

Enhancing a Classroom Social Competence and Problem-Solving Curriculum by Offering Parent Training to Families of Moderate- to High-Risk Elementary School Children

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The Incredible Years parent and classroom interventions were evaluated for the first time in elementary schools. Culturally diverse, socioeconomically disadvantaged schools were randomly assigned to intervention or control (CON). In intervention schools, all children received a 2-year classroom intervention beginning in kindergarten. In addition, indicated children were randomly assigned to also receive parent training (PT + CR) or only the classroom intervention (CR). PT + CR mothers reported that, following intervention, children showed fewer externalizing problems and more emotion regulation than CR or CON children. Observations showed that child–mother bonding was stronger in the PT + CR condition than in the CON condition, and PT + CR mothers were significantly more supportive and less critical than CR or CON mothers. Teachers reported that PT + CR mothers were significantly more involved in school and that children in the PT + CR and the CR conditions had significantly fewer externalizing problems than in the CON condition.

The Early Child Longitudinal Survey, a nationally representative sample of more than 22,000 kindergarten children, suggests that exposure to multiple poverty-related risks increases the odds that children will demonstrate less social and emotional competence and more behavior problems than more economically advantaged children (West, Denton, & Reaney, 2001). Although socioeconomic disadvantage does not necessarily lead to social and emotional problems, up to 25% of children living in poverty experience negative social and emotional outcomes (Keenan, Shaw, Walsh, Delliquadri, & Giovannelli, 1997). Low income is also a significant risk factor for the early onset of conduct problems and academic underachievement (Offord, Alder, & Boyle, 1986). This is of concern because emotional, social, and

behavioral adjustment is as important for school success as cognitive and academic preparedness (Raver & Zigler, 1997). Moreover, longitudinal data show that without intervention, early emotional, social, and behavioral problems (particularly aggression and oppositional behavior) are key risk factors that mark the beginning of escalating academic problems, grade retention, school dropout, and antisocial behavior (Snyder, 2001; Tremblay, Mass, Pagani, & Vitaro, 1996).

A number of curricula have been designed for children, teachers, and parents to promote children's social and emotional competence and prevent the development of behavior problems. Early prevention programs, offered to high-risk populations at the time of school entry when behavior is most malleable and parents are motivated to be involved in their children's education, would seem to be a beneficial and cost-effective means of reducing the gap between socioeconomically disadvantaged children and their more advantaged peers. Effective curricula at this strategic developmental stage can interrupt the progression of early social and emotional problems to poor school achievement and later academic failure. Moreover, strengthening protective factors such as positive, supportive parenting practices may help buffer the negative influences associated with impoverished living situations.

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Positive, nurturing parenting is one of the most important protective factors associated with children's resilience (Gardner, 1987; Webster-Stratton, 1985a; Webster-Stratton & Fjone, 1989), whereas hostile or harsh parenting is associated with increased behavioral difficulties (Cummings, 1994; Webster-Stratton & Hammond, 1999). In addition, positive parenting approaches have been shown to build children's emotional regulation, ability to manage conflict, and school readiness (Webster-Stratton & Reid, 2006) and to mediate change in children's conduct problems (Gardner, Burton, & Klimes, in press). Unfortunately, poverty and its related aggregation of risk factors can have deleterious effects on parenting (Baydar, Reid, & Webster-Stratton, 2003; Webster-Stratton, 1990). Depressed, economically stressed, and unsupported parents are less likely to provide nurturing parenting, to provide positive cognitive stimulation, and to have strong bonds with their children's teachers.

Not surprisingly, parent training programs have been the single most successful treatment approach to date for reducing aggressive behavior problems and enhancing social competence in children with disruptive disorders (Brestan & Eyberg, 1998). The treatment goals of those parent programs shown to be effective with young children (e.g., Cunningham, Bremner, & Boyle, 1995; Eyberg et al., 2001; Sanders, Markie-Dadds, Tully, & Bor, 2000) have included reducing harsh and inconsistent parenting, increasing positive and responsive parenting, promoting parents' cognitive stimulation of their children, and increasing home-school bonding. Experimental studies have provided support for social learning theories that highlight the crucial role that parenting style and discipline effectiveness play in improving social competence and reducing behavior problems at home and at school (Patterson, DeGarmo, & Knutson, 2000).

Traditionally parenting prevention programs have not been extensively offered in school settings, particularly for preschool and kindergarten children; however, mounting evidence from several randomized control, longitudinal and comprehensive prevention programs have indicated the success of including parent training with classroom-based interventions (Webster-Stratton & Taylor, 2001). For example, Fast Track, a multicomponent, multiyear program for first- to fifth-grade children exhibiting aggressive behaviors, included teacher classroom management training, child sociocognitive skills training, emotional regulation skills training (PATHS; Kusche & Greenberg, 1994), and academic tutoring, as well as parent-child relationship enhancement and parent training.

Midintervention data at 1 and 3 years showed reductions in conduct problems and special education resource use (Conduct Problems Prevention Research Group, 2002). Another school-based program, First Step (Walker et al., 1998) designed for kindergarten children, combined a classroom social skills program (CLASS; Hops et al., 1978) with a 6-week parent program. One year later, intervention children were significantly more adapted, more engaged, and less aggressive than controls (Epstein & Walker, 1999). Similar promising results combining classroom social-cognitive curriculum with parent training were found in the Montreal Longitudinal Experimental Study (Tremblay, Mass, et al., 1996; Tremblay, Pagani, Masse, & Vitaro, 1995; Tremblay, Vitaro, et al., 1996) and the Linking the Interests of Families and Teachers Study (Reid, Eddy, Fetrow, & Stoolmiller, 1999). Both these studies showed less antisocial behavior at follow-up assessments.

The results of these studies are highly promising. However, because the design of all these studies offered the classroom and the parent training as part of a comprehensive intervention package, it is not possible to discern the added effects of the parent training interventions over the classroom intervention effects. Moreover, few of these studies evaluated the program with multiethnic populations or used independent observations of parent and child interactions at home as outcome measures.

The Incredible Years Interventions

The Incredible Years Parent and Child Training Curricula were originally developed to treat clinic-referred children (ages 3–7 years) with diagnosed early-onset conduct problems. The treatment versions of these programs have been shown in repeated randomized trials to result in improvements in parenting interactions and to reduce childhood aggression both at home and at school with sustained results 1 to 3 years later (for review see Webster-Stratton & Reid, 2003). An adapted prevention version of the parent-training program has also been shown to be effective with parents enrolled in Head Start (Reid, Webster-Stratton, & Baydar, 2004; Webster-Stratton, 1998; Webster-Stratton, Reid, & Hammond, 2001). The study presented here is our first evaluation of the parent program as an indicated prevention program in an elementary school setting combined with a prevention classroom version of the child training curricula (Dinosaur program).

Because of the large scope of this intervention project and multiple home and school measures,

we have reported the classroom results for the classroom intervention for the entire population in a separate report (Webster-Stratton, Reid, & Stoolmiller, 2006). To briefly summarize the results of the universal classroom intervention, independent blinded observations of classroom behavior showed that following intervention, teachers were more positive and less critical in their classroom management style and their students were observed to show more social-emotional competence, more school readiness skills, and fewer aggressive and disruptive behaviors than control teachers and students. Intervention effects were strongest for those students and teachers whose baseline behavior was most at risk.

Our report focuses on the results comparing outcomes for indicated children and families identified by parents and/or teachers as moderate to high risk. These families were randomly assigned to a parent training condition in addition to the classroom (PT + CR) intervention, to a classroom-only (CR) intervention, or to a control (CON) condition. These outcomes focus on independent observations of child and parent behavior at home and parent and teacher reports.

Methods

Study Design

The overall study design randomly assigned matched pairs of schools to intervention or control conditions. In intervention schools, all children received a 2-year classroom intervention (CR) spanning kindergarten and first grade that consisted of the Dinosaur Social Skills classroom prevention program. CON schools followed their usual school curriculum. In intervention schools a group of moderately high-risk children were identified, and these children were randomly assigned to receive only the CR intervention or receive a 2-year PT + CR condition. This design allowed us to test the added effects of combining parent training with the classroom intervention (PT + CR) compared to CR intervention and to the regular school program (CON).

Participants

Fourteen elementary schools in the Seattle area were selected for the project based on higher percentages of free and reduced lunch. These schools were matched on variables such as size, geographic location, and demographics of the children, and matched pairs were randomly assigned to intervention or control conditions (comparability of

intervention and control conditions is reported next). Parents of all children in kindergarten classes were invited to participate in the project, and 77% ($N = 1,152$) of possible families signed consent forms indicating that they were willing to participate. Data were collected only on children whose parents had consented, but all children in the intervention classrooms received the classroom intervention.

From the 1,152 children enrolled in the study, a moderate- to high-risk group of indicated students from each kindergarten classroom was selected based on parent or teacher reports of elevated levels of behavior problems. Because this was a prevention study, a relatively low screening threshold for behavior problems was used to identify the indicated sample. Selection criteria included a method of selecting children who had a higher than average number of behavior problems but did not limit screening exclusively to a clinical sample. Thus, *either* a parent or teacher report was enough to classify a child as "indicated." For the parent rating, children whose parents reported more than 10 behavior problems on the Eyberg Child Behavior Inventory (ECBI; Robinson, Eyberg, & Ross, 1980) were considered moderate risk. This cutoff has been used in our prior prevention studies with low-income families (Webster-Stratton & Hammond, 1998). Teachers' reports were also used to select students who had higher than average levels of problem behaviors in the classroom based on reports on the externalizing scale of the Social Competence Behavior Evaluation (LaFreniere, Dumas, Dubeau, & Capuano, 1992). Last, teachers and school counselors were asked to identify any children in their class that they had behavioral concerns about. Although this last method was not a standardized screening, we wanted to make sure not to miss any students of concern. Of the 433 children identified for the indicated sample, 34.2% were identified based on elevated parent reports, 23.6% were identified based on teacher reports, 23.3% had elevated scores based on both parent and teacher reports, and 18.9% were identified based on nonstandardized teacher or counselor concerns.

Because a combination of referral methods were used to select this moderate- to high-risk sample, the comparability of students in our four referral groups was tested (i.e., elevated parent, elevated teacher, elevated parent and teacher, and teacher/counselor nomination) on several demographic measures. Students in these four groups did not differ significantly on age, gender, or minority status. We also compared the four groups on home observations of negative child behavior and,

again, found no significant differences between the groups. Last, to determine whether students in these four referral conditions responded differently to intervention, we added referral method as a factor in the analyses of all child outcomes. There were no significant effects of referral method on outcome. Consequently, in the rest of this article, the moderate- to high-risk sample is analyzed as a single group without differentiating between the referral methods.

In intervention schools half of the indicated sample from each classroom was randomly assigned to receive the CR intervention; the other half also received the PT + CR intervention. In the control schools, the indicated sample received assessments but no additional parent or classroom intervention. Intervention and CON schools and participants were comparable on most demographic variables. At the school level, there were no significant differences on key demographic variables. In the intervention schools 56.67% of children received free and reduced lunch compared to 58.75% for control schools. School student enrollment averages were 323 for intervention schools versus 313 for control schools. The percentage of children who met fourth-grade achievement standards were also not significantly different for intervention and control schools; for reading (71% intervention vs. 67% control) and math (45% intervention vs. control 38%). Tables 1 and 2 report individual child and mother demographic variables and risk factors by intervention condition. Of the 35 demographic variables measured, there were only three significant baseline differences between conditions. There were significantly more Caucasians and fewer

Asian families in the CON condition compared to the two intervention conditions. In addition, mothers in the CON condition reported significantly more depressive symptoms than mothers in the PT + CR condition, $\chi^2(2, N = 291) = 6.42, p < .05$.

Students were on average 67 months old, and 59% were male. As reflected in these tables, this sample was diverse (20% Latino, 14% African American, 14% Asian, 38% Caucasian, 14% other minority), and 23% of the children did not speak English as their first language. In addition a high proportion of families were living in poverty (51% of families were receiving financial aid). Thirty-four percent of the mothers in the sample were unpartnered, 26% had not completed high school, and 14% were unemployed. Twenty-six percent of the mothers scored in the clinical range on the depressive symptoms, 10% scored in the clinical range on anger symptoms, and 20% of the mothers who had partners reported distressed relationships. Approximately 18% of the mothers had their first child when they were teenagers. The tables provide further demographic information broken down by intervention condition.

Interventions

Classroom intervention. All children and teachers in the intervention classrooms participated in the Incredible Years Dinosaur Classroom intervention, which was designed to improve children's social and problem solving skills, emotional regulation, and school readiness. The program was offered twice a week in a format of 15- to 20-min large-group presentations followed by 20 min of

Table 1. *Child Demographics*

Child	CON ^a	CR ^b	PT + CR ^c	Total ^d
Age at Study Entry (Months)	67.15	67.59	66.85	67.16
Gender (% Male)	59.79	59.09	58.43	59.13
Ethnicity (%)				
Latino	26.80	13.64	16.85	19.84
African American	10.31	15.15	16.85	13.89
Caucasian ^e	48.45	33.33	29.21	37.70
Asian ^e	5.15	18.18	20.22	13.89
Other	9.28	19.71	16.85	14.69
English Not First Language (% Yes)	15.46	30.30	25.84	23.02
Developmental Problems (Mother Report; % Yes)				
Language Delay	13.54	6.15	14.94	12.10
Cognitive Delay	4.17	1.54	3.45	3.23
ADHD	8.33	1.54	4.60	5.24
Vision or Hearing Impairment	7.29	1.54	3.45	4.44
Learning Problem	6.25	4.62	5.75	5.65

Note: Values are mean or percentage. CON = control condition; CR = classroom-only intervention; PT + CR = parent training condition plus classroom intervention.

^a*n* = 97. ^b*n* = 66. ^c*n* = 89. ^d*N* = 252. ^eThese variables showed significant condition differences at baseline.

Table 2. *Mother Demographics*

Mother	CON^a	CR^b	PT + CR^c	Total^d
Age <19 When First Child Born	20.65	24.59	10.71	18.14
% Not Married or Partnered	26.80	43.94	34.83	34.13
No. of Children Living In Home	2.26	2.35	2.47	2.36
No. Times Moved Past Year (% 1 or More)	81.58	48.84	57.89	61.59
Household Income				
<\$15,000	16.84	20.63	16.67	17.77
\$14,000–\$24,999	21.05	30.16	21.43	23.55
\$25,000–\$39,999	14.74	19.05	14.29	15.70
\$40,000+	47.37	30.16	47.62	42.98
Financial Aid (% Yes)	47.87	54.84	51.81	51.05
Education (% Less Than High School)	21.65	25.76	18.18	21.51
Employment Status (% Not Working)	35.42	25.76	22.73	28.40
Respondent Ethnicity (%)				
Latino	25.00	15.15	18.18	20.00
African American	5.21	16.67	13.64	11.20
Caucasian	59.38	36.36	35.23	44.80
Asian	5.21	19.70	21.59	14.80
Other	5.21	12.12	11.36	9.20
CES-D Depressed Mood (% >16) ^e	33.68	22.22	20.69	26.12
BAAQ Anger (% >9)	11.58	7.69	9.41	9.80
DAS Marital Adjustment (% <100)	19.23	20.93	18.97	19.55
Partner's Education (% <High School)	30.00	27.08	20.00	26.06
Partner's Employment (% Not Working)	13.92	17.02	10.17	13.51

Note: Values are mean or percentage. CON = control condition; CR = classroom-only intervention; PT + CR = parent training condition plus classroom intervention; CES-D = Center for Epidemiologic Studies Depression Scale; BAAQ = Brief Anger-Agression Questionnaire; DAS = Dyadic Adjustment Scale.

small group skill-practice activities. Sixty lessons were taught across the 2 years (30 in kindergarten and 30 in first grade). Intervention teachers participated in 4 days (28 hr) of training in implementing the curriculum. More details about the Dinosaur curricula can be found in Webster-Stratton and Reid (2004) and primary outcomes for the classroom portion of the intervention are reported in Webster-Stratton et al. (2006).

Parenting intervention. The Incredible Years parent discussion groups focused on teaching positive discipline strategies and effective parenting skills. To address child risk factors as well (e.g., poor social skills and problem solving and language or reading delays), parents were also taught ways they could strengthen their children's social and academic competence. The program was adapted from our clinic treatment program to meet the needs of a community-based, preventive program for multiethnic families. The program, held in the schools, consisted of weekly parent groups (2–3 hr, once a week, for 12–14 sessions in 2 consecutive years; kindergarten and first grade) and included meals, transportation, and childcare. Much has been written elsewhere about the group process used for these parent groups (Webster-Stratton & Herbert, 1994). Briefly, the

groups are run using a collaborative process whereby parents set goals for themselves and the group leaders facilitate learning using group discussion, videotape vignettes, role-plays, and home assignments. For non-English-speaking families, interpreters were trained to assist the families and group leaders.

The program content included our BASIC parenting program, the newly developed School Readiness program, and the ADVANCE parent training series. Thirty new videotape vignettes were produced to represent a broader range of families from different cultural backgrounds and to include content related to promoting social and academic competence (e.g., reading and writing readiness). The kindergarten curriculum focused on positive parenting skills and effective discipline to manage common misbehaviors, strategies to foster language development, social competence and school readiness skills, and ways to collaborate with teachers. In first grade the program reviewed concepts from the prior year and added new content regarding ways to help children problem solve and communicate effectively, adult and child anger management and strategies to promote children's school success through predictable home learning routines as well as parental coaching of children's language and reading skills.

Assuring parent intervention integrity. To ensure the integrity of the intervention: (a) groups were co-lead by a counselor from the school in partnership with a research staff clinician who had been certified in the Incredible Years program; (b) leaders followed the detailed training manual; (c) research clinicians had weekly supervision with ongoing review of videotapes of their sessions; and (d) research clinicians completed weekly protocols about content covered, vignettes shown, role plays conducted. Integrity of the classroom intervention was monitored in a similar way and is discussed in detail elsewhere (Reid, Webster-Stratton, & Hammond, 2006).

Measures

Assessment procedures were identical in each condition. Baseline assessments were conducted in the fall during the kindergarten year. The kindergarten and first-grade interventions ran in consecutive years from December to April, and postassessments were conducted after the intervention in the kindergarten (post-K) and first-grade years (post-1). Assessments included parent report, teacher report, and home observations and measured parent-child interactions and child behavior.

Maternal risk factors and family background. All families completed demographic information on ethnicity, income, and family background variables. Standardized reports of maternal risk factors were collected using the Center for Epidemiological Studies Depression Scale, an index of self-reported depressive symptoms ($\alpha = .85$, test-retest, $r = .5$; Radloff, 1977); the Dyadic Adjustment Scale (Spanier, 1989), a 32-item self-report measure of marital satisfaction and adjustment ($\alpha = .96$, test-retest, $r = .87$); and the Brief Anger-Aggression Questionnaire (Maiuro, Vitaliano, & Cohn, 1987), a six-item measure developed for assessment of anger levels ($\alpha = .82$, test-retest, $r = .84$).

Home observation procedures. Mother-child dyads were observed in a 30-min home interaction by observers blind to intervention condition. Mothers were instructed to engage in typical daily activities during the observation. Coders completed two observational measures, detailed next.

Dyadic parent-child interactive coding system revised (DPICS-R; Robinson & Eyberg, 1981). DPICS-R is a well-researched observation measure developed for recording behaviors

of conduct-problem children and their parents. For parent behavior, the variables of interest are negative/critical parenting (e.g., critical statements, commands, and negative physical intrusions) and supportive parenting (e.g., praise, descriptive commenting, encouragement, problem solving). For the target child behavior, one summary score is used: total child negative behavior (whine + cry + physical negative + smart talk + yell + destructive + noncompliance). These specific variables have been selected because they discriminate clinic from nonclinic families and because they represent the coercive process, which has been shown to underpin the development of conduct problems (Patterson, Capaldi, & Bank, 1991). In this study reliability data were gathered on approximately 18% of the observations ($N = 80$ observations where both a primary and secondary coder independently coded the observation). The intraclass correlation coefficients calculated between observers for these variables are .84 (child negative), .85 (supportive parenting), and .77 (negative/critical parenting).

Coder impression inventory (CII). This instrument was adapted from Oregon Social Learning Center (OSLC). Coders record their impressions about child misbehavior and parental discipline style. There are four summary scores: nurturing/responsive parenting (e.g., parent problem solved with child, was physically affectionate, followed through, modeled positive behavior, supported child, was responsive to child), harsh/critical parenting (e.g., threats, unreasonable punishment, critical statements, overly strict, shouted), lax/permissive parenting (e.g., tentative, overly permissive, parent had little control), and child bonding with parent (e.g., child verbally and physically affectionate with parent, child enjoyed parent, child attached to parent, child enjoys parent). These scales have good internal consistency: nurturing/responsive parenting ($\alpha = .72$), harsh/critical parenting ($\alpha = .86$), lax/permissive parenting ($\alpha = .75$), child bonding with parent ($\alpha = .61$). As with the DPICS variables, interrater reliabilities were calculated for 18% of the observations and the Intraclass Correlations for the summary scores are as follows: nurturing/responsive parenting = .80, harsh/critical parenting = .77, lax/permissive parenting = .58, and child bonding with parent = .70.

Parenting practices inventory (PPI). This questionnaire has been used by us in multiple studies (e.g., Webster-Stratton et al., 2001) and was originally revised from the OSLC's discipline

questionnaire for parents of older children. Two summary scores were included in the analyses for this project: harsh and inconsistent discipline, and praise and incentives. Internal consistency is adequate: $\alpha = .67$ harsh and inconsistent discipline, and $\alpha = .65$ praise and incentives.

Child behavior checklist (CBCL). Parents' ratings were obtained using the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000, 2001). For this article, both the Externalizing and the Internalizing *T* Score were of interest ($\alpha = .89-.93$, test-retest reliability, $r = .92$).

ECBI. The ECBI is a 36-item inventory of problem behaviors for children ages 2 to 16 (Robinson et al., 1980). Test-retest correlations on this measure range from .86 to .88, and internal consistency is also good ($\alpha = .88-.95$). In this project we used the ECBI to select the high-risk sample.

Social competence scale-parent (P-Comp). This instrument was developed by the Conduct Problems Prevention Research Group (1999; Fast Track) and consists of 12 items that assess parents' perceptions of positive social behaviors. The measure consists of two subscales: Prosocial Behaviors ($\alpha = .81$) and Emotional Regulation ($\alpha = .80$). The Prosocial Behavior scale consists of items such as resolves peer problems, understands others, shares, is helpful, and listens. The Emotion Regulation scale consists of items such as accepts things, copes with failure, thinks before acting, can calm down, and controls temper.

Teacher-parent involvement questionnaire (INVOLVE-T). The INVOLVE-T is a 20-item teacher questionnaire developed by the OSLC and revised by us for use with young children. The measure asks teachers to report on the extent to which parents seem comfortable with the school environment, value education, support the teacher, assist with homework, and engage in cognitively enriched interactions with their children. The scale yields a summary score that measures all of these aspects of parent involvement in school-related activities ($\alpha = .92$).

Social competence and behavior evaluation-preschool edition (SCBE; LaFreniere et al., 1992). SCBE is an 80-item rating scale developed to assess patterns of social competence, emotion regulation and expression, and adjustment difficulties in children ages 30 to 78 months. The scale

yields standardized externalizing and social competence scores. This measure has extensive reliability and validity data. Interrater agreement (.72, .89) and internal consistency (.82, .89) were high. SCBE scales were also significantly correlated with the CBCL/TRF (Edelbrock & Achenbach, 1984) Internalizing (.53, .63) and Externalizing (.64, .66) scales.

Family satisfaction questionnaires. At the end of the program, parents completed a brief questionnaire about the curriculum, including their evaluation of the parenting skills taught, the training methods, content areas, and the usability of the program strategies at home.

Results

Attrition Analyses

Four hundred thirty-three children were identified for the indicated sample (CON = 172, CR = 130, PT + CR = 131). Baseline data were collected on 340 mothers and children (78% of the 433 identified children). At the end of the kindergarten year, complete mother and child data (post-K) were collected on 293 mothers and children (67% of the 433 identified children). At the end of first grade, complete data (post-1) were collected on 252 children (74% of children assessed at baseline). There was no significant difference among conditions on the percentage of families who dropped and those who completed the study at either post time point. Percentages of drops from each condition were as follows: 12.6% CON, 19.5% CR, 11.0% PT + CT. Families who dropped from the project were compared to non-drops on all demographic and outcome variables, and there were no significant differences.

Attendance

Of the 89 families in the PT + CT group during the 1st year of intervention, 28% of mothers did not come to any parent group sessions. Seventeen percent attended 1 to 5 sessions. Fifty-five percent of mothers attended more than half the sessions, with 23% of these attending all 12 sessions. In the 2nd year of intervention 52% did not attend any sessions, 4.4% attended 1 to 5 sessions, 44% came to more than half of the sessions, and 25% attended all or almost all of the sessions (11-12). Across the 2 years 24% attended no sessions, 33% attended between 1 and 12 sessions, and 43% attended more than half of the sessions (>12). The primary analyses for this study used

an intent-to-treat design and included all mothers assigned to the parent condition regardless of whether they attended group sessions. Subsequent analyses examined whether mother's actual attendance in the groups had an impact on outcomes.

Intervention Integrity

Group leaders completed protocol checklists to record their fidelity to the program. All parent groups met for at least 24 sessions (12 in kindergarten and 12 in first grade). On average group leaders showed 86 vignettes in each year, which met the recommended number of 7 to 8 vignettes per session. Leaders also completed an average of 81.5% of the required group elements (e.g., use agenda, review homework, ask about buddy calls, do role-plays, do specific brainstorm exercises, conduct specific discussions).

Parent and Child Outcome Variables

Table 3 shows baseline and postintervention means and standard deviations for all outcome variables reported next. There were no significant differences on any parent or child outcome measures across the three intervention conditions at baseline. Table 4 provides summaries of analyses for each outcome variable. The overall analytic strategy was to perform a mixed-design analysis of covariance with three conditions, using the baseline scores as covariates and the post-K and post-1 scores as repeated measures. In each analysis, a Time \times Condition interaction was included in the first model. If that interaction was significant or near-significant ($p < .10$), separate repeated measures analyses of covariance were run for post-K and post-1 scores to determine if qualification was needed for interpretation of the overall group differences (e.g., if intervention effects were present at one post time point and not another). When the Time \times Condition interactions were not significant, this suggested stable intervention effects in the post-K to post-1 time period. In this case, the Time \times Condition interaction was removed from the model and the main effect of condition was interpreted. Whenever this main effect was significant, planned contrasts (two-tailed) were run to compare PT + CR and CR to CON and PT + CR to CR only.

Parent Outcome Observation and Report Variables

DPICS-R. For DPICS-R Supportive Parenting variable, there was no Time \times Condition interaction, but there was a main effect of condition,

$F(2, 195) = 6.18, p < .01, \eta^2 = .06$. Planned contrasts showed no intervention effects for the CR versus CON comparison, but the mothers in the PT + CR condition showed significantly higher rates of supportive parenting than both the CON mothers, $F(2, 195) = 3.43, p < .001$, and mothers whose children received the CR only intervention, $F(2, 195) = -2.37, p < .05$. These analyses also show that these effects were stable across the post-Kindergarten to post-first-grade time period. On the other hand, the DPICS-R negative/critical parenting variable showed a significant Time \times Condition interaction, $F(2, 195) = 3.49, p < .05$. To understand this Time \times Condition interaction, we examined planned contrasts at both the post-K and the post-1 time points. For the negative/critical parenting variable, the significant interaction reflected changes in directions of the contrasts but no significant condition main effects at either post-K or post-1. There was a trend for the PT + CR mothers to be less negative than control at post-K but no effects or trends at post-1.

CII. For the CII observation variables, there were no Time \times Condition interactions, but there was a main effect of condition for all three CII parenting variables: nurturing/attentive parenting, $F(2, 195) = 3.68, p < .05, \eta^2 = .036$; harsh/critical parenting, $F(2, 195) = 10.13, p < .001, \eta^2 = .094$; and lax/permissive parenting, $F(2, 195) = 3.81, p < .05, \eta^2 = .038$. Planned contrasts were conducted on all three variables. For nurturing/attentive parenting, mothers in the CR condition were not significantly different than CON mothers. Mothers in the PT + CR condition were significantly more nurturing and attentive than mothers in the CON group, $F(2, 195) = 2.69, p < .01$. There was a trend for mothers in the PT + CR group to be more nurturing and attentive than CR mothers, but this test did not reach the .05 level of significance, $F(2, 195) = -1.67, p < .1$. For harsh/critical parenting, mothers in the CR condition were not significantly different than CON. Mothers in the PT + CR group were significantly less harsh and critical than mothers in the CON group, $F(2, 195) = -4.29, p < .001$, and mothers in the CR group, $F(2, 195) = 3.10, p < .01$. Mothers in the PT + CR group were significantly less lax and permissive than mothers in the CON group. There was no significant difference in lax permissive parenting for the CR versus CON comparison or the CR versus PT + CR.

To summarize, the observational measures of parenting changes results indicated that compared to the CON group, mothers in the CR + PT

Table 3. Outcome Variables, Means, and Standard Deviations

Variables	Control ^d						Intervention—Classroom only ^b						Intervention—Classroom + Parent Group ^c								
	Pre		Post-1		Post-2		Pre		Post-1		Post-2		Pre		Post-1		Post-2				
	M	SD	M	SD	M	SD	N	M	SD	M	SD	N	M	SD	M	SD	M	SD	N		
Home Observations																					
DPICS-R Neg/Critical Parenting	16.23	12.01	18.34	14.05	12.90	10.30	82	20.17	15.37	19.30	14.70	16.30	12.24	52	17.83	12.21	13.67	9.59	15.50	10.92	65
DPICS-R Supportive Parenting	17.53	17.28	13.79	14.82	13.06	13.95	82	13.97	16.43	16.52	16.16	12.40	13.59	52	15.10	16.39	16.95	16.44	21.58	18.28	65
DPICS-R Child Neg Behaviors	11.66	15.39	13.72	19.79	6.76	10.42	82	15.34	13.95	11.34	18.21	8.69	12.65	52	18.53	24.04	10.00	14.82	8.69	13.80	65
CII Nurturing/Attentive Parenting	1.99	.34	1.97	.34	1.98	.34	83	1.99	.27	2.01	.26	2.00	.28	53	1.99	.35	2.09	.29	2.06	.25	63
CII Harsh/Critical Parenting	1.23	.25	1.28	.30	1.26	.33	83	1.24	.33	1.25	.25	1.20	.25	53	1.23	.21	1.14	.17	1.11	.11	63
CII Lax/Permissive Parenting	1.21	.20	1.25	.24	1.14	.19	83	1.27	.32	1.20	.22	1.14	.16	53	1.22	.26	1.14	.17	1.12	.19	63
CII Child Bonding With Parent	2.43	.35	2.46	.32	2.47	.35	84	2.39	.35	2.46	.33	2.50	.32	53	2.43	.39	2.55	.31	2.57	.26	63
Parent Report																					
PPI Harsh/Inconsistent Discipline	2.94	.67	2.80	.62	2.69	.65	94	2.83	.75	2.67	.64	2.71	.69	64	2.83	.70	2.60	.65	2.55	.63	88
PPI Praise and Incentives	4.21	.76	4.17	.78	4.18	.72	94	4.09	.81	4.17	.72	4.31	.74	65	4.22	.87	4.65	.71	4.58	.83	87
CBCL M Internalizing	51.84	10.48	51.57	10.13	52.16	10.91	95	51.94	8.65	50.33	10.73	50.94	11.07	63	49.85	8.86	47.38	9.24	48.49	8.27	84
CBCL M Externalizing	55.04	9.98	53.84	9.72	52.81	9.94	95	53.49	8.08	51.98	10.26	51.48	10.25	63	53.63	8.43	49.46	9.96	49.62	10.14	84
P-COMP M Prosocial/Communication	3.40	.73	3.59	.69	3.59	.71	89	3.36	.68	3.56	.63	3.67	.59	56	3.36	.71	3.68	.75	3.80	.68	79
P-COMP M Emotional Regulation	2.75	.60	2.81	.68	2.76	.67	89	2.73	.73	2.91	.73	2.83	.74	56	2.66	.73	2.96	.77	3.04	.72	79
Teacher Report																					
INVOLVE-T Parent Involvement Total	2.88	.71	2.78	.71	2.72	.82	81	2.67	.64	2.66	.68	2.72	.65	54	2.61	.70	2.77	.74	2.78	.67	73
SCBE Externalizing T Score	52.86	11.15	53.21	10.15	53.68	11.65	84	53.15	10.91	51.67	12.39	50.11	10.91	55	52.51	10.53	51.21	9.68	50.53	9.87	77
SCBE Social Competence T Score	45.52	11.08	48.48	10.77	50.48	9.92	84	46.53	10.88	49.49	11.67	48.44	11.10	55	45.14	11.37	47.75	11.92	50.48	11.04	77

Note: DPICS-R = Dyadic Parent-Child Interactive Coding System Revised; Neg = negative; CII = Child Impression Inventory; PPI = Parenting Practices Inventory; CBCL = Child Behavior Checklist; M = ; P-COMP = Social Competence Scale-Parent; INVOLVE-T = Teacher-Parent Involvement Questionnaire; SBCE = Social Competence and Behavior Evaluation-Preschool Edition. ^aMaximum N = 97. ^bMaximum N = 66. ^cMaximum N = 89.

Table 4. Results of Repeated Measures Analyses of Covariance

Variable	Condition	Main Effect	ES (Partial η^2)	Planned Contrasts		
				CR vs. Control	PT + CR vs. Control	CR vs. PT + CR
Home Observations						
DPICS-R Negative/Critical Parenting (scaled) ^a	<i>ns</i>	$F(2, 195) = 6.18^{**}$	.060	0.73	3.43 ^{***}	-2.37*
DPICS-R M Supportive Parenting (scaled) ^a						
DPICS-R M Child Negative Behaviors (scaled) ^a	<i>ns</i>	$F(2, 195) = 3.68^*$	.036	0.78	2.69 ^{**}	-1.67 [†]
CII M Nurturing/Attentive/Responsive Parenting		$F(2, 195) = 10.13^{***}$	.094	-0.89	-4.29 ^{***}	3.10 ^{**}
CII M Harsh/Critical Parenting ^a		$F(2, 195) = 3.81^*$	.038	-1.20	-2.79 ^{**}	1.34
CII M Lax/Permissive Parenting ^a		$F(2, 196) = 2.98^{\dagger}$	.030	0.48	2.38*	-1.68 [†]
CII M Child Bonding With Parent						
Parent Report						
PPI M Harsh and Inconsistent Discipline ^a	<i>ns</i>		.119	1.42	5.58 ^{***}	-3.66 ^{***}
PPI M Praise and Incentives		$F(2, 242) = 16.28^{***}$	.027	1.18	-2.56*	1.15
CBCL M Internalizing		$F(2, 238) = 3.28^*$	.036	0.41	-2.85 ^{**}	2.16*
CBCL M Externalizing		$F(2, 238) = 4.49^*$				
P-COMP M Prosocial/Communication	<i>ns</i>					
P-COMP M Emotional Regulation		$F(2, 220) = 4.28^*$	.037	0.98	2.91 ^{**}	-1.62
Teacher Report						
INVOLVE-T Parent Involvement Total		$F(2, 212) = 3.72^*$	.035	1.00	2.72 ^{**}	-1.50
SCBE Externalizing T Score		$F(2, 212) = 3.80^*$	.035	2.40*	-2.27*	-0.33
SCBE Social Competence T Score	<i>ns</i>					

Note. [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Note: DPICS-R = Dyadic Parent-Child Interactive Coding System Revised; M = Mother; CII = Child Impression Inventory; PPI = Parenting Practices Inventory; CBCL = Child Behavior Checklist; Mother P-COMP = Social Competence Scale-Parent; INVOLVE-T = Teacher-Parent Involvement Questionnaire; SBCE = Social Competence and Behavior Evaluation-Preschool Edition.

^aTransformations for analyses: Log.

condition were observed to have higher levels of supportive and nurturing/attentive parenting and lower levels of harsh/critical and lax parenting. Mothers in this combined intervention condition also showed an incremental intervention effect on harsh/critical and supportive parenting compared to the CR only condition. These observational findings were stable across the two postassessment time points and confirm our hypothesis that improvements in parenting behaviors would occur only in the condition where mothers were offered the parenting group.

PPI. There were no Time \times Condition interactions on the PPI harsh and inconsistent discipline or praise and incentive mother report variables. There was a significant main effect for the Praise and Incentives scale, $F(2, 242) = 16.28$, $p < .001$, $\eta^2 = .12$. Planned contrasts showed that mothers in the PT + CR condition reported using significantly more praise and incentives with their children than mothers in either of the other two conditions: PT + CR vs. CON, $F(2, 242) = 5.58$, $p < .001$, and PT + CR vs. CR, $F(2, 242) = -2.37$, $p < .05$. Mothers in the CR condition did not change on the Praise and Incentive scale compared to controls. Neither intervention group mothers reported significant intervention effects on the harsh and inconsistent variable compared to CON mothers' reports or compared to each other. Thus, mothers who were in the parenting intervention condition reported improvement on their positive parenting skills but did not report decreases in their negative parenting skills.

Child Outcome Report and Observation Variables

DPICS-R. The DPICS-R Child Negative Behaviors showed a near significant Time \times Condition interaction, $F(2, 195) = 2.38$, $p < .10$. To understand these Time \times Condition interactions, we examined planned contrasts at both the post-K and the post-1 time points. For the child negative behaviors, the significant interaction reflected changes in directions of the contrasts but no significant condition main effects at either post-K or post-1. Thus, there was no intervention effect for child behavior on this variable.

CII. For the CII observation variable, child bonding with parent, there were no Time \times Condition interactions, but the main effect of condition approached significance, $F(2, 196) = 2.98$, $p < .10$, $\eta^2 = .037$. Planned comparisons showed that children in the PT + CT condition were observed to be significantly more bonded with

their mothers compared to CON mothers, $F(2, 196) = 2.38$, $p < .05$. There was also a trend ($p < .10$) for children in the PT + CT group to be significantly more bonded with their mothers than those in the CR group.

CBCL. There were no significant Time \times Condition interactions for mother report on the CBCL Internalizing or Externalizing *T*scores. There were significant condition main effects for both Internalizing, $F(2, 238) = 3.28$, $p < .05$, $\eta^2 = .027$, and Externalizing, $F(2, 238) = 4.49$, $p < .05$, $\eta^2 = .036$, scores. Mothers in the PT + CR condition reported significantly fewer internalizing, $F(2, 238) = -2.56$, $p < .05$, and externalizing, $F(2, 238) = -2.85$, $p < .01$, problems than mothers in the control condition. Mothers in the PT + CR condition also reported significantly fewer externalizing problems than mothers in the CR condition, $F(2, 238) = 2.16$, $p < .05$. For internalizing behavior there was no significant difference between the PT + CR condition and the CR condition. Mothers of children in PT + CR conditions reported significant improvements on the CBCL compared to mothers of controls. These reports of improvements were found for the Total Behavior Problems *T* score and for the Externalizing Behavior *T* score. Mothers of children in the CR group reported no change compared to the CON group. The CR + PT versus CR comparison was not significant for either variable.

P-Comp. There were no significant Time \times Condition interactions for mother report on the P-Comp. There was a significant condition main effect for the Emotion Regulation subscale, $F(2, 220) = 4.28$, $p < .05$, $\eta^2 = .037$. Planned contrasts showed that mothers in the PT + CR group reported that their children showed significantly better emotion regulation than in the control group, $F(2, 220) = 2.91$, $p < .01$. There were no significant differences between the CR group and either the CON or the PT + CR groups.

Teacher Report

SCBE. There were no significant Time \times Condition interactions for the Externalizing or Social Competence scales. There was a condition main effect for the Externalizing Behavior scale, $F(2, 212) = 3.80$, $p < .05$, $\eta^2 = .035$. Planned contrasts showed that children in both the CR, $F(2, 212) = -2.40$, $p < .05$, and the PT + CR, $F(2, 212) = -2.27$, $p < .05$, conditions were reported by their teachers to have significantly fewer externalizing behavior problems compared

to control teachers. There were no differences between the two intervention conditions on this variable. For the Social Competence scale there were no condition main effects.

INVOLVE-T. There were no Time \times Condition interactions for this scale. There were significant main effects of condition for parent involvement, $F(2, 212) = 3.72, p < .05, \eta^2 = .035$. Planned contrasts showed that teachers reported that parents of children in the PT + CR condition were significantly more involved, supportive of their children's education, and communicated more with the teachers than control parents, $F(2, 212) = 3.05, p < .01$. There was significant difference neither between the CR mothers and CON parents on this variable nor between the two intervention conditions.

Satisfaction with Program

Family satisfaction questionnaires. Mothers in the parenting group reported high levels of satisfaction. On a 7-point scale, mean satisfaction ratings were above 5 on all questions including general satisfaction ($M = 6.27, SD = .73$), program usefulness ($M = 6.01, SD = .65$), ease of techniques ($5.37, SD = 1.06$), and leader satisfaction ($6.40, SD = .62$).

Attendance Analyses

These results reflect an intent-to-treat approach to analyses such that all families were included in analyses, whether or not mothers attended the parent groups. As just reported, approximately half of the mothers assigned to the combined PT + CR condition attended less half of the parenting sessions, and of those, approximately one fourth of mothers came to no sessions at all. We were also interested in the extent to which mothers' attendance was related to change in parenting. To evaluate whether change over time depended on the level of attendance for the PT + CR group, analyses of variance were run for each of the outcome measures including attendance as a covariate and time as a repeated measure (pre, post-1, post-2). Significant Time \times Attendance within-subjects effects were observed for two of the PPI measures: physical punishment, $F(2, 185) = 4.20, p < .05$, and praise and incentives, $F(1, 170) = 3.65, p < .05$. These results were in the predicted direction with higher levels of attendance associated with increased levels of praise/incentives over time and with decreased levels in physical punishment over time.

Clinical Significance

We were also interested in examining the extent to which children's behavior moved from higher to lower risk categories after intervention. Although the entire sample was "indicated" for elevated behavior problems, the range of problem behavior spanned the moderate to highest risk range. For the clinical significance analyses, we were interested in the subset of this indicated sample in the highest risk (or clinical) range. We used the DPICS-R child negative behavior variable because observations are less sensitive to rater bias than the parent or teacher reports. Because these variables are not normed, we defined negative child behavior that was in the 75th percentile as in the "clinical" or highest risk range. For child behavior the 75th percentile corresponds to an average of nine negative child behaviors in 30 min. This cutoff has distinguished between clinic and nonclinic samples in our prior work (Webster-Stratton, 1985a, 1985b), and we have used it to determine clinical significance in other articles (e.g., Webster-Stratton et al., 2001). For these analyses, we defined a clinically significant improvement as a 30% reduction in child behavior from baseline to each postassessment.

Improvement at post-1. For negative child behavior, 24.6% ($n = 49$ of 199) of sample was highest risk at baseline. Of those high-risk children, a 30% reduction at the post-K assessment was observed for 60% of the CON, 42.2% of the CR, and 90.5% of the PT + CR groups. Differences in improvement among the conditions were significant for CON versus PT + CR, $\chi^2(1, N = 36) = 4.70, p < .05$, and for CR versus PT + CR comparison, $\chi^2(1, N = 36) = 8.10, p < .01$.

Improvement at post-2. At the post-2 assessment point a 30% reduction at the post-K assessment was observed for 73.3% of CON, 76.9% of CR, and 95.2% of PT + CR. Differences in improvement among the conditions approached significant for the CR versus PT + CR intervention comparison, $\chi^2(1, N = 36) = 3.51, p < .10$, but were not significant for the CON versus PT + CR comparison.

Discussion

Comparable to national studies (Rimm-Kaufman, Pianta, & Cox, 2000; Webster-Stratton & Hammond, 1998), approximately one third of socioeconomically disadvantaged kindergartners in our study

were reported by their parents or teachers to have risky behaviors (such as higher levels of aggression and oppositional behavior). This study furthers our understanding of effective treatments for higher risk children by evaluating the added effects of adding training for parents to a classroom social skills and problem-solving curriculum. Previous school-based prevention studies have not evaluated the individual contributions of their comprehensive interventions targeted at both parents and classrooms and teachers. Moreover, it provides the first study regarding the impact of the Incredible Years Parent program to be used as a prevention program in elementary schools serving large numbers of socioeconomically disadvantaged children. Previously the prevention version of this program has only been evaluated in Head Start preschool populations. In particular, the results point to the feasibility and acceptability of using this revised parenting prevention program in a school setting with multiethnic, low-income populations, including non-English-speaking populations.

The results indicate that the parent program was highly acceptable to this population and confirmed the value of adding parenting intervention to a classroom prevention program for moderate-to high-risk kindergarten children. Independent observations of parenting interactions at home indicated that mothers in the combined parent and classroom condition (PT + CR) showed significant reductions in DPICS-R and CII harsh/critical parenting variables compared to mothers in the CR and CON conditions. In addition mothers in the PT + CR condition showed significant decreases in CII lax/permissive parenting and increases in nurturing/attentive parenting compared with mothers in the CON condition. Mothers in the PT + CR condition also reported significantly more improvements in their use of praise and incentives on the PPI than CR and CON mothers.

For child behaviors, mothers' reports on the CBCL indicated that children in the PT + CR condition showed significant improvements in externalizing problems compared with children in the CR only condition and with the CON mothers. Mothers in the combined condition also reported significant improvements in internalizing problems and their children's ability to regulate their emotions (i.e., ability to calm down, control temper, think, accept limits) on the P-COMP compared with CON mothers.

Home observations revealed a significant improvement in children's bonding and attachment to their mothers on the CII in the PT + CR condition compared to the CON group (this

contrast approached significance for the PT + CR vs. CR comparison). This indicated that children in the condition where mothers received the parent group were more verbally and physically affectionate with their mothers and enjoyed their interactions with them more than in conditions without parent training.

Home observations did not reveal changes in children's negative behaviors at home for the entire sample; however, because baseline rates of observed negative behavior were low for two thirds of the sample, it is possible that lack of effects on this variable was because of floor effects. Further analyses of the subsample of children who exhibited high levels of observed negative behaviors at baseline indicated significant improvement for the children in the PT + CR intervention. At the post-1 assessment, the PT + CR treatment group was significantly more effective than either of the other two conditions; 90.5% of children in the PT + CR group showed a 30% reduction in observed behavior problems at home compared to 60% of children in the CON condition and 46.2% in the CR condition. At the second postassessment, the results were still in the expected direction with greater benefits for the PT + CR condition; 73.3% of CON children, 76.9% of CR children, and 95.2% of PT + CR children showed a clinically significant improvement. However, at this time point, the conditions were not significantly different from each other.

Teacher reports indicated that children in both intervention conditions showed significantly fewer externalizing problems than CON children. There were no differences between the CR and the PT + CR conditions according to teacher reports of child behavior at school. This is not surprising, as the classroom intervention was very intensive and specifically targeted management of children's negative behaviors. However, effects of the parent training were evident in teacher reports of parent involvement. Teachers reported that mothers in the combined condition were significantly more involved in their children's education than mothers in the CR condition and CON mothers. This measure asks teachers to rate how comfortable parents seem in the classroom environment, how much parents seem to value education, how much time parents spend in the classroom or with homework, and how comfortable the teachers feel with parents. The teacher report of parent involvement is interesting because it suggests that by involving parents in the training we get improved bonding and partnerships between parents and teachers, which did not occur for the CR condition. Research has suggested that parent-school bonding in the early grades is an important predictor

of later child academic success (Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999).

One limitation of this study was the relatively low attendance rate in the parent groups (50% of mothers attended less than half of the sessions) in spite of intensive efforts to remove barriers (child care, meals, and transportation were provided) and to encourage parent participation (weekly reminder calls, parents assigned buddies from the groups, and a small gift certificate bonus was given for attendance at the majority of the groups). Although these rates are typical for prevention projects where parents have not self-identified problems, lower attendance potentially dilutes intervention effects. The analyses of the intervention effects used an intent-to-treat approach, as is appropriate with prevention research. Given that half of the parents received little or no intervention, the aforementioned changes in mother and child behavior indicate overall robust intervention effects. We were also interested in whether attendance predicted the strength of intervention effects on any variables. Attendance analyses indicated that mothers' attendance in the groups was significantly related to their reports of increased use of praise and incentives and decreased use of physical punishment. Because harsh and punitive discipline, including physical punishment, has been shown to be detrimental to children's social and emotional adjustment (Straus, Sugarman, & Giles-Sims, 1997), this finding is important in terms of indicating the benefits of higher doses of intervention on this important outcome. However, it is also important to note that mothers who attended groups may have had a higher motivation to change than those who did not attend groups, so the results for the attendance analyses can not solely be attributed to the increased dosage.

Although a number of studies have tested school-based prevention programs that combine classroom and parent components (Conduct Problems Prevention Research Group, 2002; Eddy, Reid, & Fetrow, 2000; Walker et al., 1998), this study is one of the few intervention studies testing the additive impact of a parent intervention on a school curriculum. The results show that parenting behavior, parent-child bonding, and parental school involvement changed significantly in the condition where parent groups were offered. In addition, parent reports of child externalizing, internalizing, and emotion regulation behaviors showed significant intervention effects in the PT + CR condition compared to controls. Clinical significance analyses after the 1st year of intervention showed more improvement in the PT + CR condition compared to the other two

conditions. Follow-up assessments on this sample are being collected to determine if the positive postintervention results are maintained 1 and 2 years after intervention.

The results reported here confirm our prior research with clinic populations showing incremental benefit from interventions that target parents *and* children rather than either alone (Webster-Stratton & Hammond, 1997; Webster-Stratton, Reid, & Hammond, 2004). The study presented here extends those results to the prevention setting and provides rationale for adding parenting programs to school-based classroom intervention. Positive parenting and parent-school bonding are predictors of later social and academic success for young children with behavior problems (Hawkins et al., 1999). These findings emphasize that including parent intervention is crucial for changing these key protective factors when developing school-based prevention programs for young high-risk children.

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