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Parent Stress Reduction Through a Psychosocial Intervention For Children Diagnosed with Attention-Deficit/Hyperactivity Disorder

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PARENT STRESS REDUCTION THROUGH A PSYCHOSOCIAL INTERVENTION FOR CHILDREN DIAGNOSED WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

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Title: Parent Stress Reduction Through a Psychosocial Intervention For Children Diagnosed with Attention-Deficit/Hyperactivity Disorder

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Children with Attention-Deficit/Hyperactivity Disorder (ADHD) experience significant difficulties in the domains of attention, hyperactivity, and impulsivity. This constellation of symptoms not only has a negative impact on the child's life by creating difficulties in school and peer relations, but also is associated with difficulties within the home. In fact, having a child with ADHD is correlated with significant increases in the amount of stress that parents experience. Studies have indicated that when parents of children with ADHD participate in parent training and when children receive medication, parent stress is decreased. The current study examines whether a child's participation in a psychosocial treatment, specifically the Summer Treatment Program (STP), can have the same significant positive impact on parents' experience of stress. Participants were parents of children participating in the Summer Treatment Program provided through a community mental health clinic. Parents completed measures of parenting stress prior to and after their child participated in the STP. Measures of child behavior problems were also completed prior to and following the child's participation in the STP. There was a significant decrease in the total amount of parenting stress that parents were experiencing after their child participated in the STP. Findings, however, were inconsistent as to

whether or not child behavior improved. The results, however, do suggest that participation in the STP can have a positive impact on parent stress.

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CHAPTER 1

LITERATURE REVIEW

A disruptive behavior disorder can affect not only the world of a child, but also the lives of his or her family. The stress of raising a child with a disruptive behavior disorder can impact parent-child relationships and create a difficult home environment. Therefore, when treating a child with a disruptive behavior disorder, it is important that clinicians can be assured that their treatment is not only alleviating a child's symptoms, but is also working to decrease parent stress and improve familial functioning. One particular way to investigate this is by examining whether or not a child with Attention-Deficit/Hyperactivity Disorder's (ADHD) participation in a Summer Treatment Program (STP) can affect decreases in their parents' reports of stress. To unravel this question, an understanding of what parent stress is will be developed, the unique contributions of ADHD to parent stress will be investigated, other ADHD treatments that have been shown to reduce parent stress will be reviewed, the Summer Treatment Program will be outlined, and finally hypotheses regarding parents' stress reports and a child's participation in a STP will be presented.

Parent Stress

Ask any parent if raising a child is stressful and they will immediately answer yes. Furthermore, parenting stress is ubiquitous. All parents, despite their own or their children's characteristics, their economic status, or any other possible explanatory variable experience parenting stress to some degree (Deater-Deckard, 1998). What exactly it is that makes parenting stressful and how to define parenting stress, however, is an answer that is much more difficult to produce. Over the past several decades a

number of researchers have attempted to define parenting stress, develop instruments to measure the amount of stress that a parent is experiencing, and develop models that explain the complex processes involved in parenting stress. These attempts have lead to great strides in the conceptualization of parenting stress and have informed both assessment and treatment for parents under stress.

Deater-Decker (2004) defines parenting stress as, "a set of processes that lead to aversive psychological and physiological reactions arising from attempts to adapt to the demands of parenthood. This is often experienced as negative feelings and beliefs toward and about the self and the child. By definition, these negative feelings arise directly from the parenting role," (p.6). This definition states that parenting stress must be directly associated with the demands of parenting. It also states that parenting stress involves not only negative feelings toward one's own ability to function as a parent but also involves negative feelings toward the child. This definition points to the idea that parenting stress must involve parent factors and child factors. It also implies that the parent-child relationship can be affected by parenting stress.

It is further the tension between the vast array of demands of parenting and the available resources to deal with these demands that determines the degree to which parents experience stress. The demands of parenting are many and include things such as meeting children's typical survival needs, such as providing food, water, clothing, and shelter. It also includes more abstract demands such as providing children with love, support, affection, and attention (Deater-Deckard, 2004). Resources to cope with these demands are also varied and may be more difficult to access for some parents than others. They "include a host of mental and physical factors such as adequate protection for

survival (e.g., sufficient housing, food, and income), knowledge, feelings of competence, and instrumental and emotional support from others,"(Deater-Deckard, 2004, p.6)

Furthermore, the parenting role in and of itself can be stressful. Becoming a parent can cause one to question or change their identity. Social relations associated with the parenting role can also be similarly stressful. "Structural constraints on the social environment can lead to physical and psychological isolation; low reward, the complexity of daily life, uncertainty, interpersonal conflict, restricted choices, and deprived personal resources"(Deater-Deckard, 2004, p.14). Furthermore, when society perceives that parents do not handle their child well in public or the child is misbehaving, they are seen by others as being an incompetent parent (Abidin, 1990). All of these factors add together to place an enormous pressure on the parent, simply by virtue of being in the parenting role.

In fact, no one factor is sufficient to explain or to create a highly stressful parenting environment. A variety of interacting variables contribute over time to parents' perception of parenting stress (Crnic and Low, 2002). In an attempt to identify these factors, based upon parenting stress definitions and available research, several researchers have developed a number of theories explaining the causes of parent stress.

The first theory is the Parent-Child-Relationship theory of parenting stress. This theory posits that there are three domains of parenting stress. The first is the parenting domain. This domain includes aspects of stress resulting from the parent's personal experience (Deater-Deckard, 2004). These parent factors could include gender, family history, mood states, beliefs about child development, and ideas on how to best raise a child (Crnic & Low, 2002). These parental factors will have a direct impact on the way in

which the parent behaves. The second domain is the child domain, which is stress related to the child's behavior. Stressful child behavior would include such behaviors as noncompliance, interrupting, inattention, and other general child behavior problems. The third domain is the relationship domain, which is stress related to the parent-child relationship. This theory further states that stress in any of the three domains can lead to detrimental effects in the other domains; however, reductions in stress in any of the three domains can lead to positive effects in the other domains (Deater-Deckard, 2004).

Changes in the parent domain as a result of stress in any of the three domains might include such actions as decreases in expressions of love and affection, increases in insensitive methods of discipline, less consistent parenting behavior, or complete withdrawal from the parenting role. As these changes in the parenting domain occur, it is likely that changes in the child domain and the parent-child relationship domain would also occur. The child's behavioral problems would likely increase, as would difficulties in the parent-child relationship. Likewise, in the inverse relationship, as stress decreases in any of the domains, parenting behavior, child behavior, and parent-child relationships would improve (Deater-Deckard, 2004).

Another theory of parenting stress is the Daily Hassles Theory of Parenting Stress. This theory examines the way in which the everyday stress of parenting can have an effect on the parent and the child. It considers the effects of minor stressful events that can accumulate overtime (Crnic & Low, 2002; Deater-Deckard, 2004). "These include the typical stress that arises when having to deal with a child's minor misbehavior or problems, when carrying out the many mundane tasks of childcare, and when navigating the complicated and usually conflicting schedules of work and family life," (Deater-

Deckard, 2004, p.10). This theory, however, is not contradictory to the Parent-Child-Relationship theory, but rather compliments it to explain how parents experience the building effects of stress, within all three domains, over time with everyday hassles, day in and day out (Deater-Deckard, 2004).

Many mundane tasks that can become stressful over time include child behaviors such as interrupting and whining. Parenting concerns and behavior that can become stressful include straightening up after messes, limited alone time, uncertainty on how to deal with a variety of circumstances a child encounters, coordinating car pools or other child activities, and a variety of other instances that a parent is forced to deal with on a daily basis. All of these occurrences can lead to frustration, irritation, and confusion, which in turn can lead to the experience of stress (Crnic & Low, 2002). It is important to note that while inconsistent stress can affect parents and their children, chronic parenting stress is more likely to have harmful consequences (Deater-Deckard, 2005).

With chronic stress, parents may experience changes within the parenting role (Crnic & Low, 2002). Stressed parents have been found to have more difficulty resolving parenting dilemmas and to have decreased satisfaction within the parenting role. Stressed parents have also been found to have less sensitivity in responding to their child (Deater-Deckard, 2004). When parents experience more frequent and more intense daily stressors in parenting, relationships may become challenging, hostile, and problematic. When this occurs, the Daily Hassles theory states that child behavior and the parent-child relationship will deteriorate (Crnic & Low, 2002). Here, as in the Parent-Child-Relationship theory, one sees the hypothesis that stress can have an impact

on not only the parent and the parent's behavior, but also can have an impact on the child and the child's relationship with the parent.

A general theory of stress that is often applied to conceptualize how parenting stress develops is Lazarus' theory of Stress Appraisal and Coping (1984). "The definition of stress here emphasizes the relationship between the person and the environment, which takes into account characteristics of the person on the one hand, and the nature of the environmental event on the other," (Lazarus, 1984, p. 21).

This model of stress involves four different processes. The first process in stress appraisal and coping is the perception of an external stressor. This stressor must be perceived by the individual (Deater-Deckard, 2004; Lazarus, 1984). If the individual does not perceive an event as stressful, then by definition it cannot be stressful for that individual. With parenting stress, the cause of stress is the child or children, but a variety of different types of events may be present (Deater-Deckard, 2004). The second process occurs when the individual engages in a cognitive appraisal of the stressor. Cognitive appraisal of the stressor allows the individual to conclude whether or not the stressor is aversive or to be avoided. The third process occurs when the individual engages in coping mechanisms to reduce the effects of the aversive stressor. The last process is referred to as the stress reaction. The stress reaction entails the negative effects that occur in one's mind and body as a result of being exposed to a stressful event (Deater-Deckard, 1998; Deater-Deckard, 2004; Lazarus, 1984). "Psychological stress, therefore, is a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being. The

judgment that a particular person-environment relationship is stressful hinges on cognitive appraisal," (Lazarus, 1984, p.21).

Cognitive appraisal then becomes a very important aspect of how parents will interpret their child's behavior. It is the variations in parents' cognitions about their child's behaviors and why the behavior is occurring that may explain why certain parents are more able to effectively navigate the stresses of parenting than others (Deater-Deckard, 2004). For instance, those parents who identify the normal activities of childhood as problematic will experience more stress than those parents who label these behaviors as typical or normative (Crnic & Low, 2002). Parent perceptions are also likely to be influenced by such things as marital difficulty, mood disorders such as anxiety and depression, substance abuse, job stress, low socioeconomic status, daily hassles, and single parenting (Webster-Stratton, 1990).

It is very likely that under situations in which parents are experiencing chronic parenting stress, parents may become biased in their access to knowledge about the causes of their child's behavior. They may misidentify the cause of their child's behavior. This may cause them to blame their children, or themselves, when determining why their children behave as they do (Deater-Deckard, 2004).

Coping, likewise, becomes an important factor in determining how parents experience stress. Lazarus (1984) defines coping within his model as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person," (p.178). Coping, therefore, is what an individual does at a specific time and place in order to handle or change the stressor, as well as manage their emotional and physical reaction to

it (Lazarus, 1984). For parents, this would mean that the effectiveness of how well they deal and cope with the stressors created by their child, either by changing the stressful event or attempting to minimize their reactions to it, will determine the degree to which they experience a stress response and all of its negative consequences. "Parents who are less reactive and more able to regulate their thoughts, emotions, and behaviors are able to adapt more readily in the face of minor or major parenting stressors," (Deater-Deckard, 2004, p.53).

Very closely related to this model is one developed by Webster-Stratton (1990). "This model assumes that stressors due either to extrafamilial factors, interpersonal factors, or child factors confront parents with a situation that requires coping skills," (Webster-Stratton, 1990, p. 303). The effect that these stressors have on the parent depends upon the parent's psychological well-being and the amount of support they receive from friends, family, and other personal resources. Also, similar to Lazarus' theory, in this model the way in which a parent appraises a stressful event will have an impact on their reaction to it (Webster-Stratton, 1990).

Measures of Parent Stress

From these theories of parenting stress, ways to measure parenting stress have been developed. The most popular and most widely used among these is the Parenting Stress Index (PSI), which provides an estimate of the amount of stress a parent experiences in their role as a parent. The PSI draws directly upon the Parent-Child-Relationship theory for its organizing framework (Abidin, 1997).

The PSI measures child, parent, and situational characteristics that lead to parenting stress. The measure includes two domains and a Stressful Life Events Scale.

The items for the two domains use a five-point Likert scale ranging from “strongly agree” to “”strongly disagree” to assess parents’ opinions. The first domain is the Child Characteristics domain, which includes the subscales Adaptability, Demandingness, Mood, Distractibility/Hyperactivity, Acceptability of Child to Parent, and Child’s Reinforcement of Parent (Abidin, 1997; Loyd & Abidin, 1985). When scores are elevated in this domain it is associated with children whose behavior cause significant stress to their parents and make it difficult for them to fulfill their parenting role (Loyd & Abidin, 1985). The second domain is the Parent Characteristics domain, which includes the subscales Depression, Attachment to Child, Social Isolation, Sense of Competence in the Parenting Role, Relationship with Spouse/Parenting Partner, Role Restrictions, and Parental Health (Abidin, 1997; Loyd & Abidin, 1985). When either of these domains is elevated in comparison to the other, the domain that is elevated is considered to contain factors contributing to the majority of the parents’ stress (Loyd & Abidin, 1985). A Total Stress score is obtained by adding the two domain scores. The Stressful Life Events Scale is a yes/no item format evaluating the major life events that occurred for the parent within the last year (Abidin, 1997). With these domains, it is clear that just as in the Parent-Child-Relationship theory of parent stress, both parent and child characteristics are viewed as important dimensions of parenting stress. Also, with the addition of the Stressful Life Events Scale, the daily hassles and the related adjustment are also considered, as in the Daily Hassles theory.

The test-retest reliability for the Total Stress score on the Parent Stress Index ranges from .88-.90 and the test’s concurrent validity has been established with a number of measures, including the Beck Depression Inventory, Child Abuse Potential Inventory,

Child Behavior Scale, Eyeberg Child Behavior Inventory, Family Adaptability and Cohesion Evaluation Scales, and Family Impact Questionnaire. In addition to this longer format, the authors of the PSI have also developed a short form of the measure. The short form is comprised of 36 items taken directly from the long form. These items are organized into three clusters of 12 items each. These three clusters form three subscales: Difficult Child Temperament, Dysfunctional Parent-Child Interaction, and Parental Distress. These subscales are then combined to obtain a Total Stress score. The test-retest reliability for this form ranges from .84-.91 for the Total Stress score. While the PSI- short form does not currently posses validity literature on its own, its Total Stress score has a correlation of .95 with the Total Stress score on the longer format, indicating that they very likely possess similar validity scores (Abidin, 1995).

The developers of these measures understood stressors as both additive and multidimensional, so that the more stressors an individual experiences across the child and parent domains, the more severe their stress reaction would be. The writers of this scale assume a linking between behaviors and parent and child characteristics to stress. Most concisely, this measure defines possible sources of stress and the impact of stressors, as well as gives a measure of the impact of specific parent and child factors on stress. Lastly, this measure can be used to help determine specifics areas of therapeutic intervention (Abidin, 1997).

While the PSI is among the most popular of the measures used to assess parent stress, there are some who question its use and have therefore sought to develop other measures of parent stress. Berry and Jones (1995) criticize the Parent Stress Index as too invasive and as creating a discrepancy between mother and father reports. They state,

"There is a need for better understanding of the connections between parental stress and both well-being and the quality of other relationships such as marriage, taking into account both the rewards and demands of parenthood," (Berry & Jones, 1995, p. 464).

The Parental Stress Scale (PSS), therefore, considers both the positive and negative aspects of parenting, departing from traditional theories of parenting stress. This measure then focuses more on the parent domain of functioning. This scale consists of 18 items that are answered using a 5-point Likert scale ranging from "strongly disagree" to "strongly agree." The test-retest reliability for this scale was found to be .81. Validity was established by comparing the measure to other measures of parenting stress, including the PSI, and a general measure of stress, the Perceived Stress Scale. All correlations were significant and in the direction expected (Berry & Jones, 1995). Findings from this measure suggest that stress scores are related to parental role satisfaction variables and that the majority of variance in the parents stress score is related to whether the parent found their role to be a pleasant and rewarding experience. This was measured by items specifically addressing happiness, optimism, and satisfaction with the child (Berry & Jones, 1995).

Despite this, some theorists argue that a single measure of parenting stress is not sufficient to capture this complex domain. Deater-Deckard (1998) argues that for parenting stress to be fully understood an in depth review of the demands of parenting, the parent's psychological well-being, the quality of the parent-child relationship, and the child's psychosocial adjustment must be thoroughly investigated.

Correlates of Parenting Stress

With these theories established and measures created, many researchers have sought to demonstrate their validity. Researchers have attempted to investigate how specific parent, child, and parent-child relationship issues may lead to the experience of more stress, how the experience of daily hassles add up to chronic stress, and how cognitive appraisal and coping have an impact on the experience of parenting stress.

In support of the Parent-Child-Relationship theory, as well as the Daily Hassles theory, many researchers have shown that child behavior can have a significant impact on a parents' experience of stress. "Parenting stress is greater in families with children who are more reactive and have poorer self-control, who are more aggressive and noncompliant, who are inattentive and hyperactive, and who are anxious or depressed," (Deater-Deckard, 2004, p.73). For example, it has been found that parent stress is associated with the degree of impairment or dysfunction in the child. Specifically, in a study involving three-year-old children with and without developmental delays, it was found that parenting stress, as measured by the Family Impact Questionnaire, was higher in parents of children with developmental delays. This study also found that parent stress was higher in parents of children with behavioral problems than it was in parents of children with cognitive delays (Baker, Blacher, Crnic, & Edelbrock, 2002; Deater-Deckard, 2004; Webster-Stratton, 1990).

Furthermore, in a study involving preschool children, it was found that children who were more difficult and more emotionally intense were perceived as being more stressful to both mothers and fathers (McBride, Schoppe, & Rane, 2002). Therefore, the more acting out a child does, the more stress a parent experiences (Deater-Deckard,

2004). As a child acts out more, a parent has more hassles to deal with throughout their day. In these situations, as in Parent-Child-Relationship theory, it would be the child component of the theory that drives a parent's stress.

Studies have also shown support for the impact of parent characteristics on parents' perceived levels of stress. For example, Reitman, Currier, and Stickle (2002) found that "mothers' reports of competence in the parenting role and general satisfaction with the child seem more strongly related to their own emotional state and economic situation than to child behavior," (p. 390). They based this on the finding that parental psychopathology scores and income was associated with stress in parent-child relationships, whereas child behavior problems were not. They also found that maternal psychopathology, family socioeconomic status, and maternal education level accounted for a significant amount of variance in dysfunctional parent-child relationships. This study may downplay the role of child behaviors in contributing to parent stress, however, as it was conducted with minority single mothers in a low socio-economic status neighborhood who had significant psychopathology. Clearly, these mothers were attempting to parent in very stressful situations (Rogers, 1998; Reitman, Currier, & Stickle, 2002).

Chi and Hinshaw (2002) further supported the role of the parent domain in contributing to difficulties in the parent-child relationship. They found that maternal depression can have detrimental effects on the parent-child relationship. Maternal depression was associated with maternal reports of negative parenting and problematic parent-child interactions. Clearly then, stress related to parent problems can have an impact on the other domains of parenting stress.

In further support that the parent-child relationship domain can be impacted by stress, it has been found that stress and parent-child conflicts disrupt the ebb and flow of family functioning. They disrupt the routine of the family and lead to a greater experience of stress in the parent (Crnic & Low, 2002). Research has shown that as in both the Parent-Child-Relationship theory and the Daily Hassles theory suggest, stress in any domain can lead to deficits in the parent-child relationship. For instance, it has been found that children who have difficult temperaments bring forth more negative reactions from their families (Crnic & Low, 2002). Furthermore, "parents who report higher levels of stress in the parenting role are more likely to be harsher and more authoritarian in their parenting behavior and feel less involved with their children's lives," (Deater-Deckard, 2004, p. 75).

In an attempt to tease apart the specific aspects of parenting stress, Ostberg and Hagekull (2000) employed the use of structural equation modeling to determine the contribution of child, parent, and family variables to parenting stress. This study was based on 1, 081 Swedish mothers of children aged 6 months to 3 years. Stress was measured with an adaptation of the Parent Domain of the Parent Stress Index (PSI). The possible variables considered appeared very similar to the constructs presented in the Parent-Child-Relationship theory of parenting stress. Specifically, Ostberg and Hagekull (2000) included child temperamental characteristics, mother's age and education level, and family-related variables, such as social support and workload, in their model.

They found that parents who had a high workload, low social support, perceived their child as fussy or difficult, experienced negative life events, had child caretaking hassles, more children in the family, and were older had more stress. They also found

that child irregularity contributed indirectly to stress through creating increased parenting hassles. Therefore, a child with less predictable behaviors presented more challenge to their parent. This child would most likely not allow a parent to adequately organize their home and anticipate the child's needs for the day. Over time, as suggested by the Daily Hassles theory, this every day irritation will lead to chronic parent stress. This model explained 48 percent of the variance in parent stress (Ostberg & Hagekull, 2000).

Sepa, Frodi, and Ludvigsson (2004) similarly investigated a variety of variables to determine which ones contributed to parenting stress. This study examined 16,000 families of newborn to one-year-old children in Sweden. This study employed the use of a Swedish parent stress questionnaire, which was based upon the American PSI. They examined sociodemographic variables (including age, number of siblings, marital status, education, and childcare arrangements), maternal psychological variables, life style variables, and child characteristics. They found that sociodemographic variables did not contribute to parent stress. The only predictors of parent stress were parent characteristics and child characteristics (Sepa, Frodi, & Ludvigsson, 2004). This again supports the Parent-Child-Relationship theory that states that both parent and child domains contribute to parent stress.

Interventions For Parenting Stress

With theories developed, assessment techniques created, and investigation strategies suggested, theorists next considered how best to intervene to prevent parenting stress. Intervention becomes important because stress decreases a parent's ability to be supportive and sensitive to their child's needs (Deater-Deckard, 2005). It is suggested that for interventions to be effective, parents themselves need not be targeted specifically.

Because parenting stress involves a variety of dimensions and domains, “any number of changes in a family’s situation, a parent’s own health and functioning, or a child’s behavior, could lead to reductions in parenting stress,”(Deater-Deckard, 2004, p. 157). This gives hope to those wishing to reduce parenting stress because there are many different avenues from which to improve a parent’s stress reaction.

Decreases in social support are often correlated with increases in many different types of stress. This is also the case with parenting stress and may be particularly important for parents of children with difficult behavior (Crnic & Low, 2002; Deater-Deckard, 1998). In fact, Sepa, Frodi, and Ludvigsson (2004) found that mothers of infants who did not have high amounts of social support where more likely to experience greater levels of parenting stress. In further support of this, Bonds, Gondoli, Sturge-Apple, and Salem (2002) found in their study of parents of 9 and 11 year olds that parents who had support were more likely to have better parenting practices. This relationship was mediated by less parenting stress. Rodgers (1998) also found that social support buffered the effects of stress on parent behavior and on parent symptomatology in parents of children in preschool and kindergarten. Whatever the intervention used, it is clear that given the deleterious effects that parenting stress can have on the parent, child, and their relationship, parenting stress must be addressed.

When parenting stress is placed within the context of having a child with externalizing and disruptive behavior disorders, as is in the case of ADHD, a more complicated and complex picture is created. For these parents, the normal pressures of parenting are exacerbated by having a child who presents with difficulties in relating and interacting. As examined studies have already shown, disruptive behaviors in general

lead to a greater experience of stress in the parents. With this, we have seen that the parent-child relationship suffers. This strain of living in a stressful environment affects all family members. ADHD and the parent stress associated with it then becomes a serious and important clinical consideration.

Parenting Stress and ADHD

ADHD in General

The DSM-IV defines Attention-Deficit/Hyperactivity Disorder as involving symptoms of inattention and hyperactivity-impulsivity that have persisted for at least 6 months and are maladaptive and are inconsistent with the child's developmental level (American Psychiatric Association, 2000). Some of the symptoms of inattention include failing to give close attention to details, difficulty sustaining attention in tasks or play, not seeming to listen when spoken to directly, not following through with instructions, difficulty organizing tasks, losing objects, and being easily distracted. Some of the symptoms of hyperactivity-impulsivity include fidgeting hands, squirming in one's seat, running or climbing excessively at inappropriate situations, difficulty engaging in tasks quietly, excessive talking, blurting out answers before the question is completed, difficulty waiting their turn, and interrupting or intruding on others. ADHD is further divided into the combined type with both inattentive and hyperactive-impulsive symptoms met, the predominantly inattentive type with primarily inattentive symptoms met, and the predominantly hyperactive-impulsive type with primarily hyperactive-impulsive symptoms met (American Psychiatric Association, 2000).

ADHD also carries with it a variety of comorbid disorders. These include oppositional behaviors and aggressive-spectrum disorders, learning disorders, depression,

and anxiety. Unfortunately, each comorbid condition has its own associated difficulties and impairments. Furthermore, it seems that "ADHD subtypes show substantially different patterns of comorbidity, with the inattentive type more likely to demonstrate association with internalizing features and hyperactive-impulsive and combined types more prone to incorporate serious aggression and conduct disturbance" (Hinshaw, 2001, pp.5-5).

Academically, these children have lower grades in school, more academic failure, and do worse on standardized tests (Hinshaw, 2001). Socially, children with ADHD exhibit more problem behavior and are less socially skilled than their non-ADHD cohorts. They exhibit more noncompliant and inappropriate behavior and have more negative social behavior (DuPaul, McGoey, Eckert, & VanBrakle, 2001). Children with ADHD are rejected by their peers and have a low number of positive endorsements from their classmates, as well as have difficulty making and keeping friends. This seems to be a result of being intrusive when interacting with others, failing to reciprocate in relationships with others, and an overall tendency to be disruptive. Personally, these kids have lower self-esteem and less accurate self-perceptions than comparison children (Hinshaw, 2001).

Within this complex web of difficulties, it becomes clear that a child who has ADHD is faced with a variety of challenges academically, socially, and personally. Unfortunately, the difficulties do not stop there. These problems extend to and affect their family. Parents dealing with these children experience a great deal of stress.

Parenting Stress and ADHD

Importantly, while all parents experience stress to some degree, parents of children with externalizing behavior problems report significantly more stress than parents of children without externalizing behavior symptoms. Parents of children with externalizing behavior problems view themselves as having less parenting knowledge, less parental competence, and less social support (Morgan, Robinson, & Aldridge, 2002). Parents of children with ADHD are therefore, as a group, experiencing more stress and more self-doubt than are parents of children without externalizing behavior disorders. A review of the literature on parent stress and ADHD illustrates the significance of the stress experienced in this group, the variables that exacerbate the stress experience, and the negative impact that parent stress caused by having a child with ADHD can have on the family and the parent-child relationship.

Johnston and Mash (2001) state that, "the presence of ADHD in children is associated to varying degrees with disturbances in family and marital functioning, disrupted parent-child relationships, specific patterns of parental cognitions about child behavior and reduced parenting self-efficacy, and increased levels of parenting stress and parental psychopathology," (p.183). Family members of children with ADHD are therefore more likely to experience these negative reactions than family members of children without ADHD. ADHD is further associated with an atmosphere of parental and marriage discord, perceived parenting incompetence, and negative parent-child relationships and childrearing beliefs. These negative reactions not only disrupt family functioning, but also, over time, lead to chronic stress in the child's parents (Hinshaw, 2001; Mash & Johnston, 2001). Furthermore, as parents attempt to deal with their ADHD

child, they may be perceived negatively by others as being demanding, desperate, or flawed in their abilities to care for their child (Kaplan, Crawford, & Fisher, 1998). This too adds to the parent's stress experience.

To illustrate the significant increases in parent stress experienced by parents of children with ADHD, several studies have shown that those parenting ADHD children have higher levels of stress. For instance, DuPaul (2001) in a study of 94 children between the ages of 3 and 5 found that, "mean ratings provided by parents of children with ADHD were associated with a higher stress level than 83% of the PSI normative group, and there was a difference of more than 2 SD on these measures between ADHD and control parents," (p514). Also, Baker and McCal (1995) found in their study involving 16 mothers of children with ADHD, 16 mothers of children with a learning disability, and 16 mothers of "normal" children that mothers of children with ADHD showed significantly more stress than did mothers of children with learning disabilities. These children had a mean age of 8. This increase in parent stress as a result of having an ADHD child has similarly been found in children as young as preschoolers. Parents of twenty-five preschool children with ADHD rated their child as more stressful and as having a less rewarding parent-child relationship than did parents of twenty-five normal controls (DeWolfe, Byrne, & Bawden, 2000). Within these detrimental interactions, there are certain variables and characteristics that have been shown to contribute significantly to parenting stress in parents of children with ADHD. In all of the following studies the PSI was used to measure parenting stress unless otherwise noted.

Child Characteristics

One characteristic that has inconsistently been shown to increase parenting stress in parents of children with ADHD is gender. Bussing et al. (2003) found that boys contributed more to parenting stress than did girls. These children had an average age of 10.3 and stress was measured via the Caregiver Strain Questionnaire. Breen and Barkley (1988), however, found that ADHD boys and girls ages 6 to 11 were equally stress-inducing to their parents. In this study, the PSI was utilized to measure stress. It is likely that the different ages of the children and the different assessment measures used may have contributed to these contradictory conclusions. The picture thus remains unclear as to whether or not child gender has a significant effect on parent stress in children with ADHD.

Another characteristic that has been shown to increase parenting stress in parents of children with ADHD is the degree and severity of inattention symptoms and hyperactivity symptoms as reported by parents on self-report measures (Bussing et al., 2003; Harrison & Sofronoff, 2002). This may be because symptoms associated with ADHD, such as hyperactivity, impulsivity, and inattentiveness, affect the type and quality of interactions the parent has with their child (Fischer, 1990). In support of this, Vitanza and Guarnaccia (1999) found that "what was most important to a mother's level of parenting distress was how challenging and oppositional she perceived her child to be," (p. 39). Therefore, in this study, the strongest predictor of parenting stress was the degree of challenge that a child's behavior presented.

A third characteristic that exacerbates the experience of stress in parents of children with ADHD is child age. It has been found that families of young children with

ADHD engage in less adaptive coping behavior, and therefore experience a greater stress reaction to the difficulties posed by the child, as compared to normal controls. These results were found in a study specifically looking at children between the ages of 3 and 5 (DuPaul, McGoey, Eckert, & VanBrakle, 2001). This may be because parents of young children have not yet determined how to best cope with their difficult child or may not yet be aware of possible resources for social support.

One of the strongest predictors of parenting stress in parents of children with ADHD is whether or not the child also has oppositional defiant disorder or oppositional characteristics (Anastopoulos et al, 1992; Barkley, Fischer, Edelbrock, & Smallish, 1991; Bussing et al, 2003; Hinshaw, 2001; Johnston & Mash, 2001; Podolski & Nigg, 2001; Ross & Blanc, 1998). It has often been found that parent-child relationships are most conflicted when the child possesses behavior disturbances associated with conduct disorder. It is important to note, however, that children with ADHD alone also show an elevated level of parent-child conflicts as compared to the interactions between children without externalizing behavior problems and their parents (Johnston & Mash, 2001).

In fact, most conflicts in the parent-child relationship result from the presence of ODD or its associated symptoms comorbid in ADHD children (Barkley, Fischer, Edelbrock, & Smallish, 1991; Edwards et al, 2001). One study even found in a sample of 104 children ages 12 and younger that aggressive and oppositional behavior accounted for as much as 37% of the variance in parent stress. This study found that while maternal psychopathology, the severity of the child's ADHD, and the child's health were all significant predictors of parent stress, it was aggressive and oppositional behavior that accounted for the most variance (Anastopoulos et al., 1992). In another study it was

found that parents of children with dual or multiple diagnoses experienced more stress than parents of children with ADHD alone or ODD alone. This study investigated stress as experienced by parents of children ages 2 to 8 with single, dual, or multiple disruptive behavior disorders (Ross & Blanc, 1998).

Parent Characteristics

Another characteristic that might also increase parenting stress is whether or not the child's parent has ADHD. This is a very real possibility as parents of children with ADHD have an elevated risk of having ADHD themselves (Johnston & Mash, 2001). Furthermore, "ADHD appears strongly associated between parents and children, and ADHD in parents appears to confer specific impairments in parental functioning above and beyond the influence of child ADHD," (Johnston & Mash, 2001, p. 198). Therefore, a parent's experience of having ADHD themselves may make it more difficult for them to cope with their ADHD child.

Additionally, parental psychopathology seems to increase the likelihood that the parent will find their ADHD child to be stressful. In fact, in some studies parent psychopathology has been found to account for a sizeable amount of the variance in parent stress caused by raising a child with ADHD (Anastopoulos et al., 1992). To support this, Vitanza and Guarnaccia (1999) found a mother's global self-esteem was a significant predictor of amount of parenting stress. Therefore, parents who view themselves positively are more able to effectively cope with the demands of parenting. It may also be that effectively coping causes higher global self-esteem.

Another parent characteristic that has an impact on the degree to which parents experience stress related to having a child with ADHD is parenting similarity, or the

degree to which parents agree on the way in which to raise and discipline their child. Not only is parenting similarity associated with less marital conflict and fewer comorbid disruptive behavior problems in the children, but it is also associated with lower parenting stress (Harvey, 2000).

Finally, some have suggested that parent knowledge of ADHD is an important variable to include when explaining the variance in stress of parents with children who have ADHD. This is because knowledge affects a parent's cognitive appraisal of a child's behavior. This also relates to theories of parenting stress that place cognitive appraisal as important in the stress reaction. Parents' knowledge of ADHD, as well as their understanding of child and adolescent development as it relates to ADHD characteristics, will influence the way in which they understand and appraise a variety of situations that they encounter with their child (McCleary, 2002). In essence, whether or not a parent perceives their child as stressful will depend in part upon how they view the child's behavior, as well as the sources and causes of the behavior.

It is no surprise that these parent and child characteristics contribute strongly to the experience of stress in parents of children with ADHD. Previously reviewed theories of parent stress suggest that parent and child characteristics are both important domains in the parent stress experience. This was further supported in a study by Anastopoulos et al. (1992) that found that "child (43%) and parent (41%) characteristics accounted for far more of the variance in overall parenting stress than did family-environment variables (4%)," (p.515). Harrison and Sofronoff (2002) similarly investigated a combination of parent and child characteristics to determine the amount of variance that they accounted for in parenting stress. These authors included the variables of severity of child

behavioral disturbance, low knowledge of ADHD, perceived parental control, and parent attributions about the child's behavior in their model. This model accounted for 24% of the variance in parent stress. Baker (1994) found that 45% of the variance in parent stress related to ADHD was accounted for by total problem behaviors in the child, fewer years that the parents were married, and, surprisingly, increased SES. The authors explain this anomaly by suggesting that high SES may in some way carry with it expectations for how the parent and child should behave. It is suggested that these expectations may in fact increase the stress experience.

Stress Effects on Parent-Child Interactions and Parent Behavior

Given the theories of stress previously reviewed, it is no surprise that parent-child interactions are negatively affected by parent stress. In fact, the general pattern of interaction between ADHD children and their families is more problematic than one would find between children without an externalizing disorder and their parents. Observational studies have found both ADHD children and their parents exhibit more negative and controlling behaviors than normal controls (Johnston & Mash, 2001). Further research has demonstrated that children with ADHD showed more than twice the level of noncompliance and more than five times the level of problem behaviors than normal controls when performing tasks and activities suggested by their parents. For their part, parents of children with ADHD show negative behaviors toward their children three times more frequently than parents of normal controls (DuPaul, 2001). Overtime, as a result of noncompliance and defiance, families of hyperactive children develop negative attributions about their children and their children's behavior (Mash & Johnston, 1990).

Unfortunately, these negative patterns of interactions often continue throughout childhood and into adolescence. While interaction patterns may improve from childhood ratings, ADHD children continue to have more negative interactions with their parents than normal controls in adolescence (Barkley, Fischer, Edelbrock, & Smallish, 1991). "These hyperactive adolescents also displayed greater interaction conflicts with their mothers, both on parent ratings of home conflicts and on direct observation measures of parent-teen interactions," (Barkley, Fischer, Edelbrock, & Smallish, 1991, p. 231). Also, it has been found that parents and their ADHD/ODD children rated themselves as having significantly more issues involving parent-teen conflict, more anger during these conflict discussions, and more negative communication generally than parents and children without externalizing behavior problems (Edwards, 2001).

Furthermore, the experience of having a child with ADHD can have additional detrimental effects on the parent. Parents of children with ADHD and high oppositional behaviors have lower levels of self-esteem (Johnston, 1996; Mash & Johnston, 1983). It has also been found that parents of ADHD children experienced more psychological disturbance, particularly fathers with ADHD children with high oppositional behaviors. These feelings are likely to be the result of coping with a difficult child (Mash & Johnston, 1983).

Another detrimental effect that the stress of having a child with ADHD can have on the parents is increasing their rate of alcohol consumption. Pelham and Lang (1999) examined how interacting with a child with ADHD would affect alcohol consumption in adults. They based this study on the assumption that if stress in general could increase alcohol consumption, then it may be possible that parenting stress could also lead to

increased alcohol consumption. They found that when college students interacted with a child who had externalizing behavioral problems, the students increased their rate of alcohol consumption. When they replicated this study using parents of children with ADHD as their subjects, they found an interesting result. They found that interacting with a child with externalizing behavior problems was related to increased drinking only when the parents had a significant family history for alcoholism (Pelham & Lang, 1999). This suggests that while parents of ADHD children who have a family history of alcoholism may cope with their stress by drinking, parents without this family history find more productive ways to cope with their stress.

Pelham et al. (1998) also found this result. They, however, made specific conjectures about mothers' responses to stress stating, "in contrast to father, mothers of deviant children may respond initially to the stress of a deviant child with problem-solving coping styles that preclude drinking," (Pelham et al, 1998, p. 111). They hypothesized that the chronic stress of raising a child with ADHD may eventually lead some mothers to resort to alcohol consumption as a coping mechanism (Pelham et al, 1998).

Given the negative effects that having a child with ADHD cause in a family and the high degree of stress that it can cause, it is no surprise that some studies, though a surprisingly few number, have examined at whether or not treatment for ADHD can reduce the experience of stress in a family.

Parent Stress Reduction in ADHD Families Through Treatment Interventions

Despite the fact that parent stress is clearly an important issue for families of children with ADHD, very little research has examined whether or not interventions

aimed at reducing ADHD symptomatology are also effective at reducing parent stress. Many of the studies that have examined this question have done so through parent interventions, such as parenting training or group therapy. Parent training, in particular, is a commonly used intervention. This is because it provides parents with behavioral modification techniques through collaboration with the therapist, actively involving the parent in the therapeutic process (Chronis et al., 2004). Very few studies have documented whether treatment aimed specifically at children can reduce parent stress.

Pisterman et al. (1992) examined whether or not parenting stress could be reduced through parent training programs. In this study, families of 91 preschoolers with ADHD were placed in one of two experimental groups. The first group focused on child noncompliance and the second group focused on both child noncompliance and dealing with the child's short attention span. Both groups, however, addressed diagnostic, etiological, familial, developmental, and treatment issues related to ADHD. Each of these groups were conducted in a group format and lasted for 12 weeks. The Parent Stress Index was used to assess parent stress.

Results of this study indicated that compared to a wait list control group, those individuals who participated in the groups experienced significantly less parenting stress and a greater sense of parenting competence. These authors state that, "the present results suggest that parent group interventions which provide support, specific knowledge and skills to help parents cope more effectively with their child's particular difficulties may be especially conducive to fostering a sense of parenting competence," (Pisterman et al., 1992, p. 55). They speculate that parents' stress related to child characteristics may

have been improved through education about the disorder, creating less negative appraisals of the reasons for the child's actions.

Another study that investigated the effect that a parent-training group had on parents' report of the level of stress was conducted by Anastopoulus et al. (1993). Thirty-six families participated in this study. Participants in this group had a child with a diagnosis of ADHD and fell in the age range of 6-11. These individuals were assigned to either the parent training or wait list group. Those participating in the parent group followed the nine session treatment program developed by Barkley. Topics covered included positive reinforcement, positive attending and ignoring skills, attending to independent play, the use of the token reward system, compliance training, punishment strategies, how to cope with behavioral problems in public places, and strategies for communicating about a child's behavior with the child's school.

Results from this study indicated that parent training led to improved child behavior, decreases in parenting stress, and increases in parenting self-esteem. These authors similarly stated that child improvement ratings may stem from the parent's increased knowledge and understanding of ADHD, as well as increased mechanisms with which to cope with a child's difficult behavior. They cite as support for this contention that the parent domain on the PSI showed significant improvement, whereas the child domain did not (Anastopolous et al., 1993).

A dissertation by Lehner-Dua (2002) also examined the effects of Barkley's parent training on parents' reports of stress. Participants were parents of children aged 6 to 11. Participants were placed into either a group receiving parent training or into a

parent support group, which was merely a parent discussion group in which no formal training or techniques were taught. Both groups met for nine two hour weekly sessions.

Much like previous research, this study found that those who participated in the parenting training group reported a significant decrease in the perceived severity of their child's problem behaviors. They also reported a significantly greater decrease in their reports of stress as measured by the PSI as compared to the parent support group. Both groups showed improvements in their sense of parenting competence as measured by the Parenting Sense of Competence Scale (Lehner-Dua, 2002).

Another study that focused solely on parenting interventions was a dissertation by Newman (1999). This study looked at whether participation in multi-family therapy could lead to decreases in reports of stress in parents of children with ADHD. Twenty-one families were included in this study with 9 in the experimental group and 12 in the control group. The children in these families were between the ages of 5 and 13. Families in the experimental group met for 1.25 hours per week, whereas those in the control group met for 45-60 minutes, depending on which of the treatment modalities they were assigned to. Individuals in the control group were placed in either individual social skills training, peer social skills training group, or social-learning based family therapy. The first component of the experimental group was based on Barkley's training program for parents. The second component focused on peer support and networking between the members.

The results of this study indicated that the experimental group did not significantly outperform the control group and in some cases was inferior to the control group. Newman (1999) states, "the dissipation of denial effect was identified as possibly

having reduced the improvement scores in the experimental group as compared with the standard treatment group across several of the measures utilized for this study," (p. 150). This assumption would mean that the experimental group did not initially report accurate scores due to an unwillingness to admit dysfunction, but that as they became more comfortable with the study reported more accurate feelings at the end of intervention. It is also possible that participants in the experimental group endured more stressful events at the second assessment period than did the control group (Newman, 1999). Overall, however, both groups showed improvement trends on the majority of measures examining parenting stress, parenting sense of competence, and child behavioral symptoms (Newman, 1999). So, while the experimental group did not appear to be more effective than the control group, this study did show that multifamily therapy had positive effects on its participants. It may also be likely that differences were not found due to the low power of this study caused by the small sample size.

In a dissertation that included both children and families in their research, Aman (2000) examined if a family systems group therapy model could be used to improve knowledge of ADHD, reduce parenting stress, and improve family cohesiveness. The subjects were chosen for participation in the treatment groups on a first come basis. The remaining participants were placed in the wait list control group. The families chosen for this study were then broken into the parent group or child group, depending on their role within the family. Overall, 62 parents and their children were selected for this study, with the children ranging between the ages of 7 and 12. In the parent group, the parents received parent skills and communication skills training, as well as education on ADHD. In the child group, the children of the family received ADHD education and

communication, social, and self-control skills training. Each group lasted for 90 minutes with the last 30 minutes of each group used for interaction between the groups. These groups met eight times.

Results of this study were very interesting. The parents did not rate their stress as being significantly decreased after their families' participation in the parent and child groups. They did show an increase, however, on the PSI subscale Parenting Competence. These parents did state that they felt less stress in their day-to-day interactions. Children, likewise, reported improvements in their home environment. Parents also rated their child's negative behaviors as decreased. Finally, at least by observation, the parents and children exhibited increases in their ability to effectively relate to and get along with one another. They also reported decreases in the amount of stress that they experienced during these interactions and during the groups (Aman, 2000).

One study that provides some insight into how interventions focused on the child alone has had an impact on parent stress alone is the MTA study by Wells et al. (2000). This study examined the differential effects of behavior therapy alone, medication management alone, a combination of the two, and a community comparison group in 579 ADHD children aged 7-9. These children were randomly assigned to either an intensive behavioral therapy program that involved three intervention components (parent training, school intervention, and a summer treatment program), a group wherein medication was managed by the investigators, a combination of these two treatment, or a comparison group of children receiving typical community interventions, such as medication prescribed by their physician. Assessment occurred at baseline, 3, 9, and 14 months. The following measures were employed in this study: Alabama Parenting Questionnaire to

assess parenting practices, Parent-Child Relationship Questionnaire to assess perceptions about the quality of the parent-child relationship, PSI-short form to assess parent stress, Beck Depression Inventory to assess parent depression, and Dyadic Adjustment Scale to assess marital adjustment.

This study showed that all three treatment interventions, the behavioral treatment, medication management, and the combination of the two, resulted in decreases of negative parenting, maternal depression, marital conflict, and parenting stress. None of these groups differed significantly from each other on any of these measures. All of these treatment interventions outperformed the control group with respect to these measures. It is interesting to note that combined treatment did not produce significantly greater decreases in measures of parenting behavior and stress than medication or behavioral therapy alone. These authors concluded that, "carefully constructed and monitored behavioral and medication treatments, alone or combined, produce better effects on a measure of negative parenting behavior than do standard treatments currently offered in the community," (Wells et al, 2001, p. 552).

It is particularly noteworthy that there are few studies that address the child individually, not only because theories of parent stress would lead us to believe that specifically targeting child behaviors would lead to a decrease in reports of parenting stress, but also because as Chronis et al (2004) state, "distressed individuals [such as parents] often lack the motivation or organization to complete effortful tasks that require ongoing work, such as the consistent implementation of behavioral management techniques taught in behavioral parent training," (p.8). What remains to be seen in the current research is whether or not a specifically focused psychosocial treatment for

ADHD children alone can have an effect on parent stress. Though the MTA study showed an effect on parent stress for a combination of parenting training, Summer Treatment Program, and school intervention, it is unclear whether or not one component of child intervention can have such an effect. The component that was used to examine this question in the current study is the Summer Treatment Program (STP).

The Summer Treatment Program

Children between the ages 5 and 15 attend the STP from 8am until 5pm on weekdays. Each child and adolescents is placed in age-matched groups of approximately 12. While there, children gain intensive experience in how to function in a group, make friends, and in how to respect and interact with adults. Each group spends approximately three hours in a classroom setting. The remainder of the day is spent engaging in recreational activities (Pelham et al., 2005).

Children receive points for appropriate behavior and lose points for inappropriate behaviors throughout their day. Children are also given time-outs when necessary. Extensive social reinforcement is used in the form of praise and public recognition of good behavior. In addition to this, children receive 10 minutes of social-skills training each day. This training includes instruction, role-playing, and practice in key social concepts. Children also are educated in group problem-solving skills. In addition to this, they are taught how to follow the rules and practices of sports. This includes education on sportsmanship. In order to communicate the child's behavior during the day to their parents, daily report cards are sent home (Pelham et al., 2005).

Hypotheses

Because a family is a group of individuals attempting to work together, interventions that focus on teaching children how to work effectively with others, such as the STP, should result in a decrease in ADHD and associated symptoms that are manifested in the home. This decrease in symptoms should result in a decrease in parent stress, as research supports the assumption that changes in the child domain can have an impact on the stress experienced in the parent domain. This decrease in stress and symptoms should be most notable in parents of children with the most severe behavioral problems.

CHAPTER 2

METHODS

Procedures

A community mental health agency in rural western Pennsylvania gathered referrals for individuals willing to participate in their annual STP. Once all referrals to the group were gathered, the primary investigator sent out materials to the parents of children participating in the STP asking them to consider becoming a part of the present study. Included in the materials was a consent form that the parents were asked to return to the primary investigator if they were interested in participating in the study (Appendix A). Approximately one week after the initial request for subjects, a reminder letter about the study was sent (Appendix B). Approximately two weeks after the initial letter was sent, all parents who returned the consent form were sent testing materials and a letter explaining the materials (Appendix C).

Included in the initial testing materials were the Parent Stress Index- Short Form (PSI-SF) (Appendix D), a demographics questionnaire (Appendix E), and the Test of ADHD Knowledge (TOAK) (Appendix F). When more than one child in the family was participating in the Summer Treatment Program, materials were sent to the home for each child. Approximately one week after these materials were sent to the parents, a reminder letter was sent to encourage parents to return the testing materials as soon as possible (Appendix G). Also, prior to their child's participation in the STP, the parents were asked to complete a Child Behavior Checklist (CBCL) (Appendix H), and a Disruptive Behavior Disorders Rating Scale (DBD) (Appendix I) as part of the standard protocol

followed by the community mental health center. The results of these measures were also considered by the primary investigator.

The children then participated in the STP. This program lasted for 8 weeks, 5 days a week, 9 hours each day. Children received behavioral treatment and instruction on how to interact with others in socially appropriate and respectful ways, how to function in a group, and how to function within the classroom. The child's day was divided between classroom activities and recreational activities. During this time, they received social skills instruction, learned problem-solving techniques, and gained instruction on how to be a good sportsman. The children's behavior was modified using a point system from which they could earn rewards. For example, children were given points if they were able to effectively name the expectations that must be followed during different periods of the day, i.e. expectations during classroom activities, expectations during games, and so on. Additionally, children's misbehavior was modified using time outs.

Following the completion of the Summer Treatment Program, parents were sent a letter (Appendix J) and asked to again complete the PSI-SF and DBD and return it to the primary investigator. The children's counselors were also sent a consent form (Appendix K) asking them to complete a measure regarding the children's improvement in the STP. Those who agreed were sent a letter (Appendix L) and asked at to complete the Counselor Survey of Child Improvement (CSCI) (Appendix M). Approximately two weeks after the materials were sent, a reminder letter (Appendix N) was sent to those parents who had not yet returned the testing forms, asking them to return the measures as soon as possible. Finally, a debriefing letter (Appendix O) was sent to the participants informing them that if they were curious as to the outcome of the research or had any

questions, they were free to contact the primary investigator. All measures were completed in June of 2006 and August of 2006.

Participants

Participants were parents of children who attended the STP offered through a community mental health agency in western Pennsylvania. Participants agreed to complete measures prior to and after their child participated in the STP.

Initially, approximately 175 surveys were sent to parents of children participating in the STP. Names and addresses of children participating in the Summer Treatment Program were provided to the investigator by the community mental health facility. Of the 175 parents contacted, 23 returned consent forms indicating an interest to participate in the study. A total of 19 parents subsequently completed both pretest and posttest measures. Therefore, this study had an attrition rate of 82.6%.

Comparisons between the four individuals who did not complete posttest measures and the 19 who did, indicated some significant differences between the two groups. Those who did not complete the posttest measures were significantly older and had significantly more children in their home. They also had significantly more questions wrong on the Test of ADHD Knowledge. Also, interestingly, they reported significantly lower scores on the Defensive Responding, Parent Distress, Difficult Children, and Total Stress Scales on the PSI-SF. They further reported significantly lower scores on the ADHD-Impulsivity and the ODD subscales of the Disruptive Behavior Disorders Rating Scale. These parents may therefore have children with fewer behavior problems and subsequently have less stress than other parents in the study. This may have caused these parents to feel as though this study was less applicable to them.

The presence of more children in their home may also have made finding time to complete the study more difficult.

In order to gain an understanding of the type of individuals who did respond to this study, the demographic characteristics of the parents who participated were analyzed, as well as information that they provided about the target child. The following demographic data is summarized in Table 1. It was found that the majority of the parents responding were the child's biological parent. The mean age of parents responding was 36.17. The youngest parent responding was 22 and the oldest was 60. Of these individuals, the majority of respondents were female.

The parents responding to this study reported a wide range of income with most earning below $21,000 per year. The family composition of the parents completing the study was also varied with a nearly equally mix of married and single parents. The parents had a mean number of 1.89 children in their home, with the least number of children being 1 and the most being 4.

The children who attended the STP whose parents agreed to participate in the study had a mean age of 9.72. The majority of the children were male and most of the children were European-American. The demographic data for the children is presented in Table 2.

Table 1

Demographic Data of Parents

Mean Age	36.17
Gender	
Male	21.1% (*n* = 4)
Female	78.9% (*n*= 15)
Relationship to Child	
Biological Parent	73.7% (*n*= 14)
Stepparent	5.3% (*n*= 1)
Adoptive Parent	10.5% (*n*=2)
Grandparent	10.5% (*n*=2)
Marital Status	
Single	36.8% (*n* =7)
Married	46.4% (*n* = 9)
Divorced	15.8% (*n* = 3)
Household Income	
Under $10,000	15.8% (*n*= 3)
Between $11,000 and $20,000	36.8% (*n*= 7)
Between $21,000 and $40,000	26.8% (*n* = 5)
Between $41,000 and $60,000	5.3% (*n* = 1)
Over $61,000	5.3% (*n* = 1)
Preferred not to answer	10.5% (*n* = 2)
Mean Number of Children in the Home	1.89

Table 2

Demographic Data of Children

Mean Age	9.72
Gender	
Male	63.2% (*n* = 12)
Female	36.8% (*n* = 7)
Ethnicity	
European American	73.7% (*n* = 14)
African American	10.5% (*n* = 2)
Hispanic American or Latino	10.5% (*n* = 2)
Preferred not to answer	5.3% (*n* = 1)

Measures

General Information

A demographics questionnaire developed for the purposes of this study was completed by the parents. This questionnaire contained questions on gender of the parent, age of the parent, ethnicity, SES, marital status, number of children in the home, and child age, gender, and ethnicity.

Parent Stress

Parents were asked to complete the Parenting Stress Index- Short Form (PSI-SF) at pretest and posttest. The PSI-SF is a 36 item test that is a brief screening measure of parent stress, specifically stress in the parent-child system (Reitman, Currier, & Stickle, 2002). This measure was normed for use with children ranging in age from 1 month to 12 years. Parents respond on a 5-point Likert scale of “strongly disagree” to “strongly

agree" after reading a variety of statements about themselves, their children, and their relationship with their child. The PSI-SF yields a Total Stress score, which is the sum of the Parental Distress subscale, the Difficult Child subscale, and the Parent-Child Dysfunctional Interaction subscale. The Parental Distress subscale measures parents' perception of their own behavior, including perceived competence, marital conflict, social support, and limitations experienced in their life as a result of parenting demands. The Difficult Child subscale indicates the parent's perception of their child's temperament, noncompliance, demandingness, and defiance. The Parent-Child Dysfunctional Interaction subscale measures the degree to which parents perceive their children as not meeting expectations and view their interactions with their child as not reinforcing. As stated previously, the test-retest reliability for this form ranges from .84-.91 for the Total Stress score. It further has been shown to correlate with a variety of stress and distress measures. While the PSI- short form does not currently posses validity literature on its own, its Total Stress score has a correlation of .95 with the Total Stress score on the longer format. This suggests that the short form very likely possesses a similar validity score as the longer format (Abidin, 1995).

Child Behavior

To assess the overall level of behavioral difficulty that the children present their parents with, participants completed the Child Behavior Checklist (CBCL) as part of standard STP protocol. The CBCL is a 113 item test. Parents indicate a score of 0, 1, or 2 if the statement they read is not true, sometimes true, or very true of their child. The CBCL employed in this study was normed on children age 6 to 18. The CBCL yields several scales. It contains the Competence Scale, which examine the level of the child's

competence in activities, school, and social situations. This yields a Total Competence score. The CBCL also contains the following Syndrome Scales: Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, Social Problems, Thought Problems, Attention Problems, Rule-Breaking Behavior, and Aggressive Behavior. The scales Withdrawn, Somatic Complaints, and Anxious/Depressed are used to create the Internalizing Problems Scale. The Externalizing Problems Scale is created using the Rule-Breaking Behavior and Aggressive Behavior Scales. The Total Problems Scale is derived by adding the total number of 1s and 2s indicated, with the exception of items two and four, by the parent. Finally, the responses are divided into the DSM-Oriented Scales. These include Affective Problems, Anxiety Problems, Somatic Problems, Attention Deficit/Hyperactivity Problems, Oppositional Defiant Problems, and Conduct Problems Scales.

Based on raw scores, a minimum T-score of 50 is obtained for all scales. For the Syndrome and DSM-Oriented Scales, scores less than 67 are considered to be in the normal range, scores 67-70 are considered to be in the borderline clinical range, and scores over 70 are considered to be in the clinical range. For the Total Problems, Externalizing Problems, and Internalizing Problems Scales T-scores less than 60 are considered to be in the normal range, scores 60-63 are considered to be in the borderline clinical range, and scores 63 and over are considered to be in the clinical range. The test-rest reliability for this measure ranges between .87 and.89 with intra-class correlations in the .90s. Content, construct, and criterion-related validity have all been demonstrated for the CBCL (Achenbach, 1991).

The Disruptive Behavior Disorders Rating Scale (DBD) was also used to assess child behavior. It, too, was completed as part of standard STP protocol prior to the STP and again at posttest. The DBD is a 45 item parent report form that indicates the degree to which children exhibit symptoms of ODD, CD, and ADHD. Specifically, this measure has an ODD subscale, a CD subscale, an Inattentive subscale, and a Hyperactive-Impulsive subscale. To determine how a child's scores compare to normative data, the average rating for the items from each subscale is computed using the following scoring: Not at all = 0, Just a little = 1, Pretty Much= 2, Very much = 3. In general, the higher the score obtained, the more the child is exhibiting symptoms of that DSM diagnosis and the more likely that they will be exhibiting clinically significant symptoms. When a child reaches a clinically significant score in a given category, 2 standard deviations above the mean of the normative data, they are said to meet diagnostic criteria for that characteristic (Pelham et al, 1992).

Counselors of children whose parents were participating in this research completed the Counselor Survey of Child Improvement (CSCI). This measure, developed specifically for this study, was used to indicate the child's amount of improvement in the Summer Treatment Program. The measure consists of 10 items addressing behaviors specifically targeted in the STP. The items were generated based on materials discussing the specific goals of the STP, as well as the types of activities and behavioral modifications that are performed with the children. The counselors rated on a 5-point Likert scale whether or not the child's behavior was "much worse" to "much better" in those specific domains. Posttest analyses indicated that the measure has a coefficient alpha of .874, suggesting adequate internal consistency.

ADHD Knowledge

To assess the degree of knowledge that parents possess about ADHD, the Test of ADHD Knowledge Scale (TOAK) was employed (Anastopoulos et al., 1992, unpublished). This measure consists of 26 items assessing a parent's knowledge about ADHD's primary and comorbid features, its situational variability, and its treatment methods. These items were scored as either correct or incorrect. The TOAK has been found to have a test-retest reliability of .85 (Anastopoulos, Shelton, DuPaul, & Guevremont, 1993).

CHAPTER 3

RESULTS

Pretest Scores

To determine the problem behaviors of the Summer Treatment Program participants prior to the camp, mean Child Behavior Checklist (CBCL) scores were examined. The mean T-score for the Internalizing Problems Scale was 58.11. This score falls within the normal range of functioning. Both the Externalizing Problems T-score, 64.00, and the Total Problems T-score, 64.12, fell within the clinical range. This illustrates that, overall, these children present a clinical picture of having more externalizing behavior problems than internalizing problems. Mean T-scores for all CBCL scales are listed in Table 3.

Table 3

Mean CBCL Scores

Syndrome Scales	T-score	Standard Deviation
Anxious/Depressed	58.41	7.51
Withdrawn/Depressed	60.24	8.29
Somatic Complaints	56.47	6.92
Social Problems	63.59	9.96
Thought Problems	62.29	9.18
Attention Problems	66.94	11.36
Rule Breaking Behavior	61.06	7.15
Aggressive Behavior	65.18	9.50
Internalizing Problems	58.11	10.40
Externalizing Problems	64.00	7.76
Total Problems	64.12	9.16
DSM-Oriented Scales		
Affective Problems	62.12	7.92
Anxiety Problems	57.94	8.17
Somatic Problems	56.65	6.70
Attention Deficit/Hyperactivity Problems	66.00	10.20
Oppositional Defiant Problems	64.18	7.63
Conduct Problems	64.18	7.91

Initial Disruptive Behavior Disorders Rating Scale (DBD) scores were also examined. Based on these scores, 4 of the 19 children met diagnostic criteria for the ADHD-hyperactivity category, 8 met criteria for the ADHD-impulsive category, 9 met criteria for the oppositional defiant category, and 2 met criteria for the conduct disorder category. Eight of the children met diagnostic criteria in more than one category. Six children did not meet criteria in any category.

Mean parent stress scores at pretest revealed that the parents participating in this study were experiencing a significant amount of stress. The mean score for the Parent

Distress Scale was 36.26. This score was in the 90th percentile, meaning these parents were experiencing more distress in their parent role than 90% of parents. The mean score for the Parent-Child Dysfunctional Interaction Scale was 33.21. This score placed these parents between the 95th and 99th percentile. This scale denotes that these parents perceived themselves as having more dysfunction in their relationship with their child than 95-99% of parents. Similarly, the mean score for the Difficult Child Scale was 44.16, again placing the parents in the 95th-99th percentile. Overall, the sample had a mean Total Stress score of 113.16. This score places the sample above the 99th percentile. The parents of children participating in the STP, therefore, reported that they were experiencing more stress in their role as a parent than over 99% of parents. Importantly, the mean score for Defensiveness scale was 22.05. Scores less than 10 denote significant defensive responding. This suggests that parents participating in this study were not responding in a guarded or defensive manner.

Parent Stress Correlates Before and After the STP

In order to examine the relationship between various measures and parent stress at both pretest and posttest, Pearson correlations were performed. Total Parent Stress at pretest had significant correlations with the CBCL Externalizing Scale and the DBD ADHD-Impulsivity subscale. There was a trend toward significance with the number of children in the home and DBD subscales ADHD-hyperactivity, ODD, and CD.

Total Stress at posttest had significant correlations with all pretest and posttest DBD subscales, with the exception of CD at pretest, which showed a trend toward significance. Total Parent Stress scores at posttest were also significantly correlated with

the CBCL Internalizing and Externalizing Scales. Complete results for all correlates are listed in Table 4.

Table 4

Correlates of Total Parent Stress Scores at Pretest and at Posttest

Variables	Pearson Correlation		*p*		N
	Pretest	Posttest	Pretest	Posttest	
Demographic					
Parent Age	.118	-.098	.640	.699	18
Number of Children in Home	.444	.229	.057	.345	19
Child Age	.139	.023	.584	.927	18
Total Number Wrong on TOAK	-.198	-.213	.416	.382	19
CBCL					
Internalizing	.335	.529*	.188	.029	17
Externalizing	.533*	.550*	.028	.022	17
DBD					
ADHD-Hyperactivity Pretest	.422	.562*	.081	.015	18
ADHD-Impulsivity Pretest	.613**	.662**	.007	.003	18
ODD Pretest	.466	.577*	.051	.012	18
CD Pretest	.422	.440	.081	.068	18
ADHD-Hyperactivity Posttest	----	.744**	----	.000	19
ADHD-Impulsivity Posttest	----	.715**	----	.001	19
ODD Posttest	----	.749**	----	.000	19
CD Posttest	----	.660**	----	.002	19
Counselor Rating	----	.325	----	.237	15

* Correlation is significant at the 0.05 level
** Correlation is significant at the 0.01 level

Parent Stress Posttest Results

In order to test the hypothesis that Total Parent Stress scores at pretest and posttest would be significantly different, a matched-samples t-test was performed. Total Parent Stress scores at pretest and posttest were statistically different, $t(18) = 3.22$, $p = .005$. To determine which change in the subscales accounted for this significant result, a matched samples t-test was performed on all three subscales, comparing them at pretest and posttest. The difference between the Parent Distress Scale at pretest and posttest was not statistically different, $t(18) = 1.16$, $p = .26$. The difference between the Parent-Child

Dysfunctional Interaction Scale at pretest and posttest also was not significant, however, it showed a trend toward significance, $t(18) = 2.04$, $p = .057$. The difference between pretest and posttest on the Difficult Child Scale was significant, $t(18) = 3.36$, $p = .003$. Because the Difficult Child scale measures the perception of the child's temperament, noncompliance, demandingness, and defiance, one might argue that the greatest change in Total Parent Stress was due to positive changes in the child's behavior. It is likely, therefore, that the Summer Treatment Program had a positive effect on the child's behavior and subsequently also on parent stress. These results are reported in Table 5.

Table 5

Pre and Posttest PSI-SF Scores

Scale	**Mean time 1**	**Mean time 2**	***t***	***p***	**SD**
Parent Distress	36.26	34.68	1.16	.262	5.94
Parent-Child Interaction	33.21	30.26	2.04	.057	6.31
Difficult Child	44.16	38.05	3.36	.003	7.92
Total Parent Stress	113.16	102.47	3.22	.005	14.46

In order to test the hypothesis that significantly more change would occur in Total Parent Stress scores for parents of children with the most severe behavior problems, children were divided into low externalizing symptoms vs. high externalizing symptoms based upon scores from the initial CBCL ratings. Those with a T-score of 63 or higher, in the clinical range, on the CBCL's Externalizing Scale were placed into the high externalizing group. Based on this criterion, 9 children were placed in the low externalizing group and 10 children were placed in the high externalizing group.

The change in Total Parent Stress was compared for the high and low externalizing group using a 2x2 ANOVA. The factors were pretest and posttest and high or low externalizing score. There was found to be a trend toward significance for a main effect between the change in parents' Total Stress score for the two groups ($F(1,17) = 4.34$, $p = .053$). This is likely because, as demonstrated by the correlations, those low on externalizing symptoms had parents with less stress. Of interest, the low externalizing group showed more change in Total Parent Stress than did the high externalizing group. This interaction, however, was not significant. This result, therefore, while not significant, is in the opposite direction predicted.

Changes in Child Behavior

To examine whether or not there were changes in child behavior as reported by the DBD, matched samples t-tests were performed for all scales of the DBD at pretest and posttest. None of the scales were significantly different from pretest to posttest. Means, t-scores, and significance levels are reported in Table 6.

Table 6

Pre and Posttest DBD Scores

Scale	**Mean time 1**	**Mean time 2**	***t***	***p***	**SD**
ADHD-H	21.50	20.67	.681	.505	5.19
ADHD-I	22.94	22.22	.585	.566	5.23
ODD	19.11	19.44	-.330	.745	4.28
CD	19.50	19.33	.206	.839	3.23

Counselors who worked with the children throughout the STP, however, did note a significant positive change in the children's behavior. The sample's mean, 38.67, was

compared to a mean of 30 using a one group t-test. Significant results were found, $t(14) = 7.65$, $p = .000$, standard deviation= 4.39, suggesting that the counselors saw a significant behavioral change that the parents did not. A mean of 30 was selected for comparison because this score would denote that no change has occurred in the child's behavior since beginning camp.

Pearson correlations were also performed to determine whether the created measure, Counselor Survey of Child Improvement, was related to any other measure administered. It was found that there was a significant correlation between the counselor rating scale and the CBCL Internalizing Scale, $r = .604$. There was also a trend toward a significant relationship between the rating scale and the Difficult Child Scale from the PSI-SF at pretest, $r = .462$, and the ADHD-hyperactivity subscale from the DBD at posttest, $r = .476$. This suggests that the CSCI was related to other child behavior measures. Results of the correlations performed are listed in Table 7. There was not, however, a significant relationship between change in parent stress and counselor rating of child improvement.

Table 7

Correlates of the CSCI

Variables	Pearson Correlation	*p*	N
PSI-SF			
Defensive Responding Pretest	-.087	.759	15
Parent Distress Pretest	-.076	.788	15
Parent-Child Interaction Pretest	.128	.648	15
Difficult Child Pretest	.462	.083	15
Total Stress Pretest	.249	.371	15
Defensive Responding Posttest	.100	.723	15
Parent Distress Posttest	.242	.385	15
Parent-Child Interaction Posttest	.207	.459	15
Difficult Child Posttest	.425	.114	15
Total Stress Posttest	.325	.237	15
CBCL			
Internalizing	.604*	.017	15
Externalizing	.210	.451	15
DBD			
ADHD-Hyperactivity Pretest	.184	.511	15
ADHD-Impulsivity Pretest	.154	.585	15
ODD Pretest	.315	.235	15
CD Pretest	.160	.569	15
ADHD-Hyperactivity Posttest	.476	.073	15
ADHD-Impulsivity Posttest	.420	.119	15
ODD Posttest	.296	.284	15
CD Posttest	.223	.424	15

* Correlation is significant at the 0.05 level
** Correlation is significant at the 0.01 level

In order to determine whether any variables moderated the change in Total Parent Stress from pretest to posttest, a number of 2x2 ANOVAs were performed examining both demographic and child behavior variables. None of the interactions were significant, indicating that none of the demographic or child behaviors variables moderated the change in parent stress. Therefore, all additional exploratory analyses of

the relationships among demographic variables and other measures revealed no significant findings.

CHAPTER 4

DISCUSSION

Children with Attention-Deficit/Hyperactivity Disorder (ADHD) experience significant difficulties in the domains of attention, hyperactivity, and impulsivity. This constellation of symptoms not only has a negative impact on the child's life by creating difficulties in school and with peer relations, but also is associated with difficulties in the home. In fact, having a child with ADHD is correlated with significant increases in the amount of parent stress that is experienced (DuPaul, 2001). Studies have indicated that when parents of children with ADHD participate in parent training and when children receive medication, parent stress is decreased (Aman, 2000; Anastopolous et al., 1993; Lehner-Dua, 2002; Newman, 1999; Pisterman et al., 1992; Wells et al., 2000). The current study examined whether a child's participation in a psychosocial treatment, specifically the Summer Treatment Program (STP), could have the same significant positive impact on parents' experience of stress.

The hypothesis that there would be a significant difference between Total Parent Stress scores at pretest and Total Parent Stress scores at posttest was supported. There was also a significant difference on the Difficult Child Scale and a trend toward significance on the Parent-Child Interaction Scale between pretest and posttest. These differences suggest that changes in the perception of the child's behavior and in the perception of the parent-child relationship accounted for the reduction in total parent stress experienced. The Difficult Child Scale and the Parent-Child Interaction Scale measure the perception of the child's temperament, noncompliance, demandingness, and defiance and the degree to which parents perceive their children as not meeting

expectations and view their interactions with their child as not reinforcing. The goals of the STP are not only to increase the child's compliance and decrease defiance, but are also to improve the child's interactions with others. Because there were differences in these specific scales, this lends support to the hypothesis that the changes were as a result of the STP. These results echo those of previous studies that found that treating externalizing behaviors in children has an impact on the reduction of parent stress (Aman, 2000; Anastopolous et al., 1993; Lehner-Dua, 2002; Newman, 1999; Pisterman et al., 1992; Wells et al., 2000).

The results of this study further suggest that the children who participated in the Summer Treatment Program were experiencing a significant amount of externalizing problems. This is illustrated by the overall picture of the Children Behavior Checklist (CBCL) and Disruptive Behavior Disorders Rating Scale (DBD) scores. This was to be expected as the STP was designed specifically for children with ADHD, an externalizing behavior disorder. As expected, the parents of the children who participated in the STP were experiencing a high degree of stress in their role as a parent, particularly in their relationship with the child and in relation to their child's difficult behavior.

In accordance with what might be predicted, there were significant correlations, or a trend toward significance, between Total Parent Stress scores at both pretest and posttest and nearly all measures of child problem behavior. Higher scores on measures of problem child behavior correlated with higher parent stress scores. This is consistent with past research that has found that the more behavioral acting out a child engages in, the more difficult a parent's job is and therefore the more stress they experience (Deater-

Deckard, 2004; McBride, Schoppe, & Rane, 2002; Morgan, Robinson, & Aldridge, 2002).

Interestingly, no demographic variables correlated with Total Parent Stress scores at pretest or posttest. A previous study found that younger children with ADHD have parents with more stress than do older children. The previous study, however, focused on children much younger (ages 3 to 5) than those in the current study, who had a mean age of 9.72. (DuPaul, McGoey, Eckert, & VanBrakle, 2001). It is likely that there is more stress associated with parenting younger children. This may be due to parenting adaptations that must take place when parents initially realize that their child has an externalizing behavior problem.

In a previous study, parent age was found to have an effect on overall stress experienced. Older parents experienced more stress. The same study, focusing on children ages 6 months to 3 years, also found that more children in the home increased parent stress (Ostberg & Hagekull, 2000). Neither of these findings were supported in the current study. It may be that there is a specific interaction between older parents parenting younger children and parent stress that does not exist with the older children included in this study.

Finally, parents' knowledge of ADHD was not correlated with parent stress. ADHD knowledge has been hypothesized to effect the way in which parents view their child's behavior, as well as the sources and causes of the behavior. This may affect the way in which parents view their competence as a parent and subsequent stress related to their parenting role (McClearly, 2002). With a mean of 10.21 wrong on the Test of ADHD Knowledge and a standard deviation of 2.97, it is possible that there was not

significant variability in the current study to capture significant results. Therefore, the parents in the current study appear to have been fairly equally informed about ADHD. Another possible explanation is that information about ADHD has become more ubiquitous even since the 2002 study. Therefore, lack of knowledge or information about ADHD may no longer be as widespread as it once was. Unfortunately, a direct comparison between the current study and the one previously mentioned is not possible due to differences in measures used to capture ADHD knowledge.

A surprising finding was that there was more change in parent stress for parents of children who were rated as having low externalizing scores than those with high externalizing scores. This interaction, however, was not significant. It was hypothesized that the most change in parent stress would be seen in parents of children who had the most severe behavior problems. This was suspected because these children presented the most potential for behavior change and therefore the most potential for parent stress reduction. Though no known studies currently exist suggesting that STP effects are moderated by externality, the current finding may be due to the stressful nature of externalizing behavior problems in children. For instance, even if there were a decrease in the high externalizing children's symptamology, it may not have been enough to greatly impact the amount of parent stress that accompanies the child's difficult behavior. As already noted, the degree of challenge that a child's behavior presents is related to the amount of stress parents experience (Deater-Deckard, 2004; McBride, Schoppe, & Rane, 2002; Morgan, Robinson, & Aldridge, 2002). Even with a decrease in symptoms, these children may still be exceedingly difficult to parent.

Related to this, there was not a significant change in DBD scores from pretest to posttest. This may be for several reasons. One possible explanation is that the sample size for this study may not have been large enough to detect changes that occurred between pretest and posttest. Parents also may have had difficulty focusing on reviewing their child's behavior in the past few weeks, despite specific instructions to do so, and instead used a more global memory when reporting their child's behavior.

Another explanation is that the DBD may not have been sensitive enough to pick up the types of changes that occurred in the children's behavior. Perhaps if open-ended questions or a parent interview had been employed, parents would have been more able to report the type of behavior changes that occurred as a result of their child's participation in the STP. This very likely may have provided different results. This is evidenced by the finding that parents reported reductions in stress on the PSI-SF Difficult Child and Parent-Child Interaction Scales. These results imply that there was a positive change in child behavior and the way parents and children chose to interact with each other.

Interestingly, camp counselors, who did not have a significant history with the children and were asked to rate a series of behaviors specifically addressed in the Summer Treatment Program, did note significant positive change in the children's behavior from the beginning of the camp to the end of the camp. This rating showed a trend toward significant correlations with other measures of child behavior and a significant correlation with the CBCL Internalizing Scale. Unfortunately, it was not significantly correlated with Total Parent Stress scores, but did show a trend toward significance with the Difficult Child Scale at pretest, suggesting some relationship

between changes in the STP and parent stress. It is possible that with a larger sample size more significant results would have been obtained. Therefore, while at present there are a number of highly suggestive results that point to changes in parent stress being as a result of the STP, no decisive findings that support this conclusion are available.

There were several limitations in this study, most notably the experimental design. Because it was both infeasible and unethical to withhold treatment from a control group of children, the nature of this study necessitated a single-group pretest-posttest design. This type of design, however, carries with it a myriad of potential confounds and errors. When change occurs between the pretest and posttest conditions, as it did in this study, there are many possible explanations for why the change occurred. It cannot simply be assumed that the intervention was the cause of the difference between the two testing periods.

One possible explanation is that the change would have naturally occurred with the passage of time. This could be due to maturation of the children and therefore the improvement of their behavior. It could also be due to regression toward the mean. Many of these children were rated as having very poor behavior and their parents rated themselves as very stressed. At these extremes, a tendency to decrease in stress toward the mean is common. Another possible explanation is that some other event outside of the treatment affected the children uniformly in a manner as to effect change in how they presented before and after the treatment. This could also be true of the parents, so that an event outside of the treatment affected how the parents perceived their stress. While this is unlikely, because the participants lived in the same community, it is possible that a community-wide event affected their perceived stress, such as the impending return of

the children to school. All of these possible errors and confounds make any conclusions that may be drawn from this study very tentative and severely limits generalizability (Aron & Aron, 1999).

This study opens the door for a variety of future research. Given the preliminary results of this study, it would be beneficial for another study to investigate these same questions using a more stringent experimental design. Perhaps in a more urban area with a greater population to draw from, STPs that have staggered start dates could be utilized to create a match-groups pretest-posttest design. This would allow for a control group without denying any groups of treatment. Running the study in a more urban or suburban area may also increase the sample size.

Because the small sample size impeded some of the results of this study, as well as resulted in lower power and a smaller effect size, future studies in this area may benefit from using incentives for parents to participate in this study. Mail surveys have traditionally netted poor response rates, with response rates ranging from 12% to 60%. Using monetary incentives have been found to increase these rates (James & Bolstein, 1990). While attempting to run a busy household, stopping to fill out a survey may be the last thing a stressed parent wants to do. If they are compensated for their time, they may be more willing to participate in the study. This will further help to ensure that the sample of the study is more closely matched to the sample of individuals participating in the Summer Treatment Program. Because information was only garnered for individuals who agreed to participate in this study, there is uncertainty regarding how closely the sample in this study matched those who participated in the STP.

Keeping in closer contact with the parents throughout the study may also be beneficial. Some STPs conduct simultaneous parent training groups during the time that the children are participating in the treatment. While the STP investigated in the current study does not do this, it may be an essential step in further reducing parent stress. At the very least, conducting pretest and posttest interviews with parents would allow parents to more fully express the changes they see in their child and in their stress level as a result of their child participating in the STP. It may also be important to garner information regarding whether or not the child had been diagnosed with ADHD by a professional or if the child is currently taking ADHD medication. This information is available in chart diagnoses and medication is monitored throughout the STP. This data, however, was not collected for the present study and may have a significant impact on the amount of behavior change that was seen or expected.

Conducting a three-month follow-up would also be an important addition to any future studies. This would allow the researcher to determine whether or not changes in parent stress are maintained over time. This may open the door for future investigators to determine what, if anything, is needed to continue reductions in parent stress.

While any conclusions that can be drawn from this study are tentative, it lends support to the hypothesis that treating a child with an externalizing behavior disorder can have an impact on parent stress. Recognizing that treating just the child through behavioral methods can have a positive impact on parent stress is a novel result and to the knowledge of this investigator is not currently represented in any available literature. This is important information for any parents to consider when they are determining whether or not to treat their child with an externalizing behavior problem. It may also

have important implications for what types of treatment produce the most positive change throughout the entire family system. Whatever conclusions may eventually be drawn from this line of research, it is highly plausible that treating one member of the family can truly have a positive impact on all others in the household.

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Appendix A

Initial Letter

Dear Parent or Guardian,

You have recently registered your child to attend the Summer Treatment Program (STP) offered through the Community Guidance Center. Jenna Craley, a graduate student at Indiana University of Pennsylvania, is researching to whether or not a child's participation in the STP can effect parent stress.

As you may know, children with ADHD have difficulty paying attention and acting out in hyperactive and impulsive ways. This not only effects the child's life by creating difficulties in school, but also can create problems within the home. In fact, it has been found that parents of kids with ADHD experience more stress than parents of kids without ADHD. Because of this, it is important to know whether or not interventions strategies, such as the STP, designed to improve a child's behavior, can also improve relationships within the family.

If you are interested in helping us determine whether treating a child with ADHD can also have a positive impact on your life, please return the bottom portion of the second page of this letter in the enclosed envelop. By returning this, you will show that you have read and understood the purpose of this study and consent to participate in it. Also, by returning this you will consent to allow us to look at the information that you filled out for the Community Guidance Center about your child's behavior. Your consent will also allow us to ask camp counselors to rate your child's improvement within the STP. Your participation in this study is voluntary and not necessary for your child to participate in the STP. Also, your participation in this study in no way affects your services at the Guidance Center. The Guidance Center will not know whether or not you choose to participate and your answers to questions for this study will not specifically be given to them.

It is also important to know that your answers on the materials presented to you and to camp counselors will be kept confidential. You can choose to withdraw from the study at any time. If you choose to withdraw from the study, you may contact me, Jenna Craley, and all information you have provided will be destroyed and not used this study.

If you return the paper showing your interest to help with this study, you will be sent a packet of materials to fill out and return to the primary investigator. A second packet of materials will then be sent to you after your child has participated in the STP. This will help us to see whether any differences exist between your answers before your child has participated in the STP and after your child has participated in the STP. Each set of materials should take no longer than twenty minutes to complete and no known psychological risks are associated with their completion. If you have any questions or concerns, please feel free to contact me at 724-357-4522. Should you wish to contact the

Guidance Center about this study, you may contact Dr. Ralph May, Chief Clinical Officer, at 724-465-5576, ext 253.

Thank you so very much for your time and consideration.
Sincerely,

Project Director: Jenna Craley
Graduate Student
Psychology Department
201 Uhler Hall
Indiana, PA 15705
J.L.Craley@iup.edu
724-357-4522

Faculty Sponsor: Donald Robertson, Ph.D.
Professor
Psychology Department
201 Uhler Hall
Indiana, PA 15701
Donald.Robertson@iup.edu
724-357-4522

Community Guidance Center Representative: Ralph May, Psy.D.
Chief Clinical Officer
Community Guidance Center
793 Old Route 119 Hwy N.
Indiana, PA 15701
724-465-5576 ext. 253

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730).

……

Yes, I would like to participate in the study examining whether or not a child's participation in the STP can effect parenting stress. Please send me a survey to complete regarding child improvement in the STP.

Name _____

Child's Name _____

Address _____

_____

_____

Appendix B

First Reminder Letter

Dear Parent or Guardian:

Approximately one week ago you should have received a letter in the mail regarding a parenting stress study for parents of children participating in the STP. Please take the time to return the letter and return envelope included with those materials indicating your desire to participate in the study. If you have already returned the letter, please disregard this letter. If you have any questions, please feel free to contact me via email at J.L.Craley@iup.edu or by phone at 724-357-4522.

Thank you for your time and consideration in completing this study.

Jenna Craley

Appendix C

Letter with First Wave of Testing

Dear Parent or Guardian,

Thank you for agreeing to participate in the parenting stress study! Enclosed you will find several questionnaires to complete and return to me in the enclosed envelop. One questionnaire will be a general demographics questionnaire, another will assess your level of parenting stress, and the last will assess your overall knowledge of ADHD. Please answer all questions to the best of your ability. Also, please make sure not to write your name, or child's name, or any other identifying information on the questionnaires, even if it asks for this information. This will insure that all of your answers will be completely confidential. If you have any questions or concerns, please feel free to contact me at 724-357-4522.

Thank you again for your participation in this study. Your time is greatly appreciated!

Sincerely,

Project Director: Jenna Craley
Graduate Student
Psychology Department
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Chief Clinical Officer
Community Guidance Center
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724-465-5576 ext. 253

Appendix D

PSI- Short Form

Instructions

This questionnaire contains 36 statements. Read each statement carefully. For each statement, please focus on the child you are most concerned about, and circle the response that best represents your opinion.

Circle the SA if you strongly agree with the statement
Circle the A if you agree with the statement.
Circle the NS if you are not sure.
Circle that D if you disagree with the statement.
Circle the SD if you strongly disagree with the statement.

While you may not find a response that exactly states your feelings, please circle the response that comes closet to describing how you feel. YOUR FIRST REACTION TO EACH QUESTION SHOULD BE YOUR ANSWER.

Circle only one response for each statement, and respond to all statements. **DO NOT ERASE!** If you need to change an answer, make an "X" through the incorrect answer and circle that correct response.

Before responding to the statements, write your name, gender, date of birth, ethnic group, marital status, child's name, child's gender, child's date of birth, and today's date in the spaces at the top of the questionnaire.

Name_____ Gender_____Date of birth_____ Ethnic group_____

Marital Status_____Child's name_____Child's date of birth_____

Today's date_____

SA= Strongly agree A= Agree NS= Not Sure D= Disagree SD= Strongly Disagree

---

1. I often have the feeling that I cannot handle things very well.	SA	A	NS	D	SD
2. I find myself giving up more of my life to meet my children's needs than I ever expected.	SA	A	NS	D	SD
3. I feel trapped by my responsibilities as a parent.	SA	A	NS	D	SD
4. Since having this child, I have been unable to do new and different things.	SA	A	NS	D	SD
5. Since having a child, I feel that I am almost never able to do things that I like to do.	SA	A	NS	D	SD
6. I am unhappy with the last purchase of clothing for myself.	SA	A	NS	D	SD
7. There are quite a few things that bother me about my life.	SA	A	NS	D	SD
8. Having a child has caused more problems than I expected in my relationship with my spouse (or male/female friend).	SA	A	NS	D	SD

9. I feel alone and without friends.	SA	A	NS	D	SD
10. When I go to a party, I expect not to enjoy myself.	SA	A	NS	D	SD
11. I am not as interested in people as I used to be.	SA	A	NS	D	SD
12. I don't enjoy things as I used to.	SA	A	NS	D	SD
13. My child rarely does things for me that make me feel good.	SA	A	NS	D	SD
14. Sometimes I feel my child doesn't like me and doesn't want to be close to me.	SA	A	NS	D	SD
15. My child smiles at me much less than I expected.	SA	A	NS	D	SD
16. When I do things for my child, I get the feeling that my efforts are not appreciated very much.	SA	A	NS	D	SD
17. When playing, my child doesn't often giggle or laugh.	SA	A	NS	D	SD
18. My child doesn't seem to learn as quickly as most children.	SA	A	NS	D	SD
19. My child doesn't seem to smile as much as most children.	SA	A	NS	D	SD
20. My child is not able to do as much as I expected.	SA	A	NS	D	SD
21. It takes a long time and it is very hard for my child to get used to new things.	SA	A	NS	D	SD

For the next statement, choose your response from the choices "1" to "5" below.

22. I feel that I am:
    1. not very good at being a parent
    2. a person who has some trouble being a parent
    3. an average parent
    4. a better than average parent
    5. a very good parent

	1	2	3	4	5

23. I expected to have closer and warmer feelings for my child than I do and this bothers me.	SA	A	NS	D	SD
24. Sometimes my child does things that bother me just to be mean.	SA	A	NS	D	SD
25. My child seems to cry or fuss more often then most children.	SA	A	NS	D	SD
26. My child generally wakes up in a bad mood.	SA	A	NS	D	SD
27. I feel that my child is very moody and easily upset.	SA	A	NS	D	SD
28. My child does a few things which bother me a great deal.	SA	A	NS	D	SD
29. My child reacts very strongly when something happens that my child doesn't like.	SA	A	NS	D	SD
30. My child gets upset easily over the smallest thing.	SA	A	NS	D	SD
31. My child's sleep or eating schedule was much harder to establish than I expected.	SA	A	NS	D	SD

For the next statement, choose your response from the choices "1" to "5" below.

32. I have found that getting my child to do something or stop doing something is:
    1. much harder than I expected
    2. somewhat harder than I expected
    3. about as hard as I expected
    4. somewhat easier than I expected
    5. much easier than I expected

	1	2	3	4	5

For the next statement, choose your response from the choices "10+" to "1-3"

33. Think carefully and count the number of things which your child does that bother you
For example: dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc.

10+	8-9	6-7	4-5	1-3

34. There are some things my child does that really bother me a lot.	SA	A	NS	D	SD
35. My child turned out to be more of a problem than I had expected	SA	A	NS	D	SD
36. My child makes more demands on me than most children.	SA	A	NS	D	SD

Appendix E

Demographics

1) Your relation to the child:

_____ Biological parent
_____ Step parent
_____ Grandparent
_____ Adoptive parent
_____ Foster parent
_____ Other (specify):_____

2) Age _____

3) Gender
____ Female
____ Male

4) Racial/ethnic group with which you most closely identify
____ African-American/Black
____ Hispanic/Latino
____ Euro-American (white, Caucasian)
____ Pacific Islander
____ American Indian/Native American
____ Asian-American/Asian
____ Other (please specify) _____

5) Approximate Annual Income
____ Under $10,000
____ $11,000- $20,000
____ $21,000- $40,000
____ $41,000- $60,000
____ Over $61,000
____ Prefer not to answer

6) Marital Status
____ Single
____ Married
____ Separated
____ Divorced

7) Number of Children Living in Your Home:_____

8) Age of Child Participating in the STP:___

9) Gender of Child Participating in the STP

_____ Male
_____ Female

Appendix F

Test of ADHD Knowledge

On the pages that follow are questions about Attention Deficit Hyperactivity Disorder (ADHD). Before answering these questions, please take a minute to fill in the information requested below.

A. Identifying Data

1. Your age.....

2. Gender..... Male Female

3. Marital Status..... Single Married Separated Divorced

4. Highest Grade Completed...

5. Occupation.....

B. Exposure to ADHD Information

1. How many television programs on ADHD have you watched?

a. 0 b. 1 or 2 c. 3 - 5 d. 6 or more

2. How many magazine/newspaper articles on ADHD have you read?

a. 0 b. 1 or 2 c. 3 - 5 d. 6 or more

3. How many books on ADHD have you read?

a. 0 b. 1 or 2 c. 3 - 5 d. 6 or more

4. How many lectures/presentations on ADHD have you attended?

a. 0 b. 1 or 2 c. 3 - 5 d. 6 or more

5. Have you ever belonged to an ADHD Parent Support Group?

a. Never b. Previously belonged c. Presently belong

6. Have you or anyone in your family ever been evaluated for ADHD?

a. No b. Yes

7. Have you or anyone in your family ever been treated for ADHD?

a. Never b. Previously received c. Presently receiving

1. Which of the following is true about Attention Deficit Hyperactivity Disorder (ADHD)?

a) it was first discovered in the 1960's
b) it was first discovered in the 1980's
c) it is the new label for what used to be called Minimal Brain Dysfunction

2. The most common side effects of Ritalin and other stimulant medications are:

a) decreased appetite and insomnia
b) zombie-like appearance and behavior
c) depression and anxiety
d) headaches and stomach problems

3. Which of the following is a <u>proven</u> treatment for ADHD?

a) removing sugar, food colors, and food additives from the diet
b) play therapy/individual psychotherapy with the child
c) biofeedback/relaxation training with the child
d) all of the above
e) none of the above

4. ADHD occurs:

a) in relatively equal numbers of boys and girls
b) more often in girls than boys
c) more often in boys than girls

5. In addition to their primary problems, many children with ADHD:

a) do not do well in school, often working well below their potential
b) display temper outbursts and oppositional-defiant behavior
c) have problems keeping friends
d) all of the above
e) none of the above

6. Which of the following is true for most children with ADHD?

a) ADHD is an inborn biologic predisposition
b) ADHD is acquired after birth, due to neurologic complications
c) ADHD is acquired after birth, due to faulty parenting or serious family/marital problems

7. Many parents of ADHD children experience parenting stress because:

a) they are ineffective and incompetent in their parenting roles
b) they are depressed or troubled by other types of personal or family problems
c) they use traditional parenting techniques, which often do not work well with ADHD children

8. To make a diagnosis of ADHD, it is <u>always</u> necessary to conduct:

a) blood tests
b) neurologic testing, including an EEG
c) both a and b
d) neither a or b

9. Ritalin and other stimulant medications:

a) work for most individuals with ADHD, regardless of their age
b) work for most children and adolescents with ADHD, but not adults
c) work for most ADHD children under 12 years of age, but not adolescents or adults

10. Children with severe ADHD problems:

a) can not pay attention to anything for a long time
b) can pay attention to things that interest them for a long time
c) can pay attention to some things for a long time, but <u>only</u> if they are bribed or threatened with punishment

11. Although not a major cause, which of the following can cause ADHD?

a) damage to certain parts of the brain
b) eating too much sugar
c) allergies
d) all of the above
e) none of the above

12. Which of the following is true about the treatment of ADHD?

a) medication alone is usually all that is necessary
b) individual counseling is almost always necessary
c) changes in diet are often necessary
d) none of the above

13. In school, most children with ADHD:

a) do just fine in regular classrooms, without any special help
b) have the potential to do well in a regular classroom, provided that certain modifications in teaching style are made
c) can not do well in any regular classroom, and therefore must be placed in a full time special needs classroom

14. Which of the following is <u>not</u> an effective treatment for ADHD?

a) stimulant medication
b) behavior modification in the classroom
c) parent training
d) removing sugar from the diet

15. Which of the following is true?

a) ADHD is a learning disability
b) ADHD is technically not a learning disability
c) ADHD has little impact on school performance

16. Which of the following best describes the prevalence of ADHD?

a) less than 1% of the child population has ADHD
b) between 3 to 5% of the child population has ADHD
c) approximately 10% of the child population has ADHD

17. The <u>primary</u> symptoms of ADHD are:

a) learning problems and/or school failure
b) noncompliance, argumentativeness, and/or temper outbursts
c) low self-esteem, depression, and/or anxiety
d) inattention, impulsivity, and/or overactivity

18. For most children, ADHD is a condition whose symptoms:

a) are outgrown by adolescence
b) are outgrown by adulthood
c) are not usually outgrown

19. When children are tested for ADHD in clinic settings, they often

behave quite well. The best explanation for this is:

a) they are not really ADHD
b) clinicians handle them better than parents or teachers
c) the clinic setting is a novel, one-to-one situation

20. The most reliable information about a child's behavior comes from:

a) interview/rating scale responses provided by parents and teachers
b) an interview with the child
c) psychological testing done with the child

21. The goal of treatment for most children with ADHD is:

a) to cure their ADHD
b) to control their ADHD until they outgrow it
c) to help them cope better with their ADHD problems

22. For <u>most</u> children with ADHD who must take medication:

a) stimulant medications are more effective than antidepressant medications
b) antidepressant medications are more effective than stimulant medications
c) stimulant medications and antidepressant medications are equally effective

Appendix G

Follow-up Letter For First Wave of Testing

Dear Parent or Guardian:

Approximately one week ago you should have received a packet in the mail regarding the parenting stress study in which you recently indicated you would be willing to participate. Please take the time to fill out the questionnaires and return them in the envelope provided. If you have any questions, or if you need a new set of questionnaires, please contact me via email at J.L.Craley@iup.edu or by phone at 724-357-4522.

Thank you for your time and consideration in completing this study.

Jenna Craley

Appendix H

Child Behavior Checklist for Ages 6-18

Child's Full Name First Middle Last

Child's gender _____Boy _____Girl

Child's age _____

Child's ethnic group of race _____

Today's date Mo.___Date__Yr.____

Child's Birthdate Mo.___Date__Yr.____

Grade in school_____ Not attending school_____

Parent's usual type of work, even if not working now. (Please be specific—for example, automechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)

Father's type of work_____

Mother's type of work_____

This form filled out by: (print your full name)

Your gender: _____Male _____Female

Your relation to the child: __Biological parent ___Step parent _Grandparent ____Adoptive parent ____Foster parent _____Other (specify):_____

Please fill out this form to reflect *your* view of the child's behavior even if other people might not agree. Feel free to print additional comments beside each item and in the space provided on page 2. ***Be sure to answer all items.***

I. Please list the sports your child most likes to take part in. For example: swimming, baseball, skating, skate boarding, bike riding, fishing, etc.

_____None

	Compared to other children of the same age, about how time does he/she spend in each?				Compared to others of the age, how well does he/she do each one?			
	Less than average	Average	More than average	Don't know	Less than average	Average	More than average	Don't know
a._____	_____	_____	_____	_____	_____	_____	_____	_____
b._____	_____	_____	_____	_____	_____	_____	_____	_____

c._____ _____ _____ _____ _____ _____ _____ _____ _____

II. Please list your child's favorite hobbies, activities, and games, other than sports. For example: stamps, dolls, books, piano, drafts, cars, computers, singing, etc. (Do ***not*** include listening to radio or TV.)

_____None

	Compared to other children of the same age, about how time does he/she spend in each?				Compared to others of the age, how well does he/she do each one?			
	Less than average	Average	More than average	Don't know	Less than average	Average	More than average	Don't know
a._____	_____	_____	_____	_____	_____	_____	_____	_____
b._____	_____	_____	_____	_____	_____	_____	_____	_____
c._____	_____	_____	_____	_____	_____	_____	_____	_____

III. Please list any organizations, clubs, teams, or groups your child belongs to.

_____None

	Compared to other children of the same age, about how active is he/she in each?			
	Less than average	Average	More than average	Don't know
a._____	_____	_____	_____	_____
b._____	_____	_____	_____	_____
c._____	_____	_____	_____	_____

IV. Please list any jobs or chores your child has. For example: paper route, babysitting, making bed, working in store, etc. (include both paid and unpaid jobs and chores.)

_____None

	Compared to other children of the same age, about how well does he/she carry them out?			
	Less than average	Average	More than average	Don't know
a._____	_____	_____	_____	_____
b._____	_____	_____	_____	_____
c._____	_____	_____	_____	_____

V. 1. About how many close friends does your child have? (Do *not* include brothers and sisters)

_____None _____1 _____ 2 or 3 _____ 4 or more

2. About how many times per week does your child do things with any friends outside of regular school hours? (Do *not* include brothers and sisters)

_____ Less than 1 _____1 or 2 _____ 3 or more

VI. Compared to others of his/her age, how well does your child:

	Worse	**Average**	**Better**
a. Get along with his/her brothers & sisters?	_____	_____	_____
b. Get along with other kids?	_____	_____	_____
c. Behave with his/her parents?	_____	_____	_____
d. Play and work alone?	_____	_____	_____

VII. Performance in academic subjects.

_____**Does not attend school because**_____

Check for each subject that child takes

	Failing	**Below Average**	**Average**	**Above Average**
a. Reading, English, or Lang. Arts	_____	_____	_____	_____
b. History or Social Studies	_____	_____	_____	_____
c. Arithmetic or Math	_____	_____	_____	_____
d. Science	_____	_____	_____	_____
Other academic subjects- for example: computer courses, foreign language, business. Do ***not*** include gym, shop, driver's ed., or other nonacademic subjects.				
e._____	_____	_____	_____	_____
f._____	_____	_____	_____	_____
g._____	_____	_____	_____	_____

---

2. Does your child receive special education or remedial services or attend a special class or special school?

_____No _____Yes—kind of services, class, or school:

3.Has your child repeated any grades?

_____No _____Yes—grades and reasons:

---

4. Has you child had any academic or other problems in school?

_____No _____Yes—please describe:

When did these problems start?_____

Have these problems ended?
_____No _____Yes—when?

Does your child have any illness or disability (either physical or mental)?
_____No _____Yes—please describe:

What concerns you most about your child?

Please describe the best things about your child.

Please print. Be sure to answer all items.

Below is a list of items that describe children and youths. For each item that describes your child ***now or within the past 6 months,*** please circle the ***2*** if the item is ***very true or often true*** of your child. Circle the ***1*** if the item is ***somewhat or sometimes true*** of your child. If the item is ***not true*** of your child, circle the ***0***. Please answer all items as well as you can, even if some do not seem to apply to your child.

0= Not True (as far as you know) 1= Somewhat or Sometimes True 2= Very True or Often True

---

0	1	2	1. Acts too young for his/her age
0	1	2	2. Drinks alcohol without parents' approval (describe):_____
0	1	2	3. Argues a lot
0	1	2	4. Fails to finish thing he/she starts
0	1	2	5. There is very little he/she enjoys
0	1	2	6. Bowel movements outside toilet
0	1	2	7. Bragging, boasting
0	1	2	8. Can't concentrate, can't pay attention for long
0	1	2	9. Can't get his/her mind off certain thoughts; obsessions (describe):_____

0	1	2	10. Can't sit still, restless, or hyperactive
0	1	2	11. Clings to adults or too dependent
0	1	2	12. Complains of loneliness
0	1	2	13. Confused or seems to be in a fog
0	1	2	14. Cries a lot
0	1	2	15. Cruel to animals
0	1	2	16. Cruelty, bullying, or meanness to others
0	1	2	17. Daydreams or gets lost in his/her thoughts
0	1	2	18. Deliberately harms self or attempts suicide
0	1	2	19. Demands a lot of attention
0	1	2	20. Destroys his/her own things
0	1	2	21. Destroys things belongs to his/her family or others
0	1	2	22. Disobedient at home
0	1	2	23. Disobedient at school
0	1	2	24. Doesn't eat well
0	1	2	25. Doesn't get along with other kids
0	1	2	26. Doesn't seem to feel guilty after misbehaving
0	1	2	27. Easily jealous
0	1	2	28. Breaks rules at home, school, or elsewhere
0	1	2	29. Fears certain animals, situations, or places, other than school (describe):____
0	1	2	30. Fears going to school
0	1	2	31. Fears he/she might think or do something bad
0	1	2	32. Feels he/she has to be perfect
0	1	2	33. Feels or complains that no one loves him/her
0	1	2	34. Feels others are out to get him/her
0	1	2	35. Feel worthless or inferior
0	1	2	36. Gets hurt a lot, accident-prone
0	1	2	37. Gets in many fights
0	1	2	38. Gets teased a lot
0	1	2	39. Hangs around with others who get in trouble
0	1	2	40. Hears sounds or voices that aren't there (describe):_____
0	1	2	41. Impulsive or acts without thinking
0	1	2	42. Would rather be alone than with others
0	1	2	43. Lying or cheating
0	1	2	44. Bites fingernails
0	1	2	45. Nervous, highstrung, or tense
0	1	2	46. Nervous movements or twitching (describe):_____
0	1	2	47. Nightmares
0	1	2	48. Not liked by other kids
0	1	2	49. Constipated, doesn't move bowels
0	1	2	50. Too fearful or anxious
0	1	2	51. Feels dizzy or lightheaded
0	1	2	52. Feels too guilty
0	1	2	53. Overeating
0	1	2	54. Overtired without good reason
0	1	2	55. Overweight
			56. Physical problems ***without known medical cause:***
0	1	2	a. Aches or pains (***not*** stomach or headaches)
0	1	2	b. Headaches
0	1	2	c. Nausea, feels sick
0	1	2	d. Problems with eyes (***not*** if corrected by glasses) (describe):_____
0	1	2	e. Rashes or other skin problems
0	1	2	f. Stomachaches
0	1	2	g. Vomiting, throwing up
0	1	2	h. Other (describe):_____
0	1	2	57. Physically attacks people

0	1	2	58. Picks nose, skin, or other parts of body (describe):_____
0	1	2	59. Plays with own sex parts in public
0	1	2	60. Plays with own sex parts too much
0	1	2	61. Poor school work
0	1	2	62. Poorly coordinated or clumsy
0	1	2	63. Prefers being with older kids
0	1	2	64. Prefers being with younger kids
0	1	2	65. Refuses to talk
0	1	2	66. Repeats certain acts over and over; compulsions (describe):_____
0	1	2	67. Runs away from home
0	1	2	68. Screams a lot
0	1	2	69. Secretive, keeps things to self
0	1	2	70. Sees things that aren't there (describe):_____
0	1	2	71. Self-conscious or easily embarrassed
0	1	2	72. Sets fires
0	1	2	73. Sexual problems (describe):_____
0	1	2	74. Showing off or clowning
0	1	2	75. Too shy or timid
0	1	2	76. Sleeps less than most kids
0	1	2	77. Sleeps more than most kids during day and/or night (describe):_____
0	1	2	78. Inattentive or easily distracted
0	1	2	79. Speech problem (describe):_____
0	1	2	80. Stares blankly
0	1	2	81. Steals at home
0	1	2	82. Steals outside the home
0	1	2	83. Stores up too may things he/she doesn't need (describe):_____
0	1	2	84. Strange behavior (describe):_____
0	1	2	85. Strange ideas (describe):_____
0	1	2	86. Stubborn, sullen, or irritable
0	1	2	87. Sudden changes in mood or feelings
0	1	2	88. Sulks a lot
0	1	2	89. Suspicious
0	1	2	90. Swearing or obscene language
0	1	2	91. Talks about killing self
0	1	2	92. Talks or walks in sleep (describe):_____
0	1	2	93. Talks too much
0	1	2	94. Teases a lot
0	1	2	95. Temper tantrums or hot temper
0	1	2	96. Thinks about sex too much
0	1	2	97. Threatens people
0	1	2	98. Thumb-sucking
0	1	2	99. Smokes, chews, or sniffs tobacco
0	1	2	100. Trouble sleeping (describe):_____
0	1	2	101. Truancy, skips school
0	1	2	102. Underactive, slow moving, or lack energy
0	1	2	103. Unhappy, sad, or depressed
0	1	2	104. Unusually loud
0	1	2	105. Uses drugs for nonmedical purposes (***don't*** include alcohol or tobacco) (describe):_____
0	1	2	106. Vandalism
0	1	2	107. Wets self during the day
0	1	2	108. Wets the bed
0	1	2	109. Whining
0	1	2	110. Wishes to be opposite sex
0	1	2	111. Withdrawn, doesn't get involved with others
0	1	2	112. Worries

113. Please write in any problems any child has that were not listed above:

0	1	2	_____
0	1	2	_____
0	1	2	_____

Appendix I

DBD Rating Scale

Child's Name:_____ Form Completed by:_____

Date Completed:_____

Check the column that best describes this child. Please write DK next to any items for which you don't know the answer.

	Not at All	Just a Little	Pretty Much	Very Much
1. Often interrupts or intrudes on others (e.g., butts into conversations or games.				
2. Has run away from home overnight at least twice while living or parental surrogate home (or once without returning for a lengthy period).				
3. Often argues with adults				
4. Often lies to obtain good or favors or avoid obligations (i.e., "cons" others)				
5. Often initiates physical fights with other members of his or her household				
6. Has been physically cruel to people				
7. Often talks excessively				
8. Has stolen items of non trivial values without confronting a victim (e.g., shoplifting, but without breaking and entering; forgery)				
9. Is often easily distracted by extraneous stimuli				
10. Often engages in physically dangerous activities without considering possible consequences (not for the purpose of thrill-seeking), e.g., runs into street without looking				
11. Often truant from school, beginning before age 13 yrs.				
12. Often fidgets with hands or feet or squirms in seat				
13. Is often spiteful or vindictive				
14. Often swears or uses obscene language				
15. Often blames others for his or her mistakes or misbehavior				
16. Has deliberately destroyed others' property (other than by fire setting)				
17. Often actively defies or refuses to comply with adults' requests or rules				
18. Often does not seem to listen when spoken to directly				
19. Often blurts out answers before questions have been completed				
20. Often initiates physical fights with others who do not live in his or her household (e.g., peers at school or in the neighborhood)				
21. Often shifts from one uncompleted activity to another.				

22. Often has difficulty playing or engaging in leisure activities quietly				
23. Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities.				
24. Is often angry and resentful				
25. Often leaves seat in classroom or in other situation in which remaining seated is expected.				
26. Is often touchy or easily annoyed by others.				
27. Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)				
28. Often loses temper				
29. Often has difficulty sustaining attention in tasks or play activities				
30. Often has difficulty awaiting turn				
31. Has forced someone into sexual activity				
32. Often bullies, threatens, or intimidates others				
33. Is often “on the go” or often acts as if “driven by a motor”				
34. Often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)				
35. Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)				
36. Has been physically cruel to animals.				
37. Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)				
38. Often stays out at night despite parental prohibitions, beginning before age 13 yrs.				
39. Often deliberately annoys people				
40. Has stolen while confronting a victim (e.g., mugging, purse snatching, extortion, armed robbery)				
41. Has deliberately engaged in fire setting with the intention of causing serious damage				
42. Often has difficulty organizing tasks and activities				
43. Has broken into someone else’s house, building, or car				
44. Is often forgetful in daily activities				
45. Has used a weapon that can cause serious physical harm to other (e.g., a bat, brick, broken bottle, knife, gun)				

Appendix J

Second Wave of Testing Letter

Dear Parent or Guardian,

Your child has now completed the Summer Treatment Program. It has also been three months since you first completed questionnaires for the parenting stress study. In order to determine whether or not your stress level has changed as a result of your child's participation in this program, you are being sent follow-up materials to complete and return to the primary investigator.

Please find enclosed a questionnaire related to parenting stress and a questionnaire related to your child's behavior. Please note that both of these questionnaires have been changed to ask you to specifically consider your stress and your child's behavior within the past month. Also, remember not to write your name, or child's name, or any other identifying information on the questionnaires, even if it asks for this information. This will insure that all of your answers will be completely confidential. Once you have completed the survey items, please return them in the enclosed envelope. If you have any questions or concerns please feel free to contact me at J.L.Craley@iup.edu or by phone at 724-357-4522.

Thank you very much for your time and consideration. Your participation has been a valuable piece of this research.

Sincerely,

Project Director: Jenna Craley
Graduate Student
Psychology Department
201 Uhler Hall
Indiana, PA 15705
J.L.Craley@iup.edu
724-357-4522

Faculty Sponsor: Donald Robertson, Ph.D.
Professor
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201 Uhler Hall
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724-357-4522

Community Guidance Center Representative: Ralph May, Psy.D.
Chief Clinical Officer
Community Guidance Center
793 Old Route 119 Hwy N.
Indiana, PA 15701
724-465-5576 ext. 253

Appendix K

Counselor Consent Form

Dear Sir or Madam:

You have recently acted as a counselor in the Summer Treatment Program (STP) offered through the Community Guidance Center. Jenna Craley, a graduate student at Indiana University of Pennsylvania, is conducting a research study to determine whether or not a child's participation in the STP effects parent stress.

As you may know, children with Attention-Deficit/Hyperactivity Disorder (ADHD) experience significant difficulties with sustaining attention and acting in hyperactive and impulsive ways. This constellation of symptoms not only has a negative impact on the child's life by creating difficulties in school and with peers, but also is associated with difficulties within the home. In fact, research has shown that parents of children with ADHD experience significantly more stress than parents of children without ADHD. This stress can create strained relationships within the home. Because of this, it is important to know whether or not interventions strategies, such as the STP, designed to improve a child's behavior also can improve relationships within the family, and specifically can effect parent stress.

If you are interested in helping us determine whether treating a child can also have a positive impact on parent's lives, please return the bottom portion of the second page of this letter. By returning this, you will indicate that you have read and understood the purpose of this study and consent to participate in it. Your participation in this study is voluntary and not a requirement of your job. It is also important to note that your answers on the materials presented to you will be kept confidential. You may choose to withdraw from the study at any time. If you choose to withdraw from the study, you may contact the primary investigator and all information you have provided will be destroyed and not used for the purposes of this study.

If you return the postcard indicating your interest to engage in this study, you will be sent a short survey regarding a child's improvement in the STP to fill out and return to the primary investigator. This survey should take no longer than five minutes to complete and no known psychological risks are associated with its completion. If you have any questions or concerns, please feel free to contact Jenna Craley.

Thank you for your time and consideration.
Sincerely,

Project Director: Jenna Craley
Graduate Student
Psychology Department
201 Uhler Hall
Indiana, PA 15705
J.L.Craley@iup.edu
724-357-4522

Faculty Sponsor: Donald Robertson, Ph.D.
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Community Guidance Center Representative: Ralph May, Psy.D.
Chief Clinical Officer
Community Guidance Center
793 Old Route 119 Hwy N.
Indiana, PA 15701
724-465-5576 ext. 253

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730).

……

Yes, I would like to participate in the study examining whether or not a child's participation in the STP can effect parenting stress. Please send me a survey to complete regarding child improvement in the STP.

Name_____

Appendix L

Letter with Counselor Questionnaire

Dear Camp Counselor,

Thank you for agreeing to participate in the parenting stress study! Enclosed you will find a short questionnaire regarding specific children's improvement within the STP. Please answer all questions to the best of your ability. If you have any questions or concerns, please feel free to contact me.

Thank you again for your participation in this study. Your time is greatly appreciated!

Sincerely,

Project Director: Jenna Craley
Graduate Student
Psychology Department
201 Uhler Hall
Indiana, PA 15705
J.L.Craley@iup.edu
724-357-4522

Faculty Sponsor: Donald Robertson, Ph.D.
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Appendix M

Counselor Survey of Child Improvement

Please rate the amount of improvement in each behavior since the child began participation in the STP.

1= Much worse 2= Slightly worse 3= No change 4= Slightly better 5=Much better

1. Peer relationships	1	2	3	4	5
2. Sportsmanship	1	2	3	4	5
3. Interactions with adults	1	2	3	4	5
4. Academic performance	1	2	3	4	5
5. Self-efficacy	1	2	3	4	5
6. Following rules	1	2	3	4	5
7. Paying attention	1	2	3	4	5
8. Teasing other children	1	2	3	4	5
9. Problem-solving skills	1	2	3	4	5
10. Impulsivity	1	2	3	4	5

Appendix N

Second Wave of Testing Follow-up Letter

Dear Parent or Guardian:

Approximately one week ago you should have received a packet in the mail regarding the parenting stress study you began participating in earlier in the summer. Please take the time to fill out the questionnaires and return them in the envelope provided. If you have any questions, or if you need another questionnaire, please contact me via email at J.L.Craley@iup.edu or by phone at 724-357-4522.

Thank you for your time and consideration in completing this study.

Jenna Craley

Appendix O

Debriefing Letter

Dear Parent or Guardian and Camp Counselors,

You have now completed all measures for the parent stress study. We wanted to take this time to let you know the specific hypotheses of the study. It was hypothesized that because a family is a group of individuals attempting to work together, interventions that focus on teaching children how to work effectively with others, such as the STP, should result in a decrease in ADHD and associated symptoms that are manifested in the home. This decrease in symptoms should result in a decrease in parent stress as a result of their child's participation in the group. This decrease in stress and symptoms should be most notable in parents of children with the most severe behavioral problems. It is also hypothesized several variables will be associated with the amount of change in parenting stress, including a demographic characteristics, child improvement ratings from camp counselors, change in child behavior as rated in parents, the amount of initial child behavior problems, and parent ADHD knowledge.

The answers that you provided will now be analyzed to determine whether or not any of these hypotheses are correct. If you are interested in learning about the outcomes of this research, please feel free to contact me at J.L.Craley@iup.edu or at 724-357-4522 and I will provide you with a summary of the results.

Thank you once again for your participation in this research. Your time has been greatly appreciated.

Sincerely,

Project Director: Jenna Craley
Graduate Student
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201 Uhler Hall
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724-357-4522

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