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The Influence of Group Training in the Incredible Years Teacher Classroom Management Program on Preschool Teachers' Classroom Management Strategies

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This study examined changes in preschool teachers' perceptions of classroom management strategies following group training in the recently revised Incredible Years Teacher Classroom Management Program (C. Webster-Stratton, 2006). The authors used a pre/post follow-up design across 2 groups that each met for 8 sessions over an 8–10-week period for a total of 32 hr of training. Twenty-four preschool teachers from one of the lowest income and highest unemployment counties in the state of Michigan participated in the program. To examine short-term maintenance effects, the authors collected follow-up data 16 weeks after all teachers completed the training. The authors found improvements in teachers' perceptions of positive classroom management strategies and their use. Transporting this evidence-based teacher training program to school-based mental health service delivery settings warrants additional study.

KEYWORDS classroom management, evidence-based interventions, behavior problems, teacher training

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The number of young children demonstrating chronic behavior problems is concerning and has serious ramifications for schools and communities. Reported figures suggest that as many as 25% of preschool age children in the United States present with emotional and behavioral problems, with even higher rates for children from low-income families (Qi & Kaiser, 2003). Behavior problems in the preschool classroom, such as aggression, inattention, impulsivity, and noncompliance jeopardize healthy social and emotional development (Loeber, Burke, Lahey, Winters, & Zera, 2000; Webster-Stratton, 1997). Preschool children with early-onset conduct problems are at a significant risk for subsequent school dropout, substance abuse, violence, and delinquency (Webster-Stratton & Reid, 2003). In an attempt to alter the trajectory of noncompliant, aggressive, and oppositional behavior, early intervention services with preschool children are warranted and of considerable benefit to communities.

The negative effect of problem behaviors in the classroom is not limited to the child but also affects classroom peers and teachers. Peers exposed to a classmate exhibiting behavior problems can miss out on valuable learning and social opportunities as a result of disruptions and are more likely to reject those exhibiting this type of behavior (Hanish & Guerra, 2002). The presence of disruptive behavior interferes with the delivery of engaging lessons and activities, academic engaged time, and use of positive classroom management strategies (Brophy, 1999; Jones & Jones, 2007). Teachers in these challenging learning environments are more likely to experience stress, become dissatisfied with their job, and transfer or leave the profession (U.S. Department of Education, 2005). Given the challenges that chronic behavior problems in the classroom pose to multiple stakeholders, it is important to provide supports and training to teachers that promote successful management of classroom environments. Helping teachers develop the competencies necessary to adjust the classroom environment to better suit the learning needs of children who are at risk for developing chronic behavior problems holds considerable promise in the prevention of later conduct problems (Hamre & Pianta, 2005; Sroufe, Carlson, Levy, & Egeland, 1999).

There are two core components of evidence-based classroom practices (e.g., Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2009) and specific management strategies in early childhood settings (e.g., Conroy, Sutherland, Haydon, Stormont, & Harmon, 2008) that are important to include in a teacher training program on classroom management (Doll, Zucker, & Brehm, 2004). One component emphasizes the self-agency of students such as promoting academic efficacy, self-determination, and behavioral self-control. The second component emphasizes promotion of the classroom community and learning through the caring and committed relationships among members of the learning environment (Doll et al., 2004) and to those outside that context through efforts pertaining to increasing home–school collaboration (Christenson & Sheridan, 2001). Examples of specific types of teacher

strategies that link to these two components include proactive behavior management, promoting positive classroom climate, and communicating with parents.

Research and policy initiatives, such as the No Child Left Behind Act of 2001 (U.S. Department of Education, 2002) have emphasized the importance of adopting theory-based interventions deemed efficacious. One program that incorporates the "what and how" of teaching an evidence-based classroom management approach efficiently to groups of teachers is the Incredible Years Teacher Classroom Management Program (TCM; Webster-Stratton, 2006). Multiple randomized group evaluations of TCM conducted under the auspices of federal grant funds by the intervention developers (e.g., Webster-Stratton, Reid, & Hammond, 2001) and two independent evaluation research teams that used TCM in a broader mental health consultation approach (Raver et al., 2008; Williford & Shelton, 2008) have been completed. All provide strong support for the efficacy of this group training approach with preschool and elementary grade teachers and children. Specific findings from these studies indicated (a) increases in teachers' use of praise and encouragement, (b) decreases in teachers' use of criticism, (c) increases in children's positive affect and cooperation with teachers, (d) increases in children's positive interactions with peers, and (e) decreases in children's aggression in the classroom (Center for the Study and Prevention of Violence, 2010).

TCM is one part of a multifaceted prevention and early intervention approach for reducing and preventing conduct problems in children (Webster-Stratton, 2000). The Incredible Years Training Series (IY) consists of interventions [child, parent, and teacher (TCM)] that focus on strengthening competencies and developing strategies to help promote children's social-emotional and academic skills. IY programs are grounded in childhood aggression theory and its emphasis on the importance of socialization processes (Patterson, 1982). According to this theory, adults can negatively reinforce and maintain behavior problems by engaging in coercive interactions with children. The IY programs were designed to alter problem behavior by changing child and adult behavior through the use of modeling problem-solving behaviors, teaching social and self-regulation behaviors, and through the use of positive discipline strategies (Webster-Stratton, 2000). The TCM program specifically focuses on altering young children's (ages 3–8 years) behavior through the promotion of positive interactions between teachers and students. For those students who are the most at risk for conduct problems, TCM is recommended as an adjunct to the child and parent programs.

The combination of the IY parent/teacher/child programs as well as the IY parent training as a stand-alone program has been extensively studied (Center for the Study and Prevention of Violence, 2010). With respect to those studies focused on TCM, only nine were located in the literature. Yet, despite this relative paucity of information when compared with the IY Parent Training Program, initial TCM studies have provided convincing

evidence (e.g., independent observation of positive changes in child and teacher behavior) of the potential global reach of this evidence-based group training approach. Specifically, studies indicate decreasing conduct problems and increasing prosocial skills at home and in school across diverse teacher populations in the United States (Webster-Stratton, Reid, & Hammond, 2001; Webster-Stratton, Reid, & Hammond, 2004; Webster-Stratton, Reid, & Stoolmiller, 2008), in Jamaica (Baker-Henningham, & Walker, 2009; Baker-Henningham, Walker, Powell, & Meeks Gardner, 2009) and in Wales, United Kingdom (Hutchings et al., 2007). TCM also has recently been investigated with rigorous methodologies as a standalone self-administered training program with preschool teachers in a medium-sized Midwestern city (Shernoff & Kratochwill, 2007) and as a group training approach used in combination with mental health consultation in low-income, high-minority Head Start classrooms in Chicago (Raver et al., 2008) and North Carolina (Williford & Shelton, 2008). These studies indicated a positive effect on improving teacher–child interactions, though it is important to note that none of those studies involved training from leaders who were certified to deliver the program. This calls into question issues of integrity as certification in TCM is one means to insure the program is being carried out as it is intended. Despite this limitation, two recent qualitative studies using teacher interviews further highlighted the benefits to teachers (e.g., understanding children's needs and abilities, better relationships with parents), benefits to children (e.g., improvements in children with behavior problems, increased academic skills), challenges to carrying forward the intervention (e.g., difficulty implementing a specific strategy taught), and perceptions of the need for widespread dissemination of this approach to other teachers, teaching assistants, playground monitors, and lunch staff (Baker-Henningham & Walker, 2009; Hutchings et al., 2007).

Although there is much agreement regarding the benefits of bringing evidence-based interventions such as TCM into efforts to improve teachers' classroom management skills, the issue of moving the knowledge gained from efficacy studies into the "real world" of effectiveness research remains an important one in need of investigation (Chorpita, 2003). This particular study addresses some of those challenges. One barrier to the transportability of evidence-based interventions to practice has been the failure to consider contextual factors of authentic settings when developing and conducting efficacy research (Kratochwill & Shernoff, 2004). For example, previous TCM studies have been conducted under less-than-realistic conditions for teachers, considering that substitute teachers are often hired to allow teachers the time to partake in this training. This study is unique in that teachers attended trainings one night (4 hr) a week for 8 weeks after their regular work responsibilities.

A second barrier to bringing research into practice has been uncertainty regarding the need to evaluate enhancements or updates of interventions already identified as evidence based. Specifically, research results to date have

yet to examine the revised and enhanced version of TCM (Webster-Stratton, 2006). Revisions incorporate an additional session on problem solving and a greater focus on self-regulation and coaching through the addition of supplemental vignettes and group training activities. It can be argued, however, that evaluation of such changes may be unnecessary, because these enhancements would likely only build on the positive outcomes of previous studies.

A third barrier exists when interventions are delivered within a time frame that differs from how they were investigated in randomized controlled trials. Although the 32 hr (eight 4-hr sessions) that teachers were involved in training was consistent with previous studies such as the 28 hr of training reported by Webster-Stratton et al. (2008), the structure of those hours across weeks was different. The nature of the low-income, high-unemployment community-based setting and the lives of the teachers who were involved in this study would not allow for full-day (7 hr) once a month sessions across 4–6 months as was previously reported in the literature (e.g., Webster-Stratton et al., 2008). A final barrier addressed in this study relates to the dissemination of interventions without the benefit of facilitators who are certified in the program, a feature strongly recommended by the developers of TCM. In the present study, the second author served as the primary facilitator of these groups. While uncertified, the facilitator had participated in the group training of TCM offered by Dr. Webster-Stratton in Seattle, Washington, and a long history of group training experience with this population of preschool teachers. The facilitator in this study would be considered to be at the precertification stage, and these groups were one of a host of requirements for TCM certification. At present, no one is certified in TCM in the entire state of Michigan and that challenge appears to be consistent within other parts of the country as indicated by other studies that have looked at the effect of TCM training without the benefit of certified group leaders (e.g., Raver et al., 2008).

Attention to contextual variables, particularly those involving individuals whose commitment is necessary to the sustainability of the program, such as teachers, is critical to understanding the effectiveness of an intervention in authentic settings (Kratochwill & Shernoff, 2004; Rones & Hoagwood, 2000). Change in teachers' perceptions of classroom management and home–school communication strategies were used in this study as an indication of the effectiveness of group training in TCM. Specifically, the study relied on teacher-reported frequency of using specific management techniques addressed by the training as well as teacher-reported perceptions of the usefulness of the targeted classroom management techniques. In addition, items pertaining to the use of strategies aimed at enhancing home–school communication were included in the data collection. Input-reflecting changes in teacher thinking as a result of this group training was of particular interest because our community-based early education partners were considering expansion

of TCM training across the entire county. To address issues pertaining to implementation and dissemination of this efficacious teacher training approach, we addressed the following hypotheses:

1. A significant increase in the frequency of use, or how often strategies are used in the classroom, and perceived usefulness of positive classroom management strategies (e.g., attend to appropriate behavior) will occur between baseline, end of treatment, and follow-up phases of the study.
2. A significant increase in the frequency of use and perceived usefulness of home–school communication and collaboration strategies (e.g., develop parent partnerships) will occur between baseline, end of treatment, and follow-up phases of the study.
3. A significant decrease in the frequency of use and perceived usefulness of inappropriate management strategies (e.g., commenting on child's inappropriate behavior in a loud voice) will occur between baseline, end of treatment, and follow-up phases of the study.
4. Teacher-reported perceived usefulness of classroom management strategies will correlate highly ($r = .50$) with the reported frequency of the use of those strategies.

METHOD

Participants

We recruited 24 preschool teachers to participate in the two group trainings conducted in 2009, and these teachers completed all pre, post, and follow-up measures. Preschool teachers included those providing services in Head Start programs, in homes, and in centers. All preschool teachers were at least 18 years of age, working in a state-licensed facility in the county, working with children between the ages of 3 and 5 years, and required to participate in professional development activities to maintain their credential with the state. Table 1 provides an overview of the demographic characteristics of the sample. The first group training completed between February and April involved 12 participants, though 2 were excluded from inclusion in the study results because they failed to complete all data collection measures at the conclusion of group training and follow-up stage of the study. The second group training conducted between May and July involved 14 participants, all of whom completed data collection measures in full. All 24 participants were female. The majority of participants were between the ages of 40 to 59 years of age ($n = 14$), had more than high school education ($n = 17$), and served as lead or assistant teacher in a preschool setting ($n = 19$). The mean overall attendance for the eight sessions was 100%.

TABLE 1 Summary of Teacher Participant Demographic Data, by Group

Characteristic	Preschool teacher (Group 1)	Preschool teacher (Group 2)	Combined
Age (years)	4	5	9
21–39	6	8	14
40–59	0	1	1
60–69			
Race			
Caucasian	6	7	13
African American	4	7	11
Gender			
Female	10	14	24
Male	0	0	0
Years of experience			
<3 years	3	1	4
>3 years	7	13	20

Procedures

An advisory board consisting of school and community leaders from the surrounding area developed the study recruitment methods. A county extension educator in partnership with countywide agencies that provide professional development for childcare providers disseminated fliers pertaining to the study. Teachers of children between 3 and 5 years of age who provided care within the county were eligible for participation. These selection criteria were established to focus TCM training on providers within the county extension office outreach area and to ensure that providers were homogenous with respect to children's developmental age. Participants were from a county with one of the most highly diverse populations in the state. In addition, a high rate of low income and high unemployment distinguishes this county from others, which as a whole had the highest unemployment in the country at the time of this study. Each participant received three types of incentives for participating in the group training study. A light dinner was provided at each session, $80 in gift cards to a local grocery/general merchandise store was split up across the different phases of the study, and continuing education credits (3.0 CEUs) were granted to each participant who completed the study. The affiliated university's Human Subjects Institutional Review Board approved informed consent procedures.

Teachers completed the Teacher Strategies Questionnaire before group training, at the conclusion of TCM, and 16 weeks following completion of TCM in order to examine maintenance effects. Only two previous TCM studies included the Teacher Strategies Questionnaire measure, albeit only using items from the Positive Strategies Scale (Shernoff & Kratochwill, 2007) and the use of a composite of multiple scales that was inconsistent with previous scale development (Williford & Shelton, 2008). No previous studies

have examined the effect of TCM on inappropriate management strategies or strategies aimed at improving home–school connections as measured by the Teacher Strategies Questionnaire. It is noted that the two-item confidence in managing classroom behavior was not included because of missing data from 5, 6, and 7 participants, respectively, at pretreatment, posttreatment, and follow-up. These data were missing largely because of the location of those items on the form as they were listed by themselves between two sets of directions.

Teacher Classroom Management Program

Training topics within TCM include proactive teaching, providing praise and rewards, discipline strategies, promoting positive relationships, social skills training, problem-solving training, and promoting parental involvement. The TCM training has been implemented in a host of formats including a 4-, 5-, or 7-day workshop format with trainings held once a month to allow for practice, application, and skill refinement (Baker-Henningham & Walker, 2009; Hutchings et al., 2007; Webster-Stratton et al., 2001). This study used a weekly format with eight Thursday evening sessions over a 2–3-month period. This format was decided for feasibility issues, including the need to meet regularly with our teacher group and the need to be sensitive to the teachers' weekly schedules. This type of spacing and timing of trainings is different than formats appearing in the literature (e.g., Webster-Stratton et al., 2001) yet is consistent with the total hours of training (30–40 hr) indicated on the program Web site (www.incredibleyears.com).

The TCM involves the following five content areas: (a) the importance of teacher attention, encouragement, praise; (b) motivating children through incentives; (c) preventing behavior problems—the proactive teacher; (d) decreasing students' inappropriate behaviors; and (e) building positive relationships with students and problem solving. Materials include seven DVDs depicting a diverse array of teachers' interactions with students, a comprehensive leader manual that promotes the integrity of the training through the use of checklists, reminders, suggestions, and other strategies to help in the presentation and discussion of program content. A summary of key points from each content area are highlighted in the group leader manual, and suggestions for classroom activities and homework assignments are associated with each DVD.

Measures

The Teacher Strategies Questionnaire (Webster-Stratton et al., 2001) is a 44-item measure used to evaluate teachers' self-reported frequency of strategy use, or how often teachers used the strategies in the classroom, and perceptions of strategy usefulness, including working with parents. Participants

rated four frequency-of-strategy-use and perception-of-strategy-usefulness questions for each specific teaching technique assessed. For example, teachers provided ratings on "How frequently do you reward good behavior with incentives?" and "How useful do you think rewarding good behavior with incentives is?"

We computed five frequency-of-strategy-use scales and four perception-of-strategy-usefulness scales. This includes the 18-item Total Positive Strategies Scale (three subscales: praise and incentives, proactive strategies, and limit-setting strategies), which examined changes in those management strategies that were expected to increase at the posttreatment stage. Examples of items from this scale include "comment on good behavior," "praise good behavior," and "ignore misbehavior that is not disruptive." The nine-item Inappropriate Strategies Scale examined whether the group training could effectively reduce inappropriate management strategies. Items such as "use physical restraint," "use comments in a loud voice," and "warn or threaten to send child out of the classroom if s/he doesn't behave" make up this scale. Table 2 provides a summary of the data collected from participants on this measure across time.

To examine secondary effects of group training on improving communication and collaboration with parents, we analyzed two additional scales from the Teacher Strategies Questionnaire: the eight-item Positive Approaches With Parents Scale (e.g., "make home visits") and the eight-item Working With Parents Scale (e.g., "ask parents to volunteer in the classroom"). For the Positive Approaches With Parents Scale, teachers rated the frequency of strategy use and the perception of strategy usefulness; for the Working With Parents Scale, they rated only the frequency of strategy use.

Previous research (Webster-Stratton et al., 2001) indicated good internal consistency reliability for the Total Positive Strategies frequency-of-use subscale (.79), the Total Positive Strategies perception-of-usefulness subscale (.70), the Inappropriate Strategies frequency-of-use subscale (.77), and the Inappropriate Strategies perception-of-usefulness subscale (.84). We computed Cronbach's alpha coefficients for the scales at baseline for the present study. Similar to those in previous research, alphas for the 18-item Total Positive Strategies frequency-of-use subscale (.80), the Total Positive Strategies perception-of-usefulness subscale (.87), and the 9-item Inappropriate Strategies perception-of-usefulness subscale (.70) indicated good internal consistency. The .50 alpha for the Inappropriate Strategies perception-of-usefulness subscale, however, indicated considerably weaker internal consistency compared with previous reliability reports for this scale. We also computed alpha coefficients for the three subscales of the Total Positive Strategies Scale. The alphas for the praise and incentives frequency-of-use subscale (.79) and the perception-of-usefulness subscale (.84) indicated good internal consistency similar to that reported in previous research (.75 and .76, respectively). Alphas for the proactive strategies frequency-of-use subscale

TABLE 2 Means and Standard Deviations for Pre, Post, and Follow-Up Frequency of Strategy Use and Usefulness

	Pre		Post		Follow-up	
Strategies	Frequency	Usefulness	Frequency	Usefulness	Frequency	Usefulness
Teacher–Child interaction						
Positive strategy total	56.5 (9.7)	54.5 (11.4)	62.8 (12.1)	63.1 (13.7)	62.9 (9.0)	62.5 (10.6)
Praise and incentives	18.2 (4.9)	18.0 (5.2)	21.5 (4.3)	22.0 (5.0)	21.3 (3.8)	21.4 (4.2)
Proactive strategies	22.9 (4.3)	22.0 (5.1)	24.7 (5.4)	24.7 (5.7)	25.3 (3.7)	25.0 (4.6)
Limit-setting strategies	15.3 (2.8)	14.5 (3.0)	16.6 (4.2)	16.4 (4.6)	16.3 (3.4)	16.0 (4.0)
Inappropriate strategy use total	15.6 (2.9)	17.0 (4.9)	15.3 (3.5)	16.5 (4.3)	14.4 (3.2)	15.6 (3.8)
Teacher–Parent interaction						
Positive Approaches With Parents	13.8 (4.9)	15.5 (7.1)	15.3 (6.7)	17.6 (8.8)	15.2 (7.8)	15.2 (7.5)
Working With Parents	29.9 (9.4)		31.1 (10.9)		31.0 (11.0)	

(.71) and the perception-of-usefulness subscale (.78) indicated stronger reliability compared with the minimally adequate levels reported in previous research (.63 and .54, respectively). Alphas for the limit-setting subscales also revealed inconsistencies with the alpha for the limit-setting frequency-of-use subscale in the present study (.17) falling well below the internal consistency (.73) reported in previous studies using this scale. Alpha for the limit-setting perception-of-usefulness subscale in the present study (.43) indicated similarly minimal adequacy in reliability as reported in previous research (.52). Alphas for the Positive Approaches With Parents frequency-of-use subscale (.71), the Positive Approaches With Parents perception-of-usefulness subscale (.88), and the Working With Parents Scale (.82), although not reported in previous research, indicated reasonable to good internal consistency for the present study.

RESULTS

We conducted repeated measures analyses of variance to assess whether there were significant increases in the perceived usefulness and frequency of use of positive classroom management strategies between baseline, end of treatment, and follow-up phases of the study (Table 3). We found significant differences between teacher-reported positive strategy use scores across the three time periods, $F(2, 38) = 21.0$, $p < .01$. We found significant differences also for perceived usefulness of positive strategies across the three time periods, $F(1, 23) = 14.3$, $p < .01$. Compared with the use of positive strategies before implementation of the TCM training, scores of frequency of use and perception of usefulness for positive strategies immediately following intervention and 6 months following intervention (Table 3) were significantly higher. We found no significant differences between post and follow-up, indicating maintenance of gains made while involved in the group training.

We used repeated measures analyses of variance also to analyze the three subscales that comprise the Total Positive Strategies Scale (i.e., praise and incentives subscale, proactive strategies subscale, and limit-setting strategies subscale). Specifically, analysis aimed to assess whether there were significant increases in teacher-reported frequency of use and perceived usefulness of the positive classroom management among baseline, end of treatment, and follow-up. Frequency of use of the praise and incentives subscale was significantly different across the time periods, $F(2, 46) = 12.5$, $p < .01$. Additionally, perceived usefulness of the praise and incentives subscale was significantly different across the time periods, $F(1, 23) = 12.9$, $p < .01$. Teachers reported increased frequency use and perceptions of usefulness from Pre to Post intervention as well from pre to follow-up (Table 3). We found no significant differences between posttreatment and follow-up, again consistent with a lack of further change following completion of the

TABLE 3 Repeated Measures Analyses of Variance for Pre, Post, and Follow-Up Strategy Use

Strategies (I)	Strategies (J)	Mean difference (I–J)	*SE*	Lower bound	Upper bound
Frequency of positive strategies total					
Pre	Post	−6.4**	1.6	−10.5	−2.3
	Follow-up	−6.4**	1.8	−11.0	−1.9
Post	Follow-up	−.04	1.7	−4.3	4.2
Usefulness of positive strategies total					
Pre	Post	−8.6**	2.2	−14.2	−2.9
	Follow-up	−7.9**	2.1	−13.3	−2.5
Post	Follow-up	.67	1.8	−4.1	5.4
Frequency of praise and incentives					
Pre	Post	−3.3**	.68	−5.1	−1.6
	Follow-up	−3.1**	.87	−5.3	−.83
Post	Follow-up	.25	.65	−1.4	1.9
Usefulness of praise and incentives					
Pre	Post	−4.0**	.93	−6.4	−1.7
	Follow-up	−3.4**	.95	−5.9	−.97
Post	Follow-up	.63	.83	−1.5	2.8
Frequency of proactive strategies					
Pre	Post	−1.8	.93	−4.2	.61
	Follow-up	−2.4**	.90	−4.7	−.09
Post	Follow-up	−.63	.94	−3.0	−1.8
Usefulness of proactive strategies					
Pre	Post	−2.7*	.95	−5.1	−.21
	Follow-up	−3.0*	1.0	−5.6	−.36
Post	Follow-up	−.29	.79	−2.3	1.7

*$p < .05$. **$p < .01$.

training program. Another positive strategy use subscale, proactive strategies was also reported to be significantly different across time periods for frequency of use, $F(2, 46) = 3.7$, $p < .05$, and perceptions of usefulness, $F(1, 23) = 8.6$, $p < .05$. Differences in perceptions of usefulness were apparent between pre and post, as well as between pre and follow-up. However, differences in reported frequency of use were only apparent between pre and follow-up (Table 3), indicating somewhat of a delay in change following completion of the training program. We found no significant differences among the pre, post, and follow-up periods for the limit-setting strategies subscale.

We conducted repeated measures analyses of variance also to assess whether there were significant increases in the perceived usefulness and frequency of use of home–school communication and collaboration strategies. We found no significant differences among the pre, post, and follow-up periods for the Positive Approaches With Parents frequency-of-strategy-use, the Positive Approaches With Parents perception-of-strategies-usefulness, or the Working With Parents frequency-of-strategy-use subscales.

We conducted repeated measures analyses of variance also to assess whether there were significant decreases in the perceived usefulness and frequency of use of inappropriate management strategies between baseline,

TABLE 4 Correlations Among Pre, Post, and Follow-Up Perceptions of Usefulness and Frequency of Strategy Use

Frequency	Preusefulness	Postusefulness	Follow-up usefulness
1. Positive strategies total			
Pre	.77**		
Post		.96**	
Follow-up			.87**
2. Praise and incentives			
Pre	.69**		
Post		.91**	
Follow-up			.87**
3. Proactive strategies			
Pre	.81**		
Post		.91**	
Follow-up			.82**
4. Limit-setting strategies			
Pre	.85**		
Post		.97**	
Follow-up			.76**
5. Positive approaches with parents			
Pre	.70**		
Post		.90**	
Follow-Up			.85**
6. Inappropriate strategies total			
Pre	.31		
Post		.83**	
Follow-up			.75**

**$p < .01$.

end of treatment, and follow-up phases of the study. Contrary to our hypothesis, no significant differences were indicated across the three time periods when comparing teacher-reported inappropriate strategy use, though it is noted that teachers reported infrequent use of these strategies before involvement in training.

We conducted Pearson correlation analyses to assess whether teacher-reported perceived usefulness of positive and inappropriate classroom management strategies correlated highly with the reported frequency of use of those strategies across the three time periods. Table 4 illustrates that the teacher-reported perceptions of usefulness and frequency of use of overall positive strategies were significantly and positively correlated when compared at pre, post, and follow-up. This suggests that teachers who reported relatively high perceptions of positive strategies usefulness at pre, post, and follow-up were very likely to have reported high frequency of use of positive strategies at the corresponding time points. Significant positive correlations were also indicated in teacher reports of perceptions of usefulness and frequency at pre, post, and follow-up for the use of the positive

strategy subscales, including praise and incentives, proactive strategies, and limit setting. Also, significant positive correlations emerged between frequency and usefulness for the Positive Approaches With Parents Scale at the three time points. Unlike positive strategies, where correlations emerged between perceived usefulness and frequency of use at all three time periods, the inappropriate strategy correlations were only significant at the post and follow-up periods.

DISCUSSION

This study examined teachers' perceptions of usefulness and frequency of use classroom management strategies following the implementation of the Incredible Years TCM training program. Results for the present study were consistent with past research indicating significant increases in teachers' perceptions of their positive strategy use immediately following the training (e.g., Webster-Stratton et al., 2001, 2004), with reported improvements maintained at 16-week follow-up. Given the study's reliance on teacher self-report data, caution should be taken in the interpretation of results. Researchers have noted that self-report data can often reflect what is referred to as social desirability bias or a tendency to rate one's attitudes and practices in a favorable way (Baker, 1994). From this perspective, it could be argued that teachers' self-reports of their classroom management practices and attitudes following the TCM training programming may be affected by social desirability bias. For example, failure to report an increase in the use of the positive management strategies introduced in the program would be inconsistent with the expectations of the evaluators

Aside from the considerations associated with the validity of self-report data, the present study offers encouraging results. As indicated by the positive strategies total and praise and incentives subscales scores, teachers reported that they significantly increased their use of positive strategies in the classroom following the intervention and maintained an increased level of use at the follow-up assessment. Similarly, teacher reports on the use of proactive strategies significantly increased from preassessment to follow-up assessment; however, no difference was apparent between pre- and postassessment. The significant increase of the reported use of praise and incentives and proactive strategies was consistent with previous research that illustrated a lapse in the increase in these types of strategies that occurred after a period of time following completion of TCM group training (Raver et al., 2008). This is an important finding given that Raver et al. (2008) supplemented teachers' training with the support of a mental health consultant to provide support and feedback to teachers when implementing strategies in the classroom, whereas the present study did not. This suggests that teachers may be able to independently incorporate these strategies into classroom

management practices without the support of a consultant. Although teacher reports did not indicate a significant increase in the use of all positive strategies subscales in the present study, overall positive strategies total increased significantly according to teacher ratings. This may suggest that although consultation support is beneficial and may be considered optimal, it may not be necessary in order for teachers to significantly increase their overall use of positive strategies following the TCM training and further study is warranted to support such a conclusion.

For the limit-setting strategies subscale, a subscale included in the positive strategy use total-scale, teachers did not report significant increases in their use of these strategies in the classroom at posttest or at the follow-up test. One reason why teachers' perceptions of their use of praise and incentives and proactive strategies increased while perceptions of their use of limit setting did not increase could be related to the nature of these particular strategies. There may have been more opportunities for teachers to provide praise and incentives to their students, compared to limit-setting strategies. For example, opportunities to comment or praise good behavior may occur at numerous times throughout the day and is not dependent on a specific triggering event, whereas use of limit-setting strategies such as timeout for destructive behavior and warnings are likely to occur less frequently and only in reaction to a student's misbehavior.

It appears that teachers' perceptions of their use of strategies to increase home–school involvement did not significantly increase immediately following the intervention or at the 6-month follow-up, as indicated by the Positive Approaches With Parents and Working With Parents scales. In a study conducted in North West Wales, teachers' perceptions of strategies for improving home–school links were examined following the implementation of the TCM program (Hutchings et al., 2007). Results of the Wales study indicated that out of all the positive strategies taught during training, the strategies promoting home–school collaboration received the lowest ratings by teachers, given that teachers thought some of the strategies were not feasible. It could be the case that feasibility was an issue in the present study as well. Teachers may not have attempted to implement the home–school strategies or perhaps attempts at implementation were compromised because of time or scheduling constraints. Given that one of the core themes of the TCM training is to strengthen home–school partnerships (Webster-Stratton, 2006), it is important to further investigate why teachers' use and perceptions of home–school strategies do not increase as expected following TCM training. Investigation of this issue could help inform how to better target the home–school components of the TCM training in a way that increases its effectiveness for teachers.

It is interesting to note that teachers' perceptions of their use of inappropriate management strategies did not significantly decrease following the TCM training. This finding is inconsistent with previous studies, such as

Raver et al. (2008) and Williford and Shelton (2008). These studies found, via observational methods, a decrease in teachers' inappropriate strategy use following the TCM training. Differences in findings may be related to the low reliability of this scale and/or issues often associated with self-report data as opposed to the observational data used in the previous studies. It could be argued that social desirability bias may influence teachers' self-reports of inappropriate strategies in school communities where such practices and/or attitudes are viewed as inferior or undesirable. This may be supported by the low-level inappropriate strategies reported at baseline or an alternative explanation may be that this group of preschool teachers had little room to actual decrease the frequency they used these strategies.

Differences in findings related to use of inappropriate strategies might exist because previous studies (i.e., Raver et al., 2008; Williford & Shelton, 2008) either supplemented the teacher training with consultation or delivered the training within a consultation model. For example, in Raver et al.'s (2008) study, mental health consultants attended teacher trainings with teachers. Consultants helped teachers identify and overcome barriers to strategy use, adapted the strategies to fit current classroom practices, and assisted in identifying teachers' strengths and weaknesses regarding strategy use. On the contrary, our study did not include consultation supports that provided encouragement and immediate feedback to teachers as they attempted to generalize the TCM strategies to their classroom settings. This supportive component may influence the decrease of inappropriate strategy use more so than the increase of positive strategy use, given that teachers may find it difficult to completely eliminate particular inappropriate classroom management strategies without immediate support. Perhaps teachers in the present study were less likely to identify inappropriate strategy use and replace it with a positive strategy, compared to teachers in the previous studies who received immediate feedback from a consultant.

The present study extends previous research by examining teachers' perceptions of the usefulness of positive and negative strategies, in addition to perceived changes in actual strategy use. Teachers perceived some of the positive strategies taught within TCM to be more useful at the conclusion of the training. This finding is consistent with the few studies that have examined teachers' perceived usefulness of strategies (e.g., Williford & Shelton, 2008), and this suggests that if teachers perceived strategies as useful, they were more likely to implement the strategies. Conversely, if they did not perceive strategies as useful, they were not as likely to increase their use of them. It is important to further investigate teachers' perceptions of strategy usefulness given that it may help to better understand ways to increase the success of TCM programs in changing teachers' frequency of strategy use in the classroom.

Positive correlations were indicated at all three data collections when examining teacher-reported frequency of use and perceptions of usefulness

of the overall Positive Strategies. Although all correlations were significant, results indicated that the strongest relationship existed following the TCM program, with a decrease in strength from post to follow-up. A similar trend was noted in the correlation analysis of the three positive strategies subscales with strong positive relations between teachers' perceptions and frequency of use across the three time points, with the strongest association demonstrated at postintervention and a decrease in the strength of the correlation from post to follow-up. This pattern indicates that, in general, when a teacher perceived a positive strategy as highly useful, their reported use of that strategy was also likely to be high. Conversely, if a low perception of positive strategy usefulness was reported, low reported use of that strategy was also highly probable. It makes sense that the strongest correlation between reported frequency of use and perceived usefulness emerged immediately after training, given that training taught explicit ways to implement these strategies. Before training, perhaps teachers perceived particular strategies as useful, but did not frequently implement them because they were unsure of the procedure. After training, it is possible that teachers were better equipped to carry out these strategies perceived as useful in the classroom.

Although teachers' perceptions of usefulness and frequency of positive strategy use were correlated across the three time points, teachers' perceptions of usefulness and frequency of inappropriate strategy use were correlated only at post and follow-up time periods. This inconsistency suggests that, before the implementation of the TCM program, teachers may have reported that inappropriate strategies were not useful, yet indicated that they used them in the classroom. Similar to the Positive Strategies results, the correlation of teachers' perceptions of usefulness and frequency of Inappropriate Strategy Use was strongest following training and decreased at 6-month follow-up.

Taken together, results from the study help us to better understand changes in teachers' perceptions regarding classroom management strategies following the TCM training program. Specifically, results indicated increases in the reported use of and perceived usefulness of praise and incentives and proactive strategies as well as overall perceived use and usefulness of positive strategies following implementation of the TCM training program. Increases were not detected, however, in the positive subscale related to limit-setting strategies. Contrary to previous studies, teachers' perceptions of their use of inappropriate management strategies did not significantly decrease following the training.

Limitations and Future Directions

The present study had several limitations. First, only teachers provided ratings of the frequency of positive and negative strategy use. Self-reports of

behavior certainly have the potential for bias in this case by overreporting positive strategy use or under-reporting negative strategy use, either intentionally or unintentionally. It was fairly clear as to which questions were assessing for positive or negative classroom strategies on the Teacher Strategies Questionnaire. To reduce social desirability bias, it would be important for future studies to use other methods to assess strategy use in the classroom, such as observations, to a gain more complete picture of teachers' strategy use in the classroom. This study is also limited by the lack of inclusion of a control group. A repeated measure across time methodology with only one group of participants fails to provide information about how these preschool teacher perceptions would change as a result of other external factors such as time or maturation. It would also have been beneficial to incorporate additional measures into the study to assess teacher classroom management strategy use. Although we did not find statistically significant changes for two of the positive strategies subscales—proactive strategies and limit-setting strategies—it is important to note that these subscales consisted of 5–6 questions. Therefore, to examine specific positive strategies implemented in the classroom, perhaps a measure with positive strategies subscales consisting of more questions would provide additional insight into how the training affects specific strategies, rather than just overall positive strategy use and overall negative strategy use.

Another limitation is the small sample size of preschool teachers who went through this group training. Although the number of participants completing the IY program is comparable to other samples in studies examining the program (e.g., Hutchings et al., 2007), these findings are limited in their generalizability to other early childhood teachers. To gain a better understanding of the effectiveness of the IY Teacher Training Program, and the relationship between perceptions of usefulness and actual strategy use, recruitment of larger samples would strengthen the support of this program. The inclusion of teachers from only one county representing a very low income and high unemployment rate also limit the generalizability of study findings to other preschool teachers.

Implications for Practice

Nationally certified school psychologists are uniquely trained to provide leadership to districts regarding systems-level intervention and prevention programs. Finding effective means by which teachers can be provided with training in how to better manage their classrooms and improve social-emotional development outcomes in young children should be a priority in any mental health service delivery system. School psychologists need to acquire knowledge of those programs that work to efficiently and effectively change teacher's perceptions and use of strategies that are known to work

with children who are at risk for later academic and social challenges. Acquiring the skills necessary to implement such programs in their districts is equally important for those who carry that role and responsibility in their work setting. Helping teachers prevent conduct problems through group training approaches such as that of TCM is one additional concrete step in moving from a response to failure approach to one of prevention and early intervention.

In addition, efforts should be made in increasing the number of certified IY TCM professionals, especially in low-income areas where research shows high prevalence rates for maladaptive aggressive behavior in young children. School psychologists can play an active role in their districts to identify staff that may be well positioned to work toward certification in this program or to carry out the program with teachers in their communities. The early identification of disruptive behaviors in early educational settings, such as preschool and day care may play a role in changing developmental trajectories (secondary prevention), resulting in fewer disruptive and aggressive behaviors, and greater social competencies in elementary and later schooling (Webster-Stratton, Kolpacoff, & Hollingsworth, 1998).

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