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A role for community health workers in pediatric ADHD treatment through the delivery of behavioral parent training

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Thesis

**A ROLE FOR COMMUNITY HEALTH WORKERS IN PEDIATRIC
ADHD TREATMENT THROUGH THE DELIVERY OF BEHAVIORAL
PARENT TRAINING**

by

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B.A., University of Washington – Seattle, 2012

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requirements for the degree of
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ABSTRACT

Introduction: Community health workers are a growing and developing portion of the healthcare workforce. They have proven successes in decreasing healthcare inequities for many common chronic medical conditions, such as asthma, and have secured support at the Department of Health and Human Services. One common medical condition for which community health workers have not yet been explored as a resource is pediatric Attention Deficit Hyperactivity Disorder. We sought to investigate what the literature showed on community health workers' involvement in ADHD treatments thus far, and to specifically investigate which ADHD behavioral parent training program could best be adapted to a pilot study where community health workers were the intervention delivery agents.

Methods: We performed a systematic review of the literature on evidence based behavioral parent training programs for children with ADHD. Parent training interventions were compared for ease of application to a community health worker home-visit model. Program ability to successfully reduce child behavior problems and improve parenting practices was analyzed.

Results: 8 full text articles were analyzed in depth and grouped by intervention type. 1 article was a sports-based intervention for fathers, 1 was meant to improve attendance rates, 1 was a combined child-targeted and parent-targeted Behavioral Parent Training (BPT) therapy, 2 were based on the “New Forest Parenting Package”, and 3 were based on Barkley’s 1997 manualized BPT.

Discussion: Evidence exists for the ability of community health workers to deliver a behavioral therapy to families of children with ADHD, specifically behavioral parent training. Barkley’s manualized BPT had the best combination in our study of positive outcomes for families and ease of adaptability to in-home delivery. We recommend a pilot study be conducted using a modified version of Barkley’s BPT and have community health workers as the delivery agents to begin to see what role community health workers can play in the treatment of pediatric ADHD.

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LIST OF ABBREVIATIONS

| | |
|---------|--|
| ADHD | Attention Deficit Hyperactivity Disorder |
| BPT | Behavioral Parent Training |
| CBCL | Child Behavior Checklist |
| CD | Conduct Disorder |
| CHW | Community Health Worker |
| COACHES | Coaching our Acting-out Children: Heightening Essential Skills |
| ECBI | Eyberg Child Behavior Inventor |
| ED | Emergency Department |
| GIPCI | Global Impressions of Parent-Child Interactions |
| HNC | Helping Noncompliant Children |
| IRS | Impairment Rating Scale |
| IY | Incredible Years |
| NFPP | New Forest Parenting Program |
| ODD | Oppositional Defiant Disorder |
| PSoC | Parenting Sense of Competence |
| STEPP | Strategies to Enhance Positive Parenting |

INTRODUCTION

Community Health Workers as a Healthcare Workforce

Community Health Workers (CHW's) are a growing and developing portion of the healthcare workforce in America (Massachusetts Executive Office of Health and Human Services, 2014). A CHW is considered to be a "frontline public health worker who is a trusted member of/or has an unusually close understanding of the community served" (American Public Health Association, 2015, para 2). They are very frequently current or past members of the community they serve. It is their background and their ties to their community which makes them uniquely qualified and specially designated as CHW's. They are generally quicker to gain the trust of their patients, and are able to understand and anticipate the needs of the community they serve. The Massachusetts Department of Public Health even defines a community health worker by these unique community ties; "a CHW is a public health outreach professional who applies his or her unique understanding of the experience, language, and/or culture of the populations he or she serves in order to carry out [their] roles" (EOHHS, 2015, para 2). These roles that a CHW may carry out include, but are not limited to, community and public health outreach, health education, informal counseling, social support, advocacy, health screenings, and healthcare system navigation (EOHHS, 2015). CHW's are typically utilized to serve a traditionally underserved or poor resource community, such as the urban poor, immigrant communities, Latino's, the elderly, and Native American populations (U.S. Department of Health and Human Services, 2007). CHW's usually

work within families or with individuals to promote disease prevention, deliver or increase access to health screenings, increase immunizations, and help patients navigate a complicated healthcare system. So far, they've been frequently used for such common conditions and general health concerns as Asthma, Cancer, Flu, Mental Health, Women's Health and Maternal & Child Health (DHHS, 2007). In addition to the broad range of topics a CHW may address, and roles they may play, a CHW may be called by a broad range of titles. Similar analogous terms for a CHW include Community health educator, Family Advocate, Outreach worker, Patient navigator, Lay health worker, Promotor(a), and many more.

The successes CHW's have had have gained them support on national and public policy platforms. In 2003, the Institute of Medicine produced "Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care," and recommended increasing the use of CHW's in multidisciplinary treatment teams as a way of increasing disease prevention and reducing risks for underserved communities (Institute of Medicine, 2003). More recently, a policy brief by the Centers for Disease Control and Prevention (CDC), titled "Addressing Chronic Disease through Community Health Workers, a policy and systems level approach" emphasized the growing recognition for a community health workers' ability to level healthcare disparities (2011). In 2006, Massachusetts included CHW's in their healthcare reform bill, and in 2010, the Affordable Care Act made available grants for those who would promote broader implementation of CHW's into care plans. The CDC's own REACH program, designed to reduce racial disparities, includes CHW's as part of its care in 18 out of 40 sites across the country (CDC, 2011).

CHW's are useful in increasing access to preventative and treatment health services for individuals and communities that usually struggle, and the increased advocacy for them, and their subsequent growth as workforce, reflects this.

Community Health Workers and Pediatrics

A medical condition where community health workers have had successful integration into pediatric care is Pediatric Asthma. A CHW has an ability to better relate to families and meet them at their homes to provide informal counseling and other non-medical services. This has led to a number of experimental initiatives to use CHW's to reduce pediatric asthma symptoms (Peretz et al., 2012, Turcotte et al., 2014, Shani et al., 2014). Asthma has many known environmental triggers, such as pets, pests, dust mites and mold, all of which can commonly be found in homes (CDC, 2014). Studies have sought to use community health workers, often referred to as asthma navigators or asthma coaches, to go into homes and find these environmental triggers and remove them, as well as to help educate families about their child's asthma.

Between 2006 and 2010, 472 families from the New York City neighborhoods of Washington Heights and Inwood participated in the "WIN for Asthma Program" (Peretz et al., 2012). Bilingual CHWs visited homes and taught educational materials on asthma to patient families, performed environmental home assessments, helped families set asthma related goals, and then followed up regularly. The program length was a full year. It resulted in an over 50% reduction in visits to the Emergency Department for emergent asthma symptoms, and nearly 100% of caregivers reported an increased

confidence in managing and caring for their child's condition.

A similar study was done in Massachusetts, called the "Lowell Healthy Homes Program" (Turcotte et al., 2014.) For 6 months, "asthma coaches" performed 4–9 home visits depending on the needs of families. Coaches were equipped with checklists to ensure clean up of homes, and were given cleaning supplies which they could then distribute to families who needed or lacked such supplies. Coaches were also educational and helped families to better understand their child's asthma and asthma symptoms. The results of the program were significant decreases in Emergency Department visits, and a decrease in asthma medication use. Despite initial costs of the Lowell Healthy Homes program, it was ultimately found to be the more cost-effective program when compared to control, as fewer dollars were spent on expensive asthma treatments and ED visits.

These are just a couple examples of the success CHW's are having with pediatric asthma, and there have been many more studies with similar results (Krieger et al., 2009, Margellos-Anast et al., 2012, Postma et al., 2009).

Asthma is not the only chronic medical condition where CHW's are having success, however. Raphael et al. (2013) performed a systematic review on CHW's and pediatric chronic diseases. They found four medical conditions for which CHW's as extenders of treatment have been studied in a randomized controlled fashion: Asthma, Type I diabetes, Obesity, and Failure to thrive. They found, overall, that the "evidence for [community] health worker intervention improving the care of children with chronic conditions [was] generally positive" (p. 414). Interventions were typically in the form of home-visits, but could also be phone calls and emails. In general, CHWs focused on

education and supporting parents. In one instance they modeled “healthy parent-child behavior” (p. 412).

Despite the success of CHW’s in reducing symptoms for chronic medical conditions like asthma, there are still many more medical conditions that have yet to be fully studied where CHW’s could potentially have a positive impact.

ADHD as a Common Chronic Disease of Childhood

Attention Deficit Hyperactivity Disorder, or ADHD, is a disorder that commonly presents in the pediatric years and can last into adulthood. It has occasionally been the subject of controversy in the recent decade (Isaacs, 2006). This is likely due to increases in diagnosis, the use of stimulant medication in pediatric patients, and the difficulty of diagnosis due to symptom overlap with many other conditions (Isaacs, 2006).

According to the DSM IV, ADHD is a condition characterized by a “persistent pattern of inattention and/or hyperactivity impulsivity that is more [frequent and severe than normal] (DSM IV, 2000, p. 85.) While it is sometimes not diagnosed until adulthood, symptoms of ADHD must have been present before the age of 7 in order to qualify for diagnosis. They must be significant enough to impair functioning in at least two settings (for example, school, work or social life,) and impact the normal development of the child. The DSM also requires that these symptoms not be due to any other conditions with similar symptoms, such as anxiety or bipolar disorder, which have also been known to affect concentration.

As a behavior disorder, ADHD often co-occurs with other behavior disorders, like

oppositional defiant disorder and conduct disorder (CDC, 2015). ADHD often affects child peer relationships, with 3 times as many parents of ADHD children reporting child peer-relationship problems than non-ADHD parents (CDC, 2015). It even has an effect on accidental injuries, and a child with ADHD is more likely to have a head injury or be otherwise accident prone (CDC, 2015). Genome wide association studies have confirmed there are strong genetic components to ADHD, backing up the observed familial heritability of ADHD (Coghill, 2015, Asherson and Gurling, 2012). Prevalence of ADHD is controversial and figures vary, but the CDC reports as of 2011 about 11% of children between 4 years old and 17 years old have received a diagnosis (2014). The CDC also reports a strong gender bias, with boys having about a 13.2% chance of diagnosis vs a 5.6% chance of diagnosis for girls (2014).

There is no cure for ADHD and treatment focuses on reducing or alleviating symptoms. Patients have behavioral therapy and prescription stimulant medication as their treatment options. A combination approach of both therapy and medication is regarded as the most effective approach, with stimulant medication alone considered a safe and effective therapy (Robito-Alcon & Correias-Lauffer, 2014). Medications are FDA approved for use in children as young as 3 to 6, and include the familiar Adderall, Concerta, and Ritalin (National Institute for Mental Health [NIMH], n.d.). Methylphenidate and similar stimulants have a large backing of scientific study proving their safety and effectiveness (Haertling et al., 2014). Despite this, parents may still fear medication use will lead to abuse and can be reluctant to try it in their child (Coletti et al., 2012). Fears about stigmatization may also make some parents reluctant to start

medication (Hervey-Jumper et al., 2008). Additionally some children just don't tolerate ADHD medication well because of side effects.

All of these reasons and more can lead to behavioral therapy as a treatment on its own. Among therapies, there are two broad categories, as classified by a study by Serrano-Troncoso et al.: psychological therapy and psychoeducational therapy (2013). Psychoeducational therapies are defined more narrowly, and as a group tend to target problematic behaviors related to just school settings. Therapy is either directed at the child to help them better manage their own symptoms and organize their schoolwork, or at school officials so that they can better understand and interact positively with ADHD children. Psychological therapy has a broader focus and incorporates popular practices such as parent training, and behavioral cognitive therapy (Serrano-Troncoso et al., 2013).

In the absence of formal therapy, there are published guidelines on lifestyle modifications families can make for managing ADHD. The NIMH has published "Tips" for parents (2012). They recommend keeping a routine schedule, organizing as many household items as possible, organizing schoolwork, maintaining clear and consistent rules, and praising often for following those rules (NIMH, 2012, para 7) Other government health agencies have similar recommendations and these general guidelines are widely available to the public and easily accessible with an internet connection.

ADHD and Resource Poor Communities

It is not news that families from poor urban communities struggle to access the same level of healthcare resources that wealthier families have access to. Racial

minorities struggle to access the same level of mental healthcare services and have “unmet needs” when compared to non-minorities (Yeh et al., 2003). There are demonstrated differences in prescription rates between minority children and non-minority children (Zito et al., 1998). These disparities are clearly pronounced in psychotropic medication practices. In a study on methylphenidate prescribing practices for children with Medicaid, there was found to be a 2.5 fold lower prescription rate for African American children despite no associated lower rate of diagnosis or parental refusal for prescription therapy (Zito et al., 1998).

Children in poor urban environments are also less likely to receive coordinated care for their ADHD (Guevara et al., 2005). An investigation in urban Philadelphia into the causes of break down in care coordination found communication between parents, primary care providers and school officials to be lacking across the board (Guevara et al., 2005). This same study reported a lack of readily identifiable community resources for parents of children with ADHD. Parents and Providers struggled to identify parent support groups or parent training classes, despite an expressed interest in them (Guevara et al., 2005).

What resources are available tend to be underutilized by minority populations. African Americans and Hispanics with ADHD struggle to access specialty mental health services at the same rates as their non-minority counterparts (Bailey et al., 2014). This has been attributed to multiple factors, including cultural attitudes towards mental illness leading to a decreased seeking of treatment, fears about stigmatization, poor insurance, and economic barriers (Bailey et al., 2014).

There has been a repeated reported breakdown of communication between providers and families and a repeated reported lack of trust (Guevara et al., 2005, Fiks et al., 2010). Both of these are seen to inhibit good care and access to necessary treatment resources. Given, then, the special role that CHW's can have as trusted members of their community, and as facilitators of communication between healthcare providers and families (through education, counseling and advocacy), and given the demonstrated success they are having in improving symptoms and outcomes for a variety of chronic health conditions, we suggest CHW's take on a role in the care and management of ADHD.

A Role for CHW's in ADHD Treatment

Community health workers could potentially serve as educators, translators and builders of trust and communication between primary care providers and families of children with ADHD. One example where CHW's served as cultural brokers with high populations is in a study by Goepp et al. (2004). The study originally intended to decrease the use of pediatric ED's by poor urban populations for non emergent conditions. CHW's, who had been originally employed to help educate study participants on ED misuse, identified a critical lack of communication between researchers and study participants. Study participants were mistrustful and fearful of the study intentions, and CHW's, concerned the study could not be completed as intended, advised a change in study aim. Goepp et al. switched study aims to an investigation on the causes of ED use for non-emergent reasons. CHW's communicated that study participants feared pediatric

providers may not be understanding of their unique and challenging life circumstances and felt they may be judgmental and unsympathetic due to missed appointments or inability to comply with treatment plans. The ED was preferred for its anonymity. Key here is that community health workers were able to open the lines of communication and to translate and transfer information from an otherwise mistrusting patient population to researchers.

We suggest that community health workers be incorporated into ADHD care by increasing their involvement in behavioral therapies, and in the process increase communication between patient families and providers. We recommend they do this through the delivery of an evidence based behavioral parent training program in a home-visit style.

Evidence Based Therapies Delivered by CHW's

Behavioral Parent Training, or BPT, is an established, effective therapy with a growing literature base of positive outcomes for parents and children with a wide variety of behavioral disorders, including ADHD, Oppositional Defiant Disorder, and Conduct Disorder (Lee et al., 2010, Zwi et al., 2011, Furlong et al., 2013). There has been, however, a reported lack of resources and easy access to parent training for vulnerable communities with ADHD (Guevara et al., 2005). If a CHW could effectively deliver BPT for ADHD, this would help address both the perceived and real lack of treatment resources and make available to a needy population yet another treatment option.

To our knowledge, there has yet been no study looking at the efficacy of a BPT program delivered specifically to parents of children with ADHD by community health workers. There have been a few programs of close approximation that turn up on a preliminary-literature review search, however. We summarized three of them below:

Table 1: CHW delivered BPT

| | | | |
|-----------------------------|--|---|---|
| Authors | Fayyad et al., 2010 | Strayhorn, & Weidman, 1989 | Williamson et al. 2013 |
| Study Participants – Adult | 87 Mothers | 89 Mother s and Fathers | 194 Mothers |
| Study Participants – Child | 87 Children, ages 6–12 | 96 Children ages 2–5 | 194 Children, ages 7–12 |
| Study Aims | To test a behavioral parent training program in an Arab nation and reduce the use of corporal punishment for child ADHD and externalizing symptoms | To include “favorable practices” with an emphasis on fun parent-child interactions as a preventative therapy for problematic child behavior | To pilot a preventative BPT program specific for immigrant Latina mothers |
| Study ‘intervention’ or BPT | A combined modified therapy based on manuals developed by the Integrated Services Program Task Force and produced by the World Psychiatric Association | “Training exercises for Parents of Preschoolers” | Madres a Madres |
| Intervention/BPT Agent | 20 social and health workers with various levels of health and social science education. Trained in the intervention therapy before delivery | 5 research assistants with “cultural roots in the communities” | Promotoras |
| Supervision of Agent | Yes | Yes | Yes |
| Location of Treatment | Local health and social service centers in impoverished areas of Beirut, South Lebanon. | Not described, but in Continental USA | In-home, Santa Ana, California |

| | | | |
|--------------------------|--|--|---|
| Outcomes/ Conclusions | Parent ratings of child behavior problems of mild to moderate reduced from 54% to 19%. Mother reports of using violence as punishment dropped from 40% to 6% | Assessments of parent and child behavior during playtime, and child ADHD symptoms showed statistically significant improvement | Child internalizing symptoms improved, and mothers reported improved family functioning and family organization |
|--------------------------|--|--|---|

These studies were not included in our literature review results for the following combination of reasons: not including ADHD children, preventative rather than treatment aims, age of study, and location (developing country.)

Madres a Madres was a preventative behavioral parent training program administered by actual CHW's and was the study of closest approximation to what we propose. Promotoras performed home-visits and taught parenting skills to immigrant Latina mothers. The preventative aims were to decrease youth violence and behavioral problems, and the BPT program was developed with this and the unique needs and family dynamics of immigrant Latina families in mind. Promotoras conducted 4 home visits, each 2 hours long. Each session had its own topic. The four topics covered were normative child development, "positive parent-child interaction techniques," "positive behavioral management strategies" and information connecting families to community resources (Williamson et al., 2013, p. 50). Specific tactics mentioned by the authors included ignoring mild poor child behavior, consistent adherence to family rules, and regular consequences like time-out. Mothers were encouraged to praise their children often. "Visual materials, video segments, interactive role plays, and worksheets" were all used in the teaching of parenting skills (p. 51). While ADHD was not a consideration in

this study, and study participant children were not selected based on any ADHD symptomology, outcomes were positive and the intervention was similar to many ADHD behavioral parent training interventions.

The second study we looked at was also interested in testing a preventative BPT program in a high risk community. Strayhorn and Weidman (1989) tested a behavioral parent training program that emphasized “dramatic play” and “fun” interactions between low income parents and their children (p. 888). It significantly improved children’s hyperactivity and anxious behaviors, and independent observer reports of parenting behaviors showed improvements as well. The intervention was delivered by individuals with “cultural roots in the communities” from which study participants were recruited (p. 891). They were likely analogous to community health workers of today, though from the description, they worked in a more limited role and didn’t perform much of the healthcare system navigation that CHW’s typically do, and that Williamson et al. reported their CHW’s did.

Lastly, we looked at a simple study done in Lebanon that used a global health definition of a CHW. The CHW’s in this study were of varying educational levels, but all were originally from the impoverished neighborhoods of Lebanon where the experimental BPT intervention took place. Thus they still had CHW-like cultural ties to the study participant communities. Children included in this study were suspected of ADHD based on externalizing symptoms from mother reports, and the intervention administered by CHW’s aimed to reduce these behaviors and to improve parenting skills. Outcomes were positive.

The outcomes for all three of these studies were favorable for the intervention, resulting in improved child behaviors and parenting practices. Interventions closely resembled current behavioral parent training programs given by advanced degree therapists, but were administered by community health workers, or equivalent agents with close community ties. Together, this is encouraging support for the potential ability of a community health worker to deliver a behavioral parent training program to parents of children with ADHD and achieve similar results.

SPECIFIC AIMS

The specific aim of our review was to systematically search the literature of current evidence based behavioral parent training programs for children with ADHD, and to determine which of these programs could best be delivered by a community health worker in a home-visit format. Community health workers are increasingly being used to decrease health disparities and improve access to preventative and treatment services for chronic medical conditions. Poor resources communities like the ones community health workers typically serve have an increased risk of ADHD diagnosis but a decreased access to care. It is worth investigating if CHW's can effectively deliver a BPT program for ADHD, and we aim to pick a program from the current literature and adapt it.

Our objectives were to:

- i) Reconfirm that the BPT we reviewed had shown efficacy as a behavioral therapy for children, ages 2–12, with ADHD as their primary diagnosis.
- ii) Determine which BPT therapy has the greatest potential for successful adaptation to a CHW delivery model.

We chose to accomplish these two tasks by analyzing the methods and results sections of our articles. The methods would give us insight into the ways in which different BPT programs were similar or different. Results would give us insight into their success as a treatment for ADHD.

METHODS

A search of PubMed articles was conducted from October 2014 to December 2014, using various combinations of the key terms Community Health Workers, ADHD and Behavioral Parent Training. Articles were pulled by Title and Abstract. The study population of children had to be between the ages of 2 and 12 years old. The behavioral therapy intervention had to be shorter than 6 months and longer than one session. Adults or parents had to be targets of the therapy intervention, and the purpose of the intervention had to be to improve ADHD child behavioral problems. Articles had to be younger than 2010, and have the full-text available in English. Close analysis of abstracts led to 12 articles. Full text analysis led to the additional exclusion of 4 of those 12, either because the article did not describe in detail a specific intervention, (i.e. a meta analysis) repeated the same intervention by the same author but tested different outcomes, or because the intervention targeted non-generalized ADHD symptoms (a parents ability to help improve their child's social or academic skills.) This left us with 8 full text articles for analysis.

Articles differed greatly in the measures and the statistical analyses used to reach their conclusions. When we compared studies we decided to simply group them by BPT program type, and then summarized findings into table format. We were specifically interested in interventions and results, and focused on common or re-occurring themes and results from our collected studies. While studies varied in terms of objectives and primary outcomes, most of them assessed whether problematic child behavioral symptoms of ADHD, as reported by parents, improved. Most also examined parental

confidence or stress. We focused on these outcomes as they would likely be among the primary outcomes for any potential pilot study involving community health workers and an ADHD BPT program. The BPT program should demonstrate improvement in these outcomes in the traditional research setting before being applied to a CHW delivery model. Also important to our tables were the delivery agents of the different BPT interventions and the various locations (i.e. hospital or clinic) that the interventions were delivered.

RESULTS

More than a few of the articles we pulled were the continuations of years of research on a particular Behavioral Parent Training (BPT) program. In some instances, authors built their BPT program upon an already existing and established BPT program. For the most part we used the generalizations from articles to determine details of the intervention, but we sometimes found it necessary to go back to primary resources. Of our 8 articles, 3 were modified versions of a manualized BPT program authored by Barkley in 1997. 2 articles were based on the New Forest Parent Training program, one was given the abbreviation STEPP, one was based on the Incredible Years program, and one was a sports-based BPT for fathers called COACHES. Studies were conducted either in a controlled research setting or an outpatient clinic, with one study conducted in the home. All programs were delivered by highly trained therapists, with the exception of a self-help BPT study.

IY:

Table 2: IY

| | |
|----------------------------|---|
| Authors | Webster-Stratton et al., 2013 |
| Study Participants – Adult | Mother and Father |
| Study participants – Child | 99 children ages 4–6 |
| Study Aims | To determine the effects of the IY program at 1 year follow up |
| Study BPT | The Incredible Years |
| BPT Delivery Agent | Described as “MA or PhD – level group leaders” |
| BPT delivery location | Not described |
| Outcomes/Conclusions | Treatment effects held at 1 year follow up. A majority of the treatment group saw symptom improvement to below clinically significant levels. |

One-Year Follow-Up of Combined Parent and Child Intervention for Young Children with ADHD. Webster-Stratton et al. 2012.

This study was a randomized controlled trial comparing the results for the Incredible Years program at 1 year follow up against a waitlist control. The Incredible Years has had success as a BPT program for treating children with oppositional defiant disorder. The authors wanted to test its effectiveness as a therapy for parents of an ADHD patient population (Reid et al., 2003, Larsson et al., 2008). 20 weekly sessions were delivered in small group format, with each session lasting approximately 2 hours. Parents and children were each the target of an extensive therapy, which was delivered to them separately and concurrently. Parental therapy focused on developing consistency in the home through a routine schedule, taught emotional self-regulation techniques, and helped parents to help their children problem solve. The program contained scholastic and social components as well. Parents watched a video modeling ADHD child behavior to help them better understand and calibrate their expectations for what was appropriate behavior for their own child. They also planned what their responses would be to problematic behavior. There were tips for parents for managing their own stress or depression. In the child directed therapy, participants were taught skills such as “following group rules, identifying and articulating feelings, problem solving, anger management, friendship skills, and teamwork” (Webster-Stratton et al., 2011, p. 195).

The interventions – for both children and adults – were led by those with a masters or doctorate level of education, and they themselves checked in weekly with “TY trainers” (Webster-Stratton et al., 2012, p. 253). The location of treatment was not

specified.

99 children, ages 4 to 6, and their families were randomly assigned to either IY or waitlist control. For study eligibility, children had to have ADHD symptoms significant for diagnosis of ADHD, and about half had a comorbid diagnosis of oppositional defiant disorder. Medication use for ADHD was an exclusion criterion. Of the 49 children randomized to intervention (the other 50 to wait-list control), 49 mothers, and 39 fathers enrolled in the parent training. Minority demographics of the study were representative of minority demographics of the city.

This study was a one-year follow up investigation of the Incredible Years program, with 27 different measures taken, all classified into 5 broad categories. These categories all showed improvement in favor of the IY intervention. There were improvements for mother and father reports of child behavior, mother reports of positive parenting styles, teacher reports of child behavior, independent observations of mother parenting styles and child behavior, and for assessments on children's abilities to articulate feelings and problem solve. Specifics about what qualified as improvements in child behavior, improvements in parenting style, or what was problem solved were not available.

Parent and teacher reports of child behavior showed significant change from pre to immediately post intervention, and no significant change between post intervention and the 1 year follow up. Mother reports of harsh discipline, or physical punishment decreased from pre IY to post IY, with no loss of these improvements at the 1 year follow-up. Child problem solving ability and independent observations of child behavior

in the school setting showed improvement from pre IY to follow-up. ADHD symptoms of clinical significance, as measured by the CBCL (child behavior checklist,) decreased from 100% of children to slightly less than half at the 1 year follow up. ODD was shown to be a predictor of success for the IY program, with higher levels of ODD in ADHD children leading to a more successful outcome, specifically for mother reports of child oppositional behavior, and mother reports of harsh parenting.

STEPP

Table 3: STEPP

| | |
|----------------------------|--|
| Authors | Chacko et al., 2012 |
| Study Participants – Adult | 80 single mothers |
| Study participants – Child | 80 children ages 5–12 |
| Study Aims | To determine if increased attendance and program completion could be improved for ‘high risk’ families by specifically addressing parent expectations and increasing small groups social support through the STEPP program |
| Study BPT | STEPP |
| BPT Delivery Agent | “therapists,” no other description |
| BPT delivery location | Not described |
| Outcomes/Conclusions | Mothers in the STEPP treatment program had higher attendance and lower dropout. They also reported higher social support and greater satisfaction with their child’s behavioral improvements. |

Evaluating a Comprehensive Strategy to Improve Engagement to Group-based Behavioral Parent Training for High-risk Families of Children with ADHD. Chacko et al. 2012.

The Strategies to Enhance Positive Parenting program, or STEPP, is a BPT program that was tested against a traditional, established BPT. STEPP was conceived with the aim of increasing parent training completion rates specifically for at risk single parents.

The traditional BPT program that STEPP was compared to was described as a 9 week manualized program that met in group format for 2.5 hours a week. Mothers watched videos of parenting errors, discussed what they'd seen, and planned alternative parenting strategies they could use in similar situations. They participated in parenting role-play scenarios with therapists and group members, and were given weekly homework assignments. Effective use of time out was taught, as was how to ignore their child's mild poor behavior while paying attention to his or her good behavior. Study participant children and their siblings were enrolled in a social-behavioral therapy group that met at the same time mothers underwent the traditional BPT. This child-targeted therapy was not described.

The STEPP program contained everything that the traditional BPT program did, but with additional elements to try to ensure a higher completion rate. The first addition was at enrollment. Researchers held an open discussion with mothers to address any expectations that didn't match well with reality regarding possible barriers to participating in the program or the possible treatment results from the program. The

second addition was the formation of smaller subgroups within the larger therapy. The aim was to increase social support, especially for socially anxious mothers. They reasoned smaller groups would make forming ties easier, leading to more support and engagement in the behavior parent training. Mothers in the STEPP program also underwent additional problem solving discussions oriented toward anticipating and brainstorming solutions to parent or child issues that may interfere with their parenting or affect their attendance or engagement to BPT. The child social skills behavior program component of BPT was also modified in STEPP, although again, details were lacking for the child-directed therapy. There was a higher level of interaction between therapists and children, and therapists and mothers, in regard to modeling good parenting techniques. Therapists also helped parents develop and practice an incentive system which could be put into place at home.

Those delivering the intervention were only described as “therapists,” and the location of treatment was undescribed.

This study defined high risk families as single mothers and their children. Children ages 5 to 12 with symptoms significant for a diagnosis of ADHD, and with mothers living without a significant other were considered for eligibility. ODD/CD comorbidity was allowed, and approximately 2/3 of children included had an ODD/ADHD dual diagnosis. Children with IQ’s < 80 were excluded, as were those with a developmental disorder or psychosis. In total, 80 children and their mothers were enrolled and randomized to either STEPP or traditional BPT.

Primary outcomes were drop out rates, homework completion rates, and attendance. Additional outcomes were the typical BPT therapy measures, and looked to assess mother’s experience of the therapy, her sense of support from group members, and her reports of child improvement.

This study was primarily concerned with attendance and drop out, and data focused on this and any potential moderating variables. They found there was a significant difference in mother reports of satisfaction with their child’s improvement after therapy, with higher satisfaction rates in the STEPP program. Mothers in the STEPP program also reported significantly higher levels of sense of social support. There were no differences between groups on ratings of therapist quality, experiences during the initial intake stages, and quality of therapy. By the end of the study, approximately 65% of families in the traditional BPT group had dropped out, compared to only 10% of STEPP families.

COACHES

Table 4: COACHES

| | |
|----------------------------|--|
| Authors | Fabiano et al., 2012 |
| Study Participants – Adult | 55 Fathers |
| Study participants – Child | 55 Children ages 6– 12 |
| Study Aims | To determine the effectiveness of a sports based BPT program designed especially to increase positive father engagement. |
| Study BPT | COACHES |
| BPT Delivery Agent | A clinical psychologist |
| BPT delivery location | Not described |
| Outcomes/Conclusions | Some improvements in father parenting behavior at post study, but treatment effects had disappeared by follow-up. |

A Waitlist-Controlled Trial of Behavioral Parent Training for Fathers of Children with ADHD. Fabiano et al. 2012.

Coaching our Acting-out Children: Heightening Essential Skills, or simply, COACHES, is a BPT program developed specifically for fathers. The study was a randomized controlled trial of COACHES vs waitlist control. COACHES is an 8 week program, with each session lasting 2 hours, and split into 2 parts. The first hour is didactic, consisting of video viewing of parenting errors and discussion. Additional topics are covered and include time out, rewarding positive behavior while ignoring mildly poor behavior, and developing effective and consistent rules and commands. The second hour consists of a soccer game where fathers practice the weekly parenting skill they have just learned. Games are supervised by a therapist, who can then give immediate feedback to fathers on their new parenting skills.

The BPT intervention was delivered by a clinical psychologist, and sessions were audiotaped. Tapes were reviewed by an independent party for integrity.

Children had to have a diagnosis of ADHD and a paternal figure willing to participate to be considered for study eligibility. Children with comorbidity of ADHD/ODD or ADHD/CD were eligible, but IQ's < 80, psychosis, pervasive developmental disorders, or inability to speak English led to exclusion. While all participants were asked to keep ADHD medications constant, both control and intervention groups experienced some participant medication changes. End of study analysis showed no difference between groups for this, however. 55 fathers and children were ultimately enrolled and randomized to either COACHES or waitlist control.

For outcomes, both mothers and fathers were assessed. Fathers as well as mothers of both the intervention and control groups filled out an ECBI (Eyberg Child Behavior Inventory) questionnaire at pre-study, immediately post intervention, and at 1 month follow up. The ECBI is a measure of child behavioral problems as reported by parents. Unblinded observers used the Dyadic Parent-Child Interaction Coding System II to measure father interactions with children. Participants also rated their satisfaction with the intervention.

The only measures of child behavior were the reports by parents on the frequency and intensity of their child's behavior problems, as measured by the ECBI. There was no significant change for the frequency of child problems as reported by fathers between pre and post study, but there was a decrease in the intensity of reported problems by fathers in the COACHES group. The primary outcomes in this study were, however, of father behavior. COACHES' fathers were found to significantly increase their use of praise and decrease their use of negative talk at post treatment assessments. At the 1 month follow-up, the differences between groups for this had disappeared. Mothers in both groups, although in no way involved in the treatment, were assessed in the same manner as fathers to see if treatment to fathers would affect mother parenting behavior. No differences between mothers in the two groups were found.

NFPP

The New Forest Parent Training Program is reported to be a specialized, superior parent training program for parents of children with ADHD. NFPP is said to “target ADHD behaviors and the psychological deficits thought to underlie them” (Daley & O’Brien, 2013, pg. 543).

Table 5: NFPP

| | | |
|----------------------------|---|--|
| Authors | Daley & O’Brien, 2013. | Abikoff et al. 2015 |
| Study Participants – Adult | Mother and fathers | Mother and fathers |
| Study participants – Child | 43 children, ages 6–11 | 187 children ages 3–4 |
| Study Aims | To determine if a self-help method of the NFPP BPT program could be effective | To determine the short and long term effects of the NFPP program compared to a BPT program established for problematic child behavior |
| Study BPT | NFPP-Self Help | NFPP |
| BPT Delivery Agent | Not applicable | “trained clinicians” |
| BPT delivery location | In-home, UK wales | In-home |
| Outcomes/Conclusions | Improvements in child ADHD symptoms based on parent reports. | Parents report improvement in child ADHD symptoms, but independent observations from teachers and researchers did not see improvement. |

A Small-Scale Randomized Controlled Trial of the self-help Version of the New Forest Parent Training Programme for Children with ADHD Symptoms. Daley & O'Brien, 2013.

Daley and O'Brien (2003) suggested that delivering BPT by therapist, while effective, could present barriers to accessing the treatment itself. They wanted to test if a self-help form of BPT could be effective in changing parent techniques and child behavioral problems. They adapted the New Forest Parent Training Program to a written format that study participants could do in their own time at home, and tested it against waitlist control.

The NFPP-Self-Help program began with one 2 hour group session where study participants were briefed on 4 main behavioral parent training topics: education about their child's ADHD behaviors, previous research on NFPP, explanations of key strategies in the self help manual that would help with their child's behavior, and a discussion about how to best integrate the NFPP-SH therapies into the home setting (p. 546). Parents left the session with as many copies of the NFPP-SH program as they wished, and the manual would instruct them through "six-steps" of the program (p. 546). Each week, parents received a check up phone call to encourage program maintenance. The phone call was strictly non-therapeutic. The six steps focused on helping parents help their children develop attention skills, patience, and self-organization, and used games and exercises as teaching tools.

43 children and their parents (64 parents) were randomized to intervention or waitlist control. Children recruited were between the ages of 4 and 11, and could not be

on ADHD medication. Child ADHD symptoms were determined using PACS (Parental Account of Child Symptoms). Potential parental study participants were interviewed using PACS interview questions, and answers were scored. A threshold score of 17 or higher indicated ADHD and was an inclusion criterion for the study. Analysis showed that majority of families enrolled were of low socioeconomic status in the UK.

Outcomes of child ADHD symptoms were also measured using PACS. Parents reported on their sense of well-being and parenting ability using the “General Health questionnaire,” and the “Parental Sense of Competence Scale,” (PSoC). Parent-Child interactions were observed and measured using the Global Impressions of Parent-Child Interactions scale (GIPCI,) and assessments were made at pre and post study.

Daley and O’Brien reported significant decreases in PACS scores (equaling a decrease in reported ADHD symptoms) for the NFPP-SH group, with moderate effect sizes. Parental reports of self parenting competency also improved in the NFPP-SH group, with large effect sizes for PsoC scores. Independent observation of Parent-Child interactions and child ADHD behavior showed no difference between the NFPP-SH group vs the waitlist control group, however.

Parent Training for Preschool ADHD: a Randomized Controlled Trial of Specialized and Generic Programs. Abikoff et al., 2015.

This study was an attempt to investigate the claims that the New Forest Parenting Package (NFPP) is a superior behavioral parent training therapy. NFPP was tested against an established BPT program for oppositional defiant disorder, “Helping the

Noncompliant Child, (HNC)” and against a third waitlist control group. The NFPP is an 8 week program, with each session lasting an hour to an hour and a half. NFPP uses many of the same strategies as other BPT therapies, such as homework assignments, decreasing negative talk towards children and increasing “positive and reciprocal parent-child interaction,” (p. 4). It aims to change parenting behavior by targeting 4 areas of parental behavior and expectation, which the authors called “scoping, extending, scaffolding and consolidation.” Scoping is simply learning to observe their child’s behavior patterns. Extending is essentially teaching a parent to calibrate realistic expectations for their ADHD child’s behavior based on their child’s current behavior. Scaffolding is where parents construct games as a method of teaching appropriate behavior to children. Consolidation is broad applicability, where skills learned in one area are applied to others. Helping Noncompliant Children (HNC) was the BPT program that NFPP was tested against. It was also 8 weeks long, with each session lasting an hour, but as a program it’s been designed to help children with generalized behavioral and oppositional defiant problems.

All treatment groups and BPT therapies were carried out by “trained clinicians” and sessions occurred in the study participants homes (p. 4). HNC was also conducted by trained clinicians, but occurred in the clinic.

187 Children between the ages of 3 and 4 years old, with a firm diagnosis of ADHD were included in the study, and randomized to NFPP, HNC, or waitlist control. Children with an IQ < 70, receiving ADHD medication or behavioral therapy, or with a history of psychosis or pervasive developmental disorders were excluded. Other health

and mental health histories that might have interfered with treatment also led to exclusion.

Assessments were taken at pre and post study, and for NFPP and HNC groups, an additional assessment was taken as follow up. The average time for follow up was 6 months, and did not differ between the NFPP or HNC group.

Child ADHD symptoms were measured by parent and teacher reports using the Conner's Scale. Children were videotaped and behaviors indicative of ability to maintain attention were scaled and rated. Symptoms of Oppositional Defiant Disorder or Conduct Disorder were also assessed. A child's ability to delay gratification was assessed using an M & M and a delayed signal. Parent child interactions were observed and scored using a modified GIPCI. Parents also self reported on their own levels of stress and sense of parenting competence.

There was no difference between the HNC and NFPP treatment groups on participant satisfaction or drop out rates. Both HNC and NFPP had ADHD symptom reductions when compared to waitlist control, but no significant differences were noted between the two groups. Follow up scores for inattention showed maintained improvement, but other markers of ADHD – hyperactivity and impulsivity – showed worsened outcomes. NFPP performed worse than HNC. Clinicians reported improvement in both treatment groups for ADHD symptoms, but greater symptoms of hyperactivity/impulsivity in children from the NFPP treatment group than HNC. There were no differences between treatments in a child's ability to delay rewards or maintain attention. For oppositional and physically violent behavior, NFPP either did no better or

worse than HNC. Parenting behaviors improved significantly for both treatment groups, but one group did not do significantly better than the other.

Barkley

Each of these three programs utilized some modified version of Barkley’s manualized behavioral parent training program published in 1997 titled “Defiant Children: a Clinicians Manual for Assessment and Parent Training.

Table 6: Barkley

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|----------------------------|---|--|--|
| Authors | Van Den Hoofdakker et al., 2010 | Gerdes et al., 2012 | Loren et al., 2015 |
| Study Participants – Adult | Mother and Father | Mother and Father | Mother and Father |
| Study participants – Child | 94 children, ages 4–12 | 20 children, ages 6–12 | 241 children, ages 6–12 |
| Study Aims | To determine predictors and moderators of BPT success | To determine if BPT has “clinically meaningful change” for the individual participants | To determine if BPT could be effective in a “less controlled” outpatient setting |
| Study BPT | Modified, combined Barkley and McMahon | Modified Barkley only | Modified, combined Barkley and MTA study |
| BPT Delivery Agent | “2 psychologists... [with] extensive post graduate training in behavior therapy” (p. 320) | Not stated | 12 staff psychologists with between 4 and 30 years of experience |
| BPT delivery location | Mental health outpatient clinic | A university-based ADHD clinic | 37 different outpatient clinics affiliated with Cincinnati Children’s |
| Outcomes/ Conclusions | Children with single or no comorbidity respond better to BPT, as do parents | Decreases in parenting stress were clinically meaningful for | Results for improvement in parenting practices and child behavior problems were equal to |

| | | | |
|--|--|-----------------------------------|---|
| | with higher confidence in their parenting abilities. | majority of parents in the study. | those seen in BPT studies conducted under more rigorous conditions, suggesting BPT is effective when conducted in less controlled settings. |
|--|--|-----------------------------------|---|

Behavioral Parent Training as an Adjunct to Routine care in Children with Attention Deficit/Hyperactivity Disorder: Moderators of Treatment Response. Van Den Hoofdakker et al. 2010.

This study was a randomized controlled trial of a behavioral parent training therapy plus routine clinical care vs routine clinical care alone. The purpose of the study was to bring to light some of the predicting and moderating variables of BPT success. The authors used a 12 session group format program for the BPT therapy, lasting 2 hours each, spread over 20 weeks. The BPT was a combination of Barkley’s manualized BPT and a program developed by Forehand and McMahon: Helping the non-compliant Child (1981). This combined BPT program focused on: “structuring the environment, setting rules, giving instructions, anticipating misbehavior, communicating, and reinforcing positive behavior, ignoring, employing punishment, and implementing token systems” (para 22). The therapy also worked to change parent thinking and cognitive processes, as well as to provide psychoeducation about ADHD. Both BPT and control groups received routine clinical care, which involved generalized mental health psychoeducation, pharmacotherapy, counseling, and access to crisis management and psychiatrists.

The BPT sessions were delivered by 2 psychologists with post graduate education

in behavioral therapy and experience with parent training. Sessions occurred at a mental health clinic.

Children with a diagnosis of ADHD whose parents still reported behavioral problems after initial treatment at an outpatient mental health facility were considered for, and asked to, participate. To be eligible, children had to be between the ages of 4 and 12, and have an IQ>80. 94 children and their parents were randomized to either the interventional BPT and routine clinical care, or routine clinical care alone.

The study aimed to examine 3 potential child variables and 3 potential mother variables. They looked at child age, IQ and comorbidity status (co-occurring diagnoses of ODD or CD), and at maternal symptoms of ADHD, depression and parenting efficacy. Parenting efficacy was defined as a parents sense of parenting competence.

The efficacy of this BPT program as superior to routine clinical care alone had been established in a previous study by the same author (Van Den Hoofdakker et al., 2007). The child behavior checklist (CBCL) was used as a measure of child behavior problems, specifically externalizing symptoms. At post study assessment, behavior problems had decreased for both groups, but significantly more so for the BPT group ($P=0.021$). ADHD symptoms were measured using the ADHD index, and while both groups showed significant decreases in ADHD symptoms by this measure from pre to post study, there was no significant difference between groups ($p=0.161$). Repeated measures ANOVA's for comorbidity showed a better BPT treatment response among children with fewer comorbidities. Child IQ had no predicting or moderating effect. Age had no predicting or moderating effect on externalizing symptoms, but older children had better

response to BPT treatment and a decrease in ADHD symptoms. Children with no or single type comorbidity (ADHD/ODD only or ADHD/CD only) responded better to treatment than those with multiple comorbidities, showing a moderating effect for this variable.

Results for maternal variables showed no predictive value for maternal ADHD, depression or self efficacy. Additionally, maternal ADHD or depression had no moderating effects. Maternal parenting efficacy, however, showed moderating effects, affecting both the CBCL (externalizing symptoms) and the ADHD index (ADHD symptoms) outcomes. Parenting confidence and child age, and no, or single type comorbidity were then the only moderating effects of this BPT study. The BPT in this study was effective in reducing externalizing symptoms (yelling, hitting, etc.) but not necessarily other ADHD symptoms.

Parental Functioning in Families of Children With ADHD; Evidence for Behavioral Parent Training and Importance of Clinically Meaningful Change. Gerdes et al. 2012.

This study wanted to see if the effects of BPT, which studies have found to be statistically significant between treatment groups and controls, also resulted in clinically meaningful change for the individuals who underwent BPT. There was no control group for this study.

The study used only a modified version of Barkley's 1997 parent training program. Each family received a slightly tailored BPT, which generally consisted of 8 to 12 sessions, each lasting 50 minutes. Each session focused on a specific topic. Topics

covered included psychoeducation on ADHD and normal ADHD child behavior. Session topics included teaching parents to ignore their child's mild poor behavior, to pay attention to their good behavior, using commands and time out effectively and efficiently, and how to establish a token system. One session focused on addressing difficulties in the school setting, but details as to what this entailed were not given.

Treatment occurred at a university based ADHD clinic. Clinical psychology graduate students and ADHD faculty were involved in determining ADHD symptoms and diagnosis, both when evaluating children for study eligibility and when taking data assessments at post-treatment. No direct descriptions were given for the delivery agent in this study. It's reasonable to assume the same students and faculty that collected data and administered screening also delivered the parent training.

37 Children from ages 5 to 12, with ADHD diagnosed by students and staff, began the study along with their parents. 17 families dropped out. This left 20 families for data analysis. Of those 20, only 5 had any kind of comorbidity (all 5 were ODD/ADHD.) 4 were on some kind of pharmacotherapy for their ADHD. Half of the subjects were white, and half were of minority status.

Parents, children, and teachers were involved in this study. Parents were asked to fill out multiple questionnaires on their child's behavior and their family's functioning. Parents reported on their parenting confidence using the Parenting Sense of Competence Scale (PsoC,) and on their stress using a Stress-Index. Teachers were asked to report on child behavior problems. A parent-child interaction questionnaire on parenting techniques was completed by both child and parent. Parents, children and teachers were

interviewed in addition to the measures mentioned above.

Results of the study showed post treatment reports from mothers with statistically significant decreases in stress. Mothers also reported an increase in their own consistency in their parenting practices. Fathers reported becoming more involved in parenting in general.

The authors used the Jacobson and Truax method to determine if the changes that occurred for each individual was clinically meaningful. Authors designated clinically meaningful changes as those that indicated ‘reliable improvement’ or “recovery.” 10% to 55% of mothers had reliable improvement for stress assessments post treatment, and reliable improvement for parenting behavior. The authors noted that stress improved for mothers, but did not appear to improve for fathers. Additionally, mothers reported fewer negative parenting practices post study, and fathers reported greater positive parenting strategies.

Effects of an 8-Session Behavioral Parent Training Group for Parents of Children With ADHD on Child Impairment and Parenting Confidence. Loren et al. 2015.

This study wanted to test a behavioral parent training program in a less-controlled outpatient clinic setting to see if the positive results from studies conducted under more rigorous conditions would generalize to a more real world setting. There was no control group. The BPT program used was a modified, combined version of Barkley’s 1997 manualized parent training program, and the parent training program outlined by Wells et al. (2000) that was based on the much larger Multimodal Treatment Study of ADHD

(MTA cooperative Group, 1999). The BPT in this study consisted of 8 sessions in group format, lasting about an hour. The sessions were split up so that each week focused on a particular topic. The first session was introductory and discussed ADHD therapies and research. The next 6 sessions focused on skills parents could begin practicing at home, such as implementing a token system, using effective time out, tips on how to better handle their child's behavior in public, and how to improve their child's compliance. A single session focused on developing a system for helping children with school. Parents received weekly homework assignments at the end of sessions on these topics. They worked with therapists to anticipate difficulties they could face in implementing their new parenting skills with children at home and together brainstormed solutions. And while psychologists followed a pre-planned BPT format, they were allowed some flexibility in delivering sessions so that they could address individual family needs and tailor the intervention to the issues facing each small group.

The intervention therapy was delivered by 12 different clinical Psychologists, all employed by the Behavioral Medicine and Clinical Psychology department at Cincinnati Children's Hospital. Treatment took place at outpatient mental health clinics in the surrounding area.

241 children, ages 6 to 12, and their parents participated in the therapy. Children had to meet DSM-IV ADHD diagnosis criteria for eligibility, and ADHD and its associated behavioral issues had to be the main health concerns for parent and child. Comorbidity and treatment with pharmacotherapy were not exclusion criteria.

The authors used the IRS (Impairment Rating Scale) as a measure of child

behavioral problems and ADHD symptoms. Parents reported on their child's behavior using a modified version of the IRS. Parents were also asked to report on their confidence in managing their child's ADHD behavior. Attendance and drop out rates were tracked as well.

An analysis was done between groups for those who completed treatment and those who dropped out. 32% dropped out of the study, and no differences in age, Medicaid status, or comorbid diagnosis were found.

Significant differences were found between pre and post IRS assessments for all domains. Parents reported their children as having fewer negative effects on the family and having more positive parent child interactions. Non-parental interactions, like sibling and peer relationships were also reported as improved. Of note, at post treatment, the average IRS rating placed child behaviors in the 'non-impaired' category for all measures taken. This is opposed to the pre-treatment state when children were rated by parents, on average, to have symptoms in the 'impaired' range on half the IRS measures. Parents with private insurance tended to have larger changes in IRS assessments from pre to post treatment when compared to parents with Medicaid. The same trend emerged for parenting confidence. The results of this study were significant for showing promise that BPT could be delivered in a less rigorously controlled setting and produce favorable results comparable to research performed in a strict environment.

DISCUSSION

We sought to search the literature to find a successful behavioral parent training (BPT) program that could feasibly be adapted to a community health worker delivery model. In general, the different behavioral parent training programs all shared similar core structures and had positive results for families. They shared in common an effort to increase positive parent-child interactions through praise and rules the child could understand, and to decrease negative interactions by helping parents better understand their ADHD child and how to discipline them. For the most part, outcomes for improving maternal well being and parenting techniques improved across studies. Child internalizing or externalizing symptoms also generally improved. Child ADHD symptoms were less likely to improve without a more involved therapy including pharmacotherapy and child-directed therapy in addition to parent training. The differences we found between programs were mostly due to differing study outcome goals.

The study by Van Den Hoofdakker et al. (2010) modified Barkley's BPT by combining it with a behavior parent training program for broad spectrum behavior problems: Helping Noncompliant Children (HNC.) Of note, HNC is the same therapy that NFPP was tested against in the study by Abikoff et al. (2015). Results were positive in that their BPT intervention showed improvements over routine clinical care alone, but the more robust positive findings were for externalizing symptoms rather than ADHD symptoms. Given that the intervention was composed half of a BPT designed to reduce general behavior problems – or externalizing symptoms – this outcomes makes sense,

and we can conclude the combined Barkley and HNC approach was still effective.

The second study using a Barkley based intervention examined the clinical meaningfulness of change for study participants. The behavioral parent training was based off of Barkley's manual only, and not a combination. Despite the small sample size, the positive results for individuals in this study are supportive of the efficacy of Barkley's intervention. Mothers especially benefited in this study.

The last behavioral parent training intervention combined Barkley's program with a much longer, 35 session program used in the Multimodal Treatment of ADHD study of 1999 (MTA Cooperative Group). The success of the study, given the less rigorously controlled study conditions, is encouraging for its indication that BPT can be applied in a real world setting. Treatment was still delivered by credentialed therapists, but experience levels varied between them. The BPT in this study worked as an intervention, reducing child behavioral problems, and there is nothing unique in the description of its components to suggest it could not be delivered by a community health worker.

The three studies using modified Barkley interventions had the best combination of behavioral and ADHD symptom improvement with simple BPT session formats that could allow for adaptation to in-home delivery by a community health worker. Their high generalizability works in their favor when translating BPT to a community setting.

After deciding on Barkley's intervention, we returned to our preliminary literature search and re-examined the Madres a Madres intervention (Williamson et al., 2013). While Madres a Madres contained many of the same parent-child interaction components as Barkley and the other BPT programs we analyzed, it additionally contained some of

the more familiar CHW roles. For example, one BPT session focused on healthcare system navigation. This is encouragingly suggestive that promotoras are able to successfully deliver BPT and still function in their usual role as CHW. And while the authors didn't specifically measure any ADHD symptoms, Madres a Madres did have positive outcomes for behavioral problems. Promotoras don't hold advanced degrees in psychology or have specialty training, so this is again supportive of CHW's being able to successfully deliver BPT. Additionally encouraging is that the positive outcomes were in a population (poor, minority) that typically responds less well to BPT. As a guideline for future researchers and a proof of concept, Madres a Madres is a promising study.

In all three studies in our preliminary literature search, the intervention was delivered by CHW's who were supervised by psychologists. This is similar to the numerous child asthma studies that have used CHW's supervised by asthma nurse educators. In recommending CHW's deliver behavioral parent training, we still believe in having an expert mental health specialist involved in the process of delivering a planned program. We recommend, based on the results from our preliminary literature search, that they function in a supervisory role to CHW's.

The remaining articles in our literature review were poorer candidates for various reasons.

The Incredible Years as a BPT intervention already has a decent backing of scientific support behind it. The CDC references it as an example of a parent training therapy on their ADHD website for families and patients (CDC, 2015). The 1 years follow up results in this study add to the support for IY as an effective BPT for ADHD.

For example, researchers found maintenance effects for critical decreases in negative parenting practices like physical punishment. This can only benefit families and children. It's possible that parents changed their reporting practices from pre study to follow up, or that their perceptions of their own use of physical discipline changed. However, the simplest explanation is likely that IY gave parents new parenting tools and that led to decreased violence, as did the decreased levels of frustrating problematic child behavior. This therapy showed the strongest success of all the studies we looked at. Not only were the parent and teacher reports of improved child behaviors maintained at one year follow up, but improved child behavior was corroborated by controlled independent observations.

There is only one major problem with applying the Incredible Years BPT therapy to a community health worker treatment modality, and that is that it contains both parent and child-directed therapies. Parent directed parent training is of course what we are looking for, but it remains to be investigated whether CHW's should administer a child-directed therapy. Removing the child-directed therapeutic component of IY, however, could very possibly decrease the effectiveness of IY's success, and it's not known to what extent. If CHW's were to experiment with delivering the adult-directed parenting training component of IY in a pilot study without any child-directed intervention, and the results were found to be less positive than when IY was delivered by therapists, it would be difficult to know where to attribute the cause. IY is then a program for consideration for a later time when CHW's can deliver a child-directed intervention as well as an adult-directed intervention, or when IY has been studied without the child component.

The STEPP intervention was an attempt to decrease drop out rates. The authors found other studies reported drop out rates between 40% and 60%, and that these high rates were typical and expected. As far as achieving its goal of having participants reach study completion, it was very successful. A BPT program specific for attendance may be redundant in a CHW BPT delivery model, however. The Madres a Madres program reported an 88% completion rate, so it may be that having a CHW come to a study participant's home is enough to drastically lower drop out rates. Additionally, while STEPP may be a very effective BPT for improving ADHD symptoms, it's difficult to evaluate it as such as there was little child behavior data available beyond mother satisfaction. And while these were positive for STEPP mothers, it's difficult to know whether to attribute the positive outcome to the open discussions had at the beginning of the program, and thus lowered expectations, or actual differences in ADHD behavior. Given that STEPP is no different than the control BPT beyond additions to try and increase attendance and social support, it is likely the former explanation. For these reasons we also discarded STEPP from our candidate list for a pilot study.

The COACHES program is particularly interesting perhaps because it is the most unique among the 8 studies we looked at. Targeting father involvement using a sports based program is an interesting concept, but the poor results indicate it needs more study. In addition to concerns about its effectiveness as behavioral parent training program, it is a poor candidate to adaptation to a CHW delivery model. While the first didactic hour, on first glance, does not present any troublesome issues to in-home delivery, the second hour, a soccer game, clearly does. There are any number of difficulties that could prevent

a game from taking place at a study participants home, including lack of space, lack of fitness or disability on the part of participants, and, of course, not enough players.

CHW's, while visiting homes, are in a much more intimate, individual setting, and it would likely be logistically difficult to carry out a soccer game at a study participants house. Without the game however, the application component of the COACHES BPT program is lost, effectively losing the core feature of COACHES. Because of the logistical difficulties of playing soccer at a study participant home, and the poor outcomes of this study, we discarded COACHES as a possible BPT for CHW's early on.

There were two studies looking at the New Forest Parenting Package (NFPP.) The NFPP self help program was interesting to us because it removed the therapist from the delivery model. A therapy that could be delivered without the use of an advanced degree mental health specialist, such as a self help program, would show promise for adaptability to the community environment. The results were inconclusive however. Parents reported improvement in child symptoms, but independent observers could not back up these results. The conflicting data in this study does not support using NFPP for a community health worker ADHD behavioral parent training pilot study.

The results from Abikoff et al. on the NFPP were not supportive either (2015). NFPP was delivered in participant homes by therapists in this study. If results had been positive, this would have made it a strong candidate for a future in-home study with CHW's delivering the therapy. However, NFPP, when compared to the more generalized BPT program, performed no better, and in some instances worse.

As potential BPT intervention to be tried in a community health worker model

then, the New Forest Parent Training Program fails the first our objectives. It's of questionable efficacy for ADHD treatment based on these two studies, and needs further investigation before being tried in a less controlled community situation. We ruled NFPP out as a possible intervention for CHW delivery.

PROPOSAL

Given the success of Barkley's manualized program, "Defiant Children: A Clinician's Assessment for Parent Training," we recommend that a pilot project using Community Health Workers as the delivery agents be tried. We recommend that future studies have sessions similar to those summarized above. CHW's can work with families and parents to increase the use of praise, decrease negative interactions in the home by decreasing harsh criticisms and physical punishments, learn to ignore mildly poor behavior, consistently use time out, and implement a token system where a child receives rewards for following established family rules. Video assistance and homework assignments were popular components of most of the successful BPT therapies and we recommend they be incorporated as much as possible. We recommend looking to the study by Williamson et al. (2014) on the Madres a Madres intervention as an example of a successful community health worker delivery of a behavioral parent training program.

Community health workers are a growing and developing portion of the public healthcare workforce, and ADHD in urban poor and minority populations suffer from a lack of access to behavioral therapy resources. Community health workers could potentially serve as a resource, or bridge to resources, for these populations. We believe it is worth investigating if community health workers can effectively deliver an evidence based behavioral parent training program to parents of children with ADHD, as a positive outcome could lead to increased access to care and better overall treatment for an underserved and needy population of pediatric patients

REFERENCES

1. Abikoff, H. B., Thompson, M., Laver-Bradbury, C., Long, N., Forehand, R. L., Miller Brotman, L., ... & Sonuga-Barke, E. (2015). Parent training for preschool ADHD: a randomized controlled trial of specialized and generic programs. *Journal of Child Psychology and Psychiatry*, 56(6), 618–31. doi: 10.1111/jcpp.12346
2. American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
3. American Public Health Association. Community Health Workers. (2014). Retrieved December 18, 2014, from <https://www.apha.org/apha-communities/member-sections/community-health-workers>
4. Asherson, P., & Gurling, H. (2012). Quantitative and molecular genetics of ADHD. In *Behavioral Neuroscience of Attention Deficit Hyperactivity Disorder and Its Treatment* (pp. 239–272). Springer Berlin Heidelberg.
5. Bailey, R. K., Jaquez-Gutierrez, M. C., Madhoo, M. (2014). Sociocultural issues in african American and Hispanic minorities seeking care for attention/hyperactivity deficit disorder. *Primary Care Companion for CNS Disorders*, 16 (4). doi: 10.4088/PCC.14r01627.
6. Barkley, R. A. (1997). *Defiant children: A clinician's manual for assessment and parent training*. Guilford Press.
7. Centers for Disease Control and Prevention. (2011). Addressing chronic disease through community health workers: a policy and systems level approach. Atlanta, GA. Retrieved January 5, 2015, from http://www.cdc.gov/dhds/docs/chw_brief.pdf
8. Centers for Disease Control and Prevention. (2014). Asthma: Learn how to control asthma. Retrieved January 19, 2015 from <http://www.cdc.gov/asthma>
9. Centers for Disease Control and Prevention. (2014). Attention Deficit/Hyperactivity Disorder: Data and statistics. Retrieved January 23, 2015 from <http://www.cdc.gov/adhd>
10. Centers for Disease Control and Prevention. (2014). Attention Deficit/Hyperactivity Disorder: Treatment. Retrieved January 23, 2015 from <http://www.cdc.gov/adhd>
11. Chacko, A., Wymbs, B. T., Chimiklis, A., Wymbs, F. A., & Pelham, W. E. (2012). Evaluating a comprehensive strategy to improve engagement to group-based

- behavioral parent training for high-risk families of children with ADHD. *Journal of Abnormal Child Psychology*, 40(8), 1351–1362.
12. Coghill, D. (2015). Commentary: We've only just begun: unravelling the underlying genetics of neurodevelopmental disorders—a commentary on Kiser et al. *Journal of Child Psychology and Psychiatry*, 56(3), 296–298.
 13. Coletti, D. J., Pappadopulos, E., Katsiotas, N. J., Berest, A., Jensen, P. S., & Kafantaris, V. (2012). Parent perspectives on the decision to initiate medication treatment of attention-deficit/hyperactivity disorder. *Journal of Child and Adolescent Psychopharmacology*, 22(3), 226–237.
 14. Daley, D., & O'Brien, M. (2013). A small-scale randomized controlled trial of the self-help version of the New Forest Parent Training Programme for children with ADHD symptoms. *European Child & Adolescent Psychiatry*, 22(9), 543–552.
 15. Fabiano, G. A., Pelham, W. E., Cunningham, C. E., Yu, J., Gangloff, B., Buck, M., ... & Gera, S. (2012). A waitlist-controlled trial of behavioral parent training for fathers of children with ADHD. *Journal of Clinical Child & Adolescent Psychology*, 41(3), 337–345.
 16. Fayyad, J. A., Farah, L., Cassir, Y., Salamoun, M. M., & Karam, E. G. (2010). Dissemination of an evidence-based intervention to parents of children with behavioral problems in a developing country. *European Child & Adolescent Psychiatry*, 19(8), 629–636.
 17. Fiks, A. G., Hughes, C. C., Gafen, A., Guevara, J. P., & Barg, F. K. (2011). Contrasting parents' and pediatricians' perspectives on shared decision-making in ADHD. *Pediatrics*, 127(1), e188–e196.
 18. Furlong, M., McGilloway, S., Bywater, T., Hutchings, J., Smith, S. M., & Donnelly, M. (2013). Cochrane Review: Behavioural and cognitive-behavioural group-based parenting programmes for early-onset conduct problems in children aged 3 to 12 years (Review). *Evidence-Based Child Health: A Cochrane Review Journal*, 8(2), 318–692.
 19. Gerdes, A. C., Haack, L. M., & Schneider, B. W. (2012). Parental functioning in families of children with ADHD: evidence for behavioral parent training and importance of clinically meaningful change. *Journal of Attention Disorders*, 16(2):147–56. doi: 10.1177/1087054710381482. Erratum in *Journal of Attention Disorders*, 17(2):171.

20. Goepf, J. G., Chin, N. P., Massad, J., & Edwards, L. A. (2004). Pediatric emergency department outreach: solving medical problems or revealing community solutions? *Journal of Health Care for the Poor and Underserved, 15*(4), 522–529.
21. Guevara, J. P., Feudtner, C., Romer, D., Power, T., Eiraldi, R., Nihtianova, S., ... & Schwarz, D. F. (2005). Fragmented care for inner-city minority children with attention-deficit/hyperactivity disorder. *Pediatrics, 116*(4), e512–e517.
22. Haertling, F., Mueller, B., & Bilke-Hentsch, O. (2014). Effectiveness and safety of a long-acting, once-daily, two-phase release formulation of methylphenidate (Ritalin® LA) in school children under daily practice conditions. *Attention Deficit and Hyperactivity Disorders*. Epub ahead of print.
23. Hervey-Jumper, H., Douyon, K., Falcone, T., & Franco, K. N. (2008). Identifying, evaluating, diagnosing, and treating ADHD in minority youth. *Journal of Attention Disorders, 11*(5):522–528. doi: 10.1177/1087054707311054.
24. Institute of Medicine. (2003). *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington D.C. The National Academic Press.
25. Isaacs, D. (2006). Attention-deficit/hyperactivity disorder: Are we medicating for social disadvantage?(For). *Journal of Paediatrics and Child Health, 42*(9), 544–547.
26. Krieger, J., Takaro, T. K., Song, L., Beaudet, N., & Edwards, K. (2009). A randomized controlled trial of asthma self-management support comparing clinic-based nurses and in-home community health workers: the Seattle–King County Healthy Homes II Project. *Archives of Pediatrics & Adolescent Medicine, 163*(2), 141–149.
27. Larsson, B., Fossum, S., Clifford, G., Drugli, M. B., Handegård, B. H., & Mørch, W. T. (2009). Treatment of oppositional defiant and conduct problems in young Norwegian children. *European Child & Adolescent Psychiatry, 18*(1), 42–52.
28. Lee, P. C., Niew, W. I., Yang, H. J., Chen, V. C. H., & Lin, K. C. (2012). A meta-analysis of behavioral parent training for children with attention deficit hyperactivity disorder. *Research in Developmental Disabilities, 33*(6), 2040–2049.
29. Loren, R. E., Vaughn, A. J., Langberg, J. M., Cyran, J. E., Proano-Raps, T., Smolyansky, B. H., ... & Epstein, J. N. (2015). Effects of an 8-session behavioral parent training group for parents of children with ADHD on child impairment and parenting confidence. *Journal of Attention Disorders, 19*(2):158–66. doi: 10.1177/1087054713484175.

30. Margellos-Anast, H., Gutierrez, M. A., & Whitman, S. (2012). Improving asthma management among African-American children via a community health worker model: Findings from a Chicago-based pilot intervention. *Journal of Asthma*, 49(4), 380–389.
31. Massachusetts Association of Community Health Workers. (2015). Retrieved January 9, 2015, from www.machw.org
32. Massachusetts Executive office of Health and Human Services. Office of Community Health Workers. (2015). State and National Community Health Worker Resources. Retrieved January 13, 2015 from www.mass.gov/dph/communityhealthworkers
33. MTA Cooperative Group. (1999). Multimodal Treatment Study of Children with ADHD. A 14-month randomized clinical trial of treatment strategies for attention-deficit/hyperactivity disorder. *Archives of General Psychiatry*, 56(12), 1073–1086.
34. National Institute of Mental Health . (n.d.). Attention deficit hyperactivity disorder: treatments. Retrieved Feb 5, 2015 from <http://www.nimh.nih.gov/health/topics/attention-deficit-hyperactivity-disorder-adhd/index.shtml>
35. National Institute of Mental Health. (2012). Attention deficit hyperactivity disorder: psychotherapy. Retrieved Jan 19, 2015 from <http://www.nimh.nih.gov/health/publications/attention-deficit-hyperactivity-disorder/index.shtml?rf=71264#pub5>
36. Peretz, P. J., Matiz, L. A., Findley, S., Lizardo, M., Evans, D., & McCord, M. (2012). Community health workers as drivers of a successful community-based disease management initiative. *American Journal of Public Health*, 102(8), 1443–1446.
37. Postma, J., Karr, C., & Kieckhefer, G. (2009). Community health workers and environmental interventions for children with asthma: a systematic review. *Journal of Asthma*, 46(6), 564–576.
38. Raphael, J. L., Rueda, A., Lion, K. C., & Giordano, T. P. (2013). The role of lay health workers in pediatric chronic disease: a systematic review. *Academic Pediatrics*, 13(5), 408–420.
39. Rabito-Alcón, M. F., & Correas-Lauffer, J. (2014). Treatment guidelines for Attention Deficit and Hyperactivity Disorder: A critical review. *Actas Españolas de Psiquiatría*, 42(6), 315–24.

40. Reid, M. J., Webster-Stratton, C., & Hammond, M. (2003). Follow-up of children who received the Incredible Years intervention for oppositional-defiant disorder: Maintenance and prediction of 2-year outcome. *Behavior Therapy, 34*(4), 471–491.
41. Serrano-Troncoso, E., Guidi, M., & Alda-Díez, J. Á. (2013). Is psychological treatment efficacious for attention deficit hyperactivity disorder (ADHD)? Review of non-pharmacological treatments in children and adolescents with ADHD. *Actas Españolas de Psiquiatría, 41*(1), 44–51.
42. Shani, Z., Scott, R. G., Schofield, L. S., Johnson, J. H., Williams, E. R., Hampton, J., & Ramprasad, V. (2014). Effect of a Home Intervention Program on Pediatric Asthma in an Environmental Justice Community. *Health Promotion Practice, 16*(2):291–8. doi: 10.1177/1524839914529593.
43. Strayhorn, J. M., & Weidman, C. S. (1989). Reduction of attention deficit and internalizing symptoms in preschoolers through parent-child interaction training. *Journal of the American Academy of Child & Adolescent Psychiatry, 28*(6), 888–896.
44. Turcotte, D. A., Alker, H., Chaves, E., Gore, R., & Woskie, S. (2014). Healthy homes: in-home environmental asthma intervention in a diverse urban community. *American Journal of Public Health, 104*(4), 665–671.
45. Williamson, A. A., Knox, L., Guerra, N. G., & Williams, K. R. (2014). A pilot randomized trial of community-based parent training for immigrant Latina mothers. *American Journal of Community Psychology, 53*(1–2), 47–59.
46. U.S. Department of Health and Human Services. Bureau of Health Professionals. (2007). Community Health Worker National Workforce Study. Retrieved from <http://bhpr.hrsa.gov/healthworkforce/supplydemand/publichealth/communityhealthworkforcebibliography.pdf>
47. Van Den Hoofdakker, B. J., Nauta, M. H., van der Veen-Mulders, L., Sytema, S., Emmelkamp, P. M., Minderaa, R. B., & Hoekstra, P. J. (2010). Behavioral parent training as an adjunct to routine care in children with attention-deficit/hyperactivity disorder: moderators of treatment response. *Journal of Pediatric Psychology, 35*(3), 317–326.
48. Van Den Hoofdakker, B. J., Van der Veen-Mulders, L., Sytema, S., Emmelkamp, P. M., Minderaa, R. B., & Nauta, M. H. (2007). Effectiveness of behavioral parent training for children with ADHD in routine clinical practice: a randomized controlled study. *Journal of the American Academy of Child & Adolescent Psychiatry, 46*(10), 1263–1271.

49. Webster-Stratton, C., Reid, M. J., & Beauchaine, T. P. (2013). One-year follow-up of combined parent and child intervention for young children with ADHD. *Journal of Clinical Child & Adolescent Psychology, 42*(2), 251–261.
50. Webster-Stratton, C. H., Reid, M. J., & Beauchaine, T. (2011). Combining parent and child training for young children with ADHD. *Journal of Clinical Child & Adolescent Psychology, 40*(2), 191–203.
51. Wells, K. C., Chi, T. C., Hinshaw, S. P., Epstein, J. N., Pfiffner, L., Nebel-Schwalm, M., & Wigiel, T. (2006). Treatment-related changes in objectively measured parenting behaviors in the multimodal treatment study of children with attention-deficit/hyperactivity disorder. *Journal of Consulting and Clinical Psychology, 74*, 649–657.
52. Wells, K. C., Pelham Jr, W. E., Kotkin, R. A., Hoza, B., Abikoff, H. B., Abramowitz, A., ... & Schiller, E. (2000). Psychosocial treatment strategies in the MTA study: rationale, methods, and critical issues in design and implementation. *Journal of Abnormal Child Psychology, 28*(6), 483–505.
53. Yeh, M., McCabe, K., Hough, R. L., Dupuis, D., & Hazen, A. (2003). Racial/ethnic differences in parental endorsement of barriers to mental health services for youth. *Mental Health Services Research, 5*(2), 65–77.
54. Zito, J. M., Safer, D. J., DosREIS, S. U. S. A. N., & Riddle, M. A. (1998). Racial disparity in psychotropic medications prescribed for youths with Medicaid insurance in Maryland. *Journal of the American Academy of Child & Adolescent Psychiatry, 37*(2), 179–184.
55. Zwi, M., Jones, H., Thorgaard, C., York, A., & Dennis, J. A. (2011). Parent training interventions for Attention Deficit Hyperactivity Disorder (ADHD) in children aged 5 to 18 years. *Cochrane Database of Systematic Reviews, (12)*:CD003018. doi: 10.1002/14651858.CD003018.

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