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Acceptance and Mindfulness Treatment for Children Adopted From Foster Care

Author
Bencuya, Natalie Lynn

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Acceptance and Mindfulness Treatment for Children Adopted From Foster Care

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Psychology

by

Natalie Lynn Bencuya

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ABSTRACT OF THE DISSERTATION

Acceptance and Mindfulness Treatment for

Children Adopted From Foster Care

by

Natalie Lynn Bencuya

Doctor of Philosophy in Psychology

University of California, Los Angeles, 2013

Professor Bruce L. Baker

Professor Jill Waterman, Co-chairs

Children who have been adopted from the foster care system often face cumulative risk factors and are found to be more likely to exhibit higher levels of emotional dysregulation and behavior problems than non-adopted children (Pollack, 2008). Given this elevated risk for maladjustment, it is critical to develop treatments to best serve this vulnerable group and their families. The current study was the development and evaluation of a new 7-week treatment intervention for children (8-13 years old) adopted from foster care based on the principles of Acceptance and Commitment Therapy (ACT) and mindfulness practices. The overarching goal for the project was to determine whether this treatment model, Children Adapting Mindful Practices (CHAMP), is a feasible intervention for this group exhibiting or at risk for emotional

dysregulation and externalizing behavior problems.

Twenty-eight children were recruited and participated in the study, which was held as a weekly group offered through TIES for Families, a program that promotes the successful adoption of children from foster care. Recruitment was expanded to include 4 children who were not adopted but also were exhibiting externalizing behavior problems. The initial design of the study was a randomized waitlist-control model, and this was partially modified to increase enrollment. The final sample included 7 waitlist participants and 21 immediate treatment participants.

Results supported the feasibility and acceptability of the program, with adequate levels of attendance and homework completion. There were not significant differences between the waitlist and immediate group outcomes. In the full group of study completers (n=25), parents reported significant decreases in avoidance of their children's emotional experiences from pre-test to post-test. Parents also reported significant decreases in child behavior problems, particularly internalizing problems, and ADHD symptoms. Two months post-treatment the gains in parental mindfulness were not maintained, but the decreases in behavior problems and ADHD symptoms were maintained at trend level or stronger. Additional significant improvements in parent-reported child behavior regulation and child-reported mindfulness and emotion regulation were identified at follow-up. These results suggest that the impact of the treatment may not be maximized until there is a period of applying the skills learned in the group.

The dissertation of Natalie Lynn Bencuya is approved.

Sheryl Kataoka

Nim Lynette Tottenham

Bruce L. Baker, Committee Co-chair

Jill Waterman, Committee Co-chair

University of California, Los Angeles

2013

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VITA

Natalie Lynn Bencuya (Wieland)

EDUCATION

2007-2008 **University of California Los Angeles,** Los Angeles, CA

Master of Arts in Clinical Psychology, December 2008

Master Thesis Title: The Role of Marital Quality and Spousal Support in Child Outcomes for Children with and Without Intellectual Disability

2003-2005 **Tufts University**, Medford, MA

Master of Arts in Child Development, concentration in Clinical Developmental Psychology, May 2005

1999-2003 **Bachelor of Arts** in Child Development and English, May 2003

Summa Cum Laude

2001-2002 **Université Paris III-La Sorbonne**, Paris, France

Participated in Tufts' French language intensive program

SELECTED HONORS & AWARDS:

2011-2012 UCLA Graduate Division Dissertation Year Fellowship

2011 UCLA Psychology Department Senior Scientist Practitioner Award

2009-2010 UCLA Graduate Year Research Mentorship Award

2009 UCLA Chair's Prize

2007-2008 UCLA Alumni Association Graduate Fellowship

PUBLICATIONS:

Wieland, N., Ellingsen, R., Green, S., & Baker, B.L. (2013). Parent-child problem-solving in

families of children with and without intellectual disability. Journal of Intellectual Disability Research (posted online 1/22/13 prior to publication).

Wieland, N., & Baker, B.L. (2010). The role of marital quality and spousal support in behavior problems of children with and without intellectual disability. *Journal of Intellectual Disability Research* 54(7): 620-633.

Geller, D.A., Wieland, N., Carey, K., Vivas, F., Petty, C., Johnson, J., Reichert, E., Pauls, D.L., Biederman, J. (2008). Perinatal factors affecting expression of Obsessive Compulsive Disorder in children and adolescents. *Journal of Child and Adolescent Psychopharmacology* 18(4): 373-9.

Budman, C., Coffey, B.J., Shechter, R., Schrock, M., Wieland, N., Spirgel, A., Simon, E. (2008). Case Series: Aripiprazole in children and adolescents with Tourette's Disorder with and without explosive outbursts. *Journal of Child and Adolescent Psychopharmacology* 18(5): 509-15.

SELECTED PRESENTATIONS:

Wieland, N., & Baker, B.L. Adaptation to Adolescence for Youth With and Without Intellectual Disability: Preliminary Findings. Symposium talk presented at the April 2011 Society for Research in Child Development Conference, Montreal, Canada.

Wieland, N., & Baker, B.L. Parent-Child Problem Solving Task: Examining Social Competence over Time in Youth with and without Intellectual Disability. Symposium talk presented at the August 2010 Annual American Psychological Association Conference, San Diego, CA.

INTRODUCTION

In the field of adoption research, it is widely held that youth who are adopted are at a greater risk for emotional, behavioral, and academic problems compared with non-adopted youth (Berry, 1992; Linares et al., 2006; Simmel, Brooks, Barth, & Hinshaw, 2001). Explanations for these findings are multifaceted, and take into account the contributions of pre-adoption backgrounds of children (e.g. post-natal environmental factors), genetic and non-genetic biological risks, and "informant bias" by adoptive caretakers (Simmel et al., 2001). Given this elevated risk for maladjustment, it is a critical task to identify ways to best support this vulnerable group of children and their adoptive families, both to prevent adoption dissolution and to promote healthy development and resilience in adopted youth.

The aim of the current study was to develop and evaluate a treatment intervention for school-aged children adopted from foster care. This treatment, Children Adapting Mindfulness Practices (CHAMP), is based on the principles of Acceptance and Commitment Therapy (ACT) and mindfulness practices. This type of therapy seems to be well-suited for the population of children adopted from foster care, who are at risk for higher levels of emotional dysregulation, attention problems, and externalizing behavior problems compared to their non-adopted peers. Although there are approximately 20 evidence-based treatments available for children with externalizing behavior problems, a considerable minority exhibit poor outcomes, including a high rate of dropout, a failure to engage in the treatment process, and a failure to maintain gains (Twohig, Hayes, & Berlin, 2008). Thus, there is a need for further child treatment development. This study aims to address this gap by modifying a treatment approach that has been used effectively with adults and combining it with mindfulness techniques that have recently been applied in youth populations with encouraging results.

A. Adoption through foster care: A unique risk group

According to the most recent statistics available, approximately 2% of all children under 18 in the United States are adopted (Vandivere, Malm, & Radel, 2009). A sizable percentage of the adoptions in the U.S. are completed through public agencies (37% in 2007), and this marked a substantial increase from 1992 (18%; U.S. Department of Health and Human Services, 2004). This increase in public agency adoptions may be related to the Adoption and Families Safe Act of 1997, which authorized adoption incentive payments for states, expanded health care coverage to adopted children with special health care needs, and established new time lines for termination of parental rights and permanency hearings. The influx may also be related to an increase in substance abuse exposure in the United States, resulting in more infants who have been prenatally drug exposed (Albert, 1994).

Children adopted from public agencies (e.g. Department of Children and Family Services--DCFS) typically enter the foster care system through two pathways, either at birth due to prenatal drug exposure, or later in infancy/childhood due to neglect and/or abuse. Following detainment from their biological caregivers by DCFS, children become eligible for adoption if parental rights are terminated through court proceedings. Over half of the children placed for adoption are infants, and the remaining children are classified as special needs adoptees (Groze, 1996). Many special needs adoptees are abused and/or neglected while living with biological families and experience multiple foster placements prior to being adopted.

Children adopted from foster care are often subject to cumulative risk factors that contribute to overall adjustment. For example, prenatal drug exposure may result in pre-term birth, and pre-term birth is a risk factor for a range of developmental problems, including learning disorders, borderline IQ, and behavioral and motor difficulties (Reijneveld et al., 2006;

Taylor, Klein, Drotar, Schluchter, & Hack, 2006). Infants who enter foster care are also more likely to have mothers who had late, limited, or no prenatal care (Needell & Barth, 1998). Children who are removed from their homes tend to be exposed to impoverished environments. For example, in a study of mothers attending a substance abuse treatment program, demographic information indicated that the majority of the women were unemployed (88.9%), and relying on public assistance (70.6%). In addition, approximately half had not earned a high school diploma, and 32% had been homeless in the last two years (Conners et al., 2004). Adjustment is typically viewed as inversely related to age at adoption (Sharma, McGue, & Benson, 1996), with children adopted at younger ages demonstrating better psychological adjustment (e.g. lower levels of negative emotionality and antisocial behavior). Multiple foster placements have also been identified as a risk factor for maladjustment and increased mental health needs (Rubin et al., 2004).

Research suggests that genetic risk, in combination with early traumatic experiences, significantly increases the likelihood that children with this profile will develop mental health concerns (Kim-Cohen et al., 2007). These early traumatic experiences, such as prenatal drug exposure and/or child abuse, can be viewed as setting the stage for developmental trajectories of risk (Pollack, 2008). These developmental trajectories are linked to disturbances in emotional, social, and biological processes which are, in turn, seen as later related to psychological difficulties (See Appendix A for theoretical model). Thus, children adopted from foster care, particularly at older ages, are in a unique risk category for adjustment difficulties.

B. Impact of prenatal substance exposure

The vast majority of children removed from their homes at birth have been exposed to drugs prenatally. A wide range of illegal and legal drugs have varying impacts on prenatal brain

development and subsequent behavior. In their review of the impact of prenatal drug exposure, Thompson and colleagues (2009) noted, “Chemical neurotransmitters serve important functions in the coordination of the development of neurons and brain circuits. Psychoactive drugs modulate receptors, transporters, and other components of neurotransmission, many of which are expressed during prenatal stages of brain development…” As a result, prenatal drug exposure has been shown to have an impact on brain architecture, chemistry and neurobehavioral functions in animal models and clinical cohorts (Thompson, Levitt, & Stanwood, 2009).

Animal models have helped researchers better understand the complex neurodevelopmental consequences of prenatal drug exposure. For example, there is persuasive evidence with animal models that nicotine has a negative impact on the neurodevelopment of animal offspring; in animals, there have been identified changes in locomotor activity, reward systems, anxiety, and cognition based on nicotine exposure (Dwyer, Broide, & Leslie, 2008; Paz, Barsness, Martenson, Tanner, & Allan, 2007). Animal models have also repeatedly demonstrated the damaging effects of prenatal alcohol exposure during all gestational periods. Reported effects in rats include a decrease in spinal and cranial motor neuron production and size, reduced or delayed neuronal migration, and decreased myelination (Barrow Heaton, et al., 1999; Ozer, Sarioglu, & Gure, 2000).

Neuroimaging studies of children with prenatal drug exposure provide evidence supporting the detrimental impact of this type of exposure on brain structure. Chang and colleagues (2004; 2007) conducted neuroimaging studies of children prenatally exposed to methamphetamine, reporting smaller striatum and hippocampus volumes in this group, areas of the brain implicated in planning and learning. Rivkin et al. (2008) conducted a volumetric MRI study with children with intrauterine exposure to cocaine, alcohol, tobacco, and marijuana.

Results indicated a cumulative negative impact of substance exposure, showing that as the number of exposures to substances increased, children had increasingly lower levels of mean cortical gray matter, lower total parenchymal volumes, and smaller mean head circumferences than comparison children. Poly-substance exposure is common in children adopted from foster care, and studies such as this suggest this type of exposure may lead to magnified effects on brain structure.

Nicotine and alcohol have been shown to produce more substantial deficiencies in brain development than some illicit drugs, such as cocaine (Thompson et al., 2009). Nicotine has been associated with a risk of low birth weight and pre-term birth, as well as an increased risk of Sudden Infant Death Syndrome (SIDS). Low birth weight is a known risk factor for hyperactive and oppositional behaviors (Breslau et al., 1996). In addition, there is a strong relationship between tobacco exposure and Attention Deficit Hyperactivity Disorder (ADHD), antisocial behaviors, and learning disabilities (Thompson et al., 2009).

Alcohol consumed by pregnant women may cross the placental barrier at any time and its negative neurodevelopmental consequences are well-documented with basic and clinical science evidence (Thompson et al., 2009). At its most extreme, prenatal alcohol exposure can result in Fetal Alcohol Syndrome (FAS), characterized by growth deficiencies, craniofacial dysmorphologies, CNS damage, and intellectual disability (Chiriboga, 2003). Children who do not have full-criteria FAS may exhibit other effects of prenatal alcohol exposure, including deficits in learning, attention, and motor development, and hyperactivity. Other evidence has also documented the impact of prenatal alcohol exposure on endocrine functioning in both the fetus and mother. Alcohol consumption acts directly on the hypothalamic-pituitary-adrenocortical (HPA) axis, increasing HPA activity in both mother and offspring. Modulating the HPA axis

during development can permanently affect its responsiveness to later stressors. In particular, alcohol-exposed offspring may have an increased vulnerability to the immunosuppressive effects of stress. (Zhang, Sliwowska, & Weinberg, 2005).

Prenatal use of methamphetamine and amphetamine has increased rapidly in recent years, and there is less research on its impact on neurodevelopment (Thompson et al., 2009). Long-term consequences associated with prenatal exposure to these drugs include increased stress, decreased academic achievement, movement disturbances, and low birth weight (Cernerud, Eriksson, Jonnson, Stenneroth, & Zetterstrom, 1996). Children with prenatal methamphetamine exposure have also been found to score lower on sustained-attention, long-term spatial and verbal memory, and visual motor-integration tests compared with non-exposed children (Chang et al., 2004).

The neurodevelopmental impact of prenatal cocaine use has been found to vary significantly. Longitudinal studies have demonstrated long-term consequences in children with prenatal cocaine exposure, but the behavioral impact tends to be mild. There is an identified subtle developmental phenotype similar to ADHD, with negative effects on cognitive and attention systems, mediated by regions such as the prefrontal cortex and other higher-order cortical areas (Dow-Edwards, Mayes, Spears, & Hurd, 1999). Early studies of the effects of prenatal cocaine exposure presented a more severe clinical picture, but these studies were confounded by small sample sizes, lack of appropriate control groups, use of multiple drugs, and other psychosocial problems (Thompson et al., 2009).

As reviewed here, the negative impact of prenatal drug exposure on neurodevelopment has been well-documented. Although the behavioral effects vary somewhat depending on the type of drug, trends can also be identified. In general, children exposed prenatally to substances

are at increased risk for problems with attention, learning, and hyperactivity. However, with intervention and ample support, the negative sequelae of these problems may be reduced. Deficits in attention and hyperactivity/impulsivity, often exhibited in the sample population, were targeted in the study treatment approach.

C. Impact of early neglect/abuse

An alternative pathway for children to enter foster care and become adopted is removal from their biological home due to neglect and/or abuse. Although children in this group may have also been prenatally drug exposed, there was not sufficient evidence at birth to remove them from their biological parents' care or they did not come to the attention of hospital personnel. Children may be taken into protective custody due to physical abuse, sexual abuse, and/or neglect. Children with such trauma backgrounds who are adopted at later ages from foster care are considered to be special needs adoptees.

Physical abuse and neglect in children has been linked to problems associated with neural, cognitive, social-emotional, and behavioral outcomes (Pollack, 2008). When considering the effects of child abuse, issues of developmental period are important to consider. Research has indicated that the early childhood years are a particular critical period vulnerable to later difficulties. In an assessment of 492 previously maltreated children and 322 controls, Manly, Kim, Rogosch, & Cicchetti (2001) found that severe neglect in the first few years of life (per record review) was most damaging for later behavioral adaptation. This finding underscores the risk for children adopted from foster care, as many of these children have experienced neglect and abuse early in life.

Early adverse environments have also been linked with changes in neural structure and functioning. As the brain goes through many changes early in development, this period is

particularly sensitive to stressful environments (Tottenham et al., 2010). In an MRI study of 34 children who had experienced prolonged institutional childrearing and 28 controls, Tottenham and colleagues (2010) found that late-adopted children had larger corrected amygdala volumes than comparison groups. The amygdala is known to play an important role in social-emotional functioning, and it is related to the activity of the HPA axis (Tottenham & Sheridan, 2010). Disruptions in HPA functioning have also been linked with child maltreatment. Hart, Gunnar, and Cichetti (1996) compared HPA patterns in physically abused children with non-abused children and found the abused group exhibited elevations in afternoon cortisol levels, rather than showing the expected decrease from morning to afternoon levels. The HPA axis is involved in cortisol regulation, enabling the body to respond to stress. However, continued activation of the HPA system is associated with negative consequences such as cognitive impairments and hippocampus damage (Repetti, Taylor, & Seeman, 2002).

In an attempt to further explain how child maltreatment leads to a range of negative consequences, researchers have hypothesized that early experience may alter sensory thresholds in ways that undermine the effective processing and regulation of emotion (Pollack, 2008). For neglected children, difficulties tend to emerge in their capacities for differentiating between and responding to expressions of emotion (Wismer Fries, Ziegler, Kurian, Jacoris, & Pollack, 2005). In the case of physically abused children, a study by Pollack and Kistler (2002) found that when physically maltreated children performed a task that asked them to distinguish pictures of faces that had been morphed to produce a continuum on which each subsequent face signaled more intensity of a facial cue, abused children exhibited enhanced perceptual sensitivity to angry facial cues compared with non-abused children. In contrast, abused children's processing of other facial expressions did not differ significantly from non-abused children. Thus, the authors

concluded this was evidence in support of the theory that children adjust their perceptual mechanisms to become particularly attuned to aspects of their environments that have become salient from their experiences. Although Pollack (2008) noted that it is adaptive to attend to salient environmental stimuli, successful self-regulation is dependent on flexibility and control over these processes, and this is where maltreated children often encounter difficulties.

Similar evidence has been shown in studies with children who have experienced prolonged institutional childrearing before being adopted. Children from these backgrounds face an early childrearing experience outside the species norms, characterized by unstable caregiving. Although this is a different context than children who typically enter foster care, both groups can be viewed as experiencing adverse early caretaking environments. Using an emotional go-nogo paradigm to assess emotional regulation, Tottenham et al. (2010) found that late-adopted children from this background made more errors related to negatively valenced faces than the comparison children, but showed no group difference in responses to positive valence. The authors concluded this pattern of results was consistent with the idea that late-adopted children from prolonged institutional backgrounds are more likely than other children to be more affected by emotional contexts of a task. These results provide further evidence supporting the continued impact of early adversity on emotional systems and biases in children.

The increased salience of particular emotional signals has been shown to negatively impact abused children's attentional control (Pollack, 2008), and a lack of attentional control can also interfere with cognitive abilities. Abused children have been shown to rapidly orient to and have difficulty disengaging from anger cues, and the degree of attentional differences was found related to the magnitude of the abuse experienced and the level of reported anxiety symptoms in a study by Shackman, Shackman, & Pollack (2007).

Children who have been abused are also consistently found to be more likely to exhibit higher levels of externalizing and/or internalizing symptomatology than non-maltreated children. Neglected children are characterized by being isolated, withdrawn and experiencing elevations in internalizing problems (Manly et al., 2001). Compared with neglected children, research indicates that physically abused children tend to exhibit more externalizing behavior and to be negatively evaluated by their peers (Manly et al., 2001). In a study by Teisl and Cicchetti (2007), the authors were interested in understanding the processes mediating the relationship between child physical maltreatment and aggressive/externalizing behavior. In their sample of 167 maltreated children and 100 controls, they found that for the physically abused group maladaptive cognitive and emotional processes uniquely contributed to explaining the relationship between physical abuse and peer nominations of aggression and disruptive behavior.

Research on the long-term effects of child maltreatment are very limited (Hildyard & Wolfe, 2002), making it difficult to draw conclusions on longitudinal repercussions of abuse. However, a large sample of maltreated youth is being followed into adulthood (Widom, 2001), and results thus far indicate significant negative outcomes in late adolescence and adulthood, following a trajectory established in early and middle childhood. A history of abuse or neglect has been associated with an increased likelihood of running away from home (Kaufman & Widom, 1999). Adults with histories of neglect have also been found at-risk for delinquency and criminal behavior, and their profiles are similar to those with physical abuse histories, marking a shift from earlier differences between the two groups (Maxfield & Widom, 1996).

Whether children have been abused or neglected, there is evidence to suggest that traumatic early life experiences may negatively impact emotion regulation capacities. Difficulties in this area can manifest in psychopathology and problems with interpersonal

relationships. Intervention approaches aimed at strengthening emotion regulation capacities may be able to ameliorate earlier trauma to this system and help children more effectively manage and respond to distressing emotions, a core goal of Acceptance and Mindfulness-based approaches.

D. Behavior problems in adopted children

In addition to a large literature base documenting the negative impact of child abuse on development and subsequent behavior, there is also research indicating that adopted children tend to have increased rates of behavior problems compared to non-adopted children (Simmel et al., 2001; Crea, Guo, Barth, & Brooks, 2008). Most frequently, elevated rates of externalizing behavior problems are identified in adopted samples compared with non-adopted samples (Simmel, Barth, & Brooks, 2007). A meta-analysis of 66 studies in this area indicated higher rates of behavior problems in adopted children (compared to non-adopted) with an average effect size of 0.72 (Wierzbicki, 1993). Increased child behavior problems are particularly prevalent among special needs children who have been removed from their biological homes due to maltreatment (Rosenthal and Groze, 1994).

With regard to specific behavior problems, Brodzinsky, Schechter, Braff, and Singer (1984) compared 130 adopted children placed between age 3 and age 3.5 years (current age 6-11) with 130 non-adopted children and found significantly higher externalizing behavior problems among male and female adoptees. However, differences in internalizing behavior problems were only significant between the two groups for females. The adopted sample in this study was a combination of public, private and independent adoptions, making it difficult to draw conclusions about the particular effects of public adoptions. In a sample of 85 children placed for adoption through public agencies in California (age range 3 to 15 years old), Berry

and Barth (1989) identified the most common behavior problems as difficulty concentrating, impulsivity, demanding attention, acting immature for age, stubbornness, temper tantrums, poor school work, and lack of guilt after misbehaving.

Simmel et al. (2001) examined rates of externalizing behavior problems in a California statewide sample of 808 adopted youth ages 4-18. According to parental report, a noteworthy percentage of children demonstrated significant symptom levels of ADHD and ODD externalizing behavior problems (29%). The researchers noted this percentage is at least double what is found typically in the general population. In this study a number of risk factors predicted externalizing symptoms in adoptees, including histories of pre-adoption abuse/neglect, later age at adoption, prenatal drug exposure, and multiple foster homes. One explanation contributing to these findings involves maternal impulsivity. There is evidence that birth mothers of adoptees are impulsive, and impulsivity may increase likelihood of abusing substances (Pagliaro & Pagliaro, 1997). Maternal impulsivity may also contribute to genetic risk for impulsivity in offspring (Simmel et al., 2001).

In addition to risks for externalizing behaviors, placement instability has also been associated with difficulties in inhibitory control. Lewis, Dozier, Ackerman, & Sepulveda-Kozakwosi (2007) examined this relationship in a 5 and 6-year-old sample of 33 adopted children who had experienced foster placement instability (more than 1 placement), 42 adopted children who had experienced 1 stable placement, and 27 children never placed in foster care. Controlling for age, verbal intelligence, and a working memory control task, results showed that adopted children with multiple previous placements performed more poorly on an inhibition task than the other two groups. Difficulties with inhibitory control, an important aspect of self-regulation, place children at risk for behavior problems such as hyperactivity and conduct

problems. In this same sample, the group with placement instability was also rated more oppositional by caregivers than the other two groups, consistent with previous research in this area (Lewis et al., 2007).

Adoptees have also been found to exhibit difficulties into adolescence. Using data from the California Long-Range Adoption Study, Crea et al. (2008) analyzed prenatal drug exposure as a risk factor for externalizing behaviors in 275 adopted children 14 years post-adoption. The researchers employed growth curve modeling to assess externalizing behavior problems at four timepoints, and results indicated that prenatal drug exposure predicted elevated behavior problems compared with non-exposed youth at all timepoints. In a large sample of 4,682 adopted adolescents and a matched control group, Sharma, McGue, and Benson (1996) found that compared with non-adopted adolescents, children adopted after age 10 had significantly higher levels of drug use, antisocial behavior, and negative emotionality. For these comparisons, effect sizes ranged from .38 to .48.

There is limited research focused on the behavioral outcomes of children adopted from foster care specifically (Simmel, Barth, & Brooks, 2007), and studies with this focus often have methodological concerns. Smith, Howard, and Monroe (2000) looked specifically at 292 children adopted from foster care (mean age at placement=3years) but did not use a control group. The authors found that the majority of children presented with behaviors related to conduct problems, including lying, defiance, tantrums, and verbal and physical aggression. Hyperactivity was another common characteristic identified among this group. However, because there was no control group and this was a subset of adoptive families at risk for adoption dissolution, it is difficult to draw meaningful conclusions about the study results.

Simmel et al. (2007) addressed this research gap in a study comparing behavior problems of adopted foster youth (n=293) and adopted non-foster youth (n=312) from a California sample of adopted youth 2-18. Adopted parents rated youths' behavioral functioning 2, 4 and 8 years following adoption, and results indicated that adopted foster youth exhibited significantly more behavior problems than the non-foster youth group. The elevated rates were found for both overall and internalizing (anxiety-depression), and externalizing (hyperactive-antisocial) behavior problems. However, the authors also noted that the behavior problems in both adopted groups are higher than what is reported in the general child population.

Despite the cumulative risk factors often experienced by adoptees, from a life course perspective it is important to consider resilience in response to adversity (Crea et al., 2008), and the potential impact of family and intervention factors. Treatments for children who have been adopted and their parents may mitigate the risk conferred by their pre-adoptive backgrounds.

E. Treatment options for externalizing behavior problems

Given the ample evidence for risk of maladjustment in adoptees from foster care, there is a pressing need for treatment approaches designed to address the difficulties found in this group, many of whom exhibit externalizing behavior problems. Currently, there are approximately 20 evidence-based treatments for children with externalizing behavior disorders, including ADHD, Oppositional Defiant Disorder (ODD), and Conduct Disorder. Most treatments are in the category of behavioral therapy, either Cognitive-Behavioral Therapy (CBT) or behavioral parent training (Twohig et al., 2008; e.g. Webster-Stratton & Hammond, 1997; Kazdin, Esveldt-Dawson, French, & Unis, 1987). Behavioral parent training typically yields better results for pre-school and school-age children, while CBT approaches generally produce stronger results for adolescents (McCart, Priester, Davies, & Azen, 2006). Although children adopted from foster

care are at risk for exhibiting elevated externalizing behavior problems, it is important to distinguish between behavior problems and specific disorders. This group may not meet full diagnostic criteria for externalizing behavior disorders, or may meet partial criteria for several disorders, and this presentation should be considered in treatment development.

In the treatment of ADHD in youth, the Multimodal Treatment Study of ADHD (MTA) randomly assigned 597 children to four treatment conditions: medication management, intensive behavioral treatment, medication and behavioral treatment combined, and community care. Results indicated that medication management was more effective than either behavioral treatment or community care, and for core ADHD symptoms, the combined treatment was not significantly more effective than medication management. However, secondary analyses suggested that when used in combination with pharmacotherapy, behavioral treatments may result in wider social gains for children in areas such as family functioning (MTA Cooperative Group, 1999; Swanson et al., 2002). Thus, behavioral treatments may be an effective adjunctive or combination treatment with pharmacotherapy, and there is some evidence supporting the use of parent training with this population (Anastopoulos & Farley, 2003). In addition, there are children who are unable to tolerate pharmacological treatments, or families opposed to such treatment, where additional viable behavioral treatments are needed. In a meta-analysis by Fabiano et al. (2009), authors examined 174 studies of behavioral treatment for ADHD, including between group studies, pre-post studies, within group studies, as well as single subject studies. Results indicated that effect sizes ranged from .70 for pre-post studies to 3.78 for single subject studies, suggesting that behavioral treatments can be effective with this population.

For the treatment of ODD, antisocial behavior, and conduct problems, there is ample support for behavioral treatments aimed at young children, school-age children, adolescents, and

their parents. In a review of psychosocial treatments for childhood disruptive behaviors (Eyberg, Nelson, & Boggs, 2008), 16 evidence-based treatments were identified. In order to be considered efficacious, a treatment must be found superior to a comparison in at least two studies by different research teams (Chambless & Hollon, 1998). For younger children, efficacious treatments include the use of parent training programs for reducing child oppositional behaviors (Webster-Stratton & Reid, 2003; Brinkmeyer & Eyberg, 2003). Parent training typically involves learning skills to enhance positive parent-child relationships, and to effectively discipline and problem-solve. For older children, evidence-based treatments tend to incorporate problem-solving skills, assertiveness skills, and coping with anger, demonstrating significant reductions in antisocial behavior and increases in prosocial behavior (Kazdin, 2003; Lochman, Barry, & Pardini, 2003; Huey & Grant, 1984). Cognitive-behavioral strategies include self-instruction and perspective-taking. These programs often include a parent training component as well, and strongest results are frequently found with this combination of treatment (Kazdin, 2003).

Evidence-based behavioral treatments designed specifically for children in foster care or adopted from foster care are unfortunately limited. One evidence-based program for this population is The Oregon Multidimensional Treatment Foster Care Model (MTFC; Chamberlain & Smith, 2003). This is a community-based treatment program aimed at the treatment of early antisocial and disruptive behavior. Youth are placed one per foster home and families are provided with intensive support and treatment (Chamberlain & Smith, 2003). Evidence supporting MTFC indicates that intervention can be effective for children in foster care, but its intensive and costly nature makes it challenging to replicate and use widely. To our knowledge, there are no evidence-based group treatments targeted for children adopted from foster care,

though group treatments have been used to effectively treat externalizing behavior problems (Lochman et al., 2003).

As previously noted, these evidence-based treatments do not show short-term and long-term benefits for all children and families (e.g. Webster-Stratton & Hammond, 1997). Barriers to positive outcomes include high rates of dropout, failure to engage in the treatment process, and failure to maintain gains at follow-up (Miller & Prinz, 1990). Thus, there is a need for further treatment development focused on both children and the adults in their lives. In the case of older children in particular, there appears to be a need for additional ways to address their behavioral, emotional, and cognitive problems (Twohig et al., 2008).

F. **Rationale for applying Acceptance and Commitment Therapy (ACT) in treatment of externalizing behavior problems**

Aggregate findings indicate that children exhibiting externalizing behavior problems tend to demonstrate a limited range of affect despite showing high physiological reactivity to mood-inducing stimuli (Twohig et al., 2008). In addition, they tend to be less able to understand the emotional life and psychological perspective of others, less able to express empathy, and less psychologically flexible. These children tend to experience more punitive and unresponsive interactions from parents, higher levels of parental anger, and less warmth in the parent-child relationship (Twohig et al., 2008).

For these reasons, Acceptance and Commitment Therapy (ACT) and mindfulness treatment approaches seem particularly well-suited to this group. The identified deficits map well onto the core goals of the ACT model, which targets the negative effects of cognitive fusion, experiential avoidance, and psychological inflexibility while incorporating principles of behavioral interventions (Twohig et al., 2008). *Cognitive fusion* refers to the state of relating

literally to verbal processes (e.g. I am what my thoughts and feelings say I am). The same cognitive abilities that allow children to solve problems verbally also allow them to label their private events (e.g. distressing feelings and thoughts), predict them, evaluate them, and attempt to avoid/control them. This can lead to *experiential avoidance*, defined as deliberate attempts to modify, suppress, escape, or avoid unwanted internal psychological experiences (Hayes, Luoma, Bond, Masuda, Lillis, 2006). Experiential avoidance is fueled by the faulty belief that uncomfortable private events are "bad" and should be controlled. In children, experiential avoidance may present itself in different ways. For example, a child may act out in class to counteract feelings of not being liked (Twohig et al., 2008). Children with externalizing behavior problems tend to have difficulties with emotion regulation, and may exhibit an experiential avoidant style that tends to lead to less psychological flexibility and more behavioral struggle.

To address cognitive fusion and experiential avoidance, there are six core processes that are involved in the ACT model (See Appendix B for model and descriptions). The first three are mindfulness processes (acceptance, defusion, and self as context), and the second three are commitment and behavior change processes (contact with present moment, values, and committed action). This model emphasizes healthy functioning over a particular type of symptom reduction, a departure from most other behavioral models. It is also a different way to frame behavior problems: the emotion or the thought is not the problem, but it is the *response* that creates difficulties and is targeted. Thus, the thought or feeling does not need to change in order for behavior changes to occur, and all mindfulness and acceptance-based processes are used to promote valued action (Twohig et al, 2008). A major goal is to create more psychological flexibility in behavioral responses to distressing thoughts and feelings.

Although the principles of ACT may be challenging for children to fully understand, there is an important distinction between implementing the therapy and experiencing it (O'Brien, Larson, & Murrell, 2008). ACT relies on less literal methods like metaphors, exercises, and stories because literal discussion can inadvertently reinforce cognitive fusion and experiential avoidance. Because of this, ACT methods are more similar to methods commonly used with children, indicating it may be particularly well-suited for use with a child population. Thinking becomes more abstract between ages nine to fifteen, and the ability for youth to understand complex ideas related to mindfulness develops during these years (O'Brien et al., 2008). Children in this study's age group, 8 to 13 years old, should have the capacity to comprehend skills taught within a developmentally appropriate ACT framework.

Although there is a growing interest in the application of ACT approaches for children and adolescents (Murrell & Scherbarth, 2006), there has not been specific work on youth with externalizing behavior problems, or youth at risk for externalizing behavior problems, including children adopted from foster care. In addition, distress tolerance for this group is often low, and a major target of the ACT model is to increase one's ability to observe and respond non-judgmentally to difficult emotions.

G. Evidence for ACT approaches for adults and youth

ACT is a treatment approach introduced in 1999 (Hayes, Strosahl, & Wilson), considered to be part of a "third wave" of behavior therapies. As a group, third wave therapies typically emphasize experiential methods over didactic ones, and emphasize issues such as mindfulness, acceptance, cognitive defusion, dialectics, values, and spirituality (Hayes, Masuda, Bissett, Luoma, & Guerrero, 2004). In a review of ACT studies, Hayes and colleagues (2006) identified 74 correlations between the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004) and

psychopathology/quality of life outcomes. The AAQ measures several processes associated with psychological flexibility. The weighted effect size of these associations was .42, indicating that higher levels of psychological flexibility are moderately correlated with better outcomes and quality of life.

As for treatment studies, ACT treatments have also been compared to other well-specified interventions and waitlist/placebo or treatment as usual. Weighting average effect sizes by the number of cases that produced the effect, results indicate that ACT has produced between condition effect sizes using Cohen's d of .66. Problems addressed have been varied, including anxiety disorders, work stress, work burnout, substance abuse, depression, chronic pain, psychosis, and Borderline Personality Disorder (Hayes et al., 2006).

ACT has not typically been used with adults with externalizing disorders, such as ADHD or conduct disorder. However, the effectiveness of one mindfulness-based training program, Mindful Awareness Practices (MAPs), was evaluated with 32 participants with ADHD or probable ADHD (Zylowska et al., 2007). The sample was comprised of 8 adolescents and 24 adults, and no controls were included. The researchers utilized measures of attention, anxiety and depression pre- and post- an 8-week protocol where participants attended a group once a week for 2.5 hours and were taught how to apply mindfulness skills. Significant results were found for self-reported ADHD symptoms ($p<.01$) and neurocognitive tasks involving attentional conflict and set-shifting (all $p<.01$). Although a major limitation of this study is a lack of a control group, it does provide evidence that mindfulness skills may be taught effectively to individuals with ADHD.

Empirical support for using ACT approaches with youth is in its infancy, and lags behind the evidence base for adults. Research that does exist tends to be case studies or uncontrolled

pilot studies for youth with anorexia nervosa, anxiety disorders, or pediatric pain (Murrell & Scherbarth, 2006). To date, there is no specific data on using ACT with children with externalizing disorders, though the potential utility of an ACT approach has been described for this population (Twohig et al., 2008). In their review article, Murrell and Scherbarth asserted that in order to compare ACT approaches with other treatment studies for children and adolescents, larger samples and controlled designs are needed.

In one promising randomized controlled study, Hayes, Boyd, and Sewell (2011) compared an ACT treatment with treatment as usual (TAU) for 30 clinically referred adolescents (73.6% with clinical levels of depression). At post-treatment, participants in the ACT treatment reported larger decreases in depressive symptoms compared with the TAU condition. At a 3-month follow-up, global functioning gains strengthened in magnitude for both groups, but improvements in clinical measures were stronger for the ACT group. These results suggest that ACT may be a viable treatment option for adolescent depression, and the researchers recommended a larger follow-up trial.

Other mindfulness-based treatments have been further studied in youth populations. Burke (2010) conducted a review of empirical treatment studies using mindfulness-based interventions, identifying one study with preschoolers, six studies with school-aged children, and eight studies with adolescents. Studies ranged from case studies and uncontrolled pilot studies to randomized controlled studies with both clinical and non-clinical populations. Among the studies reviewed, outcome measures included psychiatric symptoms and attention, variables of interest in the current study.

For example, measures of mental health and psychiatric symptoms were the focus of one randomized, waitlist-control study by Biegel, Brown, Shapiro, and Schubert (2009). Recruiting

participants 14-18 years old from an outpatient psychiatric clinic, the authors evaluated an 8-week modified Mindfulness Based Stress Reduction (MBSR) protocol with 102 adolescents with a mix of psychiatric disorders. Compared with controls, the MBSR treatment group showed a higher percentage of diagnostic improvement over the 5-month study period and significant increases in global assessment of functioning scores as rated by condition-naïve clinicians.

For school-aged children, the review included only two studies with control groups, and in both of these studies the samples were non-clinical and attention was one of the major dependent variables. With a sample of 228 students in grades 1-3 and high in anxiety, Napoli, Krech, & Holley (2005) tested the effectiveness of a 24-week program combining mindfulness and relaxation. Results indicated a significant improvement in selective attention and decreases in test anxiety and ADHD symptoms in the treatment group. Saltzman and Goldin (2008) evaluated a modified Mindfulness Based Stress Reduction (MBSR) 8-week protocol with 31 children (grades 4-6) and their parents. Using a waitlist control design, they assessed attention, emotional reactivity and regulation, depression and anxiety symptoms, and metacognitive functioning pre- and post-intervention. Compared with waitlist controls, MBSR participants demonstrated significantly greater improvement on the cognitive control of attention component of the Attention Network Task. In addition, MBSR participants reported significantly less negative emotion in response to physical and social threat scenarios (Saltzman & Goldin, 2008). Results such as these suggest that mindfulness training may be beneficial for children, particularly in the areas of improving attention and reducing emotional reactivity.

In a case study with two children with ADHD ages 10 and 12, Singh et al. (2009) used a multiple baseline research design to evaluate the effectiveness of a 12-week mindfulness training for the child and parent. Results indicated that mother mindfulness training improved child

compliance with parental instructions, and gains were greater and maintained at follow-up when the children were given a similar training. Given the nature of this study, it is difficult to generalize findings or identify clinically significant change. However, it does point to the potential feasibility of using mindfulness-based approaches with children with ADHD. Further evidence was found in a larger waitlist-control study by Hadicky, Wiener, Badali, Milligan, and Ducharme (2012), where researchers evaluated the effectiveness of a 20-week mindfulness martial arts treatment for 60 adolescent boys with learning disabilities and co-occurring ADHD or anxiety. For the subsample with co-occurring ADHD (n=28), improvements were found in parent-rated externalizing behavior, oppositional defiant problems, and conduct problems.

Executive functioning is a critical component for both attention and behavior/emotion regulation, and this was the outcome variable of interest in a recent study by Flook et al. (2010). The researchers examined the effectiveness of a school-based mindful awareness practice program with 64 children (non-clinical) ages 7-9 years. The 8-week program involved 30-minute sessions twice a week, and teachers and parents reported on child's executive functioning (using the Behavior Rating Inventory of Executive Functioning; BRIEF) pre- and post- treatment. Using a randomized controlled design, both teachers and parents reported improvements in executive functioning post-treatment, but these improvements were not significantly higher than controls. However, a significant interaction effect was detected, indicating that children with lower executive functioning skills at baseline significantly increased post-intervention per parent and teacher report. Particular areas of improvement included the child's abilities to shift, initiate and monitor, central skills practiced when engaging in mindfulness exercises. The researchers concluded that mindfulness training may be particularly beneficial for children exhibiting executive functioning difficulties. These types of difficulties correspond with concerns

frequently exhibited by the current study sample, indicating a strong match in fit based on this study's preliminary findings.

Semple and colleagues (2010) have focused their work on adapting MBCT for children specifically to increase social-emotional resiliency through the training of mindful attention. They conducted a randomized waitlist-control study with 25 children (ages 9-13) in a remedial reading tutoring class, examining behavior problems and anxiety pre- and post-intervention and at a 3-month follow-up. Results indicated that children who participated in the program exhibited fewer attention problems than wait-listed controls, and these gains were maintained at 3 months (Semple, Lee, Miller, & Rosa, 2010).

H. Current Study

In sum, there is encouraging evidence to suggest that mindfulness-based treatment approaches may be effective for youth with difficulties with attention, executive functioning, and emotional dysregulation. However, there has been limited documented research on using ACT-based approaches with children with externalizing behaviors, and the current study began to fill this gap. A major strength of this study was the ability to recruit a clinical population with high-risk backgrounds. Furthermore, the current protocol blended together elements of ACT approaches modified from use with adults with mindfulness approaches that have been used more frequently with promising results in youth.

The initial aim of the study was to evaluate the feasibility, acceptability, and fidelity of the CHAMP program among this high-risk sample adopted from foster care. It was hypothesized that group leaders would demonstrate a high level of adherence to the program manual and both parents and children would demonstrate acceptance of the protocol, general satisfaction with the program, and sufficient attendance and engagement in the intervention.

A second primary aim was investigating the effects of the CHAMP program on child and parent outcomes. Specifically, it was hypothesized that the program would be effective in developing mindfulness skills for children and parents, improving children's executive functioning and emotion regulation, and decreasing children's behavior problems (particularly related to attention and externalizing problems). Although the initial analytic strategy focused on comparing the immediate and waitlist groups, challenges with recruitment and developing a sufficient waitlist group led us to expand our analyses to include pre-post (and follow-up) comparisons of the full group of completers as well.

A third area of inquiry was the evaluation of factors influencing treatment outcomes, such as level of participant engagement and severity of psychopathology. As the total sample size was smaller than initially planned, these analyses were considered exploratory and focused on predictors of outcome. It was hypothesized that participant engagement would be positively associated with treatment outcomes, even after accounting for baseline functioning, and children with elevated levels of behavior problems would be more likely to show treatment-related gains than other participants.

METHODS

A. Recruitment

Participants were initially recruited through the UCLA TIES (Training, Intervention, Education, and Services) for Families Program. TIES is an interdisciplinary, university-based program that works in conjunction with the Los Angeles public child welfare and mental health systems to promote successful adoption of young children from foster care who have special needs, including prenatal substance abuse exposure. In a sample of 54 children from this program, 38% had experienced documented child maltreatment, in addition to prenatal substance exposure (Waterman, Edelstein, Walker, Burge, & Kataoka, 2003). Participants were also recruited through TIES-South Bay, a TIES satellite operated directly through Department of Mental Health and located in Torrance. All procedures and measures were approved by the institutional review boards at UCLA and the Los Angeles County Department of Mental Health.

At TIES a range of therapeutic services are provided to support families prior to placement of a child, during the transition to the new home, and following placement that hopefully will lead to adoption. Once placed in the home, services include educational consultation, developmental, psychological and psychiatric assessment, parent and child behavior training and psychotherapy, play therapy for young children, social skills groups for school-age children, monthly adoption support groups for parents and children, and process groups for teens (Waterman et al., 2003). Our program, Children Adapting Mindful Practices (CHAMP), was offered as one of the time-limited weekly groups provided by TIES.

The TIES Program also had a contact database for families who had been served by TIES in the past, but who were not currently receiving services. This database was used to recruit additional participants who were in the specified age range. Recruitment letters (approximately

200) were sent to these families to inform them about the study and invite them to call for more information. Through this referral source, five participants were recruited.

For current clients, PI Natalie Bencuya provided an introduction to the program to TIES staff, and TIES therapists were asked to identify age-appropriate clients they believed could benefit from the program. Flyers were provided in the waiting rooms and given to therapists, who brought up the group in their sessions with potential families. For families who expressed interest in learning about the program, therapists asked whether they wanted to contact the PI directly or receive a call. The PI followed up with all interested families and conducted a phone screen when appropriate to determine eligibility for the group. Participants were required to meet to meet the following criteria: 1) Child must be 9-12 years old, 2) Child must be in a finalized adoption, and 3) Child must not have significant intellectual disability or autism spectrum disorder that interferes with their participation in a group setting. Additional therapy or psychiatric medication services children were receiving were documented, and children were encouraged to stay on a stable dose for the duration of the group. However, if clinically warranted, exceptions were made. Two children had medication changes; one child switched ADHD medications and another child was prescribed an additional mood stabilizing medication. There were no specific behavioral requirements for participation, but children tended to exhibit attention difficulties and oppositional behaviors.

Recruitment difficulties were encountered, and inclusion criteria were modified in two ways to increase enrollment. First, the age range was extended to include children 8-13. Second, for the last two groups, children who were not adopted were also permitted to join the group if other criteria were met (n=4).

B. Participants

Twenty-nine families were recruited and signed consent forms agreeing to participate in the CHAMP program. In two families, a sibling pair participated in the group, resulting in 31 children. Of these 31 children, 28 were included in the final analyses. One family dropped out due to scheduling difficulties following two sessions. A second family dropped out after the parent session, indicating that the group conflicted with some of their religious beliefs. Finally, the 3rd family not included in analyses completed the group but missed the last session and post-test questionnaires were unable to be obtained despite multiple attempts at contacting the family. An additional family also dropped out following the orientation session due to scheduling difficulties, but they agreed to complete post-questionnaires as a waitlist control family.

Among the 28 youth considered completers in the study, 23 were recruited through TIES for Families. Non-adopted children with potential attention and/or emotional regulation difficulties were targeted for recruitment through UCLA sources. In the total sample, 24 (85.7%) were adopted and 4 (14.3%) were not adopted (one child recruited outside of TIES was also adopted). There were no significant differences on measures based on adoption versus non-adoption status. Table 1 summarizes demographics for the CHAMP sample, and Table 2 summarizes adoption characteristics for the 23 child participants recruited through TIES.

Overall, the child sample was 32.1% female and 67.9% male. For identified child race, 37.1% were Caucasian, 37.1% were African American, 25% were Hispanic and 3.6% (one child) was biracial. The average age when participants began the group was 10.9 (SD=1.6), and group member age ranged from 7 to 13. One 7-year-old was permitted to join the group because he was turning eight years old right after the group ended. Approximately seventy-four percent of the primary parents completing measures were female. Among parent reporters, 74.1% were

Caucasian, 14.8% were African American, 7.4% were Hispanic and 3.7% (one parent) identified as Other. This sample of parents was identified as 74.1% heterosexual and 25.9% homosexual. Among the primary parents identified as homosexual, three were female (42.9%) and four were male (57.1%). The families tended to be highly educated; 33.3% had some type of graduate degree and an additional 44.4% had a BA/BS degree. Those with high school diplomas or a GED accounted for 14.8% of the sample, and 7.4% had an AA or vocational degree.

In the total sample, a little under half of the participants (42.9%) were taking some type of psychiatric medication. Among study completers (n=25), ten were taking psychiatric medication during the intervention. Nine out of the 10 were taking medication to treat symptoms of ADHD, and six out of these nine participants (66.67%) were also taking additional medications targeting mood symptoms (e.g. anti-depressants, mood stabilizers).

Initially, two cycles of the group (immediate and waitlist) were planned for both TIES-UCLA and TIES-South Bay. The goal was to randomly assign participants to immediate and waitlist conditions as much as possible. These plans needed to be modified following the first cycle of the group at UCLA, which began in February 2011. For the first full cycle at UCLA, participants were randomly assigned to immediate and waitlist conditions. Due to scheduling constraints, two of those participants needed to be included in the waitlist condition and were not randomly assigned. Following the first cycle at UCLA, we were unable to recruit a large enough group to divide into immediate and waitlist conditions in the South Bay TIES for Families site. The decision was made to go forward with an immediate treatment group only. This same challenge occurred during the second round of groups at UCLA, where it was necessary to begin one group while recruiting for a second group. These two groups were also considered immediate treatment conditions.

Altogether, 21 (75%) of participants were considered to be in the immediate condition and 7 (25%) were considered to be in the waitlist group. In the waitlist group, there were three participants who did not complete the treatment (one due to scheduling, two due to fit of group), but completed post-treatment measures and were included in analyses. Participants in the immediate and waitlist conditions were compared on pre-test measures and only significantly differed on one of the 23 t-tests, a finding likely due to chance. Overall, 8 participants (28.6%) were randomly assigned, and 20 (71.4%) were non-randomly assigned. These two groups were also compared on pre-test measures and only significantly differed on one of the 23 t-tests.

C. Intervention implementation/content

Group Assignment:

Once a phone screen was completed, eligible families were invited to an orientation session, where consent and assent forms were obtained and pre-measures were completed. Only one parent was required to participate in the study, although if there were two parents in the home, both were welcome to attend. In the first group at UCLA, participants were informed that they would be randomly assigned to an immediate treatment group starting the following week, or a waitlist treatment group beginning in 8-10 weeks. For the remaining groups, all participants were assigned to the immediate treatment group that began the week after orientation.

Group Leaders:

For each group, two therapists were co-leaders and conducted the session jointly. For all of the groups, PI Natalie Bencuya was one of the leaders. The other co-leaders were three graduate students from UCLA's Clinical Psychology doctoral program. All three of the leaders were externs in a practicum placement at TIES and conducted the group as part of their placement. Group leaders were trained in the manual prior to the start of the groups and met

weekly for continued supervision. Training and supervision was led by Natalie Bencuya and Jill Waterman.

Training prior to the beginning of groups took place in two half-day sessions and was led by Natalie Bencuya. Diana Winston (Education Director at the Mindful Awareness Research Center--MARC) also conducted a brief Mindful Awareness Practice (MAPs) training with the study team. Team members gained exposure to mindfulness meditation taught in MARC courses at UCLA and this served as an experiential introduction for therapists to some of the basic principles of mindfulness that were incorporated into CHAMP.

Program Format:

Following a 60-minute orientation session where participants signed consents and completed pre-measures, the CHAMP intervention was given. CHAMP was a 7-week program that consisted of six 90-minute weekly child group sessions, one 90-minute parent introduction and a 30-minute check-in with parents at Week 5 with one co-leader (while the other co-leader completed the rest of the child session). Each group had 4-6 child participants.

Program Content:

There was a didactic focus for each youth session, and each session also included various experiential exercises, including mindfulness exercises, exercises related to Acceptance and Commitment Therapy (ACT; Hayes et al., 1999) metaphors, and group discussions about participant experiences with mindfulness. Each week youth participants were given ACT-based exercises to complete. Parents also received the home exercises as well as a hand-out to help them understand the concepts and discuss with their child. The treatment incorporated various ACT principles, including contact with the present moment, acceptance, defusion, values, but it was also modified to be developmentally appropriate for a child population.

The manual was derived from multiple sources, and sources were cited when applicable. Permission was granted to use mindfulness exercises developed by Susan Kaiser Greenland (personal communication, 2010). Prior to administering the treatment model in the study, the author of the manual (N. Bencuya) consulted with multiple colleagues knowledgeable about using the ACT model and/or working with this population of children. In addition, exercises from the manual were piloted by the author in a monthly support group at TIES for children 10-15, as well as with an individual client exhibiting ADHD symptoms. Based on these experiences, the manual was modified as needed prior to the first cycle of the project. Additional consultation was sought from researchers conducting work in this field (e.g. Lisa Flook, Randye Semple). In preparation for conducting this treatment, the author attended a six-week introductory course about Mindful Awareness Practices (MAPs I; MARC), and participated in two mindfulness study groups comprised of professionals and parents interested in the application of mindfulness practices for children. These study groups were led by Susan Kaiser Greenland, author of *The Mindful Child* and past collaborator in research with MARC founder Dr. Susan Smalley.

OUTLINE FOR TREATMENT SESSIONS (See Appendix D for full manual):

Parent Session #1: Introduction to goals/principles of program

Youth Session #1: Introduction to program and to mindful awareness (breathing exercises and sensory exercises, outline group values)

Homework (HW): Engage in three mindful activities during the week (e.g. eating, walking) and describe it

Youth Session #2: Learning to distinguish between description vs. drawing conclusions (e.g. making the distinction between observing with our five senses and recognizing what judgments

our mind makes about our experiences)

HW: Worksheet to practice describing vs. drawing conclusions—explain the difference to a parent/adult

Youth Session #3: Learning about "sticky" thoughts/feelings and practicing acceptance (Mosquito Metaphor)

Description of *sticky thoughts/feelings* and *mosquito metaphor*: Sticky thoughts/feelings are defined as those that can get in our way and feel stuck to us (e.g. I am stupid), leading us to react in ways that get us into trouble (e.g. avoidance or acting out). The mosquito metaphor encourages us to think about our typical reaction when we are bitten by a mosquito (scratching the itch), and what that generally leads to (swelling, bleeding). Children are encouraged to think about another way they might respond (noticing the itch but not reacting immediately) using the mindfulness tools they have been learning. They are then asked to try and apply this type of approach to their sticky thoughts/feelings.

HW: Identify a sticky thought/feeling during the week and write down response--explain sticky thoughts to a parent/adult

Parent Session #2 (held during second half of Youth Session #4 with one group leader): Processing treatment thus far, answering questions, troubleshooting difficulties, reviewing CHAMP concepts

HW: Practice mindful witnessing (engaging with child without questions or criticisms, and noting what reactions come up for parent) with child during short one-on-one time during week

Youth Session #4: Increasing acceptance (Thoughts in Flight exercise)

Description of "*thoughts in flight*" exercise: Children are encouraged to think about their sticky thoughts as transient and not permanent. As a way to make this experiential, children are

encouraged to write a sticky thought on a paper airplane, and the leader of the group explores with participants whether it is more effective to try and keep the airplane/sticky thought in flight or to allow it to pass by and land without engaging with it.

HW: Record sticky thoughts/emotions in mindfulness journal and write about how you responded; think about what sticky thoughts are like for you

Youth Session #5: Values: What do I care about?

HW: Decide on one behavioral commitment for the week

Youth Session #6: Celebration/complete post-measures

At the beginning of the program, leaders explained to the participants that they would have an opportunity to work together to earn a pizza party at the end of their work together. At each group, children earned a point for each activity by participating and paying attention, and the group needed to earn the majority of points possible in order to earn their party. Trained research assistants kept track of the points on a poster at the front of the room, and leaders referred back to it to highlight when the group was working well together or when participants were having difficulty paying attention. For some groups this level of reinforcement was sufficient, but for others additional, more immediate reinforcement techniques were needed. In these cases, children could earn a piece of chocolate or a gold dollar for earning all possible points during each half of the group.

D. Measures

Pre- and post-treatment assessments utilized parent- and child-reported questionnaire data to assess mindfulness processes and children's behavioral functioning at each time point. For each cycle, there were three assessment periods: Time 1 (pre-treatment for immediate group), Time 2 (approximately 2 months later; post-treatment for immediate group and pre-treatment for

waitlist group when applicable), and Time 3 (post-treatment for waitlist group and 2-month follow-up for immediate group). Follow-up measures were also collected from the waitlist group 2 months following the end of the intervention. See Appendix C for full text of each measure.

Before the first assessment period, participants were told that all of their information would be held confidential. They were also informed about exceptions to confidentiality (e.g. in the case of suspected child abuse or significant risk of harm to self or others).

A. Parent Assessment Measures:

Demographics:

1) Family Demographics Form: At the pre-treatment assessment only, parents completed this questionnaire, created for the present study. The FDF assesses child, parent, and family demographic factors (e.g. ethnicity, parent education, child age, and grade). The FDF also assesses whether the family has had any prior experience with mindfulness techniques, what services the child is currently receiving, and whether the child is currently taking any psychiatric medication.

Parent Measures:

1) Parental Stress Index—Short Form (PSI-SF; Abidin, 1995)**:** The PSI-SF is a widely used 36-item measure (derived from the 120-item original PSI) designed to assess the extent to which a parent experiences stress. The measure is broken into three subscales, assessing parental distress, parent-child dysfunctional interaction, and difficult child. Similar to the full PSI, it also has a validity scale. Items are rated on a 5-point Likert scale ranging from "strongly agree" to "strongly disagree." The PSI-SF demonstrates adequate psychometric properties, with test-retest reliabilities ranging from .68 to .85 and internal consistency alpha coefficients ranging from .80 to .91 (Abidin, 1995).

2) Parental Acceptance and Action Questionnaire (PAAQ; Cheron, Ehrenreich & Pincus, 2009): The PAAQ is a 15-item measure composed of modified items from the Acceptance and Action Questionnaire (Hayes et al., 2004) that aims to measure the degree of experiential avoidance in the parenting context. Respondents rate each item of a 7-point Likert scale indicating how true the item is for them. Items include, "I try to suppress thoughts and feelings about my child that I do not like by just not thinking about them" and "I'm not afraid of my child's feelings." After reverse-scoring negatively worded items, scores are obtained by summing the item total. Items load onto two subscales: parental inaction and parental unwillingness. High scores on the inaction subscale suggest parental avoidance of taking action in the context of the emotional experiences of their children. The inaction subscale is composed of 9 items. High scores on the unwillingness subscale suggest parental unwillingness to experience the emotional experiences of their children. The unwillingness subscale is composed of 6 items.

Though the PAAQ is still undergoing psychometric testing, it has evidenced moderate levels of internal consistency (alpha=.64 to .65 across scales) and temporal stability (correlations between .68 and .74 across scales) based on a sample of parents of 154 children (Cheron, et al., 2009). There is evidence of convergent validity as well, as positive correlations are found with the PAAQ and measures of child behavior problems (CBCL; Achenbach, 1991) and measures of parental control (Parent Locus of Control; Campis, Lyman, & Prentice-Dunn, 1986).

Parent-reported Child Outcome Measures:

1) Behavior Rating Inventory of Executive Functioning (BRIEF, Gioia, Isquith, Guy, & Kenworthy, 2000): The BRIEF is an 86-item measure that assesses executive function behaviors that serve to guide and organize cognition, emotion, and behavior in children ages 5-18.

Respondents rate each item on a 3-point scale, indicating whether the behavior occurs never, sometimes, often. For the purposes of this study, parents will be asked to rate their child's behavior in the last two weeks.

There are eight clinical scales (Inhibit, Shift, Emotional Control, Initiate, Working Memory, Plan/Organize, Organization of Material, and Monitor) that form two broad indices, Metacognition Index and Behavioral Regulation Index, as well as an overall Global Executive Functioning Composite. The Metacognition Index includes 5 clinical scales (Initiate, Working Memory, Plan/Organize, Organization of Material, and Monitor) and the Behavioral Index includes 3 clinical scales (Inhibit, Shift, Emotional Control). Raw scores were converted to T-scores for this study, and higher scores reflect more dysregulation in behaviors associated with executive function. The BRIEF has been shown to have sufficient psychometric properties including internal consistency ranging from .80 to .98 and test-retest reliability ranging from .76 to .88 (Gioia, Isquith, Kenworthy, & Barton, 2002).

2) Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001): The CBCL is a widely used and well-standardized parent rating scale for behavior problems of children aged 6-18 years. The 113-item measure asks parents to rate how frequently their child engages in a range of problematic behaviors on a scale of 0 (none), 1 (some) or 2 (usually). Ratings yield T-scores (M=50; SD=10) that indicate a child's problems relative to others of the same gender and age. For this study, the three broadbands (total, externalizing, and internalizing) and subscales will be used.

3) Conners' ADHD Scale: Revised—Short Version (CPRS-R:S; Conners, 1997): The CPRS-R:S is a widely used 27-item measure designed to assess symptoms of Attention-Deficit Hyperactivity Disorder (ADHD) as well as oppositional behaviors. There are four behavior

subscales, including Oppositional, Cognitive Problems/Inattention, Hyperactivity, and ADHD Index. The CPRS-R:S offers four ratings ranging from seldom/never to very often/very frequent. The CPRS-R: S demonstrated adequate reliability and validity based on a large normative sample (8,000+ children and adolescents).

B. Child Assessment Measures:

1) Child Acceptance and Mindfulness Measure (CAMM; Greco, Smith, & Baer, 2010): The CAMM is a 10-item self-report measure designed to assess the extent to which children and adolescents observe internal experiences, act with awareness, and accept internal experiences without judgment. Items include, "I pay close attention to my thoughts" and "I get upset with myself for having certain thoughts." Respondents rate items on a 5-point Likert scale based on the degree to which the items reflect their experiences. The CAMM addresses the core aspects of attention, awareness and acceptance that complement the current trends in defining mindfulness (Coyne, Cheron, & Ehrenreich, 2008). A previous 25-item version of CAMM was evaluated with a sample of 606 middle school students, demonstrating good internal consistency (Cronbach's alpha=.84).

2) Avoidance and Fusion Questionnaire for Youth (AFQ-Y); Greco, Murrell, & Coyne, 2005): The AFQ-Y is a 17-item self-report measure designed to assess child and adolescent psychological inflexibility characterized by high levels of experiential avoidance, cognitive fusion, and behavioral ineffectiveness in the presence of unpleasant emotions (Coyne, Cheron, & Ehrenreich, 2008). Items include "I push away thoughts and feelings that I don't like" (experiential avoidance) and "The bad things I think about myself must be true" (cognitive fusion). Items were based on the Acceptance and Action Questionnaire (AAQ; Hayes et al.,

2004), but modified to be more developmentally appropriate for a youth population. Respondents rate items of a 5-point Likert scale, and higher scores reflect greater psychological inflexibility.

The AFQ-Y was administered to 1,369 children and adolescents, ranging from 9-17, and the measure demonstrated good internal consistency (Cronbach's alpha=.90 to .93) and convergent validity (Greco, Lambert, & Baer, 2008). Scores were also positively correlated with measures of child internalizing/externalizing symptoms and negatively correlated with quality of life (Coyne, Cheron, & Ehrenreich, 2008). The AFQ-Y also demonstrated negative correlations with the CAMM, suggesting construct validity.

3) Cognitive Emotion Regulation Questionnaire (Youth Version) (CERQ-k; Garnefski, Rieffe, Jellesma, Meerum Terwogt, & Kraaij, 2007): The CERQ-k is a 36-item measure designed to assess 9 cognitive coping strategies, with each subscale consisting of 4 items: Self-blame, Other blame, Acceptance, Planning, Positive refocusing, Rumination or focus on thought, Positive reappraisal, Putting into perspective, and Catastrophizing. These nine strategies are combined to form three total subscales: 1) Positive coping (Acceptance, Positive refocusing, Positive reappraisal), 2) Negative coping (Self-blame, Catastrophizing, Blaming others), and 3) Cognitive strategies (Focus on thought/rumination, Refocus on planning, Putting into perspective). For this study, the three subscales were used. Respondents rate items of 5-point Likert scale ranging from (almost) never to (almost) always. The CERQ-k was adapted from the original adult version, and items were rephrased to better fit the cognitive abilities of children aged 9 years and older.

Psychometric properties of the CERQ-k were assessed in a sample of 717 children 9-11 years old. Five of the subscales demonstrated good internal validity (Cronbach's alpha=.70-.80), and only the subscale Acceptance was below .65 (Cronbach's alpha=.62). Since the number of

items per subscale are quite small (4 items each), these alpha reliabilities can be considered moderate to good.

Evaluation of Treatment:

Parent Program Evaluation: At the final group session, parents completed a written evaluation of the program. The form assessed aspects of consumer satisfaction, including whether they would recommend the program to others and perceptions of their child's progress in home and school environments. They also evaluated the group leaders' level of knowledge about the material and their ability to convey that information.

Child Program Evaluation: At the final group session, children also completed a written evaluation modified for their developmental level. Children were asked about their overall rating of the group and group leaders, and they were asked what exercises were most and least helpful.

Group Leader Measures: At the end of each child session, each group leader rated participant engagement based on attendance, homework completion, participation, and disruption. Each child received a yes or no rating on attendance. Homework completion was evaluated by whether child completed assignment fully, completed it partially (e.g. did part of assignment or reported doing assignment but did not bring in journal), or did not complete the assignment at all. Participants were given 1-point for completed homework, 0.5 point for partially completed homework and 0 points for homework not completed. When there was disagreement among raters about homework completion (usually between full and partial credit), the score given by the majority of the raters was used. Participation and disruption were based on a 5-point Likert scale. Participation was operationalized as actively engaging in activities, answering questions, and providing personal examples. Disruption was operationalized as talking out of turn, engaging in oppositional behaviors and disrupting other group members.

Engagement variables were assessed as a composite. The composite was formed by finding the mean of the amount of homework completion and level of participation, designating a “1” for participants at or above the mean, and a “0” for participants below the mean. For the disruption variable, participants were given a “1” if they were below the mean and a “0” if they were above the mean. For attendance, participants received a “0” if they missed more than one session in the program, and this only included two participants.

Research Assistant Measures: Sessions were videotaped and observed live by trained research assistants (advanced upper division undergraduates recruited for a research internship). They also assisted the group leaders in providing positive reinforcement to participants with a point system. As the research assistants were present at every session, the decision was made for them to complete engagement ratings on participants at the end of each group rather than use videotapes. They rated participants on the same engagement dimensions completed by the group leaders. Research assistants also assessed for group leader fidelity using a Treatment Fidelity Checklist at each session.

RESULTS

Analytic Strategy

Analyses were conducted in several stages. In the first stage, questions of feasibility, acceptability and fidelity of the program were assessed. The second stage compared the immediate and waitlist groups on outcome measures. Given the small waitlist size (n=7), the third stage included pre-post-follow-up analyses and assessed for predictors of outcome for the group of completers (n=25). All measures were assessed for outliers, and as no score exceeded three times the standard deviation of the mean no modifications were necessary.

A. Evaluation of the feasibility, acceptability, and fidelity of the CHAMP program

Engagement and acceptance of the program were assessed in part by evaluating levels of participant attendance, participation, and homework completion. Table 3 shows participant attendance by session. Participant attendance averaged 92% across all groups and participants.

Participation from group members was generally evaluated by both group leaders and the Research Assistant. Given that no pair of coders were consistently more reliable with each other, an average participation rating was generated for each group, and a total average was generated based on the number of sessions each participant attended. Overall, participation was rated quite high, with limited variability. Across participants, the average participation rating for the group was 4.06 (SD=0.39) on a 5-point scale with anchors of 1 (low participation) and 5 (high participation).

Homework assignments were assessed at Sessions 2 through 6, and percentage of full or partial completion ranged from 72 to 80% (mean=77.6%) across groups. Overall, participant attendance, participation levels, and percentage of homework completion support evidence of the CHAMP program as feasible to conduct with this population.

Acceptability of the CHAMP program was assessed in part by participant evaluations at the end of the program. Data were collected from 24 parents who had children who completed the program. Parents were surveyed about their general feelings about the program, as well as specific questions about whether they felt their child benefited from the intervention. Overall, 91.7% reported feeling positive or strongly positive about the CHAMP program. When asked whether they felt the program benefited them or their child, 79.2% of parents felt the program benefited them, and 87.5% felt the program benefited their children. However, 33% reported that their child does not use the mindfulness skills taught during CHAMP outside the group. Although 34.8% of parents reported they felt their child's behavior had improved as a result of CHAMP, 60.9% reported the child's behavior remained the same and 4.3% (1 participant) reported it worsened. Approximately 33% of parents also reported that they never helped their child or helped their child very little with their home assignments. Over half of the parents (66.7%) agreed or strongly agreed that CHAMP helped their child at home, and 41.7% of parents agreed or strongly agreed that CHAMP helped their child at school. All of the parents agreed or strongly agreed that group leaders seemed knowledgeable about the material and were effective at communicating the concepts. Overall, perceptions of the program were generally positive by parents, though the reported benefits of the program were variable.

Children also completed similar participant evaluations, and their responses indicated that 80% of participants felt either positive or strongly positive about CHAMP. A high percentage of children agreed or strongly agreed that CHAMP helped them at home (92%), and approximately half of the children (52%) agreed or strongly agreed that CHAMP helped them at school. Seventy-six percent of child respondents indicated they planned to use the mindfulness skills they learned when the group ended.

Fidelity to the program was assessed through treatment fidelity checklists that were completed by research assistants during the seven group sessions. The number of activities for the groups ranged from 9 to 14, with an average of 10.7 activities per group. The percent of completed activities averaged 87.8%. Checklists were examined for trends or patterns related to activities that were not completed. For six of the seven sessions of the program, there was one activity that was not completed by any group. This was typically the last activity, and usually the last activity was another mindfulness exercise to reinforce the principles taught in the group that session. For instance, mindful shoe tying and a mindful walking exercise were not completed by any group. This can largely be attributed to time constraints and needing more time than anticipated to review homework earlier in session. If those activities were removed from the averages, the percent of completed activities averaged 95.5%. This reflects the percentage of consistently taught activities across these groups. For one group (South Bay TIES for Families), behavioral management issues impacted the leaders' abilities to complete all activities. For example, leaders would not have time to elaborate on a topic (e.g. moving from mindful breathing to making connections between breath and body) due to the high level of disruption and re-directing needed for the members. The average percentage of completed activities was calculated for the South Bay group only, and the average was 80.8%. Without the South Bay group included, the average percentage of completed activities for the other four groups was 89.5%. However, in general the majority of planned exercises were executed across groups.

Further analyses comparing the UCLA and South Bay groups were conducted to see if the participants differed significantly. South Bay participants had significantly less attendance levels than UCLA participants ($t=3.26$; $p=.003$), but on all other engagement variables they were not significantly different. At baseline, mean levels of measures for UCLA participants actually

tended to be higher than South Bay participants, and they were significantly higher for the BRIEF metacognition subscale (t=3.99; p=.001) and the CPRS-R Oppositional subscale (t=2.13; p=.04). These findings, which may seem unexpected, seem to be explained by the smaller size of the South Bay group, the fact that some children in the South Bay group had low levels of reported problems, and the measures of the most disruptive child were not included in the analyses (due to not returning post measures). Thus, the difficulty in covering all the activities in the South Bay group seemed to be more a function of a group dynamic than the behavior problems of any particular individual.

B. **Immediate-Waitlist Comparisons**

Relationships of Demographics to Pre-test Variables

The relationships of participant demographics and pre-test study measures were assessed via independent t-tests and bivariate correlations, depending on whether the variable was non-continuous or continuous. Significant relationships are summarized in Table 4.

Two demographic variables, child medication status and family experience with mindfulness, differed significantly on several study measures. At pre-test, parents of children reported to be on psychiatric medication had higher levels of reported parenting stress compared with parents of children not taking medication. They also rated this group of participants as having more ADHD symptoms on the CPRS-R (all scales except Hyperactivity) and more behavior problems on the CBCL (internalizing, externalizing and total behavior problems). Self-report from children on medication indicated they used lower levels of cognitive strategies (e.g. focus on thought/rumination, refocus on planning, and putting into perspective), as measured by the CERQ-k, compared to children not taking medication.

Parents were also asked about any past or current experience with mindfulness in their

family (including practices such as yoga or tai chi). Families who reported experience with mindfulness had parents who reported lower levels of stress (on difficult child, parent-child dysfunction, and total scales) compared to those without any experience. In addition, this group reported lower levels of experiential avoidance of difficult child emotion (e.g. higher levels of mindfulness) on the PAAQ.

For participants who were adopted, several adoption-specific demographic variables were assessed based on child's previous placement history. There was no relationship found between study measures at pre-test and number of placements prior to adoption, age when the child was first removed, estimated age at current placement, or the amount of time in out-of-home care.

Relationships of Measures at Pre-Test

The relationships among the CHAMP pre-measures were assessed with bivariate correlations. Significant relationships are shown in Table 5. Notably, children who reported higher levels of avoidance and fusion with difficult thoughts/feelings (as measured by the AFQ-Y) also tended to report lower levels of acceptance and mindfulness (as measured by the CAMM). This corresponds with what has been found by Greco et al. (2010) and lends support to the validity of these mindfulness constructs. In addition, children who reported using higher levels of negative emotion regulation strategies (as measured by the CERQ-k) tended to report higher levels of avoidance and fusion with difficult thoughts/feelings and lower levels of acceptance and mindfulness.

For parents, higher levels of reported avoidance of taking action in the context of difficult emotional experiences of their children (as measured by the PAAQ inaction scale) was associated with higher levels of reported parental stress and higher levels of parent-reported child inattention, executive functioning, and behavior problems. As is commonly found in other

studies, higher levels of reported parenting stress were associated with higher levels of parent-reported child behavior problems (as reported on the CBCL, CPRS-R, and BRIEF).

Immediate-Waitlist Analyses:

In order to compare pre-post changes on study measures in the immediate and waitlist conditions, regression analyses were conducted with post scores as the dependent variable and pre scores, condition and the interaction term of pre score and condition as independent variables. Pre scores were entered as Step 1 in the regression model, the condition was entered as Step 2, and the interaction term of pre score and condition was entered as Step 3. The final models of these analyses are summarized in Table 6.

Child Measures: For child-reported measures of cognitive emotion regulation (CERQ-k), no differences were found between the immediate and waitlist groups. Similarly, no differences were found between the groups on child-reported measures of mindfulness (AFQ and CAMM). For parent report of child executive functioning (BRIEF) and child behavior problems (CPRS-R, CBCL), no differences were found between the immediate and waitlist groups.

Parent measures: Reported differences in parental mindfulness (PAAQ) also yielded no significant differences between groups. For parental stress levels (as reported on the total score of the PSI), both the immediate and waitlist groups reported increases (non-significant) from Time 1 to Time 2, and the mean baseline score was higher for the immediate group. In the final model, study condition significantly predicted the variance in post-scores above and beyond baseline scores at the trend level ($t=-2.02$; $p=.06$) and the interaction between baseline scores and study condition was marginally significant ($t=1.95$; $p=.07$, 2% additional variance in post-scores explained). These findings suggest that for participants who had low baseline stress scores, at post-test parents in the waitlist group tended to report significantly higher levels of parental

stress compared to parents in the immediate group. However, as baseline scores increased, this difference at post-test became smaller and not significant.

C. **Pre-Post-Follow-up Changes in Full Sample**

Repeated measures ANOVA analyses were used to examine changes over the course of treatment for study completers (n=25). For both immediate and waitlist groups, study measures were sent to families who completed the intervention two months following the final session. Questionnaire data were returned by 22 out of the 25 participants (88% return rate). For these participants, ANOVA analyses were conducted with three time points: pre, post, and follow-up, and contrasts were used to determine when significant changes occurred. Results are summarized in Table 7. For those dependent variables that were significantly related to demographic characteristics, additional analyses were conducted with covariates included. Given the small sample size and large number of demographic characteristics examined (15 total), findings from these additional analyses should be considered a conservative estimate of effect.

Child measures:

Child report: Children reported on their use of cognitive emotion regulation strategies and their levels of mindfulness. For child reported measures of cognitive emotion regulation (CERQ-k), no significant changes were found from pre- to post-test. Similarly, there were no significant changes in child-reported mindfulness (as reported on the AFQ-Y and CAMM). Follow-up results suggested delayed treatment effects for child-reported measures. At follow-up, child-reported ratings of cognitive emotion regulation (as measured by CERQ-k) indicated that children reported using significantly fewer negative coping strategies for dealing with negative events (e.g. catastrophizing) compared to baseline. For child-reported measures of mindfulness (CAMM, AFQ), significant increases in mindfulness were detected from post-test to follow-up

and significant decreases in avoidance and fusion with negative thoughts/feelings from pre-test to follow-up.

Parent report of child: Parents reported on their child's executive functioning, ADHD symptoms, and behavioral problems. For parent report of child executive functioning (BRIEF), no significant changes were found from pre-test to post-test. For parent report of child ADHD symptoms, there was a significant decrease in total ADHD symptoms from pre- to post-test. For parent report of child behavior problems (CBCL), there was also a significant decrease in total problems and a trend level decrease in internalizing problems ($F= 3.72$; $p=.07$, partial eta squared=.14). In order to better understand what areas of problem behaviors decreased, repeated measures tests were also conducted for the DSM scales and subtests of the CBCL. Significant decreases were found for the anxious/depressed ($F=4.35$; $p=.05$, partial eta squared=.16) and thought problems ($F=5.84$ $p=.02$, partial eta squared=.20) subscales. Thought problems included symptoms such as obsessions and compulsions, strange behaviors/ideas and sleep problems.

Because children taking psychiatric medication had significantly higher ratings on the CPRS-R (Oppositional, Inattention, and ADHD subscales), the three CBCL broadbands and thought problems subscale at baseline, psychiatric medication status was entered as a covariate in a second set of analyses. For ADHD symptoms, the decrease from pre-test to post-test remained significant, and the interaction between medication status and time was not significant. Similarly, for total behavior problems, internalizing behavior problems, and thought problems (as measured by the CBCL) the decreases remained significant (trend level for internalizing) and the interactions between medication status and time were not significant.

At follow-up, additional parent-reported improvements in child executive functioning (as measured by the behavioral regulation and metacognition subscales on the BRIEF) were

identified. There was a significant decrease in reported behavior regulation difficulties from post-test to follow-up and pre-test to follow-up. When medication status was entered as a covariate, the decrease from post-test to follow-up remained significant but the decrease from pre-test to follow-up was reduced slightly to trend level significance (F=3.64; p=.07, partial eta squared=.16). There were no significant interaction effects between time and medication status, and both groups on and off medication followed a similar pattern of reported decreases in this area. For reported child metacognition deficits, there was not a significant group change, but a significant interaction between time and medication status was detected from pre-test to follow-up. Whereas ratings for non-medicated participants decreased from pre-test to post-test (from borderline clinical to non-clinical range), ratings for medicated participants increased in this domain (See Figure 1).

For parent report of child ADHD symptoms (CPRS-R), the significant decrease found in total ADHD symptoms from pre-test to post-test was maintained from pre-test to follow-up and a significant decrease in inattention symptoms from post-test to follow-up was identified. When medication status was entered as a covariate (for full ADHD scale only), the decrease in ADHD symptoms remained significant and there was no interaction effect between time and medication status.

For parent-report of child total behavior problems (CBCL), the significant decrease from pre-test to post-test was maintained at the trend level from pre-test to follow-up (F=4.04; p=.06, partial eta squared=.17). For reported child thought problems, the significant decrease was also maintained from pre-test to follow-up (F=9.22; p=.007, partial eta squared=.32), but the decrease for anxious/depressed behaviors was not maintained. Although a significant decrease in externalizing problems was not found at post-test, from pre-test to follow-up there was a reported

decrease at the trend level (F=3.10; p=.09, partial eta squared=.13). When medication status was entered as a covariate, the decreases for total behavior problems and thought problems remained significant and there were no significant interaction effects; however, the trend level significance for externalizing behavior problems was no longer found.

Overall, for child-reported measures effects were strongest from pre-test to follow-up, and an overall significant time effect was found for improvements on negative cognitive emotion regulation strategies (CERQ-k) and avoidance and fusion with difficult thoughts/feelings (AFQ). For parent-reported child measures, a significant total time effect was found for improvements in behavioral regulation (BRIEF) and ADHD symptoms (CPRS-R), and improvements in total behavior problems were also maintained at follow-up at the trend level.

Parent measures:

In addition to reporting about their child, parents also reported on their levels of mindfulness and stress related to parenting. A significant decrease in parental experiential avoidance related to tolerating the emotional experiences of their children (as measured by the unwillingness subscale on the PAAQ) was found from pre- to post-test, suggesting an increase in parental mindfulness over the course of treatment. At baseline, families without prior mindfulness experience and parents identified as homosexual rated higher levels of unwillingness on the PAAQ, and these two variables were entered as covariates in separate analyses. When the covariates were included, the decrease in experiential avoidance remained significant, and there were no significant interactions between time and these factors.

For reported parental stress levels, a significant increase as measured on the parental distress subscale of the PSI was found from pre- to post-test. No significant changes were found on the other four scales of the PSI. At post-test, parents of children taking medication had

significantly higher levels of reported stress than parents of non-medicated children and medication status was entered as a covariate in a second analysis. A significant interaction effect was detected, indicating that whereas the parents of children taking medication reported significantly increased levels of stress at post-test, the parents of non-medicated children tended to report similar levels of stress (see Figure 2).

At follow-up, the significant decrease in parental experiential avoidance related to tolerating the emotional experiences of their children (as measured by the unwillingness subscale on the PAAQ) was not maintained. For parental stress (as measured by the parental distress subscale on the PSI), the significant increase from pre-test to post-test was maintained at the trend level ($F=3.87$; $p=.06$, partial eta squared=.17) and there was no longer an interaction effect between time and medication status. The lack of interaction at follow-up seemed to be due to an increase in stress levels for parents of children not taking medication and a decrease in stress levels for parents of children taking medication, reducing the degree of difference between the two groups.

Overall, for parent measures there were no significant overall time effects. While parent mindfulness related to the willingness to tolerate difficult child emotion (PAAQ) increased at post-test, gains were not maintained at follow-up. The significant increases in parental stress reported at post-test were attributed to parents of children taking psychiatric medication, though this interaction was not seen at follow-up.

D. **Predictors of Outcome in Full Sample**

Engagement composite: In order to better understand what process factors might contribute to stronger or weaker outcomes for program completers, child participant engagement was investigated as a predictor of outcome in exploratory analyses. For these analyses, an

engagement composite was created with four variables—attendance, homework completion, average level of participation, and average level of disruption (see Methods for description of how composite was developed).

First, bivariate correlations were used to assess for significant relationships between the engagement composite and outcome measures (post-test and follow-up). For those pairs where significant correlations were found, regression analyses were conducted to examine whether the engagement composite predicted variance in outcomes above and beyond baseline scores of measures.

Results of the bivariate correlations between engagement variables and outcome measures are summarized in Table 8. Parents who reported higher levels of stress at post-test and follow-up tended to have children with significantly lower engagement composite scores. For parent-reported child measures, participants who were reported to have higher levels of inattention (as measured by the CPRS-R) at post-test tended to have significantly lower scores on the engagement composite. Similarly, participants reported to have higher levels of inattention and hyperactivity (on the CPRS-R) at follow-up tended to have significantly lower scores on the engagement composite. At follow-up, children who were reported to have higher levels of difficulties with metacognition (as measured by the BRIEF) also tended to have significantly lower engagement composite ratings.

Regression analyses indicated that the engagement composite predicted variance in parental distress post-test outcomes above and beyond baseline scores at the trend level ($t=-1.93$; $p=.07$, 3.6% additional variance explained). This suggests that participants rated as less engaged in the group had parents with higher levels of parental distress at post-test. However, when child medication status was included in the model, it predicted a significant amount of variance (7.4%,

p=.006) in parental stress outcome and the engagement composite was no longer a significant predictor. Thus, children on medication had parents with higher levels of parental stress, and this was more influential than the engagement rating of the child. The engagement composite also predicted variance in parent-reported child hyperactivity scores at follow-up above and beyond baseline ratings at the trend level (t= -1.97, p=.06; 10.6% additional variance explained). This suggests that participants rated as less engaged in the group had higher parent-reported levels of hyperactivity at follow-up. The engagement composite was not found to be a significant predictor of any other post-test or follow-up measure investigated.

Baseline behavioral functioning: Initial baseline child functioning was also investigated as a possible predictor of outcome at post-test and follow-up. Using baseline reported child externalizing problems, a dichotomous variable was created splitting participants into clinical (T score 64 or above) and non-clinical (below 64) groups. Repeated measures ANOVA analyses with all measures were conducted with clinical status entered as a between-subjects variable, and trend level interaction effects between time and clinical status were found for total and externalizing behavior problems (as measured on the CBCL) from pre-test to follow-up. Whereas the clinical group was reported to decrease in behavioral problems from pre-test to follow-up, there were not reported changes for the non-clinical group (See Figure 3 for externalizing dimension).

DISCUSSION

The overarching aim of the current study was to evaluate the feasibility and efficacy of a new mindfulness-based intervention for children at risk for, or exhibiting, externalizing behaviors and difficulties with emotion regulation. The content of the intervention was derived from multiple sources and was the first program to the author's knowledge combining elements of Acceptance and Commitment Therapy (ACT) and mindfulness for a youth population. The population was drawn from children adopted from foster care, a group at risk for emotion regulation difficulties, though in an effort to increase recruitment the criteria were broadened to include four non-adopted children as well. On baseline measures, participants did not differ by adoption status.

Results indicated support for the feasibility and acceptance of the program, with adequate levels of attendance and homework completion, and generally positive participant evaluations. Findings related to the impact of the intervention on mindfulness and behavioral outcomes were mixed. Very few differences in outcome were found between the immediate and waitlist groups, likely due at least in part to the small size of the waitlist group (n=7). The one marginal finding indicated that for participants who had low baseline stress scores, at post-test parents in the waitlist group tended to report significantly higher levels of parental stress compared to parents in the immediate group. However, for parents with higher baseline scores, this difference at post-test was smaller and non-significant.

Stronger effects were found when examining the outcomes of the full group of completers, though interpretation of these results must be tempered by the uncontrolled nature of the analyses. Results at post-test indicated a significant increase in reported parental mindfulness related to a willingness to tolerate children's difficult emotional experiences, and a significant

decrease in reported child behavior problems, specifically internalizing problems (trend level), anxious/depressed behaviors and thought problems (e.g. obsessions and compulsions and strange ideas).

There was some evidence to suggest that for difficulties with metacognition, involving the ability to plan/organize and monitor behavior, the intervention resulted in stronger effects for children not taking psychiatric medication. This may be related to the increased challenges for medicated children to retain these types of skills in a stimulating group setting. All but one of ten medicated children were taking medication to address ADHD symptoms, and it is possible that for some of these children the medication was not at its most effective during the hours of the evening group (e.g. children taking stimulants). Additionally, six of the nine children taking medication for ADHD were also taking additional medications to target mood symptoms, suggesting complex clinical presentations for these participants.

At the two month follow-up period, there was an 88% return rate and additional behavioral changes were identified. The gains in parent-reported thought problems and total child behavior problems were maintained, and parents reported significantly lower ADHD symptoms and behavior regulation difficulties for their child at follow-up. The gains in parental mindfulness were not maintained at follow-up, but additional significant increases in child-reported mindfulness were identified at follow-up, and children reported using significantly fewer negative cognitive emotion regulation strategies. These delayed effects suggest that for children in particular the impact of the treatment may not be maximized until after the intervention ends and there is a period of applying the skills learned in the group. Future studies should continue to include a follow-up period, and perhaps multiple follow-ups, to determine whether this pattern persists. Other treatment studies have identified additional effects of an

intervention at a follow-up assessment; in one study by Baucom, Sevier, Eldridge, Doss, and Christensen (2011), researchers found significant decreases in observed negativity and withdrawal from therapy termination through a 2-year follow-up.

Beyond identifying statistically significant changes in reported behavior following the intervention, it is important to consider the clinical significance as well. For the reported decreases in child behavior problems, ADHD symptoms, and behavioral regulation, effect sizes tended to be small according to guidelines established by Cohen (Cohen, 1988). For ADHD symptoms, mean t-scores at baseline were in the clinical range and shifted into the borderline range by follow-up. For total behavior problems and behavioral regulation, initial mean t-scores went from being in the high borderline range to the low borderline range by follow-up. In contrast, mean scores of internalizing symptoms started and ended in the non-clinical range, suggesting the identified changes may be less clinically relevant.

Predictors of treatment outcome, particularly factors related to child participant engagement and baseline clinical severity, were also explored. Engagement was examined as composite made up of four factors (attendance, homework completion, participation and disruption). Lower engagement scores were associated with higher parental distress at outcome, and it can be hypothesized that the characteristics of children with low engagement in the group may transfer to the home setting and contribute to their parent's level of stress. Alternatively, it is possible that parents who are distressed may not have the resources to help their child stay engaged. For example, engagement data indicated that parents who reported higher levels of stress also had children who completed less homework, and lack of parental involvement could be one reason for low homework completion. Lower engagement was also related to higher hyperactivity ratings at follow-up, predicting approximately 11% additional variance in follow-

up outcomes above and beyond baseline hyperactivity ratings. These results provide evidence that treatment engagement may be a meaningful factor to consider when evaluating outcomes for both parents and children.

Clinical severity was examined as a predictor of outcome by identifying participants with parent-reported clinical baseline levels of externalizing problems. On most outcome measures, clinical status did not influence the impact of the treatment. However, for externalizing behavior problems, participants in the clinical group decreased in this area while there was no reported change for participants in the non-clinical group. Given that the study aimed to target externalizing behaviors, it is useful to identify which participants may benefit the most from the intervention. Results suggesting that children with higher levels of baseline difficulties may improve more over the course of the study intuitively make sense since these children also have more room for growth than a non-clinical group.

Overall, results from this initial study support further inquiry into using ACT/mindfulness-based interventions for children with emotion regulation difficulties. Despite only meeting with parents for an introductory session and a mid-program check in, results indicated that parents increased their self-reported mindfulness skills related to their willingness to tolerate difficult child emotions. This suggests that parents may be an effective point of entry for intervention, and the program would benefit from having a concurrent parent group for teaching parents similar skills their children are learning as it applies to their roles as parents. Other treatment studies targeting child externalizing behavior problems have demonstrated clinical gains using parent training (e.g. Webster-Stratton & Reid, 2003; Anastopoulus & Farley, 2003), and there is some evidence suggesting that the combination of child and parent sessions yield the strongest results (Kazdin, 2003). The goals of a concurrent parent group would be

twofold—parents would be encouraged to serve as guides for their children in applying mindfulness skills and parents would also learn how to apply these skills to their own parenting challenges. In this type of group format, there may also be opportunities to practice mindfulness with children and parents together, modeling how they can use these skills as a family.

As parents need to be present to bring their children to the group, it may be most efficient to hold a concurrent group during that time period. Although this would require additional therapists to lead the parent group, some research indicates that concurrent parent and child groups can help limit parent attrition (Jensen & Grimes, 2010). An alternative possibility would be holding a day-long seminar over a weekend before the group starts, allowing parents to become well versed in the different CHAMP concepts in a concentrated period of time. However, there may be more logistical problems with this approach, as child care might be a problem unless it was provided by study staff. In addition, meeting over a period of time would allow parents to consolidate learning, practice skills, and have an opportunity to reflect on and thoughtfully refine intervention with the input and guidance from group leaders and members.

Although results suggested that this type of intervention is feasible with this population, behavior management was a serious consideration during the groups. In the group setting, participants tended to be easily distracted and provoked by each other. While this offered many opportunities to practice mindfulness in the moment and focus on bringing their attention back to the task at hand, it created challenges for teaching the content of the intervention. Behavioral reinforcement was a critical component of running the group effectively, and contingencies needed to be immediate and tied directly to behaviors. For youth with high levels of attention and oppositional behaviors, working toward a pizza party at the end of six weeks proved to be too far removed as a motivating factor. Additional techniques were needed to keep participants

on target during each group, either in the form of chocolate rewards or monetary rewards. Children were found to respond very well to earning a silver dollar for the first and second half of the group if they were able to earn a point for each activity of the group. Depending on the severity of the behavior problems, future groups should clearly outline rewards that can be earned at each group in addition to the larger group reward at the end of the program. It may also be worth considering whether the treatment program would work better in smaller groups or individually for children with these high levels of externalizing difficulties. Overall, it seemed the benefits of the group setting (e.g. sharing ideas and engaging in activities as a community) outweighed the drawbacks, but smaller groups or groups including more participants with subclinical levels of difficulties might mitigate the amount of redirection required by therapists.

Outcomes for the individual groups were examined to see if any patterns could be detected related to level of disruption (based on the engagement variable) and overall impact of the intervention on major measures of mindfulness (AFQ-Y, CAMM, and PAAQ) and behaviors (CPRS-R, CBCL, and BRIEF). In general, it appeared that groups with lower levels of disruption tended to show more mean level increases in mindfulness and improvements in behavior. In particular, the group with the highest level of disruption exhibited the lowest number of improved measures (two out of six key measures identified), and the group with the lowest level of disruption exhibited the highest number of improved measures (six out of six).

Given the challenges of keeping participants focused in the group, the six child sessions did not seem to be enough time to consolidate and help children internalize the mindfulness skills taught and introduced. Especially since the last session was largely a celebration (and time to complete post-questionnaires), there were only five content sessions covering various aspects of mindfulness. Leaders of the program agreed that participants could benefit from two to three

additional sessions for continued practice and application of the skills. For example, children only chose one behavioral commitment to engage in at the fifth session. It would be beneficial to have more sessions focused on making commitments related to externalizing difficulties andworking with sticky thoughts that arise when trying to follow through with these actions

In general, the flow of the sessions worked well, with a mix of hands-on activities and didactic portions of the group. However, children tended to be better at comprehending the experiential portions of the group as compared with some of the cognitive components. Participants would likely benefit from more review of the cognitive components and breaking the concepts down further to assist with comprehension. It was also clear that the review of home exercises was a critical way to engage participants and reinforce the concepts. The current manual did not allot sufficient time for this, and generally one of the activities would not be able to be completed as a result of the extra time taken for discussion of home exercises. Future iterations of the manual should provide ample time for homework review and move some activities to a later session or make certain activities optional if time is available.

A focus of ACT is on pursuing valued action, and this concept was introduced to children toward the end of the program. However, particularly for younger children, the idea of values seemed a bit abstract and disjointed from the previous work on sticky thoughts. Although it seems beneficial to interweave a discussion of values throughout the program, spending most of a session on this concept may have detracted from building upon the other skills learned. Values-driven action would be a useful component of continued work with parents, particularly in the context of connecting with how they would like to be as parents. For child participants, they would likely benefit from more concrete work related to using mindfulness to resist reacting in ways that lead to negative consequences for them.

Participants in the older range tended to have less difficulty with some of the cognitive components, and in general the content of the intervention seemed better suited for children in the 11-13 range. However, mindfulness and behavioral outcomes did not appear to differ by age of participants. The group content could be modified for younger children, but it was difficult for therapists to address the variety of developmental stages of participants. Future groups would benefit from a more narrow age range (e.g. ideally not more than two years apart). As an initial study, the focus was on recruiting sufficient participants, but a next step would be to refine the target group and adjust the curriculum accordingly.

Another consideration is the type of behavior problems targeted in the group. This initial study aimed to impact externalizing behavior problems in particular, but results (especially at post-test) tended to be more robust for internalizing symptoms. Most past research on ACT has focused on internalizing symptoms, and it may be that the techniques of defusing from difficult thoughts and feelings are a more natural fit for responding to internalizing difficulties versus externalizing difficulties. For externalizing symptoms, children need to use the skills they have learned to try and inhibit reactive behavior, a challenging task that is often made more difficult by symptoms of impulsivity. In contrast, when applying the strategies to symptoms of depression or anxiety, the focus is on allowing difficult thoughts and feelings to exist without interfering with valued action. In the current form of the intervention, children were asked to identify areas of their life they cared about (e.g. values) and how their actions created negative consequences that interfered with those values (e.g. being in detention rather than outside playing with friends). For children with primarily internalizing problems, a discussion of values would be similar but participants would be encouraged to examine how their thoughts and feelings dictate their actions (e.g. worried about asking a friend to play) and prevent them from engaging in activities

they would like to do. The negative consequences in these situations typically relate to a lack of action, rather than resulting in actions taken by children with primarily externalizing behavior problems.

Based on the initial CBCL findings in this study, adapting the program for targeting internalizing symptoms may be a promising direction worthy of future investigation. Indeed, the research base for acceptance and mindfulness-based treatments targeting youth seem to favor internalizing symptoms. In addition to case studies showing clinical improvement in school refusal and social anxiety using ACT-based treatments (Coyne, McHugh, & Martinez, 2011), Hayes and colleagues (2011) found evidence that an ACT treatment targeting depressive symptoms (in an adolescent psychiatric outpatient setting) resulted in stronger outcomes compared with a treatment as usual condition. Studies using a waitlist-control or comparison treatment have also identified reductions in depressive symptoms for at-risk minority and urban youth following mindfulness-based interventions (Mendelson, Greenberg, Dariotis, Gould, & Rhoades, 2010; Liehr & Diaz. 2010).

Strengths of the current intervention include acceptance of the model by co-therapists and participant families. In general, child participants were engaged with the material and able to grasp most of the major concepts. An additional strength of the program was its diverse and high-risk sample, including 25% LGBT families and over 50% non-Caucasian child participants (commonly seen demographics in families adopting children from foster care). Despite not having particular behavioral cut-offs for study inclusion, our recruitment from this at-risk, adopted sample resulted in participants with a high level of behavior problems. At baseline, mean levels of inattention and externalizing behavior problems were reported to be in the clinical range. Acceptance of the program by these families and the preliminary behavior outcomes

suggest that this type of intervention can be successfully implemented with children with complex backgrounds and clinical presentations. At the same time, the degree of clinical severity exhibited in some of the groups created challenges for time and behavior management that would require some modification in future groups with this population. Providing additional sessions for consolidating learning and incorporating parents more fully into the treatment could strengthen the effects for this high-risk group of children often exhibiting comorbid conditions.

There are several key ways future work in this area could build upon the current study. First, although the study utilized observational data and participant/parent report, measuring attention and regulation symptoms with a computerized task may yield additional information. For example, in a study by Zylowska et al. (2007), adult and adolescent participants with ADHD showed significant improvements in attentional conflict on a computerized Attention Network Task following an 8-week mindfulness intervention. However, it is unclear whether these effects could be achieved with a youth population with a variety of behavior problems. Second, collecting reports of child behavior from multiple informants (e.g. teachers) could help to create a more comprehensive picture of child behavior and allow for comparisons across settings. Third, findings related to engagement as a predictor of outcome might be strengthened by using a more standardized approach to evaluating and coding child (and parent) engagement behaviors.

A considerable limitation of the current study was its small waitlist group. Although the original design was a randomized waitlist-control study, recruitment challenges prevented us from maintaining the integrity of this model. With such a limited waitlist, our comparisons between groups lacked power and yielded few findings. Future studies should aim to recruit children from a larger network in order to recruit enough participants at one time to randomize them into immediate and waitlist groups. This may be more easily achieved when recruiting

from a less high-risk, multi-problem population, where barriers to joining a group can be significant (e.g. children often committed to another type of therapy). As a preliminary step, this study indicates that this type of intervention is a worthy area of continued exploration. However, it remains to be seen whether this type of intervention can create the same types of impact as other evidence-based approaches, and whether other behavioral targets might yield stronger findings.

Based on information gathered in this study, there are several follow-up studies that would be most useful to move forward in the exploration and validation of this intervention. Following modifications to the manual (e.g. adding two additional child sessions and reducing the emphasis on values in Session 5), a larger, randomized-controlled study with an adequate waitlist group should be designed. This design would also include an enhanced parental component, and the feasibility of running a concurrent parent group would be investigated. Recruitment should target a broader population of children 11-13 years old with sub-clinical and clinical levels of externalizing difficulties. If this study resulted in positive findings for increases in mindfulness and behavioral functioning, a follow-up study should compare CHAMP with an evidence-based cognitive-behavioral approach to externalizing problems that includes a parent training component (Pelham, Wheeler, & Chronis, 1998). If the dynamics of a group setting continued to create barriers for effectively implementing CHAMP, a follow-up study could examine the effects of the treatment delivered on an individual basis. A final important direction would be modifying CHAMP to target internalizing symptoms more directly, and conducting a pilot study with youth diagnosed with various anxiety and/or depressive disorders. With this group of studies, the effects of CHAMP for different populations would be further clarified, and the benefits of a more intensive parental component could be examined.

Table 1: Demographics for CHAMP sample

N=28		
Child Gender	Male Female	67.9% 32.1%
Child Race	African-American Caucasian Hispanic/Latino Biracial	35.7% 35.7% 25% 3.6%
Child Age (range 7-13 years)	Mean years (SD)	10.9 (1.6)
Child receiving psychiatric medication	Yes No	42.9% 57.1%
Child has a mental health diagnosis	Yes No	60.7% 39.3%
Child has ADHD	ADHD only ADHD with comorbid d/o	21.4% 21.4%
Child comorbid diagnosis with ADHD (n=6)	Externalizing d/o (ODD) Internalizing d/o (PTSD, Dep) Ext and Int d/o Asperger's/PDD-NOS	16.7% 33.3% 16.7% 33.3%
Child CBCL baseline externalizing score	Mean T-score (SD)	64.4 (11.2)
Child CBCL baseline internalizing score	Mean T-score (SD)	59.4 (9.6)
Child's Adoption Status	Adopted Not adopted	84.7% 14.3%
Primary Reporter's Gender	Female Male	74.1% 25.9%
Primary Reporter Sexual Orientation	Heterosexual Homosexual	74.1% 25.9%
Primary Reporter's Race	African-American Caucasian Hispanic/Latino Other	14.8% 74.1% 7.4% 3.7%
Primary Reporter's Employment Status	Employed outside home	63%
Primary Reporter's Education Level	High school/GED AA/vocational BA/BS Graduate degree	14.8% 7.4% 44.4% 33.3%

Table 2: Adoption characteristics for CHAMP sample

N=23		
Age child first removed from home (range 0 to 6 years)	Age in years (SD)	1.5 (1.6)
Reason for child removal	Neglect Bio parent substance use Neglect + bio parent substance use Physical abuse Other	28.6% 33.3% 19.0% 4.8% 14.3%
Biological parent substance use reported	Yes No	57.1% 42.9%
Time in out-of-home care prior to adoptive placement (range 0 to 48 months)	Mean number of months (SD)	14.1 (14.3)
Type of foster placement child received	Foster care home Relative or kinship foster care Group home Multiple types of placements	31.8% 13.6% 4.5% 50.0%
Number of placements child experienced (range 1 to 6)	1 placement 2-3 placements 4-6 placements	39.1% 26.1% 34.8%
Estimated age when child was placed in current home (range 0 to 7 years)	Mean age in years (SD)	3.0 (2.1)

Table 3: Attendance broken down by session

N=25	**Sn 1**	**Sn2**	**Sn3**	**Sn4**	**Sn5**	**Sn6**
Present	22 (88%)	23 (92%)	22 (88%)	24 (96%)	24 (96%)	23 (92%)
Absent	3 (12%)	2 (8%)	3 (12%)	1 (4%)	1 (4%)	2 (8%)

Table 4: Relationship between demographic variables and pre-test measures† for study completers (n=25)

Demographic Variable					
Child taking psychiatric medication	Higher CPRS-R (oppositional, inattention, and ADHD) t=2.32*, 2.22*, 2.56*	Higher PSI (parent-child dysfunction, difficult child, defensive responding, total) t=3.70**, 3.86**, 2.31*, 3.79**	Higher CBCL (internalizing, externalizing, total) t=2.45**, 3.61**, 3.85**	Lower CERQ-k (cognitive subscale) t= -2.46*	Higher BRIEF scores (behavioral regulation, metacognition, executive composite) t= 2.44*, 2.24*, 2.60*
Family experience with mindfulness (e.g. meditation, yoga, or tai chi)	Lower PAAQ (unwillingness, total) t=-2.15*, -2.13*,	Lower PSI (parent-child dysfunction, difficult child, total) t=-2.61*, -2.44*, -2.23*			
Parent Sexual Orientation (Homosexual)	Higher PAAQ (unwillingness) t=2.65*				
Child Age	CERQ-k (negative, cognitive) r=-.44*, -.41*				

*p<.05, **p<.01, ***p<.001

† Non-significant variables: child number of years in the home, time in out-of-home care, age when first removed from home, estimated age at current placement, number of placements prior to adoption, grade completed by parents, parent marital status, child race, child adoption status, child gender

Table 5: Bivariate correlations between CHAMP measures at pre-test

	PQT	PQI	PQU	AFQ	CAM	PSIPD	PSIPC	PSIDC	PSD	PSIT	CPO	CPI	CPH	CPA	CQP	CQN	CQC	CBI	CBE	CBT	BRB	BRM	BRG
PQT		.82***	.85***			.50**	.46*	.38*	.50**	.49**													
PQI			.39*			.63***	.58**	.57**	.65***	.66***				.39*			-.42*		.43*	.42*		.41*	.43*
PQU																							
AFQ					-.40*											.62**	.49*						
CAM																-.56**							
PSIPD							.55**	.69***	.97***	.81***	.42*	.41*		.45*			-.42*	.44*		.40*	.44*	.45*	.48*
PSIPC								.79***	.63***	.89***	.64***	.49*		.51**			-.55**	.49*	.80***	.75***	.66***	.57**	.66***
PSIDC									.78***	.95***	.60**	.39*		.47*			-.49*		.66***	.61***	.67***	.50**	.62**
PSID										.87***	.46*	.49*	.42*	.50**			-.45*	.44*	.39*	.48*	.51**	.50**	.55**
PSIT											.64***	.48**		.54**			-.55**	.48*	.68***	.67***	.67***	.57**	.67***
CPO												.59**	.44*	.61**			-.43*	.55**	.69***	.70***	.70***	.73***	.78***
CPI													.62**	.92***				.69***	.53**	.73***	.65***	.88***	.87***
CPH														.62**				.42*		.53**	.71***	.54**	.66***
CPA																		.66***	.59**	.77***	.69***	.89***	.89***
CQP																	.63***						
CQN																							
CQC																						-.43*	
CBI																			.57**	.77***	.46*	.65***	.63***
CBE																				.92***	.74***	.58**	.70***
CBT																					.76***	.78***	.85***
BRB																						.64***	.85***
BRM																							.95***
BRG																							

*p<.05, **p<.01,***p<.001

PQ: Parental Acceptance and Action Questionnaire (inaction, unwillingness, and total), AFQ: Avoidance and Fusion Questionnaire, CAMM: Child Acceptance and Mindfulness Measure, PSI: Parental Stress Index (parental distress, parent-child interaction, difficult child, defensive responding, total), CP: Conners' ADHD Scale (Oppositional, Inattention, Hyperactivity, ADHD total), CQ: Cognitive Emotion Regulation Questionnaire-Kids (negative, positive, and cognitive), CB=CBCL (internalizing, externalizing, total), BR: Behavior Rating Inventory of Executive Function (behavior regulation, metacognition, global executive composite)

Table 6: Immediate-Waitlist Comparisons

Study Measure	**B**	**SE B**	**β**	**Dependent Variable**
CERQ-k positive pre score Study Condition Pre score X Condition Rsq=.28	.57 1.94 .08	.45 18.75 .58	.39 .08 .12	CERQ-k positive post score
CERQ-k negative pre score Study Condition Pre score X Condition Rsq=.45	.96 9.86 -.56	.32 8.16 .34	**1.37**** .59 -1.23	CERQ-k negative post score
CERQ-k cognitive pre score Study Condition Pre score X Condition Rsq=.24	.58 14.53 -.34	.29 12.88 .38	.58 .65 .16	CERQ-k cognitive post score
AFQ pre score Study Condition Pre score X Condition Rsq=.34	1.29 17.50 -.85	.51 11.78 .55	**1.19*** .53 -.98	AFQ post score
CAMM pre score Study Condition Pre score X Condition Rsq=.12	.33 -1.80 -.06	.30 8.14 .29	.26 -.09 -.08	CAMM post score
BRIEF total pre score† Study Condition Pre score X Condition Rsq=.61	.86 16.39 -.08	.40 67.98 .42	**.86*** .24 -.19	BRIEF total post score
CPRS-R total pre score† Study Condition Pre score X Condition Rsq=.82	.63 -8.35 .27	.19 4.80 .21	**.66**** -.40 .37	CPRS-R total post score
CBCL total pre score† Study Condition Pre score X Condition Rsq=.77	1.05 5.68 -.19	.20 15.62 .24	**.99***** .09 -.22	CBCL total post score
PAAQ total pre score† Study Condition Pre score X Condition Rsq=.63	1.07 18.21 -.35	.30 18.05 .34	**1.05**** .78 -.80	PAAQ post score
PSI total pre score† Study Condition Pre score X Condition Rsq=.88	.74 -29.89 .32	.14 14.83 .17	**.71***** -.47 (p=.06) .53 (p=.07)	PSI total post score

*p<.05; **p<.01; ***p<.001

†Subscales of BRIEF, CBCL, CPRS-R, PAAQ, and PSI not shown (findings ns)

Table 7. Repeated measures (GLM) with pre-test, post-test, and follow-up scores in full sample of completers (n=25; 22 with all three data points)

Measure	Pre Mean (SD)	Post Mean (SD)	Follow-up Mean (SD)	F scores (overall, pre to post, post to f/u, pre to f/u)	Partial eta squared (overall, pre to pst, pst to f/u, pre to f/u)
Child Measures					
CERQ-k Positive	33.57 (7.92)	36.17 (11.71)	30.95 (9.05)	2.80, 1.40, 4.18, 1.92	.25, .06, .19, .10
CERQ-k Negative	28.57 (10.69)	25.74 (6.63)	24.53 (7.63)	**5.47***, 2.99, .49. **11.51****	.39, .12, .03, .39
CERQ-k Cognitive	34.13 (9.61)	32.17 (10.64)	30.74 (9.22)	1.53, .73, .04, 2.92	.08, .03, 0, .14
AFQ-Y	24.24 (14.12)	23.96 (14.19)	18.64 (9.41)	**3.97***, 0, 1.97, **7.35***	.28, 0, .09, .26
CAMM	25.44 (6.19)	24.36 (8.67)	27.91 (7.81)	2.10, .30, **4.41*,** .82	.17, .01, .17, .04
BRIEF Bx Reg	64.68 (11.56)	64.08 (14.97)	62.00 (14.48)	**4.21***, .10, **5.82*, 4.31***	.31, 0, .23, .18
BRIEF Metacog	65.84 (11.04)	66.36 (11.37)	65.05 (11.60)	1.67, .07, 2.86, 1.57	.08, 0, .13, .07
BRIEF Total	66.68 (11.33)	66.76 (12.85)	64.15 (13.46)	2.53, .002, **5.23*,** 3.00	.21, 0, .21, .13
CPRS-R Opp	66.76 (14.58)	63.42 (15.16)	65.32 (16.35)	1.11, 1.50, .02, 2.23	.10, .06, 0, .10
CPRS-R Inattention	67.76 (12.84)	66.38 (11.48)	64.00 (14.14)	**4.23***,.26**,** **8.65**, 4.39***	.17, .01, .29, .17
CPRS-R Hyp	66.36 (14.49)	63.96 (14.33)	64.09 (15.61)	.56, .58, .47, 1.16	.05, .02, .02, .05
CPRS-R Total ADHD	68.72 (12.87)	65.04 (12.29)	64.27 (14.50)	**4.24*,** **7.12*,**3.35, **8.59****	.30, .23, .14, .29
CBCL Int (T)	58.60 (9.66)	54.67 (10.14)	58.18 (12.36)	1.44, 3.72, .30, .94	.13, .14, .02, .05
CBCL Ext (T)	64.20 (11.04)	61.75 (12.19)	61.41 (12.70)	2.26, 2.30, .59, 3.10	.10, .09, .03, .13
CBCL Total (T)	63.60 (10.54)	60.63 (10.77)	60.82 (11.45)	2.27, **5.30*,** .07, 4.04	.19, .19, 0, .17
Parent Measures					
PAAQ Unwillingness	25.08 (6.76)	23.29 (6.03)	24.57 (6.48)	2.69, **6.47*,** 48, .86	.22, .22, .02, .04
PAAQ Inaction	25.50 (6.16)	26.29 (7.35)	26.67 (6.79)	.50, .63, .71, .007	.05, .03, .03, 0
PAAQ Total	50.58 (10.80)	49.58 (11.57)	51.24 (11.58)	.21, .46, .008, .37	.02, .02, 0, .02
PSI Parental Distress	25.37 (7.43)	27.25 (8.21)	28.67 (8.34)	3.08, **5.21*,**.11, 3.95	.25, .19, .01, .17
PSI Parent-Child Dysfunction	27.63 (9.50)	29.17 (10.08)	29.38 (9.28)	.92, 1.24, 1.10, .20	.09, .05, .05, .01
PSI Difficult Child	36.04 (11.30)	35.54 (12.25)	35.90 (10.68)	.55, .19, .13, 1.09	.06, .01, .01, .05
PSI Defensive Responding	16.13 (5.15)	16.58 (5.06)	17.48 (4.88)	.85, .67, .31, 1.74	.08, .03, .02, .08
PSI Total	89.04 (25.15)	91.96 (27.96)	93.95 (25.04)	.72, 1.55, .67, .61	.07, .06, .01, .01

*p<.05; **p<.01

Table 8: Significant bivariate correlations between engagement composite and outcome measures at post-test and follow-up

Engagement Variable	**Post-test Measures**	**Follow-up Measures**
Total engagement composite	PSI (parental distress and defensive responding) -.43*, -.44* CPRS-R (Inattention) -.50*	PSI (difficult child) -.43* CPRS-R (Inattention and Hyperactivity) -.43*, -.47* BRIEF (Metacognition) -.46*

*p<.05

Figure 1. Significant interaction effect from pre-test to follow-up on BRIEF Metacognition subscale for medicated (n=9) and non-medicated (n=11) children (F=7.57; p=.01, partial eta squared=.29)

BRIEF Metacognition Subscale

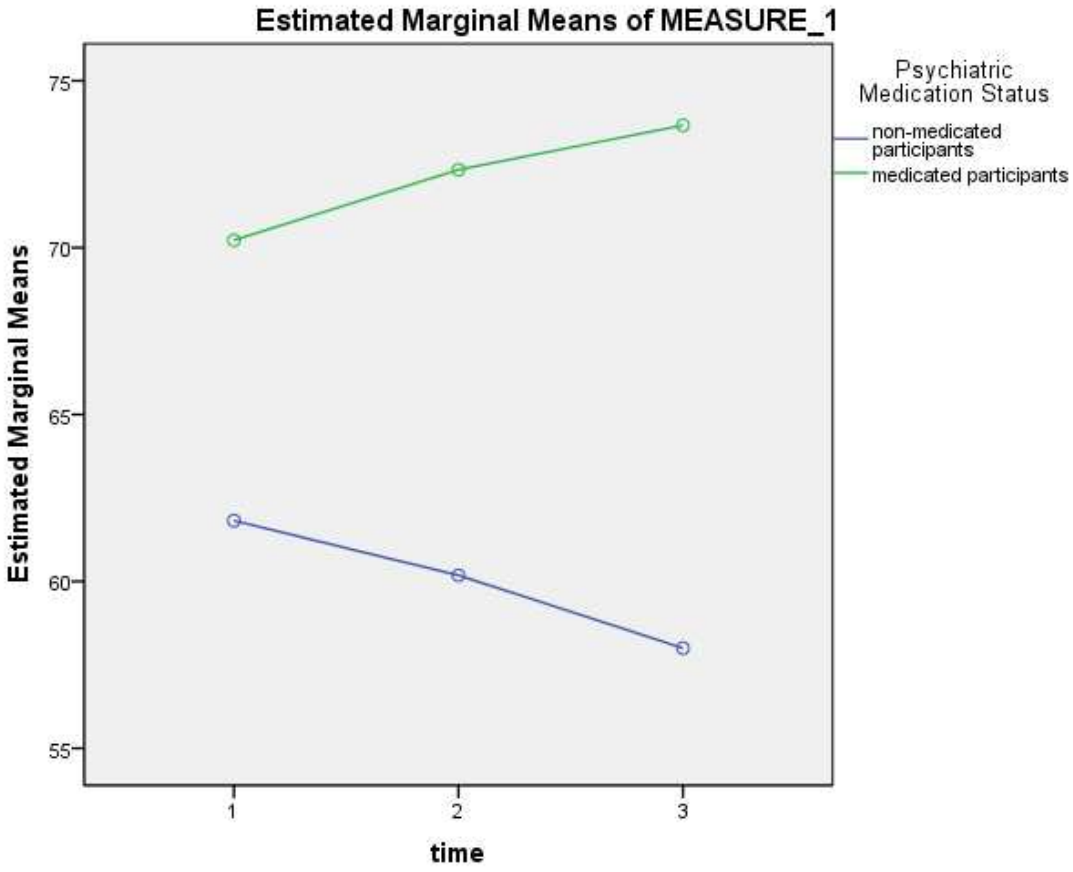


Figure 2. Significant interaction effect from pre-test to post-test on PSI parental distress subscale scores for parents of children taking (n=10) and not taking (n=15) psychiatric medication (F=7.89; p=.01, partial eta squared= .26)

Parental Stress Index (Parental Distress Subscale)

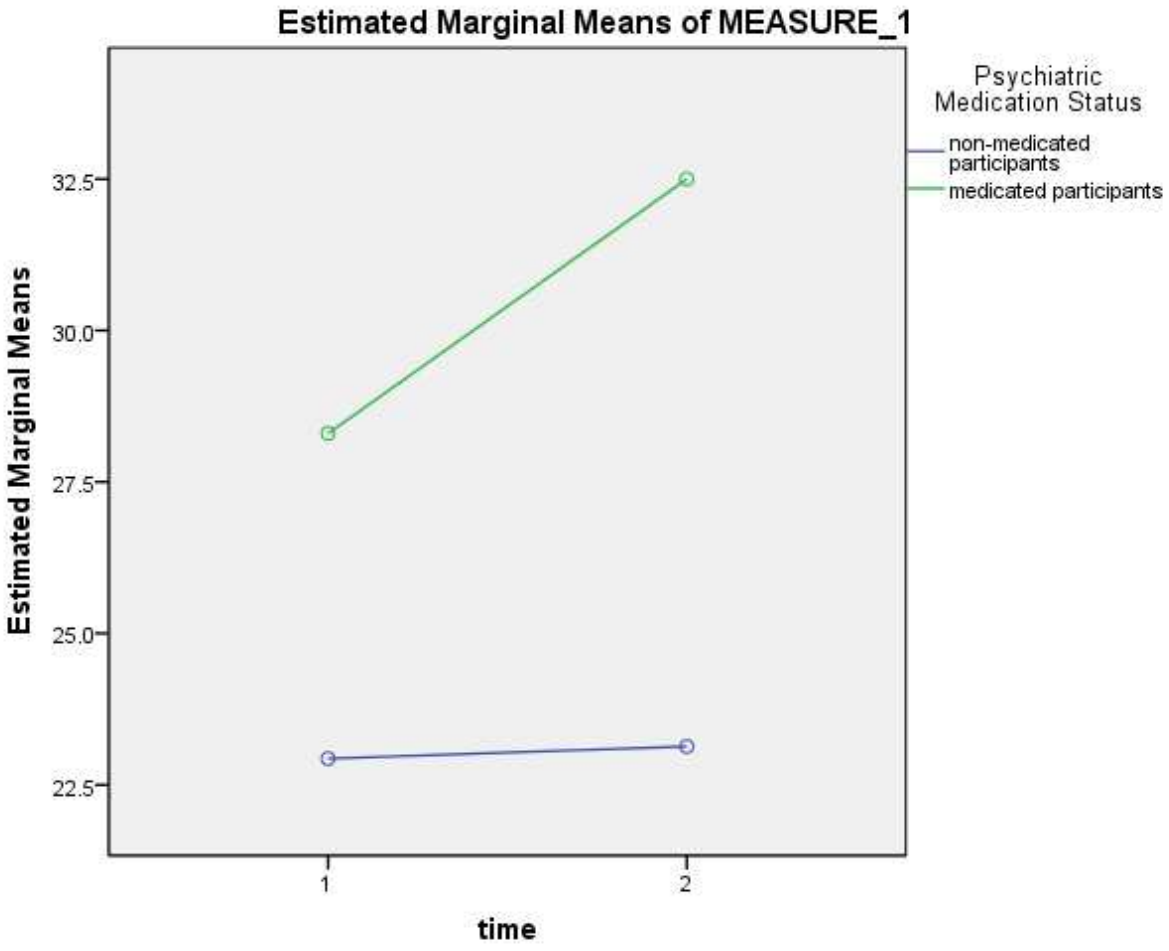
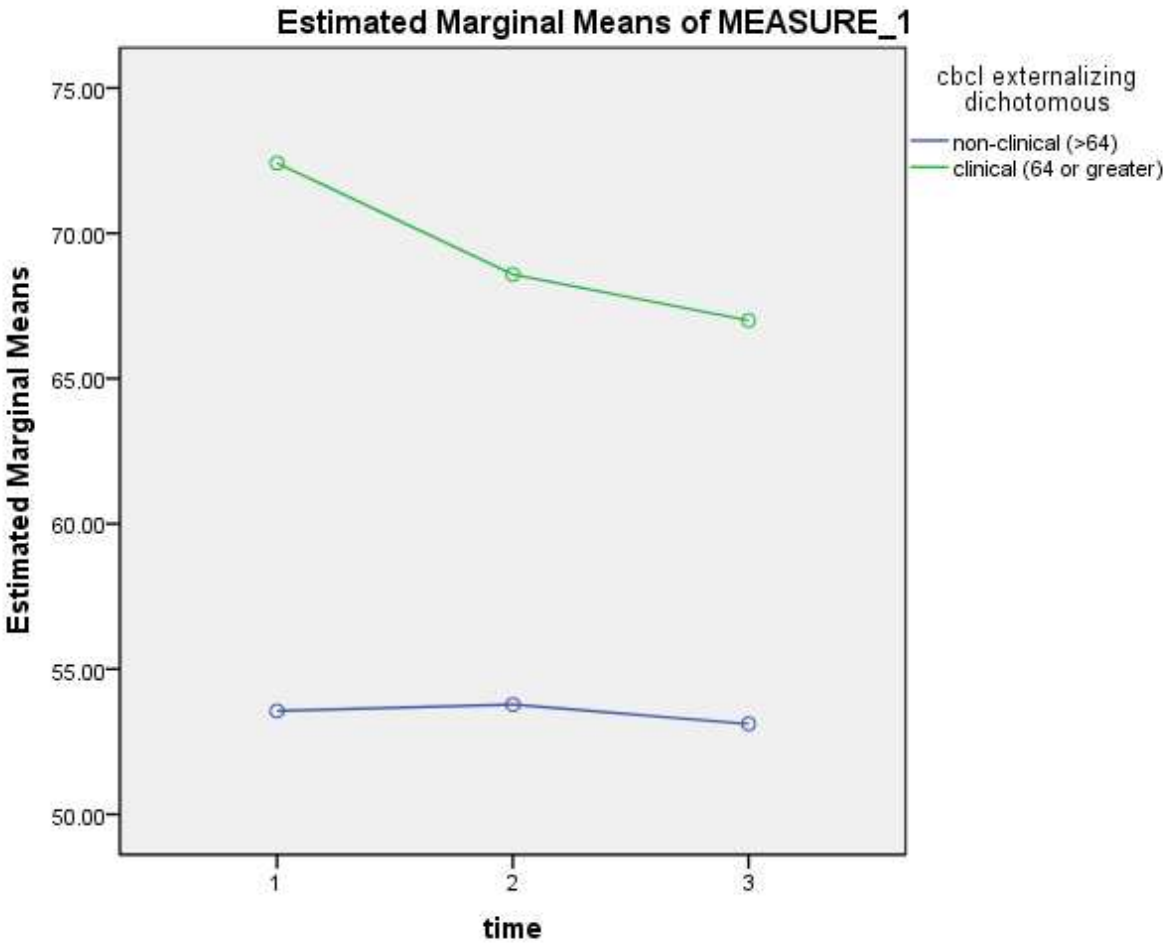


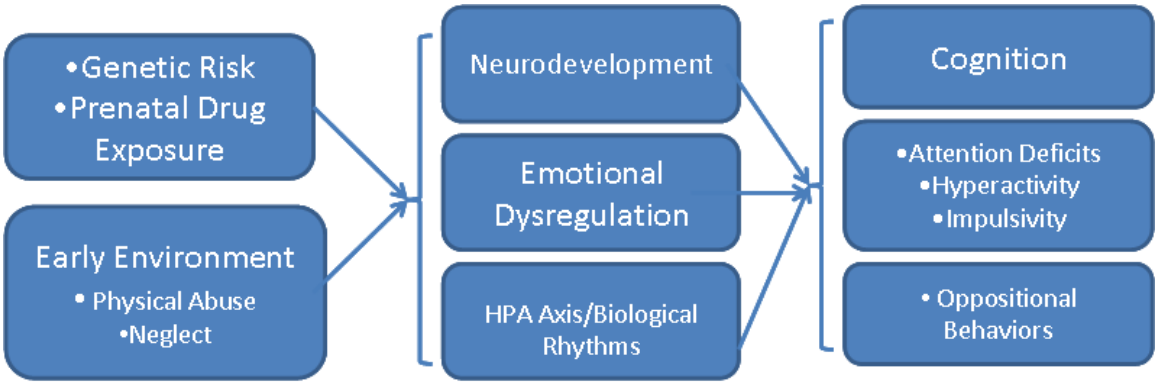
Figure 3. Significant interaction effect from pre-test to follow-up on CBCL externalizing scores for participants classified as clinical (n=13) and non-clinical (n=9) F=3.91, p=.06, partial eta squared=.17 (similar results found for CBCL total problems: F= 3.71, p=.07, partial eta squared=.16)

CBCL Externalizing Broadband

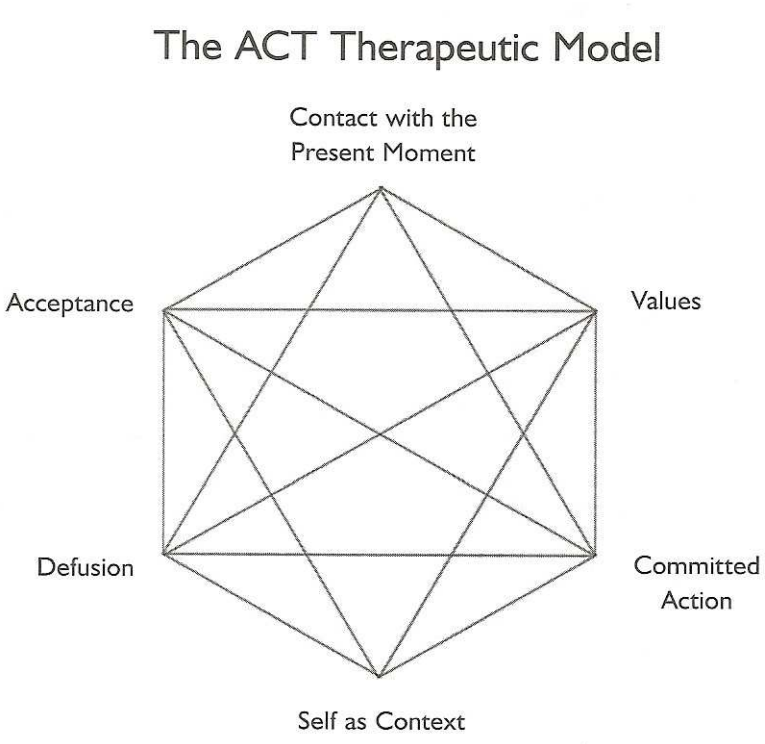


Appendix A

Theoretical model for study



Appendix B: ACT Model & Definitions



Acceptance: Active awareness of private thoughts and feelings without attempts to change them

Defusion: Stategies to alter function of thoughts and feelings rather than their content (e.g. recognizing thoughts as simply thoughts rather than literal truths)

Contact with the Present Moment: Non-judgmental contact with thoughts/feelings as they occur

Self as context: Viewing the self as a stable perspective or context, rather than overidentifying with the content of one's experience

Values: Meaningful domains of life identified by the individual to be pursued in an ongoing way

Committed Action: Purposeful action consistent with values

(O'Brien et al., 2008; Hayes et al., 2006)

Appendix C: Selected Measures

I. Demographics Measure

Family Demographics Form: Please complete the following based on your participating child. All responses will be kept confidential as outlined in the consent form.

Child Information:

1. Child's full name: _____
(Last, First, Middle)

1b. Birthdate of child: ___ ___ / ___ ___ / ___ ___

1c. How many years has child lived in home? _____
(# of years)

1d. Date of Adoption Finalization: ___ ___ / ___ ___ / ___ ___

1e. Child Race: (Please circle one)

1 = African American
2 = Asian
3 = Caucasian (White)
4 = Hispanic
5 = Native American
6 = Other (Please specify: _____

1f. Child's grade**: _____**

1g. Is your child currently in a gifted and talented program?

1= Yes
2= No

1h. Is your child currently receiving learning support/tutoring services?

1= Yes How many hours per week? _____
2= No

1i. Is your child receiving any other service in school?

_____

Child Mental Health Diagnoses:

_____

_____

Is your child receiving other additional therapeutic services? YES NO If yes, please describe treatment, frequency and duration:

Type of Therapy	Date Started	Frequency and Duration	What is therapy for?

Have you or your child had any experience with mindfulness? YES NO If yes, please describe:

_____
_____
_____

Is your child currently taking any medications? YES NO If yes, please list below

Type of Medication	Date Started	Dosage	What is medication used for?

Parent #1 Information

1. Parent's full name: _____Sex: _____
(Last, First, Middle)

1b. Birthdate of parent: ___ ___ / ___ ___ / ___ ___

1c. Parent Race: (Please circle one)
1 = African American
2 = Asian
3 = Caucasian (White)
4 = Hispanic
5 = Native American
6 = Other (Please specify: _____)

1d. Sexual Orientation:
1= Heterosexual
2=Bisexual
3=Homosexual
4=Prefer not to respond

Parent #2 Information

1. Caregiver's full name: _____Sex: _____
   (Last, First, Middle)
   1b. Birthdate of parent: ___ ___ / ___ ___ / ___ ___

1e. Parent Race: (Please circle one)

1 = African American
2 = Asian
3 = Caucasian (White)
4 = Hispanic
5 = Native American
6 = Other (Please specify: _____)

1d. Sexual Orientation:

1= Heterosexual
2=Bisexual
3=Homosexual
4=Prefer not to respond

Parent #1 Employment and Education Information

2. Current marital status:

1 = Married
2 = Separated/Divorced
3 = Widowed
4 = Never Married

3. Current employment status:
   3a. Currently working outside of home:

1= Yes
2= No

3b. Period of time worked at same job in the last 12 months: _____
(# of months)

3c. Please describe the kind of work that you do, including job title/position, name of company/employer, job responsibilities, and what employer makes or sells:

_____

_____

3d. Number of hours worked per week, on average: _____

3e. What are the work hours: (circle one)

1 = DAY (8 am to 5 p.m.) **3** = NIGHT (after 11 p.m.)
2 = EVENING (after 5 p.m.) **4** = VARIABLE (hours change)

4. Educational status:
   4a. Highest educational degree attained: (circle one)

1 = None	**4**= Vocational Degree
2 = High School Diploma or GED	**5** = Bachelor's Degree
	6 = Master's Degree
3 = Associate's Degree etc.	**7** = Ph.D., M.D., J.D.,

4b. Highest grade completed in school: (Please circle highest on scale)

5	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Or fewer							High School				College				Or more

Parent #2 Employment and Education Information

5. Current marital status:
   1 = Married
   2 = Separated/Divorced
   3 = Widowed
   4 = Never Married

6. Current employment status:
   6a. Currently working outside of home:
   1= Yes
   2= No

   6b. Period of time worked at same job in the last 12 months: _____
   (# of months)

   6c. Please describe the kind of work that you do, including job title/position, name of company/employer, job responsibilities, and what employer makes or sells:

_____

_____

   6d. Number of hours worked per week, on average: _____

   6e. What are the work hours: (circle one)

   1 = DAY (8 am to 5 p.m.) **3** = NIGHT (after 11 p.m.)
   2 = EVENING (after 5 p.m.) **4** = VARIABLE (hours change)

7. Educational status:

14a. Highest educational degree attained: (circle one)

1 = None	**4**= Vocational Degree
2 = High School Diploma or GED	**5** = Bachelor's Degree
	6 = Master's Degree
3 = Associate's Degree etc.	**7** = Ph.D., M.D., J.D.,

14b. Highest grade completed in school: (Please circle highest on scale)

5	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Or fewer							High School				College				Or more

Family Information:

8. Total gross annual income for your household:

	Yearly Estimates	Monthly Estimates	Weekly
01/A=	$0 to 15,000	0 to 1250	0 to 288
02/B=	$15,001 to 25,000	1251 to 2083	289 to 480
03/C=	$25,001 to 35,000	2084 to 2916	481 to 673
04/D=	$35,001 to 50,000	2917 to 4166	481 to 961
05/E=	$50,001 to 70,000	4167 to 5834	962 to 1346
06/F	$70,001 to 95,000	5835 to 7917	1347 to 1827
07/G=	> $ 95,000	> 7918	> 1828

9. Child's living arrangements:

9a. Child lives with: (circle one)

1 = both adoptive parents
2 = one adoptive parent (specify: _____)
3 = non-parent (specify relationship: _____)

9b. Any other adults living in the home: (circle all that apply)

1 = grandmother
2 = grandfather
3 = sibling (adult)
4 = other relative (specify: _____)
5 = friend of parent
6 = other (specify relationship: _____)
7 = more than one of the above (for coding purposes only)
9 = No other adults in home

9c. Names of the additional adults in the home:

_____
_____
_____

9d. Directly involved in child rearing activities for this child?:

_____
_____
_____

Number of biological children currently living in the home: _____
Number of adopted children currently living in the home: _____

Please list children living in your home starting with the oldest. Include gender, date of birth, his/her relationship to you and date he or she moved into the family home.

Child's name	**Gender** (M or F)	**Date of Birth**	**Relationship**	**Date moved into family home?**

Total number of children currently living in the home: _____
(This # includes target child)

Child Placement History:

How old was child when first removed from biological home? _____

If known, what were the reason(s) for removal?
_____
_____
_____
_____
_____

If substance exposure was reason for removal, what substances were used (if known)?
_____
_____
_____

Approximately how much time did child spend in out-of-home care prior to adoption?
_____

What type of placements has child had? Circle all that apply and provide approximate duration if known:

Foster family home From age _____ to _____

Relative or kinship foster care From age _____ to _____

Group home or children's institution From age _____ to _____

Other: _____ From age _____ to _____

Approximately how many placements did child have? _____

Date of adoption finalization: _____

II. Engagement Measures

CHAMP

Participant #: _____

Session #: _____

Date: _____

Therapist Completing Form: _____

ENGAGEMENT RATING:

Attendance: **YES NO**

Homework completed: **YES NO PARTIALLY**

Participation Rating: **1 2 3 4 5**
Low High

Disruption Rating: **1 2 3 4 5**
Low High

Therapist Notes:

CHAMP: Parent Final Evaluation

Name (optional): _____ *Date: _____*

Please choose the answer that best describes your experience.

1. **My overall feeling about the CHAMP group is:**
   ___ Strongly negative ___Negative ___Positive ___Strongly Positive

2. **I would recommend the CHAMP group to other parents**.
   ___ Strongly disagree ___Disagree ___Agree ___Strongly Agree

3. **I feel the CHAMP group has benefited me.**
   ___ Strongly disagree ___Disagree ___Agree ___Strongly Agree

4. **I feel the CHAMP group has benefited my child.**
   ___ Strongly disagree ___Disagree ___Agree ___Strongly Agree

5. **My child uses mindfulness skills taught during CHAMP.**
   ___ Strongly disagree ___Disagree ___Agree ___Strongly Agree

6. **I assisted my child with his/her home exercises.**
   ___ Most/all the time ___Some of the time ___A little of the time ___ Never

7. **After participating in this program, my child is better able to manage upsetting emotions:**
   ___ Strongly disagree ___Disagree ___Agree ___Strongly Agree

8. **As a result of the CHAMP group, my child's behavior has:**
   ___ Worsened ___Stayed the same ___Improved ___Improved a lot

9. **This program has helped my child at school:**
   ___ Strongly disagree ___Disagree ___Agree ___Strongly Agree

10. **This program has helped my child at home:**
    ___ Strongly disagree ___Disagree ___Agree ___Strongly Agree

11. **CHAMP group leaders were knowledgeable about the material discussed**
    ___ Strongly disagree ___Disagree ___Agree ___Strongly Agree

12. **CHAMP group leaders were effective at communicating information**
    ___ Strongly disagree ___Disagree ___Agree ___Strongly Agree

*How would you describe mindfulness?*_____
_____
_____
_____

What were the most helpful home exercises (Circle all that apply):

Mindful Awareness	**Observing vs. Drawing Conclusion**	**Mosquito Metaphor**
Mindful Witnessing	**Sticky Thoughts and Feelings**	**Commitment Exercise**

What were the least helpful home exercises (Circle all that apply):

Mindful Awareness	**Observing vs. Drawing Conclusion**	**Mosquito Metaphor**
Mindful Witnessing	**Sticky Thoughts and Feelings**	**Commitment Exercise**

Please include any comments that you wish to share about your experience with this group:

_____
_____
_____
_____
_____

Children Adapting Mindfulness Practices Program Overview: 8 week program—1 orientation session, 6 child sessions and 2 parent sessions (one individual and one combined with child)

I. **WEEK 1: Youth/Parent Session 1a:** Orientation, Consents/Assents and pre-questionnaires

II. **WEEK 2: Parent Session 1b:** Introduction to goals/principles of program

III. **WEEK 3: Youth Session 1b:** Youth introduction to program and introduction to mindful awareness exercises

IV. **WEEK 4: Youth Session 2:** Learning to distinguish between description vs. drawing conclusions (judgment)

V. **WEEK 5: Youth Session 3:** Learning about "sticky" thoughts and feelings and practicing acceptance

VI. **WEEK 6: Parent Session 2:** Reviewing program principles and identifying goals / **Youth Session 4:** Increasing acceptance with defusion

VII. **WEEK 7: Youth Session 5:** Values—what do I care about?

VIII. **WEEK 8: Youth/Parent Session 6:** Celebration of end of program/post-questionnaires

8 Week F/U: Packet of questionnaires sent to families to complete and return to TIES.

REFERENCES

Abdin, R.R. (1995). Parenting Stress Index, Third Edition: Professional Manual. Odessa, FL: Psychological Assessment Resources, Inc.

Achenbach, T.M. (1991). *Manual for the child behavior checklist/4-18 and 1991 profile*. Burlington, University of Vermont, Department of Psychology.

Achenbach, T.M, & Rescorla, L.A. (2001). *Manual for the ASEBA School-Age Forms & Profiles*. Burlington: University of Vermont, Research Center for Children, Youth, & Families.

Albert, V. (1994). Explaining growth in the number of child abuse and neglected reports and in foster care caseload. In R.P. Barth, J.D. Berrick, and N. Gilbert (Eds.), *The child welfare research review* (pp. 218-243). New York: Columbia University Press.

Anastopoulus, A.D., & Farley, S.E. (2003). A cognitive-behavioral training program for parents of children with Attention-Deficit/Hyperactivity Disorder. In A.E. Kazdin and J.R. Weisz (Eds.), *Evidence-Based Psychotherapies for Children and Adolescents.* (pp. 187-203). New York, NY: The Guilford Press Inc.

Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Barrow Heaton, M.B., Kidd, K., Bradley, D., Paiva, M., Mitchell, J., & Walker, D.W. (1999). Prenatal ethanol exposure reduces spinal cord motoneuron number in the fetal rat but does not affect GDNF target tissue in protein. *Developmental Neuroscience, 21,* 444-452.

Baucom, K.J.W., Sevier, M., Eldridge, K.A., Doss, B.D., & Christensen, A. (2011). Observed communication in couples two years after Integrative and Traditional Behavioral Couple

Therapy: Outcome and link with five-year follow-up. *Journal of Consulting and Clinical Psychology, 79,* 565-576.

Baydar, N., Reid, M.J., & Webster-Stratton, C. (2003). The role of mental health factors and program engagement in the effectiveness of a preventive parenting program for Head Start mothers. *Child Development, 74,* 1433-1453.

Berry, M., & Barth, R.P. (1989). Behavior problems of children adopted when older. *Children and Youth Services Review, 11,* 221-238.

Berry, M. (1992). Contributors to adjustment problems of adoptees: A review of the longitudinal research. *Child & Adolescent Social Work Journal, 9,* 525-540.

Biegel, G.M., Brown, K.W., Shapiro, S.L., & Schubert, C. (2009). Mindfulness-based stress reduction for the treatment of adolescent psychiatric outpatients: A randomized clinical trial. *Journal of Clinical and Consulting Psychology, 77,* 855-866.

Breslau, N., Brown, G.G., DelDotto, J.E., Kumar, S., Ezhuthacan, S., Andreski, P., & Hunagle, K.G. (1996). Psychiatric sequelae of low birth weight at 6 years of age. *Journal of Abnormal Child Psychology, 24,* 385-400.

Brinkmeyer, M.Y., & Eyberg, S.M. (2003). Parent-child interaction therapy for oppositional children. In A.E. Kazdin and J.R. Weisz (Eds.), *Evidence-Based Psychotherapies for Children and Adolescents.* (pp. 204-223). New York, NY: The Guilford Press Inc.

Brodzinsky, D.M., Schechter, D.E., Braff, A.M., & Singer, L.M. (1984). Psychological and academic adjustment in adopted children. *Journal of Consulting and Clinical Psychology, 52,* 582-590.

Burke, C. (2010). Mindfulness-based approaches with children and adolescents: A preliminary review of current research in an emerging field. *Journal of Child and Family Studies, 19,* 133-144.

Campis, L.K., Lyman, R.D., & Prentice-Dunn, S. (1986). The Parental Locus of Control Scale: Development and validation. *Journal of Clinical Child Psychology, 15,* 260-267.

Cernerud, L., Eriksson, M., Jonnson, B., Stenneroth, G., & Zetterstrom, R. (1996). Amphetamine addiction during pregnancy: 14-year follow up of growth and school performance. *Acta Paediatrics, 85,* 204-208.

Chang, L., Smith, L.M., LoPresti, C., Yonekura, M.L., Kuo, J., Walot, I., & Ernst, T. (2004). Smaller subcortical volumes and cognitive deficits in children with prenatal methamphetamine exposure. *Psychiatry Research, 132,* 95-106.

Chang, L., Alicata, D., Ernst, T., & Volkow, N. (2007) Structural and metabolic brain changes in the striatum associated with methamphetamine abuse. *Addiction, 10* (Suppl. 1), 16-32.

Chamberlain, P., & Smith, D. K. (2003). Antisocial behavior in children and adolescents: The Oregon Multidimensional Treatment Foster Care Model. In A. E. Kazdin & J. R. Weisz (Eds.), *Evidencedbased psychotherapies for children and adolescents* (pp. 282–300). New York, NY: Guilford Press Inc.

Chambless, D. L., & Hollon, S. D. (1998). Defining empirically supported therapies. *Journal of Consulting and Clinical Psychology, 66,* 7–18.

Cheron, D. M., Ehrenreich, J. T., & Pincus, D. B. (2009). Assessment of parental experiential avoidance in a clinical sample of children with anxiety disorders. *Child Psychiatry and Human Development, 40,* 383-403.

Chiriboga, C.A. (2003). Fetal alcohol and drug effects. *Neurologist, 9,* 267-279.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. Hillsdale, New Jersey: Lawrence Erlbaum Associates, Publishers.

Conners, C.K. (1997). Manual for the Conners' Rating Scale-Revised. North Tonawanda, NY: Multi-Health Systems.

Conners, N.A., Bradley, R.H., Mansell, L.W., Liu, J.Y, Roberts, T.J., Burgdorf, K., & Herrell, J.M. (2004). Children of mothers with serious substance abuse problems: An accumulation of risks. *The American Journal of Drug and Alcohol Abuse,* 30, 85-100.

Coyne, L.W., Cheron, D., & Ehrenreich, J.T. (2008). Assessment of acceptance and mindfulness processes in youth. In L.A. Greco and S.P Hayes (Eds.), *Acceptance and mindfulness treatments for children and adolescents*. (pp. 38-59). Oakland, CA: New Harbinger Publications Inc.

Coyne, L.W., McHugh, L., & Martinez, E.R. (2011). Acceptance and commitment therapy (ACT): Advances and applications with children, adolescents, and families. *Child and Adolescent Psychiatric Clinics of North America, 20,* 379-399.

Crea, T.M., Guo, S., Barth, R.P., Brooks, D. (2008) Behavioral outcomes for substance-exposed adopted children: Fourteen years postadoption. *American Journal of Orthopsychiatry, 78,* 11-19.

Dow-Edwards, D., Mayes, L., Spears, L., & Hurd, Y. (1999). Cocaine and development: clinical, behavioral, and neurobiological perspectives—a symposium report. *Neurotoxicology and Teratology, 21,* 481-490.

Dwyer, J.B., Broide, R.S., & Leslie, F.M. (2008). Nicotine and brain development. *Birth Defects Research Part C: Embryo Today, 84,* 30-44.

Ehrenreich, J.T., & Cheron, D.M. (2005). Parental Acceptance and Action Questionnaire. Questionnaire requested and received from Daniel M. Cheron, Department of Psychology, Boston University.

Eyberg. S.M., Nelson, M.N., & Boggs, S.R. (2008). Evidence-based psychosocial treatments for children and adolescents with disruptive behavior. *Journal of Clinical Child and Adolescent Psychology, 37,* 215-237.

Fabiano, G.A., Pelham, W.E., Coles, E.K., Gnagy, E.M., Chronis-Tuscano, A., O'Connor, B.C. (2009). A meta-analysis of behavioral treatments for attention-deficit/hyperactivity disorder. *Clinical Psychology Review, 29,* 129-140.

Flook, L., Smalley, S.L., Kitil, M.J., Galla, B.M., Kaiser-Greeland, S., Locke, J., Ishijama, E., & Kasari, C. (2010). Effects of mindful awareness practices on executive functions in elementary school children. *Journal of Applied School Psychology, 26,* 70-95.

Garnefski, N., Rieffe, C., Jellesma, F., Meerum Terwogt, M., & Kraaij, V. (2007). Cognitive emotion regulation strategies and emotional problems in 9-11-year-old children. *European Child Adolescent Psychiatry, 16,* 1-9.

Gioia, G.A., Isquith, P.K., Guy, S.C., & Kenworthy, L. (2000). *Behavior Rating Inventory of Executive Function.* Odessa, FL: Psychological Assessment Resources, Inc.

Gioia, G.A., Isquith, P.K., Kenworthy, L., & Barton, R.M. (2002). Profiles of everyday executive function in acquired and developmental disorders. *Child Neuropsychology, 8,* 121-137.

Greco, L.A., Murell, A.R., & Coyne, L.W. (2005). Avoidance and Fusion Questionnaire for Youth. Available from the first author and online at www.contextualpsychology.org.

Greco, L.A., Lambert, W., & Baer, R.A. (2008). Psychological inflexibility in children and adolescence: development and evaluation of the Avoidance and Questionnaire for Youth. *Psychological Assessment, 20*, 93-102.

Greco, L.A., Smith, G., & Baer, R.A. (2010). Assessing mindfulness in children and adolescents: Development and validation of the Children's Acceptance and Mindfulness Questionnaire (manuscript under review). Questionnaire requested and used with permission by R.A. Baer.

Groze, V. (1996). A 1 and 2 year follow-up study of adoptive families and special needs children. *Child and Youth Services Review, 18*, 57-82.

Hart, J., Gunnar, M., & Cicchetti, D. (1996). Altered neuroendocrine activity in maltreated children related to symptoms of depression. *Development and Psychopathology, 8*, 201-214.

Haydicky, J., Wiener, J., Badali, P., Milligan, K., & Ducharme, J.M. (2012). Evaluation of a mindfulness-based intervention for adolescents with learning disabilities and co-occurring ADHD and anxiety. *Mindfulness, 3*, 151-164.

Hayes, L., Boyd, C.P., & Sewell, J. (2011). Acceptance and commitment therapy for treatment of adolescent depression: A pilot study in a psychiatric outpatient setting. *Mindfulness, 2*, 86-94.

Hayes, S.C., Strosahl, K.D., & Wilson, K.G. (1999). *Acceptance and commitment therapy: An experiential approach to behavioral change.* New York: Guilford.

Hayes, S.C., Strosahl, K.D., Wilson, K.G., Bissett, R.T., Pistorello, J., Toarmino, D., Polunsy, M.A., Dykstra, T.A., Batten, S.V., Bergan, J., Stewart, S.H., Zvolensky, M.J., Eifert, G.H., Bond, F.W., Forsyth, J.P., Karekla, M., & McCurry, S.M. (2004). Measuring

experiential avoidance: A preliminary test of a working model. *The Psychological Record, 54,* 553-578.

Hayes, S.C., Masuda, A., Bissett, R., Luoma, J., Guerrero, L.F. (2004). DBT, FAP, and ACT: How empirically oriented are the new behavior therapy technologies? *Behavior Therapy, 35,* 35-54.

Hayes, S.C., Luoma, J.B., Bond, F.W., Masuda, A., & Lillis, J. (2006). Acceptance and Commitment Therapy: model processes and outcomes. *Behavior Research and Therapy, 44,* 1-25.

Hildyard, K.L., & Wolfe, D.A. (2002). Child neglect: developmental issues and outcomes. *Child Abuse & Neglect, 26,* 679-695.

Huey, W. C., & Rank, R. C. (1984). Effects of counselor and peer-led group assertive training on black-adolescent aggression. *Journal of Counseling Psychology, 31,* 95–98.

Jensen, S.A. & Grimes, L.K. (2010). Increases in parent attendance to behavioral parent training due to concurrent child treatment groups. *Child Youth Care Forum, 39,* 239-251.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice, 10,* 144-156.

Kaufman, J.G., & Widom, C.S. (1999). Childhood victimization, running away, and delinquency. *Journals of Research in Crime and Delinquency,* 36, 347-370.

Kazdin, A.E., Esveldt-Dawson, K., French, N.H., & Unis, A.S. (1987). The effects of parent-management training and problem-solving skills training combined in the treatment of antisocial child behavior. *Journal of the American Academy of Child and Adolescent Psychiatry, 26,* 416-424.

Kazdin, A. E. (2003). Problem-solving skills training and parent management training for conduct disorder. In A. E. Kazdin & J. R. Weisz (Eds.), *Evidence-based psychotherapies for children and adolescents* (pp. 241–262). New York, NY: Guilford Press Inc.

Kim-Cohen, J., Caspi, A., Taylor, A., Williams, B., Newcombe, R., Craig, I.W., & Moffitt, T.E. (2007). MAOA, early adversity, and gene-environment interaction predicting children's mental health: New evidence and meta-analysis. *Molecular Psychiatry, 11,* 903-913.

Lewis, E.E., Dozier, M., Ackerman, J., & Sepulveda-Kozakowski, S. (2007). The effect of placement instability on adopted children's inhibitory control abilities and oppositional behavior. Developmental Psychology, 43, 1415-1427.

Liehr, P., & Diaz, N. (2010). A pilot study examining the effect of mindfulness on depression and anxiety for minority children. *Archives of Psychiatric Nursing, 24,* 69-71.

Linares, T.J., Singer, L.T., Kirchner, H.L., Short, E.J., Min, M.O., Hussey, P., & Minnes, S. (2006). Mental health outcomes of cocaine-exposed children at 6 years of age. *Journal of Pediatric Psychology, 31,* 85-97.

Lochman, J. E., Barry, T. D., & Pardini, D. A. (2003). Anger control training for aggressive youth. In A. E. Kazdin & J. R. Weisz (Eds.), *Evidenced-based psychotherapies for children and adolescents* (pp. 263–281). New York, NY: Guilford Press Inc.

Manly, J.T., Kim, J.E., Rogosch, F.A. & Cicchetti, D. (2001). Dimensions of child maltreatment and children's adjustment: contributions of developmental timing and subtype. *Development and Psychopathology, 13,* 759-782.

Maxfield, M.G., & Widom, C.S. (1996). The cycle of violence: revisited six years later. *Archives of Pediatrics and Adolescent Medicine, 150,* 390-395.

McCart, M.R., Priester, P.E., Davies, W.H., & Azen, R. (2006). Differential effectiveness of behavioral parent-training and cognitive-behavioral therapy for antisocial youth: A meta-analysis. *Journal of Abnormal Child Psychology, 34,* 527-543.

Mendelson, T., Greenberg, M.T., Dariotis, J.K., Gould, L.F., Rhoades, B.L., & Leaf, P.J. (2010). Feasibility and preliminary outcomes of a school-based mindfulness intervention for urban youth. *Journal of Abnormal Child Psychology, 38,* 985-994.

Miller, G.E., & Prinz, R.J. (1990). Enhancement of social learning family interventions for childhood conduct disorder. *Psychological Bulletin, 108,* 291-307.

MTA Cooperative Group (1999). A 14-month randomized clinical trial of treatment strategies for Attention-Deficit/Hyperactivity Disorder. *Archives of General Psychiatry, 56,* 1073-1086.

Murrell, A.R., & Scherbarth, A.J. (2006). State of the research and literature address: ACT with children, adolescents, and parents. *International Journal of Behavioral Consultation and Therapy, 2.*

Napoli, M., Krech, P.R., & Holley, L.C. (2005). Mindfulness training for elementary school students: The attention academy. *Journal of Applied School Psychology, 21*, 99-125.

Needell, B. & Barth, R.P. (1998). Infants entering foster care compared to other infants using birth status indicators. *Child Abuse & Neglect*, 22(12), 1179-1187.

O'Brien, K.M., Larson, C.M., & Murrell, A.R. (2008). Third-wave behavior therapies for children and adolescents: Progress, challenges, and future directions. In L.A. Greco and S.P Hayes (Eds.), *Acceptance and mindfulness treatments for children and adolescents*. (pp. 15-35). Oakland, CA: New Harbinger Publications Inc.

Ozer, E., Sarioglu, S., & Gure, A. (2000). Effects of prenatal ethanol exposure on neuronal migration, neurogenesis, and brain mylelination in the mice brain. *Clinical Neuropathology, 19,* 21-25.

Pagliaro, A.M., & Pagliaro, L.A. (1997). Teratogenic effects of in utero exposure to alcohol and other abusable psychotropics. In M.M. Haack (Ed.), *Drug dependent mothers and their children: Issues in public policy and public health*. New York, NY: Springer Publishing.

Paz, R., Barsness, B., Martenson, T., Tanner, D., & Allan, A.M. (2007). Behavioral teratogenicity induced by nonforced maternal nicotine consumption. *Neuropsychopharmacology, 32*, 693-699.

Pelham, W.E., Wheeler, T., & Chronis, A. (1998) Empirically supported psychosocial treatments for attention deficit hyperactivity disorder. *Journal of Clinical Child Psychology, 27,* 190-205.

Pollack, S.D. (2008). Mechanisms linking early experience and the emergence of emotions: Illustrations from the study of maltreated children. *Current Directions in Psychological Science, 17,* 370-375.

Pollack, S.D., & Kistler, D.J. (2002). Early experience is associated with the development of categorical representations for facial expressions of emotion. *Proceedings of the National Academy of Science, USA, 99,* 9072-9076.

Reijneveld, S.A., de Kleine, M.J.K., van Baar, A.L., Kollee, L.A.A., Verhaak, C.M., Verhulst, F.C., & Verloove-Vanhorick, S.P. (2006). Behavioural and emotional problems in very preterm and very low birthweight infants at age 5 years. *Archives of Disease in Childhood—Fetal and Neonatal Edition, 91,* F423-F428.

Repetti, R.L., Taylor, S.E., & Seeman, T. (2002). Risky families: Family social environments and the mental and physical health of offspring. *Psychological Bulletin, 128,* 330-366.

Rivkin, M.J., Davis, P.E., Lemaster, J.L., Cabral, H.J., Warfield, S.K., Mulkern, R.V., Robson, C.D., Rose-Jacobs, R., Frank, D.A. (2008). Volumetric MRI study of brain in children

with intrauterine exposure to cocaine, alcohol, tobacco, and marijuana. *Pediatrics, 121,* 741-750.

Rosenthal, J.A., & Groze, V. (1994). A longitudinal study of special-needs adoptive families. *Child Welfare, 73*, 689-706.

Rubin, D.M, Alessandrini, E.A., Feudtner, C., Mandell, D.S., Localio, A.R., Hadley, T. (2004). Placement stability and mental health costs for children in foster care. *Pediatrics, 113,* 1336-1341.

Saltzman, A., & Golden, P. (2008). Mindfulness based stress reduction for school-age children. In L.A. Greco and S.P Hayes (Eds.), *Acceptance and mindfulness treatments for children and adolescents*. (pp. 163-186). Oakland, CA: New Harbinger Publications Inc.

Semple, R.J., Lee, J., Miller, LF., & Rosa, D. (2010). A randomized trial of mindfulness-based cognitive therapy for children: Promoting mindful attention to enhance emotional-resiliency in children. *Journal of Child and Family Studies, 19*, 218-229.

Sharma, A.R., McGue, M.K., Benson, P.L. (1996). The emotional and behavioral adjustment of United States adopted adolescents: Part II. Age at adoption. Children *and Youth Services Review, 18,* 101-114.

Simmel, C., Brooks, D., Barth, R.P., & Hinshaw, S.P. (2001). Externalizing symptomatology among adoptive youth: Prevalence and preadoption risk factors. *Journal of Abnormal Child Psychology, 29,* 57-69.

Simmel, C, Barth, R.P., & Brooks, D. (2007). Adopted foster youths' psychosocial functioning: a longitudinal perspective. *Child and Family Social Work, 12,* 336-348.

Singh, N.N., Singh, A.N., Lancioni, G.E., Singh, J., Winton, A.S.W., & Adkins, A.D. (2009). Mindfulness training for parents and children of ADHD increases children's compliance. *Journal of Child and Family Studies, 19,* 157-166.

Smith, S.L., Howard, J.A., & Monroe, A.D. (2000). Issues underlying behavior problems in at-risk adopted children. *Children and Youth Services Review*, 22, 539-562.

Swanson, J.M., Arnold, L.E., Vitiello, B., Abikoff, H.B., Wells, K.C., Pelham, W.E., March, J.S., Hinshaw, S.P., Hoza, B., Epstein, J.N., Elliott, G.R., Greenhill, L.L., Hechtman, L.T., Jensen, P.S., Kraemer, H.C., Kotkin, R., Molina, B., Newcorn, J.H., Owens, E.B., Severe, J., Hoagwood, K., Simpson, S., Wigal, T., Hanley, T., & The MTA Group (2002). Response and commentary on the Multimodal Treatment Study of ADHD (MTA): Mining the meaning of MTA. *Journal of Abnormal Child Psychology, 30,* 327-332.

Taylor, G.M., Klein, N., Drotar, D., Schluchter, M. & Hack, M. (2006). Consequences and risks of <1000-g birth weight for neuropsychological skills, achievement, and adaptive functioning. *Developmental and Behavioural Pediatrics*, 27, 459-469.

Teisl, M., Cicchetti, D. (2008). Physical abuse, cognitive and emotional processes, and aggressive/disruptive behavior problems. *Social Development, 17,* 1-23.

Thompson, B.L., Levitt, P, & Stanwood, G.D. (2009). Prenatal exposure to drugs: effects on brain development and implications for policy and education. *Neuroscience, 10,* 303-312.

Tottenham, N., Hare, T.A., Quinn, B.T., McCarry, T.W., Nurse, M., Gilhooly, T., Millner, A., Galvan, A., Davidson, M.C., Eigsti, I., Thomas, K.M., Freed, P.J. Booma, E.S., Gunnar, M.R., Altemus, M., Aronson, J., & Casey, B.J. (2010). Prolonged institutional rearing is

associated with atypically large amygdala volume and difficulties in emotion regulation. *Developmental Science, 13,* 46-61.

Tottenham, N., Sheridan, M.A. (2010). A review of adversity, the amygdala and the hippocampus: a consideration of developmental timing. *Frontiers in Neuroscience, 3,* 1-18.

Twohig, M.P., Hayes, S.C., & Berlin, K.S. (2008). Acceptance and commitment therapy for childhood externalizing disorders. In L.A. Greco and S.P Hayes (Eds.), *Acceptance and mindfulness treatments for children and adolescents*. (pp. 163-186). Oakland, CA: New Harbinger Publications Inc.

Vandivere, S., Malm, K., and Radel, L. (2009). *Adoption USA: A Chartbook Based on the 2007 National Survey of Adoptive Parents.* U.S. Departmetn of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation. Available at http://aspe.hhs.gov/hsp/09/NSAP/chartbook/.

Waterman, J., Edelstein, S., Walker, J., Burge, D., & Kataoka, S. (2003). Transitioning from foster care to adoption: service utilization for high-risk children. *15th Annual Conference Proceedings—A System of Care for Children's Mental Health: Expanding the Research Base,* pp. 271-274.

Webster-Stratton, C., & Hammond, M. (1997). Treating children with early-onset conduct problems: A comparison of child and parent training interventions. *Journal of Consulting and Clinical Psychology, 65,* 93-109.

Webster-Stratton, C., & Reid, M. (2003). The incredible years parents, teachers, and training series: A multifaceted treatment approach for young children with conduct problems. In

A.E. Kazdin and J.R. Weisz (Eds.), *Evidence-Based Psychotherapies for Children and Adolescents.* (pp. 224-240). New York, NY: The Guilford Press Inc.

Widom, C.S. (2001). Child abuse and neglect. In S.O. White (Ed.), *Handbook of youth and justice,* (pp. 31-47) New York: Plenum.

Wierzbicki, M. (1993). Psychological adjustment of adoptees: A meta-analysis. *Journal of Clinical Child Psychology, 22,* 447-454.

Wismer Fries, A.B., Zigler, T., Kurian, J., Jacoris, S., & Pollack, S.D. (2005). Early experience in humans is associated with changes in neuro-peptides critical for regulating behavior. *Proceedings of the National Academy of Science, USA,102,* 17237-17240.

U.S. Department of Health and Human Services. (2004). *How many children were adopted in 2000 and 2001?* Washington, D.C.: Child Welfare Information Gateway.

Zhang, X., Sliwowska, J.H., & Weinberg, J. (2005). Prenatal alcohol exposure and fetal programming: effects on neuroendocrine and immune function. *Experimental Biology and Medicine, 230,* 376-388.

Zylowska, L., Ackerman, D.L., Yang, M.H., Futrell, J.L., Horton, N.L., Hale, S.T., Pataki, C., & Smalley, S. (2007). Mindfulness meditation training with adults and adolescents with ADHD. *Journal of Attention Disorders, 11,* 737-746.