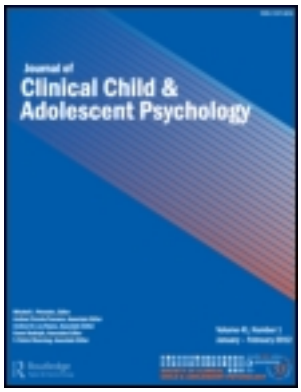

Journal of Clinical Child & Adolescent Psychology
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/hcap20

One-Year Follow-Up of Combined Parent and Child Intervention for Young Children with ADHD

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Published online: 28 Sep 2012.

To cite this article: Carolyn Webster-Stratton, M. Jamila Reid & Theodore P. Beauchaine (2013) One-Year Follow-Up of Combined Parent and Child Intervention for Young Children with ADHD, Journal of Clinical Child & Adolescent Psychology, 42:2, 251-261, DOI: 10.1080/15374416.2012.723263

To link to this article: http://dx.doi.org/10.1080/15374416.2012.723263

Journal of Clinical Child & Adolescent Psychology, 42(2), 251–261, 2013

ISSN: 1537-4416 print/1537-4424 online
DOI: 10.1080/15374416.2012.723263

Routledge
Taylor & Francis Group

One-Year Follow-Up of Combined Parent and Child Intervention for Young Children with ADHD

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Efficacies of the Incredible Years (IY) interventions are well-established in children with oppositional defiant disorder (ODD) but not among those with a primary diagnosis of attention-deficit/hyperactivity disorder (ADHD). We sought to evaluate 1-year follow-up outcomes among young children with ADHD who were treated with the IY interventions. Four- to 6-year-olds with ADHD ($n = 49$, 73% male) participated in 6 months of treatment using the IY parent and child interventions. Immediate posttreatment results indicated improvements in parenting, children's externalizing and attention problems, and social contact at school. At 1-year follow up, 22 of 27 variables that showed significant posttreatment effects demonstrated maintenance to 1-year follow up. Children with higher ODD symptoms at baseline showed more improvement in oppositionality and total behavior problems, and their mothers showed more improvement on harsh discipline scores. Approximately 70 to 75% of children were reported by their parents and teachers to fall below clinical cutoffs on measures of externalizing symptoms at the 1-year follow up (compared to 50% at baseline), and more than 50% fell below clinical cutoffs on measures of hyperactivity and inattentiveness (all were in the clinical range at baseline). Children with ADHD who were treated with the IY parent and child treatment programs showed maintenance of treatment effects 1 year after treatment.

Attention-deficit/hyperactivity disorder (ADHD) in young children marks significant risk for later development of oppositional defiant disorder (ODD), conduct disorder (CD), and more serious antisocial behavior in adolescence (CD; see Beauchaine, Hinshaw, & Pang, 2010; Campbell, Shaw, & Gilliom, 2000). This externalizing developmental trajectory exacts enormous costs on society in terms of school dropout, delinquency, substance abuse, and interpersonal violence. Early-onset CD is also among the most refractory of all psychiatric conditions, with interventions becoming increasingly less effective and more expensive if delayed until late childhood or adolescence (Offord & Bennet, 1994). These findings suggest that one effective means of preventing development of CD may be to target preschool and early school-age children with ADHD before more serious conduct problems have escalated. Unfortunately, comparatively little treatment outcome research has been conducted with samples of children with ADHD younger than age 7.

This research was supported by grant # MH067192 from the National Institute of Mental Health. Dr. Webster-Stratton has disclosed a potential financial conflict of interest because she disseminates these interventions and stands to gain from a favorable report. Because of this, she has voluntarily agreed to distance herself from certain critical research activities (recruiting, consenting, primary data handling, and analysis). The University of Washington has approved these arrangements.

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PARENT TRAINING INTERVENTIONS FOR YOUNG CHILDREN WITH ADHD

Parent training for young children with ADHD has shown some preliminary positive outcomes. For example, Pisterman and colleagues (Pisterman, McGrath, Firestone, & Goodman, 1989) reported improvements in mother–child interaction quality and rates of child compliance among preschoolers with ADHD following parent training, effects that were maintained 3 months' posttreatment and replicated in a subsequent study (Pisterman et al., 1992). Sonuga-Barke and colleagues (Sonuga-Barke, Daley, Thompson, Laver-Bradbury, & Weeks, 2001) reported similar findings, which extended to ADHD behaviors and were maintained at 6-month follow-up. It is important to note that concurrent improvements in child compliance suggest reduced oppositionality, a finding consistent with observed effects of behavioral interventions in older children. For example, findings from the Multimodal Treatment of ADHD trial indicated that negative and ineffective discipline strategies moderated treatment efficacy among grade-school children with ADHD (Hinshaw et al., 2000).

However, not all treatment-outcome research with ADHD preschoolers has yielded positive results. For example, Shelton and colleagues (2000) randomly assigned kindergarteners who exhibited high levels of ADHD and ODD to parent training, classroom day treatment, a combined condition, or a control group. The parent-training condition alone yielded no results, although the classroom child-directed intervention produced improvements in aggressive behavior, social skills, and self-control at school. However, these effects did not persist at a 2-year follow-up. Such findings are perplexing given the established efficacy of parent training in reducing ODD and CD behaviors among children in this age range (Brestan & Eyberg, 1998; Eyberg, Nelson, & Boggs, 2008). However, poor parental attendance (only 25% attended more than 4 of 14 sessions) may have accounted for the lack of results from the parent intervention. Although classroom interventions are important, the broader literature on reducing externalizing behaviors in young children suggests that effective treatments must include parent training, as parents are the primary socializing agents (e.g., Webster-Stratton & Reid, 2010).

In sum, parent training is effective in addressing ODD/CD symptoms in young children. However, given low parental engagement in studies conducted to date, it is difficult to evaluate the effectiveness of parent training in reducing ADHD symptoms among preschool- and early school-age children. Thus, more research is needed to determine whether a larger dose of parent training, combined with child treatment can improve the sustainability of clinically significant outcomes for young children with ADHD.

THE INCREDIBLE YEARS (IY) INTERVENTIONS

The IY parent and child interventions have proven efficacious in multiple randomized control studies for young children with primary diagnoses of ODD or CD, 40 to 50% of whom also had high levels of inattentive and hyperactive symptoms (Webster-Stratton, 1984; Webster-Stratton & Reid, 2010). Analyses of these samples indicated that both the IY parent and child programs are as effective for children who have comorbid ODD/CD and ADHD as they are for children with only ODD (Hartman, 2000; Webster-Stratton, Reid, & Hammond, 2001b). Moreover, combining the IY child program along side the parent program resulted in more sustained outcomes at 1-year follow-up (Webster-Stratton & Hammond, 1997).

THEORETICAL MECHANISMS OF INTERVENTION EFFECTIVENESS: IMPACT ON ADHD AND ODD

Studies examining the etiology of childhood-onset CDs have revealed that the disorder is typically preceded by symptoms of ADHD and ODD, with behavioral disinhibition playing a central role in the aggression engaged in by group members (Lahey & Loeber, 1994). Thus ADHD is a risk factor for later conduct problems. Research indicates that children with ADHD are delayed in their development of social skills, emotional self-regulation, and problem-solving skills (Beauchaine et al., 2010). They also are more likely to elicit coercive parent–child interactions and harsh discipline responses due to their difficult behavior. Coercive exchanges and negative reinforcement processes in the families of at-risk children result in increased emotional lability and aggression (Patterson, DeGarmo, & Knutson, 2000; Snyder, Edwards, McGraw, Kilgore, & Holton, 1994; Snyder, Schrepferman, & St. Peter, 1997).

We theorize that the IY parent program helps parents to reduce coercive parent–child interactions by providing them with strategies for contingent positive management and use of positive discipline. In addition the parent program focuses on reducing parents' negative affect around parenting interactions, providing them with information about their children's developmental needs, and addressing parents negative cognitive attributions about their relationship. Last, the parent program teaches parents to use positive, calm, and nurturing parental attention and persistence coaching to teach their children social skills, emotion regulation strategies, and effective problem solving.

The IY child program directly teaches children skills related to emotional literacy, self-regulation, social

interaction, and problem solving in an environment where children can practice these skills with peers and receive coaching from therapists. Together these two programs provide children with skills that can reduce impulsive and disregulated behaviors associated with ADHD and provide parents with skills to prevent the negative interactions that can lead ADHD to progress to later conduct problems.

CURRENT STUDY

The efficacy of the IY parent and child programs had not been evaluated among children with a primary diagnosis of ADHD until recently (Webster-Stratton, Reid, & Beauchaine, 2011). This RCT found positive posttreatment effects for a 20-week IY parent and child intervention condition compared to a waitlist control condition for young children with ADHD. Results showed intervention effects for (a) mother- and father-reports of child behavior problems, ADHD symptoms, and social competence; (b) mother-reports of positive parenting and discipline strategies; (c) teacher-reports of externalizing behavior; (d) independent observations of mother's parenting, children's behavior problems with mothers, and social contact at school; and (e) children's feeling vocabularies and problem-solving skills. In the present article, we determine whether these posttreatment results were sustained at 1-year follow up and present predictors of outcome for the 2011 sample.

METHOD

Participants

In the 2011 study, young children (ages 4–6 years) with ADHD (hyperactive or combined type) were assigned randomly to (a) the IY combined parent and child treatment condition ($n = 49$), or (b) a waitlist control condition ($n = 50$). Approximately half of the children had ADHD and half had comorbid ADHD+ODD. Children were admitted to the study if they scored at or above the 95th percentile on the Child Behavior Checklist Attention Problems scale (CBCL; Achenbach, 1991), met *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994) criteria for hyperactive-impulsive or combined subtype of ADHD on the Child Symptom Inventory (CSI; Gadow & Sprafkin, 1997), met diagnostic criteria for ADHD on the Diagnostic Interview Schedule for Children (Shaffer, Fisher, Lucas, Mina, & Schwab-Stone, 2000) and were not taking medication for ADHD.

In the current study, we examined treatment maintenance and predictors of outcome for intervention condition families at a 1-year follow up. All waitlist control families were offered treatment following the postassessment, so there was no untreated control group for comparison at this time point.

Procedures

Study procedures were approved by the University of Washington Institutional Review Board, and parental consent was obtained. In the original study, baseline assessments were conducted prior to randomization. The intervention lasted approximately 6 months and was followed by postassessments for all families. Intervention families received a follow-up assessment approximately 12 months later. More detailed procedures are reported in Webster-Stratton et al. (2011).

Interventions

The IY parent and child interventions have been described briefly in the initial paper (Webster-Stratton et al., 2011) as well as in more detail in several chapters (see Webster-Stratton, 2007; Webster-Stratton & Reid, 2005). The IY parent and child training interventions were delivered by M.A.- or Ph.D.-level, certified group leaders who were supervised weekly by IY trainers. Programs ran concurrently for 20 weekly 2-hr sessions.

Parent Reports of Parenting Behavior and Adjustment

Parenting practices inventory (PPI; conduct problems prevention research group, 1996). This questionnaire was revised from the Oregon Social Learning Center discipline questionnaire for parents of older children and has been used in multiple treatment-outcome studies with demonstrated sensitivity to treatment effects (e.g., Webster-Stratton, Reid, & Hammond, 2001a). Four summary scores are reported, including (a) appropriate discipline (e.g., brief time-out, ignoring, consequence; $\alpha = .81$), (b) monitoring ($\alpha = .55$), (c) harsh and inconsistent discipline (e.g., raise voice, threaten, say mean things; $\alpha = .80$), and (d) physical punishment (e.g., spank or hit child; $\alpha = .79$).

Parent Reports of Child Behavior

Child behavior checklist (Achenbach, 1991). The 1991 version of the CBCL is validated for children ages 4 to 16. For purposes of this study, broadband externalizing and internalizing scores and the Attention Problem subscale were used. Intraclass correlations for the validation sample were .98 for interparent agreement and .84 for test–retest reliability (Achenbach, 1991).

Conners' parent rating scale–revised (Conners, Sitarenios, Parker, & Epstein, 1998). The Conners'

Parent Rating Scale–Revised is a 57-item instrument that assesses ADHD and comorbid psychopathology. Summary scores for hyperactivity, inattention/cognitive problems, and oppositional behaviors were used. For these scales, in the current sample, alpha coefficients ranged from .91 to .93.

Eyberg child behavior inventory (ECBI; Robinson, Eyberg, & Ross, 1980). The ECBI is a 36-item inventory of conduct problem behaviors for children ages 2 to 16. Two summary scores measure the number of reported conduct problems and the intensity of these problems. In the current sample, alphas for these scales were .95 for intensity and .94 for number of problems (Robinson et al., 1980).

Social competence scale (P-COMP; conduct problems prevention research group, 1999a, 1999b). The P-COMP consists of 12 items that assess parental perceptions of children's positive social behaviors ($\alpha = .81$) and emotion regulation ($\alpha = .80$). In the Fast Track sample (Conduct Problems Prevention Research Group, 1999a, 1999b), this measure distinguished between normative and control groups and showed adequate reliability alpha ranged from .89 to .94.

Teacher Reports of Child Behavior

Teacher report form (TRF; Achenbach, 1991). The TRF is a teacher-report version of the CBCL (see earlier). For this study two versions were used to measure broadband externalizing behavior: the Caregiver Teacher Report (Achenbach, 1997) for children 5 or younger, and the TRF for children 6 and older. Test–retest reliabilities for broadband scales of the CTR and the TRF range from .77 to .89.

Independent Observations of Child Behavior in the Classroom

Each child was observed twice at pre- (beginning of school year) and postintervention (end of school year) and at 1-year follow-up in a different classroom for 30 min in both structured (e.g., circle time, work time at desks) and unstructured (e.g., recess, lunch) settings. Coders were blind to study condition and reliability checks were completed on 15% of observations.

Coder observation of child adaptation–revised. The Coder Observation of Child Adaptation–Revised is an observational version of the Teacher Observation of Child Adaptation–Revised (Werthamer-Larsson, Kellam, & Oveson-McGregor, 1990) that is sensitive to intervention effects (Webster-Stratton, Reid, & Stoolmiller, 2008). Following each 30-min observation, coders respond to 26 items assessing three dimensions of behavioral adjustment to school. In the current article, the social contact scale is reported. High scores indicate more problematic behavior. Intraclass correlation (.93) indicated high interrater reliability for this scale.

Child Problem Solving and Feelings Assessment

Wally problem solving test (Webster-Stratton, 1990). The Wally Problem Solving Test measures children's social problem-solving skills by assessing their responses to hypothetical conflict situations. A summary score indicates the ratio of positive to negative strategies generated by the child. The Wally was derived from Spivak and Shure's (1985) Preschool Problem Solving Test and Rubin and Krasnor's (1986) Child Social Problem-Solving Test. Intraclass correlations were .93 for positive strategies and .71 for negative strategies.

Wally feelings test (Webster-Stratton et al., 2008). The Wally Feelings Test measures children's emotion vocabulary. Children are shown eight pictures of characters in positive and negative situations and are asked how the characters in the pictures would feel. The sum of different feeling words identified provides a total feeling vocabulary score. This assessment was sensitive to intervention effects in a sample of more than 1,700 children who were assigned randomly to the IY child program or their usual classroom curriculum (Webster-Stratton et al., 2008).

RESULTS

Intervention Dose, Parent Participation, and Attrition

Baseline demographic data are presented in Table 1. Children were 73% male, which represents the typical 3:1 rate of boys:girls diagnosed with ADHD. Twenty-eight percent of children were from an ethnic minority, which represents the ethnic diversity found in Seattle. Both mother and father attendance was high (mother $M = 18.5$, $SD = 4.2$; father $M = 17.1$, $SD = 4.3$ out of 20 sessions). These means include mothers who began therapy and dropped but not the fathers who came to no sessions.

Forty-nine mothers provided baseline data (T1). All 49 began treatment, and 47 completed (T2). At the 1-year follow-up, 42 mothers (85.7%) provided data. Mothers who dropped did not differ from mothers who remained in the study on education or family income, both $ts(47) \leq 0.23$, both $ps \geq .82$, nor did their children differ on initial symptoms of inattention, hyperactivity, or ODD, all $ts(47) \leq 0.73$, all $ps \geq .30$.

TABLE 1
Baseline Demographic Characteristics and /Descriptive Statistics by Group

	Group			
Variable	*Intervention*[a]	*Wait-List*[b]	*Test-Statistic*[c]	*Effect Size (Partial η^2)*
Child's Sex (% Male)	36 (73%)	39 (78%)	$\chi^2(1) = 0.28$	.05
Child's Age (Months)	64.1 (11.3)	64.4 (10.6)	$F(1, 95) = 0.02$	00
Child's Grade (%)			$\chi^2(1) = 1.44$	.12
Preschool	22 (45%)	25 (50%)		
Kindergarten	17 (35%)	12 (24%)		
1st Grade	10 (20%)	13 (26%)		
Child With Comorbid ODD	26 (53%)	22 (44%)	$\chi^2(1) = 0.37$	.09
Child Adopted	7 (14%)	11 (22%)	$\chi^2(1) = 0.31$	.11
Child's IQ	100.4 (14.4)	106.9 (32.0)	$F(1,97) = 1.62$	.02
Language Delay	20 (40%)	18 (38%)	$\chi^2(1) = 0.24$	.03
Receiving Early Intervention	26 (52%)	21 (44%)	$\chi^2(1) = 1.21$	.07
Mothers Partnered	38 (77%)	40 (81%)	$\chi^2(1) = 0.08$	.08
Child's Ethnicity (% Minority)	14 (28%)	13 (26%)	$\chi^2(1) = 0.08$	.04
Mother Ever Imprisoned?	6 (13%)	5 (10%)	$\chi^2(1) = 0.01$	.07
Father Ever Imprisoned?	13 (26%)	12 (24%)	$\chi^2(1) = 0.08$	.08
Mother's Age (Years)	37.3 (6.0)	38.7 (6.9)	$F(1, 97) = 1.09$	.01
Father's Age (Years)	40.1 (8.5)	41.5 (8.2)	$F(1, 86) = 0.82$	.01
Hollingshead Score (SES)	32.3 (13.3)	31.6 (14.1)	$F(1, 94) = 0.25$	<.01
Mother Education (Years)	15.6 (2.3)	15.6 (2.1)	$F(1, 97) = 0.00$	.00
Father's Education (Years)	15.2 (2.2)	15.1 (2.5)	$F(1, 97) = 0.09$	<.01
No. of Children in Home	1.8 (0.7)	2.2 (1.0)	$F(1, 97) = 3.93$	.04
Parenting Disagreements Score	1.8 (0.5)	2.1 (0.7)	$F(1, 97) = 3.81$	.04

Note: Continuous variables are expressed as mean (standard deviation). ODD = oppositional defiant disorder; SES = socioeconomic status.
[a] $n = 49$.
[b] $n = 50$.
[c] Degrees of freedom differ for some variables due to missing data.
$^{*}p \leq .01$. $^{**}p \leq .001$.

Thirty-nine fathers provided baseline data (T1), and 37 began and completed treatment (T2). At the 1-year follow-up, 30 fathers (76.9%) provided data. Father0 s who dropped did not differ from fathers who remained in the study on education or family income, both $ts(35) \leq 1.02$, both $ps \geq .33$, nor did their children differ on initial symptoms of inattention, hyperactivity, or ODD, all $ts(35) \leq 1.90$, all $ps \geq .10$.

Posttreatment Therapy and Medication

At the 1-year follow up, 14 (29%) of children were taking stimulants for ADHD. Among the 20 outcome measures reported in Table 2, only two group differences emerged between medicated and unmedicated children. Children who were prescribed stimulants following the intervention scored higher than those who were not prescribed stimulants on mother-reported Eyberg total behavior problems, $t(41) = 2.05$, $p = .047$, and on mother-reported CBCL aggression, $t(40) = 3.09$, $p = .004$. No other group differences were found (all $ts \leq 1.60$, all $ps \geq .12$). In addition to stimulants, by the 1-year follow-up 45% of families were receiving (a) special services for their children through schools, (b) additional services for their children through outpatient clinics, and/or (c) additional services for parents through outpatient clinics. Families who did and did not seek additional treatment differed on only 2 of the 20 outcome measures, including father-reported Eyberg total problem behaviors, $t(28) = 2.52$, $p = .018$, and father-reported P-COMP prosocial communication, $t(28) = 2.68$, $p = .012$. Fathers from families who sought additional treatment reported more behavior problems and less prosocial communication among their children. Given this set of findings, we chose not to covary stimulant use or psychosocial service use from subsequent analyses because (a) very few effects were found, and (b) among the four significant findings, *worse* outcomes were observed for those who sought stimulant treatment/additional services. Posttreatment therapy is therefore an implausible explanation for maintenance of treatment effects.

Tests of Maintenance of Treatment Effects

Because no control group variables were available at the 1-year follow up (T3), only variables that showed significant intervention effects immediately posttreatment (T2), as reported in our initial outcome paper (Webster-Stratton et al., 2011), were assessed. For the current study, repeated measures analyses of variance were

TABLE 2
Repeated Measures Analyses of Variance Assessing Parent Reports of Child Behavior, Including Posttreatment Versus Follow-Up Contrasts

	Baseline		*Posttreatment*		*Follow-Up*					*Overall Effect of Treatment (T1–T3)*				*Maintenance Effect (T2–T3)*		
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*95% CI*	*% Below Clinical Cutoff*	*% With Significant RCI*	F^a	*p*	η^2	ϵ^b	F^a	*p*	η^2
Mother-Report Externalizing[c]																
CBCL Externalizing	65.45	6.92	59.10	8.33	58.50	9.48	55.47–61.53	76.2	57.4	18.25	<.001	.32	.97	0.26	.61	<.01
CBCL Aggression	67.10	7.50	60.48	6.89	59.85	7.96	57.31–62.39	76.2	47.6	23.19	<.001	.37	.98	0.31	.58	<.01
CBCL Attention Problems	69.08	8.91	65.80	6.78	65.08	8.69	62.30–67.86	54.8	40.5	6.12	.003	.14	.86	0.60	.44	.02
Conners' Oppositional	68.46	10.93	59.93	10.05	60.12	10.43	56.78–63.45	69.8	48.9	16.34	<.001	.30	.96	0.02	.90	<.01
Conners' Inattentive	70.76	12.80	64.61	12.03	64.85	8.38	62.17–67.53	58.1	44.7	7.58	<.001	.16	1.00	0.02	.89	<.01
Conners' Hyperactive	74.85	8.21	66.49	8.70	66.27	9.85	63.12–69.42	55.8	57.4	18.49	<.001	.32	.96	0.02	.88	<.01
Eyberg Total Intensity	158.43	22.75	128.79	25.55	131.81	29.72	122.31–141.31	44.2	68.1	32.50	<.001	.44	.97	0.67	.42	.02
Eyberg Total Problems	23.05	5.85	14.36	7.08	14.67	8.87	11.84–17.50	51.2	74.5	22.54	<.001	.35	.90	0.08	.78	<.01
Mother-Report Internalizing																
CBCL Internalizing	58.10	10.93	52.38	8.34	52.58	10.57	49.20–55.96	90.5	42.8	9.30	<.001	.19	.89	0.02	.88	.01
Mother-Report Social Skills																
P-COMP Emotion Regulation	1.86	0.48	2.48	0.55	2.47	0.59	2.28–2.66	—	47.6	30.58	<.001	.43	.91	<0.01	.98	<.01
P-COMP Social Competence	2.64	0.59	3.26	0.69	3.11	0.64	2.91–3.31	—	38.0	22.54	<.001	.35	.99	2.65	.11	.06
Father-Report Externalizing[d]																
CBCL Externalizing	61.63	10.06	57.11	8.28	57.70	8.44	55.00–60.40	90.0	50.0	6.42	.003	.20	.95	0.23	.63	.01
Conners' Oppositional	61.52	12.02	57.85	9.12	59.78	9.80	56.65–62.91	70.0	42.9	1.81	.173	.07	.97	0.99	.33	.04
Conners' Inattentive	68.07	13.52	65.56	12.61	63.70	11.54	60.01–67.39	63.3	42.9	2.43	.097	.09	.96	1.09	.31	.04
Conners' Hyperactive	67.85	9.33	64.63	8.14	65.78	9.51	62.74–68.82	56.7	57.1	1.72	.188	.06	.89	0.47	.50	.02
Eyberg Total Intensity	145.61	25.81	126.54	24.06	130.79	24.71	122.89–138.69	53.3	42.8	13.50	<.001	.33	.93	1.64	.21	.06
Eyberg Total Problems	18.93	8.31	13.93	8.79	13.11	6.45	11.05–15.17	60.0	57.1	13.59	<.001	.33	1.00	0.46	.50	.02
Father-Report Social Skills																
P-COMP Emotion Regulation	2.03	0.54	2.53	0.53	2.48	0.50	2.32–2.64	—	46.4	18.41	<.001	.41	.77	0.61	.44	.02
P-COMP Social Competence	2.65	0.54	3.04	0.58	3.00	0.59	2.81–3.19	—	39.3	9.85	<.001	.27	.93	0.11	.74	<.01
Teacher-Report Externalizing[e]																
TRF Externalizing	64.18	10.32	60.80	10.55	60.51	9.53	57.46–63.56	75.6	42.2	5.45	.007	.11	.93	0.06	0.81	<.01

Note: Clinical cutoff scores were 132 for Eyberg intensity, 15 for Eyberg total problems, and $T = 67$ for the CBCL, TRF, and Conners' scales. Clinical cutoffs for the remaining measures have not been established. CI = confidence interval; RCI = reliable change index (Jacobson & Truax, 1991); CBCL = Child Behavior Checklist (Achenbach, & Edelbrock, 1991); Conners' = Conners' Rating Scale–Revised (Conners, 1998; Conners, Sitarenios, Parker, & Epstein, 1998); Eyberg = Eyberg Child Behavior Inventory (Robinson et al., 1980); P-COMP = Social Competence Scale (Conduct Problems Prevention Research Group, 1999a, 1999b); TRF = Teacher Report Form (Achenbach, 1991).

[a]Degrees of freedom differ based on informant.

[b]Greenhouse-Geisser epsilons were used to correct *p* values for violations of sphericity and compound symmetry.

[c]$n = 42$.

[d]$n = 30$.

[e]$n = 45$.

conducted to assess change in outcomes across pre-, post-, and 1-year follow-up assessments (i.e., T1, T2, T3). Greenhouse-Geisser corrections for violations of sphericity and compound symmetry were used. Results were followed by direct contrasts of outcome measures at T2 and T3. These were intended to test maintenance of effects.

Informant reports of child behavior. Prior to evaluating treatment effects, we first assessed whether age predicted any of the parent-report, teacher-report, or observational outcome measures. Among the 20 outcomes reported in Table 2, only 2 were correlated with age. These included mother-reports of both inattention ($r^2 = .06$, $p = .01$) and hyperactivity ($r^2 = .04$, $p = .04$), on the Conners'. Because these effect sizes are quite small, and because all other age effects were nonsignificant (all r^2s $\leq .03$, all ps $\geq .12$), we did not include age as a covariate in the treatment outcome analyses.

Parent- and teacher-reports of child outcomes appear in Table 2. Significant T1–T3 changes were observed for 17 of the 20 variables reported, with effect sizes between .11 and .44. All of these variables showed nonsignificant change from T2 to T3 (postintervention to 1-year follow-up), suggesting maintenance of posttreatment effects. Effect sizes for the nonsignificant T2–T3 contrasts were negligible ($\eta^2 = < .01$–.06). Thus, the nonsignificant effects were not due to low power. Three father-report variables (Conners' oppositional, inattentive, and hyperactive) did not show significant change from T1 to T3.

Mother reports of parenting behaviors. As shown in Table 3, two of four mother-report parenting behaviors showed significant change from T1 to T3, including PPI harsh discipline and PPI physical punishment. Effect sizes were $\eta^2 = .45$ and $\eta^2 = .26$, respectively—medium to large by Cohen's (1988) standards. Both of these variables showed maintenance from T2 to T3, as indicated by nonsignificant contrasts that were of small effect size ($\eta^2 = .18$ and .11, respectively).

Child observations of school behavior and testing of problem solving and feeling language. As indicated in Table 4, school observations of children's social behavior (Coder Observation of Child Adaptation social contact), and direct testing of children's problem solving and feeling vocabulary (Wally tests) showed significant change from T1 to T3 ($\eta^2 = .11$–.29). These effect sizes fell in the small to medium range. Comparisons between T2 and T3 indicated maintenance of these results for both social contact and feeling vocabulary, as indicated by nonsignificant contrasts of small effect size ($\eta^2 = .04$ and .03, respectively). On the Wally Problem Solving Test, the proportion of positive problem-solving solutions continued to improve from T2 to T3 ($\eta^2 = .15$).

Predictors and mediators of outcome. Consistent with Kraemer's influential distinction (Kraemer, Wilson, Fairburn, & Agras, 2002), we defined (a) predictors as variables that were present at baseline and affected intervention response, and (b) mediators as variables that accrued during the intervention and accounted for variability in treatment response. Based in part on our previous work with older children (Beauchaine, Webster-Stratton, & Reid, 2005), seven baseline variables were selected as possible predictors and/or mediators of outcomes (from baseline to 1-year follow-up). Possible predictors included ODD symptoms, child sex, marital status, and marital satisfaction. Parental engagement with the intervention was assessed as a possible mediator. With the exception of ODD symptoms, none of these variables were significant. Results are not presented for nonsignificant predictor/mediators.

In Table 5 we report (a) results from analyses of ODD as a predictor of treatment response, and (b) interactions of ODD symptoms with treatment outcome. Baseline ODD symptoms were a significant predictor of treatment response for seven mother-report child behavior problem variables and four father-report child behavior problem variables. On average, children with high baseline ODD symptoms started and ended higher on other measures of child behavior problems than those who were low on ODD symptoms.

TABLE 3
Repeated Measures Analyses of Variance Assessing Mother Reports of Parent Behavior, Including Posttreatment Versus Follow-Up Contrasts

	Baseline		*Posttreatment*		*Follow-Up*			*Overall Effect of Treatment (T1–T3)*				*Maintenance Effect (T2–T3)*		
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*95% CI*	*F(2, 80)*	*p*	η^2	ϵ^a	*F(1, 40)*	*p*	η^2
PPI Appropriate Discipline	4.57	0.84	4.76	0.93	4.79	0.81	4.53–5.05	1.89	.157	.05	.92	0.09	.77	<.01
PPI Harsh/Inconsistent	3.12	0.78	2.47	0.55	2.65	0.66	2.44–2.86	32.98	<.001	.45	.82	8.64	<.01	.18
PPI Monitoring	6.37	0.38	6.42	0.51	6.53	0.51	6.37–6.69	1.66	.196	.04	.93	1.67	.20	.04
PPI Physical Punishment	1.52	0.68	1.13	0.21	1.26	0.44	1.12–1.40	14.35	<.001	.26	.79	4.83	.03	.11

Note: CI = confidence interval; PPI = Parenting Practices Inventory (Conduct Problems Prevention Research Group, 1996).
[a]Greenhouse-Geisser epsilons were used to correct p values for violations of sphericity and compound symmetry.

TABLE 4
Repeated Measures Analyses of Variance Assessing Behavior Observations and Child Testing, Including Posttreatment Versus Follow-Up Contrasts

	Baseline		*Posttreatment*		*Follow-Up*			*Overall Effect of Treatment (T1–T3)*				*Maintenance Effect (T2–T3)*		
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*95% CI*	*F(2, 82)*	*p*	η^2	ϵ^a	*F(1, 42)*	*p*	η^2
School Peer Observations														
COCA-R Social Contact	1.39	1.14	0.89	1.02	1.07	1.17	0.70–1.44	5.36	.007	.11	0.96	1.61	0.21	.04
Wally Feelings														
Total Feelings	5.69	3.03	7.67	3.62	8.79	8.33	6.12–11.45	12.98	<.001	.24	0.88	1.25	0.27	.03
Wally Problem Solving														
Proportion Positive	.66	.26	.79	0.16	0.86	.15	0.81–0.91	16.82	<.001	.29	.84	7.99	<.01	.15

Note: CI = confidence interval; COCA-R Social Contact = Quality of Social Contact with Peers (Tapp et al., 2000); higher scores indicate more social problems; Wally = Wally Problem Solving Test (Webster-Stratton, 1990).

[a]Greenhouse-Geisser epsilons were used to correct *p* values for violations of sphericity and compound symmetry.

TABLE 5
Predictors and Moderators of Outcome From Baseline to Long-Term Follow-Up for Treated Participants

	ODD Symptoms (Predictive Effects)		*ODD Symptoms (Interactive Effects)*	
Outcome Variable	*F*	η_p^2	*F*	η_p^2
Mother-Report Externalizing[a]				
CBCL Externalizing	9.7**	.20	*0.3*	*.01*
CBCL Aggression	13.6***	.25	*1.2*	*.03*
CBCL Attention Problems	0.2	.01	*0.2*	*.01*
Conners' Oppositional	53.0***	.56	*4.3**	*.10*
Conners' Inattentive	5.1*	.11	*1.2*	*.03*
Conners' Hyperactive	1.7	.04	*1.1*	*.03*
Eyberg Total Intensity	10.0**	.20	*3.0*	*.07*
Eyberg Total Problems	15.9***	.28	*0.8*	*.02*
Mother-Report Internalizing				
CBCL Internalizing	6.8**	.15	*0.3*	*.01*
Mother-Report Social Skills				
P-COMP Emotion Regulation	3.9	.09	*2.8*	*.06*
P-COMP Social Competence	3.6	.08	*1.8*	*.04*
Mother-Reports of Parent Behavior				
PPI Appropriate Discipline	1.3	.03	*0.3*	*.01*
PPI Harsh/Inconsistent	1.7	.04	*5.8**	*.13*
PPI Monitoring	1.1	.03	*0.4*	*.01*
PPI Physical Punishment	3.1	.07	*1.5*	*.04*
Father-Report Externalizing[b]				
CBCL Externalizing	8.1**	.22	*0.3*	*.01*
Conners' Oppositional	16.1***	.37	*1.7*	*.06*
Conners' Inattentive	0.2	.01	*0.7*	*.02*
Conners' Hyperactive	0.7	.03	*1.2*	*.04*
Eyberg Total Intensity	4.8*	.15	*0.7*	*.03*
Eyberg Total Problems	5.2*	.16	*5.0**	*.15*

Note: Nonitalicized entries (columns 2 and 3) denote main (predictive) effects of oppositional defiant disorder (ODD) on row variables from pretreatment to 1-year follow-up. Italicized entries (columns 4 and 5) denote interactive (moderating) effects of ODD with row variables from pretreatment to 1-year follow-up. CBCL = Child Behavior Checklist (Achenbach, & Edelbrock, 1991); Conners' = Conners' Rating Scale–Revised (Conners, 1998; Conners, Sitarenios, Parker, & Epstein, 1998); Eyberg = Eyberg Child Behavior Inventory (Robinson et al., 1980); P-COMP = Social Competence Scale (Conduct Problems Prevention Research Group, 1999a, 1999b); PPI = Parenting Practices Inventory (Conduct Problems Prevention Research Group, 1996).

[a]$n = 42$.

[b]$n = 30$.

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

On one mother-report (Conners' oppositional) and one father-report (ECBI Total Problems) variable, baseline ODD symptoms also interacted with outcome. In both cases, children with higher baseline ODD symptoms showed more improvement than children with lower ODD symptoms. One mother-report of parenting behavior also showed an interactive effect with ODD. Children with higher baseline ODD symptoms had mothers who showed more improvement on PPI harsh parenting than mothers of children with fewer ODD symptoms. ODD symptoms did not predict or interact with father-reports of social skills, teacher reports, or child testing variables, so these results are not included in the table.

Clinical significance. In Table 2 we report both (a) the percentage of children falling below clinical cutoffs on ADHD and externalizing measures at the 1-year follow up (T3), and (b) the percentage of children who maintained significant improvement at the 1-year follow-up based on the Jacobson and Truax (1991) reliable change index (RCI), which performs similarly to other methods of computing the RCI (Atkins, Bedics, McGlinchey, & Beauchaine, 2005). For the CBCL, Conners', and TRF scales, *T* scores of 67 were used as clinical cutoffs. For the ECBI problem scale, a cutoff of 15 was used, and for the ECBI intensity scales a cutoff of 132 was used. Parent- and teacher-reports of oppositional and aggressive behaviors on the CBCL and Conners' showed that 69 to 76% of children scored below clinical cutoffs and that 42 to 57% exhibited reliable change. On the ECBI, 44 to 60% of children scored below the clinical cutoff, and 43 to 68% exhibited reliable change. On parent-reported Conners' hyperactivity, 55 to 56% were below the clinical cutoff, and 57% exhibited reliable change. On parent-reported inattention, 54 to 63% scored below the clinical cutoff, and 43 to 44% exhibited reliable change. In summary, slightly more than half of the sample scored below the clinical range on measures of inattention and hyperactivity at the 1-year follow-up (whereas all children had scored above the cutoffs at baseline). At the 1-year follow-up, two thirds to three fourths of children scored below the clinical range on measures of aggression and oppositional behavior (at baseline, approximately half of those children scored above the cutoffs). Slightly fewer exhibited reliable change based on the RCI.

DISCUSSION

This article provides support for 1-year maintenance of IY parent and child treatment outcomes for young children with ADHD. Parent- and teacher-reported changes from baseline to 1-year follow-up were significant (with mostly medium to large effect sizes) for 17 of 20 variables, and none of these variables showed significant change between posttreatment and 1-year follow up (with mostly small effect sizes). This provides a test of maintenance of posttreatment results for children's externalizing behaviors, inattentive and hyperactive behaviors, and social skills and emotion regulation. Maintenance of mother-reported reductions in harsh discipline and physical punishment were also found, as were observed improvements in children's social contact with peers at school, problem solving, and feeling knowledge. The first published article on this sample (Webster-Stratton et al., 2011) reported father outcomes in detail, noting that although father attendance was high, there were no father-reported significant effects on parenting variables. We have hypothesized that because 40% of the mothers in our sample were stay-at-home mothers, perhaps fathers were less involved in parenting and had less chance to practice new strategies. Anecdotally, therapists reported that many fathers in the group seemed disorganized, a possible indicator of adult ADHD. This may have made it harder for them to absorb and integrate the new parenting strategies into their interactions with their children. Unfortunately, this variable was not measured well enough to draw any conclusions.

One limitation of the current study is that there was no longer an untreated control group, so it is not possible to rule out effects of maturation. However, to address this issue, analyses were conducted only on variables that demonstrated significant intervention effects when compared to the control group at posttreatment. Thus, maintenance (no significant change) from posttreatment to 1-year follow-up reflected maintenance only of effects that were robust and significant in the immediate posttreatment comparison to the control group.

In addition to maintenance effects, we were interested in the extent to which baseline variables predicted treatment outcomes. A number of predictors were examined (ODD symptoms, child sex, marital status, martial satisfaction, parental engagement in therapy). With the exception of ODD symptoms, none of these predicted outcome, indicating that the treatment was equally effective for both sexes and was not affected by parental engagement or marital status. It should be noted, however, that attendance was extremely high, with parents and children attending an average of 85% of sessions. This restricted range may account for the lack of relationship between attendance and outcomes. High parental attendance may also account for the discrepancy in outcome compared with the Shelton et al. (2000) study.

Not surprisingly, children with higher levels of baseline ODD symptoms continued to show higher levels of externalizing symptoms at the 1-year follow-up. More interesting was that baseline ODD symptoms also

interacted with treatment outcomes, showing that children with higher ODD symptoms at baseline showed more improvement on two child externalizing outcomes. Furthermore, their mothers showed more improvement on PPI harsh discipline. These findings dovetail with other intervention studies that have indicated improved response based on higher levels of child problem behavior (e.g., Conduct Problems Prevention Research Group, 2002) as well as our earlier research (Beauchaine et al., 2005). This provides further support for the value of offering parent and child training for children with comorbid ADHD in order to reduce coercive interactions and build children's social and emotional competence as an effective means of treating both ADHD and ODD symptoms, and perhaps reducing the risk of these children progressing to more serious conduct disorders.

Finally, clinical significance analyses showed that 70 to 75% of children were reported by their parents and teachers to fall below clinical cutoffs on measures of externalizing symptoms at the 1-year follow up (compared to about 50% at baseline). Thus, treatment prevented further development of ODD and CD in children with ADHD. Furthermore, more than 50% of children fell below clinical cutoffs on measures of hyperactivity and inattentiveness at 1-year follow up, whereas all were in the clinical range at baseline. It should be noted that these statistics are all report data and may subject to parent bias, in particular. The teacher ratings were from teachers who were not aware of the original treatment and may be more objective measures of children's functioning. Furthermore, although this reduction of both externalizing and ADHD symptoms is encouraging, 25% of children were still above the clinical cutoff for externalizing problems and 50% were still in the clinical range on ADHD symptoms. Furthermore, more than one fourth of children were on medication for ADHD symptoms and nearly half of families had sought further treatment, indicating that these children were still experiencing behavioral, attentional, and learning difficulties. Parents of children who received additional treatment reported that their children had higher levels of behavior problems, perhaps indicating that their more challenging behaviors required further intervention. Further research is needed to explore the characteristics of children who need ongoing therapy and whether these additional therapies improve outcomes and prevention of CD.

This article provides support for 1-year maintenance of treatment effects for the IY parent and child interventions for young children with ADHD with or without comorbid ODD and provides hope that early interventions such as these may help to reduce the chance of these children progressing to more serious conduct disorders as they mature.

REFERENCES

Achenbach, T. M. (1991). *Manual for the teacher's report form and teacher version of the child behavior profile*. Burlington: University of Vermont, Department of Psychiatry.

Achenbach, T. (1997). *Guide for the Caregiver-Teacher report form for ages 2–5*. Burlington: University of Vermont, Department of Psychiatry.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Atkins, D. C., Bedics, J. D., McGlinchey, J. B., & Beauchaine, T. P. (2005). Choosing a method of clinical significance: Does it matter which method we use? *Journal of Consulting and Clinical Psychology*, *73*, 982–989.

Beauchaine, T. P., Hinshaw, S. P., & Pang, K. L. (2010). Comorbidity of attention-deficit/hyperactivity disorder and early-onset conduct disorder: Biological, environmental, and developmental mechanisms. *Clinical Psychology: Science and Practice*, *17*, 327–336.

Beauchaine, T. P., Webster-Stratton, C., & Reid, M. J. (2005). Mediators, moderators, and predictors of one-year outcomes among children treated for early-onset conduct problems: A latent growth curve analysis. *Journal of Consulting and Clinical Psychology*, *73*, 371–388.

Brestan, E. V., & Eyberg, S. M. (1998). Effective psychosocial treatments of conduct-disordered children and adolescents: 29 years, 82 studies, and 5,272 kids. *Journal of Clinical Child Psychology*, *27*, 180–189.

Campbell, S. B., Shaw, D. S., & Gilliom, M. (2000). Early externalizing behavior problems: Toddlers and preschoolers at risk for later maladjustment. *Development and Psychopathology*, *12*, 467–488.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Conduct Problems Prevention Research Group. (1996). *Parenting Practices Inventory*. Seattle: Unpublished manuscript, University of Washington.

Conduct Problems Prevention Research Group. (1999a). Initial impact of the Fast Track prevention trial for conduct problems: I The high-risk sample. *Journal of Consulting and Clinical Psychology*, *67*, 631–647.

Conduct Problems Prevention Research Group. (1999b). *Technical reports for the Fast Track assessment battery*. Unpublished manuscript.

Conduct Problems Prevention Research Group. (2002). Evaluation of the first 3 years of the Fast Track prevention trial with children at high risk for adolescent conduct problems. *Journal of Abnormal Child Psychology*, *30*, 3–59.

Conners, C. K., Sitarenios, G., Parker, J. D. A., & Epstein, J. N. (1998). The revised Conners' Parent Rating Scale (CPRS–R): Factor structure, reliability, and criterion validity. *Journal of Abnormal Child Psychology*, *26*, 257–268.

Eyberg, S. M., Nelson, M. M., & Boggs, S. R. (2008). Evidence-based psychosocial treatments for child and adolescent with disruptive behavior. *Journal of Clinical Child & Adolescent Psychology*, *37*, 215–237.

Gadow, K. D., & Sprafkin, J. (1997). *Child symptom inventories norms manual*. Stony Brook, NY: Checkmate Plus.

Hartman, R. R. (2000). Parent training outcomes: A growth study examining the influence of inattention, impulsivity, and hyperactivity [Dissertation]. *Dissertation Abstracts International*, *60*(11–A), 3902.

Hinshaw, S. P., Owens, E. B., Wells, K. C., Kraemer, H. C., Abikoff, H. B., Arnold, L. E., et al (2000). Family processes and treatment outcome in the MTA: Negative/ineffective parenting practices in relation to multimodal treatment. *Journal of Abnormal Child Psychology*, *28*, 555–568.

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, *59*, 13–19.

Kraemer, H. C., Wilson, G. T., Fairburn, C. G., & Agras, W. S. (2002). Mediators and moderators of treatment effects in randomized clinical trials. *Archive of General Psychiatry*, *59*, 877–883.

Lahey, B. B., & Loeber, R. (1994). Framework for a developmental model of oppositional defiant disorder and conduct disorder. In D. K. Routh (Ed.), *Disruptive behavior disorderes in childhood* (pp. 139–180). New York, NY: Plenum.

Offord, D. R., & Bennet, K. J. (1994). Conduct disorder: Long term outcomes and intervention effectiveness. *Journal of the American Academy of Child and Adolescent Psychiatry*, *33*, 1069–1078.

Patterson, G. R., DeGarmo, D. S., & Knutson, N. (2000). Hyperactive and antisocial behaviors: Comorbid or two points in the same process? *Development and Psychopathology*, *12*, 91–106.

Pisterman, S., Firestone, P., McGrath, P., Goodman, J. T., Webster, I., Mallory, R., et al (1992). The role of parent training in treatment of preschoolers with ADHD. *American Journal of Orthopsychiatry*, *62*, 397–408.

Pisterman, S., McGrath, P. J., Firestone, P., & Goodman, J. T. (1989). Outcome of parent-mediated treatment of preschoolers with attention deficit disorder with hyperactivity. *Journal of Consulting and Clinical Psychology*, *57*, 628–635.

Robinson, E. A., Eyberg, S. M., & Ross, A. W. (1980). The standardization of an inventory of child conduct problem behaviors. *Journal of Clinical Child Psychology*, *9*, 22–28.

Rubin, K. H., & Krasnor, L. R. (1986). Social-cognitive and social behavioral perspectives on problem-solving. In M. Perlmutter (Ed.), *Cognitive perspectives on children's social and behavioral development. The Minnesota Symposia on Child Psychology* (vol. 18, pp. 1–68). Hillsdale, NJ: Lawrence Erlbaum Associates.

Shaffer, D., Fisher, P., Lucas, C. P., Mina, M. K., & Schwab-Stone, M. E. (2000). NIMH Diagnostic Interview Schedule for Children Version IV (NIMH DISC-IV): Description, differences from previous versions, and reliability of some common diagnoses. *Journal of the American Academy of Child and Adolescent Psychiatry*, *39*, 28–38.

Shelton, T. L., Berkley, R. A., Crosswait, C., Moorehouse, M., Fletcher, K., Barrett, S., et al (2000). Multimethod psychoeducational intervention for preschool children with disruptive behavior: Two-year post-treatment follow-up. *Journal of Abnormal Child Psychology 28*, 253–266.

Snyder, J., Edwards, P., McGraw, K., Kilgore, K., & Holton, A. (1994). Escalation and reinforcement in mother–child conflict: Social processes associated with the development of physical aggression. *Development and Psychopathology*, *6*, 305–321.

Snyder, J., Schrepferman, L., & St. Peter, C. (1997). Origins of antisocial behavior: Negative reinforcement and affect dysregulation of behavior as socialization mechanisms in family interaction. *Behavior Modification*, *21*, 187–215.

Sonuga-Barke, E. J. S., Daley, D., Thompson, M., Laver-Bradbury, C., & Weeks, A. (2001). Parent-based therapies for preschool attention-deficit/hyperactivity disorder: A randomized, controlled trial with a community sample. *Journal of American Academy of Child Psychiatry*, *40*, 402–408.

Spivak, G., & Shure, M. B. (1985). ICPS and beyond: Centripetal and centrifugal forces. *American Journal of Community Psychology*, *13*(3), 226–243.

Webster-Stratton, C. (1984). Randomized trial of two parent-training programs for families with conduct-disordered children. *Journal of Consulting and Clinical Psychology*, *52*, 666–678.

Webster-Stratton, C. (1990). *Wally Game: A problem-solving test*. Unpublished manuscript, University of Washington, Seattle.

Webster-Stratton, C. (2007). Tailoring the Incredible Years Parenting Program according to children's developmental needs and family risk factors. In J. M. Briesmeister & C. E. Schaefer (Eds.), *Handbook of parent training* (pp. 305–344). Hoboken, NJ: Wiley.

Webster-Stratton, C., & Hammond, M. (1997). Treating children with early-onset conduct problems: A comparison of child and parent training interventions. *Journal of Consulting and Clinical Psychology*, *65*, 93–109.

Webster-Stratton, C., & Reid, M. J. (2005). Treating conduct problems and strengthening social and emotional competence in young children: The Dina Dinosaur Treatment Program. In M. Epstein, K. Kutash & A. J. Duchowski (Eds.), *Outcomes for children and youth with emotional and behavioral disorders and their families: Programs and evaluation best practices* (2nd ed., pp. 597–623). Austin, TX: Pro-Ed.

Webster-Stratton, C., & Reid, M. J. (2010). The Incredible Years Parents, Teachers and Children Training Series: A multifaceted treatment approach for young children with conduct problems. In A. E. Kazdin & J. R. Weisz (Eds.), *Evidence-based psychotherapies for children and adolescents, 2nd edition* (pp. 194–210). New York: Guilford.

Webster-Stratton, C., Reid, M. J., & Beauchaine, T. P. (2011). Combining Parent and Child Training for Young Children with ADHD. *Journal of Clinical Child and Adolescent Psychology*, *40*(2), 1–13.

Webster-Stratton, C., Reid, M. J., & Hammond, M. (2001a). Preventing conduct problems, promoting social competence: A parent and teacher training partnership in Head Start. *Journal of Clinical Child Psychology*, *30*, 283–302.

Webster-Stratton, C., Reid, M. J., & Hammond, M. (2001b). Social skills and problem solving training for children with early-onset conduct problems: Who benefits? *Journal of Child Psychology and Psychiatry*, *42*, 943–952.

Webster-Stratton, C., Reid, M. J., & Stoolmiller, M. (2008). Preventing conduct problems and improving school readiness: Evaluation of the Incredible Years Teacher and Child Training Programs in high-risk schools. *Journal of Child Psychology and Psychiatry*, *49*, 471–488.

Werthamer-Larsson, L., Kellam, S. G., & Oveson-McGregor, K. E. (1990). Teacher interview: Teacher Observation of Classroom Adaptation—Revised (TOCA-R). In S. G. Kellam (Ed.), *Johns Hopkins Prevention Center training manual*. Baltimore: Johns Hopkins University.