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AN EXPLORATION OF PARENT MANAGEMENT TRAINING PROGRAMS AND
THEIR CULTURAL RELEVANCE

by

Maria de la Caridad Alvarez

A dissertation proposal in partial fulfilment
of the requirements for the degree

of

DOCTOR OF PHILOSOPHY

in

Psychology

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2022

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ABSTRACT

An Exploration of Parent Management Training Programs and Their Cultural Relevance

by

Maria de la Caridad Alvarez, Doctor of Philosophy

Utah State University, 2022

Major Professor: Melanie M. Domenech Rodríguez, Ph.D.

Department: Psychology

Child behavior and conduct problems are a prevalent and burdensome disorder with problems that often persist into adulthood. Parent management training programs have been identified as the leading intervention for behavioral and conduct problems. So much so, that there are over 100 parent management training interventions in existence. These programs have common elements yet vary in terms treatment length, setting, target age range, and expected outcomes. The first project of this multi-paper dissertation sought to systematically organize key information for 19 of the most widely recommended parenting programs. The second project sought to examine the generalizability, efficacy, and relevance of a subset of programs particularly for people of color. Our combined findings show that behavioral parent training programs are efficacious and produce desired behavioral, biological, and social outcomes for both parents and children, they are cost effective, and there is a substantial body of literature supporting their positive impacts. We also found that the research supporting these

outcomes for people of color is scarce particularly within the United States. Our findings indicate that most of the research with people of color was conducted outside of the U.S. For U.S.-based research, only a select number of studies engaged in cultural adaptations or used a research methodology that allowed for conclusive evaluation of treatment outcomes. We conclude that although the behavioral parent training literature for white individuals is robust and varied, this is disproportionately not the case for individuals of color.

(139 pages)

PUBLIC ABSTRACT

An Exploration of Parent Management Training Programs and Their Cultural Relevance

Maria de la Caridad Alvarez

Behavioral parent training is a research-supported treatment for improving child behavior and increasing parenting skills. Despite many programs sharing a theoretical foundation and common elements, there is great variety in terms of treatment targets, populations served, treatment length, delivery setting, and expected outcomes. The purpose of this research was to first systematically organize and categorize relevant program information for the most frequently referenced Parent Management Training (PMT) programs. To this end, 19 programs were identified for review. We summarized each program and their available research evidence which ranged from 1 to 72 studies. The findings from this first project informed the development of the second, which investigated the generalizability and applicability of PMT programs to non-White populations. We learned that the evidence for communities of color was significantly limited because people of color represented a small part of those studied or their information was not presented independently. We conclude that although the behavioral parent training literature for white individuals is robust and varied, this is disproportionately not the case for individuals of color.

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Maria de la Caridad Alvarez

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CHAPTER 1

GENERAL INTRODUCTION

The practice of parental education is not a new phenomenon, however, before the 1920s, parental education was rather informal and unstructured (Croake & Glover, 1977). Decades after the '20s, the U.S was taking part in a World War as the field of psychology was moving steadfastly towards behaviorism. The two paths would converge through a service need for soldiers and the evolution of psychology from predominantly psychodynamic to increasingly behavioral (Croake & Glover, 1977). Stemming from the behavioral movement, in the 1960s the field of psychology saw the emergence of parent management training (PMT) or behavioral parent training (BPT). Today PMT is a ubiquitous evidence-based intervention and one of the most well-studied, exhaustively reviewed, and most recommended interventions for child behavior problems (Leijten et al., 2019).

Common Elements of Parenting Programs

Commonalities across PMT programs exist and begin with the fact that many are built on coercion theory (Kazdin, 2005; Patterson, 2015), stipulating that child antisocial behavior elicits responses from parents which in turn reinforce child maladaptive behavior (Patterson, 2015). In addition to a grounding theoretical framework, PMT programs share other elements such as: (a) directing treatment primarily at parents and utilizing them as the change agents rather than the child; (b) focusing on teaching parents to reduce preoccupation with antisocial behavior and emphasize prosocial behavior; (c)

focusing on social-learning principles and teaching the techniques such as positive reinforcement (e.g., verbal praise or tangible rewards for prosocial behavior), the use of mild punishments like the removal of attention from parents, the use of time out, loss of privileges, and negotiation among others; (d) teaching skills through a combination of active/didactic teaching, practice through role-plays, written materials, and either clinic or home practice with their child. Caregivers are also taught to systematically and carefully observe, identify, and define problem behaviors in order to effectively deliver consequences and as means of evaluating progress (Kaminski et al., 2008).

The flourishing evidence on PMT as a tool for improving child behavior and family functioning has led to national legislation providing funds to agencies that apply evidence-based interventions (e.g., The Family First Prevention Services Act; Title IV-E; Wilson et al., 2019). The selection of these interventions, however, rests on individual agencies across states. Although there are repositories with rating criteria and program information (California Evidence-Based Clearinghouse for Child Welfare, 2020), it can be challenging to find information on how to compare programs and identify the key components that differentiate one intervention from another. It is both advantageous and daunting to have such abundance of accessible information. This can prove overwhelming to policy makers, interventionists, and agencies who are searching through programs for applicable evidence and relevant program components.

The overabundance of information, however, is contrasted by underwhelming guidance on PMT programs' utility and efficacy with ethnoculturally diverse groups within the U.S. and the efforts made to culturally adapt these interventions. There are

pronounced health disparities particularly when it comes to mental health services (Centers for Disease Control and Prevention [CDC], 2020; Galvan & Gudiño, 2019), and despite standards for evidence of effectiveness in prevention interventions that recommend subgroup analysis be reported (Gottfredson et al., 2015), these subgroup analyses are not being conducted.

The present work outlines two projects. The aim of the first project was to systematically organize the current literature on the most commonly cited or recommended parenting programs. To this end we report on program specific information such as treatment components, aims, outcomes, and protocols. Additionally, information on program costs and benefits is also reported. Post examination of program components and their available evidence, we seek to investigate the applicability and cultural relevance of a subset of programs to underserved ethnic and racial minorities, which is the focus of the second project. For this we report on trials conducted with diverse samples, cultural adaptations to protocols, and reported outcomes post intervention.

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CHAPTER 2

PARENT TRAINING INTERVENTIONS¹

Introduction

Behavioral disorders are the leading cause of psychological problems affecting children ages 3-11 years old and become the second leading diagnosis as children enter adolescence (Ghandour et al., 2019). Persisting aggression and conduct problems in childhood have been found to reliably predict delinquency, risky behaviors (Broidy et al., 2009), violent and antisocial behavior as well as internalizing problems leading into adolescence and adulthood (Galán et al., 2020). Intervention models highlight the importance of caregivers in the biological, psychological, and social development of children (Peter, 2018). Their proximity to the child facilitates consistent and contingent intervention optimal for shaping child behavior. Not surprisingly, many parent trainings programs have been developed to strengthen parenting practices in an effort to improve child outcomes.

Parent Management Training (PMT) quickly gained momentum for being time-limited, affordable, and efficacious (Serketich & Dumas, 1996). As a result, many behavioral parent training (BPT) interventions have been developed. Although the abundance of information can prove useful when browsing for programs, this wealth of information can make it challenging to wade through and find specific programs with the

¹Alvarez, M., Garcia, B. H., Flores, C. M. N., Vázquez, A. L., Lara, J., & Domenech Rodríguez, M. (2021). Parent training interventions. In B. Halpern-Felsher & R. Corona (Eds.), *Encyclopedia of child adolescent health*. Elsevier. <https://doi.org/10.1016/B978-0-12-818872-9.00030-3>

best available evidence. This chapter seeks to alleviate search fatigue by systematically reviewing the literature on the most commonly reference parenting programs. We articulate specific program components, key demographics served, and the outcomes reported for both parents and children.

Methods

Program Selection Process

We gathered a list of potential evidence-based parenting programs from six sources: The Blueprints for Healthy Youth Development registry, The California Evidence-based Clearinghouse, The Child Welfare Information Gateway: Parent Education to Strengthen Families and Prevent Child Maltreatment Brief, The Administration for Children and Families Compendium of Parenting Interventions Brief, The 2015 research brief from Casey Family Programs and a publication seeking to examine BPT as the mediator of change for child externalizing problems (Forehand et al., 2014). We identified 92 programs across the six resources. For the purpose of this chapter, we only selected programs mentioned in at least two of the six sources. This criteria was not based on individual program merit (or lack thereof) but was used as a way to organize and examine the level of evidence of programs that are currently being described by prominent sources. Our goal was to systematically examine the most common recommendations, rather than all programs developed. Using this criteria, we retained 19 programs.

Once programs were identified, we engaged a thorough search of the literature.

We gathered publications that were peer reviewed, published in journals, and available in English or Spanish. All interventions reviewed targeted parents as the agents of change. Further research reports must have: (a) report on treatment trials, (b) trials used random assignment to allocate participants to a specific parenting program, a control group or a comparable program, and (c) trials reported outcomes for children or parents. We did not place restrictions on publication year, sample size, program duration/intensity, geographical location or participant demographics. We searched four databases: APA Psych Info, Medline, Psychology and Behavioral Sciences Collection, and Healthsource Nursing/Academic Edition. The first and senior authors conducted searches independently, selected articles for inclusion, and resolved all discrepancies by consensus. The final list of studies was cross-referenced with published lists of bibliographies on program websites or clearinghouses. Any studies meeting inclusion criteria that were not identified in the database search were subsequently included. In this chapter, we review evidence for each program and programs are listed in alphabetical order. Due to space considerations, two program reviews were removed from this chapter and moved to Open Science Framework (<https://osf.io/x6a4t/>): Combined Parent Child Cognitive Behavioral Therapy and Hitkashrut. These programs had only one treatment trial each. The intent of this chapter is not to be evaluative nor exhaustive, but rather to systematically combine and organize relevant information regarding the most commonly recommended parenting programs.

Selected Programs

The Chicago Parent Program

The Chicago Parent Program (CPP) is an intervention emphasizing parents' role in shaping their child's behavior through modeling and social learning principles (Gross et al., 2009). CPP aims to improve parent-child relationships through reducing harsh discipline, improving parenting competence, and expanding parents' social networks to reduce the frequency and intensity of their child's behavior problems (Gross et al., 2009).

The Chicago Parent Program's design is adaptable to various settings and has been delivered in daycare centers (Breitenstein et al., 2012; Gross et al., 2009, 2011), mental health clinics (Gross et al., 2019), and through self-administered mobile health intervention via smart phones and tablets. The in-person intervention consists of 11 weekly 2-hr group sessions, facilitated by two group leaders. A 12th session is scheduled one to two months later to serve as a "booster session" (Gross et al., 2011). The electronic version of the intervention is based on six modules where participants have 12 weeks for program completion (Breitenstein et al., 2017). Sessions utilize video vignettes designed to stimulate discussion and problem-solving strategies around key concepts (Gross et al., 2011). Group leaders use detailed manuals to guide discussions, questions, role-plays and strategies to be used with each vignette (Gross et al., 2011). Parents receive weekly handouts and homework to reinforce topics such as the concept of child-centered time, importance of routines, the value of praise and encouragement, the role of rewards, setting clear limits and following through with consequences. They also learn strategies such as ignoring, stress management skills, time-out and problem solving

(Gross et al., 2009). The program primarily targets parents of children ages 2-5.

We found three original CPP trials, one original trial based on the mobile health version, and a follow-up study. Sample sizes ranged from 42 to 504 participants who were predominantly Black and Latinx, with child gender relatively balanced across samples. Based on reported results, participation in CPP led to declines in problem behavior for children, and greater improvements in parenting self-efficacy, more consistent discipline, less use of corporal punishment and greater warmth (Breitenstein et al., 2012; Gross et al., 2009). When evaluating the electronic version of the intervention (ezparent program) the completion rates were significantly greater for the online modality compared to the face-to-face version. Results also showed improvements in parental warmth, decreased use of corporal punishment, increased follow through, reductions in parenting stress, and intensity of child behavior (Breitenstein et al., 2016).

In a non-inferiority trial comparing the effectiveness and cost of group-based parent management training, parents were randomized to either Parent-Child Interaction Therapy (PCIT) or the CPP. Results from 158 participants were analyzed and results indicated that scores on Child Behavior Check List (CBCL) improved in both conditions, and CPP produced similar results to PCIT. However, the average cost per participant was higher for PCIT (\$2,151) condition compared to CPP (\$1,413).

Circle of Security

Circle of Security (COS) is a parenting intervention aiming to promote positive attachment between caregivers and their children. This program has been adapted for implementation in Head Start programs (Cassidy et al., 2017), preschool centers

(Dehghani et al., 2014), residential facilities (Cassidy et al., 2010), and home-based settings (Cassidy et al., 2011). COS consists of 20 weekly group therapy sessions lasting up to 1-hr 30 min. Group sessions usually involve six parents and a therapist.

COS sessions focus on educating caregivers regarding attachment and exploration systems associated with child development. Sessions focus on increasing caregiver sensitivity to attachment and exploration systems through didactics that include reflective activities such as reviewing videos of participant interactions with their children. COS has two overarching themes: (a) using graphics and (b) “Shark Music” (Mercer, 2015). Therapists work with caregivers to organize child behavior within an oval graphic that represents different stages in the activation of attachment or exploration systems. This exercise helps parents identify child behaviors and the caregiver’s role within the COS model. Therapists also work with caregivers to identify the “Shark Music”, which represents the anxiety or anger parents may feel when they are unable to confront their child’s needs. This helps caregivers identify moments where they may be insensitive to the needs of their child due to their own difficulties. COS has been tested with children ranging in ages from two months old to six years old.

Evidence for the efficacy of COS is largely based on studies without randomized comparison groups (Yaholkoski et al., 2016). However, our search identified three treatment trials with mixed results regarding the efficacy of COS. Cassidy and colleague’s (2017) findings suggest that caregivers who completed COS had fewer unsupportive responses to their child’s distress relative to controls. However, child attachment and behavior did not significantly differ between COS intervention and

control groups. Differences between experimental groups in child attachment were found to depend on moderators such as maternal depression and attachment styles. In a follow up study, Ramsauer and colleagues (2020) did not find significant differences between treatment as usual and COS intervention groups within a German sample. However, mothers with unresolved attachment exhibited greater gains in maternal sensitivity. These findings suggest that the COS intervention may improve child attachment among specific types of families. In contrast, a follow up study in Iran found that children who participated in COS generally had higher rates of secure attachment and wellbeing relative to controls (Dehghani et al., 2014).

The Washington State Institute for Public Policy (WSIPP) Benefit-Cost Model presents estimates of life cycle benefits and costs as they relate to taxpayers, participants, others and indirect, while counting for specific program costs. WSIPP's (2019) analysis of indicated that COS net cost benefit to taxpayers, participants, others and indirect were \$758, minus the net total cost of the program \$235, yielded a total benefit minus cost of \$523 per participant. The assessed benefit to cost ratio per participant was \$3.22 with a 56% chance that the program benefits will be greater than the costs (WSIPP, 2019).

Coping Power

Coping Power (CP) seeks to prevent the development of externalizing behavior problems among youths 8-14 years old (i.e., conduct problems, delinquency, substance use; (Lochman & Wells, 2002). This program consists of 34 child and 16 parent didactic groups lasting 40-60 min. Groups are conducted in schools and are led by trained staff (e.g., teachers, counselors, psychologist;(Lochman et al., 2009). Recently, CP has been

adapted into a brief online intervention to increase accessibility among at-risk families (Lochman et al., 2017). CP is based on a social-cognitive model that views child externalizing behavior as a result of child (e.g., impulsivity, emotional dysregulation, poor cognitive skills, ineffective problem solving) and parent (e.g., ineffective parenting skills, economic disadvantage) factors (Lochman & Wells, 2002). CP seeks to address these factors by teaching children to become aware of their emotions, set goals, build social skills, practice relaxation techniques, and learn to manage peer pressure. Parents learn to distinguish between positive and negative child behavior and acquire skills to manage these behaviors (e.g., positive reinforcement, planned ignoring, giving effective instructions). CP also teaches parents how to support their child academically.

Our search identified eight randomized control trials (RCTs) conducted in the United States and abroad. The first RCT reported that families who received CP displayed more effective parenting skills and lower child externalizing behavior problems (e.g., substance use, aggression, hyperactivity, inattention) relative to controls (Lochman & Wells, 2002). Web-based adaptations of CP have also been found to be effective in reducing child conduct problems relative to controls (Lochman et al., 2017). Component analysis suggests that the CP child module is an efficacious standalone treatment associated with lower rates of delinquency relative to controls (Lochman & Wells, 2004). However, the effects of CP were largest when both child and parent components were utilized. Researchers also examined the addition of booster sessions to CP. Findings suggest that booster sessions did not significantly improve CPs effect on child outcomes (Lochman et al., 2014).

CP has been successfully adapted and used to prevent child externalizing behavior in the Netherlands and Sweden. Families in the Netherlands who received CP reported lower child overt aggression at post treatment relative to controls (van de Wiel et al., 2007) and families that participated in CP had lower rates of child tobacco and marijuana use at post treatment relative to controls (Zonnevylle-Bender et al., 2007). Researchers in Sweden examined whether adding the CP component to a parent management training program improved family outcomes. Families that received the child component of CP and the parent management training program showed greater improvement in child (i.e., behavior problems) and parent (i.e., parenting skills) outcomes relative to those who only received the parent component (Helander et al., 2018).

WSIPP's (2019) benefit-cost summary reported the programs total benefits as \$929, with a net program cost of \$741, making the benefits minus costs \$188. CP's benefit to cost ration was estimated at \$1.25 with a 55% chance the program will produce benefits greater than the costs (WSIPP, 2019).

Family Check-Up

The Family Check-Up (FCU) model is a family-centered, strengths-based, intervention that focuses on promoting positive parenting management practices and decreasing child and adolescent behavioral problems (Dishion et al., 2003). FCU has two phases: phase 1 consists of an initial interview, an ecological family assessment, and feedback session, and phase 2 consists of connecting the family with follow-up services and resources. In phase 1, the initial interview focuses on building rapport with the consultant, discussing parents' concerns about parenting and family management

strategies, considering how parenting practices impact child's behavior, and assessment of parents' motivation for making changes to parenting practices. The strengths based ecological family assessment gathers information from the child, parents, and behavioral observations regarding child behavior, parenting practices, and family dynamics. Results from this assessment are utilized to provide feedback to the parents to emphasize family strengths and difficulties. A tailored menu of follow-up interventions is created for the families based on the assessment results, and consultants discuss and help families decide which follow-up methods the family would like to utilize. Motivational interviewing techniques are utilized to increase parents' motivation to continue follow-up services, phase 2 of the intervention. Menus of follow-up services include brief interventions (e.g., Everyday Parenting parent-training program), parent groups, family therapy, child intervention, school intervention, and community referrals (e.g., providing support for contextual risks and parental stress).

This program has been implemented widely within the United States through in-home services, schools (i.e., elementary and middle schools), and one study has implemented FCU online and another adapted FCU for young adults (YA-FCU) (Stormshak et al., 2009, 2018, 2019). FCU has been evaluated with diverse populations in the United States (e.g., White, Black, Latinx) and with low-income families enrolled in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (Shaw et al., 2006, 2016). We found 13 original RCTs and 43 follow-ups. Samples have ranged from 63-1193 participants.

Findings from these RCTs suggest that FCU improves child's aggression and

problem behavior, inhibitory control, self-regulation, grade point average, school attendance, and parental monitoring, involvement, and confidence. It also decreases child's antisocial behavior, irritability, depression rates, suicide risk, substance use risk, police arrests, comorbidity between internalizing and externalizing problems, as well as family conflict and probability of child neglect (Connell et al., 2007, 2008, 2016, 2019; Dishion et al., 2015; Fosco et al., 2013, 2016; Pelham et al., 2017; Shaw et al., 2016; Smith et al., 2019; Stormshak et al., 2009, 2019). The FCU intervention has also been shown to indirectly increase effortful control, school readiness, and decrease child's depression and withdrawal symptoms, body-mass index through increased nutritional quality of meals served by caregiver, and decrease adolescent's substance use, high risk sexual behavior, and vocational risk (Chang et al., 2015; Lunkenheimer et al., 2008; Reuben et al., 2015; Smith et al., 2015; Stormshak et al., 2018). Some effects have been shown to maintain at 2 (Fosco et al., 2013; Lunkenheimer et al., 2008; Smith et al., 2015) 8 (Connell et al., 2019) and 15 years post baseline (Kuo et al., 2019).

Based on reports from the WSIPP's Benefit-Cost Model (2019), Family Check-Up's total benefits mount to \$9,064 minus a net total program cost of \$46, for a benefit minus cost total of \$9,018 per participant and a benefit to cost ratio of \$197.66. The chances that Family Check-Up will produce benefits greater than the cost was 70% (WSIPP, 2019).

Family Foundations

Family foundations (FF) is a couple-focused psychoeducational program for first-time parents who are married or cohabitating (Feinberg et al., 2010). The program is delivered during the transition to parenting and aims to enhance the co-parenting

relationship, rather than teach specific parental skills (Feinberg et al., 2009). FF targets parents' ability to coordinate and support each other, as well as parental adjustment and self-efficacy as a means of impacting child adjustment (Feinberg et al., 2009; 2010). FF was developed for implementation in childbirth education departments of local hospitals (Feinberg et al., 2010), it has also been delivered online (Feinberg et al., 2019).

FF is comprised of 8 or 9 (2-3-hr) weekly sessions that are split up in a way that half of the material is introduced pre-birth, and the second half is delivered post-birth (Feinberg et al., 2010). The first half of the program prepares expecting parents by fostering communication and cooperation, while the post-birth sequence focuses on normalizing hardships of parenthood, helping parents recognize their child's temperament, problem solving, parenting dynamics, and encouraging security and appreciation (Feinberg et al., 2009).

We found five original trials and five follow up studies with sample sizes ranging from 56-399. Although variations of FF exist for diverse populations, the empirical evidence that met inclusion criteria for this chapter as well as the evidence reviewed in major clearing houses, included primarily White (91-81%) participants 28-31 years of age. Results from the studies found less coparenting competition (Feinberg et al., 2009; Solmeyer et al., 2014), increased coparenting support (Feinberg et al., 2016, 2019; Feinberg & Kan, 2008), reductions in harsh parenting (Feinberg et al., 2010), parental stress (Feinberg et al., 2010, 2019), and maternal depression (Feinberg et al., 2010, 2019; Feinberg & Kan, 2008). There were also reports of increased positive parenting (Feinberg et al., 2009), lower levels of teacher reported internalizing symptoms (Feinberg et al.,

2014) and improved mental health adjustment (Feinberg et al., 2010, 2016). In regards to child outcomes, the literature on FF reported decreased child behavior problems and lower levels of externalizing problems among families with boys (Feinberg et al., 2010; Solmeyer et al., 2014) and increased infant self-soothing/self-regulation (Feinberg et al., 2009, 2019; Feinberg & Kan, 2008).

A six-step analytic approach carried out through a five-year demonstration program with six cohorts ranging in sample sizes (6-19 couples) was used to estimate the costs of FF (Jones et al., 2014). The total cost of the program per year ranged from \$25,159 for 56 families on year 2, to \$5,379 on year 5 for 33 families, averaging \$779 yearly program cost per family (Jones et al., 2014). What contributed to program costs varied by several factors, such as cohort size, space allocations and intervention year. For a full breakdown see Jones et al., 2014.

GenerationPMTO

Parent Management Training Oregon Model (PMTO) is a behavioral parent training program founded on social interaction learning theory, and places parents as the change agents actively impacting child conduct problems (Patterson et al., 1982). Through the intervention, parents learn proactive, non-punitive and preventative strategies to address child misconduct. Designed to treat child behavior challenges, GenerationPMTO targets five core parenting practices (a) skill encouragement; (b) effective discipline; (c) monitoring; (d) problem solving; and (e) positive involvement. Treatment can be as short as three sessions (Kjbl et al., 2013) or last up to 6 months. Sessions tend to be 60-90 min long, and most implementations included a midweek call

to check on parent's progress towards goals or troubleshoot difficulties with the material. The intervention is delivered in individual or group settings and GenerationPMTO Specialists outline sessions agenda and objectives, give rationales, and deliver contents through didactics, role-plays, leading questions, activities, and discussions.

GenerationPMTO's efficacy has been established through randomized control trials for 2–18-year-old youth (Scavenius et al., 2020). We found 46 trials ranging in sample sizes from 14-918 participants. Within samples, child gender was relatively evenly distributed with a slight male majority, which is similar to what is seen in other interventions targeting child conduct problems. Child ages ranged from 3-16 years old, although most participants were elementary school age (6-11). When it came to race and ethnicity most samples conducted within the U.S were a majority White with the exception of one sample that was 100% Latinx (Parra-Cardona et al., 2017). Additionally, several trials were conducted outside of the U.S, including Mexican nationals (Amador Buenabad et al., 2020), Somali and Pakistani families living in Norway (Bjrknes et al., 2012), families in Uganda (Wieling et al., 2017) and with several Northern European nations (Hagen & Ogden, 2017; Kjøbli et al., 2018; Ogden & Hagen, 2008; Scavenius et al., 2020; Sigmarsdttir et al., 2013; Thijssen et al., 2017).

The majority of studies reported improvements in positive parenting practices and reductions in coercive ones. Specifically, parental practices in skills encouragement (Akin et al., 2017; Amador Buenabad et al., 2020; Parra-Cardona et al., 2017), effective discipline (Akin et al., 2017; Amador Buenabad et al., 2020; Bjrknes et al., 2012; Forgatch & DeGarmo, 2002; Kjellgren et al., 2013; Martinez & Forgatch, 2001; Ogden &

Hagen, 2008; Wieling et al., 2017), positive involvement (Forgatch & DeGarmo, 2002; Wieling et al., 2015), and problem solving (Forgatch & DeGarmo, 2002). Outcomes specific to parents included increases in mental health/psychopathology (Akin, Lang, McDonald, et al., 2018; Akin, Lang, Yan, et al., 2018; Gewirtz & Youssef, 2016; Thijssen et al., 2017), positive effects on substance abuse (Akin, Lang, McDonald, et al., 2018), improvements on parenting stress (Maaskant et al., 2017; Scavenius et al., 2020; Thijssen et al., 2017), improvements in depression symptoms, parenting efficacy, and increased life satisfaction (Forgatch & DeGarmo, 2002; Scavenius et al., 2020). Additionally, 9-year outcome data indicated mothers experienced increases in their standard of living as measured by income, occupation, education, reductions in financial stress, and number of police arrests (Degarmo & Forgatch, 2007; Patterson et al., 2010).

The majority of treatment trials reported improvements in child conduct problems and compliance. Additional outcomes included reductions in aggressive behavior (Forgatch & DeGarmo, 2002; Hagen & Ogden, 2017; Schoorl et al., 2017), reductions in externalizing (Amador Buenabad et al., 2020; Kj. bli & Hagen, 2009; Ogden & Hagen, 2008; Thijssen et al., 2017), and internalizing problems (Bjrknes et al., 2012; Scavenius et al., 2020) improvements in child's social-emotional functioning/prosocial skills and social competence as reported by parents (Akin et al., 2019; Akin, Lang, Yan, et al., 2018; Amador Buenabad et al., 2020), and as reported by teachers (Bjrknes et al., 2012; Kjellgren et al., 2013; Ogden & Hagen, 2008). Other child outcomes reported included a significant reduction in police arrests and delinquency reports for boys, reductions in deviant peer associations, and a delay in age of first arrest (Forgatch et al., 2009),

reduction in serious crimes, overall offense rates, delinquent behavior and overall time spent in institutional settings (Bjrknes & Manger, 2013). A number of outcomes stated here were shown to maintain at 6, 12, 24 months, or 9 years post interventions (DeGarmo et al., 2004; Degarmo & Forgatch, 2007; Gewirtz, 2018; Kjbli et al., 2018; Parra-Cardona et al., 2017; Schoorl et al., 2017).

When it came to children in the foster care system, completion of the GenerationPMTO intervention increased the likelihood of reunification by 15.35% (Akin & McDonald, 2018, p. 201), increased parents' readiness for reunification (Akin, Lang, McDonald, et al., 2018; Akin, Lang, Yan, et al., 2018) and showed significant effects of placement stability (Akin et al., 2015). Parents also reported increases in family cohesion (Hagen & Ogden, 2017) and beneficial indirect effects on their marital relationship as a byproduct of enhancing parenting practices (Bullard et al., 2010).

According to the WSIPP (2019), GenerationPMTO's benefits to taxpayers, participants, others and indirect total \$2,475, while the net program cost are \$1,352 yielding a benefit minus cost total of \$1,123 per participant. The benefit to cost ratio was \$1.83 with a 69% chance that the program will produce benefits greater than its costs (WSIPP, 2019). When GenerationPMTO was evaluated for prevention samples the total program benefits were assessed at \$6,431, net program costs at \$692, a benefit minus cost as \$5,740, with a benefit to cost ratio of \$9.30 and a 60% chance that the intervention will produce gains greater than its costs (WSIPP, 2019).

Incredible Years

The Incredible Years (IY) intervention is a series of three separate but interlocked

evidence-based training programs for parents, children, and teachers (Webster-Stratton et al., 2001a, 2001b). This intervention was designed to enact change in key parent, teacher, and child risk and protective factors implicated in the development and prevention of conduct problems among children ages 0 to 12 years old (Webster-Stratton et al., 2001a, 2001b). The IY series has been tested among children with attention/deficit-hyperactivity disorder (Beauchaine et al., 2013; E. J. H. Jones et al., 2017; Leckey et al., 2019; Rimestad et al., 2018; Webster-Stratton et al., 2001b); internalizing problems (Boyd et al., 2017; K. C. Herman et al., 2011; Webster-Stratton & Herman, 2008), histories of maltreatment (Conn et al., 2018; Hurlburt et al., 2013; Linares et al., 2006, 2012), developmental disabilities (Kong & Au, 2018; McIntyre, 2008), and children with high rates of obesity or obesity-related behaviors (Lumeng et al., 2017).

The IY program series design is adaptable to various settings and has been delivered in schools (M. J. Reid et al., 2007), outpatient clinics (Webster-Stratton et al., 2001a, 2001b), pediatric/primary care settings (Boyd et al., 2017; Lavigne et al., 2008; Perrin et al., 2014; Reedtz et al., 2011), family homes (Lees et al., 2014), and disadvantaged community-based agencies (McGilloway et al., 2012). Within a 14 to 20-week span, parents in The IY Parent Training (PT) program spans 14 to 20-week and teaches parents interactive play and reinforcement skills, discipline techniques (e.g., timeout, ignoring), and problem-solving skills through weekly sessions that are approximately 2-2.5-hr in length. Emphasis is placed on parent interpersonal skills such as effective communication skills, anger, and depression management. The IY Child Training (CT) program is a curriculum designed to promote children's emotional literacy,

empathy, perspective taking, anger management, and interpersonal problem-solving skills over the course of 18-22 weeks with weekly sessions ranging between 2-2.5 hrs.

We found a total of 72 treatment trials; 42 were original trials and 26 were either follow-up or subsample analysis. Of the trials identified, 29 studies were implemented in the United States, with evidence demonstrating effectiveness of the IY series in reducing children conduct problems (Brotman et al., 2005; Presnall et al., 2014; M. J. Reid et al., 2003, 2007; Webster-Stratton et al., 2001a, 2001b), ADHD symptoms (Beauchaine et al., 2013; Webster-Stratton et al., 2011), and depression among both children and parents (Boyd et al., 2017; K. C. Herman et al., 2011; Webster-Stratton & Herman, 2008). Trials have documented maintenance of significant post-treatment changes at 1-year (Webster-Stratton et al., 2011) and 2-year follow-up (Reid et al., 2003).

International evaluations of IY have also demonstrated significant improvements in parental attitudes and parent-child interactions (Hgstmr et al., 2017; Homem et al., 2015; Hutchings et al., 2007, 2017), reductions in parents' use of harsh forms of discipline (Reedtz et al., 2011; Stattin et al., 2015), reduced child conduct problems (Leijten et al., 2017; McGilloway et al., 2014) and internalizing problems (Javier et al., 2016). International trials have provided evidence of long-term outcomes with half of children diagnosed with an externalizing disorder displaying normative levels of problematic after 1-year (Axberg & Broberg, 2012; Drugli et al., 2007; Drugli et al., 2010; McGilloway et al., 2014), 2-year (Hgstmr et al., 2017), and 4-year follow-up (Reedtz & Klest, 2016). Lastly, the addition of the teacher and/or child training programs significantly improved peer interactions, internalizing symptoms (K. C. Herman et al.,

2011) and problematic behavior at school (Baker-Henningham et al., 2012; Reid et al., 2003).

When examining the cost effectiveness of the Incredible Years program, researchers in the United Kingdom used a per unit cost of improvement analysis to show that the incremental cost effectiveness ratio was one point on the Eyberg Child behavior Inventory per £73 spent (Edwards et al., 2007). Based on this ration, the conclusion drawn was that the IY would be 83.9% effective for children at risk for developing conduct disorder. Another study compared IY (among other programs) to a waitlist control and reported on a long-term economic evaluation where outcomes were measured in disability adjusted life years (DALY's). This study showed that all interventions (including IY) were cost effective at a threshold of US\$ 80,00 per averted DALY compared to the control group (Nystrand et al., 2019). Additionally, according to the WSIPP (2019), benefits of IY total \$8,004, with net program costs at \$1,416 for a total benefit minus cost of \$6,588. The chances of IY producing benefits larger than its costs were 59%, with the benefit to cost ration at \$5.65 (WSIPP, 2019).

Multisystemic Therapy

Multisystemic Therapy (MST) is an intensive family and community-based intervention emphasizing the interplay of risk factors within a youth's ecological context to be the driving components of adolescent antisocial behavior (Henggeler et al., 1992; Henggeler, Rowland, et al., 1999). Accordingly, the overarching aim of MST is to surround juvenile offenders (ages 11 to 17) with serious antisocial behaviors and their primary caregivers with a context that supports prosocial behavior by targeting

involvement and effective caregiving practices, a prosocial peer network, and supportive school environment (Henggeler et al., 1992; Henggeler, Rowland, et al., 1999). MST employs a home-based model where master's level professionals are available 24 hr a day, 7 days a week through an on-call rotation, and deliver services where problems occur (i.e., homes, schools, and neighborhood) (Henggeler, Rowland, et al., 1999). Contact ranges from daily to once weekly during the 3-to-5-month period of the intervention; therapists monitor the progress of treatment goals that are assigned individually to youth and their caregivers.

The goal of MST is to reduce youth's delinquent behaviors and empower parents with the skills and resources needed to more adaptively manage their youth's social and psychological development (Henggeler, Pickrel, et al., 1999). Informed by the theoretical underpinnings of Bronfenbrenner's social ecological framework, MST aims to identify a comprehensive set of risk factors within the youth's natural ecology to address intrapersonal (e.g., cognitive problem solving), familial (e.g., inconsistent discipline, low monitoring, family conflict), and extrafamilial (e.g., association with deviant peers, school difficulties) factors associated with serious antisocial behavior (Henggeler, Pickrel, et al., 1999). MST is also guided by nine treatment principles: finding the fit, positive/strength focus, increasing responsibility, present/action focused and well-defined, targeting sequences, developmentally appropriate, continuous effort, evaluation, accountability, and generalization. Treatment is individualized to each family.

We found 64 trials extending from the United States (Fonagy et al., 2018; Johnides et al., 2017; Sawyer & Borduin, 2011) to different regions of Europe (Butler et

al., 2011; Deković et al., 2012; Ogden & Halliday-Boykins, 2004). Of the 64 trials, 40 were original independent studies. Trials focused on juvenile delinquents found MST to significantly reduce rates of recidivism, serious offenses, and number of out-of-home placements when compared to juvenile offenders receiving treatments as usual (Borduin et al., 2009; Butler et al., 2011). MST has also been shown to improve family functioning, decrease substance use (Henggeler et al., 2002, 2006; Schaeffer & Borduin, 2005) and mental health problems (Henggeler et al., 2003). Twenty-year follow-up data has demonstrated fewer felony arrests, days incarcerated, divorces, and paternity or child support suits in adulthood (Johnides et al., 2017; Sawyer & Borduin, 2011).

Recent randomized trials have evidenced MST to be an effective intervention among juvenile offenders with negative health related issues such as diabetes (Ellis et al., 2005b, 2012), obesity (Ellis et al., 2010; Naar-King et al., 2009), and asthma (Naar-King et al., 2014). Initial trials demonstrated that when compared to standard medical diabetes care, youth receiving MST showed significant improvements in regimen/medicine adherence and in psychosocial domains such as secondary caregiver involvement (Ellis et al., 2007) and adolescent diabetes stress (Ellis et al., 2005a). Several trials also support MST's effectiveness in reducing body fat and overweight percentage (MacDonell et al., 2010; Naar-King et al., 2009), with some trials demonstrating MST to be related to significant improvements in asthma management among African American adolescents (Ellis et al., 2016; Naar-King et al., 2014). MST has also been adapted for youth with problematic sexual behaviors (Henggeler et al., 2009; Letourneau et al., 2009, 2013) and for youth who have been abused and neglected (Swenson et al., 2010) with similar

evidence across these studies.

An examination of the economic benefits of MST considered areas such as health care, productivity lost, property damage, and reductions in quality of life. Results showed reductions in criminality in the MST group compared to those in individual therapy resulting in long term benefits for societies and individual crime victims, estimating the cumulative benefits of MST at \$35,582 per juvenile offender and an additional \$7,798 per sibling (Dopp et al., 2014). Over a 25-year period, every dollar spent on MST, resulted in \$5.04 in savings for crime victims and taxpayers (Dopp et al., 2014). Another study focusing on the impact of MST for sexual behaviors (MST-PSB) versus usual community services, estimated the total benefit of MST-PSB at \$343,455 per participant, or \$48.81 in savings for every dollar spent on MST-PSB (Borduin & Dopp, 2015). Analyses based on a state wide implementation of MST in New Mexico produced benefits of more than 4,643 per youth in avoided behavioral health claims and \$15,019 per youth via reductions in juvenile crime (Dopp et al., 2018). It is estimated that over the course of the 7-year study including 1,869 participants MST yielded \$64.2 million dollars in savings (Dopp et al., 2018).

WSIPP (2019) report of MST for court-involved/post-release youth reported a total program benefit of \$25,554, a net program cost of \$8,471 for a benefit minus cost of \$17,083 a \$3.02 benefit to cost ratio and a 99% chance that the program will produce benefits greater than its costs. Several other evaluations of MST for specific populations were conducted and are available through the Washington State Institute of Public Policy.

New Beginnings Program

The New Beginnings program (NBP) is a 10-12 session group-based preventative intervention for families and children (ages 3 to 18) dealing with issues of divorce and separation (Wolchik et al., 2000; Wolchik & West, 1993). The NBP was designed to promote positive developmental adaptation after divorce by reducing children's exposure to risk factors and increase their resilience (Wolchik et al., 1993). Specifically, the NBP targets effective parenting skills (i.e., discipline skills, parent-child relationship quality, and reduced exposure to interparental conflict) among caregivers through 2-hr weekly group sessions led by at least two master's level clinicians (Wolchik et al., 2000). Group leaders teach program content using a structured manualized curriculum with sessions emphasizing didactic and experiential components (e.g., role plays, open group discussion, videos, and weekly home practices). The NBP also includes two additional structured individual sessions that are about 1-hr each to help tailor the program skills to a family's need (Wolchik et al., 2000).

We found 14 trials, four of which were original, and 10 which were follow-ups or secondary analysis. Outcomes reported in these trials include improved mother-child relationships and discipline, attitudes toward father-child contact, mental health outcomes, and reductions negative divorce events (Wolchik et al., 1993, 2000). When NBP was delivered by community-based agencies targeting both mothers and fathers, promising empirical support was found (Sandler et al., 2018, 2020). However, positive moderated effects of the NBP were not found among Latinx families (Sandler et al., 2020). Additionally, the quality of the overall dyadic behavior and maternal behavior was

found to improve among incarcerated mothers and their infants in the U.K. (Sleed et al., 2013).

Secondary analyses demonstrated that youth who participated in the NBP showed more positive outcomes on internalizing and externalizing problems, mental disorder symptoms and diagnosis, alcohol, drug, and polydrug use, number of sexual partners, grade point average and self-esteem at 6-year follow-up when compared to youth from the control condition (McClain et al., 2010; Wolchik et al., 2002). Further mediational analyses demonstrated that positive program effects on youth's educational goals, job aspirations, GPA, and youth mental health symptoms were mediated by improvements in maternal effective discipline (Sigal et al., 2012; Zhou et al., 2008) and that intervention-induced changes in youth externalizing problems and academic competence mediated the effects of the program on the job aspirations of high-risk youth (Sigal et al., 2012).

When findings were examined 15 years later, NBP demonstrated significant age-related effects on cortisol reactivity to stress (Luecken et al., 2015) as well as reductions in the incidence of internalizing disorders for females and males and substance use behaviors for males (Wolchik et al., 2013). Lastly, results found intervention-induced improvements in parenting led to better academic, work, peer, and romantic competence in emerging adulthood through effects on behavior problems and competencies during adolescence (Wolchik et al., 2020).

According to WSIPP (2019), analysis of NBP, the total benefits minus cost total \$867, with a benefit to cost ratio of \$0.14 and a 49% chance that the intervention will produce benefits greater than the costs (WSIPP, 2019). Additionally, an evaluation of the

cost and benefits of NBP as a preventative intervention for divorced families yielded a net benefit of \$1630 per family, over the course of a year, 15 years post intervention (Herman et al., 2015).

Parent Child Interaction Therapy

Parent Child Interaction Therapy (PCIT) was developed to help parents of children 2-8 years old build warm and responsive relationships as a means of managing child behavioral problems (Abrahamse et al., 2016; Schuhmann et al., 1998). Rooted in attachment and behavioral theories, the intervention has two phases; child-directed interaction (CDI) and parent directed interaction (PDI) (Schuhmann et al., 1998). During the PDI phase parents learn to improve their child's compliance through the delivery of clear, age-appropriate instructions and consequences (Ramos et al., 2018). While in CDI parents learn to follow their children's lead in a 5 min play session termed "special time" (Ramos et al., 2018). During special time parents use PRIDE skills (praise, reflect, imitate, describe and enjoyment) through which appropriate behaviors are reinforced and avoid "don't skills" (e.g., questions, commands, and criticism) (Ramos et al., 2018). Throughout both phases of treatment, therapists actively coach parents towards skill mastery and assess their progress during a 5-min in-vivo observation with their child at the beginning of session (Bagner & Eyberg, 2007). Treatment culminates when parents demonstrate mastery over both PDI and CDI skills and children's behavior is within one-half standard deviation of the normative range on the Eyberg Child Behavior Inventory (ECBI; Bagner & Eyberg, 2007). Although the intensity of treatment varies, it is customary for the intervention to be delivered weekly, in hour long blocks for about 12-

16 weeks (Bagner et al., 2010; Leung et al., 2015; Schuhmann et al., 1998; Scudder et al., 2019).

The PCIT treatment manual is available in English, traditional Chinese, Japanese, Korean, Spanish, Dutch, and German. The intervention has also been successfully implemented in Puerto Rico, Australia, as well as in several Asian and European countries (Abrahamse et al., 2016). It has been found to be successful in varying contexts like community clinics (McCabe & Yeh, 2009), child welfare agencies (Mersky et al., 2016), nursery schools (Leung et al., 2015), and in participants homes (Ramos et al., 2018) among others.

We found 18 trials, ranging from 19 to 192 participants and varying demographic makeup. Some samples were almost exclusively Australian (Kohlhoff et al., 2020; Thomas & Zimmer-Gembeck, 2012), Chinese (Leung et al., 2015, 2017) or Puerto Rican (Matos et al., 2009). Others were primarily White (Abrahamse et al., 2016; Acosta et al., 2019; Bagner et al., 2010; Bagner & Eyberg, 2007; Chaffin et al., 2011; Niec et al., 2016; Nixon et al., 2004; Schuhmann et al., 1998) with minority samples, such as in (Chaffin et al., 2004) which included 40% African Americans and (McCabe & Yeh, 2009; Ramos et al., 2018) which was primarily Latinx. Children were relatively evenly distributed with a slightly male majority, which is similar to what is seen in other interventions targeting child conduct problems.

PCIT outcomes impacted a variety of domains for both parents and their children. A large number of studies reported declines in parental stress and increases in positive interaction/parenting practices (Abrahamse et al., 2016; Bagner et al., 2010; Bagner &

Eyberg, 2007; Leung et al., 2015, 2017; Matos et al., 2009; Niec et al., 2016; Nixon et al., 2004; Schuhmann et al., 1998; Thomas & Zimmer-Gembeck, 2012). While others reported increases in parental sensitivity and non-intrusiveness (Kohlhoff et al., 2020) and increased locus of control for mothers (Schuhmann et al., 1998).

Child outcomes included, reductions in child externalizing /disruptive behaviors (Abrahamse et al., 2016; Bagner et al., 2010; Bagner & Eyberg, 2007; Kohlhoff et al., 2020; Leung et al., 2015, 2017; McCabe & Yeh, 2009; Mersky et al., 2016; Niec et al., 2016; Nixon et al., 2004; Scudder et al., 2019; Thomas & Zimmer-Gembeck, 2012), decreases in internalizing symptoms (Abrahamse et al., 2016; Bagner et al., 2010; Kohlhoff et al., 2020; Mersky et al., 2016; Thomas & Zimmer-Gembeck, 2012), attention problems (Bagner et al., 2010; Leung et al., 2015; Matos et al., 2009), aggression problems (Bagner et al., 2010; Matos et al., 2009), and child sleep problems (Acosta et al., 2019). In addition, studies also reported increased child compliance (Acosta et al., 2019; Bagner et al., 2010; Schuhmann et al., 1998), and significant improvements in child adaptive functioning (Niec et al., 2016). The PCIT intervention has shown promise in reducing the potential for child abuse among psychically abusive parents, reduced notifications to child protection services for child maltreatment and reduced recidivism among maltreating parents (Chaffin et al., 2011). PCIT has also been found to address self-injurious behavior or speech and language problems among children with cognitive impairments (Bagner & Eyberg, 2007).

Analysis of PCIT's cost effectiveness yielded a per-child treatment cost of \$1,025.71 (Goldfine et al., 2008). Prior research was utilized to evaluate treatment

outcomes as measured by the Child Behavior Checklist (CBCL), ECBI and the Parenting Stress Index (PSI). Based on this information cost effectiveness ratios were calculated and reported that in order to achieve a one-point decrease cost \$22.07- \$87.15 on the ECBI, \$100.56 on the CBCL, and \$26.47 on the PSI (Goldfine et al., 2008). When it come the benefit-cost summary conducted by the WSIPP, PCIT's benefits minus costs were \$945, with a benefit to cost ratio of \$0.55 and a 27% chance that the intervention will produce benefits greater than the costs (WSIPP, 2019). For families in the child welfare systems PCIT's benefit minus costs were \$24,365, with a benefit to cost ratio of \$15.11 and a 96% chance that the intervention will produce benefits greater than the costs (WSIPP, 2019).

ParentCorps

ParentCorps is an early intervention developed to address the impact of poverty on early child development (Brotman et al., 2013). The intervention identifies parents and teachers as the agents of change and seeks to improve positive behavior support, effective behavior management, and parent involvement in education (Brotman et al., 2013). The ParentCorps intervention was developed to be delivered in schools and consists of 13 group sessions for parents of preschool-aged children each lasting 2-hr and delivered by pre-K teachers as well as professional development for pre-K and Kindergarten teachers. Parent sessions focus on establishing routines, increasing positive involvement through child-directed play, use of positive reinforcement to increase compliance, selectively ignoring mild child misbehavior, and providing consistent consequences for undesired behavior (Brotman et al., 2011).

We found two published trials of ParentCorps, both conducted in New York City schools. Sample sizes ranged between 171 and 1,050 including ethnically diverse families, with a majority being Black (Brotman et al., 2013). Teachers in all schools received ParentCorps professional development prior to the randomization of the schools into treatment conditions. Pilot results showed improved child behavior as rated by teachers as well as improvement in parenting practices measured by both observation and self-report (Brotman et al., 2011). The impact of ParentCorp on parental involvement and child school readiness, variables tied to academic achievement, showed positive effects for Black families but not for Latinx families (Brotman et al., 2011). Relative to control, children participating in ParentCorps experienced higher academic achievement scores in reading, writing, and math, and higher teacher-rated academic performance (Brotman et al., 2013). Two-year follow-up data on 792 families showed continued intervention impact on child emotional and behavioral mental health (Brotman et al., 2016). There were no significant interactions between intervention and either academic performance nor academic achievement scores, however, the data showed a retention of gains in teacher-rated academic performance, and a protection from deterioration in reading tests scores relative to the control group (Brotman et al., 2016).

In an evaluation of potential return on investments of ParentCorps measuring costs and quality for adjusted life years (QALYs); ParentCorps was estimated to save \$4387 per participant and increase their quality adjusted life expectancy by 0.27 QALY's (Hajizadeh et al., 2017).

Parents as Teachers

The Parents as Teachers (PAT) program is a home-visiting program that provides services to families with children from the prenatal stages up to three years of age, although it has been used for children up to the age of 5 (Wagner et al., 2002). The program aims to increase parenting knowledge (i.e., positive parenting practices, child development knowledge), increase early detection of developmental delays and health problems, decrease child abuse and neglect, and increase school readiness (Wagner et al., 2002). The PAT program has four components: (a) monthly 60 min home visits, (b) monthly group connections, (c) yearly child screening, and (d) referrals to resources (Schaub et al., 2019; Wagner et al., 2002).

A trained educator conducts home visits. The curriculum for home visits includes topics such as the relationship between parent and child, developmentally appropriate parenting, and a focus on the well-being of the family (Schaub et al., 2019). Monthly home visits are recommended until the child is three years of age. The monthly group connections component is intended to be a support group for parents going through the program, where parents can meet and socialize, receive information about resources, and further expand on topics covered during the in-home visits. Ideally, families attend as many group meetings as possible, but PAT does not state a minimum requirement. The child completes a yearly screening to assess for any health, developmental, hearing, or vision problems. Families are provided with referrals to relevant resources such as childcare, health care, community agencies like battered women's shelter, and counseling services (Wagner & Clayton, 1999). The PAT program has been used individually and in

conjunction with other programs. These additional programs have targeted improving feeding and health outcomes for the child (i.e., Parents as Teachers to the Nutrition and Physical Activity Enhanced Version [PATE]; Healthy Eating and Active Living Taught at Home [HEALTH]) health outcomes for the child's mother (PAT+Lifestyle), as well as to decrease the risk of child maltreatment (i.e., Parents as Teachers and SafeCare at Home [PATSCH]).

We found five original trials and seven follow-ups: two original standard PAT trials with two follow-ups, one cluster trial assessing PATSCH, one original trial comparing PAT and PAT+Lifestyle with two follow-ups, and two follow-ups for HEALTH and one for PATE. Sample sizes ranged from 54-704. Studies have mostly been conducted within the United States and they have included socioeconomically disadvantaged African American mothers (Cahill et al., 2018; Haire-Joshu et al., 2019; Lewkowitz et al., 2018; Tussing-Humphreys et al., 2019), overweight children and mothers (Morshed et al., 2019; Tabak et al., 2018), teen and Latinx parents (Wagner & Clayton, 1999), and low-income families (Wagner et al., 2002). A few studies have taken place in Switzerland (Neuhauser et al., 2018; Schaub et al., 2019).

Findings examining the standard PAT program suggest that PAT increases child self-help behaviors, cognitive, communication, and social development and decreases child's affective, anxiety, behavioral, and pervasive developmental problems. Among parents, PAT increased acceptance of child's behavior, parental happiness when taking care of the child, maternal sensitivity, more language and literacy promoting behaviors (i.e., reading aloud, singing), and greater parenting, behavior modification, and

developmental knowledge (i.e., cognitive, emotional, and language development) (Neuhauser et al., 2018; Schaub et al., 2019; Wagner et al., 2002; Wagner & Clayton, 1999).

There seem to be some benefits to adding components to standard PAT. Participants in both PAT and PAT+Lifestyle had higher rates of breastfeeding initiation compared to the national average for African American women (Lewkowitz et al., 2018). However, mothers participating in PAT+Lifestyle had additional positive outcomes such as lower blood pressure, less increases of insulin, less weekly and total gain weight across their pregnancy, and are more likely to return to their original weight 12 months postpartum compared to PAT (Cahill et al., 2018; Haire-Joshu et al., 2019). Studies assessing HEALTH versus PAT, found that individuals in both of the HEALTH and PAT interventions had reductions of child BMI with maintenance at a 24-month follow-up, and mother's decreased giving food to the child to calm them down and increased age-appropriate feeding and structured feeding (Morshed et al., 2019). HEALTH performed better in reducing soda accessibilities in homes in comparison to PAT (Tabak et al., 2018). Mothers participating in the PAT and PATE groups were both compliant with delaying fruit juice consumption until the child was 6 months of age (Tussing-Humphreys et al., 2019). Lastly, participants in PATSCH displayed more use of nonviolent discipline techniques and an increase in psychological aggression when compared to the PAT group, and participants in the PAT group evidenced decreased child abuse potential (Guastaferrero et al., 2018).

According to the WSIPP (2019), the benefits of PAT's total benefits minus the

costs of the program result in \$3,859 per participant, with a benefit to cost ratio of \$0.18 and a 30% chance that the program will produce benefits greater than the costs (WSIPP, 2019).

Promoting First Relationships

Promoting First Relationships (PFR) is a relationship-based, manualized home visiting parenting program grounded in attachment theory (Hash et al., 2019). The program utilizes a strengths-based approach to promote trusting and secure relationships between caregivers and children, helping them increase their understanding of their children's social and emotional needs and be more emotionally available (Oxford et al., 2018). PFR is designed for parents of children three years of age and under and is delivered throughout the course of 10 weeks (Hash et al., 2019). The intervention utilizes videotaped interactions to provide relevant feedback on the familial interactions, combined with handouts to enhance parents' awareness of their children's needs, concerns and emotional development (Spieker et al., 2012). PFR can be conducted in group (6-8 participants) or individual format. The program targets emotion regulation, challenging child behavior, and unmet emotional or social needs (Oxford et al., 2016).

We identified 12 trials, 6 original studies, and 6 sub-sample or follow-up studies. Sample sizes ranged from 34-247 participants. A large section of the research was conducted with at risk populations such children in foster care (Nelson & Spieker, 2013), child welfare (Oxford et al., 2016; Spieker et al., 2012), children experiencing adversity (Hash et al., 2019) or maltreatment (Oxford et al., 2013), and infants at risk for autism spectrum disorder (D. E. Jones et al., 2018) and one trial was conducted specifically with

American Indians (Booth-LaForce et al., 2020).

Results from the research trials report a reduction in parent-child welfare separation cases (Oxford et al., 2016), improvements in caregiver sensitivity (Pasalich et al., 2016; Spieker et al., 2012), increased parental competence and understanding of children's social emotional needs (Oxford et al., 2016; Spieker et al., 2012) and the formatting of developmentally appropriate expectations among caregivers (Booth et al., 2018). Although there were no direct effects between PRF and children's sleep (Hash et al., 2019), participation in PRF predicted fewer sleep problems for children, suggesting a possible indirect effect (Oxford et al., 2013). In addition, participation in PFR was associated with improvements in neurocognitive metric of social attention (D. E. Jones et al., 2018) and increases in cortisol for children who had abnormally low levels (Nelson & Spieker, 2013).

Benefit-Cost Summary from The WSIPP (2019) report that PRF's benefits minus costs total \$590 with a \$0.57 benefit to cost ratio per participant with a 47% chance that the program will produce benefits greater than the costs.

SafeCare

The SafeCare program is a behavioral skills training program designed to help parents who are at-risk or have been reported for child neglect or abuse (SafeCare, 2015). SafeCare aims to provide parents, of children ages 0-5, skills focused on parenting and general childcare. The intervention consists of three training modules which include infant and child health care, home safety, and parent-child interactions (SafeCare, 2015).

The SafeCare training program is typically delivered in the home by certified

Home Visitors (SafeCare, 2015). The program takes approximately 18 weeks to complete with six sessions for each of the three modules of the program (Osborne, Rostad, et al., 2017). The modules are: (a) child health: targets factors associated with medical neglect, (b) home safety: targets factors related to household hazards associated with environmental neglect and unintentional injury, and (c) parent-child interaction; teaches parents appropriate parentchild interactions to target risk factors associated with neglect and physical abuse (SafeCare, 2015; Osborne, Rostad, et al., 2017). All three modules follow the same structure: the first session of each module focuses on a baseline assessment, sessions 2-5 are training sessions focused on helping parents learn the necessary skills, and session six is designed as a second assessment to measure parent progress (Osborne, Rostad, et al., 2017).

We found 8 trials with two focusing on the original SafeCare intervention targeting family outcomes. Sample sizes ranged from 37 to 2,175 families. A large number of participants were involved in either public or private child welfare agencies (Whitaker et al., 2020). Based on reported results, participation in SafeCare led to improved proactive parenting, supporting positive child behaviors, and lower parent stress (Whitaker et al., 2020).

Adaptations to SafeCare have included SafeCare+ that includes the basic SafeCare program as well as additional training such as motivational interviewing skills (Silovsky et al., 2011). Families enrolled in the augmented SafeCare+ in a rural area were more likely to enroll and remain in services compared to those who received services as usual (Silovsky et al., 2011). Another adaptation of SafeCare has been the Dad to Kids

Program also known as Dad2K. Dad2K aims to improve parenting skills and reduce the risk for child maltreatment among fathers with skills built into the parent-child interaction model of SafeCare (Osborne, Lai, et al., 2017). Reported results on the implementation of the Dad2K program include no significant changes in child maltreatment behaviors, yet improved father-child interaction skills, behavioral changes related to parenting, and higher satisfaction ratings from the fathers (Brown et al., 2018; Self-Brown, Osborne, Lai, et al., 2017). WSIPP's (2019) benefit-cost analysis of SafeCare reports the programs total benefits as \$4,056, with a net program cost of \$195 yielding a benefit minus cost of \$3,861. The programs benefit to cost ratio was \$20.82, with a 94% change that it will produce benefits greater than its costs (WSIPP, 2019).

Strengthening Families Program

The Strengthening Families Program (SFP) is a parenting skills intervention aiming to prevent child and adolescent delinquency and substance use (Kumpfer et al., 1996). SFP has different modules corresponding to different age groups ranging from 0-17 years old. SFP has been implemented in a variety of settings (e.g., schools, community mental health clinics, adult and youth corrections, churches) and has been adapted to work with diverse cultural groups within the United States (e.g., Black, Latinx, American Indians, Pacific Islanders). Additionally, SFP has been adapted and implemented internationally with promising results (e.g., United Kingdom, Greece, Poland). Groups are held for 14 weeks and last 2-hr for high-risk populations (Kumpfer & Magalhães, 2018).

SFP approaches substance misuse and behavioral issues as a family disease,

teaching caregivers skills to break the cycle of intergenerational transmission of addiction and delinquency. Children learn social and emotion regulation skills, peer resistance skills, problem solving, and effective communication. Caregivers learn parenting skills such as differential reinforcement, communication, supervision, effective discipline, and substance use education. SFP attempts to reduce barriers to care by providing transportation, dinner, and childcare.

We identified 23 trials examining the efficacy of SFP across multiple countries, and five follow up studies documenting the long-term effects. SFP has been found to effectively lower risk of illicit substance use among youth and occurrence of behavioral problems relative to control groups (Spath et al., 2000, 2002, 2006, 2013). Youth who have participated in SFP have also been found to have higher academic engagement and performance relative to controls (Spath et al., 2008). Research suggests that the most significant long-term impact of SFP is on reducing risk for illicit substance use. SFP has been found to shield participants against illicit substance use up to 10 years after engaging in the intervention (Spath et al., 2012).

WSIPP (2019) analysis reports SFP's cost benefits totaling \$3,123, net program costs at \$583, making the benefits minus costs \$2,540. The benefit to cost ratio was \$5.36 per participant, with a 60% chance that the intervention will produce benefits greater than the costs (WSIPP, 2019).

Strong African American Families

Strong African American Families (SAAF) is the first family-centered preventative intervention designed specifically for African American families. It aims to

ease the negative impacts of life stressors on rural Black youths by fostering supportive parenting (Brody et al., 2019). SAAF builds on the structure and foundation of Strengthening Families Program (Kumpfer et al., 1996) and adds racial socialization and culturally relevant factors (Brody et al., 2005). Combining longitudinal developmental research with rural African American families, and the cognitive model of adolescent health risk behavior, SAAF identifies malleable parenting processes that facilitate the development of responsive and supportive parent child relationships (Brody et al., 2005). SAAF aims to leverage supportive parenting and elicit youths protective factors to prevent initiation of risky behaviors such as substance use and sexual activity (Brody, Beach, et al., 2009).

The intervention consists of seven consecutive weekly sessions for caregivers and their 10-14-year-old youth. Sessions are held at community facilities, with separate parent and child skill-building curriculum. Each weekly session includes distinct components for parents and children, followed by a joint session where skills are practiced (Brody et al., 2004). In the 1-hour long sessions parents are taught involved vigilant parenting that includes nurturant involvement, monitoring, adaptive racial socialization, communication about sex, and setting expectations about alcohol use (Brody et al., 2004). Children learn the importance of rules, adaptive behaviors to combat racism, goal formation, and realistic estimates of alcohol consumption as well as resistance strategies (Brody et al., 2004).

We found 29 trials all conducted with African American youth in the rural south. Targeting brain development among low SES youth, years lived in poverty forecasted

diminished brain volume in key regions for control group participants, whereas the SAAF program ameliorated the association of years lived in poverty with left dentate gyrus and CA3 hippocampal subfields and left amygdalar volumes (Brody, Gray, et al., 2017). Examination of past-month substance use across 29 months as a function of DRD4 genotype found a greater preventative effect for youths carrying a 7-repeat allele, over those with two 4-repeat alleles, a role of DRD4 in increase substance use supporting the differential susceptibility to parenting hypothesis (Beach et al., 2010). Similarly, a prevention design was used to investigate a moderation effect between a polymorphism in the SCL6A4 (5HTT) gene at 5-HTTLPR and increases in youths risk behavior initiation found that risk behavior initiation was positively linked with the 5-HTTLP genotype, and negatively with participation in SAAF (Brody, Beach, et al., 2009). Those in the control group and with genetic risk-initiated risk behavior at twice the rate of those in the SAAF condition (Brody, Beach, et al., 2009). Youth at genetic risk maintained lower levels of risk behaviors 4 years after posttests (Brody, Yi-fu, et al., 2009).

Additional biological outcomes report that participation in SAAF at age 11 ameliorated the association between adverse childhood experiences (ACEs) and the development of prediabetes at age 25 (Brody, Yu, et al., 2017). For participants in the control condition, a 1-point increase in ACEs was associated with a 37.3% increase in risk of having prediabetes. ACEs were not associated with a likelihood of prediabetes in the SAAF condition (Brody, Yu, et al., 2017). More specifically living in a disadvantaged neighborhood during adolescence was associated with increased drug use among young men and elevated BMI among young women in a control group, but not in the SAAF

condition (Brody et al., 2019). Participation in SAAF at age 11 resulted in reduced drug use for men and decreases in BMI for women at ages 19-25 (Brody et al., 2019). SAAF also deters initiation of alcohol use and slows rates of consumptions among participants (Brody et al., 2006, 2010; Gerrard et al., 2006; Kogan et al., 2019), produces reductions in catecholamine levels (Brody et al., 2014) and cotinine levels 9 years after program participation (Chen et al., 2017). SAAF is also effective at preventing the development of conduct problems among youth (Brody et al., 2008; Kogan et al., 2016) increases youths' protective factors (Brody et al., 2004), self-control (Brody et al., 2005; Kogan et al., 2016), decreased sexually risky behavior, self-pride, positive racial identity and sexual intent and escalation (Murry et al., 2005, 2007, 2011).

The Strong African American Families-Teen program, a developmentally appropriate adaptation, reported outcomes such as lower increases in conduct problem behavior, substance use problems, and frequency of depressive symptoms (Brody et al., 2012). SAAF-Teen also helped reduce incidence of unprotected intercourse and promoted contraception usage (Kogan et al., 2012). Elevated parental depressive symptoms were forecasted to accelerate epigenetic aging among youth, however reductions in harsh parenting and emotional distress among children accounted for SAAF serving as a protective agent against epigenetic aging (Brody et al., 2016). Supportive parenting was also linked to increase employment income and decreased rates of poverty for participating youth (Brody et al., 2020).

When examining if children's genetic risk for negative affect and poor self-control moderated treatment effects on caregiver's depression, participation in SAAF was

associated with greater impact on depressive symptoms among caregivers whose children were at genetic risk for negative affect and poor self-control (Beach et al., 2009). SAAF is also related to reduced caregiver depression and enhanced parenting practices (Kogan et al., 2016) evidenced by consistent discipline, monitoring, open communication (Beach et al., 2008) and racially specific parenting (Murry et al., 2007).

Cost benefit analysis of SAAF-T concluded that the intervention costs were \$168 per participant, with \$50 per reduction in an alcohol use episode and \$123 per reduced episode of binge drinking. Based on cost-effectiveness acceptability curves, SAAF-T resulted in at least a 90% probability of being cost effective (Ingels et al., 2013). Analysis from WSIPP (2019) report that SAAF's net benefits total \$1,482, while net program costs totaled \$759, with a \$1.95 benefit to cost ratio and a 54% chance that the program will produce benefits greater than its costs.

Triple P-Positive Parenting Program

Triple P-Positive Parenting Program is an evidenced-based system with five levels of intensity that focus on the prevention and intervention of behavioral and emotional problems in children and adolescents. Level 1 is a media-based campaign that disseminates parenting and child development information in communities. Level 2 is a low-intensity intervention that helps parents who have mild behavioral or other concerns (e.g., toilet training) via seminars or through a single brief intervention session. Level 3 targets commonly occurring mild to moderate problem behaviors, which are delivered in individual or group format that meet one to four times for 80 min. Level 4 targets more severe behavioral problems and provides a comprehensive review of parenting strategies

in four formats: individual, group, online, or self-directed therapy. Caregivers participate in (a) eight weekly group sessions followed by four 15-30 min individual phone sessions, (b) 10 weekly self-directed sessions, or (c) 8 online modules.

Parents learn 17 parenting strategies: 10 target children's competence and development (e.g., praise, quality time, behavior charts) and seven are designed to help parents manage child's misbehaviors (e.g., time-out, setting rules, planned ignoring (Markie-Dadds & Sanders, 2006; Sanders et al., 2007)). Parents also learn a 6-step plan to enhance the generalization and maintenance of parenting skills (i.e., plan ahead, decide on rules, select engaging activities, decide on rewards and consequences, hold a follow-up discussion). Level 5, the intensive level, is provided once parents have completed level 4 and only if there is additional need for services. Level 5 addresses complicated family situations (e.g., parental conflict, stress, mental health problems) with communication, personal coping, and additional parenting skills (Hoath & Sanders, 2002; Ireland et al., 2003). For parents at-risk of child maltreatment, Pathways Triple P, a level 5 intervention, targets parental anger management and other behavioral skills to increase parent's ability to effectively cope with child-rearing (Wiggins et al., 2009). Triple P has been adapted for specific populations: Stepping Stones Triple P (SSTP) for children with disabilities (Brown et al., 2014; Whittingham et al., 2009, 2014) and Indigenous Triple P tailored for Indigenous families (Keown et al., 2018; Turner et al., 2007).

We found 34 trials and five follow-up studies with sample sizes ranging from 12 – 305 families. Triple P's efficacy has been widely tested in Australia and New Zealand with fewer trials in the United Kingdom (Doherty et al., 2014; S. Jones et al., 2014,

2015), Iran (Aghebati et al., 2014), Turkey (Arkan et al., 2020; Zyurt et al., 2016), Hong Kong (Au et al., 2014; C. Leung et al., 2003), Switzerland (Bodenmann et al., 2008), Germany (Heinrichs et al., 2014, 2017; Popp et al., 2019), Japan (Matsumoto et al., 2010), Panama (Mejia et al., 2015), and Indonesia (Sumargi et al., 2015). We found only one trial conducted in the U.S. (Prinz et al., 2009, 2016) and it utilized a population-based approach which provided no information on individuals' outcomes.

We found evidence for the efficacy of levels 1, 3, 4, 5 and special programs of Triple P on child and parent outcomes. At level 1, the parenting podcast and television series improved child behavioral problems, parenting styles, and parenting self-efficacy, competence, and confidence (Morawska et al., 2014; Sanders et al., 2000). Level 3 trials show improvements in child behavioral problems, parenting behavior and self-efficacy, parental mental health, and perceptions of partner support in treatment relative to comparison groups (Palmer et al., 2019). Level 4 has by far the most evidence. Studies show improvements on parenting styles, positive parenting behaviors, parent-child relationship, parental mental health, parental life satisfaction, parenting self-efficacy and self-esteem, and decreased stressors related to parenting, interparental conflict about child-rearing, and intensity of child behavioral and emotional problems (i.e., internalizing, externalizing (Lau et al., 2014; Day & Sanders, 2017; Jones et al., 2014, 2015). Level 5 outcomes are similar to level 4, with additional evidence for improvements in discussion of emotion labels and emotion coaching in parents (i.e., Emotion Enhanced Triple P; Salmon et al., 2014), improved negative parental attributions of child's misbehaviors, and decreased unrealistic parental expectations and potential for

child abuse (Sanders et al., 2004). Lastly, the U.S. population-based trial found that all levels of the Triple P intervention decreased levels of alleged and investigated child maltreatment cases, child out-of-home placements, and hospitalizations of emergency-room visits for child maltreatment injuries (Prinz et al., 2009, 2016).

Support for Triple P programs has been observed across populations including Chinese, Japanese, and Indigenous parents (Keown et al., 2018; Leung et al., 2003; Matsumoto et al., 2007, 2010; Turner et al., 2007), parents in Panama. (Mejia et al., 2015), parents of gifted children (Morawska & Sanders, 2009), infants (i.e., Baby Triple P) (Popp et al., 2019), and teens (Arkan et al., 2020; Doherty et al., 2013, 2014), children with asthma and/or eczema (Morawska et al., 2017), anxiety (Zyurt et al., 2016), and autism or brain injuries (i.e., SSTP) (Brown et al., 2014; Whittingham et al., 2014).

When assessing the costs and benefits of Triple P, WSIPP (2019) reported the total program benefits per participant added up to \$2,375, while the program costs were assessed at \$305 making the benefits minus cost \$2,070. The benefit to cost ratio was \$7.79 per participant and the likelihood that the program will produce benefits greater than the program costs was assessed to be 71% (WSIPP, 2019). A population-based multiple cohort decision analytic model was used to estimate the cost per DAILY averted found that Triple P was cost-effective at an incremental cost-effectiveness ration (ICER) of \$1013 per DAILY averted when delivered in a group format (Sampaio et al., 2018). In an individual format ICER was \$20,498 per DAILY (Sampaio et al., 2018).

Discussion

Parent Management Training programs are ubiquitous. They seek to intervene on children as early as in-utero and through late adolescence. A striking observation from our extensive review was the number of common elements found in these programs, an observation that has already been established through other research (Dumas, 1989; Kaminski et al., 2008). Across evidence-based interventions, there are great variability in the complexity of programs from programs that target only parents in a very specific context, to programs that target communities, parents, and teachers at various levels of intervention. The number of outcomes examined across trials vary from biological/health outcomes (e.g., diabetes, weight, cortisol), to academic (e.g., performance, attendance), to social (e.g., friendship behaviors), and behavioral (e.g., externalizing behaviors). It is important to note that this review also highlights the variability in the robustness of evidence across interventions with some having as few as one and as many as 72 treatment trials. Given both the ubiquitous nature of parenting across cultures, and the culturally-rooted nature of parenting practices and child behaviors, it is of critical importance to note that the generalizability of trials varies tremendously from trials conducted in one city (New York City) with an ethnically homogenous group to interventions with many trials with ethnically diverse populations within the U.S. and as well as international trials. We suspect that the ecological validity of BPT in general is positively assessed by the full body of the work, that is, evidence across the many programs and all of their populations. The ability of parent programs to address children's outcomes at so many varied levels speaks to the incredible importance of

parents as important agents of socialization for their children. It is perhaps a ray of hope that scholars and funders have invested heavily in providing support to parents in being the best support for their children's development.

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CHAPTER 3

**BEHAVIOR PARENT TRAINING: A META-ANALYTIC EXAMINATION
OF CULTURAL GENERALIZABILITY²**

Introduction

Parent management training (PMT) interventions are multifaceted and have been used to treat a wide array of child presenting problems. They are flexible in the ways in which they are utilized and functioning as both treatment and preventions tools. Metanalytic studies have confirmed their effectiveness at enhancing parenting behavior as a means of improving and preventing child behavior problems (Leijten et al., 2019; Lundahl et al., 2006; Maughan et al., 2005; Sanders et al., 2014; Serketich & Dumas, 1996; Wyatt Kaminski et al., 2008).

Even though efficacious treatments such as PMT have been designed and rigorously tested, gaps in service provisions remain. Evidence-based mental health services are underutilized in general, and this trend becomes even more pronounced when it comes to racial and ethnic minorities who, despite having similar rates of psychiatric disorders, receive mental health services at disproportionately lower rates (Centers for Disease Control, 2011; Galvan & Gudiño, 2019). Ethnic minority caregivers face unique stressors such a weakened family ties, low Socio Economic Status (SES), uncertain immigration status, and language difficulties (Leyendecker et al., 2018). These challenges could help explain why low-income ethnic minority families have the lowest enrollment

²Alvarez, M., & Domenech Rodríguez, M. (under review). Behavioral parent training: A meta-analytic examination of cultural generalizability.

and retention in family evidence-based interventions (FEBIs; Smith et al., 2016). Enrollment numbers are particularly low among ethnic minorities when FEBIs are delivered by White implementers, when the interventions are not perceived to fit the families' culture and when they are not delivered in the participants' language (Kumpfer et al., 2002). Enrollment and outcomes are improved when evidence-based interventions are adapted to culture and context (Soto et al., 2018; vanMourik et al., 2017)

Although previous work has examined cultural adaptations within parenting interventions (Ortiz & Del Vecchio, 2013; Schilling et al., 2021; van Mourik et al., 2017), these have mostly been conducted at the study level rather than at the program level. To this end, the present manuscript seeks to examine (a) the heterogeneity of the populations/samples targeted in frequently cited and recommended evidence-based PMT programs, (b) whether programs implemented across ethnic/cultural and/or national groups have undergone cultural adaptations, and if so, the adaptations that have been recorded (c) whether programs implemented across ethnic/cultural and/or national groups reported outcomes, and if so, the impact of PMT on outcomes across ethnic/cultural groups. We seek to add program-level specificity that can help policy makers, agencies, and other stakeholders make more systemic decisions regarding implementation.

Evidence-Based Parenting Programs

PMT programs quickly gained momentum among researchers and practitioners likely due to their brevity (compared to traditional psychotherapy), relative affordability, and heavily researched and documented efficacy (Serketich & Dumas, 1996). There are upwards of 100 parenting programs and interventions in existence which have been tested

for efficacy and/or effectiveness in various trials and follow-up studies. In addition to the health, societal, and psychological impacts of parenting interventions, their financial benefits have also been widely documented (Duncan et al., 2017). In 1998, the monetary value of curving a child's risky trajectory through effective interventions was estimated to be between \$1.7 to \$2.3 million U.S dollars (Cohen, 1998). In more recent years, cost-benefit analyses have become more targeted and even program specific. A recent comparative analysis of five programs (Cope, Connect, Comet, The Incredible Years, and bibliotherapy) reported that all interventions were 100% cost effective at \$80,000 per averted disability-adjusted life-year (Nystrand et al., 2019). PMT interventions are multifaceted, and metanalytic studies have confirmed their effectiveness at enhancing parenting behavior and targeting a wide array of child presenting problems given their functioning as both treatment and prevention tools (Kaminski et al., 2008; Lundahl et al., 2006; Maughan et al., 2005; Serketich & Dumas, 1996).

Cultural Adaptations

Despite their efficacy and extensively documented positive outcomes, EBIs are underutilized by ethnic minority families. Many have argued that in order to increase engagement for diverse families, treatment needs to be culturally adapted and include specific concerns such as immigration, biculturalism, and ethnically matched staff (Falicov, 2009; Hall et al., 2016; Parra-Cardona et al., 2016). Meta-analytic findings indicate culturally adapted treatments are more effective than non-adapted treatments and that adaptations made for specific cultural groups are more effective than general adaptations (Hall et al., 2016; Soto et al., 2018). Even when modifications to treatment

protocols are made and implemented in research trials, the ability to assess the impact of modification for ethnic minorities is difficult. Despite the standards established by the Society for Prevention Research (SPR) that recommend subgroup analysis based on ethnic subgroups be conducted and reported (Gottfredson et al., 2015), research papers rarely provide such data.

Cultural adaptations often seek to increase a program's fit and applicability to a target population, while maintaining fidelity (Castro et al., 2004). When interventions have been modified to incorporate cultural factors such as cultural beliefs or language, improvements in recruitment, retention, and participant engagement have been reported while still maintaining the same levels of effectiveness as the original randomized control trials (Bernal & Domenech Rodríguez, 2012; Kumpfer et al., 2002). Cultural competence is also directly tied to treatment outcomes, given that the degree to which therapists are perceived by clients to be culturally competent has been systematically found to be tied to treatment outcomes (Soto et al., 2018). Meta-analyses specific to parent-training interventions focusing on the general population report relatively small effect sizes with regard to improvements on parenting practices and child outcomes regardless of adaptation (Ortiz & Del Vecchio, 2013; van Mourik et al., 2017); however, medium effect sizes were found for interventions that had undergone deep structural changes aiming to incorporate social, cultural, and environmental factors (van Mourik et al., 2017). These differences in intervention effects relative to the modifications made warrant further exploration into the mechanism utilized to achieve greater impact.

There are several cultural adaptation models, some of which focus on what to

modify, others discuss the process of adaptations, some discuss quantity of modifications, while others discuss depth. The cultural sensitivity model, for example, differentiates between surface structure of minor changes versus deep structure, which modifies content to account for cultural values (Resnicow et al., 2000). Others, like the ecological validity model (EVM) specify discrete domains for adaptations which include language, persons, metaphors, content, concepts, goals, methods, and context (Bernal et al., 1995). On the other hand, the cultural adaptation framework proposed by Castro (2006) describes four stages—information gathering, preliminary adaptation design, preliminary adaptation tests, and adaptation refinement—thereby focusing on both a top down and a bottom-up approach to adaptation. While various models of cultural adaptations exist, these are not consistently utilized, and a detailed reporting of the process is even more scarce. Careful documentation of adaptations such as in Domenech Rodríguez et al. (2011) are rare, and often times modifications are done reactively to accommodate a need without the clinician even noticing slight changes in language or content. Some evidence does show that these “reactive” modifications map on to recommendations in existing models (Koslofsky & Domenech Rodríguez, 2017). Given that there is no consensus on how, when, or what should be culturally adapted (Bernal & Domenech Rodríguez, 2012), systematically examining the available evidence regarding cultural adaptations of parenting interventions to understand its depth, process, scope, and impact at the program level is warranted.

Theoretical Grounding

The process of adapting interventions can be deliberate and proactive, or logistical

and reactive; they can occur at any stage of treatment development or implementations, and are above all not systematically documented, making the process of adaptations inaccessible for possible replication (Gottfredson et al., 2015). While expert therapists engage in both planned and unplanned cultural adaptations, this manuscript will utilize a coding scheme developed to systematically categorize the types of modification made to evidence-based interventions with the intention of promoting more nuanced considerations to the specific adaptations leading to the enhancement of interventions versus those that reduce fidelity, and effectiveness. Various frameworks have been developed to capture changes made to EBI protocols, yet aspects of adaptations have not been captured. The Framework for Reporting Adaptations and Modifications-Enhanced (FRAME; Wiltsey Stirman et al., 2019) was the guiding framework used in this review/analysis as it thoroughly documents multiple components aspects and motivator that factor into program modifications. Following this framework, the review will document: (a) when and how modifications happened, (b) whether the modifications were intentional/proactive or unplanned/reactive (c) the collaborative nature of the decision making process, (d) who determined that the modifications were needed, (e) what was modified, (f) at what level of delivery the modification was made, (g) type or nature of context or content-level modifications, (h) the extent to which the changes preserve fidelity/core treatment components, and (i) the reasons or purpose for the modification, specifying the goal of the modification, as well as the contextual factors influencing the decision.

The Present Study

Using meta-analytic methods, this manuscript will address the following research questions: (a) What is the overall effect size for parenting intervention for samples that are greater than 50% ethnic minority? (b) For parenting interventions that have been implemented with samples that are greater than 50% ethnic minority, does culturally adapting the intervention result in greater effect sizes? (c) How do the different types, amount, and other cultural adaptation factors moderate the intervention effects on child outcomes? (d) Are there differences in effect sizes based on the specific outcome measure? Through these questions we seek to aid policy makers, agencies, and other stakeholders make decisions regarding implementation through providing information on cultural adaptations at the program level, rather than at the single study level.

Methods

Research Design

Meta-analysis is a form of systematic review consisting of “quantitative analysis and synthesis of a set of related empirical studies in a well-defined domain” (Bus et al., 2011, p. 270). This research utilized meta-analytic techniques to determine the generalizability and impact of PMT’s on child outcomes for samples that were greater than 50% samples of color. To increase transparency and reproducibility of methodological findings, we followed the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines (Moher et al., 2009). This publication was preregistered through Open Science Framework on February 20, 2021, under the

title *Behavioral Parent Training: A Meta-analytic Examination of Generalizability*. The pre-registration can be found on OSF at <https://osf.io/y5qxz>.

Inclusion Criteria

The inclusion criteria were at the program and at the study level. To identify which interventions had the highest potential of being in current use and had the highest potential for utilization, we searched six prominent sources reviewing or recommending evidenced-based parenting interventions. A comprehensive list of potential parenting programs was crafted through the review of six sources: (a) The Blueprints for Healthy Youth Development registry, (b) The California Evidence-Based Clearinghouse, (c) The Child Welfare Information Gateway: Parent Education to Strengthen Families and Prevent Child Maltreatment Brief, (d) The Administration for Children and Families Compendium of Parenting Interventions Brief, (e) The 2015 research brief from Casey Family Programs and (f) a publication seeking to examine behavioral parent training as the mediator of change for child externalizing problems (Forehand et al., 2014). A guiding assumption of this work is that the degree to which programs appeared or were recommended in multiple prominent sources increased program relevance and the likelihood a program would be adopted, thus increasing the need to understand the program's generalizability. In line with this rationale, to meet inclusion criteria programs had to (a) be referenced in at least two of the six resources, (b) have been rated as "well supported by research evidence" or a "Level One" intervention as stipulated by the California Evidence-Based Clearinghouse for Child Welfare, (c) target parents as the agents of change, and (d) have at least 15 published randomized treatment trials. This

criterion was selected based on a prior review of PMT programs (Alvarez, 2021) and adopted for this study because it provided a natural cutoff between programs with the most and the least evidence and it mapped on with the programs rated as a Level One program in terms of evidence by the CEBC. No restrictions on individual or group delivery were placed at the program level. Once these criteria were applied, The Incredible Years Program, Multisystemic Therapy, Generation PMTO, Triple P, and Parent-Child Interaction Therapy emerged as the five programs meeting criteria for further review.

With the programs selected, the literature on each program was searched thoroughly. Initially publications were excluded if they had not been published in peer reviewed journals and were not available in either English or Spanish. Studies were further screened for selection and were included if they: (a) used an RCT methodology where the control was a waitlist or no-treatment group, (b) were implemented in the U.S. and its territories, (c) reported outcomes for samples that were majority (> 50%) ethnic minorities, (d) represented primary analyses rather than follow up data, and (e) report child behavior outcomes and (f) focused on caregivers as the recipients of the intervention.

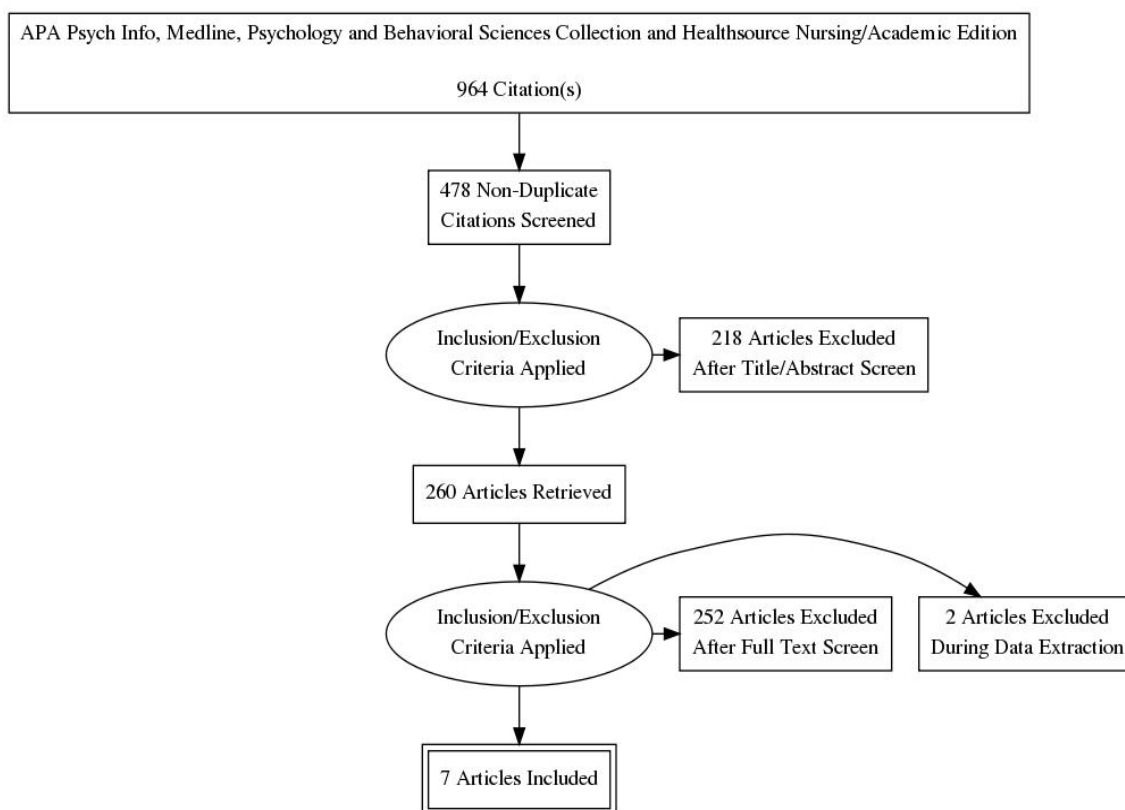
Information Sources

When it came to identifying specific studies for each of the selected programs, we conducted ancestral searches in four databases: APA Psych Info, Medline, Psychology and Behavioral Sciences Collection, and Healthsource Nursing/Academic Edition (see Figure 3.1). A gray literature search was also conducted through the U.S National Library

of Medicine Clinical Trials registration page. The list of identified studies was cross-referenced with published lists of bibliographies on the specific PMT program websites or clearinghouses. Program developers and program managers were also contacted to request any further studies that met inclusion criteria. Any additional studies identified through these means were subsequently included.

Figure 3.1

Consort Flow Chart for Inclusion Process



Search Strategy

When identifying studies pertaining to each of the included programs, the first author, and second author conducted ancestral searches independently and selected

articles for inclusion through abstract screenings and full text reviews when needed. Searched terms included the program name in quotations (e.g., “Incredible Years”) *AND* “rand*” (J. Higgins et al., 2020). The use of “rand*” was intended to capture all variations of randomization (e.g., random, randomized, randomization). Searches were initially restricted to peer reviewed articles published in either English or Spanish. No restrictions on publication year or study demographics were placed. When expanding the search to include gray literature through the U.S National Library of Medicine Clinical Trials registration database, only the program name was used. The lead author and a trained research assistant independently screened a random subset of articles to determine eligibility, while the second author preformed consensus checks. The eligibility screener for studies was piloted until 100% consensus was reached. Disagreements were resolved by the second author and all final inclusionary decisions were checked by the lead author. All discrepancies in terms of study inclusion were reviewed and resolved by consensus.

Data Extraction Process

Via the initial screener information regarding the study design, race, and ethnicity of the sample as well as country and country of implementation were extracted. This information was used for calculation of the heterogeneity of the populations/samples targeted in frequently cited and recommended evidence-based PMT programs. To address whether programs implemented across ethnic/cultural and/or national groups have undergone cultural adaptations, as well as the general impact of PMT on outcomes across ethnic/cultural groups, a secondary coding structure was utilized to document any mention of cultural adaptations. When studies reported making cultural adaptations, the

FRAME framework categories were used to code for the specific adaptations made. Each frame category was cross-referenced with individual studies. Coding consisted of carefully documenting whether the category was addressed, including the ways in which it was addressed (i.e., the researchers reported modifications to the protocol and reported doing so pre-implementation at the piloting stages). The results of the FRAME coding were then used to inform a simpler coding scheme for analysis purposes. Studies were further coded as a “surface” or “deep” structure drawing from the Resnicow et al. (1999) model. Adaptations targeting observable characteristics of the target sample, such as including treatment facilitator of the same cultural group or translating parent materials, were coded as “surface.” Adaptations accounting for cultural, societal, or psychological factors impacting behaviors of the target sample were coded as “deep.”

Study outcomes referencing child behaviors with their corresponding effect sizes, means, and standard deviations (when reported) were documented and subsequently used in meta-analyses. Once again, the lead author and a trained undergraduate researcher performed fidelity and reliability checks following the same procedures utilized for the screening of studies.

Data Analysis

Calculating Effect Sizes

Four of the studies in the sample provided effect sizes, with Hedges g being the most commonly reported. When these were not provided a Hedges’s g effect size (Wasserman et al., 1988) was calculated for each child outcome reported. Hedge’s g was calculated by subtracting the posttest mean from the pretest mean and dividing the pooled

estimate of the population's standard deviation. Given the small sample size of this project, Hedge's g was deemed more appropriate and less biased than Cohen's d (Card, 2015). This calculation was done for all relevant outcomes and conditions reported by each study. For instance, when studies examined multiple intervention targets (e.g., child teacher, and parent component) effect sizes were calculated for the parent group only and compared to the control condition (Hox et al., 2018).

Multilevel Meta-Analysis

Multiple outcomes and various conditions were reported within studies, providing a data structure appropriate for multi-level modeling (Hox et al., 2018). Outcome effect sizes are nested within studies and covariances between studies are modeled within the analysis. The hierarchical structure reflected in meta-analytic designs indicates that all meta-analyses are inherently multilevel (Fernandez-Castilla et al., 2020; Hox et al., 2018). One alternative hierarchical structure is a three-level model. Typically, these models extend the classical two-level analysis by adding an intermediary level of regression (Fernandez-Castilla et al., 2020). As such, a three-level multivariate meta-analysis was utilized to predict the overall effect size of outcomes while accounting for variables of interest, thus producing effect estimates with greater accuracy (Pigott & Polanin; 2020). This analysis used an a priori stepwise model construction (i.e., "bottom up" approach; Fernandez-Castilla et al., 2020; Hox et al., 2018). To account for study heterogeneity and provide less weight to smaller studies with more variance, a random-effects model was used.

Synthesis of Results

Results are presented via both qualitative review and quantitative analysis. We initially report on broad themes and patterns pertaining to the samples targeted in PMT programs. The second portion of the results report on meta-analytic findings extracted from the selected studies. The outcomes are measures of child behavior (e.g., Child Behavior Check List [CBCL], Behavior Assessment System for Children [BASC]), with the level of cultural adaptations (surface level or deep) as the core moderating factor. All statistical analyses, including publication biases (Rosenthal, 1979), were conducted in R (RStudio Team, 2020), using the furniture (Barrett & Brignone, 2017), metaphor (Viechtbaur, 2010), robumeta (Fisher, 2017) and devtools (Wickham, 2021) packages.

Results

Study coding was conducted by the first and second author. An initial study was coded together to evaluate the codebook and familiarize themselves with the process. After this joint coding session, the authors independently coded four subsequent studies, with 97.3% interrater reliability before completing coding for the present sample.

Sample Description

After removing duplicates, a total of 478 articles were screened for inclusion eligibility. Out of the 478 articles initially screened, 107 utilized an RCT methodology, 63 (58.9%) were conducted with samples that were greater than 50% ethnic minority within the country in which the investigation was conducted, and 34 (31.8%) addressed cultural adaptations. Unfortunately, many of these studies did not meet all criteria

simultaneously (conducted within the U.S., utilize a randomized *no treatment* control trial methodology, samples that were predominantly ethnic minority, and focus on parents as the recipients of treatment). The majority of studies did not meet inclusion because they were not conducted within the U.S, or the study design did not allocate to a no treatment control group limiting our ability to effectively isolate and examine the impact of cultural modification on intervention outcomes. Ultimately, seven articles (6.5%) met our criteria and the coding process yielded 22 total effect sizes. Program representation included one study from the Parent Child Interaction Therapy intervention, one from the Parent Management Training Oregon Model intervention, and five from the Incredible Years intervention. Most of the children in the sample were between the ages of 3 and 8. Race and/or ethnic composition of each study's sample was comprised of 100% Chinese Americans (Lau et al., 2011), 85% African American or Hispanic (Brotman et al., 2005), 100% Latinx (Majority of Mexican origin; Parra-Cardona et al., 2017), 100% first generation Korean Americans (Eujung et al., 2008), 86.3% African American or Latinx (Gross et al., 2003), 100% Filipino parents (Javier et al., 2016), and 100% Puerto Rican (Matos et al., 2009).

Cultural Adaptations

Of the seven studies that used a randomized no treatment or waitlist control, were conducted in the U.S., and included samples that were greater than 50% ethnic minorities, four made mention of cultural adaptations (Javier et al., 2016; Lau et al., 2011; Matos et al., 2009; Parra-Cardona et al., 2017) and one made modifications to address child age (Gross et al., 2003). Table 3.1 lists the FRAME reporting elements.

Table 3.1*Aspects of the Adaptation Process Considered and Reported by Researchers*

Study	Intervention	When and how modification was made	Proactive or reactive modification	Who determined modification	What is modified	Level of delivery that modification is made	Type or nature of context or content-level modifications ¹	Relationship to fidelity	Rationale for modification
Gross et al., 2003	Triple P	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported
Brotman et al., 2005	Triple P	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported
Eunjung et al., 2008	Triple P	Not reported	Proactive	Not reported	Content & Context	Not reported	Surface	Fidelity consistent	Reported
Matos et al., 2009	PCIT	Pre- implement	Proactive	Not reported	Content & Context	Cohort	Deep	Fidelity consistent	Reported
Lau et al., 2011	Triple P	Pre- implement	Proactive	Not reported	Content & Context	Cohort	Deep	Fidelity consistent	Reported
Javier et al., 2016	Triple P	Pre- implement	Proactive	Community/ research & program team	Context	Community	Surface	Fidelity consistent	Reported
Parra-Cardona et al., 2017	GenPMTO	Pre- implement	Proactive	Community/ research & program team	Content & Context	Cohort	Deep	Fidelity consistent	Reported

¹ This table follows the categories and wording used in the FRAME reporting framework and is indented to help visualize what research reported doing, rather than serve as a recommendation of what others should do. In this table we provide indication of surface or deep adaptations. For more detail on the specific adaptations, see cultural adaptations section of this dissertation.

Observations from the FRAME reporting elements provided important context. When modifications were made and reported, they were often done in the pre-implementation/planning or pilot stages (Javier et al., 2016; Lau et al., 2011; Matos et al., 2009; Parra-Cardona et al., 2017). Of the studies that reported modifications, they were all reported as being planned and proactive (Eunjung et al., 2009; Javier et al., 2016; Lau et al., 2011; Matos et al., 2009; Parra-Cardona et al., 2017). When examining who determined that the modification should be made Parra-Cardona et al. discussed the involvement of the program leader, both the research and treatment team, as well as community leaders. Javier et al. reported that community stakeholders, representatives of the target population (pastors of partnering churches, catechism coordinators, church parishioners, caregivers, and community-based organization leaders) participated in the decision to modify treatment content.

Modifications varied by study and focused on different aspects and different stages of treatment. Most of the modifications in the Javier et al. (2016) study occurred in the pre-treatment and recruitment stages, through community forums and advisory boards aimed at gaining insight into barriers for parental engagement and effective recruitment strategies. In the Lau et al. (2011) study, modifications included the introduction of skills to address recurrent conflicts common in immigrant families, elicit potential cultural and practical barriers, and the collaborative delivery of treatment including frequent checks for caregiver input. Matos et al. (2009) made both linguistic and formatting modifications, such as the translation of handouts and manuals, the modification of

examples to reflect common experiences and idiomatic expressions of the population. Additional time was also added to the beginning of sessions to allow for discussion of contextual stressors, increase rapport and discuss ways of integrating extended family to gain support, prevent interference, and incorporate values of familismo. The Eunjung et al. (2008) study selected facilitators that matched the target Korean American community, and all intervention components were delivered in Korean. The Parra-Cardona et al. (2017) study consisted of two different conditions corresponding to different degrees of cultural adaptations. One condition was based on the previously tested cultural adaptation of the Generation PMTO model (CAPAS; Domenech Rodríguez et al., 2011) for Spanish Speaking Latinx families. The dimensions adapted in the original CAPAS intervention included language, persons, metaphors, content, concepts, goals, methods, and context. The second condition consisted of CAPAS-enhanced, which was an expansion the original protocol. CAPAS-enhanced included all the adapted components from the original adaptation, in addition to two culture-specific sessions focused on the ways in biculturalism and immigration impacts parenting and Latinx parenting families. Specific risk factors, context, and challenges such as acculturation gaps between parents and children, or experiences of discrimination were used to specifically address the cultural context of underserved minorities.

Across all studies that adapted the EBI, adaptations were intended for the ethnic populations included in the sample. The type or nature of the modifications varied across studies, but consistently the adaptations were present and unchanged throughout the entire delivery of the intervention. Five studies addressed fidelity, and three

specifically reported that cultural adaptations were made to preserve fidelity to the core elements of the intervention (Eunjung et al., 2009; Matos et al., 2009; Parra-Cardona et al., 2017). Rationales for the modifications varied. In some cases, the aim was to test the culturally adapted version of a parenting program with a specific presenting problem (ADHD and/ or behavioral problems) and with a specific demographics (Puerto Rican preschoolers; Matos et al., 2009), while others aimed to improve engagement, fit, retention, increase satisfaction through addressing cultural factors (Lau et al., 2011; Parra-Cardona et al., 2017). Eunjung et al. reported their modifications were aimed at providing a parenting program to promote positive discipline among a particular ethnic group (Korean American), as well as assess various program effects by varying levels of acculturation.

Meta-Analytic Results

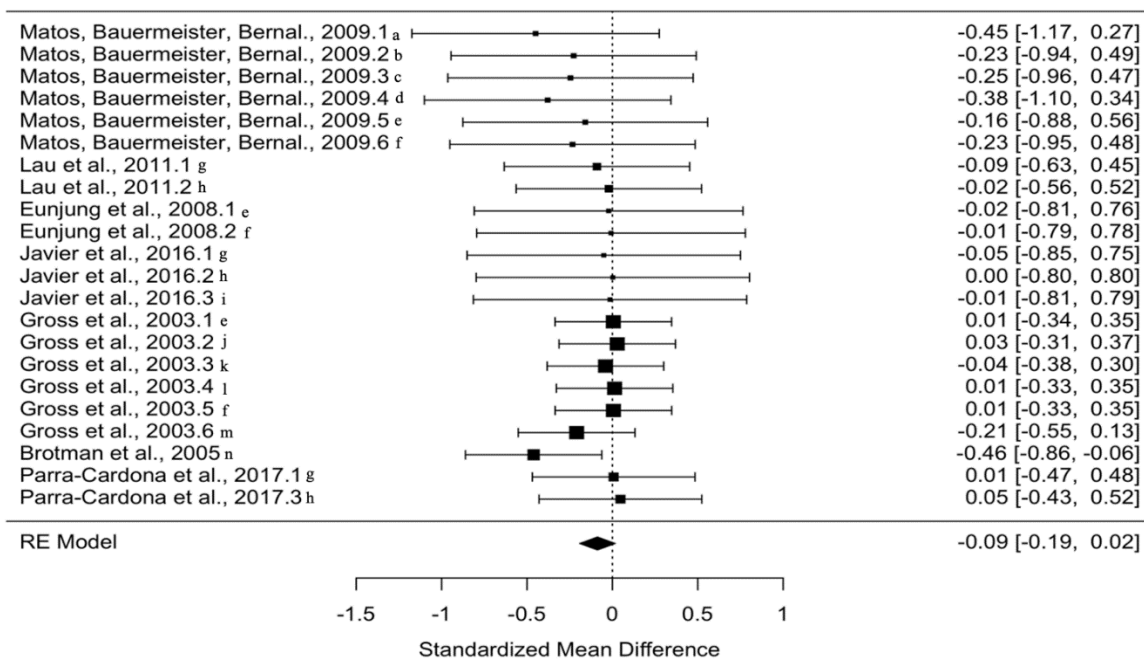
Between Study Heterogeneity

To calculate the heterogeneity in effect sizes, the ratio of observed variation to within study variance, the Q -statistic was used. Results indicated a Q -statistic of 8.06 ($p > 0.99$) and an I^2 percentage of 0.00% indicating no heterogeneity and low variance (Higgins, 2003). A Tau-squared of 0 indicated no heterogeneity in the random effect's model. Consistent with the low I^2 and nonsignificant Q -statistic, Figure 3.2 shows a forest plot illustrates a rather homogenous sample of studies warranting their combination for overall analysis and interpretation of differences among effect sizes. Heterogeneity results are to be interpreted cautiously given that the Q -statistic and I^2 are prone to underestimating heterogeneity in small samples such as ours (Higgins,

2003; Hippel, 2015).

Figure 3.2

Forest Plot of Hedges g Effect Sizes for all Treatment/Control Outcomes



Note. Forest plot for the effect of parenting interventions on child behavior. The black squares represent the while the size of the square is proportional to the study weight. The whiskers extending from each side of the square represent the range of the 95% CI. The black diamond shows the overall pooled effect size using a random-effects model, which is centered at the point estimate and the diamond width representing the 95% CI. The various iterations of the studies represent the measures of child behavior: ^a BASC – Hyperactivity, ^b BASC-Aggression, ^c DBR Hyperactivity, ^d DBR – ODD, ^e ECBI-Intensity, ^f ECBI-Problem, ^g CBCL- Internalizing, ^h CBCL- Externalizing, ⁱ CBCL-Total Problems, ^j ECBI- Oppositional, ^k ECBI- Inattentive, ^l ECBI- Conduct, ^m DIPCS-R – Negative Behaviors, ⁿ OPPUS- Child Disruptive Behavior.

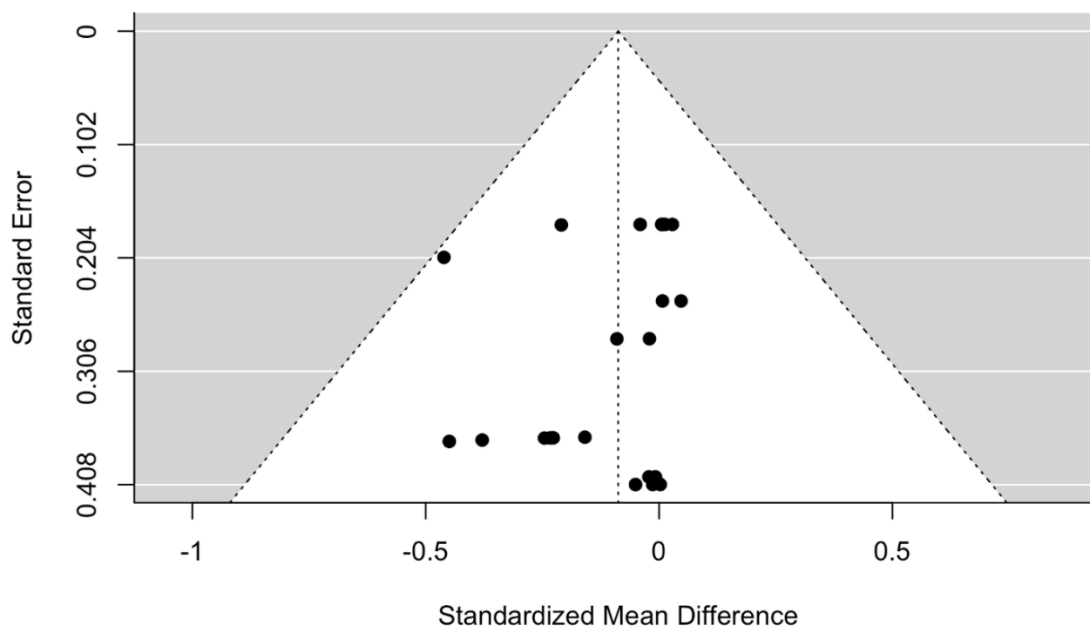
Publication Bias

Small study bias and publication bias were assessed using a funnel plot and modified Egger's Test (Hox et al., 2018). Rank correlation test was considered yet not conducted due to the concern that it is only appropriate for meta-analysis including a large number of studies (above 75; Borenstein et al., 2009; McClain et al., 2021; Sterne et al., 2000). Egger's test is appropriate for smaller sample sizes. Figure 3.3 shows the

results of the funnel plot presenting analysis of publication bias and distribution of effect size. The Eggers regression analysis was non-significant ($p < 0.48$) and consistent with the funnel plot suggesting a lack of small study bias. Because Eggers regression test measures small study bias, which can include publication bias among other things, publication bias was directly assessed through weight-function models. This approach provides greater weight to studies with a lower publication probability (i.e., $p > .05$) and can detect publication bias even with high heterogeneity, making it a more robust method of assessment. Results failed to detect publication bias.

Figure 3.3

Funnel Plot of Publication Bias

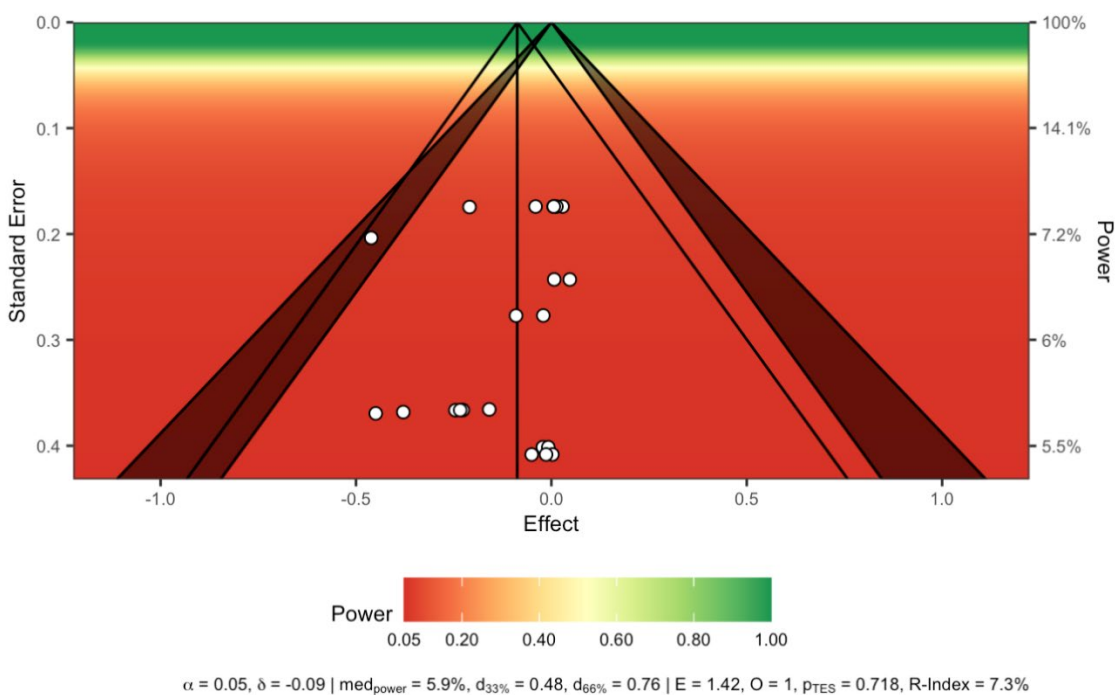


Power Analysis

To assess if the studies used in the sample were sufficiently powered, a sunset (power-enhanced) funnel plot was created (Kossmeier et al., 2020). In this plot (see

Figure 3.3), power is visualized by color, where red indicates tests that are very underpowered. The alpha for the sample was $\alpha = 0.05$, with a true effect size of $\delta = -0.09$. The median power for the entire sample was 5.9%, the true effects needed to reach typical, or in other words median power levels of 33% or 66% would need to be 0.40 or 0.76, respectively. Based on the analysis all tests reported from our studies are underpowered to detect minimally interesting effect, while the R-index of 7.3% suggest a low likelihood that the studies are replicable.

Figure 3.4
Sunset Plot of Study Power



Child Outcomes

Random effects multilevel meta-analyses were conducted for intervention effects on child internalizing and externalizing problems. The original three-level model used the treatment/comparison Hedge's g effect sizes as the first level, the second level modeled

covariance between-effects and within studies, while the third level modeled the covariance across studies. The model was fitted using restricted maximum likelihood (REML; Hox et al., 2018) with 95% a confidence interval. Results indicated an overall small effect of $g = -0.08$ ($SE = .052$, [CI = $-.89$ to $.27$]) for the 22 treatment/control effects. The small overall effect on child behavior problems is consistent with previous meta-analytic literature on PMT (Jeong et al., 2021).

Meta-regression techniques (Pigott & Polanin, 2020) were used to investigate the degree to which specific variables influenced child outcomes. Child externalizing ($g = -0.08$, $SE = 0.07$, [95% CI = -0.21 , 0.06]), internalizing ($g = -0.04$, $SE = 0.16$, [95% CI = -0.36 , 0.28]), and pro-social tendencies ($g = -0.46$, $SE = 0.20$, [95% CI = $-.86$, -0.06]) were added to the original model as moderators. Results indicated that both child internalizing and externalizing showed small effect sizes, while prosocial tendencies showed a moderate effect size. Results are interesting in light of evidence-based parenting program targets which favor nurturing positive bonds, building prosocial skills, improving monitoring, and effective problem solving as well as communication and emotional regulation rather than on eliminating problem behaviors (Forgatch & Domenech Rodríguez, 2016; Patterson et al., 1992). As caregivers gain effective parenting tools, they not only instill prosocial behavior, but they are also taught to focus on it, thus increasing both child prosocial behavior, but also parents' ability to capture it.

Cultural Adaptations

Whether or not studies made mention of cultural adaptations was coded as a binary variable (0 = *no*, 1 = *yes*). Three of our seven studies made no mention of cultural

adaptations. When assessing if this impacted the overall effect of the intervention, results did not indicate statistically significant results, however trends showed a favorable pattern for the studies that engaged in cultural adaptations (see Table 3.2). The degree to which a study was culturally adapted was assessed by examining each of the FRAME categories to determine if the modifications made constituted a surface structure or deep structure sensitivity (Resniscow et al. 1999). Despite our small sample size, results may suggest that effect sizes were larger when studies actively mentioned and addressed cultural adaptations at a deep level ($g = -0.13$, $SE = 0.9$, [95% CI = -0.31, 0.07]), than when studies did not adapt or modify the content ($g = -0.07$, $SE = 0.06$, [95% CI = -0.20, 0.52]).

Table 3.2

Cultural Competence Moderators

Variable	<i>b</i>	<i>SE</i>	<i>z</i>	95% CI
Mention of cultural adaptation				
No mention	- 0.07	0.06	- 1.15	- 0.20, 0.05
Mention	- 0.10	0.09	- 1.21	- 0.28, 0.06
Degree of adaptation				
Surface structure	- 0.07	0.06	- 1.14	- 0.19, 0.05
Deep structure	- 0.12	0.09	- 1.27	- 0.31, 0.06

Discussion

In 1999, the National Institute of Mental Health cited the scarcity of empirically tested interventions with ethnic minority research, and the lack of psychotherapy research meeting basic criteria needed to demonstrate efficacy as primary contributors to mental health disparities (Domenech-Rodríguez & Wieling, 2005). Over 20 years later the results presented in this meta-analysis show that this is still the case. Of 107 randomized no-treatment control trials reported by five of the most widely recommended and researched parenting interventions, only seven of those were conducted with samples that were predominantly ethnic minorities in the U.S, and of those seven, only five reported making adaptations or modifications to consider culture. Further, of the five studies that reported making cultural adaptations only three made modifications that conscientiously positioned caregivers of color within a political, linguistic, historical, and socioeconomic context that accounts for, and impacts the ways in which they parent. The present analysis based on the limited amount of information indicates positive effects for interventions that utilized deep level adaptations, as they produced greater (although not significant with this small sample) effect sizes than those which did not. Our small to medium effect sizes despite being underpowered hint to the effects possible when researchers intentionally intervene with people of color and investigate treatment impacts specifically for them.

Given the wealth of information supporting the efficacy of behavioral parent training on child outcomes (Chorpita et al., 2011; Corralejo & Domenech Rodríguez, 2018; Duncan et al., 2017; Leijten et al., 2019; Wyatt Kaminski et al., 2008)—coupled

with the literature on cultural adaptations (Hall et al., 2016; Parra-Cardona et al., 2009, 2016; Schilling et al., 2021; Soto et al., 2018)—we interpret small to moderate effect size findings in the context of the small sample sizes of each study but also the small sample of relevant studies, which naturally generates more uncertainty and variability in the results. Our findings also serve to elucidate the dearth of racial and ethnic representation in the most rigorous scientific studies. Acknowledging that not conducting randomized control studies with marginalized populations may be a values choice for researchers given that necessitating a control group may limit or delay access to the intervention, opting out of an RCT methodology also reduces our scientific ability to build on predictors of change more conclusively for communities of color.

Variations in what components were adapted could reflect a lack of understanding into what modifications are most beneficial. It highlights a burgeoning interest and acknowledgement of the importance of cultural adaptations. As others have found, cultural adaptations are not systematically articulated in much of the research (Schilling, 2021). Reporting of adaptations was at times not directly stated or varied in terms of where the information was presented, which could lead to challenges in reproducibility and evaluation of effective components leading to desired outcomes. The FRAME is a valuable tool for the systematic reporting of modifications or adaptations, given that it facilitates an organizational structure of information across studies allowing for meaningful comparison.

Limitations and Future Research

Our search was restricted to the U.S, focused on caregivers as the recipients of

intervention, searched by program rather than by study, and sought randomized no treatment control trial methodology. Because we were interested in assessing how many programs focused primarily on ethnic minorities (> 50%), as this would increase the likelihood of documented cultural adaptations, future studies may wish to utilize race and ethnicity as a moderator rather than an inclusion criterion and evaluate the effect on outcomes. We also limited our analysis to child outcome variables, given that changes in child behavior are the goal of many parenting programs. Others may seek to examine other variables such as changes in parenting practices, retention, or treatment acceptability.

Conclusions

This meta-analysis highlights that frequently recommended programs like GenerationPMTO, Parent Child Interaction Therapy, and the Incredible Years have used empirically rigorous measure to examine the generalizability of their interventions for people of color within the U.S. Despite this, our findings suggest the combined fields of cultural adaptations and behavioral parent training are not yet a place where we can conclusively examine and the determine the impact of specific modifications or adaptations on treatment outcomes for individuals of color. To aid in the progression of this work, our study identified the following gaps in the literature.

Our meta-analytic results showed trends indicating that although effect sizes for decreases in externalizing and internalizing behavior were small, increases in prosocial behavior were in the medium range. This highlights the success of a key goal of behavioral parenting training which is to reduce preoccupation with antisocial behavior,

by focusing on prosocial behavior; teaching parents how to instill it, capture it and encourage it. This makes behavior parent training an ideal intervention for identifying, measuring, and highlighting specific cultural contexts of resilience that could impact parenting practices.

Few studies in our sample detailed a collaborative cultural adaptation process with the communities they aimed to serve. Future work may wish to increase partnerships with the community participants to increase outcome gains, retention, relevance, and treatment satisfaction.

All studies in our sample reported engaging in proactive interventions or those intentionally planned before implementation. It is likely, however, that culturally competent therapists are responding to specific cultural needs of their clients and making in-vivo modifications to how they present the content, or how they themselves behave in order to facilitate therapeutic alliance, client satisfaction and intervention outcomes (Tao et al., 2015). Increased documentation and reporting of these adaptations and modifications would help to elucidate the key elements that increase relevance and effectiveness of behavioral parent training interventions for people of color.

Despite recommendations for research that reports subgroup analysis based on ethnic subgroups (Gottfredson et al., 2015) we found few studies that actually did this. Reporting of intervention effects specifically for people of color would allow for utilization of existing research and help the field identify particularly relevant treatment components for individuals of color, particularly in the U.S.

Work examining the key elements that make behavioral parent training effective

for non-Hispanic White populations has been successfully conducted (Chorpita et al., 2011; Lundahl et al., 2006; Serketich & Dumas, 1996; Wyatt Kaminski et al., 2008). As the body of literature on cultural adaptations made to behavior parent trainings seeks to model the demographic composition of the U.S., it is critical that we utilize gold standard research methodology and representative samples in order to identify key components that improve the efficacy of BPT for people of color.

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CHAPTER 4 SUMMARY AND CONCLUSIONS

This dissertation sought to systematically organize the abundance of information available for the most widely recommended parent management training interventions, aiming to aid in informed program selection and implementation practices. Further, we also sought to examine the generalizability of intervention outcomes for people of color. Behavioral problems impact domains such as social functioning, academics, and familial bonds in at least 1 in 5 children in the U.S., with lasting impacts extending well into adulthood (Sayal et al., 2015). Our initial review of the literature summarized the most widely recommended Behavioral Parent Training programs to show outcomes relating to reductions child externalizing (substance use, aggression, hyperactivity, inattention) and internalizing (depression, anxiety) behavior, biological/health (asthma, diabetes, sleep; Acosta et al., 2019; Ellis et al., 2012; Naar et al., 2018) and educational outcomes, such as improved GPA (Sigal et al., 2012). Parent-child relationships, favorable mental health and standard of living outcomes for caregivers were also reported immediately post intervention and when assessed nine years post interventions (Degarmo & Forgatch, 2007; Patterson et al., 2010). Twenty-year follow up data also supports the maintenance of youth outcomes such as fewer arrests, divorces and paternity or child support suits (Johnides et al., 2017; Sawyer & Borduin, 2011).

Programs ranged in duration, with some having a set number of sessions and others focusing on mastery. Target age range also varied from pre-birth (Feinberg & Kan, 2008), to young adults (Henggeler et al., 2002; Stormshak et al., 2009) with the majority

of programs having a child mean age of about seven-years-old. Delivery settings included schools and head start centers (Reid et al., 2007; Webster-Stratton et al., 2001), disadvantaged community-based agencies (McGilloway et al., 2014), families homes (Lees et al., 2014), and pediatric primary care settings (Lavigne et al., 2008).

In addition to a variety of settings, varying delivery modalities have been evaluated, such as the adaptation of interventions for electronic or mobile delivery. In these cases, researchers have reported completion rates that were comparable or significantly greater than those achieved in the face-to-face modality (Breitenstein et al., 2016; Stormshak et al., 2019). Hybrid programs with briefer sets of face-to-face sessions, integrated with internet components also reported favorable outcomes (reductions in conduct and emotional problems, improved parental self-efficacy) that were comparable to the effect observed in the longer face-to-face version of the intervention (Lochman et al., 2017; Stormshak et al., 2019).

We also examined the greater monetary and societal benefits through both direct and indirect program costs and benefits. Based on reports from the Washington State Institute for Public Policy (WSIPP) Benefit-Cost Model, the benefits of the program outcomes minus their costs provided evidence that all programs in our review were cost effective. The program cost effectiveness ranges from a total benefit minus program cost of \$188 per participant and a 55% chance that the program would be cost effective, to a total benefit minus program cost of \$24,365 and 96% likelihood that the program would be cost effective (WSIPP, 2019).

Our review of the literature yielded a total of 478 randomized trials stemming

from 19 programs which had samples ranging from 14 to 1193 participants. Of the 478 treatment trials, only 63 of them were conducted with greater than 50% ethnic minorities in the country in which the trial was conducted. A total of seven randomized controlled trials were conducted in the U.S with greater than 50% ethnic minorities. Of the seven, only five of them reported engaging in cultural adaptations. When adaptation or modifications were made to address or consider culture in terms of world view and key cultural concepts results indicate that outcome effect sizes were larger, particularly in terms of increases in pro-social child behavior. This is promising given that the original samples included in our analysis, as well our meta-analysis were underpowered.

Our results suggest that despite our increasingly diverse society, the prevalence rates of child behavior problems, their long-term consequences to the individuals and cost to society, non-comparable efforts are being devoted to the study and implementation of culturally relevant interventions for ethnic minority youth, despite the promising gains. The present research also adds to concerns regarding the lack of congruency when it comes to the reporting of cultural adaptations or modifications made. The present research also adds to concerns regarding the lack of congruency when it comes to the systematic reporting of cultural adaptations through models such as the FRAME framework. This is especially relevant since only two studies (Matos et al., 2009; Parra-Cardona et al., 2017) made adaptations based on established models of cultural adaptations. Specifically, all of the studies included in this meta-analysis reported that adaptations or modifications were planned and done pre-implementation (see Table 3.1). Although careful and intentional planning of modifications highlights a warranted and

necessary commitment to the consideration of cultural differences, ample research has stated that often times researchers engage in reactive modifications. The lack of systematic reporting of this reactive and responsive modifications does the field a disservice by not allowing us to appropriately capture the impact of them on outcomes such as treatment retention or satisfaction.

The present work utilized the FRAME framework to systematically capture modifications and adaptations made to established PMT protocols. Benefits of the framework include the ability to capture multiple aspects, stages and contextual factors often imbedded in the process of adaptations thus facilitating our future capabilities in terms of comparing the impacts of various types of modifications.

Challenges and Opportunities

These projects represent an effort to sort, and systematically categorize the abundance of literature on behavioral parent training interventions, paying specific attention to the efforts made to extend the relevance of these interventions to caregivers of color. Because our findings highlight disparities in methodological rigor between the research conducted with white samples versus those conducted with samples of color, we were not able to conclusively elucidate key cultural adaptation elements that link to significant changes in child outcomes. Future work could expand the available literature and supported outcomes through including higher percentages of participants of color in the samples, in addition to reporting outcomes by race and ethnicity. Given the evolving challenges with the Covid-19 pandemic, the favorable outcomes reported by web-based

versions of PMT interventions (Breitenstein et al., 2016; Corralejo & Domenech Rodríguez, 2018; Lochman et al., 2017; Stormshak et al., 2019), and their potential for reducing disparities, future research may wish to focus on the adaptation and dissemination of PMT web-based programs for communities of color.

References

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CURRICULUM VITALE

MARIA DE LA CARIDAD ALVAREZ

EDUCATION

- Utah State University**, Logan, UT Anticipated 2023
 Ph.D. in Clinical/Counseling Psychology
 Dissertation: *An Exploration of Parent Management Training Programs and a Meta-Analytic Examination of their Cultural Relevance*. Defended (February 2022)
 Advisor: Melanie Domenech Rodríguez, Ph.D.
- Florida International University**, Miami, FL 2018
 Master of Science in Adult Education and Human Resource Development
 Advisor: Tonette Rocco Ph.D.
- Portland State University**, Portland, OR 2016
 B.A in Psychology
 Specialization: Social Innovation and Social Entrepreneurship

CLINICAL EXPERIENCE

- Graduate Assistant*** 2019 – 2021
 Box Elder School District
 Brigham City, UT
Supervisor: Marietta Veeder, Ph.D.
- Conducted neuropsychological assessments at various schools (pre-school through 8th)
 - Wrote reports for special education placement determination
 - Participated in interdisciplinary team meetings
 - Consulted with school personnel to develop and implement behavioral interventions
 - Supervised and trained junior staff
 - Assessments administered/interpreted: KTEA-3, WIAT III, WJ-IV (achievement, cognitive & Bateria), WISC-V, WAIS-IV, WPPSI-IV, UNIT-2, KABC, ADOS (Module 3), CBCL, BASC, Connors, ABAS, GARS, ASRS, SEQ, SSRS
 - Total hours = 375 | Direct contact hours = 281 | Supervision hours = 45
- Student Therapist*** 2021- 2021
 Sorenson Center for Clinical Excellence
 Behavioral Health Clinic, Integrated Assessment Division
Supervisor: Maryellen McClain Verdoes, PhD
- Conducted, scored, and interpreted assessments with children and adults referred for concerns of autism spectrum disorder

- Attended and discussed cases with interdisciplinary assessment team to determine testing plan and diagnostic decision making
- Conducted diagnostic interviews and provide feedback to families
- Specialized assessments administered and interpreted: ADOS-2, Bayley-3, BRIEF, BASC, SEQ, SRS, M-CHAT, ABAS, WPPSI-IV, WAIS-IV, MMPI-A
- Total hours = 50.40 | Direct contact hours = 27.40 | Supervision hours = 15.50

Student Therapist/ Graduate Assistant 2021-2021

Sorenson Center for Clinical Excellence
Psychology Community Clinic, Logan, Utah
Supervisor: Sara Boghosian Ph.D.

- Provided psychotherapy for adult, child, and adolescent community clients with a wide range of presenting problems, client characteristics, cultures, and preferences
- Provided psychotherapy using evidence-based approaches: MI, ACT, BA, CBT, Behavioral Parent Training, Schema Therapy, and Humanistic Psychotherapy
- Provided Learning Disability/ADHD assessments for adults, adolescents, and children
- Prepared integrative reports, and provided recommendations
- Facilitated teen DBT groups
- Total hours = 79.5; Direct contact hours = 39; Supervision hours: 14.50

Student Therapist/ Psychology Intern 2020-2021

The Family Place
Nonprofit Organization, Logan, UT
Supervisor: Melanie Domenech Rodríguez Ph.D.

- Conducted group therapy for children and adult trauma victims using various interventions
- Provided psychotherapy in Spanish for marginalized and victimized individuals
- Piloted the After Deployment Adaptive Parenting Tools intervention
- Engaged in culturally sensitive treatment adaptations
- Conducted PTSD assessment and outcome monitoring
- Engaged in victim advocacy
- Liaised between community partners to improve wholistic client care
- Total hours = 390; Direct contact hours = 191; Supervision hours: 76

Student Therapist/ Graduate Assistant 2020-2020

Sorenson Center for Clinical Excellence
Psychology Community Clinic, Logan, Utah
Supervisor: Sara Boghosian Ph.D.

- Provided psychotherapy for adult, child, and adolescent community clients with a wide range of presenting problems, client characteristics, cultures, and preferences

- Provided psychotherapy using an evidence-based approach; utilized MI, ACT, BA, CBT, Behavioral Parent Training, Schema Therapy, and Humanistic Psychotherapy
- Provided Learning Disability/ADHD assessments for adults, adolescents, and children
- Comprised integrative reports, and provided recommendations
- Facilitated teen DBT groups
- Total hours = 166; Direct contact hours = 99.80; Supervision hours: 15

Student Therapist

2019-2020

Sorenson Center for Clinical Excellence

Psychology Community Clinic, Logan, UT

Supervisor: Melanie Domenech Rodríguez Ph.D.

- Conducted weekly parenting groups for children and youth with antisocial behavior
- Engaged in mid-week check- up calls with clients to assess effective implementation of skills
- Reviewed intervention recording weekly to assess fidelity and implementation of treatment delivery
- Total hours = 82.25 Direct contact hours = 39.25 Supervision hours = 21

Student Therapist

2019-2020

Sorenson Center for Clinical Excellence

Psychology Community Clinic, Logan, Utah

Supervisors: Susan Crowley Ph.D., Sara Boghosian Ph.D., Marietta Veeder Ph.D.

- Provided psychotherapy for adult, child, and adolescent community clients with a wide range of presenting problems, client characteristics, cultures, and preferences
- Provided psychotherapy using an evidence-based approach; utilized MI, ACT, BA, CBT, Behavioral Parent Training, Schema Therapy, and Humanistic Psychotherapy
- Provided Learning Disability/ADHD assessments for adults, adolescents, and children
- Prepared integrative reports, and provided recommendations
- Total hours = 411 | Direct contact hours = 113 | Supervision hours = 95

CLINICALLY RELEVANT EXPERIENCE

Cincinnati Children's Hospital

2021-2021

*Functional Independence Restoration Program**Cincinnati Ohio*

- Observed inpatient intensive rehabilitation sessions for children with chronic pain

- Observed psychology, occupational therapy, and physical therapy session to understand conceptualize future treatment approaches.
- Attended meetings and treatment session with parents as well as medical team meetings
- Read materials pertaining to functional pain and associated conditions

Play-in

2016- 2017

ABA Therapist Miami, FL

- Provided home and school-based individual therapy to children diagnosed with autism spectrum disorder.
- Implemented applied behavioral analysis techniques to increase expressive and receptive language skills, functional play, gross and fine motor skills, adaptive or daily living skills as well as social skills
- Worked on functional pre-academic and academic skills
- Formulated treatment plans and goals to decrease problematic and interfering behaviors while teaching functional replacement behaviors

United States Department of Defense

2015-2016

*Child Development Centers**Stuttgart, Germany and Kaiserslautern, Germany*

- Occupied several positions within the Child Care Development Centers in American military bases, including program liaison
- Lead teacher in special needs classrooms, developing curriculum and interventions
- Worked directly with therapist to implement effective classroom interventions
- Delivered in class individualized treatment to children with neurobiological disorders

Immigrant & Refugee Community Organization

2013-2014

Spanish Language Interpreter, Portland OR

- Provided written and spoken translation services throughout clinical examination, litigations, and educational affairs, for immigrants and refugees.
- Participated in outreach and fundraising on behalf of the community and center.

RESEARCH EXPERIENCES**Culture & Mental Health Lab**

2018-2022

USU, Department of Psychology, Logan, UT

- Assisted in mentorship of undergraduate students
- Collaborated on of Spanish demographic measures
- Collaborated on meta-analysis of parenting components

- Health Resources and Service Administration (HRSA)** 2019-2020
Pipeline to Diversity Grant
Idaho State University, Physician Assistant Program, Pocatello, ID
- Assisted in manuscript preparation
 - Created of teaching modules
 - Guest lectured
 - Conduct interviews and screenings for Latinx health track students
- Neuroinformatics and Brain Connectivity Lab** 2017-2018
FIU, Center for Imaging Science, Miami, FL
Principal Investigators: Angela Laird Ph.D. and Matthew Sutherland Ph.D.
- Played a key role in project development for seminal study created to experimentally assessed NIH Research Domain Criteria (RDoC) constructs in neurobiology
 - Assisted with meta-analytic data acquisition, analysis and dissemination
 Assisted with manuscript preparation
 - Provided support at the FIU site by conducting functional magnetic resonance imaging scans, including mock preparation and MRI screening for the Adolescent Brain Cognitive Development Study.
- After School Treatment Program (ATP) Serving Children with ADHD** 2017- 2018
FIU Center for Children and Families
Principal Investigator: Joseph Raiker Ph.D.
- Assisted with coordinating mixed-method clinical research project aimed to facilitate health services to economically vulnerable and ethnic/racial minority youth.
 - Developed and conducted observations of student-teacher interactions in a bilingual elementary school to assessed problematic behavior and compliance
 - Responsible for scheduling, documenting, recording and analyzing observational data collected
- Adolescent Brain Cognitive Development (ABCD Study)** 2016-2017
FIU, Center for Children and Families, Miami, Florida
Principal Investigators: Raul Gonzalez Ph.D. and Angela Laird, Ph.D.
- Assisted in a 10-year longitudinal study that examines brain development and child health across 10,000 children in the United States across 21 sites
 - Served on the Spanish Language Committee for the entire consortium of 21 Universities. Acting as an interpreter and translator of numerous texts (e.g., scales, assessments, study consents, letters to parents)
 - Conducted standardized clinical assessments to participants and their primary caregivers that gathers information on cognitive skills, academic achievement, mental health, interpersonal relationships, and substance use,
 - Implemented emergency suicidality and abuse protocols involving child protective services

- Conducted school-based recruitment of typical and high-risk population

PEER REVIEWED PUBLICATIONS

- 5) Vázquez, A. L., **Alvarez, M. C.**, Navarro Flores, C. M., González Vera, J. M., Barrett, T. S., & Domenech Rodríguez, M. M. (2021). Youth mental health service preferences and utilization patterns among Latinx caregivers. *Children and Youth Services Review*, 131, 106258. <https://doi.org/10.1016/j.childyouth.2021.106258>
- 4) Vázquez, A. L., Culianos, D., Navarro Flores, C. M., **Alvarez, M. C.**, Barrett, T. S., & Domenech Rodríguez, M. M. (2021). Psychometric evaluation of a barriers to treatment questionnaire for Latina/o/x caregivers of children and adolescents. *Child & Youth Care Forum*. Advanced online publication. <https://doi.org/10.1007/s10566-021-09656-8>
- 3) Vazquez, A. L., Navarro Flores, C. M., **Alvarez, M. C.**, & Domenech Rodríguez, M. M. (2021). Latinx caregivers perceived need for and utilization of youth telepsychology services during the Coronavirus pandemic. *Journal of Latinx Psychology*, 9(4), 284–298. <https://doi.org/10.1037/lat0000192>
- 2) Phelps, P., Domenech Rodríguez, M. M., **Alvarez, M. C.**, & Johnson, J. (2021). Shifts in attitudes and intentions to practice following Medication Assisted Treatment training. *Journal of Physician Assistant Education*, 32(3), 182–184. <https://doi.org/10.1097/JPA.0000000000000368>
- 1) **Alvarez, M. C.**, & Domenech Rodríguez, M. M. (2020). Cultural competence shifts in multicultural psychology: Online versus face to face. *Translational Issues in Psychological Science*, 6(2), 160–174. <https://doi.org/10.1037/tps0000229>

BOOK CHAPTERS

- 1) **Alvarez, M. C.**, Garcia, B. H., Navarro Flores, C. M., Vázquez, A. L., Lara, J., & Domenech Rodríguez, M. M. (2021). Parent training interventions. In B. Halpern-Felscher & R. Corona (Eds.), *Encyclopedia of child and adolescent health*. Elsevier. <https://doi.org/10.1016/B978-0-12-818872-9.00030-3>

MANUSCRIPTS UNDER PEER REVIEW

- 3) **Alvarez, M.C.**, Domenech Rodríguez, M.M., Barrett, T. S. (2021). Behavioral parent training:meta-analytic examination of generalizability. Manuscript submitted for publication to *Journal of Cross-Cultural Psychology*.

- 2) Hicks, E. T., **Alvarez, M. C.**, & Domenech Rodríguez, M. M. (2021). Impact of difficult dialogues on social justice attitudes during a multicultural psychology course. Manuscript revision submitted for publication to *Teaching of Psychology*, special issue on the Social Justice Pedagogy: Diversity, Equity, and Inclusion in the Teaching of Psychology.
- 1) Hicks, E. T., **Alvarez, M. C.**, & Domenech Rodríguez, M. M. (2021). Shifting student attitudes while minimizing grading bias: Pedagogical techniques and considerations in a multicultural psychology course. Manuscript submitted for publication to *Journal of Diversity in Higher Education*.

INVITED PRESENTATIONS AND MEDIA PRODUCTS

- 3) Ropp, A. (Host). (2020, August 27). Teaching knowledge, self-awareness, and skills: Is teaching cultural competence in an online course effective? with Cari Alvarez and Melanie Domenech Rodríguez (No. 004) [Audio podcast episode]. In *SoTL PsychSessions*. <https://psychsessionspodcast.libsyn.com/sotl004-teaching-knowledge-self-awareness-and-skills-is-teaching-cultural-competence-in-an-online-course-effective-with-cari-alvarez-and-melanie-domenech-rodriguez>
- 2) Morrow, A. (Host). (2020, October 13). Culture is important with Cari Alvarez (No.01) [Audio podcast episode]. In *Queen Behavior Change*. <https://open.spotify.com/show/4qvv22LU6oAnkltbDfEac4>
- 1) Alvarez, M. C. (2019, September 24). *ISU PAS Latino Cultural Enrichment: PAS 6642 Psychiatry*. <https://osf.io/kg9m/>

SYMPOSIUMS AND PRESENTATIONS

- 2) Domenech Rodríguez, M. M., **Alvarez, M. C.**, & Hicks, E. T. (2019, October). *Tracking cultural competence outcomes*. Paper presented at the Inclusive Excellence Symposium, Utah State University, Logan, UT. <https://osf.io/a5vep/>
- 1) **Alvarez, M.C.**, & Domenech Rodríguez, M.M. (2019, October). *Comparison of shifts in cultural competence between online and face-to-face multicultural psychology courses*. Symposium at the annual conference of the National Latinx Psychological Association. Miami, Florida

POSTER PRESENTATIONS

- 6) Vázquez, A. L., Navarro Flores, C. M., **Alvarez, M. C.**, & Domenech Rodríguez, M.M.(2021, October). *Latinx caregivers' perceived need for and utilization of youth telepsychology services during the Coronavirus pandemic*. Poster accepted

for presentation at the National Latinx Psychological Association, virtual conference.

- 5) **Alvarez, M.C.**, Vázquez, A. L., & Domenech Rodríguez, M.M. (2020, October). *Observed parenting practices in Puerto Rican families: A comparison of observational systems*. Poster presentation at the National Latinx Psychological Association, Virtual presentation.
- 4) Garcia, B., Vázquez, A. L., Navarro Flores, C.M., **Alvarez, M.C.**, Domenech Rodríguez, M.M., Amador Buenabard, N.G., Villatoro Velázquez, J.A. (2020, October). Mexican adolescent's Perception of their caregivers parenting practices. Poster presentation at the National Latinx Psychological Association, Virtual presentation.
- 3) **Alvarez, M. C.**, Hicks, E. T., & Domenech Rodríguez, M. M. (2019, October). *The relationship between attitude shifts and final grades in a Multicultural Psychology course*. Poster presentation at the APA Division 2 Society for Teaching Psychology 18th Annual Conference on Teaching (Denver, Colorado)
- 2) Papa, L.A., **Alvarez, M.C.**, Rosario Colón, J., Domenech Rodriguez, M.M. (2018, October). *Examining Informant Discrepancy Among Puerto Rican Mothers and Fathers on Outcome*. Poster presentation at the biennial conference of the National Latinx Psychological Association. Sand Diego, CA.
- 1) Morrow, A.S., **Alvarez, M.C** & Villodas, M.T. (2017, November). *Identifying Prospective Risk Factors for Juvenile Justice Involvement in a Sample of Youth At-Risk for Maltreatment: An Actuarial Approach*. Poster presentation at the annual Forensic Issues and Externalizing Behaviors Special Interest Group at the Association for Cognitive and Behavioral Therapies, San Diego, CA.

NON- PEER REVIEWED MEASURES

Reves, A. K., Joosten, M., **Alvarez, M. C.**, Vazquez, A. L & Domenech Rodríguez, M. M. (2018). *Inclusive demographics in Spanish*. <https://osf.io/sbdqg>

TEACHING EXPERINECE

Instructor, Multicultural Psychology (PSY 4240) 2019, 2021, 2022
Utah State University, Logan UT

- Adapted course content in line with teaching objectives
- Engaged in teaching activities related to updating and maintaining course content in CANVAS, grading assignments, and communicating with students, and facilitating group “Difficult Dialogues” project

- Mentored teaching assistant to develop skills in teaching activities outlined above

Guest Lecturer

2019

Physician Assistant Program, Idaho State University, Pocatello, ID

- Title: Cultural Competence and Cultural Formulation

Teaching Assistant, Multicultural Psychology (PSY 4240)

2018, 2019

Utah State University, Logan, UT

- Responsible for grading student's weekly reflections essays, discussion and ensure proper recording of weekly quiz grades.
- Provided extended feedback on assignments aimed at adding shift of cultural competence.

Teacher

2013-2015

Holy Redeemer Catholic School, Portland OR

- Created and implemented a yearlong curriculum for student's pre-K – 8th grade.
- Founded and lead an after-school tutoring/mentorship program for underperforming Latinx students
- Implemented initiatives that would increase Latinx parent involvement, including translations of take-home materials, as well as interpret for all parent teacher conferences

RECORDED LECTURES

Alvarez, M. C., & Domenech Rodríguez, M. M. (2019, September 16). *ISU PAS Latino Cultural Enrichment: PAS 6601 Intro to PAS Cultural Competence*. <https://osf.io/dwrm3/>

Alvarez, M. C. (2019, September 24). *ISU PAS Latino Cultural Enrichment: PAS 6642 Psychiatry*. <https://osf.io/kg9m/>

Alvarez, M. C. (2021, May 23). *ISU PAS Latino Cultural Enrichment: PAS 6646 Neurology*. <https://osf.io/mf3z5/>

PROFESSIONAL DEVELOPMENT TRAININGS

Ados-2 Introductory/Clinical Workshop

2021

Courtney Burnette, PhD

Utah State University, Logan Utah

Modules 1-4 and toddler

After Deployment: Adaptive Parenting Tools

2021

Abi Gewirtz PhD., Patty Ostberg M.A, Darlene Wetterstrom

Institute for Translational Research in Children's Mental health, University of Minnesota

<i>Trauma Focused Cognitive Behavioral Therapy</i> Medical University of South Carolina	2021
<i>Cognitive Processing Therapy</i> Medical University of South Carolina	2021
<i>The Gottman Method to Treating Affairs and Trauma</i> An Advanced Online Training Course	2021
<i>Cognitive Behavioral Therapy for Insomnia</i> Medical University of South Carolina	2021
<i>Parent Management Training Oregon Model</i> Melanie Domenech Rodriguez PhD. Utah State University, Logan Utah	2020
Allies (LGBTQA) on Campus Training Nicole Vouvalis, J.D., & Tyra P. Sellers, PhD. Utah State University, Logan UT	2019
<i>Introduction to Acceptance and Commitment Therapy</i> Michael Twohig, PhD., Clarissa Ong, M.S Utah State University, Logan UT	2019
<i>Focused Acceptance and Commitment Therapy the Basics and Beyond</i> Kirk Strosahl, PhD. Utah State University, Logan Utah	2019
<i>Improving Cultural Competence for Behavioral Health Professional</i>	2019