EXAMINING THE IMPACT OF PARENT-CHILD INTERACTION THERAPY ON INTIMATE PARTNER VIOLENCE

by

KYNDL X. WOODLEE

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Student: Kyndl X. Woodlee

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This dissertation has been accepted and approved in partial fulfillment of the requirements for the Doctor of Philosophy degree in the Counseling Psychology by:

Krista M. Chronister	Chairperson, Advisor
Elizabeth A. Skowron	Co-Chairperson
Jessica M. Cronce	Core Member
Keith Zvoch	Institutional Representative

and

Krista M. Chronister	Vice Provost for Graduate Studies

Original approval signatures are on file with the University of Oregon Division of Graduate Studies.

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DISSERTATION ABSTRACT

Kyndl X. Woodlee

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Rates of Intimate Partner Violence (IPV) and Child Maltreatment (CM) co-occur in 30-60% of all households, and yet there are few interventions that account for and address the family contextual factors that contribute to both (Appel & Holden, 1998; Dixon et al., 2007; Edleson, 1999; Foley, 2011). Parent-Child Interaction Therapy (PCIT) is one of the most empirically validated interventions shown to reduce CM (Skowron & Funderbunk, 2021), especially for high-risk families. PCIT targets two factors that impact CM and IPV risk: self-regulation and communication skills. The aims of this current dissertation study, therefore, were to explore the effects of PCIT on IPV frequency for families with a history of CM. It was hypothesized that caregivers assigned to PCIT would have a lower frequency of IPV behaviors in comparison to a services-as-usual (SAU) control group. Existing data were collected from caregivers (N = 204) and their children as part of a longitudinal randomized controlled trial called the Coaching Alternative Parenting Strategies Project (CAPS; Skowron, 2019, R01 DA036533). Zero-inflated negative binomial (ZINB) regression analyses showed that (a) assignment to PCIT did not significantly reduce IPV perpetration or victimization regardless of past

IPV history compared with SAU and (b) caregiver age and income did not significantly impact IPV perpetration or victimization regardless of treatment group or past IPV history. This was just the second study to examine the effect of PCIT on IPV and the first to do so with a sample this size and with families receiving individual PCIT treatment that could be modified for their needs, as opposed to a standardized group treatment. Limitations include that the sample did not have enough gender diversity to explore outcomes by gender identity and use of verbal self-report to collect IPV data.

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Dedicated to Indie

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CHAPTER I

INTRODUCTION

The purpose of this dissertation study was to examine the impact of Parent-Child Interaction Therapy (PCIT) on caregiver participants' intimate partner violence (IPV) experiences. I used existing data collected with caregivers and their children as part of a longitudinal randomized trial called the Coaching Alternative Parenting Strategies Project (CAPS; Skowron, 2019, R01 DA036533). PCIT is an empirically-supported intervention for caregivers who have maltreated their children and targets self-regulation and communication patterns, factors that strongly predict child maltreatment (CM) (Fisher & Skowron, 2017; Nekkanti et al., 2020; Rodriguez & Tucker, 2014; Romero-Martinez et al., 2016; Skowron & Funderbunk, 2021; Skowron et al., 2013). Caregiver participation in PCIT has been shown to reduce CM and to improve caregiver-child relationship quality, caregiver communication skills, and caregivers' child behavior management skills (Chaffin et al., 2011; Euser et al., 2015; Eyberg et al., 2001; Hood & Eyberg, 2003; Nekkanti et al., 2020).

Self-regulation and communication skills, and harsh parenting practices are also risk factors associated with IPV (Cordova et al., 1993; Khalifian et al., 2019; Neppl et al., 2017; Shorey et al., 2011). In fact, IPV co-occurs in 30%-60% of households where CM occurs (Appel & Holden, 1998; Dixon et al., 2007; Edleson, 1999; Foley, 2011). Provided that CM and IPV co-occur in families at very high rates and PCIT targets key risk factors shared by IPV and CM, I hypothesized that caregivers' participation in PCIT would reduce their experiences of IPV from pre- to post-intervention in comparison to caregivers who were assigned at random to a services-as-usual (SAU) control group. To

date, only one study has examined the impact of PCIT on caregiver IPV outcomes (Foley, 2011). Foley (2011) examined the efficacy of PCIT in a sample with co-morbid IPV and CM. ANCOVAs were conducted to examine if a 12-week group PCIT treatment was related to IPV decreases from pre- to post-treatment and Foley found that PCIT did reduce IPV perpetration and victimization, but none of the analyses were statistically significant. This dissertation study sought to build on Foley's (2011) research and extant PCIT outcome research by utilizing promising alternative analytical methods with a larger sample of families in the child welfare system to examine the effects of PCIT on IPV. Further, families were randomly selected for treatment provided by trained PCIT therapists in the CAPS Project, increasing the scientific rigor of this study beyond what has been conducted previously, as past researchers did not have the resources to conduct randomized controlled trial (RCT) experiments. It was hoped that study results would provide empirical evidence for an intervention that could reduce the physical, psychological, and economical toll of IPV for a population at significant risk.

CHAPTER II

LITERATURE REVIEW

Intimate partner violence (IPV) and child maltreatment (CM) are significant public health issues in the United States and around the world (Bohal et al., 2016; Breiding et al., 2015). IPV and CM share key risk factors, and consequently, co-occur in U.S. families at rates ranging from 30%-60% (Appel & Holden, 1998; Dixon et al., 2007; Edleson, 1999; Foley, 2011). Although there are methodological challenges to ascertaining the number of families that experience IPV and CM every year (Appel & Holden, 1998), scholars emphasize the need to develop more consistent definitions of IPV and CM, analyze IPV in the context of broader family violence, and use these data to establish interventions that help reduce IPV in the context of broader family violence (Appel & Holden, 1998; Dixon et al., 2007; Edleson, 1999). Construct definition, assessment, and data use are critical to developing and testing interventions that account for multiple forms of family violence, like IPV and CM. As such, the following literature review is organized as follows.

I begin by defining theoretically and empirically what behaviors and experiences scholars include under the term *intimate partner violence*. These theoretical approaches and definitions have shaped our current knowledge and measurement of IPV as well as national approaches to IPV intervention. Then, I examine two factors – self-regulation and communication skills – that modify IPV and CM risk and how these factors inform current IPV and family intervention. Next, I describe PCIT in depth and its potential to reduce IPV in families at high risk for family violence. I conclude this literature review

with a summary of the scientific gaps, study purpose, and study research questions and hypotheses.

Definition and Scope of Intimate Partner Violence

IPV is defined most broadly as "physical violence, sexual violence, stalking, and psychological aggression (including coercive acts) by a current or former intimate partner (spouse, boyfriend/girlfriend, dating partner, or ongoing sexual partner)" (Breiding et al., 2015, p. 11). *Physical violence* generally refers to the use of physical force against one's partner (Nicolaidis & Paranjape, 2009) and is often categorized as minor (e.g., pushing, shoving, or slapping) or severe (e.g., hitting with a fist, kicking, choking, using a weapon) (Breiding et al., 2015). *Sexual violence* is defined as "a sexual act that is committed or attempted by another person without freely given consent of the victim or against someone who is unable to consent or refuse" (Basile et al., 2014, p. 11), including forced, coerced, drug-facilitated, or otherwise unwanted penetrative, non-penetrative, or non-contact sexual experiences (Basile et al., 2014). *Psychological abuse* includes behaviors that are enacted by an individual with the intent to coerce, control, threaten, manipulate, monitor, intimidate, and humiliate their intimate partner and create a hostile environment (Mills et al., 2018). *Stalking* is defined as "repeated visual or physical proximity, non-consensual communication, or verbal, written, or implied threats" (The National Criminal Justice Association, 1993, pp. 43-44); however, recent operationalizations of stalking include electronic media (Shorey et al., 2015). *Economic abuse* refers to the use of behaviors that control a partner's ability to access or utilize economic resources, maintain work or advance vocationally, and ultimately, diminish that partner's potential for self-sufficiency (Adams & Beeble, 2019; Chronister &

McWhirter, 2003, 2006). The World Health Organization (WHO; 2012) also recognizes *controlling behaviors* as a form of IPV, which includes behaviors such as isolating one's partner from friends and family or limiting their access to support resources.

IPV impacts millions of cis- and trans- men and women and gender non-binary identified individuals around the world every year. The most recent national estimates in the United States show that one in every five women (22.3%) and one in every seven men (14%) report being the victim of severe physical violence at the hands of their romantic partner during their lifetime (Breiding et al., 2015). Rates of non-severe physical violence are even greater, with 31.5% of women and 27.5% of men reporting such experiences during their lifetime (Breiding et al., 2015). Recorded rates of IPV are highest for communities that experience economic and social marginalization and oppression. For example, in comparison to those in cisgender, heterosexual relationships, LGBTQ+ individuals experience IPV at similar or higher rates (Barrett & Sheridan, 2017; Rolle et al., 2018). In addition, non-Hispanic Black (41.2%), American Indian/Alaska Native (51.7%), and multiracial (51.3%) women in the United States experience physical violence during their lifetime, rates that are well above the national average (Breiding et al., 2015). The lifetime rates for psychological aggression for Black (53.8%), American Indian/Alaska Native (63.8%), and multiracial (61.1%) communities is even higher compared to the national average (47.1%) (Breiding et al., 2015). In 2010, nearly 40% of Black women and over 50% of multiracial non-Hispanic women in the United States had been the victim of rape, physical violence, and/or stalking by an intimate partner (Black et al., 2010).

It is important to acknowledge that many scholars believe these statistics are underestimates of true IPV rates, because individuals often do not report IPV. Victims doubt or minimize the severity of the IPV incident, do not believe they should seek help and fear retaliation from their abusive partners, or fear that they will be blamed by formal service providers (Chan, 2011; Spohn & Tellis, 2012). Reluctance to report IPV is exacerbated for immigrant populations, particularly Latinas, due to fear of being separated from their families because of incarceration, deportation, or other reasons (Burnett, 2017; Valenzuela, 2019).

In this section, I have defined the different forms of IPV and provided an overview of the most recent statistics on IPV in the United States. In the following section, I examine two risk factors shared by IPV and CM that support the aim of using family violence interventions to reduce IPV. I also explore the extant literature on IPV interventions, the limits to their effectiveness, and provide an argument for why PCIT has the potential to improve IPV outcomes for caregivers with histories of CM.

IPV and CM Shared Risk Factors

PCIT was developed as a child behavioral intervention, grounded primarily in social learning theory and family systems theory (Nekkanti et al., 2020). Creators of PCIT (Eyberg & Boggs, 1998) believed that dysfunctional caregiver-child relationships lead to the development and maintenance of conduct problems in children (Borrego et al., 2008). Based on these theoretical foundations, families in PCIT work to improve child behavior by strengthening caregivers' communication skills with their child, warm and responsive parenting, and interpersonal relationship qualities between the caregiver and child (Nekkanti et al., 2020). PCIT is one of the most effective interventions for

improving child behavior, and scholars have documented the effectiveness of PCIT on improving child and caregiver outcomes using randomized controlled trial and quasi-experimental methods (Thomas et al., 2017). PCIT also has become a leading intervention for reducing CM (Herschell & McNeil, 2005). PCIT targets some of the most consistently validated risk factors for CM, and correspondingly IPV (Herschell & McNeil, 2005; Urquiza & McNeil, 1996). Thus, in addition to reducing CM, it is possible that PCIT may also reduce co-occurring IPV between caregivers. One researcher has tested this possibility (Foley, 2011) and found that families who completed a 12-week group PCIT treatment saw a slight reduction in IPV behaviors; however, they were unable to identify a significant impact of PCIT on IPV due, in part, to methodological barriers that I attempted to address in this dissertation study.

Scholars have documented numerous risk factors for IPV and CM across the ecology. The most studied and empirically-verified risk factors for IPV include low socioeconomic status (SES, e.g., joblessness, low income, low academic achievement), young age, history of family violence during childhood, adult attachment issues, low empathy, self-regulation issues, social information processing deficits, men's desire for power, mental illness (e.g., depression, personality disorders), substance use issues, negative communication patterns, family stress, approval of traditional sex roles, and violent social norms (e.g., Chronister & Aldarando, 2012; Cordova et al., 1993; Dodge et al., 1995; Finkel et al., 2009; Fosco et al., 2007; Khalifian et al., 2019; Taft et al., 2008.) The most studied and empirically-verified risk factors for CM include low SES, young caregiver age, history of CM victimization, witnessing parental during childhood, past CM and IPV perpetration, aggressive response bias, self-regulation issues, family stress,

mental illness (e.g. depression, anxiety, personality disorders), substance use issues, negative communication patterns, approval of violent conflict resolution tactics, and lack of access to positive parenting strategies (e.g., Borrego et al., 2008; Easton & Crane 2016; McCance-Katz, 2019; Neppl et al., 2017; Nekkanti et al., 2020). Some research shows that low SES and young caregiver age can impact how effective interventions are due to the associated risk, although there is conflicting evidence as to whether these factors positively or negatively affect intervention outcomes (e.g., Lundahl et al., 2006; McTaggart & Sanders, 2007; Theise et al., 2014)

There are several risk factors for IPV victimization and perpetration that overlap with risk factors for CM. A full review of the research on each of these risk factors is beyond the scope of this chapter, so a more exhaustive list can be found in Table 1. For the purposes of this dissertation literature review, I focus on the shared risk factors for IPV and CM that have been targeted by IPV and family interventions and that PCIT targets specifically. Those shared risk factors are self-regulation and communication skill deficits.

Self-Regulation Deficits

Couples with histories of IPV tend to share common deficits in self-regulation skills that create barriers to effectively navigate relational conflict. *Self-regulation* is a construct that encompasses the intersection of personal, behavioral, and environmental processes (Bandura, 1986) and refers to any efforts by a person to alter their inner states or responses, such as their thoughts, emotions, and impulses (Vohs & Baumeister, 2004). Constructs discussed through this section, such as impulse control, self-control, and emotion regulation, are considered aspects of self-regulation (Vohs & Baumeister, 2004).

Some researchers assert that individuals use abusive tactics toward their intimate partner because they are unable to regulate their violent impulses, information processing deficits, threat perceptions, or emotions during conflict (e.g., Dodge et al., 1995; Finkel et al., 2009; Gratz & Romer, 2004; Taft et al., 2008; Vohs & Baumeister, 2004). Gratz and Romer (2004), for example, found that high overall emotion dysregulation scores and difficulties with engaging in goal-directed behavior, regulating impulses, and accessing effective emotion regulation strategies were related to a higher frequency of IPV perpetration among men. Difficulties regulating impulses were related to IPV perpetration for women (Gratz & Roemer, 2004). Finkel and colleagues (2009) found that adults with low levels of self-control required more knowledge of self-regulatory resources and practices and more time to engage in self-regulation and impulse control processes to refrain from acting on violent impulses during conflict with their partners than people with higher levels of self-control. Further, psychological aggression is associated with impulse control difficulties, limited access to emotion regulation skills, and lack of emotional awareness for both men and women (Shorey et al., 2011). Impulse control difficulties are also correlated with physical violence for both men and women, whereas limited access to emotion regulation strategies is also correlated with physical violence perpetrated by women (Shorey et al., 2011). Other scholars also assert that IPV is impacted by an individual's attempts to exert control over their negative affective states. For example, Roberton and colleagues (2012) found that over-regulation of emotions is significantly related to aggressive behavior, and generally uncomfortable internal states deplete one's cognitive resources to make appropriate appraisals and inhibit the use of aggression. These self-regulation deficits are exacerbated by caregivers'

own childhood experiences of IPV and CM, illustrating the cyclical nature of family violence (Dodge et al., 1995; Fosco et al., 2007; Taft et al., 2008).

Interventions designed to improve self-regulation have largely targeted perpetrators' ability to regulate their emotions and behavior. In their seminal series of studies, Finkel and colleagues (2009) identified self-regulation deficits as a key predictor of IPV perpetration and showed that interventions designed to bolster self-regulation skills led to decreased violent behaviors and inclinations when experiencing conflict with their partners. Other interventions have narrowed in on emotion regulation as a target. For example, scholars have designed interventions that use cognitive behavioral therapy (CBT) strategies to target emotions, promote self-regulation skills, and prevent IPV (e.g., Dunford, 2000; Hesser et al., 2017; Palmer et al., 1992; Stover et al., 2009). These CBT interventions, administered in-person and remotely, commonly teach more adaptive strategies for coping with emotions in the face of conflict, such as how to employ relaxation techniques and manage anger (Hesser et al., 2017; Stover et al., 2009).

In addition to CBT approaches with an emphasis on emotion regulation strategies, researchers have also specifically explored emotion focused therapy (EFT) as a treatment for couples in relationships involving IPV (Slootmaeckers & Migerode, 2020). These authors explain that, in many cases, relational violence is a result of emotional hyperactivation triggered by interpersonal conflicts that activate one's attachment fears. Through this lens, EFT seems suitable for IPV interventions, as it is based in attachment theory and centers on emotional responses in relationships (Schneider & Brimhall, 2014; Slootmaeckers & Migerode, 2020).

IPV interventions that target emotions can be suitable for many in need of treatment (e.g., Dunford, 2000; Hesser et al., 2017; Palmer et al., 1992; Stover et al., 2009). Further, interventions that bolster self- and emotion-regulation skills may be particularly helpful for households experiencing CM. Caregivers in these households often experience greater levels of family stress and related regulation difficulties (Ashworth, 2015; Bowen, 1978). According to the Family Systems Theory literature (Bowen, 1978), the level of family stress experienced by the caregiver predicts the caregiver's use of IPV (Ashworth, 2015). That is, caregivers who experience greater levels of family stress, often associated with child behavioral problems, are more likely to use IPV in their intimate relationship (Ashworth, 2015). Therefore, the reduction of stress in the household via improved self-regulation skills has important implications for reducing the use of IPV.

Interventions that solely target emotions have limitations, including limits to who are suitable candidates for the interventions. These interventions may only be suitable for perpetrators, or couples experiencing less severe forms of IPV (Finkel et al., 2009; Hesser et al., 2017; Slootmaeckers & Migerode, 2020). Several researchers have suggested that CBT interventions that center on emotion regulation are not appropriate for individuals who use violent tactics as a way of controlling a partner or those who use severe violence (Finkel et al., 2009; Hesser et al., 2017). Although EFT is a theoretically-appropriate intervention for couples who have engaged in "situational couple violence" in which the IPV is the result of escalating interactions, EFT is contraindicated in cases of "intimate terrorism" (Slootmaeckers & Migerode, 2020, p. 329), in which the IPV is rooted in control, power, and gender differences, out of concern for the abused partner's safety

(Johnson & Leone, 2008). A primary critique of these narrowly focused interventions is the failure to attend to the couple's most proximal contexts: their families and the communication and interpersonal dynamics among family members. In the next section, I review research on communication skill deficits as a risk factor for IPV and the outcomes of IPV interventions that target communication skills.

Communication Skills Deficits

One of the most consistently empirically-supported skill deficits found in violent couple relationships is poor communication (Cordova et al., 1993; Khalifian et al., 2019). Poor communication is one of the most endorsed relationship problems for men in treatment for IPV perpetration (e.g., Cordova et al., 1993; Feldman & Ridley, 2000; Gordis et al., 2005; LaMotte, 2017). Researchers in one study found that violent husbands exhibited more aversive interpersonal communication behaviors (i.e., criticizing, disagreeing, putting down) compared to distressed, nonviolent couples and "happily married" couples (Cordova et al., 1993, p. 560). Also in that study, researchers found that, in couple relationships where IPV was occurring, partners demonstrated greater levels of negative reciprocity (responding to negative behavior by exhibiting negative behavior) than distressed and happy couples (Cordova et al., 1993). Feldman and Ridley (2000) found that, relative to non-violent men, male perpetrators reported blaming, criticizing, and using other unilateral acts of verbal aggression with their partners. These men also reported more mutual verbal aggression, more mutual avoidance of discussing issues, and a greater proportion of destructive to constructive communication than their non-violent counterparts (Feldman & Ridley, 2000). Among young adult and adolescent females, verbal aggression by either person in the relationship

has been shown to be associated with physical violence by either person in the relationship (Messinger et al., 2011). The extant body of research documents that adults' communication skill deficits increase the risk of IPV perpetration and victimization in their intimate relationships (e.g., Cordova et al., 1993; Feldman & Ridley, 2000; Gordis et al., 2005; LaMotte, 2017; Messinger et al., 2011). Conversely, greater use of verbal reasoning is negatively associated with physical IPV (Messinger et al., 2011).

Given the important role of poor communication skills in IPV risk, scholars have focused on developing interventions to target communication skills (e.g., LaMotte et al., 2017). Communication skills were one of three primary target areas of development for one IPV prevention program conducted at the University of Maryland, Baltimore County (Khalifian et al., 2019). This program, entitled Skills for Healthy Adult Relationships (SHARe; Khalifian et al., 2019), uses an integrative CBT model to enhance participants' positive communication and reduce negative communication in their romantic relationships. Outcome research showed that SHARe significantly reduced participants' use of negative communication strategies with their intimate partners, increased their use of effective conflict management strategies with their partners, and reduced the occurrence of IPV such that participants experienced no incidences of IPV perpetration or victimization 15-months post-intervention (Khalifian et al., 2019). With another study, scholars developed a general premarital IPV preventive intervention, delivered remotely, to target adults' interpersonal communication skills (Braitwaithe & Fincham, 2007). Participants in this premarital intervention completed lessons on communication danger signs, impairments to constructive communication, and several communication and problem-solving techniques (Braitwaithe & Fincham, 2014). A series of randomized-

controlled trials showed that this premarital intervention, delivered remotely, effectively reduced IPV for college students in relationships up to 1-year post-intervention (Braithwaite & Fincham, 2007, 2009, 2014). Other IPV interventions include communication skills as a tertiary target. For example, given that substance misuse and IPV are frequently co-occurring issues (Cafferky et al., 2018), some substance use interventions include sessions focused on communication skills and have shown some promise in reducing IPV for couples with an IPV history (Easton & Crane, 2016).

In sum, communication skill deficits and consequent negative communication dynamics between partners are a key risk factor for IPV. Correspondingly, scholars have found that couples experiencing IPV often have deficits in their communication skills with their children and other parenting practices. The context of IPV and these skill deficits place them at very high risk for CM (e.g., Borrego et al., 2008). Conversely, the family stress associated with negative parent-child communication and relationship qualities increases couples' risk for IPV (Ashworth, 2015). In the next section, I review the extant research on the relationship between parenting and IPV risk, and the effectiveness of child and family interventions that target parenting practices to reduce CM and may reduce IPV risk.

Family Interventions: The Potential of PCIT

Decades of family intervention research has identified ways to address a host of family challenges, including family stress, child behavioral issues, parent-c1`hild relationship quality, and parenting practices (e.g., Borrego et al., 2008; Sanders, 1999). Caregivers who have experienced IPV often utilize harsh parenting practices, including using critical, aggressive, or cold communication patterns with their children (Borrego et

al., 2008; Neppl et al., 2017), and their relationships with their children may be negatively impacted (Herschell et al., 2017). Caregivers with a history of CM display similar self-regulation difficulties that increase IPV risk. For example, caregivers' social information processing deficits, such as aggressive response biases, reduce caregivers' ability to regulate aggressive impulses and behaviors, increasing the risk of CM perpetration (Berlin et al., 2011). These self-regulation deficits and communication styles are comparable to the behaviors of individuals who have been violent towards their partners (Berlin et al., 2011; Cordova et al., 1993; Feldman & Ridley, 2000). Family interventions rarely target only one family issue or one mechanism that increases risk for families, but instead target multiple, key risk factors. The history of child and family intervention research is extensive and beyond the scope of this dissertation study. However, in this section, I examine some of the literature on how family interventions target self-regulation and communication issues to reduce family violence risk.

There are dozens of empirically-supported family-based interventions that aim to reduce child problem behavior, improve caregiver-child relationships, improve positive parenting skills, and ameliorate family violence (e.g., Herschell & McNeil, 2005; Kumpfer, 1998; Menting et al., 2013; Sanders, 1999; Walker et al., 2002). These interventions are each unique in their approaches to achieve these outcomes, but many target similar factors, including self-regulation and communication. Many interventions emphasize positive parenting skills, including communicating with warmth, praise, and affection to promote children's prosocial behavior and improve family relationships (Kumpfer, 1998; Menting et al., 2013; Sanders, 1999; Walker et al., 2002). Some of these interventions also bolster caregivers' self-regulation skills, including emotion

management, altering maladaptive social cognitions, and behavioral self-control (Fisher & Skowron, 2017; Menting et al., 2013; Skowron & Funderbunk, 2021).

PCIT stands among these empirically-supported child and family interventions as a unique approach to child behavioral issues and parent-child conflict that addresses parenting practices, communication issues, and self-regulation (Chaffin et al., 2011; Eyberg, 2008; Lanier et al., 2012) and is considered the most effective at reducing child behavioral problems and CM with families at highest risk, such as child-welfare involved families and families with a history of CM (Borrego et al., 2008; Herschell & McNeil, 2005; Urqiuza & McNeil, 1996). In the next section, I describe PCIT in depth and discuss the extant literature on PCIT outcomes.

Parent-Child Interaction Therapy

PCIT is an evidence-based behavioral intervention that targets problem behaviors in children ages 2 to 8 years by teaching parents skills to improve their relationships and dyadic interactions with their children (Eyberg et al., 2008). PCIT utilizes unique, in-vivo skills coaching of parent-child interactions, and employs a two-phase approach aimed to enhance the parent-child relationship and improve child behavior management (Pearl, 2008). For the present study, only one caregiver participated in PCIT, but PCIT can be conducted with both caregivers with some procedure modifications. When PCIT was initially developed, each phase included approximately eight weekly sessions, beginning with a didactic session, during which the therapist introduces the caregivers to the general concept, relevant skills, and purpose of that phase of treatment (Eyberg et al., 2008). Since then, PCIT has been modified to include a third phase consisting of a clinical intake session and two motivational enhancement (ME) sessions at the outset of treatment

(Chaffin et al., 2004; Chaffin et al., 2011; Nekkanti et al., 2020) The ME sessions involve the caregivers engaging in activities to bolster their motivation to actively participate in treatment, such as weighing the pros and cons of their current parenting practices and completing an exercise encouraging self-efficacy beliefs, motivations, and expectations (Nekkanti et al., 2020). ME sessions are considered especially important for child-welfare involved caregivers who may be less motivated to engage in the treatment (Nekkanti et al., 2020). In this section, I will outline the Child-Directed Interaction (CDI) and Parent-Directed Interaction (PDI) phases of PCIT, focusing on the skills targeted during each phase.

Child-Directed Interaction

In this beginning phase of PCIT, treatment focuses on enhancing the relationship between the caregiver and their child. The CDI phase of treatment sees the therapist and caregiver working towards building warmth and attachment while following the child's lead in an interactive play scenario. Caregivers are coached through a "bug-in-the-ear" device, which allows the therapist to provide feedback and instruction from another room. During this phase of PCIT, caregivers are specifically coached to use five skills to respond to their child's behavior during play: Praise, Reflect, Imitate, Describe, and use Enthusiasm (PRIDE; Eyberg, 2004). *Praise* involves caregivers verbally noting approval to their child or providing an otherwise positive response to something the child said or did. *Reflecting* is a skill in which caregivers repeat back to their child something the child said to them. *Imitate* means for caregivers to copy the play of their children, truly following their child's lead. *Describe* refers to caregivers saying aloud what their child is

doing. Finally, caregivers are coached to show *enthusiasm* through tone, body language, and a high level of engagement when playing with their child.

All of these skills serve the purpose of creating open and warm communication between the caregiver and child as well as eliciting and reinforcing prosocial behaviors in the child, such as verbalizing feelings, and engaging in non-aggressive play (Borrego et al., 2008). Therefore, these skills are used only when the child is demonstrating prosocial behaviors and caregivers are coached to actively ignore minor behavioral problems, such as making inappropriate jokes or playing with toys aggressively (Borrego et al., 2008). In addition to learning skills to elicit prosocial behavior, caregivers also learn to avoid negative parent-child interactions, such as making critical statements towards the child, asking questions, communicating a lack of understanding, giving commands to the child during child-led play, or using negatively-worded statements (Borrego et al., 2008; Pearl, 2008). This process allows negative interactions to be replaced by positive interactions to facilitate growth in the parent-child relationship.

During CDI, caregivers practice using the PRIDE skills more frequently and effectively until they reach a point of mastery or evident comfort with the skills (Borrego et al., 2008). Standard PCIT protocols were initially set at 16-18 total sessions – or about 8-9 sessions for each phase. However, the CAPS Project allowed extensions for the families that enrolled in the study during the first year in effort to prioritize families meeting mastery (Nekkanti et al., 2020). Based on protocol established by Chaffin and colleagues (2004, 2011), the CAPS Project developers established a standard PCIT dosage of 22 sessions per family: two ME sessions, nine CDI sessions (one didactic and eight CDI coaching sessions), and 11 PDI sessions (one didactic and 10 PDI coaching

sessions) (Nekkanti et al., 2020). Finally, families are introduced to PCIT homework during this phase, which sees the dyad setting aside 5-10 minutes each day for a play session to practice the skills they are learning (Pearl, 2008). This at-home practice carries on into the next phase of PCIT.

Parent-Directed Interaction

Once caregivers have mastered the CDI skills, they proceed to the second phase of PCIT: PDI. This phase, known as the "Discipline" phase, focuses on helping caregivers employ effective child behavior management skills (Borrego et al., 2008, p. 498). While continuing to use the CDI skills that foster warmth and closeness, caregivers now learn to give specific and effective commands, and follow through with appropriate consequences based on their child's response. When children comply with a command within a 5-second window, caregivers are to respond with verbal praise in order to reinforce compliance. PCIT teaches a specific protocol for responding to children when they do not comply with a caregiver's command. After their child initially does not comply with a command, caregivers give a verbal warning of an appropriate negative consequence. A second instance of non-compliance following this warning initiates a time-out procedure with a standardized script and time limits (Borrego et al., 2008).

As the phase progresses into the later sessions, the therapists and the dyads work on how to implement effective commands and consequences in settings outside of the therapy space, including on family outings. Practicing these scenarios helps caregivers prepare to apply the skills learned in a variety of settings, particularly settings in which their children are likely to exhibit problem behavior. Caregivers meet mastery of the PDI skills when they demonstrate a consistent ability to deliver effective, direct commands

with which their children generally comply, and when they demonstrate their ability to consistently follow through with appropriate consequences for compliance and non-compliance. Once caregivers master the CDI and PDI skills, they graduate from the PCIT treatment.

PCIT Outcomes

Researchers have gathered much empirical evidence to show that PCIT is an efficacious intervention with children and families of diverse backgrounds (e.g., Rothenberg et al., 2019; Thomas et al., 2017). PCIT has been shown to be effective for populations in the United States, Australia, and New Zealand (Lineman et al., 2020; Woodfield & Cartwright, 2020), and for Latinx families in the United States and Puerto Rico (Matos er al., 2009; McCabe & Yeh, 2009). The intervention is also effective for children in the foster care system (Timmer et al., 2006). Reductions in CM are largely consistent with a variety of populations, including for caregivers of children with ADHD, traumatic brain injury, externalizing and internalizing difficulties and children on the autism spectrum; mothers with depression; and families with a history of domestic violence, though it is not recommended for families with ongoing severe IPV (Borrego et al., 2008; Cohen et al., 2012; Ginn et al., 2017; Herschell et al., 2017; Timmer et al., 2011; Ros & Graziano, 2019; Self-Brown et al., 2012). Researchers have also demonstrated PCIT's effectiveness when delivered in lab, community, and home settings, as well as with individual families and community groups (e.g., Fowles et al., 2018; Ros & Graziano, 2019)

Researchers have observed both the immediate and long-term effects of the intervention (Borrego et al., 2008; Eyberg et al., 2001). PCIT reduces child problem

behavior, as measured by the Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999), from pre- to post-treatment, and child participants continue to evidence reductions at 2 to 6 years post-treatment (Eyberg et al., 2001; Hood & Eyberg, 2003). Caregivers who participate in PCIT also show reduction in their use of CM, including participants with a history of child abuse and neglect (Chaffin et al., 2011; Lanier et al., 2012). Overall, PCIT positively impacts caregivers' internal barriers to warm parent-child interactions, reduces the harsh or abusive behaviors exhibited by some caregivers, decreases family stress, and increases the use of positive interpersonal skills. PCIT helps caregivers have more positive interactions with their children by improving interpersonal skills such as reflective listening and prosocial verbalizations and reducing caregivers' use of criticism and sarcasm (Eisenstadt et al., 1993; Hood & Eyberg, 2003). Beyond the skills-based benefits of PCIT, caregivers also experience reductions in internalizing problems, such as feeling a lack of control and low levels of parenting self-efficacy (Borrego et al., 2008; Hood & Eyberg, 2003) and improvement in stress levels and risk for CM (Borrego et al., 1999).

Scholars have identified a few mechanisms that indicate how PCIT improves CM and child behavior outcomes. Scholars have emphasized the importance of the therapist coaching the caregiver during the interaction activities (Shanley & Niec, 2010). Specifically, therapists are able to model the positive parenting skills to the caregiver using the in vivo coaching technique unique to PCIT, which rapidly improves caregivers' own use of these skills (Shanley & Niec, 2010). PCIT also improves *children's emotion regulation*, which has been empirically linked to numerous child problem behaviors, regardless of the level of emotion dysregulation the children exhibited at the outset of

treatment (Rothenberg et al., 2019). Further research shows that PCIT improves *caregivers' emotion regulation*, which can allow for caregivers to process their child's behavior and other parental stressors and respond in more adaptive ways (Lineman et al., 2020). Finally, PCIT reduces caregivers' levels of parental and family stress, which may be key in the reduction of risk of CM and IPV (Borrego et al., 2008; Hood & Eyberg, 2003). PCIT, then, shows promise as a potential family-centered IPV intervention.

PCIT is an effective intervention for many populations, and it is most notable for the proposed dissertation study that PCIT has been shown empirically to reduce CM risk for caregivers who have a history of IPV (Borrego et al., 2008; Chaffin et al., 2004; Herschell et al., 2005; Herschell et al., 2017) and targets mechanisms important to family-centered IPV preventive interventions. Chaffin and colleagues (2004) found that, for families with CM history, PCIT and treatment as usual (including parenting skills groups) bolstered positive parenting skills, but only PCIT reduced negative parent behaviors. The emphasis on relationship building during CDI, and the interpersonal and parenting skills taught during both PCIT phases, help caregivers with an IPV history reduce the negative impacts this experience has on their parenting (Borrego et al., 2008; Timmer et al., 2010). PCIT has been demonstrated to effectively improve the interpersonal skills of caregivers with a history of IPV and other forms of family violence and to improve the quality of their relationships with their children (e.g., Borrego et al., 2008; Brestan, et al., 1997). Further, PCIT results in positive outcomes for family members not directly involved in treatment (Brestan et al., 1997), which suggests that changes in caregiver behavior and the targeted caregiver-child relationship are impacting the entire family system. Though the literature provides evidence that PCIT is effective

for caregivers involved in IPV relationships (Borrego et al., 1999; Borrego et al., 2008) most of the literature focuses, understandably, on the child behavioral and dyadic interaction outcomes; little is known about the potential effects of PCIT on caregiver IPV. The impact of PCIT on IPV has been assessed in one dissertation study (Foley, 2011), but has not been examined since. The author of this study did not find a statistically significant effect of PCIT on IPV perpetration or victimization, but methodological problems impacted the ability to identify potential effects. For example, the sample comprised families who were court-ordered to attend treatment who may have had reason to underreport IPV in their relationship (Foley, 2011). Furthermore, their initial power analysis was based upon finding large effect sizes. With several caregivers not reporting any IPV history, the author had a limited sample size and may not have detected an existing small or medium effect (Foley, 2011). Therefore, it is worth further exploring the potential effects that PCIT may have on IPV within the caregivers' intimate relationships.

In summary, I have provided with this literature review a broad look into the detrimental impact of IPV on survivors, families, and society at large. To address this impact, scholars have developed several interventions aimed to help people in violent relationships develop important interpersonal skills. With the effectiveness of well-established interventions ranging from no different to slightly better than mandatory arrest (Stover et al., 2009), it has become clear that the efficacy of other interventions ought to be assessed. Since research indicates that deficits in communication skills are common for couples with IPV histories and that self-regulatory issues increase the likelihood of IPV perpetration, an intervention that improves these areas may

significantly reduce the prevalence of IPV in these couples. Although PCIT seems theoretically justified as a potential IPV intervention, only one study of which I am aware has explored such effects (Foley, 2011). The present study aims to fill this gap in the literature.

Summary

There are several, shared individual and contextual factors that place families at risk for CM and IPV. These shared risk factors present a unique opportunity for scholars to develop interventions that address both forms of family violence. Unfortunately, too few interventions have been developed and tested to do just that. Although not designed specifically to address IPV directly, PCIT is grounded in theoretical and empirical scholarship that reduces caregivers' maltreating behaviors by targeting shared individual and family systems risk factors for IPV and CM (Borrego et al., 1999; Borrego et al., 2008; Hood & Eyberg, 2003). Examining the impact of PCIT on caregiver IPV outcomes, therefore, is justified and important.

Study Purpose and Contributions

A significant oversight of IPV interventions is that, despite the shared risk factors and high co-occurrence rates of IPV and CM, few interventions address IPV within the broader context of family violence. As indicated previously, most IPV interventions target either sociocultural influences of IPV or they are centered around the skill deficits of the perpetrators or participating couples. Some family violence interventions have addressed the broader family system implications of IPV by acknowledging the impact of IPV on children who have been exposed to it (McWhirter, 2011; Stover et al., 2009). These interventions have been effective at mitigating the deleterious effects of IPV

exposure during childhood (Stover et al., 2009); however, few researchers have examined the impact of family interventions on caregivers and their relationships with each other (McWhirter, 2011; Stover et al., 2009). Of the few that have examined these effects (e.g. McWhirter, 2011), study results indicate that the interventions improve some individual outcomes for survivors and children but do not provide insight into whether IPV perpetration is reduced and couple behaviors and family processes are improved.

The purpose of this dissertation study was to explore the effects of PCIT on IPV for families with a history of CM. Foley (2011) calls for further examination of the impact of PCIT on IPV to better establish an understanding of how PCIT may serve as an intervention for caregivers who have experienced IPV. It was hoped that study findings would contribute positive evidence for an existing, empirically-supported intervention that impacts IPV (while acknowledging and addressing the family dynamics that increase IPV risk) and would promote our understanding of how PCIT impacts caregivers' and their partners' behaviors with each other.

Toward this study aim, I aimed to answer two research questions: (a) Does PCIT significantly impact the frequency of IPV over time? (b) Are the effects of PCIT on IPV frequency moderated by participant age and income? I hypothesized that IPV frequency at post-intervention would be lower for caregivers who participated in PCIT compared to caregivers who were assigned at random to a SAU control condition. I did not have directional hypotheses with regards to how age and income would impact PCIT effects. There is ample evidence to suggest that more at-risk families respond better to some behavioral health interventions while lower-risk families do not, and vice versa (e.g.,

Lundahl et al., 2006; McTaggart & Sanders, 2007; Theise et al., 2014). The examination of age and income as covariates was exploratory.

In this chapter, I have defined IPV, examined the extant literature on the shared risk factors for IPV and CM, and discussed why PCIT could be a suitable IPV intervention for families in the child welfare system. I also described how the present dissertation study aimed to contribute to the literature on the effect of PCIT on IPV. In the next chapter I describe all study methods used to address the study purpose and answer the study research questions.

CHAPTER III

METHODS

This chapter provides details about the research methods and extant data that I used to complete this dissertation study.

Research Design and CAPS Data Set

Present study data were collected as part of the Coaching Alternative Parenting Strategies (CAPS) Project (Skowron, 2019, R01 DA036533). The CAPS Project, funded by the National Institute on Drug Abuse/National Institutes of Health (NIDA/NIH), is a 5-year, longitudinal, randomized-controlled trial that began in 2015. The primary aim of the CAPS Project is to examine PCIT's potential target mechanisms of change including, "neural, physiological and behavioral processes related to parent self-regulation and socio-cognitive processes" (Nekkanti et al., 2020, p. 2). All CAPS Project study procedures involving human subjects were approved by the University of Oregon Institutional Review Board prior to the commencement of the study. Self-report survey, physiological, behavioral, and neurological data were collected at three time points from caregivers and their children. After initial assessments, caregivers were randomly assigned to the PCIT treatment condition relative to the SAU condition at a rate of 1.5:1. Families who were assigned to PCIT completed a second assessment at the midpoint of their treatment. All families completed a final assessment approximately 6 months after their initial assessment (Nekkanti et al., 2020).

Participants

All caregivers who participated in the CAPS Project were included in this dissertation study. Study participants included caregivers and their child who completed

Wave 1 and Wave 3 study assessments (N = 204). The Oregon Department of Human Services (DHS) Child Welfare and Self Sufficiency divisions pre-selected eligible caregivers and their children from their database for recruitment into the CAPS Project. To be recommended for the CAPS Project by DHS, the primary caregiver had to (a) have a record of suspected or indicated CM that (b) did not include a history of perpetrating child sexual abuse and (c) have a child between 3 and 8 years old at the time of study recruitment. Following this pre-selection process by DHS, CAPS research assistants contacted families to conduct further study eligibility screening. Additional CAPS Project study inclusion criteria required that:: (a) the participating caregiver was at least 18 years old, (b) the caregiver was the participating child's biological or custodial parent, (c) the participating child was no more than 7 years old at study entry, (d) no parent or caregiver in the home had a documented history of child sexual abuse per welfare records, (e) the caregiver spoke sufficient English to engage in the CAPS study assessment, and (f) the caregiver provided written informed consent. Detailed demographic information for caregiver and child participants is provided in Table 2.

Caregiver Participants

Of the total dissertation study sample, 88.2% of caregivers identified as female (n = 180) and ranged in age from 18 to 64 years (M = 32.29, SD = 6.34). Caregiver participants self-identified racially as follows: 70.1% (n = 143) non-Hispanic White, 2.5% (n = 5) Hispanic American/Latinx, 2.0% African American (n = 4), 1.5% (n = 3) Pacific Islander, and 1.5% (n = 3) Native American. Of the remaining participants, 20.6% (n = 42) identified as biracial or multiracial and 2.0% (n = 4) participants did not provide or did not know their racial identification. In adherence with study inclusion criteria, all

caregivers had at least partial custody of the child that was participating in the CAPS Project with them. The vast majority of caregivers (98.0%, *n* = 200) reported that they were the child's birth parent. A few caregivers were not biological parents, with 1% *(n* = 2) identifying as grandparents, 0.5% *(n* = 1) as a step-parent, and 0.5% (*n* = 1) as an adoptive parent.

Caregivers' self-reported marital status was as follows: 45.6% (*n* = 93) single, 17.2% (*n* = 35) married, 11.3% (*n* = 23) living together, 10.3% (*n* = 21) separated, 10.8% (*n* = 22) divorced, and 0.5% (*n* = 1) widowed. In response to this question, an additional 4.4% (*n* = 9) of caregivers selected "other," following which 1.5% (*n* = 3) of participants wrote in "engaged," 0.5% (*n* = 1) wrote "engaged but living separately," 0.5% (*n* = 1) wrote in "in a relationship," 0.5% (*n* = 1) wrote in "living with ex, planning on getting married again," 1.0% (*n* = 2) wrote in "married but not living together," and 0.5% (*n* = 1) wrote in "married but separated."

Participants self-reported their current employment status as follows: 53.4% (*n* = 109) not currently employed, 22.5% (*n* = 46) full-time stable employment, 17.2% (*n* = 35) part-time stable employment, 2.9% (*n* = 6) full-time seasonal employment, and 3.4% (*n* = 7) part-time seasonal employment. Only one participant did not provide a response. Caregivers were also asked to provide their yearly household income. Of the full 204-person sample, only 171 caregivers provided responses and they reported an average yearly income of $17,929.57 (*SD* = 1,037.49), with a range of $0-$90,000.

Caregivers' highest education level completed included: 1.5% (*n* = 3) 7th grade, 2% (*n* = 4) junior high, 13.2% (*n* = 27) some high school, 49.5% (*n* = 101) either graduated from high school or earned their GED certificate, 13.2% (*n* = 27) earned an

associates or junior college degree, 5.4% (*n* = 11) earned a bachelor's degree, and 1% (*n* = 2) earned a graduate degree. Additionally, 14.2% (*n* = 29) of the caregivers reported that they completed a technical/vocational training certificate or course.

Child Participants

No child data were analyzed for this dissertation study, but their demographic data are presented to provide a larger context of caregiver participants' families. A total of 204 children participated in this study along with their caregivers, with 54.9% (*n* = 112) of children identified by their caregivers as male. The children ranged in age from 3 to 8 years at the Wave 1 CAPS assessment (*M* = 4.76, *SD* = 1.40). Child participants were identified racially by their caregivers as follows: 57.4% (*n* = 117) non-Hispanic White, 2.9% (*n* = 6) Hispanic American/Latinx, 1.5% (*n* = 3) African American, 0.5% (*n* = 1) Native American, and 36.8% (*n* = 75) biracial or multiracial. Only 1% (*n* = 2) of participants did not provide their child's race. The highest education level completed for children as reported by their caregiver was: 34.8% (*n* = 71) Preschool/Head Start, 21.1% (*n* = 43) kindergarten, 8.8% (*n* = 18) 1st grade, and 14.7% (*n* = 30) 2nd grade. An additional 20.6% (*n* = 42) of caregivers reported their child had not yet enrolled in school at any level.

PCIT Treatment Group Participants

The treatment group comprised 120 families. Of the caregivers, 89.2% (*n* = 107) identified as female, and 48.3% (*n* = 58) of the children identified as female. The caregivers in this group had an average age of 32.41 years (*SD* = 6.70), and their children who participated in the study had an average age of 4.70 years (*SD* = 1.36). Caregivers in this group identified racially as: 67.5% (*n* = 81) non-Hispanic White, 2.5% (*n* = 3)

Hispanic American/Latina, 1.67% (*n* = 2) African American, 2.5% (*n* = 3) Pacific Islander, and 0.8% (*n* = 1) Native American. Most of the caregivers in this group (97.5%, *n* = 117) were the participating child's biological parent. The sample included 0.8% (*n* =1) adoptive parents and 1.67% (*n* = 2) grandparents. Nearly half (43.4%, *n* = 52) of the caregivers in the treatment group were single. Of the remaining caregivers, 19.2% (*n* = 23) were married, 14.2% (*n* = 17) living together, 7.5% (*n* = 9) separated, 10.0% (*n* = 12) divorced, .8% (*n* = 1) widowed, and 5.0% (*n* = 6) of caregivers responded "other."

The caregivers in the treatment group reported their level of education achievement as follows: 0.8% (*n* = 1) had completed 7th grade or less, 2.5% (*n* = 3) completed junior high school, 13.3% (*n* = 16) completed some high school, 48.3% (*n* = 58) completed high school or received their GED,, and 13.3% (*n* = 16) obtained a technical/vocational training certificate. Additionally, 15.0% (*n* = 18) of caregivers in the sample earned an associate's degree, 5.0% (*n* = 6) completed a bachelor's degree, and 1.7% (*n* = 2) completed a graduate degree. About half of the caregivers (50.8%, *n* = 68) in the treatment group were not employed for pay. Of those who were employed for pay, 22.5% had full-time stable employment (*n* = 27), 20.0% (n = 24) had part-time stable employment, 4.2% (*n* = 5) had part-time seasonal employment, and 2.5% (*n* = 3) had full-time seasonal employment. Of the caregivers who reported their annual income (*n* = 99), the average income was $19,046.18 (*SD* = 13,288.84), with a range from $0-$66,000.

Preliminary analyses indicated that, after families were randomized into treatment and control groups, there were no significant differences in group demographics with respect to age, gender, education, income, race, and marital status. Detailed demographic information for each group is provided in Table 2.

PCIT Treatment Engagement

In the CAPS Project, PCIT treatment consisted of two ME sessions, nine CDI sessions (one didactic and eight CDI coaching sessions), and 11 PDI sessions (one didactic and 10 PDI coaching sessions) (Nekkanti et al., 2020). Of the 120 families randomized to the PCIT treatment group, 26.7% (n = 32) did not attend any PCIT sessions. Of the 88 families that completed at least one PCIT session, the average number of CDI sessions attended was 6.47 (SD = 3.74) and the average number of PDI sessions was 5.05 (SD = 5.08). These data suggest that caregivers, on average, either reached mastery or stopped attending treatment prior to reaching the standard maximum number of sessions in CDI and PDI.

Procedures

An overview of CAPS study procedures is provided in Figure 1. The following is a brief description of each research activity that participants completed.

Screening

Families were first screened by a DHS staff member and then by a CAPS research team member to establish whether each potential participant met all study inclusion criteria. Once families had been screened and provided written consent, all participants completed Wave 1 (W1) and Wave 3 (W3) assessments, which were scheduled at least 6 months apart. Each assessment consisted of two, 2- to 3-hour long sessions occurring approximately 1 week apart.

Assessment Session 1

During the first session, caregivers and their child were, first, guided by two trained research assistants – one to work with the caregiver and one to work with the

child – through a series of tasks designed to assess caregiver-child interactions. Between each of these tasks, the dyads would do a resting activity for which they sat still on a couch watching a neutral video of aquatic animals. During the resting activity, the caregiver and child were connected to a heart and respiratory system monitor, which provided a live feed of their heart rate and respiratory functioning that was observed by a third trained research assistant. In the second half of the first assessment session, the caregiver and their child were separated to complete individual computer-administered tasks designed to assess aspects of self-regulation, including attention, inhibitory control, and emotion regulation. Caregivers were connected to an electroencephalogram (EEG) monitor while completing their tasks on the computer. Periodically during the session, the caregiver was given questionnaires that asked for their demographic information, social status, and child's behavior. Once the caregiver and child were separated, and before the caregiver was connected to the EEG monitor, the research assistant continued to administer questionnaires to the caregiver that asked about their own health and their child's health. The first assessment session ended when both the caregiver and child completed their individual tasks.

Assessment Session 2

Children and caregivers would spend most of the second session completing individual tasks. The child would spend the first segment of this session connected to a children's version of the EEG monitor and complete children's versions of the self-regulation tasks the caregivers completed in session one. Caregivers would sit with the research assistant assigned to them to complete a series of questionnaires that assessed a wide variety of variables related to child maltreatment. Once the caregiver and child

completed their individual tasks, the research assistants would collect biophysiological data (i.e., blood sample, spirometry tests). At the end of the second session of the W1 assessment, families were randomly assigned to the treatment group and began PCIT treatment with a trained CAPS clinician or to the control group and asked only to return for the W3 follow-up assessment in 6 months. Families assigned to the treatment group also completed a Wave 2 assessment, which occurred at the midpoint of their PCIT participation, or approximately 16 weeks after the W1 assessment. This second assessment only required one session, which was a significantly abbreviated version of the two sessions they completed during the W1 and W3 assessments.

Initially, the CAPS Project did not assess caregivers' experiences of IPV. Due to my interest in exploring IPV in the broader context of family violence, as well as family interventions, Principal Investigator Elizabeth Skowron added the Conflict Tactics Scale-Revised (CTS2; Straus et al., 1996) and Work/School Abuse Scale (WSAS; Riger et al., 2000) when I joined the CAPS research team, 1 year after the CAPS Project began. To capture the IPV experiences of as many caregivers as possible, the CTS2 and the WSAS were administered at different stages of each caregiver's involvement in the study. Families that joined the study after we added the CTS2 and WSAS were asked to complete the WSAS during their first W1 assessment session, and the CTS2 during the larger battery of surveys administered during the second W1 session. Families that had already completed their W1 assessment prior to the addition of the CTS2 and WSAS, completed these surveys either during their second W3 session or during a phone interview conducted just before their second W3 session. See Nekkanti et al. (2020) for a

detailed outline of CAPS study procedures that are not examined in the present dissertation study.

Measures

Table 3 provides a summary of all study measures completed and at what assessment time points and sessions. Below is a description of all study measures used to complete this dissertation study.

Demographic Information

During the pre-treatment assessment, a CAPS research assistant asked caregivers for their age, racial and ethnic identity, gender, and level of education as well as that of the child participating in the project. Caregivers also provide information about their relationship to the participating child, relationship status, and household income. Research assistants asked for this information by following prompts from a Qualtrics survey open on a laptop. Caregivers were given booklets with all response options, which research assistants input into the Qualtrics survey.

Intimate Partner Violence

I used the Conflict Tactics Scale-2 (Straus et al., 1996) to measure caregivers' experiences of physical, psychological, and sexual IPV. The CTS2 comprises 39 paired self-report items asking participants about behaviors they have used with their partners when conflict arises. Item pairs ask how frequently the participant used specific behaviors in the past 6 months and how often the participant's partner used them. For this study, caregivers were asked at the W1 assessment about the behaviors they and their partners used in the past 6 months preceding their study involvement. For the W3 assessment, which occurred at least 6 months after the W1 assessment, caregivers were

asked again about the occurrence and chronicity of their and their partners' use of these behaviors over the past 6 months – roughly aligning with the length of time involved in the study.

Items on the CTS2 are rated on a 7-point Likert-scale: 0 = *never*, 1 = *Once*, 2 = *Twice*, 3 = *3 – 5 times*, 4 = *6 – 10 times*, 5 = *11 – 20 times*, and 6 = *20+ times*; 7 denotes that the behavior has occurred, but not within the given time frame. The CTS2 can be scored for chronicity and for prevalence. Chronicity examines how frequently these behaviors are being used by and against the participant within a given time frame (Straus et al., 1996). Prevalence scores are dichotomous and indicate whether the behavior occurred or not during the past 6 months. In order to observe the level of impact PCIT had on caregivers' use and experience of IPV, I must examine how frequently these behaviors happened in the 6 months preceding the participant's study involvement and the time between W1 and W3; thus, only chronicity scores were included in the analyses. Chronicity scores are calculated by summing each of the participant's responses, using the midpoints for each response above 2. That is, a response of *3–5 times* is counted as 4; *6–10 times* is counted as 8; *11–20 times* is counted as 15 (Straus et al., 1996). If a participant reports that the behaviors has occurred 20 or more times in the past 6 months, the creators of the measure suggest using a midpoint score of 25 (Straus et al., 1996). Response option 7 ("This has happened, but not in the past 6 months") is not counted towards an individual's total chronicity score because it does not provide information about the frequency of behaviors in the given time frame (Straus et al., 1996).

The CTS2 consists of five subscales: Psychological Aggression (e.g., "Insulted or swore at partner"), Physical Assault (e.g., "Pushed or shoved partner"), Sexual Coercion

(e.g., “Used threats to make partner have sex”), Injury (e.g., “Partner went to doctor for injury”), and Negotiation (e.g., “Suggested compromise to an argument”). Per suggestion from one of the measure authors, Sherry Hamby, subscale scores were utilized in my analyses, as opposed to using a total IPV score (personal correspondence, 2020). With a sample of 317 heterosexual undergraduate sociology and criminology students in relationships, internal consistency coefficients for each subscale were reported as: Psychological Aggression, a = .79; Physical Assault, a = .86; Sexual Coercion, a = .87; Injury, a = .95; Negotiation, a = .86 (Straus et al., 1996). With the current sample, calculated internal consistency coefficients for each subscale were: Psychological Aggression, a = .93; Physical Assault, a = .94; Sexual Coercion, a = .79, Injury, a = .85, Negotiation, a = .92. These internal consistency scores indicate that the CTS2 demonstrates adequate to good reliability (Cronbach, 1951).

As I detailed previously, the participants’ relationship statuses were widely varied. Although the responses “single,” “separated,” “divorced,” and “widowed” suggest a lack of a current partner, it is possible that these caregivers have romantic partners to whom they are not married and with whom they did not live. Therefore, we administered the CTS2 to all caregivers. Caregivers who were not involved in an intimate relationship during the past 6 months were asked to only use response options 0 (“This has never happened”) or 7 (“This has happened, but not in the past 6 months”); thus, chronicity scores for these individuals would be zero.

Work/School Abuse

We used the Work/School Abuse Scale (WSAS; Riger et al., 2000) to assess participants’ experiences of intimate partner abuse that involved work or school settings

and tactics to sabotage participants' work and school performance. Work/school abuse is not directly assessed by the CTS2 (Straus et al., 1996). The WSAS comprises 12 items indicating various behaviors that perpetrating partners use to affect the other partner's ability to work or go to school. These 12 items are divided into two, 6-item subscales: Restraint Tactics and Interference Tactics. With a sample of adult, female identified domestic violence survivors living in the Chicago area, internal consistency coefficient alphas were reported as .82 for the all 12 WSAS items and as .73 and .77 for the Restraint Tactics and Interference Tactics subscales, respectively (Riger et al., 2000). With the same study sample, Riger et al. (2000) found that the WSAS was significantly and modestly correlated with Sullivan's (1992) modified version of the CTS ($r = .38$, $p < .05$), providing initial data to suggest that the WSAS and CTS measure similar constructs.

Due to parameters of the parent study around how many measures caregivers would be asked to complete and the duration of the assessments, we asked caregivers to complete only the Interference Tactics subscale. All six Interference Tactics items began with the item stems, "In the past 6 months, my partner…" and assessed tactics like, "come to work/school to harass you" and "physically force you to leave work/school." The original WSAS measure only assesses the respondent's experience of these tactics at the hands of their intimate partner. To gauge caregiver participants' perpetration of these behaviors, we created paired items similar to those included in the CTS2 (i.e., "my partner came to work to harass me" and "I did this to my partner"). Response options were identical to the CTS2 (0 = *Never*, 1 = *Once*, 2 = *Twice*, 3 = *3–5 times*, 4 = *6–10 times*, 5 = *11–20 times*, and 6 = *20+ times*; 7 denotes that the behavior has occurred, but not within the given time frame). WSAS Interference Tactics subscale scores were

calculated by summing the participants' responses, using the midpoints for each response above 2. That is, a response of *3–5 times* is counted as 4; *6–10 times* is counted as 8; *11–20 times* is counted as 15 (Straus et al., 1996). As was suggested for scoring the CTS2, responses of 20 or more times were counted as 25 (Straus et al., 1996). With the current dissertation study sample, internal consistency for the modified Interference Tactics subscale was calculated as $\alpha = .87$, which denotes a stronger level of internal consistency than the original, unmodified measure. Similar to procedures for the CTS2, caregivers who were not involved in an intimate relationship during the past 6 months were asked to only use response options 0 ("This has never happened") or 7 ("This has happened, but not in the past 6 months"). Response option 7 is not counted towards an individual's total chronicity score because it does not provide information about the frequency of behaviors in the given time frame (Straus et al., 1996).

CHAPTER IV

RESULTS

In this chapter, I describe the results of my dissertation. I begin by addressing the results of my preliminary analyses. Specifically, I discuss the missing data, skewness of the outcome data, and how the main analyses accounted for the distribution of data exemplified by the current data set. I continue by discussing the descriptive correlation analysis results. To answer my two dissertation questions, I conducted zero-inflated negative binomial regression analyses, the results of which are also detailed below.

Missing Data

A total of 204 caregivers completed at least their two W1 Assessment appointments. CTS2 data from W1 was available for 94.1% of caregivers *(n* = 192). WSAS data from W1 was available for 90.1% of caregivers (*n* = 185). At W3, CTS2 data were available for 76.5% of caregivers (*n* = 156), and WSAS data were available for 73.5% of caregivers (*n* = 150). In each analysis, cases with missing data were dropped.

Preliminary Data Analyses

I conducted preliminary analyses, using SPSS version 25 for Mac computers (IBM, released 2017), to check for statistical assumptions and examine the distribution of study data (Keppel & Zedeck, 1989). Examination of descriptive data, histograms, and scatterplots showed significant positive skew for many of the study variables – most notably overall perpetration, victimization, and total CTS2 scores at W1 and W3; WSAS perpetration and victimization scores at W1 and W3; and the physical assault, sexual coercion, and injury CTS2 subscales at W1 and W3. This positive skew, indicating that most caregivers had no history of IPV or had not experienced IPV in the past 6 months,

was congruent with IPV frequencies and skew documented with national samples (Caetano et al., 2008; Straus & Gelles 1990; Straus et al., 1996). I explain in the main analyses section how I dealt with the positive skew.

Using G*Power 3.1.9.6 for Mac OS X 10.7 to 10.15 (Faul et al., 2007; version released 2020), I conducted an a priori power analysis to test the difference between PCIT and control groups over two time points using a repeated-measures, between-factors test, a small effect size (f = .20; Cohen, 1988), and an alpha of .05. Results indicated that a total sample size of 134 is required to achieve a power of .80. The total sample size for this proposed dissertation study is 204; however, outcome data for the CTS2 and WSAS was only available for 156 and 150 participants, respectively. Zero-inflated negative binomial (ZINB) analyses for both research questions were conducted using R (R Core Team, 2017).

Means and Correlations

Means, standard deviations, and score ranges for all W1 and W3 study variables are provided in Table 4. Overall, caregivers in this sample had either perpetrated or survived one or more of the abusive behavior tactics assessed by the CTS2 11 times in the past 6 months; with caregivers perpetrating one of these behaviors an average of 5.53 times (SD = 9.47) and being the victim of one of these behaviors an average of 5.47 times (SD = 9.10) in the past 6 months. Means also show that work interference perpetration (M = 0.13, SD = 0.77) and victimization (M = 0.17, SD = 0.98) were highly infrequent. The average number of reported IPV experiences for all caregivers decreased from W1 to W3 (see Table 4). Further, the average CTS2 perpetration score for caregivers who were randomized to the PCIT intervention group decreased from W1 (M = 8.80, SD = 12.84)

to W3 (*M* = 6.77, *SD* = 10.96), as did the CTS2 victimization scores from W1 (*M* = 10.96, *SD* = 16.61) to W3 (*M* = 5.53, *SD* = 7.80). For the control group, the average CTS2 perpetration score at W1 (*M* = 4.19, *SD* = 7.23) decreased at W3 (*M* = 3.75, *SD* = 6.46) and the average CTS2 victimization score at W1 (*M* = 5.77, *SD* = 11.79) decreased at W3 (*M* = 5.38, *SD* = 10.76). The significance of these decreases and the impact of treatment can only be determined with the main analyses.

Bivariate and Pearson correlation coefficient values are provided in Table 5. Some correlations among study variables were in the expected directions and others were not. Caregiver age was not significantly correlated with any of the outcome variables. Caregiver gender was significantly, positively correlated with W3 CTS2 perpetration scores ($r = .16$, $a < .05$), indicating that female-identified caregivers were more likely to perpetrate behaviors assessed by the CTS2. Marital status was also significantly, negatively related to perpetration ($r = -.301$, $a < .01$) and victimization ($r = -.17$, $a < .05$) of CTS2 behaviors. Surprisingly, household income was positively related to work interference perpetration ($r = .254$, $a < .01$) but no other main outcome variables. Caregiver education was not significantly correlated with any of the outcome variables. Household income was significantly, positively related to several victimization and perpetration subscales. In terms of IPV experiences across W1 and W3 data, all W1 IPV data and W3 IPV data were highly correlated for the full sample.

Main Analyses

In this section, I present the results of my main study analyses. I focus separately on the impact of PCIT on IPV perpetration and on IPV victimization. I conducted all main analyses using an intent-to-treat (ITT) approach, which refers to the practice of

attributing all study participants to the groups to which they were randomized, without accounting for treatment condition engagement (Kruse et al., 2002). ITT is regarded as the standard analysis for examining individual-level change in randomized controlled trials (McCoy, 2017). ITT is carried out by retaining participants' data, even those who either never engaged in treatment or dropped out at some point during the treatment, when assessing the effectiveness of the treatment (Kruse et al., 2002; McCoy, 2017). ITT avoids the biases and spurious significant effects that are caused by omitting non-engaged participants (Kruse et al., 2002; Mahniah & Rao, 2004; McCoy, 2017).

The positive skew of most study data due to the data having an overrepresentation of 0 scores – known as over-dispersion – required me to conduct ZINB regressions (Atkins & Gallup, 2007) with W3 IPV perpetration and victimization as the dependent variables and participant treatment condition as the independent variable, with W1 IPV perpetration and victimization as covariates. ZINB analyses produce two model results sections: (a) *a count model*, which can be used to assess the impact of the independent variable of interest (PCIT) and any covariates while accounting for excess zero scores and (b) *a zero-inflated model*, which shows us the odds that a participant is among those who have never experienced the outcome variable, and how the independent variable and covariates affect these odds. Because only six caregivers reported work abuse during their involvement in this study, I was unable to include work abuse in the main analyses.

Research Question 1: Does PCIT Significantly Impact the Frequency of IPV Over Time?

For my first research question, I conducted ZINB regression analyses to examine treatment effectiveness, first using IPV victimization chronicity at W3 as the dependent

variable and treatment group as the independent variable with two levels (PCIT group and the control group). I repeated the analysis with IPV perpetration. For these analyses, I also included W1 perpetration and victimization data as covariates in the regression. A ZINB analysis is a variant of the Poisson analysis that is most appropriate for count data, or response variables that count the number of occurrences of an event, and are not normally distributed (Atkins & Gallop, 2007; Green, 2021). What makes this analysis best for the current study is the fact that the large number of zeros in the data set resulted in an over-dispersed Poisson model, which is accounted for in a ZINB regression model (Atkins & Gallop, 2007).

Victimization. The first model produced by the ZINB analysis, a count model, examined how PCIT participation impacted caregivers' IPV victimization chronicity at W3. I hypothesized that caregivers who participated in PCIT would show significant decreases in IPV victimization at W3. The null count model with no predictors showed that CTS2 victimization scores for caregivers who could have had a non-zero score (e.g., were in a relationship during the past 6 months, or were in contact with a past partner during the past 6 months) was 2.13 and this model was significant ($p < .001$). That number decreased by 0.32 ($B = -0.32$, $z = -1.56$) for caregivers who were assigned to PCIT; however, this effect was non-significant ($p > .05$). Caregivers' W1 CTS2 victimization scores also did not significantly predict W3 CTS2 victimization scores ($p > .05$), with W3 scores increasing by 0.01 for each one-point increase in W1 scores ($B = 0.01$, $z = 1.43$). These count model results showed that PCIT did not significantly impact the frequency of caregivers' IPV victimization from W1 to W3.

The zero-inflated model of the ZINB analysis, which estimates the likelihood that a participant would be among those who could only have a zero score (e.g., were not in a relationship during the past 6 months, had no contact with past partner), showed that, with no predictors, caregivers were 0.84 times more likely to be among those who could only have a W3 CTS2 victimization score of zero than to not be in that group, which was not statistically significant ($B = 0.84$, $z = 1.96$, $p > 05$). These odds increased by 0.10 ($B = 0.10$, $z = 0.15$, $p > .05$) for caregivers in the PCIT group. W1 CTS2 victimization scores decreased the odds of being among the caregivers who could only have a W3 CTS2 victimization score of zero by 1.42 ($B = -1.42$, $z = -1.87$, $p > .05$). These zero-inflated model results showed that neither treatment condition nor W1 CTS2 victimization scores had a significant impact on the odds that a caregiver was among the group who could only have zero scores.

Perpetration. As done with W3 CTS2 victimization scores, I conducted a ZINB regression analysis for W3 CTS2 perpetration scores. I hypothesized that caregivers' participation in PCIT would result in a significant decrease in IPV perpetration scores at W3. The null count model with no predictors showed that CTS2 perpetration scores for caregivers who could have had a non-zero score was 1.89 ($B = 1.89$, $z = 14.61$, $p < .001$). That number decreased by 0.09 ($B = -0.09$, $z = -0.59$, $p > .05$) for caregivers who were assigned to PCIT, but this effect was non-significant. Unlike the previous model, caregivers' W1 CTS2 perpetration scores did significantly predict W3 CTS2 perpetration scores, with expected W3 scores increasing by 0.03 for each one-point increase in W1 scores ($B = 0.03$, $z = 6.86$, $p < .001$). These count model results do not support my initial

hypothesis that PCIT would significantly impact the frequency of caregivers' IPV perpetration from W1 to W3.

The zero-inflated model of this analysis showed that, with no predictors, caregivers in this sample were 0.73 times more likely to be among those who could only have a W3 CTS2 perpetration score of zero than to not be in that group ($B = 0.73$, $z = 2.49$, $p = .013$). These odds decreased by 0.44 ($B = -0.44$, $z = -1.20$, $p > .05$) for caregivers in the PCIT group. W1 CTS2 perpetration scores decreased the odds of being among the caregivers who could only have a W3 CTS2 victimization score of zero by 0.13 ($B = -0.13$, $z = -3.50$, $p < .001$). Of these variables, only W1 CTS2 perpetration scores had a significant impact on the odds a caregiver was among the group who could only have zero scores.

In sum, ZINB regression results showed that the answer to Research Question 1 is 'no.' Participation in PCIT did not significantly impact caregivers' IPV victimization and perpetration experiences from W1 to W3 as hypothesized.

Research Question 2: Are the Effects of PCIT on IPV Frequency Impacted by Participant Age and Socioeconomic Status?

For my second research question, I examined if certain caregiver demographic variables influence PCIT's effectiveness in reducing IPV. I repeated the ZINB analysis with W3 CTS2 Perpetration and Victimization as the dependent variables and treatment group as the independent variable, this time including caregiver age and income as covariates in addition to W1 CTS2 scores. Initial attempts at running this analysis resulted in error messages due to income scores ranging from $0 - $99,000. To reduce

this level of variance, income was rounded to the nearest thousand. That is, a yearly income of $99,000 was entered into the model as 99.

Victimization. The count model of this ZINB regression analysis showed that, with no predictors, W3 CTS2 victimization score for caregivers who could have had a non-zero score was 3.15 (B = 3.15, z = 3.06, p = .002). That number decreased by 0.36 (B = -0.36, z = -1.28, p > .05) for caregivers who were assigned to PCIT. In this model, caregivers' W3 CTS2 victimization scores remained almost unchanged for each one-point increase in W1 CTS2 scores (B = 0.00, z = 0.23, p > .05). Again, the impact of PCIT and W1 scores on W3 victimization was not significant. The impact of caregiver age and income were also non-significant, with W3 CTS2 victimization scores decreasing about 0.02 (B = -0.02, z = -0.72, p > .05) for every 1-year increase in caregiver age, and decreasing about 0.01 (B = -0.01, z = -0.61, p > .05) for every $1,000 increase in annual income. These results do not support my hypothesis that age and income would influence the impact of PCIT on caregivers' experiences of IPV victimization frequency.

The zero-inflated model of this ZINB analysis showed that, with no predictors, caregivers in this sample were 2.16 times more likely to be among those who could only have a W3 CTS2 victimization score of zero than to not be in that group (B = 2.16, z = 1.24, p > .05). All of the tested covariates reduced these odds, but only W1 CTS2 scores and income reduced these odds significantly. W1 CTS2 victimization scores decreased the odds of being among the caregivers who could only have a W3 CTS2 victimization score of zero by 0.33 (B = -0.33, z = -3.14, p = .002). Income decreased these odds by 0.09 (B = -0.09, z = -2.51, p = .012) for every $1,000 increase in income. The odds of being among the caregivers who could only score zero at W3 decreased by 0.12 (B = -

0.12, z = -0.20, p > .05) for caregivers in the PCIT group. Lastly, every 1-year increase in caregiver age predicted nearly no change in the odds of a caregiver being part of the group that could only score zero on the CTS2 at W3 (B = -0.00, z = -0.04, p > .05). In essence, the zero-inflated model results showed that assignment to PCIT and age did not have a significant impact that a caregiver was among the group who could only have zero scores.

Perpetration. As with IPV victimization, I conducted a ZINB regression analysis to examine if age and income impacted the effects of PCIT on caregivers' IPV perpetration frequency. The count model of this analysis showed that, with no predictors, W3 CTS2 perpetration score for caregivers who could have had a non-zero score was 1.47 (B = 1.47, z = 2.54, p < .05). That number decreased by 0.05 (B = -0.05, z = -0.29, p > .05) for caregivers who were assigned to PCIT. Caregivers' W3 CTS2 perpetration scores increased .03 (B = 0.03, z = 4.92, p < .001) for every one-point increase in W1 CTS2 perpetrations scores. Here, the impact of PCIT was not significant and past IPV perpetration significantly predicted W3 CTS2 scores. The impact of caregiver age and income were both non-significant in this model, with W3 CTS2 perpetration scores increasing about .02 (B = 0.02, z = 0.89, p > .05) for every 1-year increase in caregiver age, and only marginally decreasing (B = -0.00, z = -0.29, p > .05) for every $1,000 increase in annual income. These results do not support my hypothesis; age and income did not impact caregivers' IPV perpetration from W1 to W3.

The zero-inflated model of this analysis showed that, with no predictors, caregivers in this sample were 0.34 times more likely to be among those who could only have a W3 CTS2 perpetration score of zero than to not be in that group (B = 0.34, z =

0.30, $p > .05$). Only W1 CTS2 scores significantly impacted these odds. W1 CTS2 perpetration scores decreased the odds of being among the caregivers who could only have a W3 CTS2 perpetration score of zero by 0.11 ($B = -0.11$, $z = -3.17$, $p = .002$). The odds of being among the caregivers who could only score zero at W3 decreased by 0.40 ($B = -0.40$, $z = -0.94$, $p > .05$) for caregivers in the PCIT group. Income decreased these odds by 0.03 ($B = -0.03$, $z = -1.64$, $p > .05$) for every $1,000 increase in income. Lastly, every 1-year increase in caregiver age increased the odds of a caregiver being part of the group that could only score 0 on the CTS2 at W3 by 0.03 ($B = 0.03$, $z = 0.85$, $p > .05$). In short, the zero-inflated model results showed that assignment to PCIT, age and income did not have a significant impact that a caregiver was among the group who could only have zero scores and W1 CTS2 perpetration scores significantly decreased the odds of being among the group who could only have zero scores.

CHAPTER V

DISCUSSION

The purpose of this dissertation study was to use longitudinal data collected from an intervention trial to examine the effectiveness of PCIT in reducing IPV perpetration and victimization for a sample of caregivers involved with the child-welfare system. I hypothesized that (a) caregivers in the PCIT intervention group would report a lower frequency of IPV perpetration and victimization at post-intervention compared to caregivers in the SAU control group and (b) caregiver age and income would significantly affect the impact of PCIT on the frequency of caregivers' IPV perpetration and victimization at post-intervention. Study findings did not support study hypotheses. Zero-inflated negative binomial regression results showed that (a) neither caregiver IPV victimization nor perpetration frequency post-intervention (W3) significantly differed for those randomly assigned to the PCIT intervention group and those assigned to the SAU control group; (b) caregiver IPV perpetration frequency at pre-intervention (W1) significantly predicted IPV perpetration frequency at post-intervention (W3), regardless of caregivers' treatment group assignment, age, and annual income; and (c) caregiver age and income did not significantly predict post-intervention (W3) IPV victimization or perpetration when treatment group and past IPV history were considered. These study results suggest that for this sample of child-welfare involved caregivers, there is not sufficient evidence that PCIT has any more or less impact on caregivers' IPV experiences than the services they typically receive. Further, beyond any other assessed variable, only the caregivers' history of IPV perpetration in the 6 months prior to their involvement in the study significantly predicted their IPV perpetration during their involvement in the

study. In the following sections, I discuss the underlying implications of these findings and consider the strengths and limitations of this dissertation study.

Study Contributions

This dissertation study was only the second study to use longitudinal, experimental trial data to examine the effects of PCIT on caregivers' IPV experiences. Foley (2011) examined the efficacy of PCIT with a sample of caregivers who had reported IPV and CM. Foley used a series of ANCOVAs to determine if participation in a 12-week PCIT group treatment was related to decreases in IPV from pre- to post-treatment and found that PCIT did not significantly impact IPV perpetration or victimization. The present dissertation study added to the extant literature, and built on Foley's study, in several important ways. First, I used data from the CAPS longitudinal randomized controlled trial (Skowron, 2019, R01 DA036533) to examine pre- and post-intervention data over the course of a 6-month time period, ensuring that experiences captured in caregivers' pre-intervention responses were not also captured in their post-intervention responses. Despite the null findings for the current dissertation study, using longitudinal data from a study wherein participants were randomly assigned to PCIT and control conditions is a methodological strength and contribution to the PCIT intervention and IPV literature. Second, the PCIT treatment offered in Foley's study was an abbreviated version lasting 12 sessions and was provided to groups of families, whereas, for the CAPS Project, caregiver-child dyads participated individually, and many continued their treatment until the caregivers met mastery in CDI and PDI. The present study, therefore, involved more opportunity to directly engage caregiver-child dyads and adapt PCIT appropriately for each dyad. Third, I examined the impact of PCIT using a

ZINB regression instead of an ANCOVA. Many caregivers in the current sample reported no IPV experiences in the past 6 months, leading to an overdispersion of data. Utilizing this analysis allowed me to examine the impact of PCIT when the distribution of IPV data were distributed in a way that is contraindicated for a linear regression analysis (Green, 2021). ZINB regressions are specifically appropriate for count data for phenomena that are generally uncommon, like IPV (Green, 2021; Straus et al., 1996). Although study hypotheses were not supported, there are several notable implications and recommendations for future research in this area.

PCIT and IPV Intervention

PCIT is grounded theoretically in social learning theory and family systems theory, which suggests that PCIT could be an effective intervention for reducing IPV between caregivers (Borrego et al., 2008). PCIT targets and has been shown empirically to reduce factors that increase the risk for CM and IPV. I aimed to find evidence that PCIT would reduce caregiver participants' IPV perpetration and victimization because of the shared CM and IPV risk factors that PCIT specifically targets; communication and interpersonal skills that helps caregivers self-regulate and communicate better in order to develop better relationships with their children and manage conflicts in more appropriate ways (Borrego et al., 2008; Foley, 2011). Similar communication and interpersonal skills, and deficits in these areas, have been linked with IPV risk. Moreover, past studies have shown that PCIT impacts the caregiver and child directly involved in treatment as well as improves the relationships of participating caregivers and their children who did not participate in PCIT and reduces these children's problem behavior (Brestan et al., 1997).

To date, there are no published studies that examine the effect of PCIT on communication patterns or self-regulatory processes with the CAPS Project sample; however, PCIT scholars and CAPS Project researchers have proposed a novel conceptual framework for PCIT efficacy that identifies neural, physiological, and behavioral mechanisms of self-regulation and social cognition through in vivo coaching as key mechanisms for reducing CM (Skowron & Funderbunk, 2021). This framework is backed by recent literature on the social neurobiology of CM (e.g., Fisher & Skowron, 2017; Skowron et al., 2013). CAPS data can be used to learn more about how PCIT impacts the mechanisms that are theoretically linked to CM and IPV. For example, future analyses using CAPS Project data could establish under what intervention conditions and for whom targeted skills generalize to relationships with caregivers who are not active in PCIT and what additional factors can be addressed for PCIT to have a significant impact on IPV such as treatment fidelity and engagement and the moderating effects of communication and self-regulation measures.

Although previous PCIT outcome research suggests that PCIT skills generalize to caregivers' relationships with their other children who did not participate in the PCIT intervention, these dissertation study results suggest that the skills caregivers learned as part of the PCIT may not generalize to their intimate partnerships or be enough to result in changes in IPV frequency. Although PCIT intervenes with caregiver skill domains common to CM and IPV intervention, the overlap and way in which these skills are targeted may not have been enough to make an impact on caregiver IPV. Although we may expect caregivers who would primarily be considered perpetrators to reduce their use of IPV once they gain the skills provided by PCIT, the underlying motivation for

using IPV may be different than the underlying motivation for using CM and the root of caregiver-child relational challenges. That is, the relational barriers and skills addressed in PCIT that improve caregiver-child relationships could fail to address issues that are specific to the adult caregiver intimate relationship, such as financial issues, gender and power dynamics, trust, or infidelity (e.g., Babcock et al., 1993; Cordova et al., 1993; LaMotte et al., 2017). It is also possible that our assessment of IPV was not long enough. That is, it may take more time for family system stress and caregivers' intimate relationship dynamics to record measurable changes in IPV frequency. Similarly, we did not measure use of positive communication skills and positive caregiver intimate relationship qualities. Positive and negative communication and interpersonal dynamics have been shown to be orthogonal to each other; meaning that changes in one domain do not necessarily result in changes in the other domain (e.g., Dallaire et al., 2006; DeVries et al., 2009).

Nearly all caregivers in the sample were the only caregiver participating in PCIT. Although the caregivers that participated in the intervention may have improved their parenting skills and developed a stronger and more warm relationship with their children, their partners were not engaging in the PCIT intervention and were likely not gaining skills that benefit the intimate relationship quality. PCIT is designed to be and is ideally conducted with both caregivers present (Hembree-Kigin & McNeil, 2013). When one caregiver does not receive the coaching provided by PCIT, they are likely to continue using adverse parenting practices with their child, which may lead to diminished treatment outcomes. Similarly, it is possible that with one of the intimate partners not developing the skills taught in PCIT, any possible impact of PCIT on IPV is diminished,

as they may still perpetrate the violent behaviors reported by the participating caregiver and may continue to create a relational environment that drives the participating caregiver to also act violently in the romantic relationship.

It is also important to consider that caregivers in the present dissertation study who reported IPV experiences in the past 6 months reported perpetration and victimization at comparable rates. These comparable rates suggest that much of the IPV represented in this sample was bi-directional; indicative of relational patterns that would be best addressed by an intervention that involves both caregivers. Scholars also have documented that interventions are more likely to result in significant changes in bi-directional IPV when both partners acquire skills for better self-regulation and conflict resolution (Langhinrichsen-Rohling & Capaldi, 2012; Pepler, 2012).

A more obvious consideration is that PCIT was not designed to directly target IPV outcomes. PCIT was designed to reduce children's behavioral problems (e.g., Eyberg et al., 2001; Hood & Eyberg, 2003). With years of empirical research, PCIT has become an intervention that provides new and effective methods for decreasing CM and improving caregiver mental health and motivation with populations at significant risk for CM and child behavioral problems, including those with a history of IPV (e.g., Borrego et al., 2008; Chaffin et al., 2004; Herscell & McNeil, 2005; Urquiza & McNeil; 1996). For future development of PCIT as a possible intervention for IPV, it may be worth considering modifications to the intervention that are targeted at improving caregiver-caregiver relationship quality (e.g., positive communication skills, self-regulation, conflict management skills) as both caregivers participate together.

Assessment of IPV and PCIT Mediating Mechanisms

The procedures that were used in this dissertation study were a unique approach to assessing the impact of PCIT on IPV. There are two aspects related to assessment of study constructs that may have affected study results: (a) assessing IPV using retroactive self-report and (b) collecting IPV data from caregivers by verbally administering the CTS2 and WSAS. Obtaining data about an individual's behavior using self-report measures can be an effective and simple approach to data acquisition (Haeffel & Howard, 2010); however, self-report measures present threats to validity. There are two particularly relevant threats to validity when assessing IPV (Babcock et al., 2004), and for this study those included social desirability (Johnson & Fendrich, 2002; Van de Mortel, 2008) and recall bias (e.g., Brusco & Watts, 2015; Gaskell et al., 2000; Hassan, 2006). Caregivers may have felt a need to underreport IPV perpetration and victimization to be perceived more favorably and reduce their risk of further child-welfare or law enforcement involvement. Furthermore, the IPV assessment instruments (i.e., CTS2 and WSAS) were administered verbally, in an interview format, by trained research assistants. These face-to-face assessment procedures may have exacerbated participants' reluctance to disclose some IPV experiences, especially given that caregivers had limited opportunity to build rapport with the research assistants. These assessment procedures may have contributed to an underreporting of IPV, and therefore level of overdispersion of excessive zero IPV scores, at both waves of data collection, which may have influenced study findings. Although IPV rates reported by present dissertation study participants were similar to IPV rates reported nationally, this participant group was at far greater risk (i.e., involved in child welfare system) and likely should have reported higher IPV frequencies.

In terms of recall bias, people can experience challenges with recalling traumatic events, such as IPV, due to conscious and unconscious cognitive processes that inhibit the processing and retrieval of the events (e.g., Porter & Birt, 2001; Van der Kolk, 2015). In addition, around 30 caregivers who completed W1 before the CTS2 and WSAS were added as study measures were asked during their W3 assessment to report on their IPV experiences back at the time of the W1 assessment as well as at the W3 assessment. In essence, participants had to recall their IPV experiences 6 months preceding their current (W3) visit and 6 months preceding their W1 visit. It is likely that this assessment procedure resulted in recall bias for those few participants.

Most present study caregivers reported being single or otherwise not in a relationship (i.e., separated, divorced, widowed) at the time of the study (67.5%, n = 138), which may have inflated the zeros in the sample – some zeroes were likely from people in relationships that happened to not experience IPV, whereas the other zeroes were likely from caregivers who were not in relationships or other contexts where IPV was a risk. Examination of correlation data showed that relationship status was positively correlated with CTS2 perpetration and victimization. That is, caregivers who were married or living with their partner were more likely to report higher frequencies of IPV (i.e., higher CTS2 scores) and those not in relationships were more likely to have lower IPV experiences or CTS2 scores. These data also support the possibility that the high proportion of non-partnered caregivers was partially responsible for the excess zeros in the sample.

Additionally, it may be that some relationship statuses were not assessed by the CAPS survey relationship status response options of married, living together, separated,

divorced, widowed, single, or other. For example, there may have been caregivers who were casually dating someone or in a long-term relationship that would not be defined as married or living together. In fact, there is substantial evidence documenting that less committed or stable intimate relationships are at greater risk for IPV (e.g., Jewkes, 2002). There could also have been caregivers who share custody of their child with someone who they are not dating and to whom they were never married. These sorts of relationships are fairly common and can involve ongoing IPV, and yet participants in this relationship dynamic may not consider this person a partner and may have responded to the CTS2 and WSAS using "Never" or "... not in the past 6 months." Again, these reporting errors could have influenced my ability to detect changes in IPV as a result of PCIT participation. For future research, it is recommended that relationship status is assessed very broadly to reflect less traditional relationship constellations, but that are represented more often in families who are at high-risk.

Study Limitations

Study results must be interpreted considering study limitations. Limitations in IPV data collection procedures are most notable and can be improved in future research. Dr. Skowron was generous to add IPV assessments at my request after the CAPS Project had already started. The limitations of doing so were worth the potential benefits of examining present dissertation study research questions. However, for future research endeavors, recall bias and social desirability in IPV reporting can be addressed with minor modifications to study assessment procedures.

It is important to note that 20.1% (n = 41) of the caregivers who were assigned to PCIT in this sample did not engage in the treatment beyond the initial intake session.

Including these caregivers in the analysis and not controlling for their level of treatment engagement is in line with the ITT approach, as it provides the most conservative estimation of treatment effectiveness (Kruse et al., 2002). However, this approach does not allow me to analyze if the level of treatment engagement impacts the effectiveness of the treatment. Future studies could benefit from exploring how treatment dosage impacts the treatment outcomes by including factors such as number of sessions completed or if caregivers met mastery in the study analyses.

Another study limitation was the narrower assessment of caregivers' relationship status, limiting the relationships in which some caregivers may have self-reported IPV using the CTS2 and WSAS. Deficits in communication and self-regulation skills are central in both IPV and CM, and may be, in part, key mechanisms for CM reduction for PCIT families (Cordova et al., 1993; Finkel et al., 2009; Skowron & Funderbunk, 2021). Unfortunately, examining the potential moderating effects of these variables was beyond the scope of this dissertation study and their assessment would likely have yielded important information. Researchers working on the CAPS Project are currently in the process of transcribing and coding conversations between all caregiver-child dyads in this sample during a standard PCIT Dyadic Assessment Protocol (Nekkanti et al., 2020). The coding is being done using the Dyadic Parent-Child Interaction Coding System, Fourth Edition (DPICS-IV; Eyberg et al., 2014), which identifies positive parenting verbalizations (i.e., labeled and unlabeled praise, behavior descriptions, reflections) and negative parenting verbalizations (i.e., criticisms, direct and indirect commands, questions). Data for several forms of self-control were also collected from CAPS participants (Nekkanti et al., 2020) including, attentional control assessed using an

auditory attention task (AUDAT; Neville et al., 2013), inhibitory control assessed using a Stop Signal Task (Aron et al., 2004), and emotion regulation assessed using an Emotional Go/No-Go Task (Schulz et al., 2007). Once coding and data cleaning are complete for these measures, further examination of these variables as potential moderators can be done.

A final key limitation of this study is the fact that most caregivers self-identified as female. It is important to examine the effects of PCIT with caregivers of all genders and with one and two caregivers participating. Much of the research on PCIT has focused primarily on mothers, as mothers are more often the primary caregiver, particularly in child welfare-involved families (Nekkanti et al., 2020; Urquiza & McNeil, 1996). The CAPS Project initially only recruited mothers to the study based on this, and a theoretical model based on neurobehavioral regulatory processes best demonstrated in nonhuman primate mother-child dyads (Nekkanti et al., 2020). Fathers were recruited to the CAPS Project after their DHS collaborators requested fathers be included because there was a significant proportion of male primary caregivers in child welfare-involved families locally (Nekkanti et al., 2020). There are considerable differences in the motivation, impact, and forms of IPV used based on gender (e.g., Capaldi et al., 2012; Johnson et al., 2016). Due to these differences, it is worth exploring how PCIT may differentially impact participants of different gender identities and when one or two caregivers are involved.

Conclusion

IPV remains a significant public health concern, particularly for families who have engaged in CM and who are involved in the child welfare system. PCIT has been a widely effective intervention for the very families that reflect the current sample – data

from the CAPS Project specifically continues to be analyzed to determine how effective the intervention was in reducing CM and improving caregiver-child relationships for this specific sample. Unfortunately, with this dissertation study, I was unable to find evidence that PCIT would serve as a viable IPV intervention. The methodological limitations of this dissertation may have hindered my ability to detect an effect, but it is also possible that PCIT is simply not an adequate intervention for IPV reduction. However, this is not to say that family-based interventions as a whole cannot function as IPV interventions. Based on the comorbidity rates and similarities in risk factors of IPV and CM, as well as the dearth of strong IPV-centered interventions, I believe that future research should continue exploring the impact of family-based interventions on IPV.

APPENDIX: TABLES AND FIGURES

Table 1

Risk Factors for Intimate Partner Violence and Child Maltreatment across Different Levels of the Ecology.

Intimate Partner Violence Risk Factors	Child Maltreatment Risk Factors	Shared Risk Factors
Demographic characteristics • Education/ Low academic achievement • Low income/financial strain • Young age • Marginalized racial identity History of violence • Witnessing parental violence as child • CM victimization • Past history of IPV Psychological functioning issues • Adult Attachment difficulties • Depression • Emotion regulation difficulties • Low empathy • Impulsivity • Men's need for and perceived lack of power • Personality disorders • Psychopathology • Stress Substance use • Alcohol use/alcohol problem • Illicit drug abuse	Demographic characteristics • Education/ Low academic achievement • Low income/financial strain • Young age • Marginalized racial identity History of violence • Witnessing parental violence as child • CM victimization • Past history of IPV and CM perpetration Psychological functioning issues • Aggressive response bias • Depression • Emotion regulation difficulties • Low empathy • Impulsivity • Personality disorders • Psychopathology • Stress Substance use • Alcohol use/alcohol problem • Illicit drug abuse	Demographic characteristics • Education/ Low academic achievement • Low income/financial strain • Young age • Marginalized racial identity History of violence • Witnessing parental violence as child • CM victimization** • Past history of IPV** Psychological functioning issues • Depression** • Emotion/self-regulation difficulties* • Low empathy • Impulsivity • Personality disorders** • Psychopathology • Stress* Substance use • Alcohol use/alcohol problem • Illicit drug abuse Dysfunctional relationship dynamics

Intimate Partner Violence Risk Factors	Child Maltreatment Risk Factors	Shared Risk Factors
Dysfunctional relationship dynamics • High relationship conflict/discord • Negative/aggressive communication patterns • Relationship instability/estrange-ment (divorce, separations) • Low Marital satisfaction • Family stress/dysfunction Restricted World View • Approval of violent conflict resolution tactics • Traditional sex role ideology • Social norms supportive of violence Structural inequality and disadvantage • Lack of community resources • Systemic racism	Dysfunctional relationship dynamics • Negative/aggressive communication patterns • Limited access to positive parenting strategies • Family stress/dysfunction Restricted World View • Approval of violent conflict resolution tactics • Social norms supportive of violence Structural inequality and disadvantage • Lack of community resources • Systemic racism	• Negative/aggressive communication patterns* • Family stress/dysfunction* Restricted World View • Approval of violent conflict resolution tactics • Social norms supportive of violence Structural inequality and disadvantage • Lack of community resources • Systemic racism

Note. *Risk factors targeted by PCIT. **Risk factor groups with which PCIT has been empirically shown to be effective. Modified from "Partner violence victimization and perpetration: Developmental and contextual implications for effective practice" by Chronister, K. M., & Aldarondo, E. (2012). In APA handbook of counseling psychology, Vol. 2: *Practice, interventions, and applications*. (pp. 125-151). American Psychological Association

Table 2.

Participant Demographic Information by Treatment Group

	Total Sample				PCIT Group				Control Group			
	n	%	*M*	*SD*	*n*	%	*M*	*SD*	*n*	%	*M*	*SD*
Caregiver												
Gender												
Female	180	88.2			107	89.2			73	86.9		
Male	24	11.8			13	10.8			11	13.1		
Age			32.29	6.34			32.41	6.70			32.12	5.82
Race/Ethnicity												
White	143	70.1			81	67.5			62	73.8		
Black	4	2.0			2	1.7			2	2.4		
Pacific Islander	3	1.5			3	2.5			0	0.0		
Latina/o	5	2.5			3	2.5			2	2.4		
Native American	3	1.5			1	0.8			2	2.4		
Multi-racial	42	20.6			27	22.5			15	17.9		

Unknown	4	2.0	3	2.5	1	1.2
Relationship to Child						
Biological Parent	198	97.1	116	96.7	82	97.6
Adoptive Parent	1	0.5	1	0.8	0	0.0
Stepparent	1	0.5	0	0.0	1	1.2
Grandparent	2	1.0	2	1.7	0	0.0
Other	2	1.0	1	0.8	1	1.2
Marital Status						
Married	35	17.2	23	19.2	12	14.3
Single	93	45.6	52	43.3	41	48.8
Living together	23	11.3	17	14.2	6	7.1
Separated	21	10.3	9	7.5	12	14.3
Divorced	22	10.8	12	10.0	10	11.9
Widowed	1	0.5	1	0.8	0	0.0
Other	9	4.4	6	5.0	3	3.6
Employment						
Not employed	109	53.4	61	50.8	48	57.1
Full-time, stable	46	22.5	27	22.5	19	22.6

Part-time, stable	35	17.2	24	20.0	11	13.1
Full-time, seasonal	6	2.9	3	2.5	3	3.6
Part-time, seasonal	7	3.4	5	4.2	2	2.4
No response	1	0.5	0	0.0	1	1.2
Education						
<7th grade	3	1.5	1	0.8	2	2.4
Junior high	4	2.0	3	2.5	1	1.2
Some high school	27	13.2	16	13.3	11	13.1
High school/GED	101	49.5	58	48.3	43	51.2
Vocational training	29	14.2	16	13.3	13	15.5
Associates/junior college	27	13.2	18	15.0	9	10.7
Bachelor's degree	11	5.4	6	5.0	5	6.0
Graduate degree	2	1.0	2	1.7	0	0.0
Child						
Gender						
Female	92	45.1	58	48.3	34	40.5
Male	112	54.9	62	51.7	50	59.5

Age			4.76	1.40			4.70	1.36			4.85	1.44
Race/Ethnicity												
White	117	57.4			68	56.7			49	58.3		
Black	3	1.5			1	0.8			2	2.4		
Pacific Islander	0	0.0			0	0.0			0	0.0		
Latino	6	2.9			3	2.5			3	3.6		
Native American	1	0.5			1	0.8			0	0.0		
Multi-racial	75	36.8			46	38.3			29	34.5		
Unknown	2	1.0			1	0.8			1	1.2		
Education												
Not in school	42	20.6			27	22.5			15	17.9		
Preschool	71	34.8			43	35.8			28	33.3		
Kindergarten	43	21.1			24	20.0			19	22.6		
1st grade	18	8.8			8	6.7			10	11.9		
2nd grade	30	14.7			18	15.0			12	14.2		

Table 3.

CAPS Survey Measures across W1 Assessment and W3 Assessment

Target	Questionnaire	W1 Session 1	W1 Session 2	W3 Session 1	W3 Session 2
Caregivers*	Revised Conflict Tactic Scale (CTS2)		W1		W3
	Work/School Abuse Scale (WSAS)[!]	W1		W3	
Caregivers[+]	Revised Conflict Tactic Scale (CTS2)				W1/W3
	Work/School Abuse Scale (WSAS)[!]				W1/W3

*Caregivers began the study after the CTS2 and WSAS were added to the CAPS Project
[+]Caregivers began the study before the CTS2 and WSAS were added to the CAPS Project
[!]*The WSAS was modified from its original format for the CAPS Project.*

Table 4.

Descriptive Statistics for All Study Variables

	Total Sample				PCIT Group				Control Group			
	n	*M*	*SD*	Range	*n*	*M*	*SD*	Range	*n*	*M*	*SD*	Range
Age	204	32.39	6.34	46.00	120	32.41	6.70	46.00	84	32.12	5.82	25.00
Income*	171	17.93	13.57	90.00	99	19.05	13.29	66.00	72	16.39	13.89	90.00
CTS2-P W1	192	6.90	11.10	74.00	113	8.79^{+}	12.84	74.00	79	4.19	7.23	39.00
CTS2-V W1	192	8.83	15.00	95.00	113	10.96^{+}	16.61	95.00	79	5.77	11.79	65.00
CTS2-P W3	156	5.53	9.47	71.00	92	6.67^{+}	10.96	71.00	64	3.75	6.46	33.00
CTS2-V W3	156	5.47	9.10	65.00	92	5.53	7.80	35.00	64	5.38	10.76	65.00
WSAS-P W1	185	0.21	1.09	12.00	109	0.23	0.85	6.00	76	0.17	1.38	12.00
WSAS-V W1	185	0.42	1.96	20.00	109	0.42	1.58	13.00	76	0.41	2.41	20.00
WSAS-P W3	150	0.13	0.77	8.00	89	0.19	0.97	8.00	61	0.03	0.26	2.00
WSAS-V W3	150	0.17	0.98	8.00	89	0.17	1.10	8.00	61	0.13	0.79	6.00

Note: * Income mean, SD and range divided by 1,000. $^{+}$PCIT group means significantly higher. Unequal *n* for PCIT and Control reflect 1.5:1 randomization ratio.

Table 5.

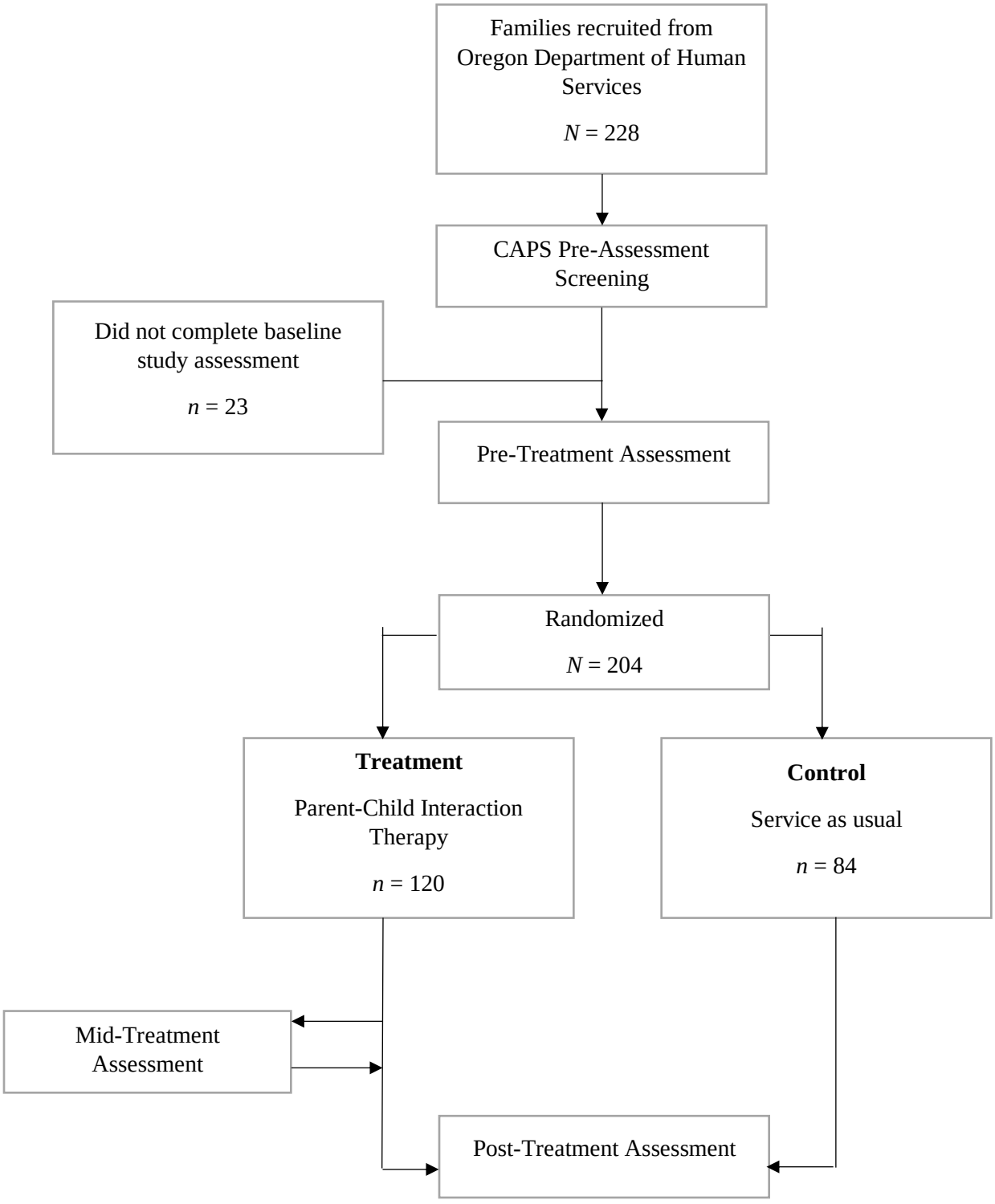
Bivariate Correlations between Age, Income, Marital Status, Treatment Group, and IPV for Total Sample (N=204)

	1	2	3	4	5	6	7	8	9	10.	11	12
1. Age	-	-.001	-.120	.023	-.076	-.051	-.055	-.100	.004	-.014	.052	-.002
2. Income		-	-.302***	.097	.001	-.081	.142	.077	-.081	-.084	.254**	.153
3. Rel. Status			-	-.066	-.187**	-.051	-.301***	-.168*	.079	.066	-.130	-.031
4. Tx				-	.205**	.171*	.157*	.009	.026	.004	.101	.030
5. CTS2-P W1					-	.776***	.738***	.390**	.364**	.369**	.294**	.271**
6. CTS2-V W1						-	.480**	.266**	.335*	.494**	.111	.268**
7. CTS2-P W3							-	.695**	.267**	.113	.432**	.338**
8. CTS2-V W3								-	.125	.130	.205*	.305**
9. WSAS-P W1									-	.648**	.481**	.208*
10. WSAS-V W1										-	.038	-.038
11. WSAS-P W3											-	.541*
12. WSAS-V W3												-

Note. * Correlation significant at the .05 level. ** Correlation significant at the .01 level. *** Correlation significant at the .001 level

Figure 1.

Coaching Alternative Parenting Strategies Project Flow Chart



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