

EVALUATION OF CAREGIVER TREATMENT INTEGRITY DURING A TREATMENT
ADHERENCE CHALLENGE INVOLVING A SIBLING

by

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ABSTRACT

The success and maintenance of intervention effects for reduction of behaviors exhibited by children on the autism spectrum depends on the integrity with which intervention plans are implemented. Previous research has shown that context changes (e.g., new environments) may lead to renewal of caregiver integrity errors. The purpose of this study was to evaluate how the presence of a second child affects caregiver treatment integrity. Using a translational approach, participants underwent three phases. In Phase 1, caregivers were given no instructions on how to respond to confederate disruptive behavior. In Phase 2 caregivers implemented functional communication training (FCT) with the confederate. In Phase 3, participants continued to implement FCT while simultaneously caring for a crying babydoll, simulating another child being present. A reversal was conducted if participants showed persisting high rates of integrity errors during the treatment adherence challenge. Caregiver integrity errors did not increase during the treatment adherence challenge.

INDEX WORDS: Renewal, relapse, translational, caregiver, integrity, sibling

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CHAPTER 1

INTRODUCTION

The lasting success of a treatment for children with autism spectrum disorder (ASD) who exhibit challenging behavior and its maintenance depends on the integrity with which treatment is implemented (Fryling et al., 2012). Treatment integrity is defined as the degree to which the independent variable is manipulated as intended (Gresham et al., 1993; Peterson et al., 1982). Research has shown that there is a correlation between high treatment integrity and treatment outcomes (Arkoosh et al., 2007). After obtaining treatment goals in a clinical setting, the child's caregivers are expected to implement the treatment consistently and with high integrity in their natural setting (e.g., the home) to ensure lasting effects (Allan & Warzak, 2000). However, context changes (e.g., a new setting, another child present) may lead to an increase in challenging behavior from the child, a behavioral phenomenon known as renewal (Muething et al., 2020).

Renewal of challenging behavior exhibited by a child is well documented however, little is known about renewal of caregiver behavior during generalization and the specific factors that impact it. A change in context could lead to renewal, or an increase, of caregiver implementation of integrity errors (e.g., ignoring appropriate communication or reinforcing challenging behavior from a child), irrespective of an increase in challenging behavior (Mitteer et al., 2018). These increases in integrity errors could also result in the reemergence of challenging behavior by the child; a separate phenomenon known as resurgence (Fuhrman et al., 2016). Taken together, context changes during the treatment of challenging behavior could result in increases in

caregiver integrity errors and child challenging behaviors, degrading treatment gains. As such, it is critically important to understand variables that impact caregiver integrity during generalization.

Adherence to treatment protocols in the generalized setting following the discontinuation of clinical services is important to ensure continued positive treatment outcomes. St. Peter et al. (2016), evaluated the effects of treatment-integrity failures on a response-cost procedure. In this study, 19 college students participated in two experiments. In each experiment, the participants were asked to interact with a computer simulation game. The participants were not given any instruction on how to play the game or what was expected from them. Experimenters implemented a response-cost procedure with varying degrees of integrity to increase target responding of participants and decrease all other responding. Specifically, the target behavior across phases was clicking on a red dot and the response cost procedure involved the participant losing points when they clicked on anything else. In the first experiment, participants were randomly assigned to one of four groups; 20% omission errors, 20% commission errors, 50% omission errors, or 50% commission errors. The second experiment consisted of implementing a range of 20% to 50% omission errors. The results of Experiment 1 indicated that omission errors suppressed undesired behaviors more than commission errors did. It also indicated that 20% omission errors were more detrimental to treatment than 50% omission errors were. Experiment 2 showed that, though treatment may still be effective with up to 50% omission errors, it is important that integrity remain high for achieving the most effective treatment outcomes. The results of this study suggest that adherence to treatment protocols is important for the continued success of the treatment.

Another potential barrier to successful treatment outcomes following discharge of clinical care is caregiver failure to adhere to treatment protocols. Caregiver nonadherence is the failure to implement learned treatment strategies as intended (Carr et al., 2015). Williams et al. (2023) evaluated relapse in caregiver nonadherence. Participants consisted of caregivers of autistic children who engaged in challenging behaviors maintained by escape from nonpreferred tasks. A confederate acted as the participants' child in all phases of the study. In Phase 1, participants were asked to interact with the confederate as they would with their own child and respond to challenging behavior as they normally would. Following Phase 1, using behavioral skills training (BST), participants were taught how to implement functional communication training (FCT). In Phase 2, participants implemented FCT procedures and the confederate's rate of challenging behaviors decreased. In Phase 3, the confederate's challenging behaviors renewed to baseline levels. The results of this study suggest that caregiver treatment adherence is negatively impacted by renewal of challenging behavior.

Mitteer et al. (2018) evaluated how a treatment adherence challenge affected caregiver treatment integrity. Participants (three women, one man) consisted of caregivers whose children engage in challenging behaviors. During each phase of this study, a confederate was used as the child and engaged in behaviors that simulated those of the participants' own children. In Phase 1 (baseline), participants were asked to interact with the confederate as they would with their own child and were given no other instructions. The confederate proceeded to engage in predetermined rates of challenging behavior in the form of destructive behavior and negative vocalizations. Each time the participant responded to the confederate's challenging behavior (e.g., reinforced the behavior), the challenging behavior was terminated for 20 s. Sessions lasted for 5 min each. Following Phase 1, participants were trained, using BST, to only respond to the

confederate's functional communication responses (FCRs) in Phase 2. Phase 3 consisted of a treatment adherence challenge in the form of an inconsolable child. To stimulate an inconsolable child, the confederate engaged in high rates of challenging behaviors irrespective of how participants responded and emitted the same number of negative vocalizations as in previous phases, but at an increased volume. Results showed that three out of four of the participants, treatment nonadherence relapsed. The results of this study suggested that context changes, in this case an inconsolable child, negatively impacted caregiver treatment adherence.

Another variable that can impact caregiver treatment integrity is the presence of a second child. Having multiple children present may require caregivers to allocate their time and responding across multiple children. A significant number of families that have two or more children, making it important to know how the presence of a second child during treatment implementation impacts the caregiver's integrity. Though it has been shown that caregiver treatment adherence may be disrupted by a treatment challenge such as implementing it with an inconsolable child (Mitteer et al., 2018), there is no research examining whether the presence of a sibling is likely to lead to a decrease in treatment integrity and subsequent increase in challenging behavior (i.e., resurgence). This information would allow practitioners to modify take-home treatment plans that consider external distractions such as other children being present. Numerous distractions could increase caregiver treatment integrity and create the best possible treatment outcomes. The results could also be used to assess ways to minimize treatment errors and produce the most favorable treatment outcome, thus an evaluation of the impact the presence of a sibling has on caregiver treatment integrity is warranted.

The purpose of the current study was to evaluate how the presence of a second child affects the treatment integrity of caregivers. Specifically, this study evaluated (a) the impact of a

treatment adherence challenge involving a sibling on caregiver implementation integrity in an intervention for challenging behavior and (b) the effectiveness of providing immediate feedback to caregivers when making treatment integrity errors in the presence of a second child as it has been shown that immediate corrective feedback has been effective at increasing caregiver treatment integrity (DiGennaro et al., 2007).

CHAPTER 2

METHODS

Participants and Settings

Caregiver Participants

Three female caregivers whose children (a) were participating in a program at an academic medical center specializing in reduction of targeted behaviors and (b) had previously undergone a functional behavior assessment in the clinic and had an identified function for challenging behaviors, completed this study. Participants had varying degrees of exposure to Applied Behavior Analysis (ABA) assessment and intervention services. Jenna was a 62-year-old woman whose son engaged in aggressive and disruptive behavior maintained by social negative reinforcement. Jenna did not have any other children. Jenna held a bachelor's degree and had previously received caregiver training on intervention methods from the center at which this study was conducted. She also received ABA training for several years prior to this study. Shea was a 54-year-old woman whose son engaged in disruptive and self-injurious behaviors maintained by positive reinforcement in the form of tangible items. Shea had three other children. Shea held a bachelor's degree and had received caregiver training on intervention techniques at the center at which this study was conducted for several years prior to the study. Kelly was a 36-year-old woman whose son engaged in aggressive behaviors maintained by positive reinforcement in the form of tangible items. Kelly had one other child. Kelly held a bachelor's degree and received caregiver training at the center at which this study was conducted

on intervention techniques for 3 weeks prior to the study. All participants completed the informed consent process prior to starting the study.

Confederate Participants

A registered behavior technician (RBT) served as the confederate for all sessions in baseline (Phase 1), FCT (Phase 2), the treatment-adherence challenge (Phase 3), and the treatment-adherence challenge with feedback (Phase 4). This RBT had worked in the intensive outpatient program in the clinic for over a year. A second RBT that worked in the clinic for 2 years acted as the RBT that trained caregivers on BST and took reliability data on confederate behaviors. A third RBT who had worked in the clinic for 1 year acted as the confederate for the role-playing portion of BST.

Setting

This study took place within an academic medical center, specializing in the reduction of target behaviors in the Southeastern United States. Each phase of the study was conducted in a generalization room in the clinic. More specifically, the room was set up to mimic a home-like setting. The room contained a one-way observation window for discrete data collection. The room contained a couch with a blanket on it, a lounge chair, a coffee table, and a vase with a plant. There was a laminated piece of green construction paper with a laminated icon representing an iPad® on the coffee table. A baby doll was used in phases three and four. During these sessions, a wireless Bluetooth speaker was discreetly placed under the couch and played audio of a baby crying for a random amount of time ranging from 1-5 min. This audio began randomly during the sessions.

Response Measurement

Caregiver Behavior

The dependent variables of this study were appropriate and inappropriate caregiver responses. Appropriate caregiver responses were defined as not responding to confederate disruptive behaviors and providing programmed reinforcement within 3 s of the confederate's FCR. Inappropriate caregiver behavior was defined as responding to the confederate's disruptive behaviors or failure to provide programmed reinforcement within 3 s of the confederate's functional communication response. Any attention, physical or vocal, within 3 s of the confederate's disruptive behavior was counted as inappropriate caregiver behavior. Data collectors tallied the frequency of each caregiver's behavior using pen and paper.

Confederate Behavior

Confederate destructive behavior was defined as open or closed hand hitting, kicking, and throwing objects. FCRs were the exchanging of an icon card that had a picture symbolizing an iPad®. 5 min scripts for confederate disruptive behavior were prewritten and read to the confederate through a wireless earbud. The maximum rate of confederate responses was 30 per minute (Greer et al., 2016).

Interobserver Agreement (IOA) and Procedural Integrity

All sessions were video recorded and at least one third of sessions in each phase had a second observer collect interobserver agreement. Caregiver appropriate and inappropriate responding IOA was calculated by dividing the smaller value by the larger value and then was converted into a percentage. A total of 75% of baseline IOA was collected in vivo and 25% collected using the video recordings. All FCT session IOA was collected in vivo. A total of 75% of treatment adherence session IOA was collected in vivo and 25% collected using the video

recordings. Baseline sessions had a second observer take IOA for 33.3% of sessions and yielded an agreement of 95.8%. FCT sessions had a second observer collect IOA for 30% of sessions and yielded an agreement of 100%. Treatment adherence sessions had a second observer take IOA for 41.7% of sessions and yielded an agreement of 80%.

The primary RBT took procedural integrity on the confederate in vivo for 100% of all sessions. Procedural integrity was collected in 30-s intervals where the data collector scored correct, incorrect, or no opportunity for the confederate following the script (see Appendix B). Procedural integrity was calculated for each phase by dividing the number of intervals scored correct by the total number of intervals. The values were then averaged and converted to a percentage. During baseline sessions, the confederate maintained 97.8% procedural integrity. During FCT sessions, the confederate maintained 100% procedural integrity. During treatment adherence challenge sessions, the confederate maintained 98.6% procedural integrity.

Experimental Design

A nonconcurrent multiple baseline design was used in this study to evaluate changes in caregiver treatment integrity during a treatment adherence challenge. An embedded reversal design was used for participants who showed high frequencies of inappropriate responses during the treatment adherence challenge to evaluate changes in caregiver integrity during the challenge (Phase 3) involving a second child. All sessions lasted 5 min. Intermittently throughout the study an experimenter confirmed with the caregiver that they wished to continue with the study.

Procedures

Baseline (Phase 1)

Upon arrival at the clinic, the primary RBT led the caregiver back to the home-like session room. The primary RBT told the caregiver “When the confederate enters, we ask that

you treat them as you would if they were your actual child; please respond to any of their behaviors as you normally would.” No further instructions were provided to the caregiver and the primary RBT left the room. Sessions began when the confederate RBT entered the room. Each session was 5 min in duration. The confederate engaged in destructive behaviors at a maximum rate of 30 responses per minute. The confederate did not engage in FCRs. Contingent on inappropriate caregiver responses, the confederate refrained from engaging in disruptive behavior for 30 s. Each caregiver participated in a minimum of three baseline sessions. The criteria for caregivers to move on was three sessions with a stable trend. Data on the frequency of appropriate and inappropriate caregiver responses was collected.

Behavioral Skills Training (BST)

Once all baseline sessions were completed, the primary RBT reentered the room, and the confederate left the room. The RBT told the caregiver “You will now learn how to implement a treatment using functional communication training (FCT)”. The RBT began by briefly explaining the purpose of FCT following the provided script (see Appendix A). The RBT then explained the specific differential reinforcement of alternative (DRA) behaviors procedure that the caregiver would be implementing with the confederate. After the primary RBT explained the DRA procedure, a second RBT entered the room and the first RBT modeled implementing the DRA procedure with them while the caregiver was instructed to watch. Then, the caregiver was asked to role-play implementing the DRA procedure with the second RBT. The first RBT provided feedback as needed during the role-play portion. Once the caregiver completed 6 consecutive role-play trials at 100% accuracy, they moved on to the functional communication training (FCT) phase.

FCT (Phase 2)

After BST, the caregiver was instructed to implement the DRA procedure with the confederate once the confederate entered the room. The specific DRA procedure used in this study consisted of FCT where the caregiver reinforces the confederate's FCR with access to an iPad. Both RBTs left the room and the confederate entered. Sessions started upon the confederate entering the room. Each session lasted 5 minutes in length and each caregiver completed a minimum of three FCT sessions. Contingent on confederate FCRs in the form of a card exchange, the caregiver provided their attention or the tablet for 30 s. Contingent on inappropriate caregiver responses, the confederate refrained from engaging in disruptive behavior for 30 seconds. The confederate engaged in disruptive behavior at a rate of 15 instances per minute and 15 FCRs per minute during the first FCT session. The confederate engaged in disruptive behavior at a rate of 12 instances per minute and 18 FCRs per minute during the second FCT session. The confederate engaged in disruptive behavior at a rate of 8 instances per minute and 22 FCRs per minute during the third FCT session. This trend in response rates was implemented to simulate a natural treatment effect. The frequency of appropriate and inappropriate caregiver responses was recorded. Once the caregivers completed three consecutive FCT sessions with 80% accuracy, they moved on to Phase 3.

Treatment-adherence challenge (Phase 3)

Following the last FCT session, the RBT who coached the caregiver on the DRA procedure entered the room and the confederate exited. The RBT gave the caregiver the baby doll and instructed them that they would again implement the DRA procedure with the confederate, this time simultaneously caring for the baby doll. The session started once the confederate entered and the RBT exited. Each session lasted 5 min and each caregiver completed

a minimum of 3 sessions of the treatment adherence challenge. Contingent on inappropriate caregiver responses, the confederate refrained from engaging in disruptive behavior for 30 s. Contingent on confederate functional communication responses in the form of a card exchange, the caregiver provided their attention or the tablet for 30 s.

If the caregiver maintained low rates of inappropriate responding, the appointment concluded and the primary RBT conducted a debrief with them. If the caregiver engaged in high rates of inappropriate responding during this phase, they underwent a reversal. The reversal involved the caregiver completing Phase 4 and then reversing back to phase 3. Once the reversal was completed, the primary RBT debriefed with the caregiver and the appointment ended.

Treatment-adherence challenge with feedback (Phase 4)

Following the treatment adherence challenge phase, if caregivers maintained high rates of integrity errors, they completed a reversal followed by the treatment adherence challenge with feedback. Methods were the same as in the treatment adherence challenge, except that the RBT who trained the caregiver on BST entered the session room after each session and provided feedback to the caregiver on any mistakes made while implementing the DRA procedure.

CHAPTER 3

RESULTS

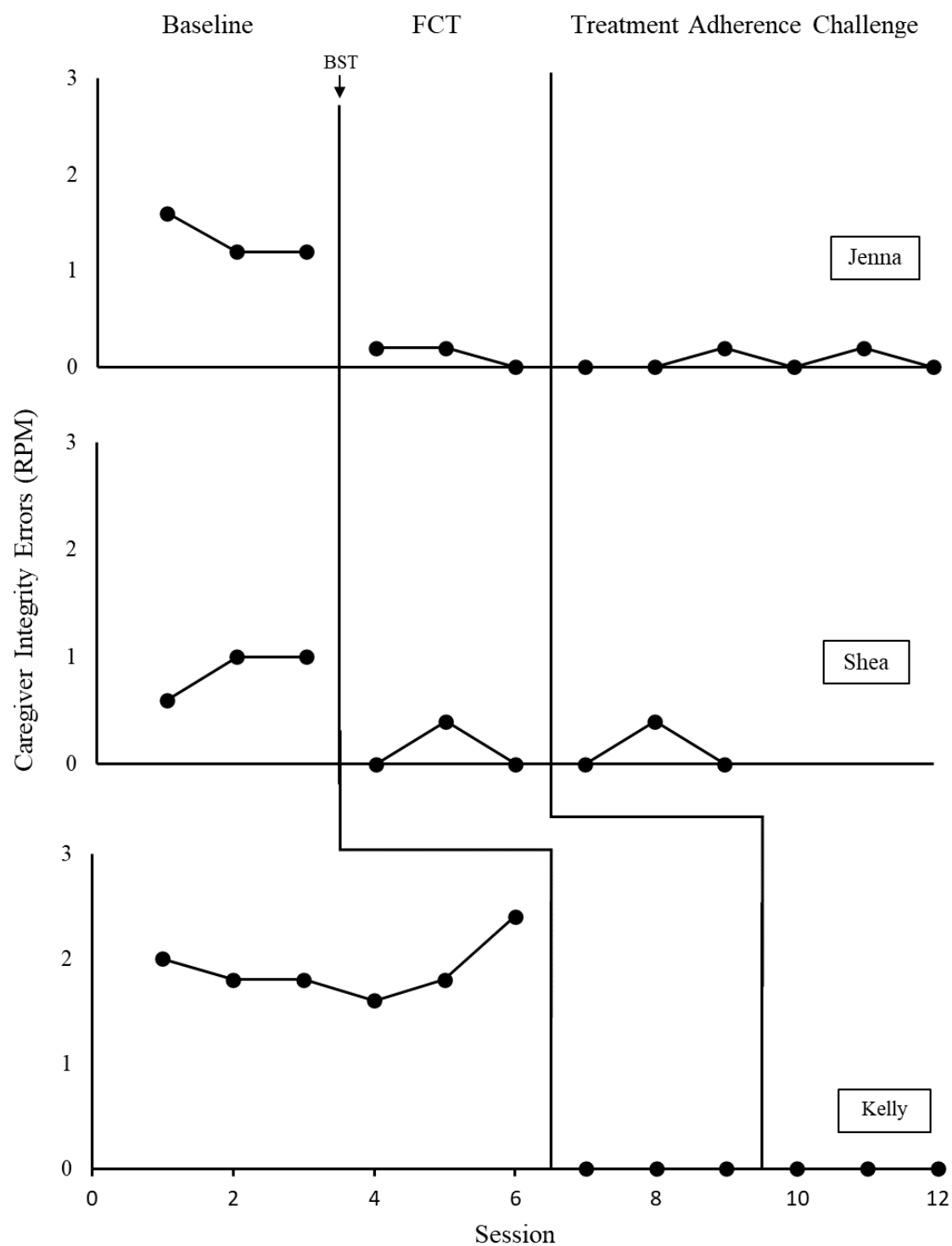
Figure 1 depicts the nonconcurrent, multiple-baseline design across the participants. During baseline, Jenna displayed consistently high rates of inappropriate responses, averaging 1.3 integrity errors per minute. During the FCT phase, after receiving BST, Jenna showed low rates of inappropriate responses during her first two sessions and then zero inappropriate responses during her third session, averaging 0.1 integrity errors per minute. During the treatment adherence challenge, Jenna displayed consistently low rates of inappropriate responses, averaging 0.1 integrity errors per minute.

During baseline, Shea displayed an increasing trend of inappropriate responses that stabilized on her third session, averaging 0.9 integrity errors per minute. After receiving BST, during the FCT phase, Shea displayed no inappropriate responses during her first and third sessions, and low rates of inappropriate responses during her second session, averaging 0.1 integrity errors per minute. Shea displayed the same results in the treatment adherence challenge as she did during the FCT phase.

During baseline, Kelly, displayed a slightly decreasing trend of inappropriate responses for the first four sessions before displaying an increasing trend of inappropriate responses during sessions four through 6. Her integrity errors during baseline averaged 1.9 per minute. During both the FCT and treatment adherence phases, Kelly emitted no inappropriate responses.

Figure 1

Rates of Caregiver Inappropriate Responses per Session



CHAPTER 4

DISCUSSION

After receiving services for behavior reduction in a clinical setting, treatment plans are often generalized to the home for the caregivers to continue to implement for lasting effects (Allan & Warzak, 2000). Such a change in context may lead to relapse of caregiver nonadherence to treatment protocols. Another context change that could negatively impact caregiver treatment adherence is the presence of a second child.

This study attempted to stimulate these events with caregivers of children who engage in behaviors targeted for reduction. During baseline, all three caregivers emitted high rates of integrity errors. After receiving BST, all caregivers completed the FCT phase with low rates of integrity errors. During the treatment adherence challenge, relapse in caregiver integrity errors was not observed across any of the three caregivers. The present study adds to the literature regarding caregiver treatment integrity after experiencing context changes. More specifically, this study depicts that, even after a context change, BST was an effective form of training to avoid relapse of undesirable caregiver responding.

There may be several reasons why relapse in integrity errors by the caregivers was not observed across any of the three caregivers. For example, this study used a confederate RBT in place of the caregiver's actual child, as well as a baby doll in place of a second child. The translational approach taken in this study cannot ensure a personal connection between the participant and the confederate or the baby doll. During the treatment adherence challenge, this could have increased the likelihood that the caregivers disregarded the crying baby doll.

However, even without an increase in errors, caregivers that participated in the study anecdotally reported that it was difficult to respond to the confederate and baby doll as they would their own child since it was a stranger and a doll. A possible future refinement for this study would be to use a more life-like baby simulation doll or to use the caregiver's actual children rather than a confederate and baby doll.

Similarly, one participant in this study did not have more than one child at home. This could have impacted the results of the study as it would have been a novel situation for the caregiver if they have not had to interact with more than one child when implementing a treatment plan. This could have caused the caregiver to be more inclined to disregard the babydoll during the treatment adherence challenge. A future refinement regarding this could be adding to the inclusion criteria that participants must have more than one child in the home.

Another potential explanation for the absence of relapse of caregiver integrity errors may be the challenging behavior that occurred. In this study, the confederate only engaged in disruptive behavior (i.e., hitting the table). This may have differed from the behaviors that the caregivers experience with their own children, both in topography and intensity. If the confederate's behavior was too dissimilar to that of the caregiver's child, it could have taken away the personalization effect of the behavior. For example, if a caregiver's child mainly engages in aggression (i.e., punching), they might not be able to relate to a confederate engaging in destructive behavior. Future procedural refinements to target this would be to either have the caregivers' actual child participate with them, or align the behaviors that the confederate engages in with those that the participant's child already engages in.

Finally, another potential explanation for these results could be previous training experience. Each of the three caregivers in this study had previously received or were currently

receiving caregiver training from staff at the center in which this study was conducted. Each caregiver that participated in this study had several years of exposure in ABA in the form of caregiver training. Because of previous experience or training in ABA, the caregivers might have been less susceptible to making integrity errors as a result of previous experience in caregiver training. A consideration for future researchers could be to use a participant pool of caregivers that had not previously received caregiver training on implementation of a treatment outside of a clinical setting.

A limitation of this study pertained to the way in which data was collected. Response measurement consisted of total caregiver integrity errors. Caregiver integrity errors were not differentiated between commission and omission errors. Isolating each error type in data collection would allow researchers to gather information about which specific type of relapse in challenging behavior is occurring respective to each error type.

Despite not seeing an effect during the treatment adherence challenge, this study presents important information. First, the lack of relapse in integrity errors of caregivers further suggests that BST is an effective and efficient method of training caregivers on treatment protocols, even in a scenario where a second child is present. Second, it is important that providers consider additional barriers a caregiver might encounter when sending treatment plans home. While this study evaluated a second child as a barrier, there are many other barriers caregivers may face. For example, caregivers may have a conflicting work schedule that would present another barrier to work through when implementing a treatment. The additional stress of another child being present combined with the focus it takes to implement an intervention plan requires the caregiver to allocate their attention to multiple things at once. This would mean that providers should take care to send home treatment plans that caregivers are more likely to be able to implement with

high integrity given their external barriers. Additionally, it is important that providers train caregivers in such a way that accounts for these barriers to ensure lasting effects.

CHAPTER 5

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APPENDIX A

BEHAVIORAL SKILLS TRAINING PROTOCOL

Instructions

The trainer registered behavior technician (RBT) read the following to the caregiver:

“We will now teach you about functional communication training, or FCT. FCT is one of the most widely used treatments for challenging behavior and consists of (a) delivering what your child wants when he/she appropriately request it and (b) not delivering what your child wants when they engage in challenging behaviors. The current child you are working with engages in challenging behavior to get [your attention/their tablet]. She recently learned to appropriately request what she wants by touching a card with a picture of that item on it. From now on, we would like you to give her [attention/the tablet] when she touches the picture card and avoid giving her [attention/the tablet] when she engages in challenging behavior. We would also like you to place challenging behaviors on extinction, meaning you will no longer provide any responses to the confederate when they engage in challenging behaviors, this includes withholding [your attention/the tablet].”

“First, we will show you what this looks like and then we will give you a chance to practice. The RBT will pretend to be the child with the challenging behavior who recently learned to appropriately request [attention/the tablet].”

Modeling

The trainer RBT and a confederate RBT demonstrate an FCT session with the first RBT providing the designated reinforcer assigned to that caregiver’s condition (i.e., attention,

tangibles). The RBTs modeled three trials in which the confederate RBT first engages in disruptive behavior (resulting in the trainer RBT implementing extinction) before emitting an FCR (resulting in the trainer RBT immediately delivering the programmed reinforcement) and three trials in which the confederate RBT first engages in an FCR (resulting in immediate reinforcement) with these scripts randomly assigned across six trials. The trainer RBT described the FCT implementation and rationale after each trial by saying the following:

When the confederate RBT emits disruptive behaviors first: “When the RBT engaged in disruptive behavior, I implemented extinction by ignoring the behavior altogether; I did not say anything to the RBT and I did provide them with [attention/their tablet]. This eliminates any reinforcement provided to the RBT when they engage in that behavior. When the RBT appropriately asked for [my attention/their tablet], I provided them with what they asked for. This is positive reinforcement; I am providing the RBT with what they want when they appropriately ask for it to encourage them to engage in that response again in the future.”

When the confederate RBT emits the FCR first: “When the RBT appropriately asked for [my attention/their tablet], I provided them with what they asked for. This is positive reinforcement; I am providing the RBT with what they want when they appropriately ask for it to encourage them to engage in that response again in the future.”

Ask the caregiver if they had any questions about the procedure before proceeding to roleplay.

Roleplay

The confederate RBT continues to serve as the confederate during roleplay. The RBT engaged in scripted FCRs and disruptive behavior as in the modeling component. Following a trial with no caregiver errors, the trainer RBT provided descriptive praise (e.g., “Great job ignoring that disruptive behavior and waiting for her to ask nicely!”). Contingent upon a caregiver’s

commission or omission error, the trainer RBT would have provided corrective feedback as follows:

If the caregiver did not provide reinforcement immediately after an FCR: “Remember, we want to give her what she wants right away when she asks nicely.”

If the caregiver provided reinforcement after a disruptive behavior: “Remember, we want to ignore any challenging behaviors and only provide [attention/the tablet] when she asks nicely.”

Following any error, the RBT would initiate the identical trial until the caregiver responded correctly to that trial. Roleplay ended following six correct trials (with no remedial trials), three of which began with challenging behavior and three of which began with FCRs first.

0:30-0:00: DIS DIS DIS DIS DIS DIS DIS DIS DIS DIS DIS DIS DIS DIS DIS DIS DIS DIS
DIS DIS DIS DIS

FCT Session 1

5:00-4:30: DIS DIS FCR DIS FCR DIS DIS FCR FCR DIS DIS FCR DIS DIS FCR FCR FCR
DIS DIS FCR

4:30-4:00: FCR DIS FCR FCR DIS DIS FCR FCR DIS FCR

4:00-3:30: DIS FCR DIS FCR DIS DIS DIS FCR DIS FCR DIS DIS FCR FCR FCR

3:30-3:00: DIS FCR FCR DIS DIS FCR FCR DIS DIS FCR FCR DIS FCR DIS FCR

3:00-2:30: DIS DIS FCR FCR FCR

2:30-2:00: DIS FCR FCR FCR FCR DIS DIS DIS FCR FCR DIS DIS FCR DIS DIS FCR FCR
FCR DIS DIS DIS FCR FCR DIS DIS

2:00-1:30: FCR FCR FCR DIS DIS FCR DIS DIS FCR

1:30-1:00: DIS FCR FCR DIS FCR DIS FCR FCR DIS FCR DIS DIS FCR FCR FCR FCR DIS
DIS DIS DIS

1:00-0:30: FCR FCR FCR FCR DIS DIS FCR FCR FCR DIS DIS FCR FCR DIS DIS

0:30-0:00: DIS FCR DIS DIS DIS FCR FCR DIS FCR DIS DIS DIS FCR DIS FCR

FCT Session 2

5:00-4:30: DIS FCR FCR FCR FCR FCR DIS DIS

4:30-4:00: DIS FCR FCR DIS FCR FCR FCR DIS DIS FCR FCR FCR FCR FCR DIS DIS DIS
FCR FCR DIS FCR FCR

4:00-3:30: DIS FCR FCR FCR DIS FCR FCR DIS DIS FCR FCR FCR DIS DIS FCR FCR DIS
DIS FCR FCR FCR

3:30-3:00: DIS FCR DIS FCR DIS FCR DIS FCR FCR

3:00-2:30: DIS DIS FCR DIS FCR FCR DIS DIS FCR FCR

2:30-2:00: FCR FCR DIS FCR DIS FCR FCR FCR DIS FCR FCR FCR DIS DIS FCR FCR DIS
FCR DIS FCR

2:00-1:30: FCR DIS FCR FCR FCR DIS DIS FCR FCR DIS FCR DIS FCR FCR DIS FCR DIS

1:30-1:00: DIS FCR DIS FCR FCR DIS FCR DIS DIS FCR FCR DIS DIS DIS FCR FCR DIS

1:00-0:30: DIS FCR FCR DIS FCR DIS FCR FCR DIS FCR DIS DIS FCR FCR DIS FCR DIS
FCR FCR DIS DIS FCR DIS

0:30-0:00: DIS DIS FCR DIS FCR FCR FCR FCR DIS

FCT Session 3

5:00-4:30: FCR FCR FCR FCR DIS DIS FCR FCR FCR FCR DIS DIS FCR FCR FCR

4:30-4:00: DIS FCR FCR FCR FCR DIS DIS FCR FCR FCR FCR FCR DIS FCR FCR

4:00-3:30: FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR FCR

3:30-3:00: DIS FCR FCR DIS DIS FCR FCR FCR FCR DIS DIS FCR FCR FCR FCR FCR DIS
FCR FCR

3:00-2:30: FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR DIS DIS FCR FCR FCR FCR

2:30-2:00: DIS FCR FCR DIS DIS FCR FCR FCR FCR FCR FCR DIS FCR FCR

2:00-1:30: FCR FCR DIS DIS FCR FCR FCR DIS FCR FCR FCR DIS DIS FCR FCR FCR
FCR

1:30-1:00: DIS FCR FCR DIS FCR FCR FCR FCR DIS FCR FCR FCR FCR

1:00-0:30: FCR FCR DIS DIS FCR FCR FCR DIS DIS FCR FCR FCR FCR

0:30-0:00: DIS FCR FCR DIS FCR FCR DIS FCR FCR FCR FCR FCR DIS FCR FCR FCR
FCR

TX ADHERENCE Session 1

5:00-4:30: FCR DIS FCR FCR FCR FCR DIS FCR FCR FCR DIS FCR FCR FCR

4:30-4:00: DIS DIS FCR FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR DIS FCR FCR

4:00-3:30: FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR DIS

3:30-3:00: DIS DIS DIS DIS FCR FCR FCR FCR FCR FCR FCR FCR FCR FCR FCR FCR
DIS FCR FCR

3:00-2:30: DIS FCR FCR FCR FCR FCR DIS FCR FCR FCR DIS DIS FCR FCR

2:30-2:00: DIS FCR FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR FCR DIS FCR FCR

2:00-1:30: FCR FCR DIS DIS FCR FCR FCR DIS FCR DIS FCR DIS FCR FCR FCR FCR

1:30-1:00: DIS DIS DIS FCR FCR FCR FCR FCR FCR FCR FCR FCR FCR FCR

1:00-0:30: FCR FCR DIS DIS FCR FCR FCR DIS FCR FCR FCR FCR FCR DIS

0:30-0:00: DIS FCR FCR DIS FCR FCR DIS FCR DIS FCR FCR FCR FCR FCR FCR FCR

TX ADHERENCE Session 2

5:00-4:30: DIS DIS FCR FCR FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR FCR

4:30-4:00: DIS FCR FCR FCR FCR DIS DIS FCR FCR FCR FCR FCR DIS FCR FCR

4:00-3:30: FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR FCR

3:30-3:00: DIS FCR FCR DIS DIS FCR FCR FCR FCR DIS DIS FCR FCR FCR FCR DIS
FCR FCR

3:00-2:30: FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR DIS DIS FCR FCR FCR FCR

2:30-2:00: DIS FCR FCR DIS DIS FCR FCR FCR FCR FCR FCR DIS FCR FCR

2:00-1:30: FCR FCR DIS DIS FCR FCR FCR DIS FCR FCR FCR DIS DIS FCR FCR FCR
FCR

1:30-1:00: DIS FCR FCR DIS FCR FCR FCR FCR DIS FCR FCR FCR FCR

1:00-0:30: DIS DIS FCR FCR FCR FCR FCR DIS DIS FCR FCR FCR FCR

0:30-0:00: DIS FCR FCR DIS FCR FCR DIS FCR FCR FCR FCR FCR DIS FCR FCR FCR
FCR

TX ADHERENCE Session 3

5:00-4:30: FCR DIS FCR FCR FCR FCR DIS FCR FCR FCR DIS FCR FCR FCR

4:30-4:00: DIS FCR FCR FCR FCR DIS FCR FCR FCR DIS DIS FCR FCR DIS FCR FCR

4:00-3:30: FCR DIS FCR FCR FCR FCR FCR DIS FCR FCR FCR

3:30-3:00: DIS FCR FCR DIS DIS FCR FCR FCR FCR DIS DIS FCR FCR FCR FCR FCR DIS
FCR FCR

3:00-2:30: FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR DIS DIS FCR FCR FCR FCR

2:30-2:00: DIS FCR FCR DIS DIS FCR FCR FCR FCR FCR FCR DIS FCR FCR

2:00-1:30: FCR FCR DIS DIS FCR FCR FCR DIS FCR DIS FCR DIS FCR FCR FCR FCR

1:30-1:00: DIS FCR FCR FCR DIS FCR FCR FCR FCR DIS FCR FCR FCR FCR

1:00-0:30: FCR FCR DIS DIS FCR FCR FCR DIS FCR FCR FCR FCR FCR DIS

0:30-0:00: FCR DIS FCR DIS FCR FCR DIS FCR DIS FCR FCR FCR FCR FCR FCR FCR

TX ADHERENCE + FEEDBACK Session 1

0-0:30: FCR DIS FCR FCR FCR FCR DIS FCR FCR FCR DIS FCR FCR FCR

0:30-1:00: DIS FCR FCR FCR FCR DIS FCR FCR FCR DIS DIS FCR FCR DIS FCR FCR

1:00-1:30: FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR FCR

1:30-2:00: DIS FCR FCR DIS DIS FCR FCR FCR FCR DIS DIS FCR FCR FCR FCR FCR DIS
FCR FCR

2:00-2:30: FCR FCR FCR FCR FCR DIS DIS FCR FCR FCR DIS DIS FCR FCR

2:30-3:00: DIS FCR FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR FCR DIS FCR FCR

3:00-3:30: FCR FCR DIS DIS FCR FCR FCR DIS FCR FCR FCR DIS DIS FCR FCR FCR
FCR

3:30-4:00: DIS FCR FCR DIS FCR FCR FCR FCR DIS FCR FCR FCR FCR

4:00-4:30: FCR FCR DIS DIS FCR FCR FCR DIS FCR FCR FCR FCR FCR DIS

4:30-5:00: DIS FCR FCR DIS FCR FCR DIS FCR DIS FCR FCR FCR FCR FCR FCR FCR

TX ADHERENCE + FEEDBACK Session 2

0-0:30: FCR DIS FCR FCR FCR FCR DIS FCR FCR FCR DIS FCR FCR FCR

0:30-1:00: DIS FCR FCR FCR FCR DIS FCR FCR FCR DIS DIS FCR FCR DIS FCR FCR

1:00-1:30: FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR FCR

1:30-2:00: DIS FCR FCR DIS DIS FCR FCR FCR FCR DIS DIS FCR FCR FCR FCR FCR DIS
FCR FCR

2:00-2:30: FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR DIS DIS FCR FCR FCR FCR

2:30-3:00: DIS FCR FCR DIS DIS FCR FCR FCR FCR FCR FCR DIS FCR FCR

3:00-3:30: FCR FCR DIS DIS FCR FCR FCR DIS FCR FCR FCR DIS DIS FCR FCR FCR
FCR

3:30-4:00: DIS FCR FCR DIS FCR FCR FCR FCR DIS FCR FCR FCR FCR

4:00-4:30: FCR FCR DIS DIS FCR FCR FCR DIS FCR FCR FCR FCR FCR DIS

4:30-5:00: DIS FCR FCR DIS FCR FCR DIS FCR DIS FCR FCR FCR FCR FCR FCR FCR

TX ADHERENCE + FEEDBACK Session 3

0-0:30: FCR FCR FCR FCR DIS DIS FCR FCR FCR FCR DIS DIS FCR FCR FCR

0:30-1:00: DIS FCR FCR FCR FCR DIS DIS FCR FCR FCR FCR FCR DIS FCR FCR

1:00-1:30: FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR DIS

1:30-2:00: DIS DIS FCR FCR FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR FCR FCR FCR
DIS FCR FCR

2:00-2:30: FCR FCR FCR FCR FCR DIS DIS FCR FCR FCR DIS DIS FCR FCR

2:30-3:00: DIS FCR FCR FCR FCR FCR FCR FCR FCR DIS DIS FCR FCR FCR DIS FCR FCR

3:00-3:30: FCR FCR DIS DIS FCR FCR FCR DIS FCR FCR FCR DIS DIS FCR FCR FCR
FCR

3:30-4:00: DIS FCR FCR DIS FCR FCR FCR FCR DIS FCR FCR FCR FCR

4:00-4:30: FCR FCR DIS DIS FCR FCR FCR DIS DIS FCR FCR FCR FCR

4:30-5:00: DIS FCR FCR DIS FCR FCR DIS FCR FCR FCR FCR FCR DIS FCR FCR FCR
FCR

APPENDIX C**CAREGIVER RESPONDING DATA SHEET**

Date: _____

Session: _____ DC: _____ Condition: _____

Caregiver Inappropriate Responses	Caregiver Appropriate Responses	Notes

Session: _____ DC: _____ Condition: _____

Caregiver Inappropriate Responses	Caregiver Appropriate Responses	Notes

Session: _____ DC: _____ Condition: _____

Caregiver Inappropriate Responses	Caregiver Appropriate Responses	Notes

Session: _____ DC: _____ Condition: _____

Caregiver Inappropriate Responses	Caregiver Appropriate Responses	Notes

Session: _____ DC: _____ Condition: _____

Caregiver Inappropriate Responses	Caregiver Appropriate Responses	Notes

Session: _____ DC: _____ Condition: _____

Caregiver Inappropriate Responses	Caregiver Appropriate Responses	Notes

Session: _____ DC: _____ Condition: _____

Caregiver Inappropriate Responses	Caregiver Appropriate Responses	Notes

Session: _____ DC: _____ Condition: _____

Caregiver Inappropriate Responses	Caregiver Appropriate Responses	Notes

APPENDIX D**CONFEDERATE INTEGRITY DATA SHEET**

