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Title: Efficacy of the Incredible Years Group Parent Program With Families in Head Start With a Child Maltreatment History

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Methods: A site-randomized controlled trial of the IY parenting program was conducted in 64 classrooms in seven Head Start centers in Seattle, Washington. Families of 517 children took part in the study, with 361 in the IY condition and 156 in the control condition. Parenting practices and child behavior were measured through in-home observations and self-report questionnaires prior to the start of the IY program, in the spring after the IY program had concluded, and 12-18 months after study enrollment when children were in kindergarten. Analyses examine the impact of the IY program on parenting practices and children's behavior, exploring whether the program had differential impacts for parents with and without a prior report of maltreatment.

Results: The IY program resulted in improvements along many parenting dimensions and on characteristics of observed child behavior. Program impacts were similar for parents with and without a reported history of child maltreatment. However, parents with a reported history of prior maltreatment had greater initial room for improvement in areas such as harsh/critical parenting, nurturing/supportive parenting, and discipline competence than parents without such a history.

Conclusions: The IY parenting program has positive impacts for parents with a history of reported child maltreatment. While similar benefits were observed for both groups of parents in this study, results support delivering evidence-based parenting programs of longer duration and higher intensity than often used by agencies in the communities serving parents in contact with child welfare.

Practice: Agencies serving parents referred for child maltreatment should carefully examine the characteristics of the parenting programs they deliver. Use of a parenting program that has a sound

base of empirical support, such as IY, and sufficient intensity and duration, is likely necessary to make substantial changes in parents' child-rearing practices.

Running Head: EFFICACY OF THE INCREDIBLE YEARS GROUP

**Efficacy of the Incredible Years Group Parent Program with Families in
Head Start with a Child Maltreatment History**

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Running head: EFFICACY OF THE IY GROUP

Efficacy of the Incredible Years Group Parent Program with Families in Head Start with a Child

Maltreatment History

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Efficacy of the Incredible Years Group Parent Program with Families in Head Start with a Child Maltreatment History

Subsequent to the 3 million referrals to child welfare that occur each year, pertaining to roughly 5.5 million children, almost 90% of children remain in their home, some with and many without an active child welfare case opened (US DHHS; NCANDS Child Maltreatment 2004). Across the range of families referred, risk for recurrent abuse and neglect is substantial (Drake, Jonson-Reid, Way, & Chung, 2003; Horwitz, Hurlburt, Cohen, Zhang, & Landsverk, in review), as are risks for significant developmental difficulties (Stahmer et al., 2005). Young children are particularly at risk for recurrent maltreatment and for early disruption in adaptive developmental trajectories. In early childhood, parenting skills and the home environment play a major role in children's development and safety (Scarr, 1992; Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000).

Not surprisingly, parents with and without histories of reported child maltreatment differ in their parenting practices. As a group, parents reported for maltreatment have less effective child management techniques (Hickox & Furnell, 1989), higher levels of hostile feelings (Lesnik-Oberstein, Koers, & Cohen, 1995), reduced emotional responsiveness, and escalated verbal aggression (Hawley, Halle, Drasin, & Thomas, 1995; Moser & Jacob, 1997). The need for effective parent training programs for families in contact with child welfare is clear (Barth et al., 2005; Hurlburt et al., 2007). However, few studies have directly examined the impact of evidence-based programs from behavioral health on key outcomes among families with child welfare involvement. Testing of evidence-based parenting interventions is important because parents with a history of maltreatment tend to have higher numbers of family risk factors that might reduce the impact of parent training, such as parental depression, substance use, domestic violence, and other stressors. A number of parenting interventions are well-established regarding their ability to improve parenting skills and child outcomes in behavioral health settings, but often child behaviors are the principal outcomes rather than parenting skills. This has led to some uncertainty about the relevance of evidence-based parenting programs to child welfare settings. Uncertainty about the relevance of parenting programs to child welfare is reflected in reviews on the California Evidence-based

Clearinghouse (www.cachildwelfareclearinghouse.org), which rates many parenting programs as having a moderate level of relevance to child welfare, due to the lack of specific work conducted with families having child welfare involvement.

Parenting skills are multi-faceted, including a number of dimensions such as warmth and responsiveness, maintaining a safe environment, appropriate supervision, effective discipline, setting of predictable daily routines, and provision of medical care. At present, few studies of parent-training programs provide direct evidence regarding changes in objective indicators of key parenting competencies among families involved with child welfare (Chaffin & Valle, 2003; Chaffin et al., 2004; Hurlburt et al., 2007; Lutzker, 1990). Research on changes in parenting practices is central to informing child welfare agencies and child maltreatment prevention initiatives about the relevance of parent training programs from behavioral health to child maltreatment reduction. The current study examines parenting outcomes of the group-based Incredible Years (IY) BASIC program (Webster-Stratton & Reid, 2003; Webster-Stratton & Reid, 2005) with families reported to child welfare or having self reported maltreating their child compared with parents not previously involved with child welfare for maltreatment, having similar limited socio-economic status. Matching for socio-economic status is central as many families referred for maltreatment experience substantial economic hardship, which itself is associated with many other life stressors, such as unemployment, lower levels of social support, and often absence of one parent from the immediate family environment.

The IY BASIC parent-training program is a well-developed behavioral health intervention relevant to caregivers of young children. Similar to other models from children's behavioral health, such as Parent Child Interaction Therapy (Eisenstadt, Eyberg, McNeil, Newcomb, & Funderbunk, 1993; Eyberg et al., 2001; Hembree-Kigin & McNeil, 1995) and parent management training (Bank, Marlowe, Reid, Patterson, & Weinrott, 1991; Bernal, Klinnert, & Schultz, 1980; McMahon, Forehand, & Griest, 1981; Patterson, Chamberlain, & Reid, 1982; Kazdin, Esveldt-Dawson, French, & Unis, 1987), the IY program builds on social interaction learning theory (Patterson, Reid, & Dishion, 1992) and research that describes characteristics of parenting and parent-child relationships hypothesized to affect children's

social, emotional, and behavioral development (Baumrind, 1966). The IY program is well-established as an intervention to help parents reduce harsh/critical parenting, increase parent discipline effectiveness, and improve positive/supportive/responsive parenting, each of which has been tied to children's social and behavioral development (Baydar, Reid, Webster-Stratton, 2003; Reid, Webster-Stratton, & Beauchaine, 2001; Scott, Spender, Doolan, Jacobs, & Aspland, 2001; Webster-Stratton, 1998; Webster-Stratton, Reid, & Hammond, 2001; Webster-Stratton & Reid, 2003; Webster-Stratton, Reid, & Hammond, 2004).

The IY model may be particularly relevant to child welfare because it is group-based, focused on building support networks and decreasing isolation, and has a format designed to reduce stigma and increase parental participation and engagement. The IY model emphasizes individual goal-setting and a self-reflective learning style, as well as intensive behavior practice and rehearsal methods with other parents and a collaborative relationship between group leaders and parents. Using data from a large trial of IY conducted in Head Start settings in Seattle, this paper examines the effects of IY on several key parenting competencies and child behavioral indicators among families with and without a reported history of maltreatment, all of whom were enrolled in Head Start. Although maltreatment recurrence might also be of interest, proximal indicators of parenting competencies are the primary focus of this study and are important immediate precursors of maltreatment and of positive change in children's development.

Analyses reported in this paper focus on several observable indicators of parenting competence, including indicators of harsh/critical discipline, discipline competence, and positive/supportive/responsive parenting. Harsh/critical discipline is a notable component of the authoritarian parenting style. It has been linked with the initiation and maintenance of cyclical patterns of coercive parent-child interactions and, in combination with the presence of ineffective discipline skills, has been associated with the likelihood of child maltreatment (Frías-Armenta & McCloskey, 1998). From a developmental perspective, harsh/critical discipline, ineffective discipline, and physical maltreatment have been linked to increased likelihood of child externalizing behavioral difficulties, poorer social skills, more withdrawn behavior,

and other kinds of developmental difficulties (Aber, Allen, Carlson, & Cicchetti, 1989; Crick & Dodge, 1994; Erickson, Egeland, & Pianta, 1989; Fantuzzo, delGaudio, Atkins, Meyers, & Noone, 1998; Jaffee, Caspi, Moffitt, & Taylor, 2004; Knutson, DeGarmo, Koepl, & Reid, 2005).

From a theoretical and empirical perspective, supportive/nurturing/responsive parenting, an important part of the authoritative parenting style, has also been linked to child developmental outcomes (Baumrind, 1989). It includes such features as positive affect, proactive teaching, inductive discipline (a discipline strategy in which parents explain to children why a punished behavior is wrong), positive reinforcement of prosocial behavior, respect for one's child, open communication, and involvement with a child's activities (Pettit, Bates, & Dodge, 1997). Nurturing/supportive parenting is hypothesized to reduce the likelihood that parents will need to resort to coercive disciplinary practices because children are socialized to anticipate and respond to inductive disciplinary approaches (Criss, Shaw, & Ingoldsby, 2003)(Gardner & Klimes, 2006).

This paper examines the effects of a short, prevention version of the IY BASIC program on parenting competencies measured through home observation, and on observer and parental reports of child behavior. For each parenting domain, the primary question of interest is whether the positive effects of IY observed overall for participants in the original Head Start study (Webster-Stratton, 1998) were of similar magnitude for families with a reported history of maltreatment as for those without such history. Analyses examine whether parenting competencies and child behavioral difficulties were poorer at baseline relative to families in Head Start without such a history. They also examine whether the IY intervention improved parent and child behaviors over the course of one school year. Although the data reviewed in this study were collected more than 15 years ago, the results are still relevant to today's contemporary problem of how to effectively deliver parent interventions for families with child welfare involvement, especially given the few randomized trials conducted of parenting interventions for families having child welfare contact.

Method

Participants

In a sample collected in 1993 and 1994, eight Head Start centers were invited to participate in a study of the IY parenting program as a method for preventing and reducing child behavioral difficulties, and increasing social competence in preschool children. The study was approved by an institutional review board and informed consent was obtained from all participants. Centers were located within one large Head Start district in the Seattle, Washington area. Only one center declined to participate in the study. The remaining seven Head Start centers were randomly assigned via lottery to either intervention or control conditions. Initially, parents of 542 children expressed interest in participating (approximately 85% of the English-speaking families enrolled in Head Start). Parents were not paid for participation. A total of 517 families completed the baseline assessments, 361 from the intervention condition and 156 from the control condition (based on random assignment at the center level). Among these families, 56.2% were headed by a single mother. Almost all children (95%) were living with their biological mother. Remaining children lived in other settings, primarily with relatives (5%). The mean age of maternal caregivers was 29.1 ($SD = 6.2$). There were 269 boys and 248 girls (mean age of 4.7 years, $SD = 0.36$). Minority groups were represented in 39.1% of the children (18.0% African-American, 4.3% Hispanic/Latino, 1.0% Asian-American, 1.9% Native-American, and 13.9% multi-racial). Approximately 85.8% of participating families received financial aid (such as welfare), with a median family income of approximately \$10,000 per year (equal to approximately \$15,000 in 2010). Parents answered a self-report question asking “have you ever been reported for child abuse (or have you ever abused your child)?” Just over one fifth (20.8%) of the families answered yes to this question.

By the time fall baseline assessments and immediate post-intervention follow-ups were completed, 116 (21%) of the original 542 families interested in the study had dropped out of the Head Start program (91 families that had completed baseline interviews) and were unavailable for spring post-assessments. This early attrition rate was consistent with an overall Head Start drop-out rate of 22% for this particular district in previous years, and was equivalent across the intervention (21%) and control conditions (22%). For analyses examining differences at baseline, information was available from 517

respondents who had completed the baseline assessments. Analyses emphasizing change over time focused on 426 participants remaining in the study at the immediate post-intervention follow-up.

Procedures

Baseline assessments were conducted in the fall of each year. Parents assigned to centers participating in the intervention condition took part in 8-9 weeks of an abbreviated version of the IY parent-training program (referred to as PARTNERS in its shorter prevention form at the time). Following the conclusion of the parent-training program, post assessments were conducted with all parents in the study in the spring of the school year. Additionally, follow-up interviews were completed 12-18 months after the initial baseline assessment when the children were in kindergarten. All assessments consisted of parent interviews, questionnaires, and in-home observations.

The mothers who participated in the IY intervention attended an average of 5.61 ($SD = 2.62$) 2-hour sessions. Nearly 79% completed at least four of the 8 parenting group sessions. While group-based parent-training is relatively common for families receiving child welfare services, the IY program differs from such services on a number of dimensions (Hurlburt et al., 2007). The IY clinical approach emphasizes parental participation in group discussion, de-emphasizes the expert role for group facilitators, and emphasizes the collaborative relationship between parents and group facilitators. Didactic presentation of material is limited, except in a few key domains such as how to use Time Out to calm down effectively. Each meeting revolves around a relatively small number of parenting principles that group members extract from discussion following the viewing of 10-15 short video vignettes of parent-child interactions. Group facilitators help parents to identify, summarize, and apply parenting principles to their own specific parenting situations and goals for their children. Role play among participants is designed to occur in every session, to provide parents with hands-on behavioral practice applying new parenting skills to situations they encounter with their children at home, to provide group leaders with opportunities to monitor group and individual progress in learning and applying targeted skills, and to facilitate tailoring of future sessions. Further program detail can be found in other resources (Webster-Stratton, 2009).

The IY program is designed to be socially rewarding to group participants, to use parents' own experience and expertise to solidify learning and practice of parenting skills, to de-stigmatize the process of practicing skills, and to enhance learning through engaging parents on cognitive, emotional, and behavioral levels. The program content begins by emphasizing skills for developing a strong positive parent-child bond. It also includes components focused on the value of praise and selectively praising desired behaviors, ignoring inappropriate child behaviors, specific non-violent alternatives for discipline, and parent-child problem-solving skills. These were the core components of the PARTNERS program at the time of data collection. As described further in the discussion, the IY parent program has evolved since that time to include additional components and a greater number of sessions.

The PARTNERS program was delivered by trained Family Support Workers in the Head Start programs (N=25) by selected parents who emerged as strong group leaders (n=4). All leaders took part in a 4-day training workshop, and then received ongoing weekly supervision. Group leaders also learned the program model by leading their first parenting group in conjunction with a staff member from the University of Washington Parenting Clinic. As described in Webster-Stratton (1998), program delivery was closely monitored to ensure appropriate delivery of the intervention, including program content, skill-building methods, and use of a collaborative approach with participating parents.

Measures

Measures included in this analysis were observational indicators of parent and child behavior occurring during home observation sessions, and a parent report of child behavior. Parent and child behaviors were measured by: the Dyadic Parent-Child Interaction Coding System-Revised (DPICS-R), a Coder Impression Inventory (CII) conducted after home visits, and the Eyberg Child Behavior Inventory (ECBI).

Dyadic Parent-Child Interaction Coding System – Revised. The DPICS-R is an extensively researched rating system used by independent observers to record parent and child behaviors in the home (Robinson & Eyberg, 1981; Webster-Stratton 1985b; Webster-Stratton & Fjone, 1989; Webster-Stratton & Lindsay-Woolley, 1999). In the current study, mothers were observed with their children in their homes

for 30-minute periods at the baseline, post, and follow-up assessments. Three parent summary variables were assessed: positive parenting (which encompasses praise, positive affect, and physically positive behavior), total critical statements, and total commands. The two child summary variables assessed in this study included total child deviance and noncompliance (including physical and verbal aggression), and nonverbal affect valence. Nonverbal affect, also known as valence, was assessed by raters every five minutes, during which they coded the child's valence on a scale of 1 to 5 (exuberant affect to unrestrained negative affect).

Observers in this study were highly experienced or extensively trained prior to starting the project. They were blind as to the study condition of participating families. Reliability checks were completed on a weekly basis using standardized videotapes, in addition to 15% of home observations. Interrater reliabilities for parent summary variables, as assessed by intraclass correlations, were as follows: positive parenting (.70), total critical statements (.77), and total commands (.80). Interrater reliability for child summary variables included: total deviance and noncompliance (.87), and nonverbal affect (.79).

Coder Impressions Inventory. The CII, a 72-item inventory adapted from the Oregon Social Learning Center questionnaire and Observer Impressions Inventory (Capaldi & Patterson, 1989), was completed after home observations by the same observers who completed the DPICS. The CII asked questions about their impressions of observable in-home parent and child behaviors. Three scales assessed parenting characteristics, including: nurturing and supportive parenting ($\alpha = .91$), harsh and critical parenting ($\alpha = .88$), and discipline competence ($\alpha = .84$). The nurturing and supportive scale consisted of 13 items related to affection, patience, and respect for the child. The harsh / critical scale contained 11 items pertaining to sarcasm, neglect, and disregard for the child. The discipline competence scale included 13 items related to the parent's ability to obtain the child's compliance through disciplining techniques. Two child behavior scales included: child positive affect and prosocial behavior ($\alpha = .67$), and overall poor conduct (single item). The child positive affect and prosocial behavior scale pertained to affection and compliance.

Eyberg Child Behavior Inventory. The ECBI is a 36-item behavioral inventory (Robinson, Eyberg, & Ross, 1980), completed by parents, that assesses child behavioral problems for children ages 2-16 years. This inventory has been empirically validated to correlate with independent observations of child behaviors (Webster-Stratton, 1985a; Webster-Stratton 1985c). Analyses utilized the ECBI behavior problem index, with possible scores ranging from 0-36.

Analysis

The primary focus of analyses was to examine whether differential intervention effects occurred for parents with and without a reported history of maltreatment, examining both parenting behaviors and child behaviors. Differences at baseline between parents with and without a history of reported maltreatment were examined to understand the degree to which families may differ from one another prior to entry into a parent-training intervention.

Analyses of differences in intervention effects for the two groups utilized multi-level, random-effects modeling, conducted using the Supermix software suite (Scientific Software International, 2008). For each dependent variable, differences between intervention and control conditions were examined at the two follow-up time points, controlling for the initial level of the dependent variable. For example, the IY intervention effect for harsh/critical parenting (CII) was examined at post and follow-up within a single model, controlling for baseline harsh/critical parenting (Step 1). Individuals with data available at either the post or follow-up time points were included in the analyses. The key question of whether intervention effects differed for families with and without a reported history of child maltreatment was answered in a subsequent modeling step (Step 2) by including an interaction of condition with reported history of child maltreatment. In all models, post and follow-up timepoints were nested within individuals, and individuals were nested within Head Start sites. In total, models were run for 10 different variables. Significance tests occurred for multiple model parameters. In this paper, experimental intervention effects should be seen as repeating analyses previously reported (Webster-Stratton, 1998), although here analyzed for the first time in a random effects modeling framework. The critical parameters of interest, however, were the interaction terms examining possible differential intervention

effects. Because we were interested in whether any evidence exists for differential intervention impact, a significance level of .05 was used to test model parameters rather than adjusting the significance level to a more stringent threshold.

Given the modest number of parents in the study with a reported history of child maltreatment, we were most interested in the magnitude of the condition * history of maltreatment interaction terms. Very small interaction parameters would indicate little difference in intervention effects for parents with and without such a history, whereas larger, or even significant parameters would suggest differential effects for parents with and without a reported history of child maltreatment.

Finally, exploratory analyses examined the relationship between the number of sessions attended by parents and changes in outcome variables among parents in the intervention condition, to understand possible dose-response relationships with changes in parent and child behaviors.

Results

Baseline Differences and Change Over Time in Parent and Child Behaviors

At baseline, reliable differences appeared between families with and without a reported history of child maltreatment (Table 1). According to independent observational indicators, mothers with such a history issued more critical statements ($d = 0.36$). According to coder impressions, mothers were also less nurturing/supportive to children ($d = -0.38$), more harsh/critical ($d = 0.37$), and had less competent discipline efforts than mothers without a report of child maltreatment ($d = -0.26$).

With regard to child behaviors, mothers with a history of child welfare involvement reported a somewhat higher level of behavior problems at baseline among their children than mothers without such a history ($d = 0.35$). No significant differences in child behavior were observed in measures based on home observations among children in families with and without a reported history of child maltreatment.

Table 2 summarizes mean levels for each variable at baseline, post-intervention, and follow-up for families in the intervention and control conditions, stratified by history of reported child maltreatment. This table allows for examination of trends on outcomes over time. Tests of differences between

intervention conditions over time, and of the similarity of effects for families with and without a reported history of child maltreatment, are summarized in multivariate models presented in Tables 3 and 4.

Effects of Intervention, Child Maltreatment, and Their Interaction on Outcomes

Parenting behaviors. Multivariate model development followed a consistent approach. For each measured variable, Tables 3 and 4 show the results of random effects models with and without the condition by reported history of maltreatment interaction. The experimental intervention effect for each variable is evident in Step 1. The interaction term, and changes in the size of the estimated intervention effect, are presented in Step 2. All models controlled for the initial level of the dependent variable, which was significant in each case, and took into account the nesting of observations within Head Start centers, the unit of randomization. Random effects variance components at the Head Start center and parent/child levels are presented at the bottom of each model. Head Start center variance was small and non-significant in each case.

Between baseline and post-intervention assessments, parents participating in the IY intervention improved more than parents in the control condition on a number of positive parenting characteristics, including praise/positive affect/physical positives, total critical statements, nurturing/supportive parenting, harsh/critical parenting, and discipline competence. For example, parents in the intervention condition were estimated to be 6.31 points higher ($d=0.40$) on the positive parenting measure, 0.16 points higher on nurturing parenting ($d=0.34$), and .14 points higher on discipline competence ($d=0.33$). They also reduced negative parenting behaviors more than parents in the control condition, including total critical statements ($d=-0.26$) and harsh/critical parenting ($d=-0.14$). These results are reflected in significant condition parameters in each model. In none of the models was the time variable significant, indicating that overall levels did not change significantly on any variable from post to follow-up. Time by condition interactions were also tested (not shown) to understand whether trends over time in the two conditions differed. They did not. In three models, families with a reported history of maltreatment continued to differ significantly from families without such a history, including having lower nurturing

parenting and discipline competence, and higher harsh/critical discipline. Group differences at follow-up time points are reflected in the parameter for reported history of child maltreatment.

The interaction of condition by reported maltreatment was entered in model Step 2 for each dependent variable. Interaction terms were non-significant in all models and estimated intervention effect sizes from Step 1 changed relatively little in each model, suggesting that the IY intervention had similar impacts for families with and without a history of reported maltreatment. For example, for total critical statements, the parameter of -1.57 estimates the intervention effect on critical statements to have been 1.57 points larger (fewer critical statements) for families with a history of maltreatment relative to those with no such history, but not significantly larger. The intervention effect estimate for those with no reported history of maltreatment changed from -4.76 to -4.47, again suggesting a very small change in the intervention effect estimate for parents without a history of reported maltreatment upon inclusion of the interaction term.

Child behaviors. The same analytic approach was taken in analyses of child behavior outcomes. In all models of child behaviors, baseline levels predicted follow-up behavior and were included as variables in random effects models. Children of parents participating in the IY intervention showed reductions in negative nonverbal affect ($b=-0.14$, $d=-0.27$) and improvements in positive affect ($b=0.13$, $d=0.27$) according to observational indicators. Study condition was not related to changes in other observed or parent-reported child behaviors over the follow-up period. In one model, an overall change across time indicated that negative nonverbal affect tended to increase somewhat for all children between post and followup home observations ($b=0.08$).

One of the interaction terms in the Step 2 models was significant. Children of parents with a reported history of maltreatment were estimated to have higher levels of observed deviance and noncompliance at follow-up in the intervention condition relative to the control condition. None of the other interaction terms approached significance and all were relatively small in magnitude. Very small changes in estimates of intervention effects between model Steps 1 and 2 were congruent with intervention effects being similar for families with and without a reported history of maltreatment.

In several areas, children of parents with a history of child maltreatment had significantly poorer outcomes overall (regardless of condition), than children in families without such a history, including greater negative nonverbal affect ($d=.21$), poorer child conduct ($d=.28$), and lower child positive affect ($d=-.41$) during in-home observational sessions.

Finally, analyses examined relationships between the number of sessions attended by parents and parent-child outcomes in the intervention condition. Significant improvements in parenting were associated with higher attendance at IY sessions for all six parenting indicators, including DPICS positive parenting ($b=1.00$ points of improvement per additional session attended), DPICS harsh/critical parenting ($b=-0.88$), DPICS number of commands ($b=-1.46$), CII nurturing/supportive parenting ($b=0.02$), CII harsh/critical parenting ($b=-0.02$), and CII discipline competence ($b=0.02$). Improvements in child indicators were not associated with number of sessions attended.

Discussion

Using a site-randomized controlled trial design with a large number of participating parents in an indicated prevention setting, this study repeated analyses showing that the IY parenting program results in significant positive changes in parenting practices (Webster-Stratton, 1998), but using a multi-level, random effects modeling framework to account for clustering at the site and client levels, and to address issues of missing data within a unified analysis. Building on those results, further analyses showed that intervention effects did not differ in any notable way for parents with and without a reported history of child maltreatment. Parents with such a history did start off with more negative and less positive parenting practices, consistent with other studies comparing matched samples of parents with and without a history of child maltreatment (Aragona & Eyberg, 1981; Burgess & Conger, 1978). Parents with a history of reported maltreatment also had poorer parenting practices in several areas at follow-up points and children of parents with a reported history of maltreatment had poorer affect and conduct in observed parent-child interactions. The results contribute important new knowledge with regard to further development of effective parent-training approaches for families in child welfare.

The IY model is one of several parenting interventions that have emerged from a common theoretical foundation in social interaction learning theory, and that have received extensive empirical support for their ability to change parenting practices and to reduce child behavior problems (Barth et al., 2005; Chorpita et al., 2002; Brestan & Eyberg, 1998; Hurlburt et al., 2007; Webster-Stratton & Reid, 2003). The IY group-based parenting program is unique in the emphasis it places on using video-based vignettes to provide parents with models for extracting parenting principles, development of a group process designed to support and empower parents to identify parenting principles together in a tight social group, and then to incorporate those principles into their own circumstances through extensive role-play practice opportunities (Webster-Stratton, 1982). This study provides specific support for the IY intervention model as an approach to changing parenting practices among families with a reported history of child maltreatment and, due to their common intervention targets, further indirect support for other kinds of programs having a similar intervention focus, such as PCIT and PMT. The IY model may be a particularly relevant approach to develop further for families involved in child welfare because the group-based intervention model can be efficient, cost-effective, and, due to the highly social nature of the IY group format, foster engagement among individuals who might not be as willing to participate in a more traditional client-therapist relationship. The intervention is receiving increasing attention from child welfare organizations around the country, so further research on use of the model in child welfare is important (California Evidence-Based Practice Clearinghouse, 2007). For example, the updated version of the basic IY parenting program includes added topics particularly relevant for this population such as social and emotional coaching to build parent-child attachment and promote children's social competence, added emphases on home safety proofing and normal developmental expectations, as well as helping parents establish predictable home rules, daily schedules and family routines. Use of this 16-18 session program with families referred because of neglect in Washington State is associated with significant pre-post improvements in parents' reports of parenting stress and child behavior problems, and high program satisfaction.

Outcomes examined in this paper reflect changes in parenting practices post intervention and through to the subsequent school year between preschool and kindergarten. Across a number of parenting dimensions, positive intervention effects were observed, including improvements in parental positive affect, critical statements, commands, nurturing/supportive parenting, and discipline competence. Effect sizes fell in the small (commands, $d = .14$) to moderate (positive affect, $d = .40$) range. Due to the broad-based nature of intervention effects on parenting practices, the intervention should be seen as having a larger overall impact than is reflected by any one parenting indicator.

This study does raise an important issue about intervention dose. It is not uncommon for child welfare settings to seek brief interventions that will be sufficient to help parents adjust their parenting styles. In this experiment, parents with a reported history of child maltreatment achieved similar levels of benefit from the IY program, but on average had greater change to make in parenting skills because their parenting approach was more critical and less supportive to begin with. On several indicators of parenting, group level differences continued to exist between parents with and without a history of child welfare involvement at follow-up time points. Parents having such a history continued to have less nurturing/supportive parenting, more harsh/critical discipline, and lower discipline competence. In addition to continued differences in overall parenting practices between parents with and without a reported history of child maltreatment, children of parents with such a history had poorer affect and conduct in observed parent-child interactions, suggesting that differences in parenting were reflected in child behavior in the follow-up time points. This study suggests that brief evidence-based parenting interventions, like the 8-week IY program used in this study, may benefit participants but not yet have sufficient impact on parenting outcomes.

The current recommended form of the IY BASIC parenting program in broad prevention applications is 12 weeks. In intervention settings or settings in which families have higher numbers of risk factors, such as families with child welfare involvement, a program with more extended involvement, whether in initial program length or through later booster sessions, is likely warranted. Although correlational findings, the association between number of sessions attended and improved parenting

outcomes suggests that more intensive intervention may be necessary to address some of the additional parenting limitations present among parents in contact with child welfare. Modifications recommended based on clinical considerations are further discussed by Webster-Stratton and Reid (2005). Use of a longer and evidence-based program would represent a change in service models in many communities (Hurlburt et al., 2007).

In addition to resulting in broad-based changes in parenting practices, the specific areas in which change occurred are important due to their link with child maltreatment. Fairly strong evidence exists that physical abuse frequently arises in the context of ineffective and inconsistent parental discipline efforts (Gil, 1970; Herrenkohl, Herrenkohl, & Egolf, 1983; Straus, 2000) and harsh/critical discipline (Greenwald, Bank, Reid, & Knutson, 1997). Evidence also suggests that harsh/critical parenting practices are not only a characteristic of families referred for physical abuse, but of families referred for neglect as well (Bousha & Twentyman, 1984; Burgess & Conger, 1978; Dolz & Cerezo, 1997; Kavanagh, Youngblade, Reid, & Fagot, 1988; Knutson et al, 2005; Kolko, Hurlburt, Zhang, Barth, Leslie, & Burns, 2009; Lau, Valeri, McCarty, & Weisz, 2006; Pianta, Egeland, & Erickson, 1989). In a trial of PCIT conducted by Chaffin and colleagues (2004), changes in observed patterns of negative parental behaviors served to partially mediate the positive effects of PCIT on maltreatment outcomes. The current study, while not able to examine child maltreatment recurrence directly, provides support for future research examining the impact of the IY intervention on maltreatment recurrence.

Limitations

This study has clear limitations. It was conducted in a prevention setting, with an abbreviated form of the IY intervention, so there is a possibility that some of the conclusions drawn about intervention effects might not generalize to families currently referred to child welfare. However, child welfare services have become increasingly focused on alternative response models that make serious efforts to be inclusive and supportive of family perspectives and less confrontational. The IY program fits well within such a strengths-based, social support framework.

In this study, the measurement of reported child maltreatment history could have benefitted from access to previous child welfare records. To the degree that participants were not honest in answering the question about prior maltreatment, it would serve to diminish possible differences between the two groups. Still, 20% of participants answered the question in the affirmative. In a study of maltreatment report patterns in the city of Cleveland, which has relatively low median income, Sabol, Coulton, & Polousky (2004) found that 28.4% of children had been reported for suspected maltreatment by age 4. The percentage of parents reporting a history of maltreatment in this study was not dissimilar to the results from Cleveland, suggesting that self-reported percentages in this study are likely relatively accurate, although possibly slightly too low.

It should be noted that the trial took part in the context of Head Start centers, which has the potential to influence overall differences between intervention and control conditions because Head Start centers have responsibility for providing other kinds of parenting education. While this should be kept in mind, Head Start did not have a strong structured parent training component when this study was conducted. The IY intervention was seen as adding a new focus on parent-child interaction skills and effects observed in this study are likely applicable outside of the Head Start context as well.

The study also was limited, for the most part, to observational indicators of parent and child behaviors. While these were felt to be less biased, reactivity is still a potential problem since parents in the IY condition may have known more about the kinds of behaviors that would be socially desirable during the in-home observations. Although a possible explanation, this seems unlikely. In the trial of PCIT conducted by Chaffin et al. (2004), in which control condition parents participated in another group format parent-training program rather than no parent-training, changes in observed parenting practices actually trended toward deterioration in the comparison condition despite parents' participation in a program having similar intended targets to PCIT, suggesting that reactivity is not likely to be a substantial problem with observational measures.

This study is also limited in the range of dependent variables explored. While good evidence exists for the link between measured parenting constructs and child development and child maltreatment,

this study did not measure child developmental or maltreatment outcomes directly, other than changes in child behavioral functioning. Small changes were observed in some child behaviors, particularly affect valence, but changes in parent-reported child behavioral problems were not detected. This could be due to the fact that only 20% of parents reported CBCL externalizing problems in the clinical range, creating a floor effect and not enough power to see changes in the sample that did report behavior problems. Thus, this study contributes additional evidence regarding the likely impacts of the IY intervention for families in child welfare, but cannot provide further evidence about possible links between parenting practices and child maltreatment in particular. This seems an especially important area for further research.

Considering these limitations, and the pattern of existing results from other studies, this study represents incremental new information supportive of further efforts to refine and test the IY group-based parent-training model with parents of younger children, and other similar evidence-based parent-training approaches, as methods for supporting child maltreatment prevention and more positive child development.

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Table 1

Baseline Mean DPICS-R and CII Indicators of Parent and Child Behaviors for Families with and without a History of Reported Child Maltreatment

	Reported history of maltreatment		No reported history of maltreatment		<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Parenting Behaviors					
DPICS-R					
Praise, positive affect, and physical positive	21.75	16.94	22.19	15.63	0.001
Total critical statements	25.48	19.30	19.07	17.36	
Total commands	43.23	26.41	44.92	28.45	
CII					
Nurturing/supportive	2.29	0.53	2.47	0.45	0.000
Harsh/critical	1.60	0.58	1.42	0.46	0.001
Discipline competence	2.11	0.49	2.22	0.41	0.013
Child Behavior Indicators					
Parent Report Measures					
Eyberg Child Behavior Inventory	11.06	6.58	8.52	7.20	0.002
DPICS-R					
Deviance and noncompliance	15.33	17.31	13.29	17.96	
Positive affect	15.40	17.17	14.20	14.68	
Nonverbal affect	2.90	0.50	2.80	0.51	
CII					
Positive affect	2.18	0.48	2.29	0.49	
Poor conduct	3.48	1.36	3.29	1.30	

Note. *d* in text computed as the mean difference between caregivers with and without a history of child maltreatment divided by the pooled standard deviation. CII = Coder Impressions Inventory, DPICS-R = Dyadic Parent-Child Interaction Coding System – Revised. The Coder Impressions Inventory was completed by the same rater who completed the DPICS-R, subsequent to the home visit. Coders were blind to intervention condition and to reported history of maltreatment.

Table 2
Mean DPICS-R, CII, and Parent-Reported Child Behavioral Indicators at Pre, Post, and One-Year Follow-up for Families in Intervention and Control Conditions, Stratified by Reported History of Maltreatment

	Reported history of maltx.	Intervention						Control					
		Pre		Post		F-up		Pre		Post		F-up	
		M	se	M	se	M	se	M	se	M	se	M	se
Parenting Behaviors													
DPICS-R													
Praise, positive affect, and physical positive	Yes	20.99	1.93	28.30	2.61	29.95	3.46	23.53	3.44	20.06	3.22	20.89	3.39
	No	21.76	.93	32.09	1.37	28.75	1.72	23.19	1.58	26.94	1.58	27.04	1.58
Total critical statements	Yes	25.80	2.46	18.27	2.30	16.42	2.45	24.73	2.98	23.39	5.44	20.95	4.76
	No	18.67	1.10	12.38	1.04	13.09	1.23	19.97	1.52	18.12	1.54	18.17	1.93
Total commands	Yes	43.01	3.15	35.46	3.08	30.92	3.64	43.73	4.92	41.17	4.92	34.32	4.09
	No	44.05	1.71	34.72	1.85	35.18	2.42	46.91	2.80	43.36	2.65	42.44	2.87
Coder Impressions Inventory													
Nurturing / supportive	Yes	2.28	0.07	2.53	0.05	2.53	0.08	2.29	0.09	2.20	0.14	2.37	0.09
	No	2.49	0.03	2.66	0.02	2.64	0.03	2.43	0.04	2.55	0.04	2.54	0.04
Harsh / critical	Yes	1.62	0.07	1.47	0.07	1.42	0.09	1.57	0.10	1.46	0.12	1.45	0.12
	No	1.45	0.03	1.29	0.03	1.27	0.03	1.35	0.04	1.36	0.04	1.33	0.03
Discipline competence	Yes	2.09	0.06	2.29	0.05	2.26	0.07	2.14	0.09	1.97	0.09	2.21	0.10
	No	2.19	0.02	2.40	0.03	2.42	0.03	2.30	0.04	2.33	0.03	2.34	0.04
Child Behaviors													
Parent Report Measures													
Eyberg Child Behavior Inventory													
	Yes	11.46	0.85	8.49	0.91	9.27	1.33	10.10	0.88	9.05	1.43	9.00	1.73
	No	8.81	0.48	6.69	0.45	7.37	0.62	7.98	0.59	7.09	0.62	6.94	0.60

Note. DPICS-R = Dyadic Parent-Child Interaction Coding System – Revised.

Table 2 (cont'd)

	Reported history of maltx.	Intervention						Control					
		Pre		Post		F-up		Pre		Post		F-up	
		M	se	M	se	M	se	M	se	M	se	M	se
Total deviance and noncompliance	Yes	17.80	2.02	13.73	2.28	11.08	2.08	9.57	3.12	6.22	1.45	7.26	2.69
	No	14.49	1.18	8.45	0.70	9.51	0.90	10.53	1.34	10.32	1.19	7.06	0.94
Nonverbal affect valence	Yes	2.97	0.06	2.79	0.08	2.82	0.10	2.73	0.10	2.83	0.09	2.89	0.07
	No	2.84	0.03	2.62	0.90	2.70	0.05	2.73	0.05	2.77	0.05	2.84	0.05
Coder Impressions Inventory Positive affect	Yes	2.20	0.06	2.27	0.06	2.36	0.07	2.13	0.09	2.06	0.10	2.32	0.09
	No	2.29	0.03	2.51	0.03	2.52	0.04	2.28	0.04	2.40	0.05	2.40	0.05
Poor conduct	Yes	3.67	0.16	2.96	0.21	3.08	0.24	3.00	0.24	3.24	0.22	2.79	0.30
	No	3.41	0.08	2.49	0.09	2.61	0.10	3.03	0.11	2.86	0.12	2.47	0.12

Note. DPICS-R = Dyadic Parent-Child Interaction Coding System – Revised.

Table 3

Effects of Condition, History of Reported Child Maltreatment, and Time on Intervention Outcomes – Parent Competencies

	DPICS-R						CII					
	Praise, pos. affect, physical positive		Total critical statements		Total commands		Nurturing / supportive		Harsh / critical		Discipline competence	
	Step 1 b (se)	Step 2 b (se)	Step 1 b (se)	Step 2 b (se)	Step 1 b (se)	Step 2 b (se)	Step 1 b (se)	Step 2 b (se)	Step 1 b (se)	Step 2 b (se)	Step 1 b (se)	Step 2 b (se)
Intercept	17.69 (2.14)	18.16 (2.19)	10.43 (1.38)	10.24 (1.44)	30.84 (3.05)	31.39 (3.15)	2.00 (0.09)	2.01 (0.09)	1.01 (0.05)	1.02 (0.05)	1.82 (0.09)	1.83 (0.09)
Baseline level of DV	0.38*** (0.05)	0.38*** (0.05)	0.38*** (0.03)	0.38*** (0.03)	0.24*** (0.04)	0.24*** (0.04)	0.21*** (0.03)	0.22*** (0.03)	0.24** * (0.03)	0.24*** (0.03)	0.21*** (0.04)	0.21*** (0.04)
Condition	6.31** (1.99)	5.54** (2.15)	-4.76*** (1.33)	-4.47** (1.47)	-4.99 (2.77)	-5.82 (3.00)	0.16*** (0.04)	0.13** (0.05)	-0.07* (0.03)	-0.07 (0.04)	0.14*** (0.04)	0.12** (0.04)
Reported history of Maltreatment	-2.59 (2.02)	-5.63 (3.73)	1.47 (1.59)	2.58 (2.91)	-1.69 (2.71)	-5.09 (4.99)	-0.10** (0.04)	-0.19** (0.07)	0.09* (0.04)	0.07 (0.07)	-0.13** (0.04)	-0.20** (0.07)
Time	-1.44 (0.23)	-1.40 (1.23)	0.07 (0.97)	0.05 (0.96)	-1.12 (1.71)	-1.07 (1.71)	-0.002 (0.02)	-0.00 (0.03)	-0.03 (0.03)	-0.03 (0.03)	0.02 (0.02)	0.02 (0.02)
Condition by Maltreatment	---	4.30 (4.43)	---	-1.57 (3.46)	---	4.85 (5.94)	---	0.12 (0.08)	---	0.03 (0.09)	---	0.11 (0.09)
Head Start center variance (se)	3.22 (4.20)	3.27 (4.22)	-0.38 (1.33)	-0.45 (1.33)	8.47 (9.11)	9.16 (9.50)	0.005 (0.004)	0.004 (0.003)	0.000 (0.001)	0.000 (0.001)	0.003 (0.002)	0.002 (0.002)
Case variance (se)	115.39*** (21.57)	114.42*** (21.52)	70.23*** (13.18)	70.23*** (13.18)	186.87*** (39.48)	186.05*** (39.42)	0.030*** (0.008)	0.030*** (0.008)	0.040 *** (0.009)	0.040*** (0.009)	0.040*** (0.008)	0.040*** (0.008)
Residual (se)	215.43*** (19.20)	215.68*** (19.22)	132.23*** (11.78)	132.23*** (11.78)	419.08*** (37.21)	186.05*** (39.42)	0.110*** (0.009)	0.096*** (0.009)	0.098 *** (0.009)	0.098*** (0.009)	0.082*** (0.007)	0.082*** (0.007)

Note. CII = Coder Impressions Inventory, CW = Child Welfare, DPICS-R = Dyadic Parent-Child Interaction Coding System – Revised.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 4

Effects of Condition, History of Reported Child Maltreatment, and Time on Intervention Outcomes – Child Behavior

	Parent Self-report		DPICS-R				CII			
	ECBI		Deviance / noncompliance		Nonverbal affect		Positive affect		Poor conduct	
	Step 1 b (se)	Step 2 b (se)	Step 1 b (se)	Step 2 b (se)	Step 1 b (se)	Step 2 b (se)	Step 1 b (se)	Step 2 b (se)	Step 1 b (se)	Step 2 b (se)
Intercept	3.02 (0.61)	3.01 (0.63)	6.47 (1.04)	7.09 (1.07)	2.34 (0.12)	2.35 (0.13)	2.17 (0.10)	2.16 (0.10)	1.93 (0.17)	1.94 (0.17)
Baseline level of DV	0.53*** (0.03)	0.53*** (0.03)	0.21*** (0.03)	0.21*** (0.03)	0.15*** (0.04)	0.15*** (0.04)	0.10** (0.04)	0.10** (0.04)	0.25*** (0.04)	0.25*** (0.04)
Condition	-0.60 (0.61)	-0.58 (0.66)	-0.30 (1.10)	-1.24 (1.18)	-0.14** (0.05)	-0.15** (0.05)	0.13* (0.05)	0.13* (0.06)	-0.24 (0.12)	-0.25 (0.13)
Reported history of maltreatment	0.64 (0.62)	0.70 (1.15)	0.95 (1.11)	-2.66 (2.03)	0.11* (0.05)	0.07 (0.10)	-0.20*** (0.05)	-0.18* (0.08)	0.37** (0.13)	0.32 (0.25)
Time	0.11 (0.31)	0.11 (0.31)	-0.44 (0.79)	-0.39 (0.79)	0.08* (0.04)	0.08* (0.04)	0.04 (0.03)	0.04 (0.03)	-0.04 (0.09)	-0.04 (0.09)
Condition by maltreatment	---	-0.08 (1.36)	---	5.15* (2.42)	---	0.06 (0.12)	---	-0.03 (0.10)	---	0.07 (0.29)
Head Start center variance (se)	0.32 (0.40)	0.32 (0.40)	1.03 (1.31)	0.95 (1.25)	0.000 (0.002)	0.000 (0.002)	0.005 (0.004)	0.005 (0.004)	0.008 (0.015)	0.009 (0.015)
Case variance (se)	15.93*** (1.91)	15.93*** (1.91)	18.70** (7.22)	18.03* (7.17)	0.069*** (0.017)	0.069*** (0.017)	0.026* (0.013)	0.026* (0.013)	0.336*** (0.097)	0.335*** (0.097)
Residual (se)	14.04*** (1.22)	14.04*** (1.22)	92.33*** (8.08)	92.19*** (8.06)	0.181*** (0.016)	0.185*** (0.016)	0.165*** (0.015)	0.165*** (0.015)	1.110*** (0.100)	1.110*** (0.100)

Note. CII = Coder Impressions Inventory, CW = Child Welfare, DPICS-R = Dyadic Parent-Child Interaction Coding System – Revised.

* $p < .05$, ** $p < .01$, *** $p < .001$