (Eisenhower et al., 2005). Similarly, gender is often a factor in behavior problems of children without developmental delays. Specifically, boys often present more externalizing problems (e.g., Lee, Baillargeon, Vermunt, Wu, & Tremblay, 2007; Offord et al., 1987) and girls demonstrate similar or greater internalizing difficulties (e.g., Keenan & Shaw, 1997; Offord et al., 1987). With our sample, we determined that gender was unrelated to the behavior problems of children with developmental delays.

Finally, children’s cognitive and adaptive skills are often related to the development of challenging behavior. In our sample, we did not find the composite skill scores to be significant in predicting externalizing behavior problems. The cognitive and adaptive behavior scores, however, were related to children’s internalizing problems. Children with relatively lower cognitive and adaptive scores appeared to have higher levels of internalizing problems. We believe that the inclusion of speech problems in the definition of internalizing behavior problems may, in part, explain our findings because those difficulties are often related to and confounded with cognitive levels. For example, children with language impairments have demonstrated more internalizing problems, including greater withdrawal, than children without language impairment (Stanton-Chapman, Justice, Skibbe, & Grant, 2007).

Taken as a whole, our findings point to areas in which early intervention service providers might better support families and assist them in the reduction of children’s behavior problems. First, service providers need to be aware of the stressors occurring in the lives of families in their programs and to provide support and resources to the family during such times. Second, single-parent families may benefit from additional resources related to respite and better understanding and responding to their children’s day-to-day demands, especially during high-stress situations. Finally, given the importance of the family climate, providers need to recognize the benefits of harmonious relationships within families and provide services that recognize, respect, and enhance such relationships. The findings from our investigation support the need for evidence-based practices that promote improved behavioral outcomes for young children with developmental delays (cf., Powell et al., 2007). Moreover, evidence-informed family support should be provided in a manner that promotes the positive family climate of families. For example, Dunst, Trivette, and Hamby (2007) in their meta-analysis determined that family-centered practices improve parent well-being in general and reduce children’s behavior problems in particular. In addition, the involvement of families through training, information provision, and integration into program planning is considered critical to promoting positive behavior in early childhood settings (cf., Hemmeter, Fox, Jack, & Broyles, 2007).
Study Limitations and Future Research

Our investigation has several limitations worth noting. The sample was modest and restrictive, especially in terms of ethnicity and average income, and it lacks the diversity among families seen in many early intervention programs. In addition, the three categories of participants’ developmental delays did not include the full range of developmental difficulties, although they are fairly representative of children who have entered early intervention services before the age of 24 months (Scarborough et al., 2004). Methodologically, issues of shared variance should be considered as mothers were the reporters of most of the instruments we used. Finally, because data were collected over a decade ago, other limitations apply. First, current choices for some of the measures used in this study may vary from those originally selected to assess children’s cognitive performance (e.g., the Bayley Scales). Second, early intervention services differ today as more services are provided in child care settings than previously (Hebbeler et al., 2007). Nevertheless, the majority of early intervention services continue to be provided in the children’s homes, and the family focus of services, which was evident when these data were collected, has remained a consistent feature of early intervention service models (Dunst et al., 2007).

Despite the limitations of our study, we believe that important implications may be derived from our findings. We found only one factor, cognitive and adaptive skills, to relate to the level of internalizing, but not externalizing, behavior problems they exhibited at age 5. Early intervention service providers should continue to focus on children’s cognitive and adaptive skills to prepare them for school. Nevertheless, family factors and the overall nature and tone of family relationships appear to have a critical role in the development of children’s social emotional behaviors. Numerous investigators have documented in the literature with children without developmental delays that factors in the lives of parents affect their children’s behavior (e.g., Reid & Patterson, 1989; Yeung, Linver, & Brooks-Gunn, 2002). Our descriptive investigation indicates that such factors may also operate in the lives of families of children with developmental delays, especially marital status for children’s externalizing behaviors and stressful life events for both children’s externalizing and internalizing behavior problems. Although early intervention service providers have very limited control over adverse life events, services and programs can be offered or secured to provide support for parents dealing with family stressors. The absence of a relationship between family poverty and the behavior problems of young children with developmental delays in our sample was unexpected and indicates that additional research with more diverse socioeconomic status samples should be performed. We hope this investigation will stimulate future research into the antecedents of behavior problems in children with developmental delays, particularly in the area of family support by early intervention service providers.

References


