Marquette University
e-Publications@Marquette

Psychology Faculty Research and Publications | Psychology Department

1-1-2011

Parental Functioning in Families for Behavioral Parent Training and Importance of Clinically Meaningful Change

Alyson Gerdes
Marquette University, alyson.gerdes@marquette.edu

Lauren M. Haack
Marquette University

Brian W. Schneider
Marquette University

Post-print. *Journal of Attention Disorders* (2011), DOI: 10.1177/1087054710381482. Used with permission.

Parental Functioning in Families for Behavioral Parent Training and Importance of Clinically Meaningful Change

Alyson C. Gerdes, Lauren M. Haack, and Brian W. Schneider

Abstract

Objective/Method: Statistically significant and clinically meaningful effects of behavioral parent training on parental functioning were examined for 20 children with ADHD and their parents who had successfully completed a psychosocial treatment for ADHD.

Results/Conclusion: Findings suggest that behavioral parent training resulted in statistically significant improvements in some domains of parenting behavior for both mothers and fathers and in reductions in most domains of parenting stress for mothers. Importantly, clinically meaningful change also was noted for these parental functioning areas, as well as for other domains of parental functioning that did not result in statistically significant findings. Clinical implications are discussed.

ADHD is a common and chronic mental health disorder that is characterized by developmentally inappropriate levels of inattention and/or hyperactivity/impulsivity (American Psychiatric Association, 2000; Biederman et al., 2005; Flory, Molina, Pelham, Gnagy, & Smith, 2006). Over the past 2 decades, the field has seen a major focus on establishing evidence-based treatments for childhood mental health disorders, such as ADHD. Several recent reviews, including a meta-analysis, have concluded that behavioral parent training is an effective treatment for ADHD (Fabiano et al., 2009; Hoza, Kaiser, & Hurt, 2008; Pelham & Fabiano, 2008). Not surprisingly, to date, the majority of treatment outcome studies have focused on improvements in child functioning, such as decreased symptomatology. Fewer studies have examined improvements in parental functioning following treatment, and none, to our knowledge, have examined clinically meaningful change in this domain. Thus, the primary aim of the current study was to investigate the effects of behavioral parent training on maternal and paternal parenting efficacy, stress, and behavior by examining both statistically significant change, as well as clinically meaningful change.

Evidence-Based Psychosocial Treatments for ADHD

Three major reviews examining evidence-based psychosocial treatments for ADHD have

been published in the last 2 years (Fabiano et al., 2009; Hoza et al., 2008; Pelham & Fabiano, 2008). These reviews concluded that behavioral parent training has enough research support to be considered an evidence-based treatment for ADHD. The reviews included studies using between-group designs, as well as within-subject and single-subject designs. Although outcome measures varied depending upon the study, they most commonly included measures of child functioning, such as parent and teacher ratings of ADHD symptoms. Taken together, studies support the conclusion that behavioral parent training results in reduced ADHD symptomatology and improved child behavior.

Parental Functioning in Families of Children with ADHD

Fewer studies have examined the effectiveness of behavioral parent training on improving parental functioning in families of children with ADHD (for reviews, see Fabiano et al., 2009; Hoza et al., 2008; Pelham & Fabiano, 2008). This seems like a particularly important area to explore given that parent training places the responsibility on the *parents* to modify their child's behavior by learning and implementing new parenting strategies. Concurrent improvements in parental functioning following a parent-focused treatment certainly would provide further support for the effectiveness of the treatment. Not surprisingly, research demonstrates that parents of children with ADHD are at greater risk for poorer parental functioning (for a review, see Johnston & Mash, 2001). They experience higher levels of psychopathology, including ADHD, depression, and anxiety, and report feeling less efficacious and experiencing higher levels of parenting stress than parents of comparison children.

Fortunately, studies that have investigated parental functioning as an outcome measure suggest improvements in this domain, although parental functioning has been conceptualized and measured quite differently depending on the study (for reviews, see Fabiano et al., 2009; Hoza et al., 2008; Pelham & Fabiano, 2008). Some studies have examined parenting-specific factors, such as parental cognitions and affect related to parenting, whereas others have focused on less parenting-specific factors, such as parental psychopathology and inter-parental conflict. In general, regardless of the outcome measure, these studies have concluded that parent training improves parental functioning (e.g., parents report decreased parenting stress and improved parenting behavior following treatment).

Importance of Clinically Meaningful Change

It is important to note that all of these studies focused on statistically significant differences between groups or between pre-post means. To our knowledge, no one has

examined whether the changes found in parental functioning following treatment are *clinically meaningful*. Most psychotherapy research assesses treatment outcomes based on null hypothesis significance testing (NHST) even though this provides limited information about the "size, importance, or clinical significance" of treatment effects for the *individual* (Jacobson & Truax, 1991, p. 12). In the past decade, Ogles, Lunnen, and Bonesteel (2001) and others have recommended that treatment outcome research should employ alternative techniques to supplement NHST of group means by also assessing the magnitude of *individual* change following treatment.

In addition to focusing on meaningful change at the individual level, these alternative techniques also are advantageous, because they are unaffected by sample size (i.e., conclusions about change are neither exaggerated by large samples nor underestimated by small samples). They also allow for examination of the *characteristics* of individuals who make clinically meaningful change versus those who do not. This may allow for a greater understanding of why some individuals do not show improvement following psychotherapy and may be helpful in proactively addressing potential barriers to treatment or tailoring treatment for certain individuals. Unfortunately, such techniques are time-consuming and require numerous measures of normative data that often are unavailable. As a result, most treatment outcome research examining children has primarily focused on examining statistically significant change following treatment.

Although several approaches for examining clinically meaningful change have been proposed, Jacobson and Truax's (1991) method is most widely cited (Ogles et al., 2001). This method considers clinically meaningful change to occur when an individual makes both reliable change (RC) *and* moves into the normal range of functioning. It is the most conservative of the approaches, because a client cannot, by definition, obtain clinically meaningful change with this method if he/she begins treatment with symptoms that fall within the normal range of functioning even if he/ she makes RC or demonstrates improvement over the course of treatment. Although only focusing on those clients with the most significant symptomatology makes sense for some outcome measures, Karpenko, Owens, Evangelista, and Dodds (2009) have recently argued that it also may be important and valuable to examine all clients who have achieved RC even if the change was not clinically significant. This argument seems particularly relevant to the current study, because the aim is to examine parental functioning rather than child symptomatology. Parents of children with ADHD may begin parent management training with parenting stress, efficacy, and skills within the normal range, but may still substantially improve in some, if not all, of these domains following treatment, which likely allows them to better manage their child's

difficult behavior.

Karpenko and colleagues' (2009) study is important, because it is the only study that has examined the correspondence between clinically significant *symptom* change and RC in *functioning* in a sample of children with ADHD. Several domains of functioning were examined, including parent–child relationship quality, social skills, and global impairment. They argue that moving beyond an examination of just symptoms is important, because improved functioning actually may be more important to the child and/or parent than a reduction in ADHD symptoms. This seems particularly relevant when examining behavioral treatment for ADHD given that this intervention focuses on improving functional problems (e.g., increasing seat work completion) rather than reducing symptoms (e.g., decreasing hyperactivity). The current study builds upon the work of Karpenko and colleagues by extending the examination of clinically meaningful change to several domains of parental functioning.

Specifically, the primary aim of the current study was to extend current treatment outcome research for ADHD by examining the effects of behavioral parent training on parental functioning in mothers and fathers, not only with regards to statistical significance but also clinical meaningfulness. It was predicted that following behavioral parent training, pre-post change would indicate improvements in parenting efficacy, stress, and behavior. Although previous research is limited, we also predicted that clinically meaningful change would be demonstrated in parenting efficacy, stress, and behavior following treatment.

Method

Participants

Participants included 20 children with ADHD and their parents who successfully completed a psychosocial treatment for ADHD. As part of the standard procedure in the clinic and as approved by the Institutional Review Board, parents signed a research consent form during the intake interview, agreeing that any information collected during the course of their child's assessment and treatment could be used for research purposes. During the time frame for the current study, a total of 37 children were assessed in the clinic and diagnosed with ADHD; 17 of these families prematurely terminated treatment, resulting in a dropout rate of approximately 46%. This is consistent with percentages reported by reviews examining child psychotherapy (Kazdin, 1996).

Determination of treatment dropout varies depending on the study; however, most studies define dropout as terminating from treatment against the advice of the therapist (Armbruster & Kazdin, 1994). As described in more detail below, the current study employed an

evidence-based treatment for ADHD, consisting of a structured 8- to 12-week program. Prior to starting treatment, the duration and nature of treatment were thoroughly discussed with families, and families signed a treatment contract agreeing to the goals and treatment sessions. Thus, premature dropout in the current study was defined as a family discontinuing treatment prior to completing the last planned session listed on their treatment plan.

Of the children whose families completed treatment and are included in the current analyses, seven received a diagnosis of ADHD, Predominately, Inattentive (ADHD-I), five received a diagnosis of ADHD, Predominantly Hyperactive/ Impulsive (ADHD-H), and eight received a diagnosis of ADHD, Combined (ADHD-C). Children ranged in age from 5 to 12 years (M = 7.85, SD = 1.53) and were predominantly male (15 males, 5 females). Ten of the children were White, and 10 were ethnic minorities. Additional demographic information may be found in Table 1. Analyses comparing demographic characteristics between the treatment completers and non-completers revealed no significant differences on child demographics and two significant differences on parent/family demographics. Specifically, parents who successfully completed treatment were more likely to be married or cohabitating and were more likely to be living in a two-parent home than parents who prematurely terminated treatment.

Assessment and Diagnostic Information

All children received a comprehensive multimodal, multi-informant assessment at a university-based ADHD clinic. Parents responded to an unstructured interview designed to gather information about the presenting problem, as well as family, social, developmental, and medical history and the Parent Structured Interview for Disruptive Behavior Disorders (DBD; Pelham, 2002), a semi-structured interview focused on ADHD, oppositional defiant disorder (ODD), and conduct disorder (CD). The primary caregiver also completed several child behavior checklists, and both parents completed measures examining parental psychopathology and parental/family functioning. Finally, children responded to an unstructured interview and completed several self-report measures, teachers completed several child behavior checklists, and a teacher interview and classroom observation were completed.

Diagnostic and subtype decisions were made by clinical psychology graduate students and a faculty expert on childhood ADHD. Final decisions were based on clinician judgments from the Parent Structured Interview for DBD (Pelham, 2002). This semi-structured interview consists of 44 items based on ADHD, ODD, and CD symptoms from the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., Text Revision; *DSM-IV-TR*). Parents were asked to rate their child's typical behavior in regard to the individual symptoms by using a rating scale of 0 (not a problem)

to 3 (severe problem). Parental responses from the interview were examined in conjunction with responses from other parent and teacher-report measures (primarily the Parent/ Teacher DBD Rating Scale; Pelham, Gnagy, Greenslade, & Milich, 1992), the presenting problem, and behavioral observations. The final clinical decision regarding symptom severity was made by the clinical psychology graduate student with the assistance of a faculty expert on childhood ADHD. Symptoms were considered endorsed when the clinician assigned a rating of moderate or severe, which corresponds to the two most extreme anchors on the Parent Structured Interview for DBD; endorsed symptoms were then tallied to determine whether diagnostic and subtype criteria had been met.

Behavioral Parent Training

The behavioral parent training employed in the current study is based on Barkley's parent training modules (Barkley, 1997, 1998). Although treatment was tailored for each family based on the presenting problems, functional impairments, comorbidities, and other complicating factors, it generally consisted of 8 to 12, 50 min sessions that included psychoeducation about ADHD and behavioral principles and the development of specific parenting strategies or skills. Sessions were skill-based and covered topics, such as giving effective instructions, consistently using time out, attending and praising positive behavior, ignoring mildly negative behavior, establishing a token economy (response cost system), and establishing and maintaining a classroom intervention. For the 20 families who completed treatment and are included in the current analyses, the median number of sessions attended was 10.

Measures

As mentioned previously, as part of the comprehensive assessment, parents completed a number of measures examining child behavior, as well as parental/family functioning. For purposes of this study, five measures were of interest, including the Client Information Form, Parent/ Teacher DBD Rating Scale (Pelham et al., 1992), Parenting Sense of Competence Scale (PSOC; Gibaud-Wallston & Wandersman, 1978, as cited in Johnston & Mash, 1989), Parenting Stress Index-Short Form (PSI-SF; Abidin, 1995), and Alabama Parenting Questionnaire (APQ; Shelton, Frick, & Wootton, 1996).

Client Information Form

A client information form was completed by the primary caregiver to collect basic demographic information, such as child age, sex, ethnicity, and parental education and

occupation. Using Hollingshead's (1975) classification, parental education and occupation were used to compute socioeconomic status for each family.

***Parent/Teacher DBD Rating Scale* (Pelham et al., 1992)**

The Parent/Teacher DBD Rating Scale is a parent/ teacher-report measure primarily consisting of the *DSM-IVTR* symptoms of ADHD, ODD, and CD. Symptoms are rated on a 4-point scale, ranging from *not at all present* to *very much present*. For purposes of the current study, two means were created based on parental responses only, one examining inattentive symptoms and one assessing hyperactive/ impulsive symptoms; higher means suggest higher levels of symptoms. Previous research demonstrates acceptable internal consistencies ranging from .68 to .96 for maternal reports of inattention, hyperactivity/impulsivity, ODD, and CD (Gerdes & Hoza, 2006). Research also suggests the appropriateness of this measure as a diagnostic tool for school-aged children with ADHD (Owens & Hoza, 2003).

***Parenting Sense of Competence Scale* (PSOC; Gibaud-Wallston & Wandersman, 1978, as cited in Johnston & Mash, 1989)**

The Parenting Efficacy subscale of the PSOC is a parent-report measure of parenting efficacy. Parents rate seven items on a 6-point scale, ranging from "strongly agree" to "strongly disagree." After computing a mean of the items, higher scores represent higher parenting efficacy. Johnston and Mash (1989) reported good internal consistency and found a negative relationship between parenting efficacy and child externalizing problems.

***Parenting Stress Index-Short Form* (PSI-SF; Abidin, 1995)**

The PSI-SF, a parent-report measure of parenting stress, consists of 36 items rated on a 5-point scale, ranging from "strongly agree" to "strongly disagree." It contains three subscales: Parental Distress, Parent/Child Dysfunctional Interaction, and Difficult Child, as well as an overall parenting stress score. Items are summed to create the total score, as well as the subscale scores; higher scores are indicative of higher parenting stress. Research has found that the PSI-SF is both a reliable and valid measure of parenting stress (Abidin, 1995; Haskett, Ahern, Ward, & Allaire, 2006).

***Alabama Parenting Questionnaire* (APQ; Shelton et al., 1996)**

The APQ is a 42-item measure assessing parenting practices that can be completed by parents or children. Items are answered on a 5-point scale ranging from *never* to *always* and are

summed to create five major domains, including Involvement, Positive Parenting, Poor Monitoring/Supervision, Inconsistent Discipline, and Corporal Punishment. Higher scores in each domain represent more of that type of parenting. Adequate reliability and validity for most subscales have been demonstrated (Shelton et al., 1996).

Results

Effects of Behavioral Parent Training on Parental Functioning

Our primary aim was to extend current treatment outcome research for ADHD by examining the effects of behavioral parent training on parental functioning, not only with regards to statistical significance but also clinical meaningfulness. To examine statistically significant effects of behavioral parent training on parental functioning, paired sample *t* tests were employed examining pre-post change in parenting efficacy, stress, and behavior for mothers and fathers. As Table 2 indicates, significant findings emerged for maternal perceptions of parent–child dysfunctional interaction, difficult child, total parenting stress, inconsistent discipline, and corporal punishment. Examination of the means demonstrates that following treatment, mothers reported less stress related to parent–child dysfunctional interactions and parenting a difficult child, experienced less overall parenting stress, and engaged in less inconsistent discipline and corporal punishment than they did prior to treatment. Significant findings also emerged for paternal perceptions of parental involvement with means indicating that fathers reported being more involved in their children's lives following treatment. Effect sizes for all significant findings were large.

To examine clinically meaningful change, Jacobson and Truax's (1991) method was employed. Rather than examining *group* change, which is sensitive to sample size, this method examines whether *each* parent demonstrates RC and moves into the range of normal functioning. Specifically, pre-post change for each parent is compared to RC indices (to examine RC) and cutoff scores (to examine normal functioning). These indices and scores are determined from norms (e.g., means, standard deviations, and test–retest reliability) collected from a well-functioning, normal sample. Table 3 contains RC indices and cutoff scores for the PSI-SF and APQ.[1] Based on these indices and scores, each parent was placed into one of six categories: no improvement or recovery; no improvement, came in functional; reliably improved, not recovered; reliably improved, came in functional; and reliably improved and recovered. Of most interest are parents who are classified as reliably improved and those who experienced clinically meaningful change (i.e., fall in the reliably improved *and* recovered category).

As indicated in Table 4, 10% to 55% of mothers fell into one of the reliably improved

categories for all domains of parenting stress (i.e., parental distress, dysfunctional parent– child interaction, difficult child, total parenting stress), as well as parenting behavior (i.e., involvement, positive parenting, monitoring, inconsistent discipline, and corporal punishment). In addition, 5% to 10% of these mothers fell into the reliably improved *and* recovered category for most domains of parenting stress, including parental distress, dysfunctional interaction, and difficult child, as well as several domains of parenting behavior, including positive parenting and inconsistent discipline, which suggests clinically meaningful change. Approximately 7% to 40% of fathers fell into one of the reliably improved categories for one domain of parenting stress (i.e., difficult child) and all domains of parenting behavior, with 20% of these fathers falling into the reliably improved *and* recovered category for involvement and 7% for poor monitoring.

Discussion

The current study aimed to extend ADHD treatment outcome research by examining both statistically significant and clinically meaningful effects of behavioral parent training on parental functioning. Findings suggest that parent training resulted in statistically significant improvements in some domains of parenting behavior for both mothers and fathers and in reductions in most domains of parenting stress for mothers. Importantly, clinically meaningful change also was noted for these parental functioning areas, as well as for additional domains of parental functioning that did not reach statistical significance.

Effects of Behavioral Parent Training on Parental Functioning

As mentioned previously, to date, most ADHD treatment outcome research has focused on improvements in child functioning (for reviews, see Fabiano et al., 2009; Hoza et al., 2008; Pelham & Fabiano, 2008) and has demonstrated that behavioral parent training results in reduced ADHD symptomatology and improved child behavior. The current study extends this area of literature and provides further support for the effectiveness of parent training by documenting improvements in *parental functioning* following treatment, specifically in parenting behavior for both mothers and fathers and in parenting stress for mothers. This was certainly expected given that research demonstrates that parent training improves child functioning (for reviews, see Fabiano et al., 2009; Hoza et al., 2008; Pelham & Fabiano, 2008); with improved child functioning, one would expect to see improved parental functioning.

Perhaps the most interesting aspect of these findings is the parental gender differences that emerged. Treatment resulted in significant reductions of parenting stress for mothers, across most domains (dysfunctional parent–child interactions, difficult child, and total parenting stress);

however, no significant findings emerged when examining paternal parenting stress. This may partially be explained by pre-treatment levels of parenting stress. Examination of the means suggests that whereas mothers and fathers reported similar levels of parenting stress following treatment, mothers reported higher levels at the beginning of treatment. This is consistent with previous research showing that mothers report more parenting stress than fathers (Calzada, Eyberg, Rich, & Querido, 2004; Deater-Deckard & Scarr, 1996) and indicates that mothers had greater opportunity to reduce their parenting stress than fathers given that they entered treatment with relatively higher levels of stress. Another possible explanation may be greater maternal participation in treatment that is further discussed below when summarizing the clinically meaningful findings that emerged.

Interestingly, whereas behavioral parent training resulted in mothers engaging in less negative parenting behavior (i.e., inconsistent discipline and corporal punishment), it resulted in fathers engaging in more positive parenting behavior (i.e., involvement). Examination of the means suggests that mothers were reporting higher levels of involvement than fathers before treatment, which allowed more room for fathers to improve in this domain. This finding really highlights the importance of engaging fathers in the treatment process (Bagner & Eyberg, 2003; Carr, 2006; Lee, 2006), because their participation in treatment resulted in them perceiving that they were more involved in their children's lives.

Furthermore, to our knowledge, the current study is the first of its kind to provide evidence for clinically meaningful change in parental functioning following behavioral parent training. Jacobson and Truax's (1991) model of clinical significance examines whether a client demonstrates RC and whether a client moves into the range of normal functioning (i.e., experiences recovery). In the current study, the majority of parents (between 60% and 100% depending on the measure) perceived themselves as being in the functional range prior to beginning treatment for their children. This obviously limited the number of parents who could potentially move into the functional range and be considered "recovered" post-treatment. Despite this, many (up to 55% depending on the measure) were still able to demonstrate RC in parenting stress and behavior from pre- to post-treatment. Furthermore, between 5% and 20% of these parents also fell into the normal range of functioning following treatment for most domains of parenting stress and behavior, which indicates that parent training resulted in clinically meaningful improvements for some families.

These clinically meaningful improvements provide further support for the robustness of behavioral parent training for treating childhood ADHD. Specifically, to our knowledge, it provides the first empirical evidence that parent training results in clinically meaningful change in

parenting stress and behavior and actually pushes some parents into the normal range of functioning on these measures. Although most treatment outcome research for ADHD has focused on statistically significant changes (for reviews, see Fabiano et al., 2009; Hoza et al., 2008; Pelham & Fabiano, 2008), many argue that researchers also must begin to examine clinically meaningful change, because it provides important and unique information about the clinical and social importance of treatment effects for *individual* children and families (e.g., Nickerson, 2000; Ogles et al., 2001).

Interestingly, there was a relatively higher percentage of mothers than fathers who displayed RC (10% to 55% of mothers vs. approximately 7% to 27% of fathers), as well as clinically meaningful improvement (5% to 10% of mothers vs. 0% to 7% fathers) for almost all domains of parenting stress and behavior. Although we are unaware of previous research that has examined gender differences in parental functioning following behavioral parent training, this finding is not surprising when treatment attendance is examined. For just over one third of the families who completed treatment, only the mothers regularly attended treatment sessions. Thus, it is not surprising that mothers in the current study experienced greater improvements than fathers; however, it again highlights the importance of continuing to encourage paternal involvement in treatment for their children (Bagner & Eyberg, 2003; Carr, 2006; Lee, 2006).

Finally, it is important to examine and discuss the overlap or lack of overlap that was found between the statistically significant findings and the clinically meaningful findings. When examining statistically significant differences, the strongest outcomes emerged for maternal parenting stress and negative, maternal parenting behavior. Anywhere between 10% and 55% of mothers also demonstrated reliable or clinically meaningful change in these areas of functioning. Interestingly, reliable or clinically meaningful change also was found for positive, maternal parenting behaviors (20% to 25% of mothers), as well as for paternal involvement (40% of fathers) and negative, paternal parenting behaviors (approximately 7% to 27% of fathers) despite the fact that statistically significant change did not emerge for most of these domains. These findings are important, because they suggest that even when treatment may not result in statistically significant group or pre-post differences, a substantial number of *individuals* may experience clinically meaningful change. Unfortunately, to date, treatment outcome studies for child psychopathology have largely ignored this kind of change (Ogles et al., 2001).

Limitations

Although the current study extended childhood ADHD research by demonstrating that behavioral parent training results in both statistically significant, as well as clinically meaningful

change in parental functioning, several limitations should be noted. The current study focused only on parenting efficacy, stress, and behavior and relied on parent report of these variables. Future research should attempt to further extend the current findings to other areas of parental and family functioning (e.g., parental psychopathology, inter-parental conflict, and family chaos) and should include others' reports when possible to avoid potential expectancy effects (e.g., direct observations of parenting behavior); however, we would argue that parental *perceptions* of change may be more important than actual change with regards to satisfaction with and success of treatment. In addition, our ability to detect clinically meaningful change in our sample was somewhat limited, because many parents identified themselves as functional prior to beginning treatment. Future research with a less functional parent sample may shed additional light on the effectiveness of parent training with regards to change at the individual level.

Finally, although consistent with reviews examining child psychotherapy (Kazdin, 1996), the high dropout rate in the current study may have resulted in a skewed distribution of the parental functioning measures if parents who prematurely terminated treatment were functioning worse at the start of treatment than parents who completed treatment. To examine this further, analyses comparing the two groups on pre-treatment parental functioning measures suggested no significant differences in parenting efficacy, stress, and behavior for mothers or fathers. Unfortunately, we have no other data points for families who prematurely terminated treatment, so it is possible that parental functioning in these families deteriorated once treatment began and may have contributed to their decision to prematurely terminate treatment. Although challenging, future research employing follow-up interviews with parents or follow-up measures of parental functioning at the time of termination would likely provide valuable information.

Clinical Implications

Several clinical implications are important to note. This study truly speaks to the robustness of behavioral parent training by demonstrating that the positive effects of treatment extend beyond the child and result not only statistically significant improvements in parental functioning, but also clinically meaningful change for some parents. While determining the exact process of change is beyond the scope of the current study, improvements in parental functioning following parent training are most likely due to both direct and indirect effects. In other words, sessions focused on improving and consistently implementing better child management techniques likely directly resulted in improvements in parental functioning (e.g., better parenting behavior); however, they also likely indirectly improved parental functioning (e.g., decreased parental stress) via improved child behavior. While not the focus of the current study,

preliminary analyses suggested statistically significant reductions in both child inattention and hyperactivity/impulsivity following treatment, which would support possible indirect effects of treatment.

The parental gender differences in treatment outcomes also highlight the importance of finding ways to increase participation of fathers in psychosocial interventions for their children. Setting aside evening treatment hours, providing childcare if needed, and dedicating sufficient time during the assessment to highlight the importance of paternal participation in treatment are potential strategies that need further empirical examination.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Financial Disclosure/Funding

The authors received no financial support for the research and/or authorship of this article.

Note

1. Unfortunately, all of the necessary normative data for the PSOC was unavailable (i.e., test–retest reliability). As a result, clinically meaningful change could not be examined for this variable.

Biographies

Alyson C. Gerdes is an assistant professor at Marquette University. Her primary research interests include evidence-based assessment and treatment of childhood ADHD, culturally-appropriate clinical practices, and parenting and parent-child relationships in families of children with ADHD.

Lauren M. Haack is currently pursuing her PhD in clinical psychology at Marquette University. Her research and clinical interests include culturally-appropriate assessment and treatment of childhood ADHD. Lauren graduated from Clemson University in 2007 with a BA in Psychology and Spanish and received her MS from Marquette University in 2010.

Brian W. Schneider earned his master's degree in May of 2009 and is currently completing his 4th year in Marquette University's clinical psychology doctoral program. Research

interests include child behavior disorders, multicultural psychology, culturally-modified treatments, and treatment disparities.

References

Abidin, R. R. (1995). *Parenting stress index* (3rd ed.). Lutz, FL: Psychological Assessment Resources.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

Armbruster, P., & Kazdin, A. E. (1994). Attrition in child psychotherapy. In T. H. Ollendick & T. J. Prinz, (Eds.), *Advances in clinical child psychology* (Vol. 16, pp 81-108). New York, NY: Plenum.

Banger, D. M., & Eyberg, S. M. (2003). Father involvement in parent training: When does it matter? *Journal of Clinical Child and Adolescent Psychology, 32*, 599-605.

Barkley, R. A. (1997). *Defiant children: A clinician's manual for assessment and parent training*. New York, NY: Guilford.

Barkley, R. A. (1998). Attention-deficit/hyperactivity disorder. In E. J. Mash & R. A. Barkley (Eds.), *Treatment of childhood disorders* (2nd ed., pp. 55-110). New York, NY: Guilford.

Biederman, J., Mick, E., Fried, R., Aleardi, M., Potter, A., & Herzig, K. (2005). A simulated workplace experience for non-medicated adults with and without ADHD. *Psychiatric Services, 56*, 1617-1620.

Calzada, E. J., Eyberg, S. M., Rich, B., & Querido, J. G. (2004). Parenting disruptive preschoolers: Experiences of mothers and fathers. *Journal of Abnormal Child Psychology, 32*, 203-213.

Carr, A. (2006). Involving fathers in psychological services for children. *Cognitive and Behavioral Practice, 13*, 94-97.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd ed.).* Mahwah, NJ: Erlbaum.

Deater-Deckard, K., & Scarr, S. (1996). Parenting stress among dual-earner mothers and fathers: Are there gender differences? *Journal of Family Psychology, 10*, 45-59.

Fabiano, G. A., Pelham, William E. Jr., 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.

Flory, K., Molina, B. S. G., Pelham, W. E., Gnagy, E., & Smith, B. (2006). Childhood ADHD predicts risky sexual behavior in young adulthood. *Journal of Clinical Child and*

Adolescent Psychology, 35, 571-577.

Gerdes, A. C., & Hoza, B. (2006). Maternal attributions, affect, and parenting in attention deficit hyperactivity disorder and comparison families. *Journal of Clinical Child and Adolescent Psychology, 35*, 346-355.

Haskett, M. E., Ahern, L. S., Ward, C. S., & Allaire, J. (2006). Construct and predictive validity of the Parenting Stress Index/Short Form. J*ournal of Clinical Child and Adolescent Psychology, 35*, 302-312.

Hollingshead, A. A. (1975). *Four-factor index of social status*. Unpublished manuscript, Yale University.

Hoza, B., Kaiser, N. M., & Hurt, E. (2008). Evidence-based treatments for attention-deficit/hyperactivity disorder (ADHD). In M. Roberts, D. Elkin, & R. Steele (Eds.), *Handbook of evidence based therapies for childhood and adolescents* (pp. 189-211). New York, NY: Springer.

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*, 12-19.

Johnston, C., & Mash, E. J. (1989). A measure of parenting satisfaction and efficacy. *Journal of Clinical Child Psychology, 18*, 167-175.

Johnston, C., & Mash, E. J. (2001). Families of children with attention-deficit/hyperactivity disorder: Review and recommendations for future research. *Clinical Child and Family Psychology Review, 4*, 183-207.

Karpenko, V., Owens, J. S., Evangelista, N. M., & Dodds, C. (2009). Clinically significant symptom change in children with Attention-Deficit/Hyperactivity Disorder: Does it correspond with reliable improvement in functioning? *Journal of Clinical Psychology, 65*, 76-93.

Kazdin, A. E. (1996). Dropping out of child psychotherapy: Issues for research and implication for practice. *Clinical Child Psychology and Psychiatry, 1*, 133-156.

Lee, C. M. (2006). Involving fathers in the delivery of psychological services. *Cognitive and Behavioral Practice, 13*, 40-41.

Nickerson, R. S. (2000). Null hypothesis significance testing: A review of an old and continuing controversy. *Psychological Methods, 5*, 241-301.

Ogles, B. M., Lunnen, K. M., & Bonesteel, K. (2001). Clinical significance: History, application, and current practice. *Clinical Psychology Review, 21*, 421-446.

Owens, J., & Hoza, B. (2003). Diagnostic utility of DSM-IV-TR symptoms in the prediction of

DSM-IV-TR ADHD subtypes and ODD. *Journal of Attention Disorders, 7*, 11-27.

Pelham, W. E. (2002). *Attention deficit hyperactivity disorder: Diagnosis, assessment, nature, etiology, and treatment*. Unpublished manuscript, State University of New York at Buffalo.

Pelham, W. E., & Fabiano, G. A. (2008). Evidence-based psychosocial treatments for attention-deficit/hyperactivity disorder. *Journal of Child and Adolescent Psychology, 37*, 184-217.

Pelham, W. E., Gnagy, E. M., Greenslade, K. E., & Milich, R. (1992). Teacher ratings of DSM-III-R symptoms for the disruptive behavior disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 31*, 210-218.

Shelton, K. K., Frick, P. J., & Wootton, J. M. (1996). Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology, 25*, 317-329.

Appendix

Table 1: Demographic Variables

Variable	*M*	*SD*	*N*	%
Child				
Age	7.85	1.53		
Gender				
Male			15	75
Female			5	25
Ethnicity				
White			10	50
African American			1	5
Latino			5	25
Other			4	20
ADHD medication at intake				
Yes			4	20
No			16	80
Comorbid conduct problems				
None			15	75
ODD			5	25
CD			0	0
Parent/Family				
Marital status				
Married/Cohabitating			18	90
Single/Never Married/Divorced			2	10
Number of parents in home				
One parent home			1	5
Two parent home			19	95
Socioeconomic status (SES)	46.18	17.50		

Note: *n* = 20; SES was computed using the Hollingshead Four Factor Index of Social Status (Hollingshead, 1975).

CD = conduct disorder; ODD = oppositional defiant disorder.

Table 2: Effects of Behavioral Parent Training on Parental Functioning—Statistical Significance

Variable	Pre-Treatment *M* (*SD*)	Post-Treatment *M* (*SD*)	*t*	η^2
Maternal parenting efficacy	4.06 (1.34)	4.39 (1.18)	−1.30	0.08
Maternal parenting stress[a]				
Parental distress	25.26 (8.61)	23.58 (8.65)	0.98	0.05
Dysfunctional interaction	27.16 (6.88)	24.47 (8.19)	2.27*	0.22
Difficult child	35.89 (7.13)	30.42 (9.15)	3.56**	0.41
Total stress	88.32 (20.20)	78.47 (24.22)	2.69*	0.29
Maternal parenting behavior				
Involvement	38.70 (4.64)	40.20 (5.14)	−1.66	0.13
Positive parenting	24.95 (3.47)	26.05 (3.73)	−1.34	0.09
Poor monitoring	13.65 (4.45)	13.10 (3.39)	0.82	0.03
Inconsistent discipline	14.00 (3.49)	11.00 (3.66)	4.09***	0.47
Corporal punishment[a]	4.74 (1.37)	3.95 (1.18)	3.75***	0.44
Paternal parenting efficacy	4.32 (0.97)	4.35 (0.64)	−0.11	0.00
Paternal parenting stress				
Parental distress	21.87 (7.79)	23.40 (6.47)	−1.05	0.05
Dysfunctional interaction	20.40 (5.21)	21.60 (4.93)	−1.25	0.08
Difficult child	29.47 (9.41)	29.33 (9.18)	0.10	0.00
Total stress	71.73 (17.79)	74.33 (16.59)	−1.09	0.06
Paternal parenting behavior				
Involvement	34.53 (4.75)	36.80 (4.46)	−2.35*	0.23
Positive parenting	24.93 (2.66)	25.00 (2.98)	−0.18	0.00
Poor monitoring	14.33 (2.99)	13.27 (2.15)	1.68	0.13
Inconsistent discipline	13.93 (3.51)	12.27 (3.39)	1.89	0.16
Corporal punishment	4.40 (1.45)	4.13 (1.55)	0.89	0.04

Note: n = 20 mothers and 15 fathers.

[a]denotes missing data for 1 mother.

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$. .01 = small effect, .06 = medium effect, .14 = large effect (Cohen, 1988).

Table 3: RC Indices and Cutoff Scores for Parental Functioning Measures

Variable	RC Index $x_2 - x_1 / S_{diff}$	Cutoff Score $M \pm 2(SD)$
Parental distress	3.94	40.80
Dysfunctional interaction	4.44	39.40
Difficult child	3.83	28.30
Total stress	8.74	101.80
Maternal involvement	2.26	31.56
Positive parenting	1.23	20.39
Poor monitoring	1.90	19.00
Inconsistent discipline	1.61	20.50
Corporal punishment	0.72	8.80

Note: RC indices and cutoff scores were determined based on Jacobsen and Traux's model (1991).

Table 4: Effects of Behavioral Parent Training on Parental Functioning—Clinical Significance

Variable	No Improvement or Recovery *n* (%)	No Improvement Came in Functional *n* (%)	Reliably Improved Not Recovered *n* (%)	Reliably Improved Came in Functional *n* (%)	Reliably Improved and Recovered *n* (%)
Maternal parenting stress[a]					
Parental distress	1 (5.0)	14 (70.0)	0 (0.0)	3 (15.0)	1 (5.0)
Dysfunctional interaction	6 (30.0)	11 (55.0)	0 (0.0)	1 (5.0)	1 (5.0)
Difficult child	3 (15.0)	9 (45.0)	1 (5.0)	4 (20.0)	2 (10.0)
Total stress	2 (10.0)	11 (55.0)	1 (5.0)	5 (25.0)	0 (0.0)
Maternal parenting behavior					
Involvement	0 (0.0)	14 (70.0)	1 (5.0)	5 (25.0)	0 (0.0)
Positive parenting	0 (0.0)	16 (80.0)	0 (0.0)	3 (15.0)	1 (5.0)
Poor monitoring	2 (10.0)	15 (75.0)	0 (0.0)	3 (15.0)	0 (0.0)
Inconsistent discipline	0 (0.0)	9 (45.0)	0 (0.0)	10 (50.0)	1 (5.0)
Corporal punishment[a]	0 (0.0)	13 (65.0)	0 (0.0)	6 (30.0)	0 (0.0)
Paternal parenting stress					
Parental distress	0 (0.0)	15 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
Dysfunctional interaction	1 (6.7)	14 (93.3)	0 (0.0)	0 (0.0)	0 (0.0)
Difficult child	2 (13.3)	12 (80.0)	1 (6.7)	0 (0.0)	0 (0.0)
Total stress	0 (0.0)	15 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
Paternal parenting behavior					
Involvement	1 (6.7)	8 (53.3)	0 (0.0)	3 (20.0)	3 (20.0)
Positive parenting	0 (0.0)	14 (93.3)	1 (6.7)	0 (0.0)	0 (0.0)
Poor monitoring	0 (0.0)	13 (86.7)	0 (0.0)	1 (6.7)	1 (6.7)
Inconsistent discipline	0 (0.0)	11 (73.3)	0 (0.0)	4 (26.7)	0 (0.0)
Corporal punishment	0 (0.0)	14 (93.3)	0 (0.0)	1 (6.7)	0 (0.0)

Note: *n* = 20 mothers and 15 fathers.

[a]denotes missing data for one mother (5.0%).