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Evaluating the Effectiveness of Parent-Child Interaction Therapy for Spanish Speaking
Families Whose Children Have Autism Spectrum Disorder

A Thesis submitted in partial satisfaction
of the requirements for the degree of

Master of Arts

in

Education

by

Jessica Cristina Mercado Anazagasty

June 2020

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2020

The Thesis of Jessica Cristina Mercado Anazagasty is approved:

Committee Chairperson

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ABSTRACT OF THESIS

Evaluating the Effectiveness of Parent-Child Interaction Therapy for Spanish Speaking Families Whose Children Have Autism Spectrum Disorder

by

Jessica Cristina Mercado Anazagasty

Master of Arts, Graduate Program in Education
University of California, Riverside, June 2020
Dr. Austin Johnson, Chairperson

The purpose of this study is to examine the effectiveness of Parent-Child Interaction Therapy for Spanish Speaking Families with children diagnosed with Autism Spectrum Disorder (ASD). Using a multiple baseline single-case design, the study will measure the treatment effect of PCIT on five children's problem behaviors and ASD symptoms, parenting practices, parent stress levels, and parent's attitudes towards treatment. Outcome measures include the Eyberg Child Behavior Inventory (ECBI), Social Responsiveness Scale-2 (SRS-2), the Parenting Stress Index (PSI), Dyadic Parent-Child Interaction Coding System (DPICS), and Therapy Attitude Inventory (TAI). Results will be obtained from visual analyses and findings of this study hope to add to the literature in improving Latino children's behavior problems and ASD symptoms.

Table of Contents

CHAPTER 1

Introduction.....	1
Prevalence of Mental Health Disorders in Children and Adolescents.....	2
Autism Spectrum Disorder and Disruptive Behavior.....	3
Linguistic and Cultural Adaptation of Behavioral Supports.....	4
Methods of Behavioral Support Delivery.....	5
Applied Behavior Analysis.....	5
Positive Behavioral Interventions and Supports (PBIS).....	6
Behavioral Parent Training.....	8
Parent Training and Ethnic Minorities.....	11
Parent Training and ASD.....	13
Types of Parent Training.....	13
Positive Parent Training Program.....	14
The Incredible Years.....	16
Parent Child Interaction Therapy.....	18
PCIT Protocol.....	20
Intake Assessment.....	20
Measures.....	21
Pre and Post Treatment Evaluations.....	21
Dyadic Parent-Child Interaction Coding System.....	22
Phases of PCIT.....	22

Teach Sessions.....	23
Coaching Sessions.....	24
Cultural Adaptation and Implementation of PCIT with Minorities.....	25
PCIT with Latino families	26
Mexican American Population.....	26
Puerto Rican Population.....	28
PCIT Literature on Treating Children with ASD.....	28
Standard PCIT.....	30
PCIT Modifications for ASD.....	31
Challenges to Treatment.....	34
Limitations of PCIT Research.....	36
Summary and Rationale.....	36
CHAPTER 2	
Method.....	38
Participants.....	38
Recruitment.....	39
Compensation.....	39
Variables.....	40
Independent Variable.....	40
Level II PCIT Trainer Qualifications.....	41
PCIT Certification Requirements.....	42

PCIT Trainee Competency Qualifications.....	43
Measures.....	43
Pre-baseline information.....	43
Screening Interview.....	43
Intake Assessment.....	43
Social Responsiveness Scale-2.....	44
Parenting Stress Index-Short Form.....	44
Outcome Variable.....	45
Dyadic Parent-Child Interaction Coding System.....	45
Eyberg Child Behavior Inventory (ECBI).....	46
Social Validity.....	47
Therapy Attitude Inventory.....	47
Design.....	47
Coding and Treatment Fidelity.....	49
Procedures.....	50
Pre-Treatment.....	50
Treatment.....	51
Data Analysis.....	52
 CHAPTER 3	
References.....	53
Appendices.....	65
Appendix A Table 1.....	65

CHAPTER I INTRODUCTION

The need for child mental health and behavioral supports stems from the range of disorders and conditions children experience. Psychological, behavioral, and developmental disorders can originate early in childhood. According to Cree et al. (2018), 17.4% of U.S. children between the ages of 2 to 8 years were diagnosed with such disorders in 2016. Children who display early behavior problems are at higher risk for mental health problems such as mood, anxiety and conduct disorders, future substance abuse, legal problems related to delinquency and arrest, social rejection, educational problems such as school drop-out, suspension or expulsion and occupational issues (Frick, 2016; Muratori et al., 2018). Behavior problems are more common between the ages of 6 to 11 years old compared to older or younger children and often require substantial systems of support in the home and school setting (Ghandour et al., 2018). During the 2013-2014 school year, about 2.6 million U.S. public school students received suspensions and about 111,000 were expelled as a form of disciplinary action in response to problem behaviors (National Center for Education Statistics, 2019). For this reason, early identification and treatment are imperative to prevent future risk. Factors associated with child conduct problems include neurochemical and autonomic nervous system irregularities, prenatal care issues, neurocognitive deficits, social processing deficits, lack of emotional regulation, and impulsivity (Frick, 2016). Other circumstances found to put children and adolescents at risk for behavior issues include environmental risk factors such as poor early child care, familial factors such as ineffective discipline and parenting

practices, lack of support, parent mental health, socioeconomic status (Cree, 2018), association with disruptive peers, exposure to violence (Frick, 2016) and acculturation stress (Bacallao & Smokowski, 2017).

Prevalence of Mental Health Disorders in Children and Adolescents

Reports from the 2016 National Survey of Children's Health suggest that attention-deficit/hyperactivity disorder (ADHD), Autism Spectrum Disorder (ASD), anxiety, depression, and behavior disorders are the most prevalent diagnosed mental disorders among U.S. children and adolescents between 3-17 years old. Ghandour et al. (2018) analyzed and reported national survey prevalence estimates and found that 7.1% of children had anxiety problems, 7.4% had a behavioral/conduct problem, and 3.2% had depression. In addition, data show that for children with anxiety and behavioral problems, gaps in treatment and intervention are common. Roughly 59.3% of children with anxiety problems and 53.5% with behavioral/conduct problems received treatment in the previous year compared to nearly 80% of those with depression receiving treatment.

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V-TR; APA, 2013) describes a list of disruptive, impulse-control, and conduct disorders characterized by a lack of self-control of emotions and behaviors. The prevalence of some of these disorders in typically developing children from a United States sample is estimated to be 11% for oppositional defiant disorder, 2.7% for intermittent explosive disorder, and 10% for conduct disorder (APA, 2013). These types of disorders are often comorbid with neurodevelopmental disorders such as ADHD and ASD.

It is estimated that 1 in 54 children in the United States has an ASD diagnosis (Centers for Disease Control, 2020). According to Xu et al. (2019), the nationally reported prevalence of ASD among children aged 3-17 in 2016 was 2.50%. Of the children diagnosed, 6.9% were on medication for related symptoms, 20.3% received both medication and behavioral treatment, and nearly 30% did not receive either treatment. Thus, not all children with mental health and developmental disorders are being treated, and additionally, these neurodevelopmental disorders do not always present themselves individually. Research suggests that ASD and ADHD often co-occur with other disorders. It is estimated that at least 70% of children diagnosed with ASD present at least one or more psychiatric disorders and may present comorbid behavior problems (Simonoff et al., 2008).

Autism Spectrum Disorder and Disruptive Behavior

Autism spectrum disorder is a neurodevelopmental disorder characterized by restricted, repetitive patterns of behavior, interests, or activities and by persistent deficits in social interactions and communication including deficits in social reciprocity, nonverbal communicative behaviors, and lack of skills in developing, maintaining, and understanding social relationships (APA, 2013). Conduct disorders alongside symptoms such as tantrums, irritability, non-compliance, and aggression are common in children with ASD. Data from the Autism and Developmental Disabilities Monitoring Network (2006–2010) found that the relationship between ASD and behavioral issues is consistent with previous literature, and Kurzius-Spencer et al. (2018) found that 60% of 8-year-old children with ASD exhibited six or more behavioral problems. This population can

demonstrate behaviors such as inattention/hyperactivity, aggression, argumentative/oppositional behavior, temper tantrums, and unusual sensory responses. Children with ASD and intellectual disability have shown an increased risk of self-injurious behavior, abnormal fear responses and eating problems (Kurzius-Spencer et al., 2018). Similarly, another study identified that aggressive behaviors may be present in 25% to over 50% of individuals with ASD (Hill et al., 2014).

Behavioral issues such as these can greatly impact individuals with ASD and their families. Research suggests that children diagnosed with ASD who present aggressive behaviors are more likely to be hospitalized than those without a diagnosis (Madell, 2008). In addition, these behavioral problems and disruptive behaviors are associated with high levels of parental stress and teacher burnout (Kaat & Lecavalier, 2013).

Linguistic and Cultural Adaptation of Behavioral Supports

Race and ethnicity have been found to influence diagnoses and clinical characteristics of children in treatment. In contrast to their likelihood to receive an ASD diagnosis, ethnic minorities are more likely to receive a diagnosis for disruptive behavior disorders in comparison to their White peers (Nguyen et al., 2007). Additionally, sociocultural and environmental factors such as socioeconomic status, spiritual beliefs, and acculturation have been found to influence perceptions of disabilities, their interpretation, and play a role in timely diagnosis and treatment (Colbert et al., 2017; Ravindran & Myers, 2012). The concept of acculturation or a family's inherent ability to adjust to a new culture has long been studied among risk factors associated with academic, physical, and mental health problems in children. Compared to their peers,

children in culturally diverse families must cope with stressors related to second culture and language acquisition (Bacallao & Smokowski, 2005). Linguistic and cultural adaptation of behavioral and psychological treatments are important as current meta-analyses support their effectiveness for minority populations over other conditions. For example, Hall, et al. (2016) found a medium effect size that favored the effectiveness of adapted interventions compared to non-adapted ones. Similarly, Soto, et al. (2018) suggest that culturally adapted treatment and therapist cultural competence are related to effective outcomes. Moreover, they explored predictive variables in culturally adapted interventions and found that basing treatment on client goals and offering the intervention in the client's preferred language is most predictive of client positive outcomes.

Although it is not uncommon in the U.S. to have ethnic minority children diagnosed with ASD, prevalence rates do vary by race and ethnicity. In fact, the prevalence of diagnosed White children with ASD is much higher than those who are Latino, suggesting that there is a risk of under-diagnosis for this population (Rato et al., 2016). Research also suggests this population is at risk of delayed diagnosis and less access to treatment when considering parent nativity (Shieve et al., 2012). Therefore, cultural adaptations and modifications should be considered for this population.

Methods of Behavioral Support Delivery

Many psychosocial interventions and methods of delivery have been designed to target mental health and behavioral issues during early childhood and adolescence in an array of settings. These methods can be individualized or delivered to a wider group and adapted to be culturally sensitive and appropriate for children with a diagnosis such as

ASD. Such methods include applied behavior analysis, which is considered the gold standard for ASD intervention, and school-based services such as school-wide Positive Behavioral Interventions and Supports (PBIS). Similarly, an indirect way of delivering behavioral interventions to children is through their parents or caregivers when engaging in Behavioral Parent Training.

Applied Behavior Analysis (ABA)

ABA has long been considered the gold standard treatment for children with ASD. Based on B. F. Skinner's operant conditioning theory, ABA theorizes, in part, that behaviors can be developed or changed over time by providing reinforcing consequences known as shaping and other procedures such as modeling and prompting (Roane, Fisher, & Carr, 2016). ABA has been established as an empirically based treatment that results in positive behavioral outcomes for children with ASD. Virues-Ortega (2009) conducted a meta-analysis synthesizing results from 22 studies which suggested that long-term, comprehensive ABA intervention for young children with autism has a medium to large treatment effect in areas such as intellectual functioning, language development, living skills acquisition, and social functioning. A more recent meta-analytic study consisting of 29 studies assessed behavior analytic interventions based on the principles of ABA and their use with children with ASD found similar results. Findings suggest ABA programs are moderately to highly effective in improving intellectual abilities ($g = 0.740$); moderately to very effective in improving communication skills ($g = 0.650$), expressive-language skills ($g = 0.742$) and receptive-language skills ($g = 0.597$); moderately effective in improving IQ on non-verbal tests ($g = 0.463$), adaptive behavior

(in total; $g = 0.422$), socialization ($g = 0.444$); and had small effectiveness in improving daily living skills ($g = 0.138$) (Makrygianni, Gena, Katoudi, & Galanis, 2018).

Positive Behavioral Interventions and Supports (PBIS)

Positive Behavioral Interventions and Supports (PBIS) follows a tiered model of behavioral support, prevention, and intervention in schools (Bal et al., 2012). It is a broad range of systematic strategies that aim to reduce and prevent problem behaviors while producing positive learning and social outcomes (Sugai & Horner, 2002). According to the research of Banks and Obiakor (2015), the PBIS model focuses on effectively changing behaviors by reducing problem behaviors and teaching appropriate alternative behaviors. With the purpose of creating a positive, predictable, supportive, and consistent social and academic climate for all students, this model takes into account school contexts or environmental conditions that may have an effect on behaviors (Bal et al., 2014). Factors that characterize the model include prevention, repeated progress monitoring, data-based decision making, evidence-based practices, and school activity coordination (Bal et al., 2012). Furthermore, it aims to improve school safety by taking a school-wide prevention and intervention approach to improving behavior issues. However, its implementation may vary based on the context and learning histories of students.

School-wide PBIS requires agreement on rule violations, data collection, and student responsiveness to interventions, and a behavioral intervention plan if necessary (Sugai et al. 2012). For this reason, team-based implementation and the collaboration of teachers, administrators, and staff in problem-solving and decision making processes is

imperative for the success of the model (Bal et al., 2014). Furthermore, it requires school-wide acknowledgment of the range of the culturally and linguistically diverse student population it serves. Multicultural and linguistically diverse students have been overrepresented across areas like school discipline, academic achievement, and high school dropout rates. Considering culture in the context of implementing behavior supports is imperative to address and improve academic and social outcomes for students (Sugai et al., 2012). According to Gillette et al. (2017) school-aged children belonging to minority groups in the United States comprised 48% of the population in 2016. The increase in the number of students with ethnic, linguistic and cultural differences requires a culturally responsive approach to behavior. Unfortunately, school classrooms are built with a core set of culturally restrictive rules, values, and behavioral expectations (Banks & Obiakor, 2015). Although the PBIS model addresses student needs through evidence-based practices, it does not account for teacher's behavioral and academic expectations that may influence student trajectories. In response, Culturally Responsive PBIS (CRPBIS) integrates the same approach as PBIS and promotes the use of culturally responsive practices. Moreover, it considers students' culture, language, heritage, and experiences to make learning effective, validate who they are, and set realistic behavioral and academic expectations (Banks & Obiakor, 2015).

Furthermore, a PBIS model can guide effective prevention and intervention efforts for children with ASD symptomatology (Blair et al., 2011). Through school programs and supports, environmental changes can be made to improve children's success and reduce problem behaviors by teaching them how to appropriately

communicate their needs (Carr et al., 2002). These supports may vary depending on the nature or intensity of the symptomatology. Some examples are providing visual supports, offering routine consistency, informing of transitions or schedule changes, offering breaks and teaching how to ask for breaks, removing distractions, offering simple and direct instructions, integrating the child's preferred activities as reinforcers and school-family partnerships that teach caregivers preventative strategies for problem behaviors (Williford et al., 2018).

Behavioral Parent Training (BPT)

Parenting practices have long been associated with child behavioral outcomes. Moreover, parent involvement (Adams, 2010) and treatment fidelity (Strauss et. al, 2012) are critical factors in the generalization of behavioral intervention gains. Specifically, interaction patterns learned through parent-child exchanges that generalize across multiple settings can affect children's mental health, academic achievement, social-emotional skills, and behavior (Stormshak et al., 2010). Familial dynamics characterized by harsh punishment; insensitive and nonresponsive parenting; inconsistent, vague commands and directions, a lack of involvement, monitoring, and supervision, have been known to hinder child compliance and positive behavior. For example, Stormshak et al. (2000) explored distinct parenting practices in relation to disruptive behavior in a sample of predominantly European and African American elementary school children. This study found that inconsistent and punitive disciplinary strategies such as spanking and physical aggression were highly related to disruptiveness, specifically oppositional and aggressive behaviors in school.

Research suggests that parent training is an effective intervention approach that improves emotional and behavioral adjustment in children (Barlow & Coren, 2018), reduces child internalizing and externalizing conduct problem behaviors (Kazdin, 2005), and improves the psychosocial well-being of parents (Lundahl et al., 2006). Different methodologies to the approach have evolved over a span of 45 years from when early research began to incorporate parents as their main focus of intervention in order to improve upon their children's disruptive behaviors (Forehand et al., 2013). Behavioral Parent Training, also sometimes more simply known as parent training, is a familial approach to child disruptive behaviors, the main goal of which is to enhance parent's abilities and knowledge when implementing effective discipline strategies meant to decrease negative interactions and problem behaviors in children (Muratori et al., 2018), thereby providing indirect service delivery to the child via a change in parent behavior.

Parent Training and Ethnic Minorities

It is important to take into account the wide range of variations in parenting approaches, practices, values, and stressors tied to culture, acculturation, and discrimination that may influence parent adherence and receptivity to training (Lau et al., 2011). Having a strong buy-in from the parents to reinforce skills learned in intervention is an important component for the success of the intervention. Poorer outcomes have been recorded for disadvantaged, ethnic minority, and linguistic minority families (Lundahl et al., 2006). Research suggests that not all families benefit to the same extent from parent training (Sanders, 1992) as cultural barriers may hinder generalizability to other contexts (Forehand & Kotchick, 1996). Additionally, most family evidence-based interventions

were designed and validated with English-speaking, middle class, Caucasian populations, although many subsequent studies have failed to report participant socioeconomic status, language proficiency, race or ethnicity (Kumpfer et al., 2017). Moreover, assessing treatment outcomes across ethnic minority populations is made yet more complex as parenting practices can vary by ethnicity (Bjørknes et al., 2012). To address these disparities in intervention outcomes, some research has attended specifically to cultural barriers in parent training (e.g., Lau, 2006; Carpentier et al., 2007; Matos, et al. 2009; McCabe & Yeh, 2009). There is an emphasis on the importance of incorporating cultural sensitivity in treatment and taking this into account has led to positive outcomes and satisfaction across ethnic groups (Lau et al., 2011; Reid et al., 2001). Previous meta-analyses have demonstrated intervention effectiveness through the integration of language and cultural beliefs into interventions as a way to improve ethnic minorities' adherence to treatment. Effective adaptations include structural changes to intervention attributes such as language, materials, client-specific needs, and content when necessary. In addition, culturally sensitive adaptations to parenting programs have demonstrated success in improving parenting behavior when compared to not-adapted programs (van Mourik et al., 2017).

When looking at culturally diverse families, gender should also be considered as a factor in how these parenting practices are carried out. For example, Holtrop et al. (2015) explored the concept of externalizing behaviors with underserved two-parent Latino immigrant families. Although monitoring and skill encouragement were predictive of less parent-reported externalization of child behaviors, problem-solving, and discipline were

predictive of higher reports of child externalizing behaviors. Latino fathers' discipline practices and reported child behaviors played a role in these findings. Holtrop et al. (2015) infer these results may be due to a difference of socialization patterns in comparison to mothers and the traditional Latino value known as “respeto”, which emphasizes the importance of obedience and reverence to authority figures. In terms of discipline, more research is warranted as this study exclusively looked at noncoercive discipline practices and may not have captured the full range of discipline in the context of Latino culture. Gaps in the literature warrant more research to study the implementation of parent training programs with ethnic minority groups.

Parent Training and ASD

There has been growing interest in the use of parent training to treat disruptive behaviors in children with ASD. Existing literature suggests that parent training with ABA components are effective for this population compared to less rigorous programs. For example, Lecavalier et al. (2017) conducted a 6-month randomized control trial comparing parent training and a parent education program. Results showed that parent training was more successful than the education program in decreasing non-compliance and disruptive behaviors in children 3 to 7 years old with ASD. Similarly, a systematic review and meta-analysis analyzed 8 studies that examined parent training as a treatment for disruptive behavior in children with ASD. Findings suggest that training programs that offer at least 12 sessions over the course of 16-24 weeks allow for parents to practice behavior management skills alongside therapist feedback. Although in eight studies, the overall impact of parent training on the population was moderate, the results actively

support its implementation and further examination in research, clinical, and educational settings (Postorino et al., 2017).

Types of Parent Training

Some of the widely used parent training programs that target behavior problems in children are presented below. Variations of Behavioral Parent Training include Positive Parenting Training (Triple P), Incredible Years Training Series (IY), and Parent-Child Interaction Therapy (PCIT). A meta-analysis on the effects of parent training programs on delinquency and antisocial behaviors found that the mean effect sizes for all three of these parent training programs were positive and statistically significant. Parent-child interaction therapy had the largest effect size (0.98), succeeded by the Triple P Parenting Program (0.56), and the Incredible Years Parenting Program (0.31) (Piquero et al., 2016).

Positive Parent Training Program (Triple P). The Positive Parenting Program, also known as Triple P (Sanders, 1999), is an evidence-based multilevel, preventative, parenting, and family support intervention. Its purpose is to prevent and treat behavioral, emotional, and developmental problems in children through reinforcing family coping skills, knowledge, independence, and resilience. Moreover, it aims to encourage caring, non-violent environments by reducing risk factors related to child maltreatment and positive child development through positive parenting practices (Muratori et al., 2018).

Triple P is directed towards children from birth to 16 years and targets crucial developmental periods from infancy to adolescence. It consists of five levels of intervention. The first level offers a universal approach that involves consultation and

self-directed training; the second level addresses parents' specific concerns about child behavior or development. The third level focuses on parenting skills training. The fourth level targets parents of children with more severe behavior problems and finally, level five is an intensive behavioral family intervention, which addresses family dysfunction of clinically referred children. In order to serve a wider range of behavioral issues, the program contains variants specifically designed for children with disabilities (Sanders et al., 2003). Studies have supported the program's effectiveness with children who have been diagnosed with anxiety (Özyurt et al., 2016), ADHD (Bor et al., 2002) and ASD (Wittingham et al., 2009). Additionally, it offers programs for parents whose children have health issues or those going through family transitions such as divorce.

Program effectiveness, cultural acceptability, and sociodemographic and delivery settings have been explored through ongoing research efforts as its evidence base continues to evolve (Pickering, 2016). Research has suggested the program's effectiveness and cultural appropriateness with ethnically diverse populations from Indonesia (Sumargi et al., 2015), Japan (Matsumoto et al., 2007), Switzerland, Hong Kong, Iran (Tehrani-Doost et al., 2009; Aghebati, 2014), and Latin American countries, among others. The program has been translated from English and dubbed or subtitled in 21 languages.

Evidence on the program's effectiveness in reducing child maltreatment is mixed, especially at a population level. Only one study has been identified in support of the viability of Triple P as a large scale parenting intervention to reduce child maltreatment (Prinz et al., 2009; 2016). Moreover, Schilling and colleagues (2019) examined the

effectiveness of The Triple P-Positive Parenting Program on child maltreatment and found that maltreatment reports and foster care placements were only slightly reduced, warranting more research in this area. However, by improving child behavior and parenting practices, and reducing parental depression, the program has demonstrated its effectiveness in the treatment of children with different behavioral and family dysfunction severity, showing up to one year of post-treatment maintenance (Kazdin, 2005). Further research has shown that participating in the program can improve parenting self-efficacy and the use of beneficial parenting methods (Hoath & Sanders, 2002).

The Incredible Years. The Incredible Years (Webster-Stratton, 2001) is an evidence-based program that contains training modules for parents, teachers, and children. Its goal is to prevent, treat and reduce oppositional and conduct problems in children, promoting child social competencies, parent competencies and strengthening families, as well as to promote socio-emotional skills and prosocial behaviors through the use of positive discipline strategies. It does so by emphasizing role-playing, child-directed play, modeling, practice and feedback from group members and the therapist (Kazdin, 2005). The program covers a range of ages from infancy to school age (6-12 years old), offering culturally appropriate examples and a variety of temperamental child issues (Muratori et al., 2018). Initial skills training is offered to groups of parents, typically 8-12 participants. This includes 26 hours' worth of audiovisuals containing different scenarios where age-appropriate positive parenting skills are modeled (Kazdin, 2005). These can be completed in a period of 12 to 14 weeks, during which time parents

are trained to master skills such as providing praise, rewards, setting limits and problem-solving behaviors. The second module provides skills training to promote effective conflict management and communication. Parents are taught self-support skills that help them cope with their emotions and amplify their social support system. The third module relates to parent-school interaction and the child's school functioning. This enhances parent-child interaction and parent involvement by encouraging them to nurture positive educational outcomes. The fourth module focuses on teacher training and effective classroom management skills.

The efficacy of the IY Parent Program for children with disruptive and prosocial behavior problems has been demonstrated in several studies. Menting et al. (2013) examined the IY in a meta-analysis consisting of 50 articles that suggest IY is a well-established effective intervention for child misconduct. Findings suggested that the strongest predictor of the program's effectiveness was the initial severity of child behavior (Menting et al., 2013). Previous research has also demonstrated that the IY program post-treatment effects can range from 1–3 years (Muratori et al., 2018). Other studies have recorded even longer positive effects. For example, Webster-Stratton et al. (2011) reassessed 78 children whose parents had participated in the IY when they were between the ages of 3-8, and found that 8-12 years after receiving the intervention, severe behavioral problems in puberty were lower than expected.

There is evidence to suggest IY's probable effectiveness with children with neurodevelopmental disabilities and conduct problems. For example, in a systematic literature review, Murray et al. (2018) examined the effectiveness of IY in children with

or at risk for ADHD. The program showed promising positive behavioral outcomes and relatively strong support for social skills development in this population through parent reports. Treatment research trials with children diagnosed with ASD are also promising. Dababnah and Parish (2016) found that the adaptation of the Basic IY was a feasible intervention that also reduced parenting stress. In order to specifically aid this population, the creators of IY modified the manual into a new program called the Incredible Years Parent Program for Preschool Children on the Autism Spectrum or with Language Delays (IY-ASD; Webster-Stratton, 2014). Although the program has been well received by parents, small positive effects on ASD child behavior have been reported in pilot studies with small sample sizes (Hutchings et al., 2016; Dababnah et al., 2019). Hence, more research is warranted in this area. Research looking at Oppositional Defiant Disorder found that posttreatment, 68% of the children no longer had an ODD diagnosis at the one-year follow-up and symptom frequency was significantly reduced, although symptoms would still infrequently occur (Hobbel & Drugli, 2013).

The IY's implementation with culturally diverse populations in the United States has been studied along with populations from the United Kingdom, Ireland, Norway, Denmark, Finland, the Netherlands, Portugal (Webster-Stratton et al., 2012), and Turkey (Uysal Bayrak & Akman, 2018). In addition, the IY has been translated into multiple languages based on program content and age range.

Parent-Child Interaction Therapy

Parent-Child Interaction Therapy (PCIT; Eyberg, 1988) is a short-term, evidence-based behavioral parent training program for children with behavior problems between

the ages of 2 to 7. It is effective for behaviors such as tantrums, aggression, and non-compliance in contexts such as home and school. The goal is to teach parents specific skills that improve and create a positive parent-child relationship and to assist parents in developing effective parenting skills (Kazdin, 2005) that promote productive, consistent, and predictable boundaries and disciplinary actions (Muratori, 2018).

The intervention is offered during real-time parent-child interactions, with the therapist directing the parent through an earpiece and behind a one-way mirror. It is divided into two stages, based on attachment and social learning theory, which require 12 or more one-hour weekly sessions, and are dependent on parent mastery of skills and child improvement. Therefore, treatment length will be dependent on parent progression through the program, which can vary across families (McNeil & Hembree-Kigin, 2010). The first stage is Child-Directed Interaction (CDI). This stage uses traditional play therapy components of training and was created to increase the child's prosocial behavior and enhance interactions by teaching parenting skills involving praise, enthusiasm, and contingent attention. The second stage, Parent-Directed Interaction (PDI), trains parents to modify child behaviors through monitoring behavior, implementation of consequences, offering consistent commands, implementing rules, and using time-out for non-compliance (Muratori, 2018).

Research supports PCIT as an effective intervention for decreasing child behavioral problems, increasing compliance, and decreasing parenting stress (McNeil & Hembree-Kigin, 2010). PCIT treatment outcomes have shown to generalize across settings such as home and school (McNeil et al., 1991), across time, to siblings not

receiving treatment (Brestan et al., 1997) and when offered as a group (Niec et al., 2016). Research also supports its use for children with disabilities, having shown initial promising results for children with ADHD (Wagner & McNeil, 2008; Matos et al., 2009) and ASD (Scudder et al., 2019). Due to methodological issues in studies of this nature and the limited research in this area, it is premature to conclude that PCIT is a sure effective treatment for these populations. However, evidence suggests that PCIT is a promising intervention warranting more research (Vetter, 2018). The intervention's effectiveness with disruptive behavior disorders, for example in children who are diagnosed with ODD, has also been explored and resulted in positive behavioral outcomes (Ward et al., 2016). Research has also looked at its effectiveness with internalizing behaviors; Choate et al. (2005) studied the effectiveness of PCIT in children diagnosed with Separation Anxiety Disorder (SAD) and found that post-treatment these children no longer met diagnostic criteria for SAD.

PCIT Protocol

The components of PCIT include an intake assessment, pre-treatment observational assessment, a Child-Directed Interaction (CDI) teaching phase, CDI coaching, Parent Directed Interaction (PDI) coaching session, PDI coaching, and a post-treatment observational assessment.

Intake Assessment

An initial intake assessment is required to construct the client's treatment objectives. This includes conducting clinical interviews, collecting standardized measures from parents, setting treatment goals, and conducting semi-structured behavioral

assessments by observing parent-child dyads in play scenarios. During the clinical interview, the therapist collects information on the child and parent such as medical and mental health treatment history, prognosis, school issues, developmental information, behavioral concerns, child and family strengths, and environmental factors that could complicate participation in the treatment. In addition, standardized measures are used to assess the severity of the behavior and the level of parental stress.

Measures

The measure used to assess the intensity of the child's behavior is a 10 minute, 36 item scale known as the Eyberg Child Behavior Inventory (ECBI). It was created for children 2-16 years old and contains two scales that assess intensity/frequency and the degree to which behavior is a problem for the parent. The clinical cut off point is determined by a score of 13 or greater in the intensity scale and a score greater than 15 for the problem scale. The ECBI can be used to assess child behavior weekly before beginning each session. For parenting stress levels, a 36 item parent-report measure called the Parenting Stress Inventory is used.

Pre and Post Treatment Evaluation

Following administration of these measures, with the purpose of understanding the parent-child relationship, a pre-treatment behavioral observation is conducted in three contexts following a protocol assessment process and coding system: a child-directed play scenario, parent-directed play, and a cleanup situation. The room for these scenarios has a one-way mirror that allows the therapist to observe the clients without disruption and is set up to promote joint play with three options for toys. During these scenarios,

parent verbalizations are recorded using the Dyadic Parent-Child Interaction Coding System (DPICS) during the first 5 minutes of each scenario. The therapist then follows the protocol by making specific verbalizations and directing the parent through radio transmissions. The same protocol is then implemented post-treatment in order to assess the parent's mastery of skills, progress and treatment effects.

Dyadic Parent-Child Interaction Coding System (DPICS)

The DPICS is the behavioral observation coding system used to guide treatment goals, evaluate the intervention, and measure progress. During the pre-treatment phase, it is used to obtain a baseline measure of the parent-child relationship, and then it is used weekly to measure progress and post-treatment to assess treatment gains. Using the DPICS, therapists code parent verbalizations during pre and post behavioral observations and 5-minute pre-session assessments. Coding involves tally marks in only one of several categories of speech (Table 1). In order to achieve mastery of skills during CDI, parents must produce 10 labeled praises, 10 behavioral descriptions, 10 reflections, and no more than three questions, commands or critical statements combined during the 5 minute observations. For PDI, the DPICS also codes for child responses to commands. Mastery of skills in this second stage requires parents to give at least four direct commands and effectively follow the timeout command sequence.

Phases of PCIT

PCIT is divided into two phases of treatment referred to as Child-Directed Interaction (CDI) and Parent Directed Interaction (PDI). The goal of CDI is to enhance the parent-child relationship by adjusting the way parents interact with their children,

follow their lead in a supportive manner during play situations and make quality verbalizations. A core component is to teach parents to increase praise, behavior descriptions and reflecting back to the child in order to encourage quality parent-child interaction. In CDI, quality verbalizations are referred to as PRIDE skills. PRIDE skills consist of teaching the parent how to praise appropriate behaviors, reflect child speech, imitate the child's play, describe the child's actions, and engage with enjoyment. The goal of PDI is to provide parents with strategies to improve compliance. Once parents reach mastery of CDI and PDI skills, they then work on generalizing the skills to other contexts.

Teach Sessions

Both phases begin with teaching or didactic sessions followed by in the moment coaching sessions. The CDI teach session discusses the expectations of treatment and focuses on establishing rapport with the family. Its goal is to educate caregivers on CDI skills through role-play, providing a rationale behind each skill. Parents are also taught "Don't skills" (avoiding commands, questions, and criticism), "Do skills" (PRIDE skills) and selective attention. Finally, homework sheets are given to parents after every session and they are required to practice CDI for 5 minutes every day during a set up play situation at home.

The PDI teach sessions emphasize the use of effective commands. Effective commands are direct, specific, stated positively, given one at a time, and are developmentally appropriate. In order to address dawdling and allow the child to comply parents are encouraged to wait 5 seconds after a command is given. Immediate

obedience is then reinforced with praise and disobedience is addressed with a time out sequence which offers parents a consistent method of developing compliance. The time out sequence consists of an initial warning and a time out chair following disobedience. The child must stay in the chair until they are allowed off for 3 minutes plus 5 seconds of quiet. Parents are encouraged to practice PDI skills at home for 5 to 10 minutes only after the first PDI coaching session.

Coaching Sessions

During each session, therapists code parent verbalizations for the first 5 minutes in order to progress monitor the parent's skills. Afterward, the therapist begins coaching, providing the parent guidance and suggestions through radio transmissions while the parent and child play. Through prompts, suggestions, and explanations the therapist teaches the parent how to change child behavior according to the treatment goals. In CDI, the goal of coaching is to shape the child's behavior through selective attention. The parent is encouraged to consistently ignore non-harmful inappropriate behaviors, only pay attention to positive behaviors and praise the child for them. They are also encouraged to use at least 10 labeled praises, 10 reflections and 10 behavioral descriptions to reinforce the parent-child interaction. During PDI parents are guided towards verbalizing at least 4 clear correct specific commands, utilizing praise when appropriate and implementing the time-out sequence. Following every coaching session, the therapist goes over skills if necessary and discusses the session with the caregivers. They are also given homework sheets for the following week and encouraged to practice their skills every day at home for 5-10 minutes depending on which phase they are in.

Cultural Adaptation and Implementation of PCIT with Minorities

Although the effectiveness of PCIT has been widely recognized, there are gaps in the literature that need to be addressed when implementing the intervention with ethnic minority groups. The PCIT literature has explored topics such as the acceptability of treatment, adaptation to specific ethnic groups, and its effectiveness without cultural adaptation (McNeil & Hembree-Kigin, 2010). Research on interventions that adhere to the core principles of PCIT has found strong therapeutic effects by requiring parents to achieve mastery of skills and avoiding need-based modifications to the treatment (Thomas et al., 2017). Research with ethnically diverse populations such as African American, Native American, and Latino populations has demonstrated mixed results. Capage et al. (2001) conducted a comparative study with African American and Caucasian participants, finding no apparent differences in PCIT outcomes between the groups. PCIT with Native American parents has also been considered effective without any major alterations. Masse (2006) conducted a study comparing Native American and non-Native American parenting styles and acceptability of parent training. The study found no differences between the groups on the acceptability of behavioral parent training. Furthermore, Ballew-Dunlap (2005) explored factors such as acculturation, parenting stress, perceived social support, and PCIT acceptability in a sample of Native American parents. Parents in this study reported the acceptability of PCIT components, which suggests alterations may not be needed to use the intervention with this particular population. In contrast, a more recent study with African American mothers indicated that although they reported child behavior improvements, the intervention had no effect

on parenting stress (Fernandez et al., 2011). This study had a 56% attrition rate, which may suggest more information is needed on potential barriers to access treatment.

PCIT with Latino families

Because behavioral interventions may need to take into account cultural values specific to Latin communities, some studies have explored adaptability to these values, thereby promoting a culturally sensitive treatment. Latino values that have been explored and tied to possible treatment outcomes include “respeto” (emphasis to respect to authority), familism (value of family relationships in relation to child upbringing), “personalismo” (warm interpersonal relationships), collectivism (preferring affiliation and cooperation) and adherence to gender roles (McCabe et al., 2005). McNeil and colleagues (2010) make notable recommendations when working with Latino families such as exploring parent and child level of acculturation, country of origin, and preferred language in order to make reasonable accommodations. However, the only two Latino subgroups that have been studied to date in regard to the implementation of PCIT are Mexicans and Puerto Ricans.

Mexican-American Population. McCabe and colleagues (2005) developed the *Guiando a Niños Activos* or Guiding Active Children (GANA) program. The program is a culturally adapted version of PCIT and is designed to better serve Mexican-American families. In order to develop the adaptation and propose modifications to PCIT, the researchers gathered information on the practical and cultural barriers faced when seeking treatment, clinical literature on the treatment of Latino families, expert opinions, and qualitative data from Mexican American parents and therapists. Clinical trials of

GANNA yielded promising results in reducing child problem behaviors even at 6 to 24 months post-treatment follow up (McCabe & Yeh, 2009; McCabe et al., 2012). Another related study conducted by Borrego and colleagues (2006) as a single case design demonstrated the effectiveness of PCIT with a Spanish-speaking Mexican-American mother and her adopted child. Although the structure and content of the program remained unchanged, one of the major contributions made to the intervention adaptation was offering it in the mother's language of preference: Spanish. Results suggest that PCIT in Spanish reduces parental stress and child behaviors and increases positive parent-child interaction.

More recently, Budd et al. (2011) explored the use of PCIT in an urban community clinic with four families presenting different behavior problems, diagnoses, and familial issues. One case study involved a bilingual Mexican American child with a diagnosis of ASD in the high functioning range, disruptive behavior disorder (DBD) and a history of motor, speech and language delays. Concerns included aggressive behavior, tantrums, noncompliance, and low frustration tolerance. The CDI phase was modified to coach for concerns in repetitive behaviors and reinforce behaviors related to eating. After PCIT, the child's ECBI score and destructive behavior was reduced to the point where children no longer meet the DBD diagnostic criteria.

Puerto Rican Population. Matos et al. (2009) studied the efficacy of a Spanish adapted version of PCIT with a Puerto Rican population of 4-6 year old children diagnosed with ADHD and behavior problems on the clinical range. Thirty-two families were randomly assigned to the intervention or a 3.5-month waiting-list condition. Results

showed a decrease in child externalizing behavior such as hyperactivity, inattention, oppositional behavior and aggressiveness. Moreover, they reported decrease in parent stress and an increase in parent satisfaction and parenting skills with posttreatment maintenance at a 3.5-month follow-up.

PCIT Literature on Treating Children with ASD

PCIT is emerging as an evidence-based treatment for disruptive behaviors in children with ASD (Bearss, 2018). Children with ASD have been found to experience similar benefits from PCIT as those without the diagnosis. Comparative results indicated significant improvement in disruptive behavior in children with ASD comparable to children without ASD (Zlomke & Jeter, 2019). Reports also indicated improvement in ASD symptomatology such as pro-social and adaptive skills, functional communication and lower levels of social withdrawal per parent report. Both groups demonstrated improvements in adaptability, regardless of diagnosis. Similarly, Parladé et al. (2020) examined the treatment process of standard PCIT, parenting skills, and the comparison of behavioral outcomes between children with (n=16) and without ASD (n=16). Participants were matched on gender, age, language receptivity and behavior intensity. Both groups demonstrated a reduction in parent-reported child behavior and improvement in executive functioning. Moreover, a subset of participants demonstrated improvement in social responsiveness, adaptive skills, and restricted repetitive behaviors.

Although PCIT in its present form may not serve the specific needs of children with ASD, it theoretically overlaps and shares many of the same goals and components of current ASD treatments such as ABA and PBIS (Williford et al., 2018). Moreover,

PCIT's focus on building foundational compliance skills encourages an argument in favor of PCIT as an intervention that can facilitate intensive treatment or serve as an alternative when families lack access to such services. Similarities between ABA and PCIT include the use of a non-traditional functional assessment of child behavior, the use of data to inform treatment, and the goal of behavior change through the use of praise and positive reinforcement of socially appropriate behaviors. Informal functional assessment within PCIT happens before and during treatment. Pretreatment target behaviors are defined and observed during three play scenarios and information collected during unstructured parent or teacher interviews, which allow the therapist to identify possible functions of behavior (McNeil et al., 2001). During treatment, parent verbalizations are coded which allow for informal functional assessments and the systematic manipulation of antecedents and consequences during coaching sessions (McNeil et al., 2001). In comparison to PBIS, PCIT also aims to prevent and reduce problem behaviors through the use of non-traditional functional assessment and behavior plans, collecting information from multiple sources such as parents, caregivers and teachers, conducting behavioral observations, and progress monitoring to inform intervention. Drawing from this overlap with ASD treatment, PCIT has been explored in its standard form and with added adaptations and modifications aimed to target ASD symptomatology and behaviors.

Standard PCIT

“Standard PCIT” refers to the implementation of PCIT without any modifications to the treatment or protocol as set out in Eyberg and Funderburk (2011). In its standard

form, PCIT has demonstrated effectiveness in reducing problem behaviors in children with ASD. For example, Solomon et al. (2008), pilot studied PCIT with high functioning 5 to 12-year-old children on the spectrum that presented behavioral problems through a randomized controlled waitlist trial. Although results did not demonstrate a significant reduction in the intensity of child problem behaviors or parent stress levels, child behavior scores were not in the clinically significant range after treatment. There was however a reduction in parent perception of the problem behavior and an increase in adaptive skills such as child flexibility. Standard PCIT has also been found to produce positive outcomes in behavior even when implemented separately. Ginn et al. (2017), explored outcomes of eight CDI training sessions for 30 parent-child dyads with an ASD diagnosis between the age of 3 to 7. Participants were either assigned to an immediate treatment group or to a waitlist group. The training sessions were implemented according to the PCIT manual and consisted of one CDI teach session and seven CDI training coaching sessions. Coaching was aligned with treatment goals and targeted family reported behavioral issues such as eye contact and sharing. Although the children did not show changes in communication skills, the treatment showed changes in disruptive behaviors and social awareness in comparison to the waitlist group. At the sixth week of follow-up, the treatment effect was maintained, providing some evidence that the CDI stage alone can produce favorable results for this population.

In contrast to Ginn et al. (2017), Scudder et al. (2019) implemented both phases of PCIT with 23 children with ASD between the ages of 2 to 7 years old. Results showed differences between the immediate intervention group and the waitlist control with a

reduction in behavior severity and an increase in parenting skills. All participating families showed improvement in child behavior and compliance, ASD symptom severity, and parent stress levels by the end of treatment. More recently, McInnis et al. (2020) studied the effectiveness of standard PCIT for children of 2 to 4 years old at risk for ASD, disruptive behavior and/or developmental delay. This study was a retrospective file review of 236 patient referrals, analyzing behaviors before and after treatment. On average, results indicated that disruptive behaviors for children at risk of ASD improved into the non-clinical range as well as lowered parent depressive symptoms.

PCIT Modifications for ASD

Although standard PCIT has demonstrated effectiveness, components of PCIT can be modified to address ASD behavioral needs such as increasing communication and lowering repetitive behaviors. The use of reflective statements has shown to increase child vocalizations as it provides immediate attention to verbal expression (Lesack, et. al, 2014; Hansen and Shillingsburg, 2016). Praise has also proven to be effective as it serves as motivation for the child to request desired reinforcers and initiate interactions by having the parent prompt the child's use of language and encourage desired behaviors (Solomon, et al., 2008). Behavioral descriptions allow the child to focus on a task longer, diminishing engagement in repetitive behaviors. Repetitive behaviors that are not maintained by attention however are not to be ignored if they serve a self-stimulatory function. Masse, et al. (2007) suggest modifying CDI to avoid selective attention of self-stimulatory repetitive behaviors, as long as they are not harmful, in order to focus on building the parent-child relationship . For PDI, there are mixed views on the

implementation of time out vs ABA's typical use of verbal and physical prompting to shape behavior and increase compliance. However, for PCIT, time out has proven more effective than selective attention (Eisenstadt et al., 1993). When incorporating commands and requiring child verbalized answers during PDI with ASD children, parents can be coached to ask strategic questions that are developmentally appropriate and incorporate the broken record method, which involves asking the same question repeatedly with a 5-second pause until the child offers a response (Masse et al., 2007). Other methods to increase child answering and asking questions involve the use of "first then" statements that suspend the preferred activity until the request is completed (Burrows et al., 2018). Parents can also be coached to reinforce social interaction such as eye contact and appropriately beginning and ending conversations (Masse, et al., 2016).

Studies with ASD youth have suggested modifications both in treatment and coding that target specific symptomatology. For example, Zlomke et al., (2017) evaluated the effectiveness and feasibility of implementing the CDI component of PCIT in 17 children with ASD aged 2 to 8 years. Minor modifications during DPICS coding included the adjustment of parent skill mastery criteria due to children with ASD typically exhibiting fewer verbalizations. In this study, CDI mastery criteria required parents to verbalize 10 labeled praises, 20 combined reflections and behavioral descriptions, no more than 3 questions, commands, or criticisms; and appropriate use of selective attention. Results demonstrated a reduction in disruptive behavior and an increase in positive parenting skills. Parents reported reductions in child social withdrawal and an increase in child communication and prosocial behaviors evident at mid and post-

treatment. This data suggests the potential effectiveness of CDI alone in increasing adaptive functioning in children with ASD and the feasibility of adjusting mastery criteria during coding.

Other possible modifications for children with ASD include a combination of visual support and social stories to explain behavioral expectations and practices during PCIT (Armstrong et al., 2015), coding child verbalizations and coaching parents to increase the vocal ability of their children. For example, Hansen and Shillingsburg (2016) modified PCIT to increase the vocal ability of children with ASD who were reported to exhibit language delays and minor non-compliance at baseline. The revised content included coding child verbalizations; these vocalizations were coded as child spontaneous vocalizations, unprompted or prompted requests, or child-echoed vocalizations. During CDI, parents were coached to praise child-appropriate vocalizations, use stimulus-stimulus pairing strategies to increase verbalizations and to reflect their child's vocalizations. CDI skill mastery was also modified to require two of the three positive parent verbalizations (praise, reflection or description). For PDI, parents were taught to issue effective commands, use instructional fading techniques, and implement a three-step compliance procedure (language prompts, model prompts, and physical prompts).

Challenges to treatment

Even with modifications for treating children with developmental disabilities challenges may arise due to client particular characteristics. For example, Agazzi et al. (2013) conducted a case study of PCIT with a 7-year-old child with ASD and highlighted the challenges of treatment depending on ASD symptomatology and the severity of

aggressive behaviors. This particular child presented several comorbidities: severe aggressive and non-compliant behavior, hearing impairment, premature birth, prenatal exposure to substances, insomnia, intellectual disability, oppositional-defiant disorder, and stereotypic movement disorder. Although ECBI scores were lower after completion, only the father's ratings were maintained at a 3-month follow-up. This may highlight the limitations of measures that rely on parental reporting and the recognition of the subjectivity of the measures. Other complications included changes in the participant's medications and difficulty implementing time-out at home due to the child's aggressive behaviors.

Similarly, Armstrong and Kimonis (2013) conducted a case study of PCIT and its effectiveness in treating a 5-year-old child with what used to be referred to as Asperger's syndrome in earlier editions of the DSM. He had also been diagnosed with ADHD, oppositional defiant disorder, and obsessive-compulsive disorder. His presented behavioral issues had resulted in expulsion from preschool as he engaged in aggressive behaviors, tantrums, eloping, and odd preoccupations. Results indicated behavior improvements that were maintained at 3 months follow up. More recently, Cambric and Agazzi (2019) conducted a case study with a 7-year-old child with high functioning autism comorbid with ADHD, ODD, transient tic disorder, and sleep problems. The treatment produced similar results and had a positive effect on reducing disruptive behavior. Complications to treatment were related to parents' lack of consistency with completing homework assigned to practice skills at home. Moreover, the child's repetitive behaviors made it difficult for the parent to engage in play. To address this, the

authors recommended the use of differential attention to increase prosocial behaviors such as eye contact and age-appropriate behavior and planned ignoring for child repetitive behaviors such as repeatedly asking questions.

Client diagnostic characteristics and setting may also pose a challenge to treatment. When determining if PCIT is the correct course of treatment for an ASD client, Masse et al. (2007) advise considering the client's level of receptive language, the effectiveness of social reinforcement such as praise and selective attention, and the incorporation of social skills training after treatment is over. Due to PCIT's reliance on social reinforcers such as labeled praise, its applicability may be limited to children with ASD who are responsive to social contingencies and demonstrate receptive language at or above 24 months old (Masse et al., 2007). In terms of treatment setting alternatives when clinics are not an option, Masse et al. (2016) examined PCIT with 3 children on the spectrum using in-room coaching in the home. Results indicated an increase in compliance for 2 of the 3 participants posttreatment and for all participants at a 3-month follow-up. Although problem behavior scores related to ASD symptomatology showed a downward trend, participants typically remained in the clinical range. Uniquely, this study provides evidence supporting the use of PCIT in home settings as an alternative.

Limitations of PCIT Research

Overall, the literature on PCIT suggests that it is a feasible treatment for children with ASD. Studies with the most successful outcomes involved participants who were cognitively high functioning and had a language receptiveness at or above 24 months (e.g., Budd et al., 2011; Solomon et al., 2008; Cambric & Agazzi, 2019). However,

positive outcomes were still found with participants that presented different characteristics such as severity of ASD symptomatology, behavior intensity, IQ scores and comorbid diagnoses. The literature suggests possible modifications to treatment that target adaptive skills and increasing vocalizations with children on the spectrum. Moreover, it looks at the importance of the parent-child relationship by assessing parent stress levels and commitment to the treatment. Previous studies have been limited to the lack of information on the subject's level of functioning adaptive and cognitive capabilities (Zlomke, Jeter, & Murphy, 2017). Additionally, most of the literature has looked at the effectiveness of PCIT through uncontrolled clinical case studies (Budd et al., 2011). Nevertheless, Hatamzadeh, Pouretamad, and Hassanabadi (2010) conducted an A-B single case design and found similar results on the effectiveness of PCIT with this population in lowering behavior problems. However, A-B designs are considered weak in terms of drawing conclusions. There are limitations to A-B designs as results are not generalizable due to lack of control for alternate hypotheses and information that the change has occurred due to intervention (Riley-Tillman & Burns, 2009). For this reason, stronger designs that allow for systematic assessment of the effectiveness of the treatment condition are needed.

Summary and Rationale

Today, Parent Behavior Training (PBT), in its varied names and forms, is recognized as an effective approach towards child conduct problems. Parent-Child Interaction Therapy is among the most common evidence-based interventions that stem from PBT. Out of all the PBT interventions, PCIT has the largest treatment effect size (mean effect size=0.98; Piquero et al, 2016). Although widely accepted as an effective and appropriate program for child disruptive and oppositional behaviors, there are several gaps in the literature with respect to its effectiveness with certain populations. Previous research with children with ASD only recommends the intervention for those who are high functioning and it is assumed it would not be effective for those who exhibit language impairment or moderate to severe symptomatology (Masse et al., 2007; Ginn et al., 2017). Moreover, since PCIT is primarily a parent training program that teaches parents how to manage child behavior, it follows that emphasis should be put into parent characteristics and barriers that may hinder the success of the program. For example, language barriers have been known to deter parents' ability to access diagnosis, treatment, and mental health services for their children (St Amant, 2018). Research also suggests this population is at risk of delayed diagnosis and less access to treatment when considering parent nativity (Shieve et al, 2012). Although limited, there are studies that have explored the use of PCIT with Spanish speaking Latino families (e.g., McCabe & Yeh, 2009; McCabe et al., 2012; Matos, Bauermeister, & Bernal, 2009) and its use with high functioning children on the spectrum (e.g., Budd et al., 2011; Solomon et al., 2008; Cambric & Agazzi, 2019) individually. However, the use of PCIT with Spanish-speaking

families whose children have ASD have not been widely studied. Moreover, most evidence of PCIT with bilingual ASD participants has been collected through uncontrolled clinical case studies, warranting more research with complex designs (Budd et al., 2011).

The purpose of this study is to explore the effectiveness of an adapted Spanish version of PCIT, with Latino children diagnosed with Autism Spectrum Disorder who exhibit different levels of severity in autistic symptomatology and problem behavior. The research questions this study seeks to answer are as follows: Is the Spanish version of PCIT appropriate and effective for Latino families with children on the autism spectrum? Does the treatment effect vary depending on the severity of symptomatology? Moreover, it aims to offer a description of appropriate modifications that target stereotypical ASD behaviors and barriers to treatment.

CHAPTER II METHODS

Participants

Participants will be Spanish-speaking families with children between the ages of two to seven who have received an Autism diagnosis and present disruptive behaviors and non-compliance. Approximately five families will be recruited and offered PCIT services as part of the project. The goal is to recruit child participants diagnosed with ASD who are within levels 1 or 2 of needed support (DSM-5) and express clinically significant problem behaviors such as aggressiveness, eloping, tantruming, defiance, and opposition among others. According to the DSM-5, severity for autism symptoms is recorded as levels of needed support in two areas: social communication and restrictive, repetitive behaviors. Level 1 is categorized as “requiring support” due to difficulty with social communication and initiating social interactions, demonstrating atypical social responses, and appearing to have decreased interest in social interactions. Moreover, these children may demonstrate inflexibility which interferes with functioning such as difficulty transitioning between tasks and issues with organizing and planning independently. Level 2 is categorized as “requiring substantial support,” which manifests as marked deficits in verbal and nonverbal communication skills, apparent social impairment, limited social interactions, and atypical social responses. These children also demonstrate inflexibility, difficulty coping with change and changing focus, and frequent repetitive behaviors that interfere with functioning in a variety of contexts.

Families are eligible to participate if (a) their child has an ASD diagnosis, (b) they speak Spanish at home and communicate with their child in Spanish as determined by

parent report, (c) the child is between the ages of two and seven, (c) the Intensity Scale of the Eyberg Child Behavior Inventory (ECBI) score is above the clinical cut point, (d) the child speaks a minimum of three words or word approximations as determined by parent report, and (f) neither parent nor child is currently receiving any other psychosocial behavior management treatment or training.

Recruitment

Participants will be recruited from a community health clinic. The center offers mental health services to the Inland Empire in both English and Spanish. With parent and center director's consent, diagnostic and severity of symptomatology will be obtained from the center's records. Parents will be contacted over the phone and screened to assess eligibility to participate. After the screening process, the parent will be invited for an intake assessment and be asked to complete child behavior rating measures. Families who show interest but do not meet eligibility criteria will be given feedback on how to manage their child's behavior and if necessary referred to other health professionals or health care providers in the area. Contact will also be made with local mental health agencies to allow the promotion of the study through flyers. The study will also be promoted through social media. The information will be posted on parenting groups and Spanish speaking ASD parent support groups in the Inland Empire.

Compensation

Participating families will receive a \$50 Amazon gift card after completing all scheduled study visits which include screening, baseline and intervention procedures for

ten weeks. Those who withdraw from the study before completion will not receive compensation.

Variables

Several child and parent behaviors are to be recorded. For parents, the dependent variables will be stress level, parent-child interaction quality recorded by the DPICS, and attitude towards therapy. For children, the dependent variables will be disruptive behavior recorded by the Eyberg Child Behavior Inventory (ECBI). The independent variable is the treatment: Spanish PCIT.

Independent Variable

Treatment will be delivered as part of a school based community mental health clinic located in Riverside, California. The clinic is equipped with one PCIT treatment room that consists of a play room and allows for observation through a two-way mirror. Spanish materials for treatment delivery including the manual, homework sheets, and assessment tools are provided by PCIT International, which is the governing organization for research and training in the PCIT protocol (www.pcit.org). Moreover, materials have been adapted and translated to Spanish from the PCIT Course of Treatment Manual by the UC Davis PCIT Training Center. The UC Davis PCIT Training Center offers Spanish-adapted forms via the UCD PCIT Spanish Coalition which is a collaborative, voluntary group of PCIT coaches and teams that translate, edit, and ensure cultural congruence, grammar and style of materials to be used with Spanish-speaking families.

Treatment will follow PCIT protocol and will consist of two phases: CDI and PDI. Both phases include (a) teaching sessions that introduce concepts and skills to

parents and (b) coaching sessions which offer parents direct guidance on how to use the skills. Using the DPICS, parent verbalizations will be coded during the first 5 minutes of every session in order to monitor parent mastery of skills. Additionally, before beginning each session the parent will be asked to complete the ECBI in order to monitor child behavior weekly. Treatment will be delivered by a bilingual supervised PCIT trainee (the student) and a bilingual PCIT therapist. The PCIT therapist is a Level II PCIT trainer certified by PCIT International following the requirements of the PCIT International Training Force (PCIT International, Inc., 2017). The trainee will work towards meeting all requirements to become a certified PCIT therapist as supervised by the Level II trainer by the beginning of the research study.

Level II PCIT Trainer Qualifications. Level II trainers have met PCIT International requirements to be a certified PCIT Therapist Level I Trainer and are considered qualified to train, supervise, and provide consultation to students at the graduate level in a mental health field. Requirements to become a certified Level II trainer include: (a) graduate education and licensure as a mental health service provider, or hold a doctoral/master's degree in a mental health field, (b) to have served as the primary therapist for a minimum of 20 PCIT cases, (c) to have trainer and continued consultation experience for at least 10 new therapists eligible for certification and demonstrate expertise presenting PCIT didactic information, (d) demonstrate active therapeutic involvement having provided direct care to at least 5 PCIT cases annually, (e) active involvement in the PCIT community for at least 7 years, (f) demonstrate competence in attending to core elements on the PCIT protocol, commitment to treatment

fidelity, structure training that is conducive to learning, tracking trainee competencies, and accurate calculation of DPICS reliability with trainees, (g) demonstrate effective problem solving in PCIT coaching situations during training and effective communication of the importance of treatment fidelity. Moreover, they are required to remain current with PCIT research and participate in 12 hours of continuing education every two years.

PCIT Certification Requirements. Following PCIT International Training Task Force guidelines, the trainee/lead researcher will work towards certification as a PCIT Therapist in collaboration with a Level II PCIT Trainer. Training requirements reflect the minimum training necessary to develop competencies as a PCIT therapist following the PCIT protocol. A certified PCIT therapist is one who has received appropriate and sufficient training to provide PCIT services. Requirements include: documentation of graduate education, basic PCIT protocol and consultation training, and the completion of two independent PCIT cases under the supervision of a PCIT trainer. Criteria met by the lead researcher and trainee include being a third year doctoral student who has completed their third year of training and is conducting clinical work under the supervision of a licensed mental health professional. Basic training consists of 40 hours of face-to-face training with a PCIT Level II Trainer that includes an overview of the theoretical foundations of PCIT, DPICS coding practice, case observations, and coaching with families, with a focus on mastery of CDI and PDI skills, and a review of the 2011 PCIT Protocol. The 40 hours of training will be conducted via a combination of didactic training, and a mentorship model. Consultation training consists of completing a

minimum of two PCIT cases with the trainee serving as a principal therapist for at least one case as supervised by a PCIT trainer. The trainee will have their treatment sessions supervised by the Level II PCIT Trainer in real time to record competencies in CDI and PDI and determine the trainee has demonstrated mastery of skills.

PCIT Trainee Competency Qualifications. By the end of training, the trainee will be able to administer, score, and interpret the required standardized measures for use in assessment and treatment planning (e.g., ECBI, TAI, and PSI-SF). They will be able to administer behavioral observations from the DPICS-IV Coding System and achieve a minimum of 80% agreement with a PCIT Trainer using the DPICS-IV during 5 minutes of either live coding or continuous coding with a criterion video recording. They will also master CDI and PDI related skills such as conducting teach sessions, adequate explanation of treatment, meet parent criteria for mastery of skills, demonstrate for the PCIT Trainer how to determine the coaching goals for sessions by interpreting the DPICS-IV data, accurately demonstrate, coach and explain the discipline sequence for PDI and explain the house and public behaviors rules procedure. Additionally, they will demonstrate adequate coaching skills as observed by the PCIT trainer.

Measures

Data will be collected on pre-baseline outcomes, target outcomes, and social validity.

Pre-baseline information

Screening interview. An initial screening phone interview will be conducted to determine participant eligibility.

Intake Assessment. In order to inform treatment, following the screening interview, the parent will be invited to the community mental health clinic by the principal researcher to complete an intake assessment. This will be conducted before beginning treatment to collect information about the parent and child. This includes demographic data, language preferences, medical and mental health histories, prenatal care issues, past trauma, behavior problem identification, and the establishment of treatment goals.

Social Responsiveness Scale-2 (SRS-2; Constantino, 2012). The SRS-2 is a parent-completed measure comprising 65 items scored on a 4-point Likert-type scale. It is designed to assess social behavior in children with ASD. It provides five subscale scores in areas of awareness, cognition, communication, motivation, and restricted and repetitive behaviors. Moreover, it offers a total score (range of 0 to 195) that can be used to indicate variations in ASD symptom severity. *T*-scores of 76 or higher are considered severe (clinically significant deficits in social functioning). Scores between 66 and 75 are considered moderate (some clinically significant social deficits). *T*-scores of 60 to 65 are considered mild (mild to moderate deficiencies in social behavior). *T*-scores of 59 and below indicate there are no social difficulties associated with a possible ASD diagnosis. From the publisher, Spanish forms only include item translations and U.S. normative scores. However, the Spanish version's psychometric properties have been previously evaluated with Mexican families and has been found to be effective and comparable to its use with North American samples (Fombonne, Marcin, Bruno, Tinoco, & Marquez, 2012). Using a 200 participant sample of children with ASD and a sample of 363 control

children without ASD internal consistency for parent SRS full scale was found to be excellent with a Cronbach's alpha of 0.97. Additionally, the SRS total scores also have equally strong and high discriminant validity (95% confidence interval (CI): 0.947–0.976).

Parenting Stress Index-Short Form (PSI-SF). The PSI-SF (Abidin, 1995) is a 36-item parent stress self-report measure with three subscales that assess stress, negative child perception, and stressors in the parent-child relationship. The original Spanish version of the measure has support for its reliability and validity (Solis & Abidin, 1991) as well as the short form used with Spanish speaking parents, which demonstrates adequate to good internal consistency and test-retest reliability across all subscales, excellent internal consistency on the Total Stress Scale ($\alpha = .91, .92, .90$) and good test-retest reliability on the Total Stress Scale (ICC = .77, .78, .77; Barroso, 2016). The original version sets cutoff scores at the 85th percentile; however, Barroso et al. (2016) recommend cutoff scores at the 72.5 percentile for the total stress scale.

Outcome variables

Dyadic Parent-Child Interaction Coding System (DPICS). The DPICS (Eyberg & Robinson, 1983) is an observation measure designed to assess the quality of parent-child interactions. It measures parent verbalizations such as neutral talk, the use of praise, behavior descriptions, questions, commands, reflective sentences and critical statements. This coding system is now on its fourth revised edition (2014) and its third and previous editions have been found to be both valid and reliable (Eyberg, Nelson, Duke, & Boggs, 2005). The DPICS will be used at the pre and post treatment observation

by coding parent verbalizations during three play scenarios which last 5 minutes each and during the first 5 minutes of every treatment session from there on. Although studies have translated the DPICS to Spanish, it has not yet been assessed for validity and reliability (Borrego et al., 2006). However, for the purpose of this study, the UC Davis PCIT Spanish version (Borrego et al., 2006) will be used.

Eyberg Child Behavior Inventory (ECBI). The ECBI is a 36-item parent report measure that assesses problem behaviors in children ages 2 to 16 years. It is composed of two subscales that rate disruptive behavior frequency (Intensity score, possible range from 36 to 252) and whether the behavior is perceived as problematic (Problem score, possible range 0 to 36). The ECBI has been normed with English and Spanish populations with evidence supporting its reliability and validity (Rich & Eyberg, 2001; Eyberg & Pincus, 1999; Garcia-Tornel et al., 1998). Using a sample of 516 Spanish 2 to 12 year olds the psychometric characteristics of the Spanish version of ECBI yielded a mean intensity score of 96.8 (SD = 27) which is comparable to the mean intensity score of 97 (SD= 35) in the United States (Rich & Eyberg, 2001) and mean problem score of 3.9. Internal consistency measured by Cronbach's alpha was acceptable ($\alpha = 0.73$). The test-retest and interrater reliability for the intensity scale was $r = 0.89$ ($p < 0.001$) and $r = 0.58$ ($p < 0.001$) respectively and for the problem scale was $r = 0.93$ ($p < 0.001$) and $r = 0.32$ ($p < 0.001$) respectively. Finally, concurrent validity between both scales was $r = 0.343$ ($p < 0.001$; Garcia-Tornel et al., 1998). Typical clinical cut-off score for the intensity scale is a raw score equal to or greater than 131 and a score equal to 15 or higher on the problem scale, whereas scores

below are considered to be within the normal range. This measure will be used during pre and post treatment to assess child behaviors at baseline and at the end of treatment and weekly to assess behavior during treatment.

Social validity

Therapy Attitude Inventory (TAI; Brestan, Jacobs, Rayfield, & Eyberg, 1999). The TAI is a 10-item Likert type parent measure that assesses satisfaction following parent training or child treatment. It has been used as a social validity measure following PCIT, and for the purposes of this study a Spanish language version of the TAI will be used. Process satisfaction is related to parent behavior rating and outcome satisfaction with changes in child compliance. Higher scores correspond with higher satisfaction. Results suggest the measure is linked to child behavior changes during treatment. Moreover, research supports high internal consistency ($\alpha = .91$) and stability ($r = .85; p < .001$).

Design

Taking into consideration What Works Clearinghouse (WWC) single case design standards (Kratochwill et. al, 2010), ethical standards and the implementation of an intervention to children at risk, the practical design of choice for this study is a concurrent single case-multiple baseline design across five participants. This design allows for causal inferences by staggering the intervention across participants. It involves implementing the same intervention (e.g., PCIT) in sequence to a particular behavior (e.g., disruptive behaviors) of matched individuals (e.g., Latinx children with ASD diagnosis) exposed to a similar environmental situation (Murphy & Bryan, 1980).

Murphy and Bryan (1980) designated the use of this design for the evaluation of behavioral interventions as a practical consideration to skill development due to functionally irreversible behavior changes. One advantage of this design is that it does not require the reversal of acquired outcomes or the withdrawal of a possible effective intervention to demonstrate a causal relationship. In other words, this design shows the effect of an intervention presented at different times across individuals and can demonstrate a functional relationship between the treatment and the behavior by a change in the target behavior when the intervention is implemented (Watson & Workman, 1981). Another advantage is that it controls for historical threats to internal validity and threats associated with maturation and exposure (Carr, 2005).

In accordance with Single-Case Design standards developed by WWC, the possible threats to validity are discussed in terms of a multiple-baseline design. Maturation effects are accounted for by requiring that the design document three replications or demonstrations of the effect and that these effects be demonstrated at a minimum of three different points in time. The repetitive collection of data and the use of phase repetition and effect replication mitigates the threat of ambiguous temporal precedence and statistical regression effects. The threat of participant selection is not a concern due to selection of matched individuals and threat to external validity will be mitigated by conducting the selection process based on the participant meeting baseline criteria and if needed randomization rather than need. Although attrition is a concern since participant dropout is systematically related to the experimental conditions, this study will adhere to evidence standards of evaluating a minimum of three units by

recruiting a total of five participants. Therefore, if two participants do not complete the study a treatment effect can still be proven with the remaining three. In compliance with evidence standards, the main researcher will aim to collect a minimum of five data points in each phase. The study will have a minimum of six phases (three phase repetitions) and a lag period of three data points before the next implementation.

Coding and Treatment Fidelity

As with any use of adapted and translated materials, maintaining treatment and assessment fidelity is important in order to assess the causal effect of the intervention. Therefore, the study will take precautions to control for confounding of instrumentation and observational bias. All materials will be requested in Spanish from their respective authors. Within the treatment setting, the intervention and observational procedures will be conducted and coded by a supervised PCIT trained bilingual Ph.D. student in School Psychology and a bilingual PCIT Level II trained therapist. Sessions will be videotaped for PCIT in order to code integrity using the DPICS to code for parent verbalizations. Coding will take place during the first 5 minutes of every session and will be carried out by both assessors. The dependent variable will be measured systematically over time by both assessors, and they must meet the minimal threshold of inter-assessor agreement by 80-90%, at baseline and intervention stages (Kratochwill et al., 2010). Assessor training is part of the PCIT training protocol and PCIT Trainee Competency Qualifications. The Level II PCIT trainer will supervise and practice DPICS coding with the trainee during in-vivo and video recorded sessions until mastery of the skill is met and agreement is

stable over 3 consecutive PCIT CDI and PDI sessions. Additionally, the PCIT manual includes session checklists which will be used to ensure adherence to protocol (Eyberg and Members of the Child Study Laboratory, 1999).

Procedures

The lead researcher will initially request the Institutional Review Board's approval to conduct the procedures of the study. In order to participate in the study, all families will be given a consent form before the initial screening procedure to allow the collection of data for the purpose of determining participation eligibility. If found eligible they will sign a form to consent to their and their child's participation in the experimental study.

Pre-Treatment

As part of the study, the parent will complete several parent and child measures, during the intake interview, before treatment and post treatment. These measures assess child behavior and parent stress level and parenting skills. The telephone screening for eligibility will consist of a questionnaire which includes questions on participant inclusion criteria. Eligible families will participate in the intake assessment and complete the Early Childhood Behavior Inventory (ECBI), the Social Responsiveness Scale-2 (SRS-2), and the Parenting Stress Index at pre and posttest.

During baseline, the DPICS will be used to conduct structured observations in order to code parent verbalizations and child behavior during parent-child interactions. The minimum baseline observations to be conducted are three. These situational

observations are part of the standard intake session conducted at baseline. Situational observations consist of an overall fifteen minute exercise with a five minute child-directed play situation, where the parent is asked to follow the child's lead during play, a five minute parent-directed play situation, and a five minute clean-up situation where the parent asks the child to clean up the play area without any assistance. These are conducted at three points in the intervention: pretreatment, mid-way once skill mastery is met and post treatment. After the baseline phase is complete, observations are conducted during the first five minutes of play at the beginning of each session.

Treatment

Following the completion of the baseline measures, the Spanish version of PCIT will be implemented. Although it is an adaptation, according to the authors it still contains all standard protocols and core features of traditional PCIT conducted in English (Eyberg & Funderburk, 2011). PCIT requires mastery of skills before moving on to the second phase therefore approximately ten treatment sessions will be held once a week for one hour. The two phases of PCIT, CDI and PDI, will be implemented according to protocol. Upon the successful completion of CDI, which requires mastery of skills through a 3 scenario five minute observation session using DPICS, the PDI phase is implemented and mastery of new skills assessed. The criteria to reach mastery during the CDI phase is to have parents verbalize 10 labeled praises, 10 behavioral descriptions, 10 reflections and no more than 3 questions, commands or critical statements while PDI requires parents to provide at least 4 commands that are effectively stated 75% of the

time in accordance to the command sequence and demonstrate successful use of the time-out sequence.

Data Analysis

Data will be examined through visual analysis in order to determine a relationship between the independent and dependent variable and the strength and magnitude of the relationship. Data points obtained from repeated measures of the dependent variables (i.e., ECBI and DPICS) will be graphed and visually analyzed to establish a pattern that demonstrates an effect has occurred from the baseline phase to intervention phase. In order to demonstrate three indications that change has occurred at different points, level, trend, variability, overlap, immediacy effect and consistency of the data will be examined using the WWC four-step process (Kratochwill et al., 2010). The first step is to establish a stable and consistent baseline pattern of data. The second step is to analyze patterns within each phase through a change in level, trend, and variability of the data. The intervention phase data will be examined to establish predictable patterns of the dependent variables. The third step is to compare data from the baseline and intervention phases to determine if treatment (PCIT) was associated with having an effect on the dependent variables. Immediate effects by comparing baseline and intervention phase data, fewer overlap of data and greater consistency are desired (Kratochwill et al., 2010). The fourth step is to analyze phases and data patterns across all participants to determine whether there are at least three indications of a treatment effect at different points in time.

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CHAPTER III

Appendices

Appendix A. Table 1.

DPICS Speech Categories in priority order and Child Response to Commands

Category	Description
Negative Talk	Verbal expression of disapproval of the child, their actions, attributes or choices. Considered a critical statement.
Commands	Indirect Command- suggestion, stated in question form or is implied. Direct Commands- declarative statement, contains order or direction for a vocal or motor behavior to be performed by the child.
Praise	Unlabeled Praise- communicates approval but is not a specific evaluation of the child. Labeled Praise - verbalization that is specific to what is positive about the child's behavior.
Questions	Verbal inquires that have a rising inflection at the end of the sentence. These request an answer but do not suggest the child has to follow through with a behavior.
Reflection	A declarative statement that has the same meaning as the child's verbalization. The parent repeats or paraphrases what the child said.
Behavior Description	A non-evaluative, declarative sentence where the child is the subject and the verb describes the child's immediate behavior (verbal or nonverbal behavior).
Neutral Talk	Statements that introduce information about people, objects, places or events. These are not descriptive or evaluative of the child's behavior.
Child Response to commands	Compliance- Child complies with command within 5 seconds or less. Non Compliance- child does not comply with command. No opportunity to comply- parent gave commands one after the other or did not allow the child 5 seconds to comply.