

## ABSTRACT

### Teaching Spanish-Speaking Parents to Implement Challenging Behavior Interventions

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Research evaluating the efficacy and social validity of challenging behavior interventions with parents who speak languages other than English is limited. Coaching Spanish speaking parents in Spanish resulted in high fidelity implementation of challenging behavior interventions. Additionally, parent-implemented interventions led to a decrease in both child's engagement of challenging behaviors. Both parents reported the procedures used were acceptable and feasible to implement at home.

Teaching Spanish-Speaking Parents to  
Implement Challenging Behavior Interventions

by

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A Thesis

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## CHAPTER ONE

### Introduction

#### *Impact of Challenging Behavior*

Challenging behaviors are typically defined as being dangerous and not socially acceptable (Jang, Dixon, Tarbox, & Granpeesheh, 2011; Fettig, & Ostrosky, 2011). These behaviors most often include aggression, tantrums, property destruction, self-injury, and stereotypy (Matson, Mahan, Hess, Fodstad, & Neal, 2010). Challenging behavior is three to seven times higher among individuals with intellectual disabilities than typically developing individuals (Alimovic 2013). Persistent challenging behaviors among these individuals are associated with impaired social and academic outcomes at a later point in life (Argumedes, Lanovaz, & Larivée, 2018; Murphy, Beadle-Brown, Wing, Gould, Shah, & Holmes, 2005; Davis, & Carter, 2008; Fettig, Schultz, & Sreckovic, 2015). Family life is also greatly impacted by persistent challenging behaviors. These behaviors consistently interfere with family activities, functions, and systems. Families often feel uncomfortable when publicly participating in their community due to the reactions of others (Fox, Vaughn, Wyatte, & Dunlap, 2002).

#### *Effective Challenging Behavior Interventions*

Challenging behaviors serve a specific purpose or function. Challenging behavior is often maintained by escape from demands, attention from others, access to tangibles, or automatic reinforcement (Carr, 1977; Carr & Durand, 1985; Iwata, Dorsey, Slifer, Bauman, & Richman, 1994). Effective challenging behavior interventions should

identify the function of the challenging behavior and include alternate, socially acceptable ways to meet the needs of an individual, such as functional communication training (FCT) (Tiger, Hanley, & Bruzek, 2008). FCT typically involves conducting a functional assessment, teaching an appropriate communicative response, and providing reinforcement when the communicative response is emitted (Carr & Durnad, 1985; Tiger, Hanley & Bruzek, 2008). Effective interventions can be implemented by a variety of implementers and in different settings. However, the most common types are those that include school-based interventions and parent training (Petrenko, 2013). A strong component in developing and implementing effective challenging behavior interventions is by involving parents and family. Family has a tremendous influence on a child's development and is a knowledgeable resource when contributing to a child's individualized intervention (Fettig & Ostrosky, 2011; Gore & Umizawa, 2011). Parents have shown to be successful in implementing techniques and interventions for their children with disabilities. Parent-implemented FCT is one of these interventions that has produced improvement in social outcomes for children that engage in challenging behaviors (Gerow, Hagan-Burke, Rispoli, Gregori, Mason, & Ninci, 2018). Furthermore, parents have effectively implemented interventions that result in a reduction in challenging behaviors (Symon, 2005; Petrenko, 2013; Fettig & Ostrosky, 2011).

### *Language Barriers When Training Parents*

Parents of children with developmental disabilities often receive services in English, regardless of their English proficiency (Padilla Dalmau et al., 2011). Parents that are limited in English proficiency are reluctant to participate in parent trainings (Al-Hassan & Gardner III, 2002). When parents are encouraged to participate in

interventions, they may not feel confident in their implementation. If parents are taught to use their native language when implementing interventions, their reluctance may decrease and their sense of confidence may increase (Al-Hassan & Gardner III, 2002). Although current research has validated the benefits of training parents to implement interventions that reduce challenging behavior, little research has evaluated the effectiveness of training parents that do not speak English as their native language.

The purpose of this study is to evaluate the accuracy of parent-implemented interventions by Spanish speaking parents, when taught in Spanish. Further, the study aims to evaluate the relation between accurate implementation of parent implemented interventions by Spanish speaking parents and the child's behavior. The first study will consist of teaching Spanish speaking parents how to implement challenging behavior interventions.

## CHAPTER TWO

### Review of Literature

#### *Inclusion Criteria*

Articles were included in this review based on the following: (a) the study measured and reported data on child's challenging behavior as a dependent variable, (b) the study included child participants that had a disability diagnosis, (c) the study included child or parent participants that were fluent in a language other than English, (d) the parents implemented some or all of the intervention, and (e) were published in a journal.

#### *Search Methods*

Database searches and ancillary searches were conducted in July 2019. This included the following education and psychology databases: Educational Resources Information Clearinghouse (ERIC), Academic Search Complete, Education Research Complete, PsyArticles, PsycINFO, and Psychology and Behavioral Science Collection. The following were used to identify articles: synonyms of challenging behavior (challenging behavior, disruptive behavior or problem behavior), disability (disabilit\*, intellectual disabilit\*, intellectual disorder, learning disabilit\*, developmental disabilit\*, developmental delay, developmental disorder, mental retardation, ASD, Asperger's syndrome, Asperger's, special education, pervasive developmental disorder, or autis\*), parent (parent, caregiver or guardian), and language (language, bilingual, multilingual, English as a Second Language, Spanish, Chinese, Tagalog, Vietnamese, German, French, or Korean). The languages selected for search terms were languages spoken by more than

1 million individuals in the United States (US Census Bureau, 2018). Although all search terms were in English, articles published in a language other than English were not excluded. After removing duplicates, the search resulted in 261 articles.

The titles and abstracts were reviewed for all articles. Only articles that met the inclusion criteria were reviewed further. Two hundred and eleven articles were excluded after reviewing the titles and abstracts. After reviewing the full text of the remaining 50 articles, only one of the articles was included for the literature review. To identify articles that were not initially found, ancillary searches were conducted. These searches included (a) reviewing the most recent 5 years of the journal of the included article, which was *Research in Developmental Disabilities*, (b) reviewing the reference list of the included article, and (c) reviewing the included articles of one literature review; Gerow, Hagan-Burke, Rispoli, Gregori, Mason, & Ninci, 2017. No articles were identified from the journal search. Four articles met inclusion criteria through the reference list review and one additional article was identified when reviewing the literature review. Overall, five additional articles were included through the additional searches, for a total of six studies.

#### *Data Extraction*

Information regarding participant characteristics, study characteristics, and study outcomes was recorded from each study. Participant characteristics included information about child participants and parent participants as demonstrated in Table 2.1 and Table 2.2. This included (a) parent and child's age, (b) parent and child's sex, (c) languages spoken by the parent, (d) parent and child's race/ethnicity, (e) parent's education and (f) child's diagnosis. Study characteristics included (a) setting, (b) challenging behavior as it was described in the study, and (c) whether the parent participants implemented some or

all of the intervention. The study outcome described the impact the intervention had on challenging behavior based on the authors description as demonstrated in Table 2.3.

Table 2.1

*Child participants*

Citation	Participants	Age	Gender	Race/Ethnicity	Diagnosis
Au et al., (2014)	8	5-10 years old	Male (8)	Chinese	Attention deficit hyperactive disorder (8)
Padilla Dalmau et al., (2011)	2	5 years and 3 months old (1), 6 years and 2 months old (1)	Male (1), female (1)	Not specified	spinal muscular atrophy and pervasive developmental (1), autistic disorder and mild intellectual disability (1)
Hand, Raghallaigh, Cuppage, Coyle & Sharry (2012)	5	6-12 years old	Not specified	Not specified	Disability not specified
Leung, Chan, Lam, Yau, & Tsang (2016)	62	2-5 years old	Male (48), females (14)	Chinese	global developmental delay (30), autism spectrum disorder (18), attention deficit hyperactive disorder (4), language delay (10)
Leung, Fan, & Sanders (2013)	42	Average age was 50.48 months	Male (30), female (12)	Not specified	physical disability (6), autistic spectrum disorder (26), developmental delay (10)
Leung, Tsang, Ng, and Choi. (2017)	32	2-7 years old	Male (28), female (4)	Chinese	Attention deficit hyperactive disorder or features (32), language delay (3), dyslexia (1), oppositional defiant disorder symptoms (1), other special education needs (1)

Table 2.2  
*Parent participants*

Citation	Total	Age	Education	Relationship to Child	Languages Spoken
Au et al. (2014)	8	The average age of mothers was 39, the average age of fathers in was 43	Primary (1), secondary or above (7)	Mothers (7), father (1)	Chinese
Padilla Dalmau et al. (2011)	2	Not specified	Not specified	Mothers (2)	English and Spanish
Hand et al. (2012)	5	Between 26-49 years old	Not specified	Not specified	English as a second language
Leung et al. (2016)	62	The average age of mothers was 36.28 years old, the average age of fathers was 40.58 years old	Primary (17), secondary or above (42), not specified (3)	Mothers (55), fathers (4), stepmother (1), other (2)	Chinese
Leung et al. (2013)	42	Not specified	Primary (29), secondary or above (13)	Mothers (37), fathers (5)	Chinese
Leung et al. (2017)	32	The average age of parents was 37.52 years old	Primary (11) secondary or above (21)	Mothers (29), fathers (3)	Chinese

Table 2.3

*Study characteristics and outcomes*

Citation	Setting	Challenging Behavior	Training for Parents	Impact on Challenging Behavior based on Description
Au et al. (2014)	Not specified	Disruptive behavior	Weekly group training sessions	Lower levels of disruptive child behavior as compared to pre-intervention
Padilla Dalmau et al. (2011)	Home	Destructive behavior	Parents conducted all intervention sessions with coaching from the investigator	Reduction in destructive behavior
Hand et al. 2012)	School	Problem behavior	Weekly group training sessions	Significant improvements in child problem behavior as compared to pre-intervention
Leung et al. (2016)	Community center	Disruptive behavior	Weekly group training sessions	Lower post-intervention disruptive child behavior.
Leung et al. (2013)	Community center	Disruptive behavior	Weekly group training sessions,	Lower levels of disruptive child behavior as compared to pre-intervention.
Leung et al. (2017)	Community centers and schools	Disruptive behavior	Parents conducted all intervention sessions with coaching from the investigator.	The intervention group reported lower child behavior problems at post-intervention

## *Results*

### *Participant Characteristics*

*Child participants.* There was a total of 308 child participants across the six studies. Only those participants that met the inclusion criteria were included in the literature review. There were 151 child participants that were included. All children were between the ages of 2-12 years old. There were 115 (76%) males, 31 (21%) females, and 5 (3%) participants whose sex was not specified. One hundred and two (68%) participants spoke Chinese. A language was not specified for 60 (37%) participants. Forty-five (29%) were diagnosed with autism or autism spectrum disorder. Forty-four (29%) were diagnosed with attention deficit hyperactive disorder (ADHD) or features. Forty-one (27%) were diagnosed with developmental delay. Thirteen (8%) were diagnosed with a speech or language delay. Seven (5%) were diagnosed with a physical disability. Two (1%) were diagnosed with a learning or intellectual disability. One (0.5%) was diagnosed with oppositional defiant disorder. One (0.5%) had other special education needs.

*Parent participants.* There was a total of 308 parents across the six studies. Only those participants that met the inclusion criteria were included in the literature review. There were 151 parent participants that were included. Of those included, 130 (86%) were mothers of a child participant, 13 (9%) were fathers, one (1%) was a stepparent, two (1%) were classified as other, and 5 (3%) had an unspecified relationship to a child participant. All parents were between the ages of 20 to 45 years old. Fifty-eight (38%) had a primary education and 83 (55%) had an education of secondary or above. Ten (7%)

had an unspecified education level. One hundred and forty-four (95%) spoke Chinese, two (1%) spoke Spanish, and five (3%) spoke a language other than English that was not specified.

### *Study Characteristics*

*Setting.* One hundred and four (69%) participated in an intervention in community centers. Thirty-two (21%) participated in an intervention in community centers and in schools. Eight (5%) participated in an intervention in an unspecified setting. Five (4%) participated in an intervention at school. Two (1%) participated in an intervention in their home.

*Challenging behavior.* Parents of 144 (95%) child participants reported their child engaged in disruptive behavior. Parents of five (3%) child participants reported their child engaged in an unspecified problem behavior and parents of two (1%) child participants reported their child engaged in destructive behavior.

*Intervention.* A total of 117 (77%) parents participated in intervention programs that consisted of group training sessions led by practitioners, educational psychologists, or social workers. These group training sessions occurred once a week for 6-8 weeks and were typically between 2 and 2.5 hours in length. These sessions included lectures, discussions, practice, and homework. During these group interventions, parents were not directly observed implementing procedures with their children. Thirty-four (23%) of the parents participated in interventions in which they implemented all intervention procedures with coaching from the investigators. Parents were observed implementing

treatment procedures with their children and were provided coaching and feedback from the investigator. All parents received instruction in their native language.

### *Study Outcomes*

*Impact on challenging behavior.* There was a reduction in destructive behavior in both (1%) children that engaged in this behavior. For all 144 (95%) children that engaged in disruptive behavior, parents reported a reduction in disruptive behavior. For the five (3%) children that engaged in unspecified problem behavior, parents reported significant improvements in child problem behaviors.

### *Discussion*

Detailed information about the parent's involvement in the interventions and trainings should be included in future research. Future research should also include specific training procedures or programs that are useful for parents that speak all languages. There is no previous literature that has included how diversity in language may impact interventions for children who engage in challenging behavior. Parents that speak a language other than English are typically trained in group settings. There is a lack of research that incorporates linguistically diverse parents into individualized interventions that occur at a one-on-one setting.

## CHAPTER THREE

### Methods

#### *Purpose*

The purpose of the study was to evaluate the effectiveness of parent-implemented challenging behavior interventions by Spanish speaking parents. The research questions include:

1. Does accurate implementation of parent-implemented challenging behavior interventions by Spanish speaking parents decrease child's engagement in challenging behaviors as compared to baseline?
2. Are parents feasibly and effectively able to implement an intervention?

#### *Participants*

Participants for this study were recruited through a grant-funded project and a local early intervention agency.

The study included two families consisting of one child and one mother. To be included in the study, the child must have been diagnosed with a developmental disability or delay, been 17 years or younger, and engaged in challenging behavior. The caregiver must have been fluent in Spanish and not received prior training in applied behavior analysis in either Spanish or English.

Manuel was a 4-year-old Hispanic male diagnosed with autism spectrum disorder. Manuel's mother reported that he engaged in repetitive behaviors such as hand flapping and challenging behaviors such as screaming, crying, throwing objects, and hitting

others. Manuel's mother reported that he used gestures to ask for some items, and he did produce some vocal word approximations. For example, Manuel would point to a toy and look at his mother to ask for the toy. Manuel lived with his mother, father, and older sister. Manuel's mother only spoke Spanish and did not have any prior training in applied behavior analysis. She implemented each session.

Angel was a 3-year-old Hispanic male diagnosed with developmental and speech delay. Angel's mother reported that he engaged in challenging behaviors such as screaming, crying, and falling to the floor. Angel's mother reported that he occasionally used one-word vocal requests if modeled, but would most often use single-syllable, non-word vocalizations to ask for items independently. Angel lived with his mother, father, and two older siblings. Angel's mother only spoke Spanish and did not have any prior training in applied behavior analysis. She implemented each session.

### *Setting*

The research sessions took place via telehealth using videoconferencing technology. During sessions, the caregiver coaches conducted sessions from a secure room inside a university or from a room inside their homes. Caregiver coaches used a university laptop that included VSee<sup>®</sup>. VSee<sup>®</sup> is a videoconferencing application that allowed for secure video calling between caregiver coaches and participants. Participants conducted sessions from their own homes. A tablet computer with the installed VSee<sup>®</sup> application was delivered to the participants.

### *Materials*

Materials included video conferencing technology (e.g., laptop, tablet, smart phone), video conferencing software (i.e., VSee<sup>®</sup>), moderately and highly preferred items (e.g., toys), data collection materials (e.g., paper, pen, laptop, and timers), and any material that needed to be created for the participants (i.e., picture communication cards).

### *Data Collection*

#### *Dependent Variables*

Data were collected on the children's engagement in the target challenging behavior and appropriate behavior. During the brief functional analysis, the caregiver coach collected data on the rate of the target challenging behavior for Manuel and on the percentage of intervals with the target challenging behavior for Angel. For the treatment evaluation, the caregiver coach collected data on the rate of challenging behavior for the Manuel and the percentage of intervals of the target challenging behavior for Angel. The rate per minute of appropriate behavior was collected for both participants during the treatment evaluation. All sessions were videotaped for data collection purposes.

Manuel engaged in aggression and throwing objects. Aggression was defined as pulling hair of another person, hitting another person, biting another person, or any attempt to do so. Throwing objects was defined as grabbing objects with one or both hands and propelling them away in any direction. The rate per minute of challenging behavior was collected by recording every instance of challenging behavior, then dividing the total number of instances by the total number of minutes. (e.g., 5 minutes). The coach also collected the rate per minute of mands and of each step completed during

task completion. Each step was defined as every time Manuel inserted one puzzle piece into the puzzle, one shape into the shape sorter, or stacked one cup. Angel engaged in crying and/or screaming, which was defined as vocalizations at a volume above normal communication level during which tears may or may not be produced. The coach collected partial interval recording of challenging behavior and rate per minute of mands during the treatment evaluation. Partial interval recording was defined as the occurrence or nonoccurrence of challenging behavior during each 10 second interval for a 5-minute session.

#### *Interobserver Agreement (IOA)*

During the brief functional analysis and treatment evaluation, the caregiver coach collected interval agreement IOA data for the child's challenging behavior and appropriate behavior. This was calculated as a percentage by dividing the number of intervals with agreement by the total number of intervals, then multiplying it by 100. For Manuel's brief functional analysis, IOA data were recorded for 100% of the sessions with an average agreement of 90% (range 83 to 100%). For Manuel's treatment evaluation IOA, data were recorded for 100% of the sessions with an average agreement of 89% (range 63 to 100%). For Angel's brief functional, IOA data were recorded for 100% of the sessions with an average agreement of 89% (range 80 to 97%). For Angel's treatment evaluation, IOA data were recorded for 100% of the sessions with an average agreement of 89% (range 77 to 97%).

### *Procedures*

All sessions throughout the study (e.g., preference assessment, brief functional analysis, and treatment evaluation) were conducted in Spanish by the parent with coaching from the caregiver coach. All parent training and coaching conducted by the caregiver coach was also in Spanish.

### *Experimental Design*

The study consisted of a brief functional analysis and treatment evaluation. A reversal design was used for the treatment evaluation to compare the child's engagement in the target challenging behavior and appropriate behavior during the baseline phases to the intervention phases. This allowed for the evaluation of a functional relation between the independent variable and the dependent variables. The parent implemented interventions were the independent variable and the child's target challenging behavior and appropriate behavior were the dependent variables.

### *Parent Training*

Parents received training to conduct the preference assessment, brief functional analysis, and the treatment evaluation. All parent trainings were conducted in Spanish using behavioral skills training (BST). BST is viewed as a well-researched, evidence-based training that can be used to train parents to implement interventions with their child (Dogan et al., 2017). BST consists of steps that include instruction, model, practice, and feedback (Fetherston & Sturmey, 2014). Before beginning each session, the caregiver coach shared with the parent a description of the procedures in Spanish that included detailed steps that each parent should follow throughout each session. At the beginning of

each session, before implementing any procedures, the caregiver coach reviewed all steps with the parent, modeled any necessary steps, and answered any questions. Throughout all sessions, the caregiver coach verbally guided and prompted each parent through the procedures by reminding the parent of next steps. At the end of each session, the coach provided the parent with feedback and praise.

### *Functional Behavior Assessment*

*Functional assessment interview (FAI).* Prior to conducting the brief functional analysis, a FAI was conducted with each of the parents. Parents vocally answered a series of questions about their child's challenging behavior. The interviews were conducted in Spanish and led by the caregiver coach. The FAI form that the coach used to interview parents was adapted from O'Neill et al. (1997).

The results from each FAI were used to determine the target challenging behavior, develop an operational definition, identify task materials used during the brief functional analysis, and identify the child's level of communication.

*Preference assessment.* A free operant preference assessment was conducted by the parent in Spanish with coaching from the caregiver coach. Five items were placed in front of the child (e.g., on the floor or on a table). The parent then told the child to play with the items. However, the parent let the child choose which items to play with. The parent provided attention, followed the child's lead, and did not give any instructions to the child. Each preference assessment lasted 5 minutes. The caregiver coach took data using a data sheet that had 30 ten-second intervals. The caregiver coach marked which items the child engaged with during each 10-second interval. To determine which items

were the most preferred, moderately preferred, and least preferred, the caregiver coach divided the number of intervals with interaction for each item by 30, then multiplied it by 100.

*Brief functional analysis.* A brief functional analysis was conducted to determine the function associated with each child's challenging behavior. The brief functional analysis consisted of a play condition, demand condition, attention condition, and a tangible condition. The order of the conditions was randomized for each family. Each condition lasted five minutes with at least a 1-minute break between each condition.

*Play condition.* The child had non-contingent access to moderately preferred toys throughout the entire session. The parent ignored any instance of challenging behavior and provided the child with attention (e.g., praise or comments) at least every 10 seconds. During this session, the parent did not present any demands to the child. The play condition served as the control condition.

*Demand condition.* The purpose of the demand condition was to determine whether the function of the target challenging behavior was maintained by escape from demands. During the FAI, all task materials were identified. Relevant task materials were present, and the parent said, "let's do some work" and presented a task. The parent used a least to most prompting procedure to guide their child to complete the task. The parent waited 5 seconds after presenting the initial verbal instruction to allow the child to initiate in the appropriate response. If, after 5 seconds, the child did not initiate in the appropriate response, the parent repeated the verbal instruction and modeled the correct response. If, after an additional 5 seconds, the child did not initiate the appropriate response, the parent

repeated the verbal instruction and full physically prompted the child to engage in the appropriate response. Praise was provided contingent upon the completion of the task, regardless of the level of prompt used. Contingent upon the target challenging behavior, the parent removed the task for 20 seconds. After the 20 seconds, the parent represented the verbal instruction and used least to most prompting to guide the child to complete the task, as mentioned above. The parent ignored any appropriate behavior and non-target challenging behavior.

*Attention condition.* The purpose of the attention condition was to determine if the function of the target challenging behavior was maintained by attention. During the attention condition, the child had non-contingent access to moderately preferred toys. The parent told the child, “I need to do some work”, then engaged in a work activity, such as reading or writing. Contingent on the target challenging behavior, the parent provided 20 seconds of attention, then withdrew the attention and engaged in work activity. All appropriate behaviors and non-target challenging behaviors were ignored throughout the session.

*Tangible condition.* The tangible condition was used to determine if the function of the target challenging behavior was maintained by access to an item. During this condition, the child had non-contingent access to a variety of moderately preferred toys. The parent provided access to a highly preferred toy for 20 seconds, then removed the toy. Contingent on the target challenging behavior, the parent provided access to the highly preferred toy for 20 seconds, then removed it again. The parent ignored any appropriate behaviors and non-target challenging behaviors throughout the session.

### *Treatment Evaluation Procedures*

The treatment evaluation consisted of two conditions: baseline and intervention. Each session was 5 minutes long. All sessions in baseline and intervention were conducted in Spanish by the parent with coaching from the caregiver coach.

*Baseline.* Based on the results of the brief functional analysis, identical procedures of the condition that was associated with the consequence maintaining the child's target challenging behavior were followed. For Manuel, the brief functional analysis procedures used during the demand condition were conducted during the baseline sessions. For Angel, the brief functional analysis procedures used during the tangible condition were conducted during the baseline sessions.

*Intervention.* A functional communicative response was taught based on the function of each child's target challenging behavior. For Manuel, a picture card with a picture of toys and the word "play", written in English, was used to teach the communicative response. First, Manuel's mother presented a rule in Spanish "First we are going to do some work, then you can play.", and presented a task (e.g., an inset puzzle, stacking cups, or a shape sorter). If, after 5 seconds, Manuel did not engage in the correct response, Manuel's mother provided a model prompt. If, after 5 seconds after providing the model prompt, Manuel did not engage in the correct response, Manuel's mother provided a full physical prompt. Manuel was required to complete approximately half of the steps of one task before asking for a break. Throughout each session, the tasks were rotated. Contingent upon completion, prompted or independent, Manuel's mother said in Spanish "Tell me if you want to play." If, after 5 seconds, Manuel did not hand

her the picture card, Manuel's mother provided a full physical prompt. If Manuel engaged in challenging behavior, his mother waited for a 3 second break in challenging behavior before providing a full physical prompt. Contingent upon communication, prompted or independent, Manuel received a 1 to 2 minute break with preferred items. Manuel's treatment evaluation also included a demand fading phase which followed the procedures used during the intervention phase, with the exception of the number of tasks required to complete before asking for a break. Manuel was required to complete all the steps of one task before asking for a break. During each session, Manuel's mother ignored all other challenging behaviors or appropriate behaviors.

For Angel, a picture card with a picture of a phone and the word "phone", written in English, was used to teach the communicative response. First, Angel's mother provided 20 seconds of access to his highest preferred item (e.g., a phone). After the 20 seconds of access, Angel's mother removed the phone and immediately provided a full physical prompt for communication. Contingent upon communication, prompted or independent, Angel received access to the phone for 1 to 2 minutes. During each session, Angel's mother ignored all challenging behaviors or appropriate behaviors.

### *Treatment Fidelity*

The caregiver coach collected treatment fidelity data on the parent's implementation of the intervention using a data sheet that included all the steps the parent followed. The treatment fidelity was calculated by dividing the total number of steps implemented correctly by the total number of steps in the session and then multiplying that by 100. During Manuel's brief functional analysis, parent treatment fidelity data were recorded for all sessions with 100% fidelity. During Manuel's treatment evaluation,

parent treatment fidelity data were recorded for all session with 89% fidelity (range 67 to 100%). For Angel's brief functional analysis, parent treatment fidelity data were recorded for all sessions with 94% fidelity (range 75 to 100%). For Angel's treatment evaluation, parent treatment fidelity data were recorded for all sessions with 98% fidelity (range 80 to 100%).

### *Social Validity*

To measure the feasibility of the parent implementation of procedures two social validity questionnaires were answered by the parent. The first questionnaire included 8 statements and was conducted after the assessment. The second questionnaire included 16 statements and was conducted after the treatment evaluation. These questionnaires were in Spanish and included statements that the parent rated vocally. The parent rated each of the statements on a scale of 1 to 6, ranging from strongly disagree to strongly agree. The average social validity rating for the assessment and the treatment evaluation was developed using the responses of the questionnaires. To calculate the average, all negative statements were reverse scored.

## CHAPTER FOUR

### Results

#### *FAI*

The results of the FAI were used to identify topographies for target challenging behavior for each participant. Manuel engaged in aggression and throwing objects. Angel engaged in screaming and/or crying.

#### *Brief Functional Analysis*

Manuel engaged in higher instances of aggression and throwing items during the demand condition (1.4 responses per minute), as seen in Figure 4.1. These results indicate that Manuel engaged in challenging behavior primarily to escape from a demand. Angel engaged in higher instances of screaming and crying during the tangible condition (33%), as seen in Figure 4.2. These results indicate that Angel engaged in challenging behavior primarily to access an item.

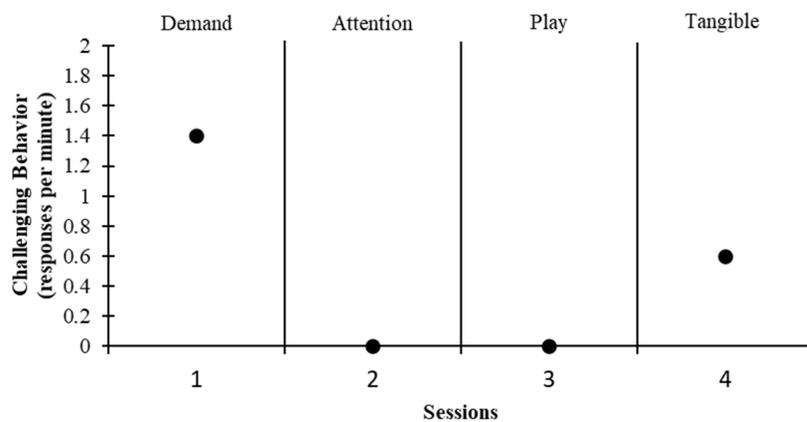


Figure 4.1. Manuel's brief functional analysis results.

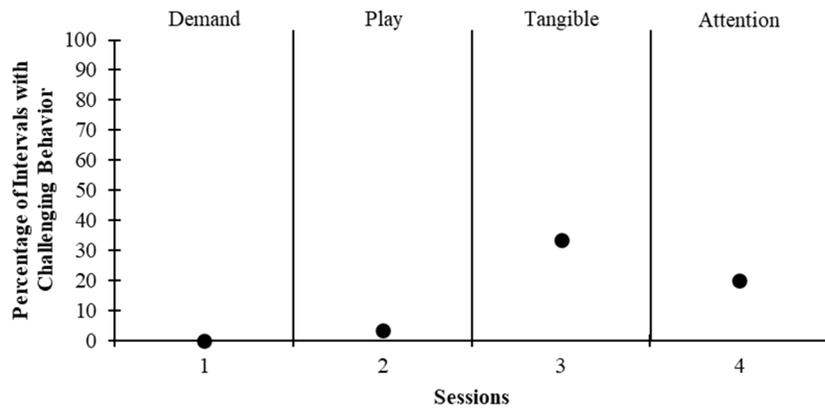


Figure 4.2. Angel's brief functional analysis results.

### *Treatment Evaluation*

#### *Child Behavior*

*Manuel.* During the initial baseline sessions, Manuel engaged in challenging behavior and did not communicate. In the initial baseline phase, challenging behavior data were not variable and demonstrated no trend with an average rate of .67 (range 0.4 to 1). The average rate of mands was 0 and the average rate of task completion was 2.5 (range 1.8 to 3) during the initial baseline phase. During the initial intervention sessions, Manuel's challenging behavior decreased, and his communication increased. Challenging behavior data demonstrated an immediacy of effect with no variability and no trend, as seen in Figure 4.3. The average rate of challenging behavior during this phase was 0. The average rate of mands during the initial intervention phase was 0.6 and the average rate of task completion was 1.7 (range 1.6 to 1.8), as seen in Figure 4.4. In the final baseline phase, the average rate of challenging behavior was 0.1 (range 0 to 0.4), the average rate of mands was 0, and the average rate of task completion was 3.4 (range 2.6 to 3.8). In the

final intervention phase, the average rate of challenging behavior was 0.04 (range 0 to 0.2), the average rate of mands was 0.6, and the average rate of task completion was 1.24 (range 0.8 to 1.6). Challenging behavior data in the final intervention phase were not variable and demonstrated no trend. In the demand fading phase, the average rate of challenging behavior was 0.3 (range 0 to 0.6), the average rate of mands was 0.4 (range 0.4 to 0.6), and the average rate of task completion was 2 (range 1.6 to 2).

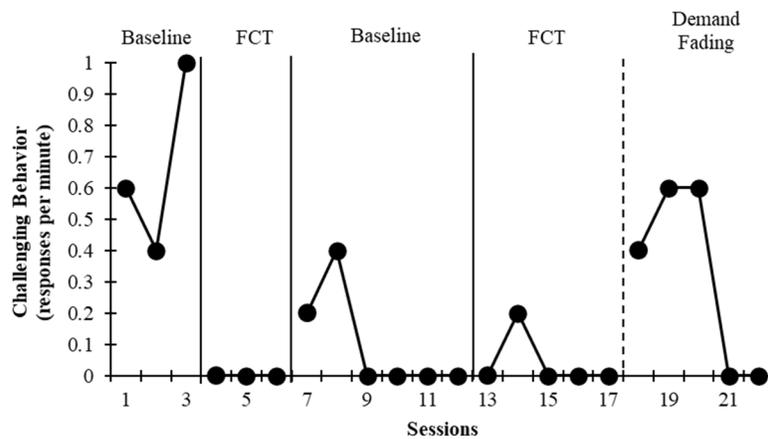


Figure 4.3. Manuel's challenging behavior treatment evaluation.

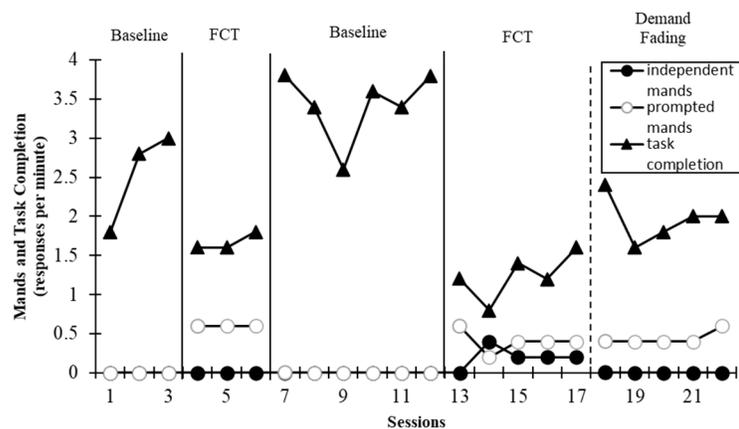


Figure 4.4. Manuel's appropriate behavior treatment evaluation.

*Angel.* During the initial baseline phase, Angel engaged in challenging behavior and did not communicate. Challenging behavior baseline data were not variable and demonstrated no trend with an average level of 33% (range 30 to 37%), as seen in Figure 4.5. The average rate of mands during the initial baseline phase was 0. During the initial intervention phase, the average level of challenging behavior was 33% (range 26 to 40%). The average rate of mands was 0.9 (range 0.8 to 1), as seen in Figure 4.6. All mands were prompted during the intervention phase. No immediacy of effect was observed, but there was a slight descending trend in the intervention phase.

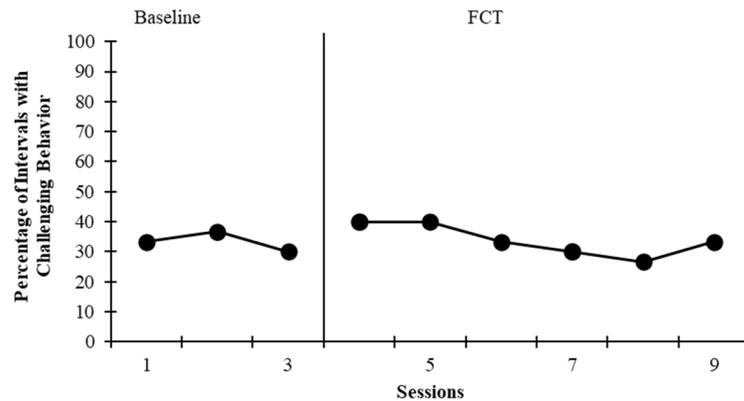


Figure 4.5. Angel’s challenging behavior treatment evaluation.

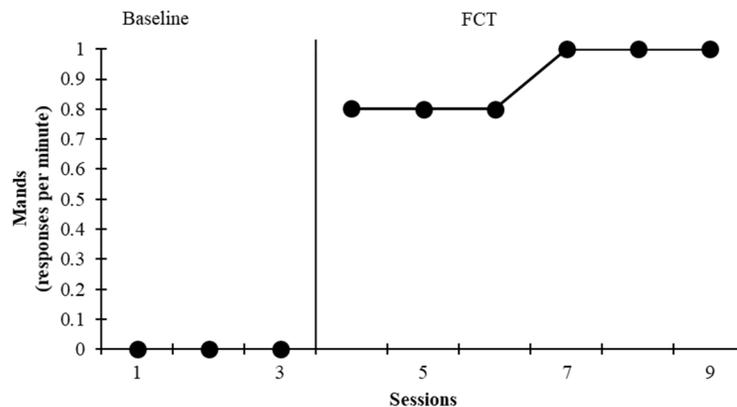


Figure 4.6. Angel’s appropriate behavior treatment evaluation.

### *Social Validity*

The average social validity rating for the assessment was a 4.5 for Manuel's mother and 5.1 for Angel's mother. The average social validity rating for the treatment evaluation was 4.8 for Manuel's mother and 5.1 for Angel's mother. Both mothers strongly agreed (selected a "6" rating) that the intervention fit with their goals to improve their child's behavior and that the intervention was feasible given the resources that they had.

## CHAPTER FIVE

### Discussion

#### *Conclusions*

The purpose of the study was to evaluate if accurate parent implementation of challenging behavior interventions by Spanish speaking parents decrease child's engagement in challenging behaviors. Both participants' mothers accurately implemented the brief functional analysis and the treatment evaluation procedures with guidance from the caregiver coach. The parent-implemented brief functional analyses resulted in the identification of the function of both participants challenging behavior. For Manuel, it was not clear that the treatment evaluation was effective in decreasing challenging behavior as compared to baseline. There was an immediacy of effect from the first baseline phase to the first intervention phase. However, there was no clear return to baseline following the first intervention phase. If Manuel's mother continued to implement the intervention procedures outside of the baseline sessions, there is a possibility that this could have caused a carryover effect into the baseline sessions. Another possibility is that there could have been a lack of an establishing operation; it may be the case that demands were no longer aversive after repeated exposure. Manuel could have lacked motivation to ask for a break if the tasks became reinforcing. However, Manuel engaged in some challenging behavior during the demand fading phase, indicating that demands still functioned as an establishing operation for challenging behavior. Manuel's mother's treatment fidelity implementation was high throughout all

sessions of the treatment evaluation. For Angel, the treatment evaluation data suggests that the intervention was not immediately effective in reducing his engagement in challenging behavior. During the treatment evaluation sessions, Angel's challenging behavior continued for 1 to 2 intervals after receiving his preferred item. Given his brief functional analysis results, it could have been possible that his challenging behavior was maintained by a different function (i.e., attention). Additionally, Angel's treatment evaluation was not completed due to frequent parent cancellations. However, Angel's mother's treatment fidelity implementation remained high throughout all sessions of the treatment evaluation.

A secondary purpose of the study was to evaluate if the parents were feasibly and effectively able to implement an intervention. Following the brief functional analysis, both mothers rated the social validity of the assessment as acceptable. Both strongly agreed (selected a "6" rating) that they liked the assessment strategy used and both strongly disagreed (selected a "1" rating) that the assessment strategy was disruptive in their home life. Following the treatment evaluation, both mothers also rated the social validity of the intervention as acceptable. Overall, both mothers effectively implemented assessment and intervention procedures. Additionally, both mothers agreed that the assessment and intervention strategies were feasible to implement in their homes.

#### *Limitations and Future Research*

A limitation for this study is the number of participants. There were two child and parent participants in the study, and a reversal design was completed for only one participant. Due to time constraints, Angel's treatment evaluation consisted of one baseline phase and one intervention phase. Therefore, it is not clear that this intervention

is effective in reducing challenging behavior across participants. Future research should include more participants within one study. Another limitation is that no maintenance data was collected on either parent implementation or child behavior. Future research should include maintenance data on parent implementation and child behavior. Additionally, this study can be expanded to include data on how accurately parents implement the intervention after time without any training. Lastly, this study did not measure the relation between parent training and parent implementation as both parents were provided with training throughout all sessions of the study. Future research should demonstrate the functional relation between parent training and parent implementation by including baseline parent implementation data prior to conducting any training sessions. Additionally, the current study could also be replicated in languages other than English to assess the generalizability of the parent training procedures. Future research should continue to identify methods that accurately teach parents that speak any language to implement interventions.

### *Implications for Practice*

This study provides information that practitioners can use when training Spanish-speaking parents to implement challenging behavior interventions. This study suggests that training Spanish-speaking parents using BST results in accurate implementation of the procedures. Parents were able to accurately implement procedures during the brief functional analysis and the treatment evaluation. Practitioners should consider training parents in their native language and should consider using BST to promote accurate implementation. Additionally, practitioners should include parents during interventions as it may be beneficial for generalization of procedures.

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