

Functional Communication Training to Reduce Maladaptive Behaviors During Self-Care Routines

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The following study evaluated the effects of functional communication training (FCT) on maladaptive protest behaviors within the home setting. FCT is an evidence-based practice utilized to teach an alternative behavior that is functionally equivalent to the maladaptive behavior (Cooper, Heron, Howard, 2007). The goal was to determine the functional relationship of FCT on maladaptive protest behavior during self-care routines. This was implemented sequentially through a multiple baseline across activities design. According to a functional behavior assessment, the participant, a three-year-old boy with autism, engaged in high rates of maladaptive protest behavior during eating, toileting, and dressing routines. Assessment results indicated maladaptive behavior is maintained by escape from task demands and access to adult attention. Based on these results, two functional communication phrases, "All done" and "Help," were taught through the use of social stories and verbal prompting to provide the participant with an alternative communicative response to gain reinforcement during these routines. Results indicated a functional relationship between functional communication and maladaptive protest behavior in that as FCT was introduced sequentially across the three activities, there was a corresponding decrease in maladaptive protest behavior and increase in functional communication during self-care routines for the participant in the home setting.

Keywords: Functional Communication Training, FCT, self-care, escape-maintained, negative reinforcement, problem behavior

Introduction

Children with Autism Spectrum Disorder often have difficulties effectively communicating. Carr and Durand (1985) were the first to establish the practice of Functional Communication Training (FCT). They hypothesized that many behavior problems may be viewed as a nonverbal means of communication, and may function as communicative behavior. As a result, Carr and Durand made the hypothesis that strengthening of functional communication skills could decrease problem behaviors. FCT is a form of differential reinforcement of alternative behaviors (DRA), often including extinction of maladaptive behaviors and reinforcement of a more appropriate communicative response such as "help." Through FCT, an examination of the function of a particular behavior is completed, and a functionally equivalent communicative behavior is taught so the participant utilizes a more appropriate behavior to access reinforcement that currently maintains the challenging behavior. FCT involves the delivery of the reinforcer maintaining the challenging behavior contingent on the emission of the newly trained communicative response (Mildon, Moore, & Dixon, 2004). This alternative response often takes the form of verbal communication, gestures, signs or pictures.

FCT can be used to treat a variety of behaviors with different topographies and functions. Typically, a functional behavior assessment is completed to determine the function of a problem behavior and to define a functional

communicative replacement behavior. Carr and Durand (1985) demonstrated this approach by determining situations when behaviors typically occur and using assessment information to select replacement communicative behaviors in their pilot study. In this study, a functional assessment suggested that problem behaviors were maintained by escape from work tasks, adult attention, or a combination of the two. For this reason, all children were taught to utilize the alternative responses of saying “I don’t know,” or “Am I doing good work?” as a functional alternative to challenging behavior. Results of this study showed that disruptive behaviors were reduced to low levels after relevant FCT, but remained high after a child was taught an irrelevant communicative response. The results of this study for teaching communicative responses that are functionally equivalent to challenging behaviors suggest that functional communication training can be effective in reducing problem behaviors such as aggression and disruptive behaviors.

Falcomata, Roane, and Stephenson (2010) also used a functional assessment to evaluate FCT as a treatment for elopement in which access to stereotypy was made contingent on a communicative response of touching a “play” card. The participant engaged in decreased elopement when access to door play was provided contingent on appropriate communication and access to door play was blocked following instances of elopement. Hagopian, Wilson, and Wilder (2001) utilized FCT as a treatment for disruptive behavior maintained by escape from attention and access to tangible items. To gain access to these reinforcers in a functional way, the authors taught the participant to appropriately request “play by myself” and “toys please.” Results indicated that FCT decreased problem behaviors by 96% in the treatment conditions when compared to baseline.

Harding, Wacker, Berg, Lee, and Dolezal, (2009) evaluated the effects of FCT on the problem behaviors of self-injury and property destruction maintained by escape from demands. The participant, a two-year-old boy with developmental delays, received a break from demands when he engaged in the functional communicative request “play, please” with a micro switch, but if he engaged in maladaptive protest behaviors, he was prompted to keep working. This study provides evidence of FCT’s effectiveness in reducing destructive behaviors, increasing manding, and task completion in the home setting, as well as the efficacy of parental implementation of FCT techniques.

While FCT can be used as a successful treatment alone, it is often combined with other behavioral strategies, including non-contingent reinforcement, extinction, and other reductive procedures. These combinations are often referred to as functional communication training packages. Non-contingent reinforcement (NCR) involves the delivery of the reinforcer maintaining the challenging behavior, on a time based (response independent) schedule (Mildon et al, 2004). NCR alone does not teach an alternative response, but provides the consequence on a regular schedule in order to reduce the motivation for challenging behavior. Extinction occurs when reinforcement in the form of attention, access to tangibles, escape or sensory stimulation, is no longer delivered contingent on the target behavior. A review of past literature including these FCT treatment packages helped build the case for FCT with extinction in the current research study.

Similar to the current study, Steege, Wacker, Cigrand, Noval, Reimbers, Sasso and DeRaad (1990) evaluated the effects of negative reinforcement and FCT with extinction on self-injurious behaviors for two children during self-care

routines. After completion of a functional analysis, verifying the behaviors were maintained by negative reinforcement, escape from the task was provided for each participant contingent upon an alternative behavior of requesting “stop.” If the child engaged in self-injury, guided compliance was utilized to complete the self-care task. Since the behavior was maintained by escape, by prompting task completion, the behavior was put on extinction. This study provided evidence that FCT with extinction can be a viable treatment for self-injurious behaviors that are maintained by escape when escape is provided contingent on requests.

Hagopian, Wilson, and Wilder (2001) provided evidence of the use of FCT with extinction and NCR to decrease aggression, disruptive behaviors, as well as spitting behavior for a six-year-old boy with autism. Based on the results of a functional analysis, the participant was prompted to emit verbal responses to terminate attention ("play by myself") and obtain toys ("toys please") for 30 seconds while problem behaviors were placed on extinction as they did not result in escape from attention or access to toys. Results indicated that implementation of FCT with extinction and non-contingent escape (NCE) decreased problem behaviors by 96% relative to baseline in both the escape from attention and tangible conditions and levels of functional communication increased over time in both treatment conditions.

Durand and Carr (1991) also evaluated the effectiveness of FCT with extinction to determine the influence of adult attention and task difficulty on the frequency of challenging behaviors for three young boys. Each student exhibited appropriate requesting without prompts in an increased rate after treatment, as well as a decrease challenging behaviors. In addition, maintenance and generalization of the FCT phases was observed for two students over a three-year period. The results of this study suggest that FCT with extinction can be taught as a functionally equivalent response for the reduction of challenging behavior in a natural setting.

The vast research conducted on functional communication treatment packages provides evidence of clinically significant improvements across behaviors, diagnoses, settings, and participants. The current research study utilized the information obtained from this review to create research conditions likely to decrease the participant's maladaptive behaviors during self-care routines and increase appropriate requesting of “help” and “all done” through the use of FCT and extinction intervention.

Methods

Participant and Setting

The participant of this study was Sam, a three-year-old boy with Autism Spectrum Disorder. The participant lived at home with his parents, younger brother, uncle, and grandmother. The participant's family is Vietnamese, which was the primary language spoken within the home. An interpreter was used for all communication with the family. Sam was healthy with no known medical or trauma history. His mother reported that he had a good appetite and often slept through the night. Recent completion of the Verbal Behavior Milestone Assessment and Placement Program indicated that his strengths were in the areas of imitation, reading, and math, with a total score of 82.5. Additionally, Sam demonstrated strong receptive communication skills and engaged in two to three-word communicative phrases independently. However,

Sam had difficulty completing challenging work demands, including self-care routines, such as eating, dressing and toileting.

During the self-care tasks, the participant engaged in frequent maladaptive behaviors, including flopping, whining and swiping. Maladaptive protest behaviors were considered a socially significant behavior in that it affected Sam's ability to attend to directions, expand his daily living skills, and access learning opportunities. These behaviors started in the beginning of the school year and maintained a consistent presence over the last several months. Sam's parents were highly concerned about the adverse social and academic effects of these behaviors. For this reason, a functional behavior assessment was conducted in order to clearly identify, define, and determine the function of the maladaptive behavior that may have interfered with Sam's ability to succeed during self-care routines. Assessment techniques consisted of completion of the Functional Assessment Screening Tool with his mother and Autism Interventionist (AI), a Functional Assessment interview with his mother and AI, and ABC data collected for a four-week period at home through direct observation.

Results of a functional behavior assessment indicated that the function of Sam's maladaptive behavior was likely multiply controlled by social negative reinforcement in the form of escape from demands and social positive reinforcement in the form of access to attention dependent on the situation. Based on the function of the maladaptive protest behavior, two specific FCT phrases were taught; "all done" and "help me." By teaching these two functional requests, the child was able to obtain reinforcement for using his words instead of engaging in maladaptive behaviors, thereby increasing his functional communication and decreasing his swiping, whining and flopping protest behaviors.

The entirety of this study took place in the Sam's home in upstate New York. Specifically, this study was implemented in the living room, the bathroom, and the kitchen areas of the house during self-care routines of eating, toileting and dressing. This study was conducted over a two-month period during Sam's daily 1:1 intervention time in which he received ABA services from a local mental health agency. The materials within the house remained consistent across baseline and treatment phases and included typical home furniture and a variety of small early learning materials. Sam had one interventionist, who was trained in the methods of this study. In addition, this researcher was present during 20% of the sessions to oversee treatment procedures and data collection.

It should be noted that the child's name and demographic information was modified in order to ensure confidentiality throughout the research study.

Experimental Design

This writer evaluated the use of Functional Communication Training (FCT) on maladaptive protest behavior by utilizing a multiple baseline across activities design. The independent variable in this study was the sequential implementation of the FCT with extinction procedures across three different self-care routines: eating, dressing, and toileting. The dependent variables were the participant's spontaneous use of functional communication and maladaptive protest behavior. It was hypothesized that there would be an inverse effect in which maladaptive behavior would

decreased and functional communication would increase as the intervention was applied in each setting during the intervention phase.

Sam engaged in typical ABA treatment throughout baseline and treatment sessions, with data collected during eating, dressing and toileting routines. After a steady rate of maladaptive behaviors was observed under baseline for four or more sessions, the researchers applied FCT during the eating routine while maintaining baseline conditions during toileting and dressing routines. When a steady rate of responding was observed during eating, FCT was applied during eating and dressing and baseline continued for toileting. Finally, once a steady trend was observed during dressing, FCT was applied during toileting. This staggered approach provided evidence that the FCT procedure was responsible for a decrease in challenging behavior. Multiple-baseline designs demonstrate the effects of an intervention by showing that behavior changes when and only when the intervention is applied (Kazdin, 2011).

Target Behavior and Data Collection

The team utilized the following operational definitions to ensure consistency with data collection procedures and appropriate implementation of intervention protocols. Maladaptive protests included any instance of one or more of the following behaviors: swiping, whining, and/or flopping from seated or standing position not in the context of a game or following a directive from an adult. An instance of protest ended when Sam had not exhibited any of the above behaviors for 30 seconds. A swipe was any instance in which Sam moved objects forcefully along/off of a surface. A flop was any instance in which Sam made his body limp and dropped to the floor. A whine was any instance in which Sam engaged in high-pitched agitated vocalizations. An episode was over once Sam was quiet for five seconds. Staff recorded the frequency of maladaptive protest behavior for the duration of self-care routines each day using a daily data sheet.

For the purposes of this study, FCT was defined as any vocalization that indicated a request to end an activity or gain help during an activity in an appropriate tone of voice and volume with the absence of maladaptive behavior. Examples included: "help please," "help me," and "all done." Non-examples included: Sam yelling, "I'm done!" while hitting staff and Sam falling to the floor while saying "No!" The interventionist took frequency data during each self-care routine daily.

This writer collected inter-observer agreement data simultaneously and independently of the interventionist staff member at least twice during each phase of the study for the target behaviors of maladaptive protests and functional communication. Agreement was calculated by dividing the total number of agreements by the total number of agreements and disagreements and multiplying by 100 for each target behavior. During baseline, average IOA results for all three self-care routines indicated a mean of 100% agreement during for maladaptive protests and 86% (range of 60% to 100%) agreement for functional communication. An assessment of the IOA data during treatment indicated a mean of 100% agreement for maladaptive behavior and 94% (range of 86% to 100%) agreement for functional communication.

Procedures

The baseline and intervention phases were implemented throughout the participant's 1:1 home session from nine in the morning until noon, Monday through Thursday. Baseline consisted of 11 sessions for eating, 23 sessions for

dressing, and 32 sessions for toileting. FCT treatment involved 24 sessions for eating, nine sessions for dressing, and seven sessions for toileting over a two-month period. The eating routine was implemented twice during each session, and dressing occurred one time each session, and toileting occurred two times during each session.

Baseline. During baseline, the interventionist was not trained in FCT and observations indicated that the participant was provided with inconsistent responses from the staff member. On 25 out of 59 occasions (42%), the interventionist ignored the target behavior. On 21 out of 59 instances (36%) when the participant engaged in maladaptive behaviors, the interventionist continued with task demands. During 11 out of 59 incidences of maladaptive behaviors (19%), the staff prompted functional communication, but allowed the child to escape demands. Lastly, on two out of 59 occasions (3%) the interventionist provided attention as a response to the maladaptive behavior.

Staff training. Once a steady rate in responding was observed during baseline sessions, the interventionist was trained during a one-hour training period through discussions, role-playing, and use of visual supports on the methods of functional communication training. Additional follow up meetings were held once a week throughout treatment for an hour to ensure procedural integrity throughout the treatment phase before the next phase of intervention was implemented. In addition, direct service staff was observed once a week to ensure reliability of data collection throughout the study. This writer obtained IOA data, provided verbal and written feedback of strategies used, and modeled interventions during each weekly observation.

FCT treatment phases. Differential reinforcement was used to encourage appropriate communication behaviors while decreasing maladaptive behaviors. When the participant appropriately engaged in functional communication in the absence of maladaptive behaviors, he was provided with immediate reinforcement; either access to help or removal of task demands and verbal praise for using his words. During intervention, Sam had the opportunity to earn a break from self-care activities for thirty minutes any time he said, “all done.” He was also given help every time he said, “Help, please.”

If Sam engaged in maladaptive behaviors during any self-care routine, extinction was implemented. For example, if he engaged in whining and falling to the floor behavior, during toileting, staff diverted their attention from the behavior and continued with task demands by providing hand over hand prompting to continue with the task. Staff responded this way, neutral redirection to task, for each self-care routine. Staff would continue this procedure until the client complied with the task demand. Once the participant complied with the task without engaging in maladaptive behavior for ten seconds, the specific discriminative stimulus was re-presented. For the eating routine, staff said, “It’s time to eat, remember if you want to be finished you can say *all done*.” During the dressing routine, the interventionist stated “It’s time to get dressed, remember if you need help, you can say *help please*.” During toileting the interventionist said, “It’s time sit on the potty, remember if you are finished, you can say *all done*.”

By ignoring maladaptive behaviors, providing prompting to continue with task demands, and reinforcing appropriate functional communication through immediate reinforcement, Sam was more likely to engage in the appropriate replacement behavior instead of the maladaptive protests behaviors. By teaching Sam a functionally

equivalent behavior, he was able to access the same form of reinforcement gained from maladaptive behaviors previously, in a more socially acceptable way.

Before each routine that was targeted for intervention, a routine-specific social story was reviewed with Sam. The social story described the contingency between specific functional communication phrases and reinforcement for each phase of the intervention. Once the social stories were reviewed, the interventionist showed Sam his visual schedule to transition to the activity.

FCT 1. During phase one, FCT was taught during eating routines while maintaining baseline conditions for dressing and toileting. Staff would first read the eating social story with Sam before transitioning to the table. Then, Sam's visual schedule was used to prompt the transition to table. The eating session began when Sam was seated at the table. Once at the table, the discriminative stimulus "It's time to eat, remember if you are finished you can say, "all done"" was provided. Staff prompted Sam to eat independently. The eating session ended when Sam ate 20 bites or when Sam said "all done." If Sam requested, "all done" his reinforcement was being able to immediately leave the table and verbal praise for using his words. If Sam engaged in maladaptive behaviors, staff diverted their attention from the behavior, physically prompted Sam to remain seated and provided with hand over hand prompting to keep eating.

FCT 2. When a steady rate of maladaptive protest behavior was observed during the eating intervention phase (zero occurrences of maladaptive behaviors for last five sessions), phase two was introduced. During phase two, FCT continued during eating and introduced for the dressing routine while baseline was maintained during toileting. Again, staff would read the dressing social story with Sam before transitioning to the dressing and departure routine. His visual schedule was used to prompt the transition to the area where clothes were laid out. The dressing session started when Sam was next to his clothes. Then, staff would provide the discriminative stimulus "It's time to get dressed, remember if you need help, you can say, "help please.""

Staff encouraged Sam to dress himself. Staff waited ten seconds then used the least intrusive prompt (gesture to sock, wait ten seconds, touch sock, wait ten seconds, verbal prompt, etc.). When Sam said, "Help please," he was immediately provided with help for the current step of the task and verbal praise for using his words. For example, if Sam was putting on his socks, the adult helped him put on that sock with the most intrusive prompt. The session ended when Sam was fully dressed. If Sam engaged in maladaptive behaviors, the behavior was ignored for ten seconds then the least intrusive prompt was provided to encourage him to dress himself.

FCT 3. Once a steady rate of responding was observed during eating and dressing, FCT was continued during these routines and introduced during the toileting routines. The staff member read the toileting social story with Sam before transitioning to the bathroom. The visual schedule was used to prompt the transition to the bathroom. Once in the bathroom, the discriminative stimulus "It's time to go to the bathroom, remember, if you are finished you can say, "all done"" was provided. Staff then prompted Sam to sit for 3 minutes. If Sam said, "all done," he was allowed to immediately get off of the toilet and was provided with verbal praise for using his words. If Sam engaged in maladaptive

behavior, he was prompted to continue sitting. The session ended when Sam sat for three minutes or when he said “all done.” Table 1 summarizes the protocols implemented during each phase of FCT.

	Desired Functional Communication Response	Consequence for Desired Response	Consequence for Maladaptive Behavior
FCT 1- Eating	“All done”	Leave the table Verbal praise	Neutral block Hand over hand prompt to complete task
FCT 2- Eating and Dressing	Above for eating plus “Help” for dressing	Provide most intrusive prompt to help Verbal praise	Neutral block Least intrusive prompt to redirect to task
FCT 3- Eating, Dressing, and Toileting	Above plus “all done” for toileting	Allow off toilet Verbal praise	Ignore behavior, neutrally block Hand over hand prompt to continue with task

Table 1. Summary of FCT protocol

Results

The frequency data collected during each self-care routine for the dependent variables, maladaptive behavior and functional communication, provided support for the research hypothesis that as the participant learned functional communication replacement phrases, he would engage in decreased maladaptive protest behaviors. The average frequencies calculated for each target behavior through a multiple baseline across self-care routines design were used to determine the effects of the functional communication training intervention.

The number of opportunities to engage in functional communicative responses remained constant across baseline and intervention phases. Frequency data indicated an average of 6.8 instances of maladaptive behavior per session (range of zero to 41) during baseline and 2.4 instances of maladaptive behavior per session during intervention (range of zero to 33). Frequency data collected across baseline and intervention phases indicated an average of 0.5 spontaneous requests (range of zero to six) during baseline and an average of 12.8 instances (range of five to 20) of functional communication requests per session during intervention.

Results from the baseline phase for the average frequency of maladaptive behavior and functional communication during each self-care routine are represented in the pink areas of Tables 2 and 3. Summaries of the result averages from the treatment phase for each dependent variable are represented in Tables 2 and 3. These results are also displayed graphically in Figure 1.

Maladaptive Behavior	FCT 1 Eating	FCT 2 Dressing	FCT 3 Toileting	Total
Baseline	1.2	2.0	3.6	6.8
Intervention	0.7	1.7	0.0	2.4

Table 2. Average frequency of maladaptive behaviors across conditions

FCR	FCT 1 Eating	FCT 2 Dressing	FCT 3 Toileting	Total
Baseline	0.0	0.1	0.4	0.5
Intervention	2.0	9.0	1.8	12.8

Table 3. Average frequency of functional communication responses (FCR) across conditions

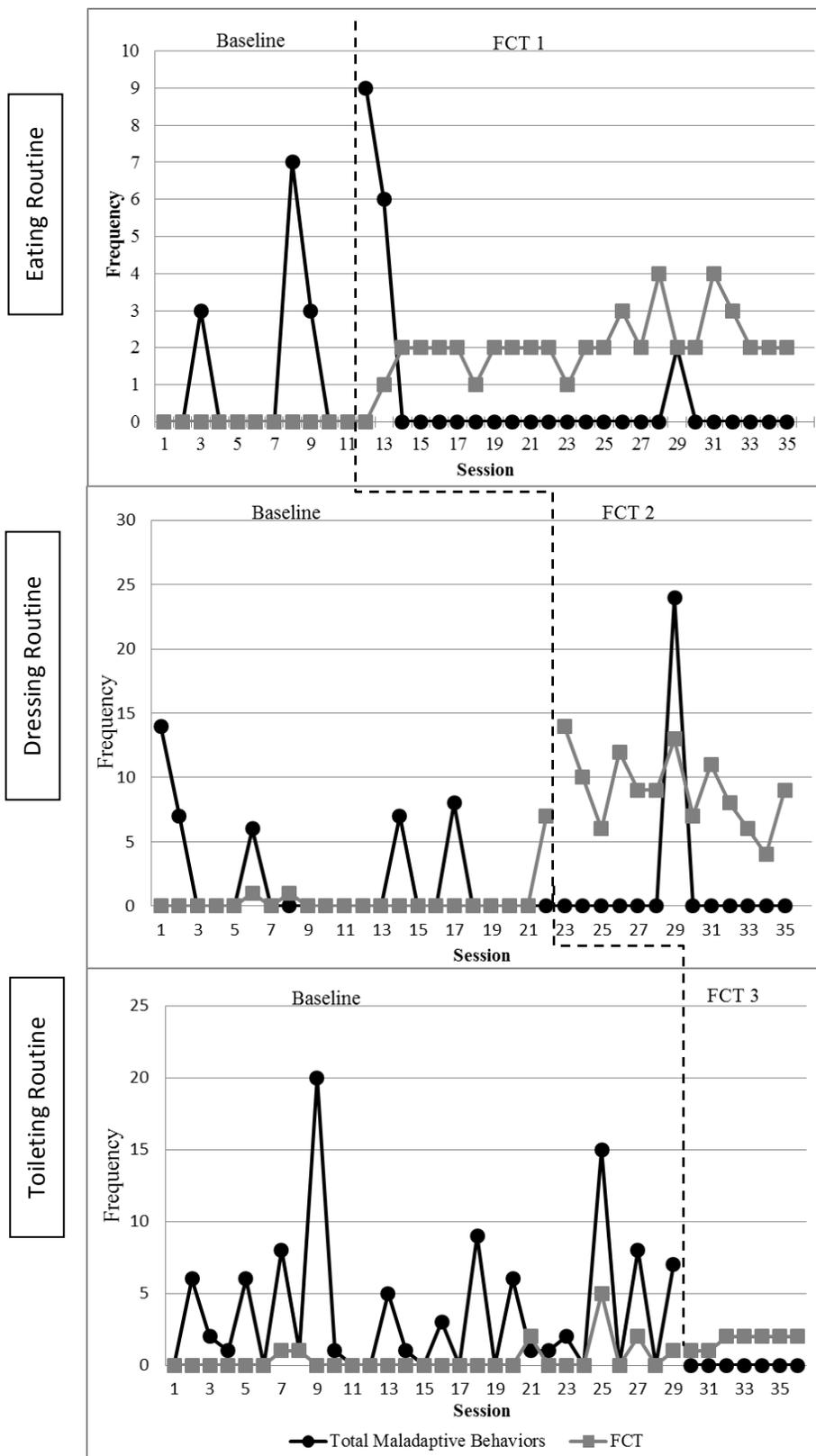


Figure 1. Total frequency by session of maladaptive behaviors and functional communication during eating, dressing and toileting routines

Discussion

The results of this study provided support for the research hypothesis that the systematic teaching of functional communicative responses across three self-care routines resulted in decreased maladaptive behavior and a corresponding increased trend in functional communication compared to baseline levels. The results demonstrated a functional relationship between functional communication training and maladaptive behavior; when, and only when, intervention was in place, maladaptive behavior decreased. Results indicated that Sam exhibited a 35% average decrease in maladaptive behaviors during the treatment phase when provided with functional communication training as compared to baseline.

Based on the FBA, which indicated that maladaptive behavior was maintained by social negative reinforcement during eating and toileting and social positive reinforcement during dressing, alternative communicative responses of requesting “all done” and “help” were taught to replace the escape and attention maintained behaviors. Since the maladaptive behaviors decreased as functional communication increased, one can say that these alternative communicative phrases and maladaptive protest behavior could be functionally equivalent for this child. Sam showed an effective use of functional communication as a contingency to gain reinforcement as evidenced by his increased functional language and decreased maladaptive behaviors to gain access to escape or help. Therefore, the results of this study indicated that the functional communication treatment package was effective in decreasing maladaptive protest behaviors for a three-year old boy with Autism in the home setting.

During the first FCT intervention phase, Sam demonstrated a 58% decrease in maladaptive behaviors, with 200% increase in functional communication. It is important to note that an extinction burst occurred during the first treatment session, in which Sam engaged in nine instances of maladaptive behavior during the eating session. Extinction bursts are quite common for escape maintained behaviors. However, it is noteworthy that the high rate of maladaptive behavior quickly decreased to an average of zero. As intervention continues over time, one would hope that this behavior maintains at such a low level.

During FCT 2, which was implemented during the dressing and eating routines, Sam’s average frequency of maladaptive behaviors per session decreased from two to 1.7, while his functional communication increased from zero to nine. Again, the extinction burst that occurred during session 29 during the dressing routine is worth mentioning. This extinction burst was possibly a result of inaccurate procedural fidelity, in that Sam was reinforced for functional communication while engaging in whining behaviors. During an observation, I was able to provide immediate feedback to maintain the extinction procedure during dressing for future sessions. After this session, a consistent extinction response was reinstated and Sam quickly decreased his maladaptive behaviors to an average of zero.

It is also important to note the significant increase in the frequency of functional communication during dressing. This was due in part to the increased number of opportunities to make requests as compared to eating and toileting. This was particularly true because “help” was the target response for dressing in which adult attention was provide instead of

the termination of the activity. This increased number of opportunities accounts for the significant increase in frequency of functional communication during this self-care routine compared to eating and toileting. Additionally, the slight decreased trend in “help” mands over the intervention phase during dressing is quite notable. This was due in part to the natural differentiation between asking for help when needed and not needed. Specifically, Sam demonstrated an increased ability to differentiate between tasks in which he could do independently and ones in which he needed adult assistance.

During FCT 3, functional communication was maintained during eating and dressing and also introduced during toileting. During this intervention phase, maladaptive behavior decreased from 3.6 average instances per session to an average of zero instances per session. Additionally, functional communication increased from 0.4 to 1.8. One important aspect of this phase to consider is that since this was the last FCT phase introduced, there was evidence of some stimulus generalization. Specifically, Sam engaged in a few spontaneous instances of functional communication during baseline before being taught the “all done” response discretely during toileting routine.

To ensure research validity, extraneous variables were minimized as the independent variable, staff, and environment were held constant over time and across experimental phases. While the results from this study retained validity, there were some limitations that should be addressed. As with most escape maintained behaviors, there is often an extinction burst that occurs following extinction implementation, as the child no longer receives reinforcement for the maladaptive response. Sometimes, this temporary increased emotional response is so intense that the environment is unable to withstand it. This was an important variable to take into account in respect to this research project. During my monthly home meeting with the mother, she brought up some cultural barriers causing difficulty within the home. The grandmother, who also lived in the home, did not agree with the ethical implementation of the extinction procedures as her grandson became more upset. However, by providing the family with literature, rationale of the procedures, and visuals, I was able to enhance the family’s understanding. I also discussed the opportunity to opt out of the research project throughout the process. If at any time, they felt uncomfortable, we would end the procedures. While this family was able to sustain these emotional responses, as they were not long lasting, some families, school environments, or staff may not be able to continue with this type of procedure and should consider the use of other behavioral modification strategies.

Another potential research limitation was the occurrence of stimulus generalization for the final phase of FCT. By the end of baseline, the child was spontaneously engaging in low rates of functional communication. However, in this instance, this functional behavior was not provided with reinforcement, since FCT 3 was not introduced yet. While small, the increase in functional communication did increase with more stability during intervention. Most importantly, since the behavior was not receiving reinforcement during baseline, the child still engaged in high rates of maladaptive behavior. It was not until the intervention was put into place that the maladaptive behavior decreased, verifying the functional relationship.

Lastly, it is important to note that the number of opportunities to engage in functional communication varied across self-care routines. Therefore, the increase in functional communication during dressing looked more significant

than the increase during eating and toileting because there were increased number of opportunities to engage in a functional response. Perhaps the use of rate as a data collection measure for the number of opportunities would be a more effective way of representing these results. The varied number of opportunities across self-care activities also affected the IOA results. While the average IOA would be considered reliable (more than 80% agreement), the range was quite varied. Since there were only two opportunities to engage in the “all done” response, if an observer missed one instance of functional communication, the percent agreement was significantly impacted. Future research might provide more opportunities to engage in the target behavior to simultaneously increase opportunities for agreement.

Future research should also address the issue of learned helplessness, or lack of initiation. Instead of requesting “help” for every single step in the dressing routine, the child should only make requests when appropriate, or when he is unable to complete the dressing step. Once the child understands the contingency of “all done” and “help” responses, he should comply with demands for incrementally increased amounts of time before gaining reinforcement. This can be done by systematically increasing the criteria or adding a time delay. Harding et al. (2009) also implemented a delay fading procedure for the cue to request all done, which could be implemented in this case.

While the results of this research provided evidence of a functional relationship, continued assessment of these treatment strategies should be evaluated to continually monitor generality and maintenance of these skills across settings and people. Increasing independence in functional communication and teaching initiation with tasks before granting access to reinforcement after functional communication will improve Sam’s functional behaviors and ensure his success at home and in the classroom over time.

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