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The Effect of Teacher-Child Interaction Training (TCIT) on Children who are Exhibiting Disruptive Behaviors within the Classroom Setting

Jaclynn S. Stankus, Karl L. Jancart, and Kara E. McGoey

Abstract

The current study examined the impact of Teacher-Child Interaction Training (TCIT) on child behavior, teacher-student relationships, and teacher satisfaction within a general preschool setting utilizing a three-tiered approach. Participants included three preschool children without clinical diagnoses. A single subject nonconcurrent multiple baseline design was utilized across participants. Results suggest that TCIT is effective in reducing disruptive behaviors within the classroom and successful in improving the teacher-student relationship. TCIT is also considered socially valid based on teacher responses, which indicate that the intervention is acceptable and feasible within the general preschool classroom setting.

Behavioral problems that interfere with teaching and learning, particularly externalizing behavior disorders, have notably worsened in preschool-aged children. Subsequently, teachers are finding it increasingly difficult to manage such behaviors (Schaffner, 2013). In addition, many educators lack the necessary training to manage externalizing behaviors in young children. They may find it difficult to focus on an individual child, or a small group, without hindering the learning of the other students in the classroom. Furthermore, research indicates that there are negative outcomes for children who display these problem behaviors during the early years. For example, children who exhibit behavioral problems and social-emotional deficits have difficulty forming positive relationships, are less likely to be accepted

by teachers and peers and are at greater risk for dropout in the later academic years (Raver & Knitzer, 2002). In preschool classrooms in particular, teachers with challenging students provide such children with fewer learning opportunities and less positive feedback. Additionally, children who show signs of difficult social interactions or aggressive behaviors are more likely to perform poorly on academic tasks and to be held back during early school years. As these children age, they are at greater risk for dropping out of school and engaging in delinquent activities (Raver & Knitzer, 2002).

The study of preschool mental health is a developing field in early childhood psychology (Vanderzee, 2010). In contrast to most K-12 classrooms, the preschool environment is less structured and focuses more on social-emotional development instead of academics (U.S. Department of Health & Human Services, 2020), which makes the preschool classroom an ideal place for mental health intervention. Additionally, play—the primary modality by which children learn—is central to the preschool classroom (Bohart et al., 2015).

For preschool-aged children who exhibit behavioral problems, research supports the use of interventions that target both parents and caregivers, including teachers (Rockhill et al., 2006). However, research in this area is limited, particularly regarding teacher-child interventions. Although there are likely many behavioral and mental health needs exhibited in the preschool classroom, teachers may not be sufficiently prepared to handle these needs. One reason for this is the inconsistency in training among teacher education programs. There is a large mismatch between the preparation of the average childhood professional and the wide variety of needs preschool-aged children can present (Bowman et al., 2000). Other reasons are poor teacher-to-student ratios and limited time throughout the day to attend to behavior management, which make classroom management difficult.

In order to address young children's behavioral problems within the classroom, researchers have implemented an adaptation of the empirically supported intervention, Parent-Child Interaction Therapy (PCIT; Filcheck et al., 2004; Tiano & McNeil, 2006). This adaptation is

known as Teacher-Child Interaction Training (TCIT); like its predecessor, PCIT, TCIT encompasses positive reinforcement through praise, teacher modeling, and various classroom management strategies to decrease undesirable attention-seeking and disruptive behaviors. Additionally, some models of TCIT contain a timeout component. The usage of timeout within TCIT intervention depends on each school's guidelines concerning the use of timeout to discipline nonpreferred behaviors in the classroom. Similar to PCIT, in TCIT teachers learn to interact with children by using play therapy techniques that are drawn directly from PCIT (Garbacz et al., 2014). Parent-Child Interaction Therapy (PCIT) was developed in the 1970's by Sheila Eyberg and is considered an evidence-based treatment for children who are exhibiting disruptive behaviors (McNeil & Hembree-Kigin, 2011). It is rooted in numerous theoretical models such as Baumrind's theory of parenting styles and development (Baumrind, 1967), Bowlby's Attachment Theory (Bowlby, 1944), and Bandura's social-learning theory (Bandura, 1971), and it incorporates numerous behaviorism principles (.e.g., positive reinforcement and punishment). As aforementioned, PCIT has a strong evidence base for its effectiveness with children who exhibit disruptive behaviors, and there are many adaptations of this model, for other social-emotional and behavioral concerns such as autism spectrum disorder (Lesack, Bearss, Celano, & Sharp, 2014), depression (Luby, Lenze, & Tillman, 2012), and issues unique to adopted children (Allen, Timmer, & Urquiza, 2014). PCIT has been studied with a range of cultural groups as well, including Chinese families (Leung, Tsang, Heung, & Yiu, 2009), Mexican American families (McCabe & Yeh, 2009), and Australian families (Phillips, Morgan, Cawthorne, & Barnett, 2008).

Purpose of the Present Study

The purpose of this study is to examine the impact of TCIT as a Tier 3 intervention on child behavior, teacher-student relationships, and teacher satisfaction in an urban general education preschool setting. Given the strong effects of PCIT, it is presumed that the

positive outcomes would translate to the classroom. However, there is minimal research on TCIT and its effects on behavior change and teacher-child relationships, especially within a three-tiered model. Current research on TCIT has been conducted as a class wide intervention (Fawley et al., 2020) or as a case study (McIntosh et al., 2000). Little to no research exists on TCIT as a tiered intervention. Since TCIT is based in the same theoretical roots as PCIT, further research is warranted to explore its effects. Furthermore, the existing literature on TCIT has shown that it is effective in reducing problem behaviors within the classroom (Garbacz et al., 2014) but has not specified the behaviors it reduced most effectively. Although TCIT has been implemented in general preschool populations, most research has been conducted in specialized preschool settings such as Head Start or therapeutic preschools (Tiano & McNeil, 2006). Therefore, there is a need for the evaluation of TCIT within the general education preschool population. Additionally, given the need for early childhood behavior management strategies to reduce disruptive behaviors in the classroom, it is practical to explore the effects of TCIT on behavior change within the classroom as well as its effects on the teacher-child relationship.

In the current empirical study, we will attempt to address the limitations in the extant literature base regarding TCIT. First, does TCIT significantly reduce problem behaviors within a general preschool population, using an intensive TCIT intervention within a three-tiered approach model through behavior observation? Additionally, does TCIT significantly reduce problem behaviors within a general preschool population using an intensive TCIT intervention within a three-tiered approach model through teacher report? It is hypothesized that TCIT will effectively reduce problem behaviors within the general preschool population. Second, does the implementation of TCIT increase positive teacher-child relationships and reduce teacher-child negative interactions? It is hypothesized that following the implementation of TCIT, positive teacher-child relationships will increase while negative teacher-child interactions

will decrease. Finally, will teachers approve of the intervention and find the intervention effective in reducing student disruptive behaviors following the TCIT intervention? We hypothesize that teachers will approve of the TCIT intervention and find it beneficial in reducing student disruptive behavior.

Method

Sample

Three (N = 3) preschool children attending an urban preschool were included in the study. Two of the three participants were receiving early intervention services at the time of intervention. All three participants attended the preschool full time (i.e., 7 hours a day). Two of the three participants were within the same classroom, and the third was in a separate classroom.

Two participants were male and included Griffin (age 4 years, Biracial) and Billy (age 4 years, White). The third participant was female, Sally (age 5 years, Biracial). Billy and Sally were within the same classroom environment, and Billy and Griffin were both receiving early intervention at the time of the TCIT intervention. Three teachers on the preschool staff participated in the study. Teacher A and C taught in the same classroom with Billy and Sally. Teacher B taught in the classroom in which Griffin was a student. One advanced doctoral student participated as a coach throughout the study. The doctoral student received consultation with a Level II PCIT trainer throughout implementation. Additionally, consultation with a PCIT Masters Level trainer was available if needed.

Instruments

Sutter-Eyberg Student Behavior Inventory – Revised (SESBI-R): The Sutter-Eyberg Student Behavior Inventory - Revised (Eyberg & Pincus, 1999; Funderburk & Eyberg, 1989) measures behavior of children ages 2-16 in the classroom setting and is completed by teachers. It contains 38 items that are rated on both Intensity and Problem scales, which allows teachers to indicate the current

frequency of child's behavior problems and decide the extent to which the behaviors are problematic (Eyberg & Pincus, 1999). The SESBI-R was given weekly to each student's teacher during the individual TCIT intervention sessions.

Dyadic Parent-Child Interaction Coding System (DPICS): The Dyadic Parent-Child Interaction Coding System (Eyberg & Pincus, 1999) was used in this study to code teacher-child interactions and teachers' use of positive skills, commands, questions, and criticisms. For all observation measures, one coder (an advanced doctoral student) completed the DPICS. Additionally, the DPICS was used throughout the Tier 1 and Tier 2 phases of the TCIT intervention to code teacher use of PRIDE skills.(In the PCIT model, the acronym PRIDE stands for Labeled Praise, Reflection, Imitation, Behavior Description, and Enthusiasm.) The advanced doctoral student and another staff member of the preschool coded using the DPICS throughout the duration of the study. Importantly, coders were required to reach mastery in use of PRIDE skills before coding teachers' use of the skills within their general classroom setting. Mastery level was assessed by each coder demonstrating their use of 10 behavior descriptions, 10 labeled praises, 10 reflections, and fewer than 3 questions/commands/criticisms within a 5-minute coding period.

Revised Edition of the School Observation Coding System (REDSOCS): The REDSOCS is an interval coding system designed to assess the disruptive behaviors of preschool and elementary school age children. The recording system contains 3 behavioral categories—inappropriate behavior, noncompliant behavior, and off-task behavior—which are specifically assessed within the classroom setting. Each child was observed at least once a week by one of the two coders. To assess for reliability, both coders coded together for 25% of the observation sessions. Each observation session lasted 10 minutes.

Therapy Attitude Inventory (TAI): The Therapy Attitude Inventory (TAI) is a 10-item scale of satisfaction with the process

and outcome of treatment or therapy (Brestan et al., 1999). This scale is typically completed by parents; however, it was used by teachers within this study. Overall, the questions on the TAI related to the TCIT intervention and only a few changes were made to better fit the teachers' perspectives (i.e., changed "parent" to "teacher"). Additionally, this measure was chosen because it is endorsed by PCIT International (PCIT.org).

Procedures

A single-subject nonconcurrent multiple-baseline design across participants was used to assess the effects of the TCIT intervention. The design included a baseline phase, an intervention phase, and a maintenance phase for child behavior. Children were referred to the study through a data driven approach and lack of response to Tier 1 and Tier 2 interventions. Informed consent from caregivers and child assent were obtained prior to implementation. Prior to the beginning of the study, teachers participated in a school-wide didactic session in which they were trained in TCIT skills.

Baseline Phase

The SESBI-R and DPICS were used to collect baseline data. The teachers who participated in the study were asked to complete the SESBI-R prior to the intervention. Additionally, an advanced graduate student who had been trained in the DPICS's coding system coded teacher-child interactions for 5 minutes prior to the TCIT intervention. At the beginning of the individual TCIT coaching sessions, teachers were already trained in PRIDE skills and were using them within their classrooms. Therefore, teachers were required to reach mastery in PRIDE skill use before moving to the TDI phase of treatment.

Intervention Phase

Teachers participated in 30-minute weekly pull-out TCIT sessions which comprised two phases, the Child-Directed Interaction

(CDI) phase and the Teacher-Directed Interaction (TDI) phase. Coaching of the CDI phase focused on positive relational and communication skills that are used within the traditional PCIT model, also known as the PRIDE skills (Labeled Praise, Reflection, Imitation, Behavior Description, and Enthusiasm). Teachers were also coached to utilize selective attention/ignoring techniques. In order to proceed to the second phase of TCIT (the TDI phase), teachers were required to reach a mastery criterion. The mastery criteria consisted of using 10 labeled praises, 10 reflections, and 10 behavior descriptions within a 5-minute coding period as evidenced by the DPICS. Once teachers progressed to the TDI phase, they were coached on utilizing effective behavior management strategies. In contrast to the original TCIT and prior models, time-out was not utilized within this study due to policies within the preschool. Therefore, a consequence hierarchy was utilized. This hierarchy included strategies including a "broken record," "swoop and ignore," and an "if then statement" (i.e., "if you don't hand me the block, then you cannot play with the Play-Doh this afternoon,") with a preferred item in the classroom. A broken record strategy is when the teacher continually repeats the command with a neutral tone and expression (with a 5 second pause in between commands) until the child complies. Additionally, teachers were taught to implement a "swoop and ignore" procedure where the teacher "swoops" the toys the child is playing with into a bin and takes them with him/her while ignoring the child's behavior, and while also utilizing the broken record. In order to graduate from the TCIT intervention, 75% of teacher commands must qualify as "effective." Additionally, the teacher needed to demonstrate at least 75% of correct follow-through with the command sequence, as outlined by the traditional PCIT model (McNeil & Hembree-Kigin, 2011). It should be noted that data collected within the TDI phase was for clinical and practical purposes and not for the purposes of this research study.

Maintenance Phase

Following the completion of the TCIT intervention, teachers were observed in their classrooms three additional times to collect maintenance and follow up data. Students were observed using the REDSOCS system for disruptive behaviors. Additionally, once the students and teachers graduated from the TCIT intervention, the teachers were asked to complete the TAI in order to assess whether they were satisfied with the TCIT intervention and found it effective.

Results

Visual and statistical analyses were used to analyze the REDSOCS results of the current study. As mentioned above, student behavioral data was collected using the REDSOCS throughout the baseline, intervention, and maintenance phases of this study. The REDSOCS allowed the observer to record three categories of behavior: 1) Appropriate vs. Inappropriate behaviors, 2) Compliance vs. Noncompliance, and 3) On Task vs. Off Task. For the purposes of this study, only "inappropriate behaviors, "noncompliance", and "off-task" behaviors were graphed. Visual analysis allowed demonstration of any variability in performance, level, and trend within and across phases (Lane & Gast, 2014). Estimates of effect size were computed for REDSOCS data via the Nonoverlap of All Pairs (NAP) method, which entails pairwise comparisons between points in the baseline and treatment phases. NAP has several strengths over other effect size estimates (e.g., PND, PEM, PAND), including the usage of all data within baseline and treatment phases and more precise scores as evidenced by narrower confidence intervals (Parker & Vannest, 2009). The effect size values and confidence intervals were calculated using the NAP web-based calculator on the website http://www.singlecaseresearch.org (Vannest et al., 2016). As a default, the calculator is set to compute effect size values for outcome variables that are anticipated to increase from baseline to the treatment phase(s). Since the REDSOCS outcome

variables were anticipated to decrease within the intervention phase, which would signify more effective treatment, the intervention phases for each participant were entered first and were followed by their respective baseline phases. Effect sizes were interpreted based on Parker and Vannest's (2009) rubric: values between 0 and .65 indicate weak effects, values between .66 and .92 indicate medium effects, and values between .93 and 1.0 indicate large or strong effects.

Behaviors

Table 1. *Mean Percentages of Sally's REDSOCS Behavioral Domains*

	Baseline	Intervention	Maintenance
Inappropriate Behaviors	17.7%	11.1%	3.7%
Noncompliant Behaviors	4.1%	2.5%	0.0%
Off-Task Behaviors	14.4%	7.6%	1.6%

Table 2. *Mean Percentages of Griffin's REDSOCS Behavioral Domains*

	Baseline	Intervention	Maintenance
Inappropriate Behaviors	11%	15.6%	14.3%
Noncompliant Behaviors	5.8%	7.7%	3.3%
Off-Task Behaviors	7.5%	11.6%	16%

Table 3. *Mean Percentages of Billy's REDSOCS Behavioral Domains*

	Baseline	Intervention	Maintenance
Inappropriate Behaviors	12.25%	14.6%	1%
Noncompliant Behaviors	0.75%	3.7%	0.67%
Off-Task Behaviors	8.75%	14.9%	0.6%

Table 4. *NAP and 95% confidence intervals for all participants' REDSOCS behavioral domains*

	Inappropriate Behaviors	Noncompliant Behaviors	Off-Task Behaviors
Griffin	0.81 (-.09 – 1.00)	0.34 (-1.00 – .40	0.38 (-.96 – .46)
Sally	0.67 (-.14 – .84)	0.74 (-.02 – .97)	0.70 (-.10 – .89)
Billy	0.04 (-1.00 – -.14)	0.47 (-.76 – .65)	0.25 (-1 – .28)

Note: 95% confidence intervals are provided in parentheses.

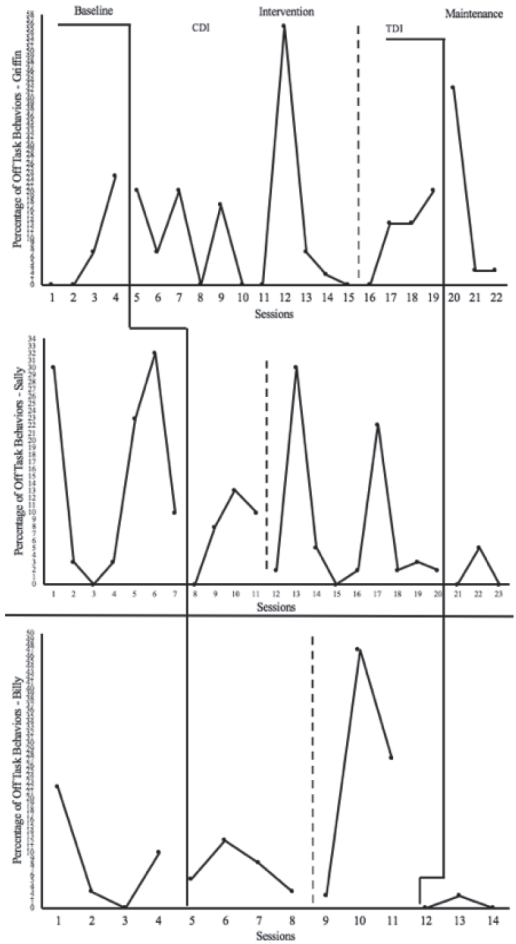

Figure 1. *Mean Percentages of Inappropriate, Noncompliance, Off-Task Behaviors (continued on next page)*

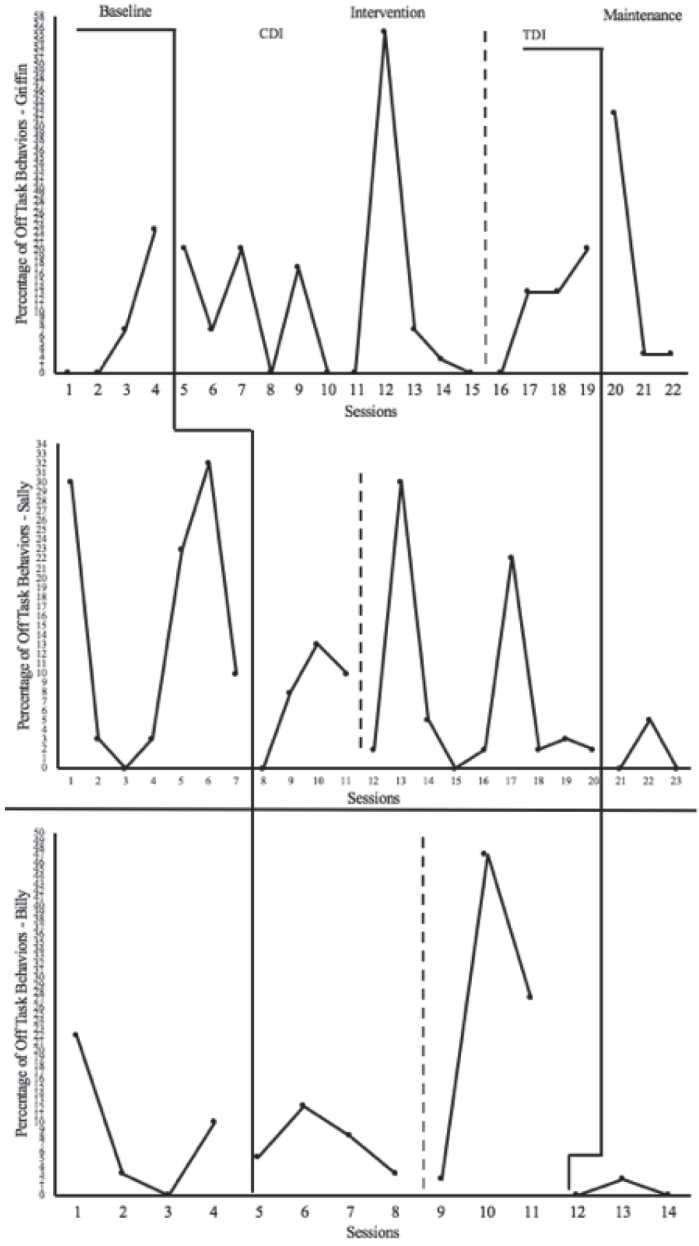

Figure 1. *(continued) Mean Percentages of Inappropriate, Noncompliance, Off-Task Behaviors*

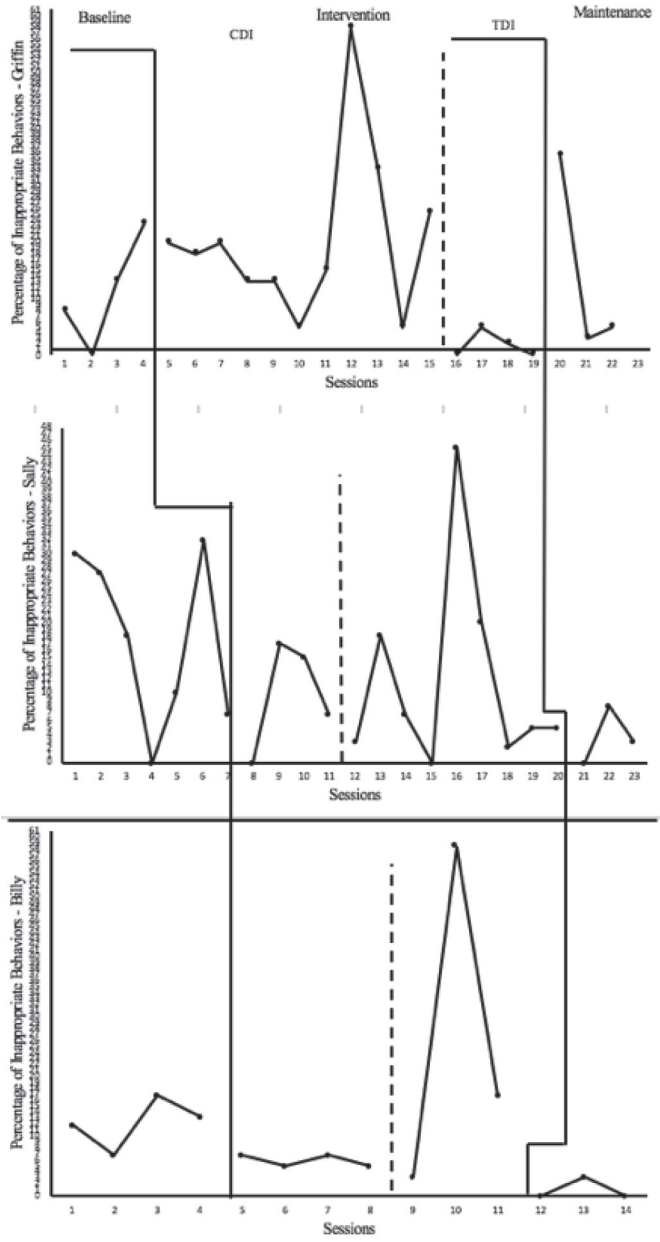

Figure 1. *(continued) Mean Percentages of Inappropriate, Noncompliance, Off-Task Behaviors*

Overall, results indicate a decrease across disruptive behavioral domains for all participants, except for Griffin, who demonstrated an increase in Inappropriate Behaviors and Off-Task Behaviors during the TDI phase. Additionally, Griffin and Billy both demonstrated a trend in which disruptive behaviors increased during the intervention phase but decreased in the maintenance phase.

NAP calculations between TDI and baseline support conclusions drawn from visual analysis of graphed data for these phases. NAPs for each participant are reported in Table 4 for the graphed REDSOCS data. Griffin and Sally's effect size for inappropriate behaviors indicated medium effects at .81 and .67, respectively. Treatment had weak effects on reducing Billy's inappropriate behavior, which was evident through his effect size of .04. Treatment also had a weak effect on reducing noncompliant and off-task behaviors for Griffin (ES noncompliant = .34; ES Off-Task = .38) and Billy (Effect Size Noncompliant = .47; Effect Size Off-Task = .25). Sally's effect sizes for noncompliant (.74) and off-task (.70) behaviors indicated medium effects.

In addition, teachers also completed the SESBI-R, which is a self-report measure on student behaviors. The SESBI-R was completed by each teacher who participated in the TCIT study weekly prior to each TCIT session. Therefore, the SESBI-R provides data on student behavior change from the teacher's perspective. Statistical and visual analyses were used to analyze the data from the SESBI-R..

Overall, all teachers indicated a decline in student disruptive behavior across all three participants. More specifically, Sally's SESBI score increased slightly in the CDI phase but decreased once in the TDI phase of treatment. Similarly, Griffin's SESBI score demonstrated a similar pattern, whereas Billy's score had more variability in the CDI phase but then continued to decrease within the TDI phase.

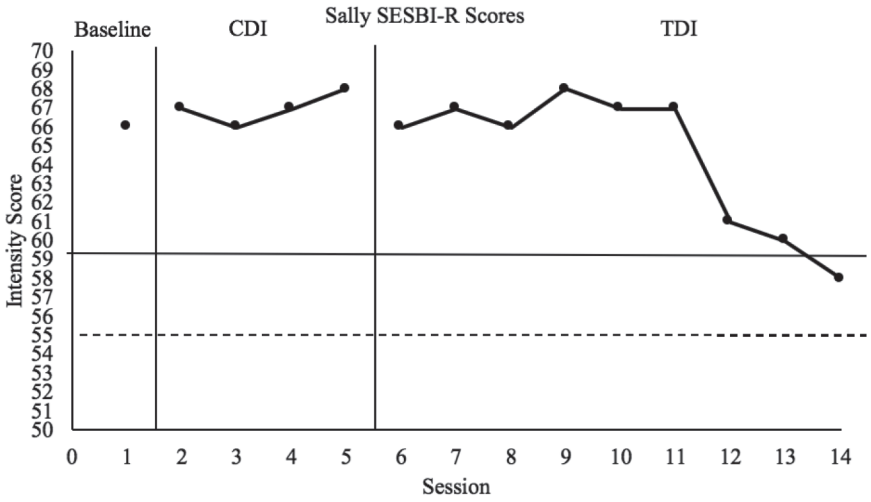

Figure 2. *Sally's SESBI-R scores across baseline and intervention*

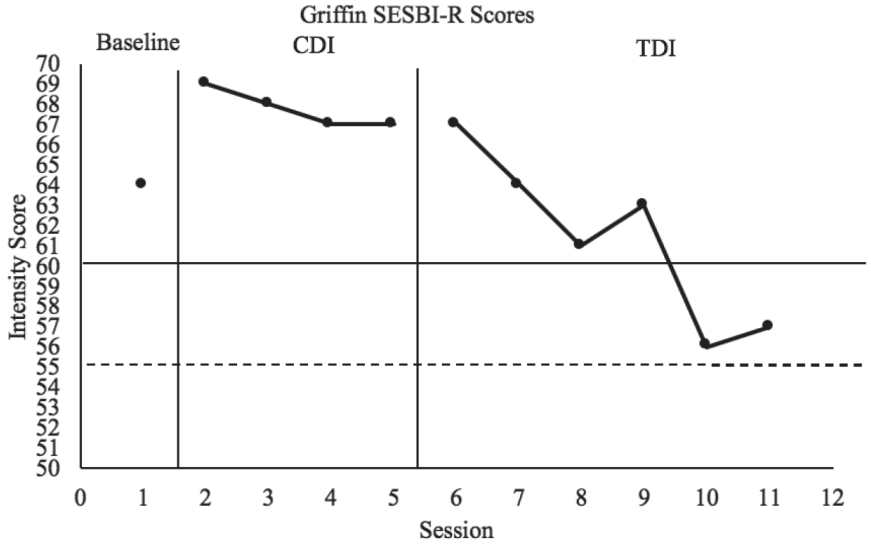

Figure 3. *Griffin's SESBI-R scores across baseline and intervention*

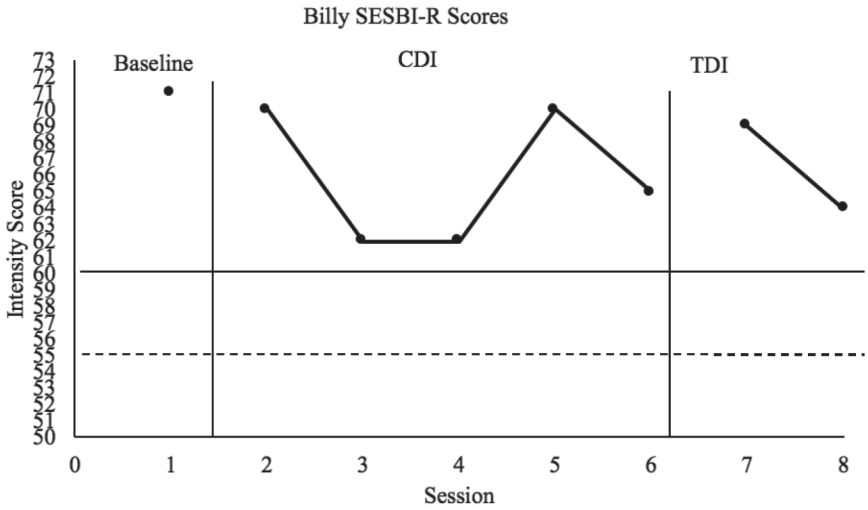

Figure 4. *Billy's SESBI-R scores across baseline and intervention*

Teacher Skills

Throughout the TCIT intervention, teachers were coached on the PRIDE skills, asdescribed. The goal of this coaching was to increase teachers' use of the skills, while decreasing other teacher behaviors (i.e., questions, commands, criticisms), which in turn, was postulated to improve the teacher-child relationship.

Table 5. *Mean Frequency Count of PRIDE Skill Use During 5-minute DPICS Coding*

	Baseline	Child-Directed Interaction (CDI)	Teacher-Directed Interaction (TDI)
Labeled Praise	3	8.75	8.89
Unlabeled Praise	2.4	1.5	1.52
Reflection	13.4	18.9	17.1
Behavior Description	4.8	11.4	11.7

Table 6. *Mean Frequency Count of Avoid Skills During 5-minute DPICS Coding*

	Baseline	Child-Directed Interaction (CDI)	Teacher-Directed Interaction (TDI)
Questions	5.9	2.1	0.79
Negative Talk	0.1	0.4	0.05
Commands	6.1	2.75	0.47

On average, teachers reduced their use of questions and commands, as the phases progressed. In terms of PRIDE skill use, teachers increased in all of the skills with the exception of Reflections, which slightly reduced in the TDI phase of treatment. Additionally, Unlabeled Praises reduced throughout the TCIT intervention as well, but this was expected since teachers are coached to utilize Labeled Praise instead of Unlabeled Praise.

Teacher Acceptability/Feasibility

At the end of the intervention, teachers completed the TAI, which reports on acceptability, feasibility, and effectiveness of the TCIT intervention. Overall, all three teachers reported that the TCIT intervention was effective for reducing disruptive behaviors and was acceptable to utilize within the school environment. Some items that teachers rated highly were "I feel that my student's compliance to my commands has…" and "Regarding the relationship between my student and I, I feel we get along…"

Discussion

Summary of Results

The current study examined the impact of TCIT on child behavior and teacher-child relationships. The first research question considered whether TCIT would reduce problem behaviors within the general classroom setting. REDSOCS results indicated

an overall decrease in problem behaviors across all participants within the classroom. According to teacher SESBI-R scores, the TCIT intervention was effective in reducing problematic behaviors within the classroom for the three participants. The second research question examined whether the TCIT intervention would improve teacher-child relationships and decrease their negative interactions as measured by the DPICS-II. All teachers improved in their use of the PRIDE skills. Additionally, teachers continued to increase their use of PRIDE skills within the TDI phase of the intervention where the PRIDE skills are not as frequently coached.

REDSOCS results indicated an overall decrease in inappropriate behaviors for the three participants. Generally, Sally's behaviors decreased throughout the intervention and maintenance phases. However, Sally did have a rapid increase in her inappropriate behaviors during session 17, which may have been due to the timing of the observation. On this day, Sally's observation took place during her transition from snack to reading time, which was a non-preferred activity for her.

Both Griffin and Billy also showed overall decreases in inappropriate behaviors, but these decreases in behaviors were not observed until the maintenance phase. Griffin demonstrated a high number of passive noncompliant behaviors within the classroom; his overall inappropriate behaviors prior to the intervention were low. Like Sally, Griffin and Billy exhibited an increase in their inappropriate behaviors at one point during the intervention phase but all three decreased as the intervention progressed.

A closer examination of Griffin's behavior reveals that his increase in inappropriate behaviors occurred during observation 12— while Griffin's class engaged in circle time. Griffin did not participate with the class and, instead, chose to read a book by himself. Prior to the TCIT intervention, Griffin had exhibited symptomology typical of the criteria forautism spectrum disorder . Ergo, positive attention from peers or adults may not have been as reinforcing to him and may have contributed to the increase of inappropriate behaviors. Billy's increase in these behaviors was exhibited during

observation 10, which was completed while he engaged in group play. Billy's increase of inappropriate behaviors during this session may have been due to the lack of structure in group play, a setting in which he struggled to engage with peers appropriately.

Noncompliant behaviors were also observed to decrease across participants with the implementation of the TCIT intervention. Sally showed a decrease in noncompliant behaviors throughout the intervention and maintenance phases. However, like with the inappropriate behaviors, she exhibited an increase in noncompliant behaviors during observation 16. This observation session was completed on Sally's first day back to the preschool classroom after a 3-week family vacation. The increase in noncompliant behavior may have been influenced by her readjustment to daily routines.

Griffin and Billy showed a slight increase in noncompliant behaviors during the intervention phase which decreased in the maintenance phase. Griffin and Billy also demonstrated an increase in noncompliant behaviors during an observation period after a few weeks of diminished frequency of these behaviors. Griffin's increase in noncompliant behaviors occurred during observation 19. Free play—the class activity during which the observation took place—offered less structure for Griffin and, given his possible ASD symptomology, may have negatively influenced his appropriate engagement with peers. Billy also exhibited an increase in noncompliant behaviors during observation 11, which was likely related to external variables during the observation.

The third behavioral measure was off-task behaviors. Sally showed a consistent level of off-task behaviors during baseline and the CDI phase, but displayed an overall decrease in off-task behaviors in the TDI and maintenance phases. In contrast, Griffin showed an overall increase in off-task behaviors throughout the intervention and maintenance phases. Typically, certain skills used in the PCIT/TCIT model are targeted toward off-task behaviors. However, since these behaviors were not part of the main research question, off-task behaviors were not included in teacher coaching.

The inattention to off-task behaviors during coaching sessions may have influenced the outcome for these behaviors. Billy's off-task behaviors increased during the intervention phase and then significantly decreased during the maintenance phase. Billy, like Griffin, demonstrated an increase in off-task behaviors during observation 10 which was during group play—an activity where Billy was not necessarily expected to be on-task. This pattern of behavioral change was most likely due to the limited amount of TCIT sessions he had completed compared to the other participants.

Sally's teacher rated her behaviors consistently high on the SESBI-R Intensity scale; however, beginning at observation 11, Sally's behaviors began to decrease. Generally, Sally's Intensity score decreased throughout the TCIT intervention. Sally's teacher ratings further suggest that the TCIT intervention was effective in reducing Sally's problematic behaviors within the classroom. Griffin's teacher ratings on the SESBI-R Intensity scale indicate that the frequency of these behaviors remained the same; however, after further looking at the scores on the REDSOCS there was a decrease in Griffin's behaviors. Lastly, Billy's teacher indicated an overall decrease in his Intensity scale. Although behaviors were not completely eliminated, there was a decrease in the overall frequency and intensity of behaviors.

The results of the DPICS-II indicated that the three teachers improved in their use of the PRIDE skills. Further, all three teachers continued to increase their use of most PRIDE skills beyond the intervention phase, the phase in which they received the most frequent coaching. The only skill in which teachers demonstrated a decrease was unlabeled praises; however, this is consistent with the TCIT model, which does not encourage unlabeled praise.

In terms of the negative interactions, teachers showed a decrease in their use of questions and commands during both phases of the intervention. Teachers' use of negative talk was observed to increase during the CDI phase and decrease in the TDI phase. The slight increase in negative talk during the CDI phase

was most likely due to a need for more coaching to reduce the use of words such as "Don't" or "No." Notably, teacher 2 required more sessions to reach mastery with Griffin than the other two teachers required to reach mastery with their student. This may have affected Griffin's overall performance in behavioral domains throughout the TCIT intervention. Also, given Griffin's atypical behaviors, positive teacher attention may not have been as effective for him as it would for a typically developing child.

Overall, according to the results of the TAI, teachers thought highly of the TCIT intervention. Furthermore, these results indicate that the TCIT intervention was found to be feasible and effectively delivered by teachers.

Contribution to Scientific Literature

This implementation study of TCIT indicates hopeful results for this intervention with a general preschool population, utilized as part of a tiered model of service. Since the number of students who exhibit disruptive behaviors has increased in recent years (Schaffner, 2013), teachers would benefit from learning effective behavioral management strategies. Behavioral management strategies in early childhood often only include a reward/consequence component (e.g., token economies). The TCIT model is unique in that it utilizes a relationship-building phase prior to implementing consequences. By developing a positive relationship between the teacher and child, the implementation of the intervention acts as a natural reward (e.g., the teacher's attention and positive regard) and motivates the child to decrease nonpreferred behaviors. The natural reward component may prove more feasible compared to the provision of a tangible reward or completion of a behavior chart, which may not always be possible to enact promptly.

The current study differs from existing research studies in that it used a three-tiered approach to the TCIT intervention, which is commonly seen in the K-12 setting. No other studies to this date have utilized a similar model when implementing the TCIT

intervention. The current study also differs from existing literature in that all teachers in the school were trained on the PRIDE skills prior to the study. In previous studies (Garbacz et al., 2014; Lyon et al., 2009; Schaffner, 2013), individual teachers were only taught PRIDE skills if they were participating in the TCIT intervention with students who might benefit. Additionally, previous models worked with groups of teachers, whereas this study trained all teachers and staff in PRIDE skills as a Tier 1 intervention prior to choosing the three teachers who participated in this study. The timing for the teacher and staff training was chosen so that teachers could reach mastery of the CDI phase sooner than occurred in previous research studies. This study implemented a hierarchy protocol in place of the time-out component. Other models of TCIT often use a version of time-out as a consequence procedure (Lyon et al., 2009). The hierarchy protocol was used instead of time-out because many early educational settings do not condone time-out interventions and because it is not applicable to all classrooms. The hierarchy protocol consisted of a "broken record" procedure, "swoop and ignore," and if-then statements. These strategies were chosen due to their generalizability within the classroom setting.

Implications for Practice

Although research from the current study and previous research demonstrates positive results for student behavior change, there are numerous considerations when translating this intervention to the classroom. If clinicians would like to implement TCIT within a school setting, they may want to consider 1) shorter sessions, 2) fewer sessions, 3) collaboration on the time-out protocol to adapt to the classroom, and 4) the training of teachers in PRIDE skills prior to the implementation of TCIT. These adaptations of t the traditional TCIT model may allow for easier implementation of the intervention, given the possible barriers schools present.

School districts and preschools are all unique. Therefore, prior to the implementation of the TCIT intervention, clinicians should

consider 1) time for the clinician, teacher, and child, 2) set times throughout the day for free-play, 3) staff coverage teachers who may participate in pull out sessions, 4) space and equipment to conduct the TCIT intervention, and 5) the appropriateness of time-out procedures. Consideration of these different factors is crucial for the intervention's success. Schools should also consider implementing a behavioral health team that regularly meets to discuss obstacles and at-risk students.

Furthermore, this study suggests that schools may utilize the TCIT PRIDE skills alone to improve the classroom climate. Clinicians may help teachers improve PRIDE skill quality and frequency with students during free-play periods, which may help foster better relationships among the students and teachers. Previous studies have demonstrated the difficulty teachers may have in reaching mastery in PRIDE skill use during TCIT (Schaffner, 2013). It also may be beneficial for schools to implement reminders, such as posters throughout the school to promote PRIDE skill use by all teachers and staff. Additionally, follow-up trainings on PRIDE skills would be a good refresher in skill use.

Limitations

Although the implementation of a three-tiered model of TCIT within a general preschool population has shown promising effects, there are also limitations. The intensity and consistency of the TCIT intervention is a significant strength; however, it is time consuming. This model of TCIT was implemented across several months which presents threats to the internal validity of the model. Additionally, there are concerns with maturation of the participants. In regard to methodology, there are clear limitations in the number of participants within the study. The current results show "proof" that the TCIT intervention within a tiered approach should be further explored to determine effectiveness.

Replication of this model within schools may be difficult, especially due to staffing. For the current study, teacher coverage was

required for the pull-out TCIT sessions. Schools may have difficulty providing this necessary staffing. In terms of logistics, the setting of the current study was in a preschool in western Pennsylvania. The school itself was not equipped for the traditional TCIT intervention (e.g., appropriate rooms, one-way mirror, 'bug' in the ear, etc.). The room used to implement the TCIT intervention had "more than recommended" objects and furniture in place. The intervention may have had a greater impact on behavior reduction, or may have expedited a reduction in behaviors, if the appropriate space and materials were provided. In terms of the implementation, the advanced doctoral student who coached teachers throughout the intervention was not PCIT certified. However, she had readily available consultation and practice with a certified therapist, Level II and Master PCIT trainers.

Additionally, over the course of the intervention, two teacher-child dyads dropped out of the study. The first two teacher-child dyads dropped out due to one of the students leaving the preschool and another teacher resigning. Therefore, the third teacher-child dyad was recruited towards the end of the study. Since they entered the study later than the other two teachers and children, they had less time in the intervention period. Despite this limitation, a significant number of observations were conducted on this student and the teacher was still able to meet mastery criteria with PRIDE skill use.

Recommendations for Future Research

Future TCIT studies should examine the effects of the TCIT principles in a Tier 1 and Tier 2 model to see how students respond behaviorally from receiving TCIT as a whole-school approach. Studies should also examine the effects of the model from the current study with a certified PCIT therapist, specifically one who is a school psychologist. This may allow for more flexibility in implementing the TCIT intervention as well as increased knowledge about the school and its operation.

A universal TCIT model for schools does not exist. Therefore, the examination of different TCIT adaptations is warranted.One adapration might be to establish an effective consequence procedure or behavior management strategy within the classroom first, and then focus on the relational component with PRIDE skill coaching. Implementing the behavior management component prior to the relationship building phase could result in more rapid behavioral change which, inturn, may gain greater teacher buy-in. Another adaptation might be the implementation of TCIT with more specialized populations within the school. Special education classrooms would be an excellent setting since students in these classrooms often struggle with emotional, behavioral, and learning difficulties.

One of the barriers to the current study was drop-out due to reasons outside of this study's control. Therefore, future research should consider recruiting students who are already participants in PCIT. Comparison of children who only receive PCIT and children who receive both PCIT and TCIT concurrently could be conducted, to determine whether both interventions together provide more behavioral change compared to that of children who receive only one of the interventions.

Another barrier was the acceptability of time-out, which is the standard consequence used within the traditional PCIT model. Therefore, further research should be conducted on the consequence strategies utilized in this study ("broken record" procedure, "swoop and ignore" procedure, and if-then statements) and their effectiveness within the TDI phase of treatment. Lastly, as aforementioned, TCIT within a tiered approach should be implemented on a larger scale to determine actual effectiveness.

TCIT is in the early stages of building a strong evidence base, especially compared to PCIT. Therefore, replication of this model should be completed with varying participants, dosages, and settings.

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