UNIVERSITY OF CALIFORNIA
RIVERSIDE

Predicting PCIT Outcomes for Spanish and English-Speaking Families

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

Doctor of Philosophy

in

Education

by

Jessica Cristina Mercado Anazagasty

September 2023

Dissertation Committee:

Dr. Austin Johnson, Chairperson
Dr. Emma Girard
Dr. Eui Kyung Kim

The Dissertation of Jessica Cristina Mercado Anazagasty is approved:

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Committee Chairperson

University of California, Riverside

Dedication and Acknowledgements

I dedicate this dissertation to my loving family, whose unwavering support and encouragement have been my guiding light throughout this journey. Mami, Papi y Nicole, su amor y confianza en mí han sido la fuente de mi resiliencia. Su apoyo constante ha sido un recordatorio de la importancia de perseguir mis sueños y por eso estoy eternamente agradecida. Gracias, por ser mis pilares de fortaleza, mis estrellas guías y mi mayor fuente de inspiración.

I would also like to express my gratitude to the individuals who have played a pivotal role in the completion of this dissertation. Their support, guidance, and encouragement have been instrumental in shaping my academic journey.

First and foremost, I am deeply thankful to my advisor, Dr. Austin Johnson. Your support, kindness, and expertise have been invaluable throughout this research endeavor. Your guidance has not only nurtured my academic growth but also instilled in me the importance of compassion in mentorship. As I embarked on this academic journey, I remember some advice I received about choosing an advisor who is both brilliant and kind. I consider myself incredibly fortunate to have found those qualities in you. Your dedication to excellence and your genuine care for my development as a school psychologist have made a lasting impact on me. Thank you for your contributions to my academic and personal growth.

I would also like to extend my appreciation to Dr. Emma Girard for introducing me to the world of PCIT and for your support throughout my research journey. Your expertise, enthusiasm, and dedication to improving the lives of children and families have been truly inspiring. I am grateful for the opportunities you have provided me and for your invaluable help that has shaped the direction of my

research. I am truly thankful for the trust you have placed in me with this data set and for the opportunities that have opened throughout this journey.

Additionally, I would like to express my gratitude to Dr. Eui Kyung Kim for your support and willingness to offer guidance whenever needed. Your expertise and insightful feedback have greatly influenced my academic journey and research endeavors. I am grateful to have had the opportunity to learn from you and to benefit from your mentorship. Thank you for your instrumental contributions to my growth as a researcher.

ABSTRACT OF THE DISSERTATION

Predicting PCIT Outcomes for Spanish and English-Speaking Families

by

Jessica Cristina Mercado Anazagasty

Doctor of Philosophy, Graduate Program in Education
University of California, Riverside, September 2023
Dr. Austin Johnson, Chairperson

Parent-Child Interaction Therapy (PCIT) is an evidence-based practice that has shown effectiveness in treating child disruptive behaviors. However, there is limited evidence regarding the predictive role of child and caregiver characteristics on PCIT outcomes, particularly for Spanish-speaking families. The purpose of this study was to explore the predictive role of child and caregiver characteristics on child behavior intensity and behavior problems after PCIT treatment with Spanish- and English-speaking families and contribute to the existing research on PCIT when delivered in the family's preferred language. The outcome variables were the post-intervention caregiver-perceived “intensity” and “problem” scores for child disruptive behaviors as measured using the Eyberg Child Behavior Inventory (ECBI). Predictor variables were child age, child gender, child maltreatment history, presence of a neurodevelopmental diagnosis, caregiver-preferred treatment language and caregiver ethnicity. Pre-test outcome scores were also controlled for. Results from linear regression models suggested that child pre-natal exposure to drugs or alcohol was

predictive of higher ECBI intensity and problem scores at post-test, while being of Latinx ethnicity was predictive of lower intensity scores at post-test after controlling for all other predictors. Implications and future directions for treatment and research are discussed.

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CHAPTER I

Introduction

The need for child mental health and behavioral supports stems from the range of psychological, behavioral and developmental disorders that 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). 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 childcare, acculturation stress (Bacallao & Smokowski, 2017), association with disruptive peers, and exposure to violence (Frick, 2016). Children who experience different types of maltreatment such as physical or sexual abuse, prenatal exposure to drugs and alcohol, neglect, and domestic violence are also at risk for poorer psychological outcomes and are more likely to be diagnosed with a mental health disorder (Witt et al., 2016). These children have also been found to exhibit higher levels of aggression, non-compliance, and internalizing issues (Trickett & McBride-Chang, 1995). Similarly, familial factors such as ineffective behavior support and parenting practices have been found to influence child conduct problems and predict of school suspension (Fleming et al.,

2016; Cree, 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 (U.S. Department of Education, 2019). For this reason, early identification and treatment involving parents and caregivers are imperative to prevent future risk.

Parent Behavioral Training

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. An indirect way of delivering behavioral interventions to children is through their parents or caregivers when engaging in Parent Behavioral Training (PBT).

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., 2006a). Different methodologies to the approach have evolved over a span of 45 years from when early research began to incorporate parents as their focus of intervention in order to improve upon their children's disruptive behaviors (Forehand et al., 2013). PBT, 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. However, not all families benefit to the same extent from parent training (Sanders, 1992). Families may exhibit high levels of resistance to treatment, poor engagement, high drop-out rates, and poor maintenance of treatment gains (Miller & Prinz, 1990). Although results have been mixed, the literature has explored predictors of behavioral parent training outcomes in the form of treatment success such as treatment attrition and caregiver perspective on behavior problems and intensity.

Outcome Predictors in PBT

A seminal study by Miller and Prinz (1990) reviewed issues affecting PBT outcomes for children with conduct disorders and identified personal, familial, and

environmental stressors. These include parental adjustment factors such as parent psychopathology including stress, depression, substance abuse, and self-esteem (Miller & Prinz, 1990; Chronis et al., 2004; Reyno & Mcgrath, 2006). Caregiver type might also play a role as parenting programs may be offered to the child's primary caregiver such as biological parents, a member of their extended family, or foster parents (Abrahamse et al., 2012; Kirby et al., 2015). The influence of parent race and ethnicity on treatment outcomes is another important factor to consider. Kazdin et al. (1993) discovered that minority-group families faced challenges in adhering to treatment compared to other groups. This finding highlights the need to address potential barriers and tailor interventions to ensure equitable access and engagement in mental health services for diverse populations. Understanding the specific factors that contribute to treatment adherence disparities can inform the development of culturally sensitive and inclusive interventions that effectively support minority-group families.

In children, social cognitive processes have been found to affect child interpretation of social cues and justification of aggressive behavior (Miller & Prinz, 1990). Child age may influence outcomes as younger children tend to exhibit less control and higher levels of externalizing behaviors (Dodge, 1993). This inability to self-regulate emotions and behaviors leads them to be more reliant on adult guidance and support and in turn have them rely on the caregiver's ability to implement skills learned through PBT. Further, early intervention for disruptive behaviors may be more effective for young children when compared to treatment at older ages when behavior problems have become persistent over time (Abrahamse et al., 2012). Child gender and mental health diagnosis have also been explored as previous literature has

suggested that boys tend to exhibit more externalizing behaviors than girls (Araujo Dawson & Williams, 2008). Moreover, comorbid diagnosis with conduct disorders of children presenting internalizing and externalizing symptoms may have implications for behavior severity and warrant treatment adaptations (Chase & Eyberg, 2008; Vetter, 2018).

Parent-Child Interaction Therapy

Parent-Child Interaction Therapy (PCIT; Eyberg, 1988) is a short-term, evidence-based PBT program for children with behavior problems between the ages of 2 to 7. It is designed to improve the parent-child relationship and address behavior problems in young children (Kazdin, 2005). It typically involves direct coaching and guidance for parents on how to interact with their children in ways that promote positive behaviors and reduce challenging behaviors (Kazdin, 2005). The therapy focuses on enhancing the quality of parent-child interactions, improving communication, and teaching parents effective behavior management techniques that promote productive, consistent, and predictable boundaries (Muratori, 2018).

In PCIT, the intervention is offered during real-time parent-child interactions with the therapist directing the parent through an earpiece and traditionally behind a one-way mirror. The intervention is divided into two stages, is based on attachment and social learning theory, requires 12 or more one-hour weekly sessions, and is dependent on caregiver's meeting goal criteria as the vehicle for child behavior improvement. In the PCIT model, treatment length is dependent on the speed of progression through the intervention, which can vary across families (McNeil & Hembre-Kigin, 2010).

The initial stage of the intervention is known as Child-Directed Interaction (CDI). CDI combines traditional play therapy techniques with the objective of promoting prosocial behavior and improving interactions in children. Its primary aim is to strengthen the parent-child relationship by guiding parents to adjust their interactions to support and follow the child's lead during play (Muratori, 2018). Furthermore, CDI places a significant emphasis on the value of high-quality verbal communication between parents and children. A crucial element of CDI involves the utilization of PRIDE skills, an acronym that represents Praise, Reflection, Imitation, Description, and Enthusiasm. These skills encompass praising appropriate behaviors, reflecting the child's speech, imitating their play, describing their actions, and engaging with enthusiasm and enjoyment. By employing PRIDE skills, parents are empowered to enhance positive interactions with their children, ultimately fostering a nurturing environment that strengthens the parent-child relationship.

Once caregivers have achieved goalPRIDE skills in CDI, they progress to the second phase of PCIT called Parent-Directed Interaction (PDI). The primary goal of PDI is to provide caregivers with strategies to improve their child's adherence to instructions and requests as well as to equip parents with effective behavior management strategies that promote positive child behaviors.These strategies include monitoring behavior, implementing appropriate consequences, offering consistent commands, establishing and enforcing rules, and using time-outs as a consequence for non-compliance (Muratori, 2018).

Typically, parents meet goal criteriawithin 5-10 sessions of therapy. Once parents have gained proficiency in utilizing the strategies, they then focus on generalizing these skills to other contexts beyond the therapy sessions. This helps

ensure that positive changes and effective parenting skills are applied consistently in the child's everyday life.

Research supports PCIT as an effective intervention for decreasing child behavioral problems (McNeil & Hembree-Kigin, 2010). A meta-analysis on the effects of parent training programs on delinquency and child problem behaviors found that PCIT 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). 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 varying diagnoses, having shown promising results for children with attention-deficit/hyperactivity disorder (ADHD; Wagner & McNeil, 2008; Matos et al., 2009), autism spectrum disorder (ASD; Scudder et al., 2019), oppositional defiant disorder (ODD; Ward et al., 2016), and internalizing behaviors such as separation anxiety disorder (SAD; Choate et al., 2005).

PCIT Outcome Predictors

Studies on the effectiveness of PCIT have identified various predictors of treatment response and attrition. Treatment response has generally been defined along three majors metrics: meeting completion criteria, reporting resolution of the child's primary issues, and children exhibiting reduced symptoms. A study by Werba et al. (2006) explored parent and child characteristics as possible predictors of PCIT outcomes in a sample of 99 participant families with 3–6-year-old children. Treatment success was defined as meeting treatment completion criteria such as parent

demonstrating criterion levels on the interaction skills and reporting resolution of the child's three primary issues as measured by frequency not duration of behaviors while children had to demonstrate more than 75% compliance to commands during structured parent-child interactions and fewer than five ODD symptoms. From this study only caregiver age and waitlist status predicted PCIT outcomes while child age was not predictive of PCIT outcomes. Reedtz et al. (2008) conducted a study to standardize the ECBI in Norway. The study found that based on caregiver reports, boys tended to exhibit slightly more frequent problem behaviors compared to girls. Additionally, the study revealed that age had a significant effect on caregiver reports of behavior problems. Specifically, the mean Intensity Scores indicated that as children grew older, the frequency of problem behavior tended to decrease. These findings suggest that behavior problems may decline as children progress through different developmental stages.

Another study by Ward et al. (2016) conducted a meta-regression to explore the mediating effects of child gender and mental health diagnosis in PCIT and found no significance. However, authors point out that the small number of studies included (11) was not sufficient to draw conclusions. Interestingly, a meta-analysis by Thomas and colleagues (2017) found that studies that provided PCIT to children with disruptive behaviors without comorbidities experienced a greater decrease in externalizing behavior compared to those that included children with disruptive behavior problems along with comorbid diagnoses.

In addition to the concerns regarding dropout rates in PCIT, research suggests that families who successfully complete the treatment tend to experience greater benefits compared to those who prematurely discontinue (Boggs et al., 2005).

Dropout rates in PCIT studies have varied widely, ranging from 10% to 69% (Chen & Fortson, 2015). Several predictors have been identified regarding treatment adherence and dropout in PCIT, including child age, parent internalizing problems, single-parent status, father involvement in treatment, caregiver education, socioeconomic status, caregiver distress, utilization of skills learned in treatment, delay in initiating treatment, referral source, caregiver type and history of child maltreatment (Kazdin, 1996; Werba et al., 2006; Fernandez & Eyberg, 2009; Lieneman et al., 2017).

Among these predictors, caregiver type is an important characteristic to consider. PCIT has demonstrated successful implementation with various caregiver types beyond biological parents, including grandparents, aunts/uncles, foster parents, stepparents, and extended family members (Abrahamse et al., 2012; Niec et al., 2016). Caregivers may rate their children differently on the ECBI based on their individual perspectives and experiences. Research has shown that there can be variations in behavior ratings between different caregivers, such as mothers and fathers in two-parent families (Bjørseth & Wichstrøm, 2016). Caregivers may have different observations, interpretations, and expectations regarding their child's behavior, which can influence their ratings on the ECBI. These differences in caregiver ratings can stem from various factors, including their unique relationship with the child, their own personal characteristics, parenting styles, and cultural influences. The frequency and type of maltreatment experienced by children can also predict mental health outcomes and service utilization in PCIT. Children exposed to multiple types of maltreatment may have higher symptom severity at the beginning of treatment and are more likely to receive ongoing referrals after PCIT (Usacheva et al., 2021). The presence of high symptom severity at the outset of PCIT can pose

challenges to treatment progress and may increase the risk of premature termination (Usacheva et al., 2021). This suggests that children with a history of maltreatment may require specialized approaches that are trauma-informed and address their specific needs.

Parent Training and Ethnically Diverse Populations

Race and ethnicity have been found to influence diagnoses and clinical characteristics of children in treatment. Individuals from racially and ethnically minoritized populations 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). Cultural barriers may also hinder treatment response and generalizability to other contexts (Forehand & Kotchick, 2016). Most evidence-based family interventions have been designed, validated, and studied with English-speaking, middle class, Caucasian populations, and many subsequent studies have failed to report participant language preference, race, or ethnicity (Kumpfer et al., 2017). Exploring cultural barriers and promoting cultural sensitivity can improve treatment response and increase the generalizability to diverse populations.

It is important to consider 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 strong buy-in from parents in order to reinforce skills learned in intervention is an important component for the success of an intervention. Poorer

outcomes have been recorded for disadvantaged, ethnic and linguistic diverse families (Lundahl et al., 2006). Additionally, 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). Moreover, assessing treatment outcomes across diverse 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; Matos, et al. 2009; McCabe & Yeh, 2009). This research has emphasized the importance of incorporating cultural sensitivity in treatment, and evidence suggests that taking this into account can lead 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 to improve ethnic minoritized population's adherence to treatment as well as having ethnically and linguistically diverse clinicians deliver the intervention. Effective adaptations include structural changes to intervention attributes such as language, materials, client-specific needs, and content when necessary. Research on parenting programs has identified the language of treatment delivery as a factor influencing parental engagement, which, in turn, affects parental enrollment, participation, and completion of the treatment (Eisner & Meidert, 2011). A study by Eisner and Meidert (2011) explored the influence of language barriers on parental engagement and found that immigrant groups who were not offered the Triple P program (Positive Parenting Program) in their native language were less likely to engage at each stage of the process, thus highlighting the significant impact of

language barriers on program engagement. However, while program translation is important, it alone may not be sufficient to address the engagement challenges faced by immigrant parents. Additional cultural adaptations, including modified recruitment strategies, delivery formats, and program contents, may be necessary.

PCIT with Spanish-Speaking families

Previous studies on PCIT have examined various aspects of the intervention, including treatment acceptability, adaptation to specific ethnic groups, effectiveness without cultural adaptation, and treatment delivery in the family's preferred language (McNeil & Hembree-Kigin, 2010). Despite the well-documented effectiveness of PCIT, there remain gaps in the literature regarding its implementation with culturally and linguistically diverse groups, particularly the underrepresented Latinx Spanish-speaking population, thereby limiting our understanding of the applicability and effectiveness of PCIT within this specific demographic. The Latinx Spanish- speaking population has only been represented in a few studies and limited to two subgroups, Mexicans and Puerto Ricans.

Previous research has highlighted a link between acculturation components, such as language proficiency, and the internalization of stressors and externalization of problem behaviors, including aggression, in Latinx children (Araujo Dawson & Williams, 2008). However, the implications of these factors for PCIT outcomes in the Latinx population have not been thoroughly investigated, emphasizing the need for further research in this area. To address this research gap, culturally adapted versions of PCIT have been developed and tested with specific Latinx subgroups.

Mexican American. 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. Clinical trials of GANA 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 unique contributions made to the intervention adaptation was offering it in the mother's language of preference (Spanish), resulting in reduction of 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. After PCIT, the child's ECBI score and destructive behavior were reduced to the point where children no longer met DBD diagnostic criteria.

Puerto Rican. Matos et al. (2009) studied the efficacy of a Spanish adapted version of PCIT with a Puerto Rican sample 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 including hyperactivity, inattention, oppositional behavior, and aggressiveness. Moreover, they reported a decrease in

parent stress and an increase in parent satisfaction and parenting skills with posttreatment maintenance at a 3.5-month follow-up.

Summary and Rationale

PBT is widely recognized as an effective approach for addressing child conduct problems. PCIT in particular, has shown a large treatment effect size (mean effect size = 0.98; Piquero et al., 2016), making it one of the most effective evidence-based interventions derived from PBT. However, there are gaps in the literature regarding the effectiveness of PCIT with ethnically, linguistically, and diagnostically diverse populations. For example, there is a limited number of studies that have included Spanish-speaking families in PCIT samples and research to suggest that language impacts treatment (Hatley-Cotter et al., 2022). Recommendations have been made in the literature for working with diverse families, emphasizing the importance of investigating participant characteristics such as language preference, child maltreatment history, and child mental health diagnosis, as these factors may influence PCIT outcomes and necessitate reasonable accommodations (McNeil et al., 2010). However, research examining these as predictors of PCIT outcomes is limited. Additionally, child maltreatment history may lead to higher symptom severity and require trauma informed approaches, while the presence of neurodevelopmental disabilities may also affect behavior severity and require accommodations (Thomas et al., 2017; Usacheva et al., 2021). Child gender and age may also play a role in child symptom presentation with the literature indicating that younger and male children exhibit higher externalizing behaviors (Araujo Dawson & Williams, 2008). By exploring these predictors, researchers and practitioners can gain valuable insights into how PCIT can be tailored to better meet the needs of diverse populations,

particularly when delivered in the family's preferred language. Identifying specific characteristics that might require special accommodations can contribute to improving the effectiveness and cultural responsiveness of PCIT.

The Present Study

The purpose of the present study was to explore the predictive role of child and caregiver characteristics on child behavior intensity and behavior problems in PCIT at post-test with Spanish and English-speaking families and contribute to the existing research on PCIT when delivered in the family's preferred language. The predictor variables included child age, child gender, child maltreatment history (i.e., sexual abuse, physical abuse, neglect, domestic violence, and pre-natal exposure to drugs), presence of a neurodevelopmental diagnosis, caregiver-preferred treatment language and caregiver ethnicity. Pre-test outcome scores were entered as a control. Treatment referral source and reason why treatment ended were explored by language preference descriptively. The outcome variables included child behavior intensity and problem scores as measured by the ECBI. The research question this study sought to answer is as follows:

1. Are child characteristics and caregiver characteristics (i.e., child age, child gender, child maltreatment history and presence of a neurodevelopmental diagnosis, caregiver preferred treatment language and caregiver ethnicity) predictive of ECBI intensity and problem behavior change scores at posttest?

Hypothesis

The hypotheses for this study are described below. These hypotheses match the previous research question and are specific to each variable that will be investigated. Hypotheses are based on findings from previous literature on PBT and PCIT outcome predictors.

1. It is hypothesized that the child and caregiver characteristics specified earlier will be predictive of ECBI intensity and problem behavior scores.

    It is hypothesized that the younger the child is in age it will be predictive of higher ECBI intensity and problem scores post treatment in comparison to older children.

    It is hypothesized that child gender, for example female, will be predictive of lower ECBI intensity and problem scores post treatment in comparison to male children.

    It is hypothesized that child maltreatment history and experiencing any of the following, sexual abuse, physical abuse, neglect, domestic violence, or pre-natal exposure to drugs, will be predictive of higher ECBI intensity and problem scores post treatment.

    It is hypothesized that the presence of a neurodevelopmental disorder diagnosis as defined by the DSM-5 (e.g., Intellectual Disorders, Communication Disorders, Autism Spectrum Disorder, Attention-Deficit/Hyperactivity Disorder, Specific Learning Disorders, Motor

Disorders or Tic Disorders) will be predictive of higher ECBI intensity and problem scores post treatment.

It is hypothesized that caregiver language, for example Spanish-speaking, will be predictive of similar ECBI intensity and problem scores post treatment as English-speaking caregivers.

It is hypothesized that caregiver ethnicity, for example Latinx, will be predictive of similar ECBI intensity and problem scores post treatment as White or Other Ethnicity participants.

CHAPTER II

Method

Setting

This study was conducted as a retrospective file review of families that participated in PCIT treatment at a community mental health clinic with sites located across Riverside County, California. The program is staffed by certified PCIT-International and/or PCIT-International eligible clinicians or clinicians under PCIT-I training including a PCIT-International Global Trainer (GT) and several Within Agency Trainers (WAT). The Preschool 0-5 Program at this clinic provides a variety of services to children ages 0-5 including PCIT, Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), Incredible Years Dinosaur School Program, and Triple P among other interventions. Within the clinic, children with behavioral problems tend to be assigned to PCIT treatment as opposed to other interventions. Depending on their language preference, families received PCIT standard treatment by trained staff either in Spanish or English.

Procedure

Permission to access deidentified data from the relevant program's database was granted after a formal application review from the program's research committee. University research approval was also granted. Only the de-identified data needed to complete this research study were requested. Lead clinician staff extracted information from clinical files of families who received PCIT treatment during a 4-year period from the Fiscal Year starting July 2015 through the Fiscal Year ending June 2019.

Predictor Variables

Predictor variables were derived from the information collected during the intake appointment. This in-person appointment is routinely conducted at the clinic before beginning treatment to collect information about the caregiver and child. This appointment 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 portion of the appointment, the therapist collects demographic information on the child and caregiver such as age, gender, medical and mental health treatment history, school issues, developmental information, behavioral concerns, child and family strengths, and environmental factors that could complicate participation in the treatment. These data are collected through a semi-structured assessment. In this type of assessment, the clinician typically follows a predetermined set of questions or prompts that are organized in a digital template in which the caregiver's responses are recorded by the clinician directly into the computer system. Within each section of the template, the clinician has the option to select predefined response options from checkboxes or input caregiver responses directly into text fields.

Caregiver demographic variables incorporated into the data analysis were self-reported ethnicity and language preference. The data set included a total of 23 caregiver reported ethnicities and 30 languages. Caregivers were asked to report their ethnicity and primary language spoken which was recorded directly into the assessment template text fields. Caregiver type was also recorded in text-fields as participants can be biological mother/fathers, adoptive/foster parents, or extended

family. Caregiver-reported demographic variables for child clients included age, gender, primary language, mental health diagnosis and history of child maltreatment. Child age was recorded in years and input into a text field while child gender was recorded as either male or female. Caregivers also provided information about the child's language abilities which could include the language(s) they primarily use or are exposed to at home or in their environment. Child language was entered into text fields and recorded through parent report. Child maltreatment history was reported as either none, suspected, or documented for each type of maltreatment. Caregivers were also asked about child experiences with specific types of maltreatment, such as sexual abuse, physical abuse, neglect, domestic violence, and prenatal exposure to alcohol/drugs. Child diagnosis was documented by recording the child's diagnosis according to the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders). This involved identifying and documenting specific disorders such as ADHD, ASD, disruptive mood dysregulation disorder, ODD, anxiety disorder, posttraumatic stress disorder, and others as appropriate. In cases where a child was diagnosed with multiple co-occurring disorders or conditions, all relevant diagnoses were documented.

The reasons for treatment ending were documented using specific categories, including "Completed PDI" (Parent-Directed Interaction), "Completed CDI" (Child-Directed Interaction), or "Drop-out." These categories were used to classify the outcomes or status of the treatment process for each participant. The clinic also documented the referral source, which indicated how the participant was referred to the clinic for assessment or treatment. The clinician recorded the referral source from a range of ten choices, which included: Assessment Consultation Team (ACT),

Community Assessment Team (CAT), Department of Public Social Services (DPSS), Education/childcare, First 5 Riverside, Foster Family Agency (FFA), Medi-Cal, MHSA (Mental Health Services Act), SNAP (Supplemental Nutrition Assistance Program) or Other. The "Other" category allowed for recording referral sources that were not specifically listed in the given options. This could include referrals from pediatricians, medical providers, self-referrals, or referrals from friends or family.

In addition to the information collected during the intake assessment, standardized caregiver report measures were utilized to assess the severity of the child's behavior and the level of parental stress. One commonly used measure for assessing child behavior is the Eyberg Child Behavior Inventory (ECBI). The ECBI serves as the outcome variable for this study, meaning it is the specific measure used to evaluate the effectiveness of the PCIT treatment. ECBI scores at pre, mid and post treatment were recorded in text-fields.

Outcome variable

Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999). 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 the reliability and validity of resulting scores (Rich & Eyberg, 2001; Eyberg & Pincus, 1999; Garcia-Tornel et al., 1998).

Studies looking at the English version of the ECBI have provided evidence of good internal consistency with Cronbach's alpha values ranging from 0.87 to 0.95.

Burns & Patterson (1990) examined a nonclinical sample of 810 parents of children and adolescents aged 6-17 years. They reported alpha coefficients of 0.93 for the Intensity Scale and 0.91 for the Problem Scale. Burns et al. (1991) conducted a study with a sample of 1,384 parents of children aged 2-17 years (mean age = 6.9 years). They found the same alpha coefficients as Burns & Patterson (1990): 0.93 for the Intensity Scale and 0.91 for the Problem Scale. Morawska & Sanders (2006) examined 110 parents of children aged 18 to 36 months. They reported alpha coefficients of 0.91 for the Intensity Scale and 0.87 for the Problem Scale.

Using a sample of 518 children from Spain ages 2 to 12, the Spanish version of ECBI yielded a mean intensity score of 96.8 (*SD* = 27) and mean problem score of 3.9 (Garcia-Tornel et al., 1998). Internal consistency measured by Cronbach's alpha was acceptable ($\alpha = .73$). The test-retest and interrater reliability for the intensity scale was $r = .89$ ($p < .001$) and $r = .58$ ($p < .001$) respectively and for the problem scale was $r = .93$ ($p < .001$) and $r = .32$ ($p < .001$) respectively. The test-retest reliability coefficients suggest that the measurements are relatively stable over time, while the interrater reliability coefficients indicate some variability in ratings between different raters. The concurrent validity coefficient suggests a moderate level of association between the intensity and problem scales. Finally, concurrent validity between both scales was $r = .34$ ($p < .001$; Garcia-Tornel et al., 1998).

The 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 within the normal range. This measure is routinely used pre- and post-treatment to assess child behaviors at baseline and at the end of treatment and weekly to assess behavior during treatment.

Data

Two discrete de-identified data sets were provided by the clinic in spreadsheets, one containing demographic information and the other ECBI scores. The data sets did not perfectly match across spreadsheets in terms of participant identification numbers. Additionally, there were cases with multiple caregiver participants, data collected during the 2020 fiscal year onward, and participants of diverse ethnicities and language preferences other than Spanish or English. To ensure that the dataset contained the necessary information for the analysis and that it met the requirements for the study's objectives, criteria were established to determine which participants' data would be included in the analysis. The lead researcher conducted a manual data cleaning process to ensure that data met the predefined inclusion criteria.

Data were retained in the data set if the following criteria were met: (1) child-caregiver dyad with available demographic and pre and post ECBI data, (2) family indicated Spanish or English as preferred language for treatment, (3) ECBI pre and post data completed by the same caregiver were available, (4) family received PCIT treatment during a 4-year period from the Fiscal Year starting July 2015 through the Fiscal Year ending June 2019, and (5) the reason the treatment ended was specified.

The decision to retain only data that contained ECBI pre and post scores completed by the same caregiver was important for ensuring consistency in the data and ultimate comparisons made. The original data set contained some cases in which one caregiver type (e.g., mother) completed pretreatment ECBI scales and another caregiver type (e.g., father) completed the posttreatment ECBI scales. Keeping data from the same caregiver helped to minimize potential variability in reporting and

provide a more accurate comparison of the child's behavior intensity and problem scores.

Additionally, cases who completed treatment from 2020 onward were excluded from the analysis. In 2020, the clinic transitioned to an online format for treatment delivery during that time period. By excluding these cases, the analysis focused on participants who received treatment prior to the shift to online therapy. This allowed for a more consistent and comparable dataset, as the treatment format change may have introduced confounding factors that could impact the study's outcomes.

Data pertaining to the reason the treatment ended (i.e., completed PDI, completed CDI, or dropped out) were utilized to describe completion and dropout rates in the study. This information was also used to clean the ECBI dataset. Specifically, only cases that completed the full PCIT treatment to PDI were included in the ECBI dataset. This ensured that the ECBI data analysis focused solely on participants who completed the PDI treatment. Analyzing only cases that completed the full treatment of PDI serves several purposes. First, it provides some stronger indicator of treatment integrity. The PDI stage of PCIT is specifically designed to target certain outcomes and implement specific strategies. By focusing on the cases that completed the full treatment, results can be used to assess the effectiveness of PCIT without confounding effects from incomplete participation. This also allows for a more accurate assessment of the impact of the treatment on the outcome measure (in this case, the ECBI scores). Including cases that completed only CDI or dropped out may introduce variability in the treatment exposure and undermine the ability to draw clear conclusions about the effectiveness of full PCIT treatment. Finally, it creates

consistency for data interpretation by creating a more homogeneous sample in terms of treatment exposure.

However, when it came to the demographic dataset, all cases that either completed PDI, completed CDI, or dropped out were retained for descriptive purposes. This broader inclusion criterion for the demographic dataset allowed for a complete description of demographic characteristics, considering all participants who engaged in the treatment to some extent, regardless of whether they completed the full treatment or not.

Critically, only those cases which met all inclusion criteria were included in the final analytic data set, although a distinct set of cases was retained for overarching descriptive purposes.

Demographic Data Cleaning

The demographic data set included 928 PCIT cases. PCIT cases are described as a caregiver-child dyad receiving PCIT treatment. Only Spanish- (n=163) and English-speaking (n=683) cases were retained for analysis for a total of 846 cases. Next, cases with complete data on the reason treatment ended were retained for a total of 779 cases. Of these 779 cases, 696 were completed during 2015-2019. The broader demographic data set's inclusion criteria were not dependent on whether ECBI data was available for each case, thus the final cases retained in the demographic data set were 696.

ECBI Data Cleaning

The ECBI data set included 907 reported PCIT cases. Entries that had repeated data (i.e., double-entered) or did not contain both pre and post ECBI data were excluded from the analytic data set. It is worth noting that some caregivers completed

the ECBI at various points throughout the treatment process, extending beyond just pre, mid, and post-treatment assessments. To determine which ECBI data entries to include in the analysis, specific parameters were established based on the treatment entry year, the reported days between the PCIT treatment start and termination date, and ECBI completion date. The goal was to select the most relevant and representative ECBI measurements for each participant. Therefore, the first ECBI completed closest to the start of treatment delivery and the last ECBI completed closest to the final treatment date were included in the analysis; scores from all other time periods were disregarded for further analysis.

Of the initial 907 reported PCIT cases, a total of 313 caregiver-PCIT cases had both pre and post ECBI score entries completed by the same caregiver. Only families who completed treatment through PDI were included in the data set for analysis. This excluded those who dropped out or only completed CDI. In total, 305 cases met these criteria and were retained for further analysis. Among these 305 cases, the data was further narrowed down to include only English and Spanish cases. This resulted in 277 cases for analysis. Among this subset of 277 cases, 254 cases completed treatment between the years 2015 and 2019. Finally, the ECBI scores for the 254 treatment cases were paired with their respective demographic data and predictor variables for further analysis.

Participants

Demographic Data

The initial sample consisted of 696 treatment cases with available information on reason treatment ended and referral source with 568 cases indicating English as a preference and 128 indicating Spanish as a preference for treatment. The majority of

the Spanish (50%) and English (44.9%) sample completed treatment through PDI, while 34.4% Spanish and 40.5% English dropped out of treatment (See Table 1). The main referral source was through education (e.g., teacher, school team, school) or childcare (27.2%; see Table 2 and 3).

The study sample consisted of 254 caregiver/child dyads that completed PDI in which 54 indicated Spanish as a preference and 200 indicated English as a preference for treatment. The majority of the sample were reported to be mothers (74%; fathers 6.3%, relatives such as aunt, uncle, stepparent or grandparents 4.7%, or an adoptive caregiver 13.8%; data was not available for 1.2% of the sample) and identified as Latinx/Hispanic (56.7%; white 28%, other 13.8%, and no response 1.6%). See Table 4 for caregiver demographic information by language sample. The majority of the sample had a male child (68.1%; female 31.9%) with an age range of two to seven years old (M = 3.76, SD = 1.092) and the majority within preschool or middle childhood ages 4-7 (56.7%). 44.5% of the sample had more than one diagnosis in which 46.9% had one while 8.7% of this information was missing. 22% of the sample had a neurodevelopmental disorder diagnosis while 78% did not. Within the neurodevelopmental disorders variable children were diagnosed with one or more of the following Communication Disorders (2.4%), Autism Spectrum Disorder (4.3%), Attention-Deficit/Hyperactivity Disorder (16.9%), Specific Learning Disorders (0.4%), Motor Disorders or Tic Disorders (0.4%) and Unspecified Neurodevelopmental Disorder (1.2%). Child maltreatment was included individually in the analysis model (history of sexual abuse, physical abuse, neglect, domestic violence, and pre-natal exposure to drugs). Amount of maltreatment exposure for the sample (N = 254) was also calculated by adding the amount of maltreatment each

participant experienced (*M* = 0.67, *SD* = 1.21, range: 0-5). Out of the 75 participants who experienced some kind of maltreatment the average amount was 2.24 (*SD* = 1.18, range: 1-5). 29.6 % of the sample experienced some form of child maltreatment with 9.8% experiencing at least one (70.1% no recorded experience; 0.4% missing). See Table 5 for child demographic information, Table 6 for child maltreatment history and Table 7 for amount of child maltreatment exposure by language sample.

Data Analysis

Statistical analyses were conducted using IBM SPSS Version 28. The ECBI data set containing 254 treatment cases was used for this analysis. To evaluate the posed research questions, multiple linear regression was used with ECBI scores as outcomes. The estimation technique employed for the regression analysis was Ordinary Least Squares (OLS) Regression. OLS regression is often used when the dependent variable (in this case, the ECBI scores) is continuous, and the relationship between the predictors and the outcome is expected to be linear. It provides estimates of regression coefficients, which indicate the magnitude and direction of the relationship between the predictors and the outcome variable (Dismuke & Lindrooth, 2006).

Two overarching models were constructed, one predicting Intensity scores and another predicting Problem scores. Models were constructed to reflect the research question posed, with descriptive statistics and diagnostics calculated prior to model estimation. The regression equation was as follows:

$\hat{Y}$ (ECBI change score) = β0 (Constant) + β1 (preschool or middle childhood) + β2 (male) + β3 (sexual abuse) + β4 (physical abuse) + β5 (neglect) + β6 (domestic violence) + β7 (pre-natal drug/alcohol exposure) + β8 (neurodevelopmental

diagnosis) + β9 (caregiver preferred treatment language English) + β10 (caregiver ethnicity WHITE) + β11 (caregiver ethnicity LATINX).

To assess the quality of the data, descriptive statistics were calculated for all variables in order to evaluate whether any impossible values (e.g., scores above maximum) existed within the data set. For ECBI scores minimum and maximum scores were verified, and histograms were created to make sure scores fell within questionnaire scoring rules. All ECBI intensity scores fell within the required scores (minimum score = 36, maximum score = 252) and problem scores fell within the required scores (minimum score = 0, maximum score = 36). The average ECBI intensity score at pretest was 158.65 (*SD* = 33.23, range: 60-252) while the post test was 94.14 (*SD* = 35.99, range: 37-200). The average ECBI problem score at pretest was 21.67 (*SD* = 7.27, range: 0-36) while the post test was 9.02 (*SD* = 9.23, range: 0-36). Child age was also verified to fit PCIT age guidelines. All child ages met criteria and fell at or between the ages of 2 to 7 years.

Assumptions of normality, homoscedasticity and linearity were assessed for each numerical variable (ECBI intensity and problem scores). The Variance Inflation Factor (VIF) was used to evaluate potential problems with multicollinearity. Prior to running the regression, potential outliers were identified by calculating the standardized values for each variable where any standardized value below -3 or above 3 is considered an outlier. The normal P-P plot demonstrated that the residuals are normally distributed for both problem and intensity ECBI scores. The scatterplot of the residuals demonstrated equal distribution of residuals for ECBI problem and intensity scores meeting the assumption of homoscedasticity. Absence of multicollinearity was verified by checking variance inflation factor (VIF) values. All

VIF values were below 10.00 for both ECBI problem and intensity scores meeting the assumption of multicollinearity. Since the residuals were normally distributed and homoscedastic, linearity is also assumed.

Dummy variables were created for each categorical variable before including it in the model and descriptive variables were also recoded to better explain the sample. Each dummy variable was put into the regression model. Child age ranged from 2 to 7 years old and was recoded into two groups: toddler which included ages 2-3 and preschool/middle childhood which included ages 4-7. Grouping children into broader age ranges ensures an adequate number of cases within each group, reducing the risk of small sample sizes for specific ages. This ensured that the analysis was not overly influenced by outliers or small subsamples within specific age points, promoting more reliable and meaningful results. Similarly, due to sample sizes, caregiver ethnicity was recoded into three categories Latinx, White or Other (i.e., Black, Native American, Filipino, Southeast Asian, Vietnamese, Other). In the regression analysis, the Latinx, White, and Other categories were incorporated as predictor variables using dummy coding. The “Other” category was used as a reference group and two dummy variables were therefore created: one for White and one for Latinx. The dummy variable for White was recoded with the value of 1 if the caregiver was White and 0 if they were not White. The dummy variable for Latinx was recoded with the value of 1 if the caregiver is classified as Latinx and 0 otherwise.

The original gender variable had values "male" and "female” and was recoded into a dummy variable where "male" represented as 1 and "female" as 0. Similarly, the original treatment language variable had values "English" and "Spanish” and was

recoded into a dummy variable where "English" was represented as 1 and "Spanish" as 0.

For the neurodevelopmental disorder variable, the various child neurodevelopmental disorders defined by the DSM-5 were grouped into one variable (e.g., Intellectual Disorders, Communication Disorders, Autism Spectrum Disorder, Attention-Deficit/Hyperactivity Disorder, Specific Learning Disorders, Motor Disorders or Tic Disorders). It is then recoded into "yes" if the child has any of the specified neurodevelopmental disorders and "no" if the child does not have any of those disorders. This recoding simplifies the variable and allows for a binary representation of the presence or absence of a neurodevelopmental disorder. These were then dummy coded in which presence of neurodevelopmental disorder was represented as 1 and absence of a neurodevelopmental disorder was represented as 0.

In order to describe the sample, caregiver type was also recoded into four categories; mother, father, relatives (stepparents, uncle, aunt, grandmother), and adoptive caregivers (caregiver, adoptive parent, foster, guardian). The caregiver type was not included in the regression analysis and only retained to describe the data due to the majority of participants in the study identifying as mothers (74%). Mothers being dominant in the sample may not provide sufficient variability or representativeness in the regression model making it difficult to draw reliable results when assessing the impact of caregiver type on the outcome.

To assess the effectiveness of PCIT in improving child outcomes, change scores for each of the two dependent variables were calculated by subtracting scores at pre-test from scores at post-test. Lower intensity and problem behavior scores at the post-treatment assessment indicate a reduction in problematic behaviors and an

improvement in behavior following PCIT. As a result, negative values for change scores are interpreted as desirable outcomes. These change scores were used as the dependent variable for subsequent regression analyses.

CHAPTER III

Results

A regression analysis was used to determine whether child and caregiver characteristics predict ECBI intensity and problem scores at post-test. Two linear regressions were conducted with caregiver ECBI intensity and problem scores included as separate outcome variables with child age, child gender, child maltreatment history (e.g., sexual abuse, physical abuse, neglect, domestic violence, and pre-natal exposure to drugs) presence of a neurodevelopmental diagnosis, caregiver preferred treatment language and caregiver ethnicity as predictors. The coefficients provided information about the direction, magnitude, statistical significance, and precision of the relationship between predictor variables and the outcome variable. See tables 8 and 9 for linear regression analysis results and tables 10 and 11 for one way analysis of variance data.

The first linear regression pertained to whether child and caregiver characteristics predict ECBI intensity scores; results indicated that the overall regression model was significant, (F (11, 238) = 2.16, p = .017). An R^2 value of .091 indicates that just 9.1% of the variance in ECBI intensity scores was explained by child and caregiver characteristics. The remaining 90.9% of the variance is not explained by the variables in the model and could be attributed to other factors that were not considered in the analysis. This means that there may be additional factors

beyond the child and caregiver characteristics that contribute to the variability in ECBI intensity scores.

Second, the linear regression on what child and caregiver characteristics predict ECBI problem scores indicated that the overall regression model was significant (F (11, 238) = 1.93, p = .036) and explained 8.2% of the variance in ECBI problem scores. The remaining 91.8 % of the variance is unexplained and may be attributed to other factors not included in the analysis.

Results yielding a statistically significant regression model suggest that the model is a good fit for the data, and at least one of the predictors has a significant impact on the outcome variable. This means that the regression model provides valuable information for predicting or explaining the variation in the outcome variable. Overall, while the regression model was statistically significant and provided some insight into the predictors of ECBI intensity and problem scores, it suggests that there are additional factors beyond the included child and caregiver characteristics that contribute to the variability in ECBI scores.

It was hypothesized that the younger the child is in age would be predictive of higher ECBI intensity and problem scores post treatment in comparison to older children. Child age was entered into the regression model as preschool/middle childhood ages 4-7 while toddler ages 2-3 were used as the reference group. Child age was not predictive of ECBI intensity (p = .68) or problem scores (p = .96). Thus, there is no statistically significant relationship between child age and ECBI intensity and problem scores after controlling for all other variables.

It was hypothesized that child gender would be predictive of lower ECBI intensity and problem scores post treatment. Child gender was entered into the

regression model as male while female was used as the reference group. Child gender was not predictive of ECBI intensity (p =.68) or problem scores (p =.37). This means there is no statistically significant relationship between the child gender and ECBI intensity and problem scores after controlling for all other variables.

It was hypothesized that child maltreatment history and experiencing sexual abuse, physical abuse, neglect, domestic violence, or pre-natal exposure to drugs/alcohol would be predictive of higher ECBI intensity and problem scores post treatment. Findings indicated that among the child maltreatment variables examined, only child prenatal exposure to drugs or alcohol had a significant effect on caregiver reported ECBI intensity scores, such that worse outcomes were observed for children when they had such prenatal exposure (b = 25.5, t = 2.28, $p \leq .02$). More specifically, there was a 25.5 point difference in the change score for children with a history of prenatal alcohol or drug exposure ECBI intensity scores that compared to those without such exposure. Results also revealed a significant relationship between child prenatal exposure to drugs or alcohol and caregiver reported ECBI problem scores, in the same direction as that for intensity scores (b = 5.87, t = 2.14, $p \leq .03$). This means that children with a history of prenatal alcohol or drug exposure were predicted to have change scores on the ECBI problem scale that were 5.87 points higher compared to those without such exposure. Overall, the results indicate a statistically significant association between prenatal alcohol or drug exposure and change in ECBI intensity and problem scores. All other child maltreatment variables were not predictive. Thus, there was no statistically significant relationship between ECBI intensity and problem scores and experiencing any of the following, sexual abuse (p =.89 and .43;

respectively), physical abuse (p =.89 and .96; respectively), neglect (p =.71 and .31; respectively), domestic violence (p = .86 and .90; respectively).

It was hypothesized that the presence of a neurodevelopmental disorder diagnosis as defined by the DSM-5 (e.g., Intellectual Disorders, Communication Disorders, Autism Spectrum Disorder, Attention-Deficit/Hyperactivity Disorder, Specific Learning Disorders, Motor Disorders or Tic Disorders) would be predictive of higher ECBI intensity and problem change scores. The presence of a neurodevelopmental disorder diagnosis was not predictive of ECBI intensity (p =.76) or problem change scores (p =.86). Thus, there is no evidence to support a significant association between the presence of a neurodevelopmental disorder diagnosis and change from pre-test to post-test on the intensity and problem scores on the ECBI.

It was hypothesized that caregiver language would be predictive of similar ECBI intensity and problem change scores. Caregiver language was entered into the regression model as English while Spanish was used as the reference group. The results indicated that caregiver language preference (Spanish-speaking vs. English-speaking) was not predictive of ECBI intensity (p = .37) or problem change scores (p = .09).

Finally, it was hypothesized that caregiver ethnicity would be predictive of similar ECBI intensity and problem change scores. Caregiver ethnicity was entered into the regression model as “Latinx” and “White” while “Other” was used as the reference group. The regression analysis revealed a significant association between Latinx ethnicity and caregiver reported ECBI intensity change scores, such that children whose caregiver was Latinx experienced more desirable outcomes than when a caregiver was not Latinx (b = -17.116, t = -2.111, $p \leq .04$). Specifically, individuals

who identified as Latinx were predicted to have ECBI intensity change scores that were 17.116 points lower compared to those who did not identify as Latinx. On the other hand, caregivers reporting their ethnicity as White did not significantly predict ECBI intensity scores (p = .29). Additionally, both Latinx and White ethnicities did not have a significant impact on ECBI problem scores (Latinx p = .22, White p = .81). These findings suggest that being Latinx is statistically associated with lower ECBI intensity change scores.

Discussion

This study aimed to explore the predictive role of child and caregiver characteristics on PCIT outcomes for Spanish and English-speaking families. Specifically, the study examined whether child characteristics and caregiver characteristics (i.e., child age, child gender, child maltreatment history and presence of a neurodevelopmental diagnosis, caregiver preferred treatment language and caregiver ethnicity) were predictive of ECBI intensity and problem behavior change scores. The overarching hypothesis proposed that each of these child and caregiver characteristics would have a predictive role in determining ECBI intensity and problem behavior scores.

The first hypothesis posited that younger children would demonstrate higher ECBI intensity and problem scores after treatment compared to older children. However, the results indicated that child age was not predictive of ECBI scores. This finding is consistent with previous research; Werba et al. (2006) found that child age was not predictive of parent report of symptom resolution or treatment completion when using PCIT with 3- to 6-year-old children with disruptive behavior disorders.

PCIT is recommended for use as an effective intervention for children ages 2-7, including toddlers and children in preschool and middle childhood age ranges. Since the present study included children within this age range, it aligns with the established validity and effectiveness of PCIT for this specific population. This finding suggests that PCIT can be effective across these age groups and that age did not influence ECBI scores post treatment.

In relation to child gender, it was hypothesized that females would have lower ECBI intensity and problem scores after treatment compared to males. However, the results indicated that child gender was not predictive of ECBI scores. It is important to note that all participating children in the sample had clinically significant ECBI scores, which suggests that the severity of behavior problems may have overshadowed any potential gender differences in treatment outcomes. This result is similar to previous research by Ward et. al (2016) in which gender was not found to significantly moderate PCIT behavior outcomes.

The third hypothesis proposed that a history of child maltreatment, including sexual abuse, physical abuse, neglect, domestic violence, or prenatal exposure to drugs/alcohol, would be associated with higher ECBI intensity and problem scores after treatment. However, only prenatal exposure to drugs/alcohol was found to be predictive of higher ECBI intensity scores at post-test. Previous studies using measures such as the Strengths and Difficulties Questionnaire and Child Behavior Checklist have also linked prenatal drug/alcohol exposure to high behavior scores (Easey et al., 2019). Studies on adverse effects of prenatal alcohol and drug exposure have identified neurocognition, self-regulation, and adaptive functioning as main areas of impairment (Hagan et. al, 2016). Furthermore, prenatal exposure to

drugs/alcohol has been associated with various issues such as anxiety, depression, internalizing disorders, emotional problems, learning disabilities and conduct disorders (Bertrand, 2009; Easey et al., 2019). Although prenatal substance exposure was found to be predictive of higher ECBI scores, previous studies involving children aged 3-7 years old diagnosed with fetal alcohol spectrum disorder (FASD), suggest providing psychoeducation related to FASD before PCIT which demonstrated improvement in child behavior problems and parenting stress (Bertrand, 2009). This approach acknowledges the unique needs and challenges associated with FASD and tailors the intervention accordingly. Similarly, Egan and colleagues (2020) found standard PCIT an effective treatment for prenatal substance exposure. In a study by Messer et al. (2022), predictors of child trauma were examined, including various forms of maltreatment such as physical abuse, emotional abuse, sexual abuse, neglect, and exposure to domestic or neighborhood violence. The study found that the change in ECBI intensity scores over time did not differ between children with and without trauma exposure, regardless of whether they completed PCIT to PDI (Messer et al., 2022). These results suggest that trauma exposure may not significantly impact the outcomes of PCIT in terms of behavior intensity as measured by the ECBI and more research is warranted for children exposed to prenatal alcohol and drugs.

The fourth hypothesis suggested that the presence of a neurodevelopmental disorder diagnosis would predict higher ECBI intensity and problem scores after treatment. However, the results indicated that the presence of a neurodevelopmental disorder was not predictive of ECBI scores. Similar results have been found in the literature and particular to ASD, Zlomke and Jeter (2020) found that diagnostic status of having ASD or not having an ASD diagnosis was not predictive of disruptive

behavior reductions. It is worth noting that PCIT has been conducted with children diagnosed with neurodevelopmental disorders such as ASD and ADHD and yielded promising results by decreasing child externalizing behaviors with and without adaptations (e.g., Matos et al., 2009; Agazzi et al., 2013; Lesack et al., 2014; Chronis-Tuscano et al., 2016; Zlomke et al., 2017; Zlomke & Jeter, 2020).

The fifth hypothesis of the study proposed that caregiver language, specifically Spanish or English-speaking, would have comparable predictive effects on ECBI intensity and problem scores following treatment. However, the results did not support a significant relationship between language and ECBI scores. It is important to consider that this finding may be influenced by clinic-specific procedures. In this study, the clinic offered standard PCIT in both English and Spanish, and trained clinicians who were fluent in the respective languages conducted the treatment. Additionally, treatment materials were available in the preferred language of the families. This approach aligns with previous research that emphasizes the importance of modifying treatment to the family's preferred language, as it has been shown to enhance the parent-child interaction and reduce problem behaviors in the treatment process (Borrego et al., 2006).

The final hypothesis proposed that caregiver ethnicity, such as Latinx compared to White or Other Ethnicity, would have similar predictive effects on ECBI intensity and problem scores after treatment. The results indicated that being of Latinx ethnicity was predictive of ECBI intensity scores, suggesting a lower intensity score. These findings suggest that the PCIT intervention provided at the clinic was effective for Latinx families in addressing and reducing behavior problems in children. These results align with previous literature that has explored the implementation of PCIT

specifically with the Latinx population. Studies conducted by Budd (2011), McCabe and Yeh (2009), and McCabe et al. (2012) have demonstrated the effectiveness of PCIT in improving child behavior outcomes among Latinx families. These studies provide additional support for the notion that PCIT is an effective approach for addressing behavior problems within the Latinx population.

It is worth noting that while no formal cultural adaptations were made to the PCIT intervention in the current study when working with Latinx families, previous research has highlighted the importance of cultural understanding and shared ethnicity between clinicians and clients. Existing literature supports the notion that when clinicians belong to the same or similar ethnic background as their clients, it can enhance cultural understanding and promote more effective therapeutic outcomes.

Numerous studies have emphasized the significance of culturally congruent care and the positive impact it can have on client engagement, treatment adherence, and overall treatment outcomes. For example, a study by Castro-Blanco et al. (2010) found that Latinx clients who received therapy from Latinx clinicians reported higher levels of treatment satisfaction and perceived cultural competence compared to those who worked with non-Latinx clinicians. Similarly, another study by Bernal et al. (2009) suggested that matching ethnicities between therapists and clients can lead to greater therapeutic alliance and better treatment outcomes.

These findings highlight the importance of cultural match in therapeutic interventions, as it promotes a sense of shared understanding, cultural sensitivity, and the ability to effectively address the unique needs and experiences of individuals from diverse backgrounds. Although the current study did not explicitly explore the impact of cultural match between clinicians and Latinx families, it is plausible to consider

that the presence of clinicians who shared a similar cultural background as their Latinx clients might have fostered a greater sense of cultural understanding and rapport, which could have positively influenced treatment outcomes.

Drop-out rates and referral source were examined descriptively. Both Spanish-speaking and English-speaking families had similar rates of drop-out and completion of the PDI component of PCIT. Additionally, the majority of referrals to PCIT came from education and childcare settings. It is important to note that the clinic may have addressed language-related challenges and attrition by providing PCIT in the families' preferred language and offering translated materials. Accommodating language preferences may be an effective approach to engagement and reducing barriers to participation. The referral source provided valuable information about the pathway through which families accessed the services. The high proportion of referrals from educational settings highlights the important role of schools in identifying behavior problems in children and connecting parents to appropriate resources and treatments. This finding highlights the importance of collaboration between clinical settings and educational institutions in addressing behavioral issues and providing early intervention services.

Limitations

The present study has limitations that should be considered when interpreting the findings. First, when cleaning the data set there was missing data that could not be corroborated with the clinic. This required that the data cleaning involve setting inclusion criteria with available ECBI scores completed by the same caregiver. Some cases included more than one caregiver participating in PCIT and completing ECBI scales. These cases were not included in the study as it may have introduced

variability in responses and potentially confound the interpretation of results. It would be beneficial to account for the potential influence of multiple caregivers and explore any differences in treatment outcomes between cases with single versus multiple caregivers. Second, caregiver type was not included in the analyses due to the majority of participants in the study identifying as mothers, limiting the generalizability of the findings to other caregiver types. Including a more diverse range of caregivers, such as fathers, grandparents, or other family members, would provide a more comprehensive understanding of treatment outcomes within different caregiving contexts. Third, the study's findings may have limited generalizability to other clinics due to potential variations in participant characteristics, demographics and contextual factors. Fourth, the study did not specifically investigate the impact of different neurodevelopmental disorders individually due to the insufficient sample size for each disorder or the impact of pharmacological treatment on child behavior due to this information not being available. The presence of pharmacological treatment, particularly for children with a dual diagnosis of conduct disorder and ADHD, can influence outcomes, with a combination of medication and PCIT potentially reducing behaviors that interfere with parenting and child skill acquisition (Miller & Prinz, 1990; Mohammadi et al., 2015). Additionally, the study did not investigate the impact of comorbid disorders that may influence child behaviors such as anxiety, depression, schizophrenia spectrum and other psychotic disorders, bipolar disorders, obsessive-compulsive disorders and feeding and eating disorders among others. This limits the ability to draw specific conclusions about the effects of PCIT on children with specific diagnoses. Future studies with larger sample sizes for each disorder can provide more targeted insights. It is also possible that other factors, such

as the severity of the neurodevelopmental disorder or specific symptom profiles, may influence the effectiveness of PCIT for children with these conditions. Examining the specific adaptations and strategies employed within PCIT for children with neurodevelopmental disorders may shed further light on the treatment outcomes in this population. Fifth, the study only indicated whether the child was exposed to alcohol/drugs without providing specific information about the types of substances or polysubstance abuse. Further description and characterization of substance exposure can provide a more comprehensive understanding of the sample and its potential impact on treatment outcomes. Sixth, the analysis only included cases that completed full PCIT (full CDI and PDI treatment). Thus, results may not generalize to those who did not complete the treatment. Finally, a restricted range of gender and diagnosis representation and lack of heterogeneity must be considered as only 30% of the child sample was female and 78% did not have a neurodevelopmental disorder. These limitations hinder the ability to determine the true impact of gender and diagnosis on ECBI outcomes. Therefore, further research with a more diverse range of participants is warranted to explore the influence of gender and diagnosis on the outcomes.

Implications for Research and Practice

The results of this study have important implications for both research and practice. Specifically, this study found that child prenatal exposure to alcohol/drugs was a significant predictor of intensity scores on the ECBI at post-test. This finding suggests that prenatal substance exposure and its effects on child development can have a significant impact on child behavior outcomes as well as caregiver perception on the intensity of these behaviors. This highlights the importance of considering the impact of prenatal substance exposure on child behavior outcomes. Moreover, it

should be taken into consideration when treating behavior problems in children within the PCIT framework. While there are a few existing studies suggesting the effectiveness of PCIT with this population, it is important to expand our understanding and address the limitations of previous research. The studies by Bertrand (2009) and Egan et al. (2020) have provided valuable insights, but they have certain limitations. Bertrand's study focused specifically on fetal alcohol spectrum disorder and utilized a group format for intervention delivery, which deviates from the traditional individual based PCIT approach. Egan et al.'s study primarily focused on prenatal substance abuse and had a sample primarily composed of Caucasian, English-speaking mothers. These limitations highlight the need for more diverse and rigorous research designs to explore the effectiveness of PCIT in different populations and contexts.

Future research should aim to address these limitations by examining the predictive role of prenatal exposure to alcohol/drugs in more depth. It is also important to include children exposed to polysubstance abuse and consider the interconnected effects of race, ethnicity, and linguistic diversity. Randomized controlled trials, as mentioned by Egan et al. (2020), can provide a more rigorous research design to evaluate the effectiveness of PCIT in different treatment conditions. Additionally, future research can focus on the development and implementation of psychoeducation programs for caregivers regarding behaviors associated with prenatal substance exposure. This can enhance treatment planning and interventions by increasing caregiver understanding and support. By conducting more comprehensive and rigorous research, we can improve our understanding of the effectiveness of PCIT for children with prenatal substance exposure and also help

inform treatment planning, intervention strategies, and the provision of culturally sensitive care for diverse populations.

Interestingly, this study did not find significant associations between ECBI scores and other factors such as child gender, age, presence of a neurodevelopmental diagnosis, child maltreatment, caregiver ethnicity, or language of treatment. Although the findings in this present study suggest that these factors may not directly influence child behavior outcomes in the context of PCIT there is still need for further research to better understand the complex interplay of factors that contribute to child behavior problems in the context of PCIT. Therapists and PCIT research have already considered child age and strategies based on developmental stages and child abilities. There are adaptations of PCIT for toddlers (12–24-month-old children) and older children (7–10-year-old children; Girard et al., 2010; Gibson et al., 2021). Considering family language preferences is essential for treatment engagement as well. Handouts, feedback and materials should be provided through translation, interpreters and bilingual therapists to minimize language barriers. Taking into account cultural factors can enhance engagement, promote trust, and strengthen therapeutic alliance. Children with a history of maltreatment may require additional support and interventions to address trauma-related issues. Engaging in trauma informed care is essential to address the unique needs of these children in PCIT. Similarly, children with neurodevelopmental diagnoses, such as autism spectrum disorder or attention-deficit/hyperactivity disorder, may have specific communication and social interaction difficulties. PCIT has been adapted and studied in these populations by accommodating to these challenges such as using visual supports, simplifying instructions, or incorporating social skills training and providing

additional support and psychoeducation, can enhance treatment outcomes for these children.

Future research in PCIT can explore a wide range of predictors that may influence treatment response. Some potential areas for investigation include examining specific neurodevelopmental disorders and other mental health diagnoses to better tailor treatment. Caregiver type and number of caregivers participating in PCIT. Most PCIT research has focused on mother-child dyads, so exploring the impact of other caregivers, such as fathers, grandparents, or extended family members, can provide a more comprehensive understanding of treatment effectiveness. Cultural and linguistic factors and exploring the experiences of families from diverse backgrounds to ensure cultural sensitivity. Moreover, studying the impact of cultural beliefs, values, and practices on the implementation and effectiveness of PCIT within diverse populations may also help inform treatment. The role of socioeconomic status in treatment outcomes including education, access to resources and income and how these factors may influence treatment engagement, adherence and PCIT effectiveness as well as source of treatment referral whether it was court mandated or voluntary may help further explore motivation and engagement.

Finally, PCIT treatment outcome was measured in the present study using the ECBI but using measures that offer information on parental stress levels, parent-child interactions and PCIT skill use as measured by the Dyadic Parent-Child Interaction Coding System (DPICS) may also offer valuable information on the effectiveness of PCIT. This information can shed light on how PCIT is influencing parent-child communication, discipline strategies, and overall relationship dynamics.

Conclusion

In this study, results indicate that PCIT treatment outcomes, as measured by ECBI scores, were not influenced by the majority of child or caregiver predictors included. Specifically, language, caregiver ethnicity, child age and gender, presence of a neurodevelopmental disorder and child maltreatment history including physical abuse, sexual abuse, neglect and domestic violence were not found to be a predictive factor for behavior intensity or problem scores. These findings suggest that (1) the clinic may have already effectively addressed the potential impact of linguistic diversity by providing treatment in the families' preferred language through trained bilingual therapists and translated materials, (2) child age and gender may not influence results due to PCIT having been successfully adapted for children in the toddler age, standard 2-7 and older children, (3) the presence of a neurodevelopmental disorder has been acknowledged within the PCIT community as requiring accommodations in treatment and adaptations have been suggested in previous studies which could lead to effective decrease in child behaviors regardless of their diagnosis, and (4) child maltreatment may have also been accounted for through trauma-informed care as well as through the PCIT literature indicating PCIT is an acceptable approach in treating behaviors and strengthening the caregiver-child relationship with this population. Child prenatal exposure to drugs/alcohol was predictive of higher ECBI scores. This finding suggests that this population may need additional support and psychoeducation to help families in treatment. Conversely, being of Latinx ethnicity was predictive of lower ECBI intensity scores suggesting that PCIT is an acceptable approach of treatment for this population.

It is important to note that these conclusions are specific to the demographics of the Riverside area and the clinic and may not necessarily generalize to other settings or populations. The effectiveness of PCIT and the influence of predictors can vary across different contexts and demographics. Further research is needed to validate these findings and explore the generalizability of the results to a broader population. It is essential to continue investigating the impact of various predictors and further explore their role in PCIT treatment outcomes in diverse populations and settings.

Tables

Table 1. *Reason Treatment Ended by Language Preference*

		Language					
		English		Spanish		Total	
		n	%	n	%	n	%
Reason	Dropped Out	230	40.5	44	34.4	274	39.4
	Completed CDI	83	14.6	20	15.6	103	14.8
	Completed PDI	255	44.9	64	50.0	319	45.8
Total		568	100	128	100	696	100

Table 2. *Referral Source by Language Preference*

		Language					
		English		Spanish		Total	
		n	%	n	%	n	%
Referral	Unknown	79	13.9	27	21.1	106	15.2
	MHSA	5	0.9	0	0.0	5	0.7
	SNAP	36	6.3	8	6.3	44	6.3
	F5R	22	3.9	2	1.6	24	3.4
	DPSS	39	6.9	4	3.1	43	6.2
	ACT	6	1.1	0	0.0	6	0.9
	CAT	15	2.6	0	0.0	15	2.2
	FFA	12	2.1	1	0.8	13	1.9
	Education/Childcare	149	26.2	40	31.3	189	27.2
	Medical	15	2.6	3	2.3	18	2.6
	Other	84	14.8	27	21.1	111	15.9
	Self	71	12.5	12	9.4	83	11.9
	Clinic/Pediatrician	35	6.2	4	3.1	39	5.6
Total		568	100	128	100	696	100

Table 3. *Reason Treatment Ended and Referral Source*

		Reason Treatment Ended							
		Dropped Out		Completed CDI		Completed PDI		Total	
		n	%	n	%	n	%	n	%
Referral	Unknown	48	17.5	12	11.7	46	14.4	106	15.2
	MHSA	2	0.7	1	1.0	2	0.6	5	0.7
	SNAP	7	2.6	8	7.8	29	9.1	44	6.3
	F5R	10	3.6	3	2.9	11	3.4	24	3.4
	DPSS	17	6.2	11	10.7	15	4.7	43	6.2
	ACT	1	0.4	2	1.9	3	0.9	6	0.9
	CAT	5	1.8	4	3.9	6	1.9	15	2.2
	FFA	4	1.5	2	1.9	7	2.2	13	1.9
	Education /Childcare	63	23.0	28	27.2	98	30.7	189	27.2
	Medical	9	3.3	3	2.9	6	1.9	18	2.6
	Other	61	22.3	11	10.7	39	12.2	111	15.9
	Self	29	10.6	11	10.7	43	13.5	83	11.9
	Clinic /Pediatrician	18	6.6	7	6.8	14	4.4	39	5.6
Total		274	100	103	100	319	100	696	100

Table 4. *Caregiver Demographics*

		Language					
		English		Spanish		Total	
		n	%	n	%	n	%
Relationship to Child							
	Mother	144	72.0	44	81.5	188	74.0
	Father	15	7.5	1	1.9	16	6.3
	Relative	9	4.5	3	5.6	12	4.7
	Adoptive	30	15.0	5	9.3	35	13.8
	Missing	2	1.0	1	1.9	3	1.2
	Total	198	100	53	100	251	100
Ethnicity							
	White	71	35.5	0	0.0	71	28.0
	Latinx	93	46.5	51	94.4	144	56.7
	Other	33	16.5	2	3.7	35	13.8
	Missing	3	1.5	1	1.9	4	1.6
	Total	200	100	54	100	254	100

Table 5. *Child Demographics*

		Language					
		English		Spanish		Total	
		n	%	n	%	n	%
Child Gender							
	Male	140	70.0	33	61.1	173	68.1
	Female	60	30.0	21	38.9	81	31.9
	Total	200	100	54	100	254	100
Child Age							
	Toddler	91	45.5	19	35.2	110	43.3
	Preschool/ Middle Childhood	109	54.5	35	64.8	144	56.7
	Total	200	100	54	100	254	100
More than one Diagnosis							
	No	84	42.0	35	64.8	119	46.9
	Yes	96	48.0	17	31.5	113	44.5
	Missing	20	10.0	2	3.7	22	8.7
	Total	200	100	54	100	254	100
Neurodevelopmental Disorder							
	No	147	73.5	51	94.4	198	78.0
	Yes	53	26.5	3	5.6	56	22.0
	Total	200	100	54	100	254	100

Note. Child age was grouped into toddler ages 2-3 and Preschool/Middle Childhood ages 4-7

Table 6. *Child Maltreatment History*

		Language					
		English		Spanish		Total	
		n	%	n	%	n	%
Sexual abuse							
	No	185	92.5	50	92.6	235	92.5
	Yes	8	4.0	1	1.9	9	3.5
	Missing	7	3.5	3	5.6	10	3.9
	Total	193	100	54	100	254	100
Physical abuse							
	No	178	89.0	46	85.2	224	88.2
	Yes	15	7.5	4	7.4	19	7.5
	Missing	7	3.5	4	7.4	11	4.3
	Total	193	100	54	100	254	100
Negligence							
	No	153	76.5	41	75.9	194	76.4
	Yes	39	19.5	9	16.7	48	18.9
	Missing	8	4.0	4	7.4	12	4.7
	Total	192	100	54	100	254	100
Pre-natal drug/alcohol							
	No	154	77.0	46	85.2	200	78.7
	Yes	39	19.5	4	7.4	43	16.9
	Missing	7	3.5	4	7.4	11	4.3
	Total	193	100	54	100	254	100
Domestic Violence							
	No	155	77.5	42	77.8	197	77.6
	Yes	39	19.5	9	16.7	48	18.9
	Missing	6	3.0	3	5.6	9	3.5
	Total	194	100	54	100	254	100

Table 7. *Total Child Maltreatment*

		Language					
		English		Spanish		Total	
		n	%	n	%	n	%
Amount of	0	135	67.5	43	79.6	178	70.1
Exposure to	1	24	12.0	1	1.9	25	9.8
Child	2	17	8.5	4	7.4	21	8.3
Maltreatment	3	15	7.5	6	11.1	21	8.3
	4	2	1.0	0	0	2	0.8
	5	6	3.0	0	0	6	2.4
	Missing	1	0.5	0	0	1	0.4
Total		200	100	54	100	254	100

Note. Number represents the amount of child maltreatment exposure to one or more of the following sexual abuse, physical abuse, negligence, pre-natal drug/alcohol exposure or domestic violence.

Table 8. *Results of Linear Regression Analysis ECBI Intensity Score*

Variable	Beta	SE B	β	*t*	*p*
(Constant)	-60.72	10.68		-5.68	<.001
Child Age	2.19	5.25	.026	.42	.677
Child Gender	-2.37	5.75	-.027	-.41	.681
Sexual Abuse	2.08	15.61	.009	.13	.894
Physical Abuse	-1.59	11.56	-.010	-.14	.891
Neglect	-4.43	11.78	-.042	-.38	.707
Pre-Natal Exposure Drug/Alcohol	25.49	11.17	.230	2.28	.023
Domestic Violence	1.49	8.53	.014	.17	.862
Neurodevelopmental Disability	2.02	6.49	.020	.31	.756
Language	6.45	7.12	.063	.91	.366
Ethnicity Latinx	-17.12	8.11	-.204	-2.11	.036
Ethnicity White	-9.13	8.57	-.099	-1.07	.287

Table 9. *Results of Linear Regression Analysis ECBI Problem Score*

Variable	Beta	SE B	β	*t*	*p*
(Constant)	-13.12	2.63		-4.99	<.001
Child Age	-.062	1.29	-.003	-.048	.962
Child Gender	-1.28	1.42	-.059	-.91	.366
Sexual Abuse	3.01	3.84	.055	.78	.434
Physical Abuse	.16	2.84	.004	.06	.956
Neglect	-2.92	2.89	-.113	-1.01	.312
Pre-Natal Exposure Drug/Alcohol	5.87	2.75	.216	2.14	.034
Domestic Violence	.28	2.09	.011	.13	.895
Neurodevelopmental Disability	.28	1.59	.012	.18	.859
Language	3.02	1.75	.121	1.72	.086
Ethnicity Latinx	-2.44	1.99	-.119	-1.22	.222
Ethnicity White	-.50	2.11	-.022	-.24	.813

Table 10. *One way Analysis of Variance for ECBI Intensity Post Score*

Model	SS	df	MS	F	Sig.
Regression	39083.64	11	3553.06	2.16	.017b
Residual	391557.81	238	1645.20		
Total	430641.44	249			

Note. R^2 = .091

Table 11. *One way Analysis of Variance for ECBI Problem Score*

Model	SS	df	MS	F	Sig.
Regression	2114.44	11	192.22	1.93	.036[b]
Residual	23691.86	238	99.55		
Total	25806.30	249			

Note. R^2 = .082

CHAPTER IV

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