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An Examination of Demographic Variables and Their Relationships with Perceived Stress Among Caregivers Beginning a Parent Training Program

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by

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Abstract

The purpose of this study was to investigate how levels of stress among caregivers beginning a behavioral parent training program are related to caregiver and child variables. Research questions were answered using archival data collected from 474 caregivers who participated in *HOT DOCS*, a behavioral parent training program, between January 2009 through July 2010. The three objectives of the study were to (a) examine caregivers' perceived stress in relation to caregiver demographic variables (i.e., gender, marital status, level of education); (b) examine caregivers' perceived stress in relation to child demographic variables (i.e., levels of externalizing and internalizing behavior and presence or absence of a diagnosis); and (c) determine how levels of caregiver stress were related to number of parent training sessions completed. Results showed that female caregivers beginning a behavioral parent training program have higher levels of perceived stress than their male counterparts. Additionally, caregivers with a higher level of education reported less stress than caregivers with less education. No differences were found among those of different marital statuses. With regard to child variables, parents' perceptions of their child's externalizing behavior, as measured by the Child Behavior Checklist (CBCL) Externalizing score, were a significant predictor of caregiver perceived stress, but internalizing behavior (also as measured by the CBCL) and presence/absence of a diagnosis were not. Perceived stress upon entering the behavioral parent training was not a significant predictor of number of sessions

completed. Implications of the study for parent training for caregivers raising young children with challenging behaviors are discussed.

Chapter One: Introduction

Statement of the Problem

Challenging behavior problems are a significant source of concern for many parents raising young children. Research studies estimate that 7% to 20% of all young children demonstrate behaviors that meet the DSM diagnostic criteria for either Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD) (Dodge, Petit & Bates, 1994; Ramey & Ramey, 1998; Webster-Stratton & Hammond, 1998). For children living in low-income neighborhoods, the risk of significant behavioral problems is even higher (Conroy & Brown, 2004). Among children living in low-income neighborhoods, up to 35% have behavioral problems that interfere with their daily functioning (Webster-Stratton & Hammond, 1998). Children with challenging behaviors present a formidable challenge for society. Without early intervention, these children are on a trajectory for increased behavioral problems over time, including difficulties in school (Campbell, 1995; Pianta, & Cox, 2000; Rimm-Kaufman, Pianta & Cox, 2000). In light of these statistics, it is important for parents and caregivers to address the challenging behaviors of young children early in their lives.

One of the barriers for parents addressing their children's challenging behavior is the level of stress that they experience on a daily basis, which may preclude them from engaging in effective problem-solving or seeking help through outside sources (Pellerin, Costa, Weems, & Dalton, 2010). Caregivers raising a child with specials needs, including those with challenging behaviors, experience higher levels of stress than parents raising a

typically developing child (Estes, Munson, Dawson, Koehler, Zhou, & Abbott, 2009; Gupta, 2007; Spratt, Saylor, & Macias, 2007).

Recent research also has investigated how caregiver stress varies based on the nature of the child's special needs. For example, a study by Gupta (2007) showed that parents raising a child with behavioral difficulties experience significantly more parenting stress than parents raising a child with a chronic illness or a child with typical development. Similarly, mothers raising a child with autism spectrum disorder (ASD) reported greater parenting stress than mothers raising children with developmental delays (Estes et al., 2009). Taken together, these findings suggest that the specific nature of the child's disability and the level of challenging behaviors exhibited by the child are important determinants in the caregiver's stress levels.

Raising a child with challenging behaviors also presents a number of other risks for caregivers in addition to increased parenting stress. Parents raising children with challenging behaviors are more likely to experience poor mental health (Webster-Stratton, 1990) and psychological distress (Estes, Munson, Dawson, Koehler, Zhou, & Abbott, 2009). In turn, these factors influence the parent-child relationship (Webster-Stratton, 1990), contributing to further difficulties in managing the child's behavior (i.e., Abidin, 1992; Deater-Deckard, 1998). In light of these findings, it is critical to develop practical interventions that promote positive outcomes for children and families (Webster-Stratton & Hammond, 1998).

Muhammad and Gagnon (2009) examined several demographic variables related to stress in a Canadian community sample. They found that level of stress was higher for females than males. In addition to this, both female and male parents reported a higher

mean perceived stress score compared to participants who did not have children. Another finding was that females and males with a post-secondary level of education reported higher levels of stress compared to females and males with secondary or less level of education. Participants in the lowest income group had higher levels of stress than those in the middle-income group. However, participants in the highest income group had elevated levels of perceived stress compared to the middle-income group. Finally, women who were married reported lower levels of stress compared to women who were single and widowed, separated, or divorced. In contrast, men who were single reported the lower levels of stress than men who were married or divorced, widowed, or separated.

When looking at research on stress related specifically to caregivers, much of the literature focuses on female caregivers. Singer, Ethridge, and Aldana (2007) conducted a meta-analysis of 17 studies based on caregivers raising children with developmental delays. Of the 17 studies, only 3 reported outcomes for fathers. Most of the participants were white, middle class mothers with high school or some college level coursework as their highest level of education. They found that stress interventions with multiple components, such as parent training and emphasis on parent wellbeing, were significantly more effective than single component programs.

There also is some literature comparing stress among mothers and fathers raising children with particular diagnoses. For example, a study conducted by Tehee and colleagues (2009) assessed caregivers raising children with ASD and their perceptions of stress. They found that mothers experienced significantly higher levels of perceived stress compared to fathers. Taken together this information highlights the need to better

understand how caregivers perceive their stress when raising young children with challenging behaviors.

Theoretical Conceptual Framework

The concept of stress has been studied for centuries. However, it was not until after World War II that stress was viewed as part of human emotions (Lazarus, 1993b). Lazarus' research on stress has increased our understanding of how people experience stress and the coping process. His research on stress emphasizes the relationship between the individual and the environment in which the stressor takes places (Lazarus & Folkman, 1984).

Lazaurus' definition encompasses the transactional nature of stress between the individual and the environment. According to his theory, stress is an upsetting experience for individuals, which has implications for their future behavior (Lazaurs, 1966). This definition highlights that both the intensity and quality of a stressful experience have an impact on the individual. In addition to this interaction between the individual and the environment, it is important to take into account the individual's personality (Lazarus, 1966). The three main factors of one's personality that influence how one appraises and copes with a situation are motivation, the person's belief system, and his or her available resources. An important piece of Lazarus's conception of stress is the coping and appraisal process. In order to for a person to determine whether or not a stimuli is a stressor, he or she must appraise the situation and determine whether or not he or she has the appropriate resources to combat the stressor.

Similar, to Lazarus' conceptualization of stress, Webster-Stratton developed a theoretical framework for stress specific to caregivers (Webster-Stratton, 1990). She

conceptualized a model of family stressors, with the notion of stressors having a pile-up effect. Within this model, she described three different types of stressors: extrafamilial stressors, interpersonal stressors, and child stressors. When stressors pile up and sufficient coping resources are unavailable, parenting function is interrupted, indirectly impacting the child's development. The presence or absence of resources for the caregiver either positively or negatively impacts the parent-child relationship. Thus, the caregiver either has necessary skills and support to deal with his or her child or will experience negative parenting experiences, such as having negative perceptions of his or her child; exhibiting irritable, critical or abusive behaviors; lacking problem-solving skills; and/or expressing little nurturance to his or her child. If the caregiver engages in poor parenting practices, the child is increasingly vulnerable to the development of conduct problems. As part of this model, four protective factors were also identified. These included caregiver's psychological health, the degree of social support of caregiver, being a male caregiver, and the caregiver not using substances. When a caregiver is raising a child with challenging behaviors, the stressors he or she faces and the resources available to deal with the stressors impacts his or her response.

Purpose of the Present Study

The present study expands the research base on stress among caregivers raising children with challenging behaviors by examining levels of stress among caregivers beginning a behavioral parent training program. The study has four main objectives. First, it aims to understand the overall levels of stress among caregivers beginning a behavioral parent training program. Second, the study examines caregivers' perceived stress in relation to caregiver demographic variables, such as caregiver gender, marital

status, and educational level. Third, it examines relationships between caregivers' perceived stress and child demographic variables, including child diagnosis, internalizing behaviors, and externalizing behaviors. Finally, the study examines relationships between caregivers' stress and their persistence in a parent training program.

Research Questions

1. What is the level of perceived stress reported by caregivers entering a behavioral parent training program?
2. What is the relationship between perceived stress and caregiver gender, educational level, and marital status?
3. What is the relationship between caregiver perceived stress and child behavior problems?
4. What is the relationship between perceived stress and the presence or absence of a preexisting child behavioral/developmental diagnosis?
5. Do parents who attend three or more sessions have lower perceived stress compared to participants who attended two or fewer sessions?
6. To what degree do the caregiver and child demographic variables in this study predict perceived stress (taking into account the relationships between the variables)?

Significance of the Current Study

Results of this study may be used to better understand caregivers entering a behavioral parent training program and the amount of stress they perceive in their lives. Specifically, it will provide further information about how demographic characteristics of caregivers raising young children with challenging behaviors and the behavior/diagnosis of their children are related to caregivers' perceived levels of stress. This information

may be helpful in tailoring parent training programs to the specific needs of different groups of parents, with the aim of retaining greater numbers of parents in the program.

Definition of Key Terms

Caregiver. This term is defined as an adult in a child caregiver role. This can include mothers, fathers, stepparents, foster parents, grandparents, and other relatives.

Child diagnosis. This term will encompass behavioral, psychological, and medical diagnoses. Examples of different diagnoses that would fall into this definition are, but not limited to, Autism Spectrum Disorder, ADHD, Speech/Language, Developmental Delay, Genetic Syndrome, Behavior Disorder, failure to thrive, or premature birth.

Perceived stress. Perceived stress is a global appraisal of one's stress. It is defined as "the degree to which respondents find their lives unpredictable, uncontrollable, and overloading" (Cohen, Kamarck, & Mermelstein, 1983, p. 387).

Young children. This term will be used to describe the children of the caregivers discussed in this document. Young children will be defined as between the ages of two- and seven-years old.

Challenging behavior. This term is defined "as any repeated pattern of behavior, or perception of behavior, that interferes with or is at risk of interfering with optimal learning or engagement in prosocial interactions with peers and adults" (Powell, Fixsen, Dunlap, Smith, & Ford, 2007, p. 83).

Chapter Two: Review of the Related Literature

Overview

This chapter begins with an overview of the literature on stress and focuses specifically on stress among caregivers raising young children. Subsequently, the relationships between caregiver demographic variables, including gender, marital status, and educational level, are discussed in relation to caregivers' stress. Pertinent literature relating child variables to caregivers' perceived stress also is reviewed. This includes a discussion of stress experienced by caregivers raising children with special needs (e.g., medical disorders, developmental disabilities) and behavior disorders (e.g., externalizing and internalizing disorders). Next, caregiver participation and persistence in parent training are reviewed as they relate to stress. The literature review ends with a summary of the literature and outlines the purpose of the present study.

Understanding Stress

Although stress has been of great interest to researchers since the 14th century, it is a difficult phenomenon to study. Two key researchers in the area of stress are Dr. Richard Lazarus and Dr. Hans Seyle. While both researchers studied stress, they examined it from different perspectives. Seyle's theory studied physiological changes that resulted from exposure to stress from a physiological perspective (Seyle, 1976). Lazarus's theory viewed stress as having psychological underpinnings; specifically, he examined how people cope with psychological stressors (Lazarus, 1966). Each of these perspectives is discussed in further detail below.

Seyle is viewed as a pioneer in the world of medicine for his research on stress and the immune system. As an endocrinologist, he spent much of his time studying how rats respond to stressors and stress-related disease (Seyle, 1976). Seyle described stress as "the nonspecific response of the body to any demand" (p. 1). With this definition of stress, Seyle highlighted that the stress one experiences may have positive or negative health outcomes. He called these two types of stress distress (an unpleasant or harmful version of stress) and eustress (a form of pleasant stress). Regardless of the type of stress an individual experiences, the body responds similarly to the demand by mobilizing glucose (energy) from storage sites and inhibiting further storage of glucose

The General Adaptation Syndrome (G.A.S.) is a three-part model developed as part of Seyle's stress-response theory (Seyle, 1976) to describe how the stress-response worked. In the first phase, or alarm reaction, the body experiences a sense of alarm and heightened emotions as it is exposed to a stressor. In the second stage, or the stage of resistance, the body is resistant to the stressor. The body learns to adapt to this stressor and responds to the stressor under this constant exposure. In the third stage, called the stage of exhaustion, one becomes sick, as the body's stress-response cannot be maintained. Based on his stress theory, Seyle hypothesizes that the body can resist a particular stressor, whether it is related to a job loss, marital conflict, or child rearing, for a finite amount of time before the body is worn out by the stressor (Seyle, 1993). Seyle uses the analogy of withdrawing money from a bank account, without being able to make deposits back into the account; this analogy demonstrates that once an individual's stress resources are used up, the resources cannot be replenished (Seyle, 1993). Thus, one must

use his or her available expenditures in responding to stress carefully to store energy and maintain resources.

Seyle explained "stress is usually the outcome of a struggle for the self-preservation or the homeostasis, of parts within a whole" (Seyle, 1976, p. 367). An important point made with Seyle's theory of stress-response is that while there are many things in life that are stressful, our bodies attempt to adapt to the stressor; thus, being able to cope with it for a period of time. However, true to his G. A. S. theory, the body can be eventually worn down and depleted of resources to adapt to stressors. Thus, individuals that face chronic stress are more at risk for medical problems (Seyle, 1976). For example, Seyle describes research conducted during World War II with pilots. During their initial missions they would experience heightened levels of anxiety, which gradually decreased as they completed more missions. However, prolonged exposure to these heightened emotions led to them to exhausting their adaptive resources. In order to recoup, a break was needed to restore their resources.

It is important to note that the impact of the stressor is determined to a degree by how the individual responds to it. From this viewpoint, some people are able to take the stressors of daily life and respond positively to them. In other cases, individuals' responses to stressful situations may be detrimental to their well being. Thus, having adequate coping mechanisms is one way to ensure that individuals are able to manage their stress.

In contrast to Seyle, Lazarus studied stress and coping, meaning the strategies people use in facing psychological stressors. Lazarus defined stress as "hardship or adversity" (Lazarus, 1993a, p.2). His theory examined three different types of stress:

harm/loss, threat, and challenge, which represent a balance of different demands placed on the individual by the environment (Lazarus, 1993b). The person either has the resources to deal with these demands or lacks the resources. If the person has the resources to respond to the demand, the response to the stress diminished. If the stressor exceeds the individual's available resources to deal with it, the individual may face deleterious consequences (Monat & Lazarus, 1977).

Part of Lazarus' theory placed an emphasis on how one's response to a stressful stimulus is mediated by one's appraisal and coping (1993b). Lazarus' theory defines coping as how an individual responds to different demands. The two major types of coping are problem-focused coping and emotion-focused coping. Problem-focused coping results in objective change. Either an individual makes changes within his or her surroundings or the individual changes his or her part in the relationship. For example, if an individual is parenting a child with challenging behaviors he or she finds stressful, the individual may choose to change his or her parenting practices. With this type of coping, the individual experiences a change in how he or she appraises the situation. This may be accomplished by temporarily distracting one's attention away from what the individual finds troubling. For example, if the person is worried about her child's challenging behavior, she may distract herself by thinking about or engaging in something else such as prayer, sports, or knitting. Another way to cope would involve changing how one interprets the relationship. For example, instead of a caregiver viewing her child's outburst at the grocery store as an affront towards her, she may choose to view it as a signal that the child is tired and needs a nap or hungry and needs a snack. In this case, the individual does not make direct changes to his or her behavior or the environment; rather,

she changes the way she thinks about the stressor. Lazarus' work on stress highlights the coping processes individuals use to deal with stressors, (Lazarus, 1993a).

In reviewing the works by Seyle and Lazarus, there are several themes that emerge about the construct of stress and coping. First, individuals will have physiological responses to a stressor. Second, the more resources one has, the better he or she can respond to and cope with stressors. Individuals with fewer coping mechanisms for psychological stressors are more likely to become sick. Taken together, Seyle's and Lazarus' research on stress highlight that it is not just the stressor that impacts the individual but also the resources and coping mechanisms one has to manage stress.

Stress Among Caregivers

The work of Seyle and Lazarus contributed to understanding of the impact of stress on health and well being and stimulated interest in stress management. Other researchers have studied stress with respect to the role it plays in specific situations. Webster-Stratton's research on stress, for example, describes how stressors impact both parenting practices and the parent-child relationship (Webster-Stratton, 1990). She conceptualized a model of family stressors in which stressors have a pile-up effect. The pile-up effect refers to the cumulative effects stress has on the parent over time. Instead of examining only one or two factors, such as the child's behavior or parenting practices, it accounts for outside of the parent-child relationship, such as living in poverty or unemployment. Within this model, she described three types of stressors: extrafamilial stressors, interpersonal stressors, and child stressors. Extrafamilial stressors may include stress resulting from events such as poverty, unemployment, and hassles in daily life. Interpersonal stressors include present relationship stressors, such as being a single or

divorced parent, experiencing marital distress, and childhood history of abuse. Child stressors include having a child with a difficult temperament, medical problems, or conduct problems. These stressors may have a deleterious effect on the parent's well-being and relationship with his or her child depending on the parent's psychological health and available resources, such as social support. When stressors pile up and sufficient coping resources are unavailable, a caregiver's ability to parent is limited, which interferes with the parent-child relationship. The parent may experience negative perceptions of his or her child; exhibit irritable, critical or abusive behaviors; lack problem-solving skills; and/or express little nurturance to his or her child. If the parent engages in such poor parenting practices, the child becomes increasingly vulnerable to the development of conduct problems.

Webster-Stratton (1990) identified four protective factors that improve the parent-child relationship and help to decrease parenting stress. First, psychological health in the parent can reduce parenting stress. Mothers who are psychologically healthy have more accurate perceptions of their child's behavior in contrast to depressed mothers who tend to view their children as more at-risk (Webster-Stratton & Hammond, 1998). A second buffer against parenting stress is the availability of social support for the caregiver (Webster-Stratton, 1990). Social support can provide caregivers with nurturing, and enduring relationships and results in a positive impact on the parent-child relationship. Third, Webster-Stratton found that mothers reported significantly more stress related to child behavior problems than fathers (Webster-Stratton, 1988). These findings may be related to the fact that mothers typically spend more time with their children and may

experience more stress about their behavior problems and guilt about their parenting practices than fathers. A final protective factor is for caregivers to avoid substance abuse.

One study conducted by Webster-Stratton (1998) examined these four protective factors in preventing conduct problems in 394 Head Start mothers who completed a parent training program. Caregivers were randomly assigned to either the parent training intervention group (n = 296) or control group (n = 130). After collecting baseline data, 79 families from the intervention group and 37 families from the control group dropped out. Of the 278 student participants, 55% were single mothers. Over 80% percent of participants in both groups were receiving government financial assistance. Fifty-three percent of the children were boys (n = 224) and 47% were girls (n = 202), with an average age of 56.53 months of age. At baseline, 63% of mothers were in the high-risk range for making critical statements, and 35% of mothers were in the moderate-to-high range for implementing harsh parenting practices. Twenty-three percent of children were in the clinical range based on mother reports on the Eyberg Child Behavior Inventory (ECBI; Boggs, Eyberg, & Reynolds, 1990). Use of critical statements by mothers and children's externalizing behaviors were confirmed to be true by independent observers. After completing the intervention, mothers in the intervention groups were significantly more likely to use consistent and less harsh parenting practices, and significantly increase their discipline competence. In contrast, control group mothers did not experience gains or changes in their parenting skills. Children in the intervention group demonstrated a significant decrease in deviance and noncompliance, whereas the children in the control group showed no differences. Approximately 12-18 months after completing the intervention, 394 mothers in both groups completed follow-up assessments. The mothers

in the intervention group reported a significant decrease in harsh discipline methods, and increase in limit setting, while the control group mothers did not change. The children in the intervention group had a significant increase in positive affect and decrease in negative affect and misconduct, whereas the control group children did not change.

In a separate analysis using the same sample, risk factors associated with children experiencing conduct problems were examined (Webster-Stratton & Hammond, 1998). Of the 426 families, 55% were single mothers, 24% had less than a high school education, and 21% had their first child as a teenager. Ninety-five percent of the children lived with their biological mother. Using the ECBI, 41% of children experienced above normal conduct problems, and 23% of children's scores were in the clinical range. When considering support available to these mothers, 29% reported that they had little or no support from their families, and 16% reported minimal to no support from their peers. Additionally, 53% of mothers reported using harsh discipline with their children, such as slapping, yelling, hitting, and extended isolation. Moreover, 38% of the mothers reported that they were either "sometimes" or "frequently" inconsistent with their discipline. Of these mothers, 30% experienced harsh parenting practices during their childhood and 26% reported abuse.

In reviewing the research on caregivers and stress, several interesting findings emerge. First, Webster-Stratton's model of stress highlights the pile up effect of stressors that caregivers with limited resources face on a daily basis when raising children with challenging behaviors. Second, the majority of caregivers raising children with Oppositional Defiant Disorder were single mothers. Almost 25% of these mothers did not

complete high school and had their first child as a teenager. In addition, over 33% of these caregivers engaged in harsh discipline practices.

Caregiver Variables and Perceived Stress

Several research studies have examined stress related to raising children with Developmental Delays (DD) and behavior problems. In a meta-analysis of 17 studies on caregivers raising children with developmental delays (DD), Singer, Ethridge, and Aldana (2007) examined the effectiveness of interventions for helping caregivers cope with stress and psychological distress. Of the 17 studies, only 3 reported outcomes for fathers. Most of the participants were white, middle class mothers with high school or some college level coursework reported as their highest level of education. There were a small number of participants that were minorities or had recently immigrated to the United States. Four studies looked at caregivers raising children with Autism Spectrum Disorder (ASD), and the remaining 13 studies looked at caregivers raising children with a wide range of DD, including ASD. This meta-analysis sheds light on the type of people that often participate in research studies related to caregiver stress and raising young children with challenging behaviors.

The researchers were interested in how effective interventions are for parents raising children with a developmental delay, and whether a multicomponent training intervention was more effective than either behavioral parent training or cognitive behavioral training alone (Singer, Ethridge, & Aldana, 2007). When the studies were analyzed, the overall effect size for these interventions was $d = 0.29$. This reflects that the interventions had a small to moderate effect on parents. In the meta-analysis, six studies used behavioral parenting training as an intervention, and a moderate effect ($d = 0.34$)

was found. This suggests that behavioral parent training has a slightly larger effect on parenting stress than do other types of programs.

Another study conducted by Baker, McIntyre, Blacher, Crinic, and Low (2003) examined 205 mothers and fathers raising three year-old children with and without developmental delays and their experience of child behavior problems and stress over time. Of these families, 86% of the caregivers were married, 52% came from a higher socioeconomic background (annual income of $50,000 or more), and over 50% of the mothers and fathers had graduated from college. At 36 and 48 months, caregivers completed the Child Behavior Checklist (CBCL; Achenbach, 2001), which is a broadband behavior rating scale based on caregiver perceptions of child behavior. Caregivers of children with DD rated their child significantly higher on the CBCL than those parents raising children without a developmental delay, meaning that they perceived more behavior problems. When the researchers examined how mothers rated children on the CBCL, 8.1% of children without developmental delays and 24.4% of children with developmental delays were rated in the clinical range. Ratings by fathers showed that 5.2% of children without a developmental delay and 23.5% of children with a developmental delay were rated in the clinical range of the CBCL. These results indicate that mothers and fathers perceived similar levels of overall problem behaviors. There was a strong agreement in couples' ratings of child behavior problems, with no significant differences between ratings on either the broadband scores or the narrowband scores. Taken together, these findings suggest that caregivers raising a child with a developmental delay experience significantly more stress than caregivers raising a child without a developmental delay.

Another study conducted by Esdaile and Greenwood (2003) examined a sample of 78 mothers (n = 53) and fathers (n = 25) raising children with disabilities with respect to parent-child interactions and experience of parenting stress. Data from these caregivers were compared to a group of 225 parents (202 mothers and 23 fathers) whose child did not have a disability. The Parenting Attribution Test (PAT; Bugental et al., 1989), the Parenting Stress Index (PSI; Abidin, 1990), and the Modified-Child Interaction Survey (MCIS; Esdaile and Greenwood, 1995) were used to determine how caregivers in the different groups experienced parenting. The PAT is designed to assess caregiver perceptions of possible causes of successes and failures in hypothetical care giving situations. The MCIS examines how the parent and child interact with each other. The child domain identifies characteristics of the child that make parenting difficult. The parent domain identifies how variables related to the parent and family may make the parent-child relationship dysfunctional and result in increased stress.

These researchers found that caregivers raising a child with a disability had significantly higher scores on the Child Domain total score on the PSI (16.872, $P <$ 0.003) than was found among caregivers raising typically developing children (Esdaile & Greenwood, 2003). This finding suggests that caregivers view having a child with a disability as more stress provoking compared to caregivers raising a child without a disability. There were no significant differences between mother and father scores on the Child Domain of the PSI. For the Parent Domain of the PSI, when mothers were compared to fathers, they reported significantly higher levels of stress on the Role Restriction of the Parenting Role (20.806, $p < 0.003$) and Depression subscales (17.758, $p < 0.003$). Also, there was a trend towards mothers experiencing higher amounts of

stress than fathers in the domains of Sense of Competence, Relationship with Spouse, and Parental Health. While these results demonstrate that there is not a significant difference between mothers' and fathers' overall levels of parenting stress, they also suggest that mothers and fathers experience stress in different ways.

Another study by Calzada, Eyberg, Rich, and Querido (2004) examined the different experiences of 53 mothers and fathers raising preschoolers with Oppositional Defiant Disorder (ODD). The mean age of the children was 4.49 years (SD = 1.09) and 83% of the sample was male. 77% of the participants were white, 17% African America, and 6% identified as other. The authors did not report caregiver educational level. All of the children met the DSM-IV criteria for ODD, while 75% also met the criteria for ADHD.

Parents completed the Eyeberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999) and the Parenting Stress Index (PSI; Abidin, 1995). Based on the ECBI, mothers reported significantly higher levels of disruptive behaviors than fathers (Mother: mean = 176.98 v. Father: mean = 166.06; t = -3.28, $P < .001$). Also, mothers reported significantly higher levels of stress on the PSI in both the Child and Parent domains. During a 30 minute structured parent-child interaction, mothers had significantly more responsive behaviors to their child's behavior than fathers. During the father-child 30-minute interaction, child compliance was higher than during the mother-child 30-minute interaction. Both mothers and fathers found their child's behavior to be both disrupting and challenging; however, fathers rated their child's behavior as less disruptive than mother's ratings. These results highlight that mothers engage in more responsive

interactions with their noncompliant child; however, the child listens more often to the father than the mother.

Another study compared changes in family composition and marital status during a child's first four years of life in families raising young children with or without cognitive delays (Hatton, Emerson, Graham, Blacher, & Llewllyn, 2010). A nationally representative sample from the United Kingdom's Millennium Cohort Study (MCS) was selected for analysis. Data were collected over three waves when the children were approximately nine months, three years, and five years of age. During wave one, there were 18,819 children and 18,552 families; wave two, there were 15,808 children and 15,590 families; and, wave three, there were 15,459 children and 15,246 families. Data were collected at face-to-face home-visits with the mother and her partner when available and through self-report questionnaires. In addition, the researchers tested the children's cognitive abilities using the Bracken Basic Concept Scale (Bracken, 2002) and the Naming Vocabulary subscale of British Ability Scales, 2nd Edition (BAS II; Elliot, Smith, & McCulloch, 1997). They found that significantly more children with cognitive delays were living in single mother households than typically developing children. At the time of the child's birth, 64.4% of families with a child with a cognitive delay were two parent homes compared to 83.5% of caregivers raising a typically developing child. The results of this study demonstrate that mothers raising children with cognitive delays are more likely to be single caregivers. Taken together these finding highlights that it is more likely for a single mother to be raising a child with a cognitive delay than a two-parent family.

Muhammad and Gagnon (2009) looked at the relationship between parenthood and perceived stress in a Canadian community sample. The sample consisted of 29,527 males and 34,308 females between the ages of 20-64. Of this sample, 18,042 female participants (52.59%) and 12,791 male participants (43.29%) had children. They were asked to respond to the following question: "'Thinking about the amount of stress in your life, would you say that most days are: (1) *Not at all stressful?* (2) *Not very much stressful?* (3) *A bit stressful?* (4) *Quite a bit stressful?* (5) *Extremely stressful?*" (p. 317). They found that level of stress was higher for females than males, 3.01 versus 2.92, respectively. Second, both female and male participants classified as parents reported a higher mean perceived stress score compared to participants categorized as non-parent participants (females: parent = 3.06 vs. non-parent = 2.95; males: parent = 3.00 vs. non-parent = 2.85). Another finding was that females and males with a post-secondary level of education reported higher levels of stress, 3.05 and 2.96, compared to females and males with secondary or less level of education, 2.94 and 2.85. Participants in the lowest income group had higher levels of stress than those in the middle-income group. (females: lowest group = 3.08 vs. middle-income group = 2.96; males: lowest group = 2.89 vs. middle-income group = 2.88). However, participants in the highest income group had elevated levels of perceived stress compared to the middle-income group (females = 3.04; males = 3.01). Lastly, women that were married reported lower levels of stress (2.95) compared to women who were single (3.07) and widowed, separated, or divorced (3.19). In contrast, men who were single reported the lowest levels of stress (2.83) than men who were married (2.92) or divorced, widowed, or separated (3.04). Taken together, there are several noteworthy findings from this study. First, it is clear that women

experience greater levels of self-reported stress than men. Also, women who are married experience less stress than their single or divorced peers, a difference not seen with men.

Tehee, Honan, and Hervey (2009) conducted a study that looked at factors that contribute to stress when raising a child with Autism Spectrum Disorder (ASD). Forty-two caregivers (23 mothers and 19 fathers) living in Ireland completed a series of questionnaires. The average age of the children was 9.3 years (*SD* = 4.5 years). The mean age of mothers and fathers was 40.9 years and 44.9 years, respectively. Twenty-two children were male and two were female. The authors did not report the parent's marital status or educational level. Caregivers completed the Perceived Stress Scale (PSS-10; Cohen et al., 1983) and an adaption of the Family Stress and Coping Interview (FSCI; Minnes & Nachshen, 2003) called the Family Stress and Coping Questionnaire (FSCQ-A). The FSCQ-A measures caregiver stress and coping. On the PSS-10 participants had a mean score of 17.7 (*SD* = 6.7) with scores ranging from 3 to 29. Mothers' mean score was 20.5 (*SD* = 6.6) while fathers' mean score was 14.4 (*SD* = 5.3). Based on the results of this study, mothers experienced significantly higher levels of perceived stress compared to fathers (Kruskal-Wallis test, $X^2 = 9.243$, *df* 1, $p = 0.002$). There was a strong, positive correlation between the PSS-10 and the FSCQ-A, ($r = 0.68$, $p < 0.001$). The researchers' findings are unique and one of few studies that have used the PSS-10 to look at parents' stress. Overall, the authors report that the participants in this study had low levels of general perceived stress. However, it is important to note that this study was conducted with caregivers raising children with ASD and did not have a control group of typically developing children to serve as a comparison. As demonstrated in other studies

of caregivers' stress, this study supported the finding that female caregivers experience higher levels of stress than male caregivers.

In summary, the extant literature reveals several important findings related to the relationships between stress and caregiver characteristics such as gender, educational level, and marital status. First, mothers experience higher levels of stress compared to fathers (Calzada et al., 2004; Esdaile & Greenwood, 2007; Singer et al., 2007: Tehee et al., 2009). Second, caregivers who are married have less stress than those who are single (Hatton et al., 2009; Muhammad & Gagnon, 2009). These findings support Webster-Stratton's research on caregivers and stress (1990) related to extrafamial stressors and interpersonal stressors.

Child Variables and Caregiver Perceived Stress

From the research reviewed in the previous sections, multiple variables, such as gender, education level, and marital status, impact caregivers' perceptions of stress (Calzada et al., 2004; Esdaile & Greenwood, 2007; Muhammad & Gagnon, 2009). Furthermore, there are certain child variables, including developmental disabilities, medical diagnoses, or behavior problems that can impact caregivers' perceptions of stress (Gupta, 2007). In this section of the literature, research regarding child characteristics and their relationships to parent perceptions of stress will be described.

Gupta (2007) compared parenting stress levels among caregivers raising children with developmental disabilities, ADHD, HIV/AIDS, and asthma. The caregivers were recruited from a pediatric clinic that primarily served low-income families from various cultural backgrounds. Almost all of the participants were mothers and 47.5% of children came from single-parent households. Caregivers were classified into one of four groups:

behavior, developmental, medical, and control, based on their child's issue. The behavior group included 50 caregivers of children with ADHD. The developmental group consisted of 28 caregivers of children with developmental delays. The medical group included 46 caregivers of children with HIV/AIDS and asthma. The fourth group consisted of 22 caregivers with children with no behavioral, developmental, or medical condition, who served as a control group.

Caregivers of children in each of these groups completed the Parenting Stress Index (PSI; Abidin, 1995). Results showed that caregivers raising children in the developmental group and behavior group reported the highest levels of parenting stress on the Total Stress score (PSI mean score of 275.0 compared to 272.5 for the behavioral, 251.67 for the medical, and 229.4 for the control groups). Caregivers raising children with ADHD (the behavioral group) also experienced heightened levels of total stress. When the caregivers in the behavior group were compared to the control group for post hoc PSI comparisons, caregivers raising children with ADHD reported significantly higher levels of stress in the child domain. When caregivers from the behavior and medical groups were compared, caregivers in the behavior group reported significantly higher levels of stress in the areas of the child domain. Overall, these results suggest that caregivers raising children with behavioral problems experience higher levels of stress when compared to caregivers raising typically developing children and children with chronic health problems.

Another recent study compared stress among caregivers raising children ages 4-12 years old with various health, behavioral, developmental, and neurological concerns (Spratt, Saylor, & Macias, 2007). Caregivers recruited for the study had children in one

of four clinics: developmental-behavioral clinic (57 children, ages 4-12), intraventricular hemorrhage (IVH) research sample (70 children, age 8), developmental clinic sample, 54 children) and neural tube defect research sample (45 children with spina bifida). Caregivers with children in the developmental-behavioral clinic had significantly higher levels of stress compared to the other three samples (IVH research sample, developmental clinic sample, and neural tube defect research sample). This finding suggests that raising a child with difficult behaviors is even more stressful for caregivers than raising a child with medical or developmental issues.

In another study, Estes, Munson, Dawson, Koehler, Zhoe, and Abbott (2009) compared the parenting stress reported by 51 mothers raising children with ASD to the parenting stress reported by 23 mothers raising children with DD. The results of this study indicated that, mothers with children diagnosed with ASD scored significantly higher on both parenting stress and psychological distress compared to mothers of children with DD (parenting stress: $t = 2.87$, $p < .01$; psychological distress: $t = 2.06$, $p < 0.005$) (Estes, et al, 2009). There also were group differences in child problem behavior and daily living skills. Children in the ASD group had higher levels of problem behavior ($M = 0.23$, $SD = 0.78$) compared to children in the DD group ($M = -0.54$, $SD = 0.50$). When considering the impact of child characteristics on maternal parenting stress and psychological functioning, the researchers found that children's behavior problems were associated with mothers' stress and psychological distress. The study's results indicate that mothers raising children with ASD reported higher levels of both parenting stress and psychological distress when compared to mothers raising children with DD. Further,

the results demonstrate that child characteristics, particularly degree of problem behavior, impact levels of parenting stress and psychological distress among mothers.

Taken together, these studies found that child characteristics do indeed impact caregivers' perceptions of stress. Raising a child with a disability, medical problem, or behavior problems is perceived as more stressful by parents than raising a typically developing child. Also, the parent's perception of stress is influenced by their child's behavior problems. Finally, raising children with externalizing disorders or challenging behaviors, such as ODD and ADHD is perceived as more the most stressful.

Caregiver Persistence in Treatment Programs

Of concern to those who design and deliver parent training programs to assist caregivers raising children with special needs is the fact that even among parents who express initial interest in the training, there is a relatively high dropout rate from these programs (Pellerin, Coasta, Weems, & Dalton, 2010). As such, researchers have tried to discern the factors that lead caregivers to drop out of parent training programs. For example, Pellerin, Costa, Weems, and Dalton (2010) compared treatment completers and non-completers at a child and adolescent community mental health clinic. Information was collected by phone via a sociodemographic questionnaire on 474 caregivers when they made the initial contact for services. In particular, information based on the child's age, gender, family income, parent educational level, and access to transportation was gathered. Caregivers also completed the CBCL (Achenbach, 1991) to assess both internalizing and externalizing child symptoms. Caregivers completed the PSI (Abidin, 1995) to assess caregivers' perceived levels of stress. Finally, caregivers completed the Brief Symptom Inventory (BSI; Derogatiz & Melisaratos, 1983), which assesses

caregivers' psychological symptoms. Of these 474 families, 107 (23%) did not come to the clinic for their initial appointment. Three hundred sixty-seven families participated in their initial session; however, 72 families did not attend their scheduled evaluation appointment. Of the remaining 295 families, 45 participants were unable to received services at the clinic or were referred elsewhere for services. Two hundred fifty families and their children began treatment at the clinic, and 54% terminated treatment early.

There were several significant differences found between completers (n = 114) and non-completers (n = 136) in this study (Pellerin, Coasta, Weems, & Dalton, 2010). Significantly more completers graduated from high school than non-completers (X^2 = 6.072, $P < 0.05$). Non-completers had significantly more children in treatment than non-completers (X^2 = 6.488, $P < 0.01$). Additionally, completers reported significantly less stress on the Total Stress cluster of the PSI (X^2 = 6.850, $P < 0.009$). Children whose parents completed treatment had a significantly lower Total Score on the CBCL compared to children whose parents dropped out of treatment (X^2 = 9.675, $P < 0.02$). Also, non-completers' children had significantly more juvenile justice involvement than completers (X^2 = 5.960, $P < 0.02$). Non-completers also reported greater levels of perceived life and parenting stressors and selected more items on the BSI that endorsed depressive symptoms. Of the sample that made initial contact with the community clinic, less than one third completed treatment and, of these, around half of these families began therapeutic services offered by the clinic.

In a review article of negative outcomes associated with behavioral parent training programs, Assemany and McIntosh (2002) suggested three reasons for why negative treatment outcomes occur. In particular, they looked at different variables that predicted

whether or not caregivers would drop out of behavioral parent training programs prematurely. Behavioral parent training programs are often recommended to caregivers as an early intervention for young children that exhibit challenging behaviors; however, many of these caregivers drop out of these programs prior to completing them. The authors suggest three reasons for why negative outcomes occur for behavioral parent training programs. These included premature family drop out, caregivers not fully engaging in the treatment program, and inability to maintain the changes at follow-up. They also identified several contextual variables that impact treatment outcomes for behavioral parent training programs. The three variables highlighted by the authors are socioeconomic disadvantage, family dysfunction, and the severity of the child's conduct problems. Taken together these three variables and contextual variables played a role on who completes and does not complete behavioral parent training programs.

The studies presented in this section of the literature review examined the differences between completers and non-completers of treatment programs. The findings indicate that caregivers were more likely to not complete a treatment program if they had less education and if their child had more severe behavior problems (Assemany & McIntosh, 2002; Pellerin et al., 2009). Additionally, caregivers with high levels of stress are less likely to complete treatment (Pellerin et al., 2009).

Summary

There is a considerable amount of research that has been done on stress and its impact upon health and well-being. Research on stress among parents indicates that caregivers raising children with challenging behaviors experience greater stress than parents of other children, including those with medical diagnoses or developmental

disabilities (Gupta, 2007; Spratt, Saylor, & Macias, 2007). Caregiver characteristics also contribute to stress among those raising children. Mothers are more likely to report greater perceived stress than fathers, and those who have less education seem to experience more stress than their peers with more education (Calzada, Eyberg, Rich, & Querido, 2004; Webster-Stratton & Hammond, 1998). Thus, those caregivers with the most challenging children and fewest resources become the least likely to benefit from treatment because they are less likely to participate (Assemany & McIntosh, 2002).

Purpose of the Present Study

The purpose of the current study is to expand on the available literature on caregivers of children with challenging behaviors. Specifically, the study aims to provide additional information about levels of stress among caregivers beginning a behavioral parent training program and how both caregiver and child characteristics are related to levels of perceived stress among caregivers. Moreover, the study aims to discern whether initial levels of stress among caregivers are related to persistence in the parent training program. In sum, the proposed study has three main objectives. First, the study aims to examine caregivers' perceived stress in relation to caregiver demographic variables, such as gender, marital status, and educational level. Second, the relationship between caregivers' perceived stress and child demographic variables will be examined, including child diagnosis, internalizing behaviors, and externalizing behaviors. Lastly, this study will compare levels of stress upon beginning a parent training program among caregiver completers and non-completers of the program.

Chapter Three: Method

Overview

This chapter reviews the methods that were used to answer the research questions posed in this study. Specifically, the chapter includes a description of the participants, followed by the measures that were used for data collection, procedures used in the study, and methods of data analysis. The chapter concludes with a discussion of study limitations and contributions to the reader's understanding of caregivers' stress who are beginning in a parent training program.

Participants

The present study used data retrieved from an archival database. The database included information about caregivers from Hillsborough County, Florida who participated in a six session behavioral parent training program. This training program took place at the University of South Florida (USF) in the Children's Medical Services building in the Department of Pediatrics. Caregivers included in this study signed the USF Internal Review Board (IRB) consent form.

A demographic description of the caregivers in the present sample is presented in Table 1. The majority of the 474 participants in the sample were the biological parent of the target child (74%), female (73%), married (54%), and had at least completed high school (85%). A relatively large percentage of participants did not report their marital

status (24%) or their level of education (9%). The mean age of the participants in this study was 35.61 years of age with a range from 16 to 79 years of age.

Table 1

Demographic Information for Participants in HOT DOCS

Variable	Number	Percent
Gender		
Female	347	73.2%
Male	127	26.8%
Caregiver Relationship to Target Child		
Biological Parent	350	73.8%
Adoptive Parent	19	4.0%
Foster Parent	8	1.7%
Grandparent	21	4.4%
Aunt/Uncle	8	1.7%
Child Service Provider	45	9.5%
Other	7	1.5%
Not Reported	16	3.4%
Ethnicity		
Black or African American	34	7.2%
White	266	56.1%
Hispanic or Latino	112	23.6%
Asian	12	2.5%
American Indian or Alaska Native	7	1.5%
Other/Multiracial	5	0.6%
Not Reported	40	8.4%
Marital Status		
Married	251	53.1%
Single	68	14.4%
Divorced	22	4.7%
Separated	13	2.8%
Other	7	1.5%
Not Reported	113	23.9%
Level of Education Received by Caregiver		
Less than High School	24	5.1%
Completed High School	108	22.8%
Completed Technical School	42	8.9%
Completed 2-Year College Degree	50	10.6%
Completed 4-year College Degree	106	22.4%
Completed Graduate Degree	100	21.1%
Not Reported	44	9.3%

Note: $N = 474$

Table 2 provides a description of the target children of the participants in the parent training program. The majority of the participants' target children were male (63%) and did not have a reported diagnosis (35%). The missing data for child's gender occurred because the Demographics Form did not contain an item asking for this information at the beginning of data collection. This item was added to the form later on during data collection. The mean age of the children was 41.59 months with a range of 11 to 142 months.

Table 2

Demographic Information for Participants' Children

Variable	Number	Percent
Target Child's Gender		
Male	296	62.5%
Female	107	22.6%
Not Reported	71	15.0%
Developmental/Behavioral Diagnosis		
No Diagnosis	165	34.88%
ASD	67	14.16%
ADHD	35	7.40%
Speech/Language	84	17.76%
Developmental Delay	33	6.98%
Down's Syndrome	2	0.42%
Other Genetic Syndrome	9	1.90%
Behavior Disorder and Disruptive Behavior/NOS	5	1.06%
Failure to Thrive	1	0.21%
Premature Birth	1	0.21%
Other parent reported condition	5	1.01%
Other	2	0.42%
Not Reported	65	13.74%

Note: $N = 474$

Description of the Behavioral Parent Training Program

The behavioral parent training program in which parents in this study were enrolled was the *Helping Our Toddles, Developing Our Children's Skills (HOT DOCS)* parent training program (Armstrong, Lilly, & Curtis, 2006). The program consists of six sessions and a booster session. Each session is held once per week and lasts approximately 2 hours. The sessions (after Session 1) include a 30-minute review and reflection on the caregivers' experiences for the week in carrying out the skills they learned from the previous lesson. Then, the *HOT DOCS* instructors provide instruction on the week's topic, practice problem-solving using group examples, and assign homework for caregivers for practice of their new skills. Appendices A and B provide a more in-depth description of each session's content and topics covered.

Measures

For this study, data were analyzed from several different sources, including the Perceived Stress Scale: 10 Items (PSS-10; Cohen & Williamson, 1988), the Child Behavior Checklist (CBCL; Achenbach, 2001), and the *HOT DOCS* demographics questionnaire (Armstrong, Lilly, & Curtiss, 2006). Each of these measures was completed by the participants at the beginning of the first session (prior to being exposed to the curriculum) and, with the exception of the *HOT DOCS* demographic questionnaire, at the end of the sixth session (after the training had been completed). Only data collected during the initial session were used in the current study.

Perceived Stress Scale: 10 Items. The total score from the PSS-10 (PSS-10; Cohen & Williamson, 1988) was used to measure caregiver stress. The PSS-10 is a brief survey used to assess caregivers' global perception of their stress. The original Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) was a 14-item scale designed to "measure the degree to which situations in one's life are appraised as stressful" (Cohen, Kamarck, & Mermelstein, 1983, p. 385). This measure was intended "to tap into the degree to which respondents found their lives unpredictable, uncontrollable, and overloading" (Cohen, Kamarck, & Mermelstein, 1983, p. 387). In evaluating the psychometric properties of the PSS, Cohen and Williamson (1988) found that the measure had strong internal consistency (reliability coefficients ranged from .84 to .86). Additionally, test-retest reliability was .85 for a college-aged sample after two days and .55 for the community sample after six weeks.

In 1988, Cohen and Williamson released an updated version of the PSS (1988), which they called the PSS-10, because it had 10 items. A national sample of 2,387 participants completed the survey, results of which indicated good internal consistency (alpha coefficient = .78) (Cohen & Williamson, 1988). Scores on the PSS-10 range from 0-40 with lower scores indicating lower levels of stress. The study will compare the results to the mean of the PSS-10 in the current sample of caregivers to the normative sample.

Scores on the PSS-10 are obtained by summing up the participants' responses for all of the items. For items four, five, seven and eight, scores are reversed (4=0, 3=1, 2=2, 1=3, 0=4) and are summed to equal each participant's total score. While the developers of the PSS-10 do not provide classification guidelines, higher scores on the PSS suggest

greater levels of overall stress and lower scores represent lower levels of overall stress. Only fully completed surveys will be included in the data analysis. Interested readers are directed to Appendix C to review the PSS-10.

Achenbach Child Behavior Checklist. The Achenbach Child Behavior Checklist (CBCL: Achenbach, 2001) was used to examine caregiver perceptions of child behavior. The CBCL is a behavior rating scale used to assess caregivers' perceptions of children aged 18 months to 18 years problem behaviors. There are three versions of the CBCL: the Parent Rating Form (CBCL), the Teacher Rating Form (TRF), and the Self Report Form for youth ages 12-18 (YSR). For the proposed study, only the CBCL will be used. Based on the child's age, the caregiver either completed the CBCL for ages 1½ to 5 years or the CBCL ages 6 to 18.

The CBCL scores are summarized into the large-band factors (Externalizing and Internalizing scores), a Total score, and narrow band scores. Both CBCL: 1½-5 and the CBCL: 6-18 are very similar; however, there are seven additional items for CBCL: 6-18. In addition to this, the CBCL 1½-5 produces seven narrow band scores while the CBCL: 6-18 produces eight. On the CBCL: 6-8 there are eight narrow band scores, which are Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, Social Problems, Thought Problems, Attention Problems, Rule-Breaking Behavior, and Aggressive Behavior. On the CBCL 1 ½-5, there are seven narrow band scores, which are Emotionally Reactive, Anxious/Depressed, Somatic Complaints, Withdrawn, Sleep Problems, Attention Problems, and Aggressive Behavior. Caregivers are asked to rate items describing their child's behavior over the previous two months on a three-point scale, ranging from *not true* = 0, *somewhat or sometimes true* = 1, or *often or very often*

true = 2. Raw scores are reported as T-scores with a mean of 50 and a standard deviation of 10. A T-score of 64 or below is considered to be within normal limits; scores between 65 and 69 are considered to be in the at-risk range; and a score of 70 or above is considered to be within in the clinical range. For the CBCL: 1½ - 5, the manual reports good internal consistency coefficients ranging from .76 to .92. For the CBCL: 6-18, the manual repots good internal consistency coefficients ranging from .78 to .97. Additionally, the CBCL has high retest reliability ranging from .82 to .95 and acceptable interrater reliability ranging from .52 to .77.

***HOT DOCS* Demographics Questionnaire.** The *HOT DOCS* Demographic Questionnaire (Armstrong, Lilly, & Curtiss, 2006) was used in this study to gather information on caregiver gender, marital status, and level of education as well as whether the child had a specific diagnosis. This questionnaire was developed by the *HOT DOCS* team to collect participant demographic information. Nineteen items are included to gather information specific to the parent/caregiver about his/her child(ren). Caregiver items include age, gender, race/ethnicity, and education. Child items include age, gender, and diagnosis (examples include ADHD, ODD, and ASD). The questionnaire may be reviewed in Appendix D.

Data Collection Procedures

For the proposed study, permission was obtained from the principal investigator of *HOT DOCS* to retrieve the data necessary for this study from the *HOT DOCS* database (January 2009-June 2010). These data included the PSS-10 scores, participant demographics, and CBCL Internalizing, Externalizing, and Total scores. All data were de-identified prior to the researcher obtaining the data from the database.

Data Analysis

Six research questions were proposed for this study. Each is described below. Prior to addressing the research questions, a factor analysis was done with the PSS-10 to determine its internal consistency with the study's sample.

Research Questions

Research question one. What is the level of perceived stress reported by caregivers entering a behavioral parent training program?

In order to answer this question, descriptive statistics were used. Caregivers' mean total score on the PSS-10 was calculated. In addition, the distribution of the scores was examined using skewness and kurtosis.

Research question two. What is the relationship between perceived stress and caregiver gender, educational level, and marital status?

In order to answer this research question, a series of simultaneous multiple regressions were run. The dependent/criterion variable was the PSS-10 score. The predictor/independent variables included caregiver gender, educational level, and marital status. After examining each of the independent variables, the interactions between gender*educational level, gender*marital status, and gender*educational level*marital status were examined.

To complete the multiple regression, first, each participant's total score was calculated on the PSS-10. The total score is a continuous score ranging from 0-40. Next, the participant's gender was entered into the equation. The highest level of education was added to the equation next. This is a categorical variable, and caregivers selected one of the following responses: less than high school, completed high school, technical school

degree, two-year college degree, four-year college degree, or graduate degree. This variable was dummy coded. Finally, caregiver marital status was added to the equation. On the demographic form, caregivers selected their marital status from the following choices: married, single, divorced, separated, or other. This variable also was dummy coded.

Research question three. What is the relationship between caregiver perceived stress and child behavior problems?

Multiple regression was used to examine the relationship between caregiver perceived stress scores and child behavior problems. The dependent/criterion variable was the PSS-10 score. The predictor/independent variables were the Internalizing and Externalizing scores from the CBCL. To complete the multiple regression, first the PSS-10 total score was calculated. Next, the child's total score on the CBCL was added to the equation. Subsequently, the child's Externalizing and Internalizing scores were added to the equation.

Research question four. What is the relationship between perceived stress and the presence or absence of a preexisting child behavioral/developmental diagnosis?

In order to answer this research question, analysis of variance (ANOVA) was used to compare caregiver perceived stress raising children with or without a preexisting behavioral/developmental diagnosis. Caregivers endorsed the preexisting behavioral/developmental diagnosis on the demographics questionnaire. Caregivers were instructed to circle or write in the entire medical, genetic, and/or behavioral diagnoses that applied to his or her child. Caregivers were not restricted as to how many diagnoses

they could identify. This variable was dichotomized to either “No Diagnosis” or “Diagnosis.”

Research question five. Do parents who attend three or more sessions have lower perceived stress compared to participants who attended two or fewer sessions?

With this research question, analysis of variance (ANOVA) was used to determine whether or not persistence in a behavioral parent training program decreases caregiver stress. The variable for persistence in the program was dichotomized to either attended two or fewer parent training sessions or attended three or more parent training sessions. The mean total caregiver stress score from each of the two groups (attended 2 or fewer sessions; attended 3 or more sessions) was compared to each other to determine if the groups differ significantly. An alpha level of .05 was used.

Research question six. To what degree do the caregiver and child demographic variables in this study predict perceived stress (taking into account the relationships between the variables)?

In order to answer this research question, the correlations between the different demographic variables and stress were examined. Correlations can range from -1 to +1. A positive correlation means that as one variable increases, the other variable increases. A negative correlation means that as one variable increases, the other variable decreases. The closer a correlation is to 1, the stronger the relationship is. Typically, correlations of .01 are considered low, .3 moderate, and .5 are high (Cohen, 1992).

After examining the correlations between the demographic variables and PSS-10, multiple regression analyses were conducted. The resulting R-square from the regression

indicates how much variance in the dependent variable can be explained by the independent variables.

Ethical Considerations

To ensure that the rights and safety of the participants were not violated in this study, the investigator obtained approval from the Internal Review Board (IRB) of the University of South Florida. Once the IRB approved of the study, the investigator was permitted to examine data from the archival *HOT DOCS* database.

Chapter Four: Results

Overview

The purpose of this chapter is to present the results of the study. The chapter begins with a description of how the data were treated. Next, a factor analysis that was completed with the 10 items of the PSS-10 is described. Subsequently, the results of the main research questions are presented. Descriptive statistics, Analysis of Variance (ANOVA), and multiple regression were used to address the research questions.

Treatment of the Data

The first step of data analysis was for the principal investigator to get approval from the IRB in order to access the HOT DOCS database. Once approval was obtained, the principal investigator for the present study was granted access to the participants' demographic information, PSS-10 scores, and CBCL scores. The principal investigator did not have access to any information that could be used to identify the subjects. The data were taken from different Microsoft Excel spreadsheets and merged into an SPSS database. All of the information was synced into the SPSS database based on the caregiver identification code. After all of the information was organized in the SPSS database, the principal investigator reviewed all entries in the database to ensure that all of the data were in the expected range. Once all of the data were reviewed, SPSS was used to analyze the data.

Factor Analysis and Measure of Internal Consistency for the PSS-10

Prior to analyzing each of the six research questions, a factor analysis was conducted with the 10 items on the PSS-10. There were 411 cases used in the factor analysis. (It is noted that although there were 474 participants total, some participants had incomplete data, i.e., they did not complete the PSS-10). The data were analyzed by means of a principal axis factoring model, with a promax with Kaiser Normalization rotation. Two components with an eigenvalue greater than 1.0 were found, 4.77 and 1.28, which together accounted for 60.5% of the total variance. For the first factor, there were factor loadings from -.02 to .84 between the ten items on the scale. Cronbach's alpha for the six items that loaded on factor one was .87, which suggests strong internal consistency. For the second factor, the factor loadings ranged from -.01 to .80. The second factor, which included the four items that loaded heaviest on it, had a Cronbach's alpha of .76, which suggests strong internal consistency. Factor one accounts for 42.93% of the variance, and factor two accounts for 7.61% of the variance. Examination of the highest loadings for each item revealed that the first factor loaded most heavily on the negatively worded items (e.g., been angered, been upset, could not cope). In contrast, items that loaded most heavily on the second factor were the positively worded items (e.g., felt confident, felt things going your way, been able to control irritations). Cronbach's alpha for all of the items was .88, which suggests strong internal consistency. These findings are similar to those found by Cohen and Williamson (1988) when they conducted a factor analysis on the 10 items. Based on the results of the factor analysis and past research using the PSS-10, it was decided that the total score would be used to

address the research questions in the present study (Cohen & Williamson, 1988; Tehee, Honan, & Hevey, 2009).

Analysis of Major Research Questions

Research question one. What is the level of perceived stress reported by caregivers entering a behavioral parent training program?

The Perceived Stress Scale-10 Items (PSS-10; Cohen & Williamson, 1988) total score was used to determine participants' perceived stress. Prior to calculating the mean score for this measure, skewness, and kurtosis were calculated for the current sample. The skewness for the current sample was -0.77. This suggests that the distribution is skewed to the left and that there were relatively few low scores among participants on the PSS-10. The kurtosis was -0.43. The kurtosis suggests that more of the caregivers' PSS-10 scores are closer to the mean and there is a lower probability of having extreme PSS-10 total scores.

Table 3 presents the descriptive statistics for the PSS-10. The higher a caregiver's score on the PSS-10, the higher their level of perceived stress. On this measure, scores ranged from 0 to 40. The mean stress score for participants in this study was 17.95 (*SD* = 6.99). The median score for the participants was 18.00. With the probability sample used by Cohen and Williamson (1988), the mean and standard deviation of the PSS-10 was 13.02 (*SD* = 6.35) with a range from 0 to 34. As such, the stress among parents in the current sample was approximately one standard deviation higher than in the probability sample studied by Cohen and Williamson.

Table 3

Mean (SD), Range and Internal Reliability Coefficients for PSS-10

Measure	*M (SD)*	Minimum	Maximum	Skewness	Kurtosis	Internal Consistency
Perceived Stress Scale (PSS-10)	17.95 (6.99)	2	38	-0.77	-0.43	.88

Note. $N = 433$

Research question two. What is the relationship between perceived stress and caregiver gender, educational level, and marital status?

In order to analyze the relationship between caregiver perceived stress and caregiver gender, educational level, and marital status, several analyses were conducted. First, the bivariate relationship between each variable and PSS-10 score was examined to determine whether the relationship was statistically significant as well as effect sizes for the significant findings. Second, correlations between the variables were reviewed to ensure there was no multicollinearity. Finally, multiple regression was used.

Table 4 provides the results of the analyses examining the relationship between caregiver perceived stress and the demographic variables. Results of an independent samples, one-tailed *t*-test showed that female caregivers reported a significantly higher level of perceived stress than male caregivers, t (429) = -2.80, $p = .0025$, although the effect size was small ($d = -0.30$). Unlike caregiver gender, there was not a statistically significant effect for caregivers' marital status, F (4, 337) = 1.05, $p = .38$, $\eta^2 = .01$, which suggests that approximately 1% of the overall variance is accounted for by marital status. However, there was a statistically significant effect based on caregivers' level of education, F (4, 402) = 5.74, $p < .005$, $\eta^2 = .05$, which suggests that a small portion of the

variance (5%) is accounted for based on level of education. Bonferroni post-hoc analyses were conducted in order to examine the difference in perceived stress among individuals with varying levels of education. Significant differences were found between the following groups: less than a high school degree and four year degree (p = .04), less than a high school degree and a graduate degree (p = .009), a high school or technical degree and a four-year degree (p = 0.03), and a high school or technical degree and graduate degree (p =.002). There were no significant differences between the following groups: less than high school and a high school or technical degree (p = 1.00), less than high school and a two-year degree (p = .372), a high school or technical degree and two-year degree (p = 1.00), a two-year degree and a four year degree (p = 1.00), a two-year degree and a graduate degree (p = 1.00), or a four-year degree and a graduate degree (p = 1.00). Overall, what the analyses indicate is that there is a general trend for individuals who have higher levels of education to experience less stress.

Table 4

Descriptive Statistics and Significance for PSS-10, Caregiver Gender, Education Level, and Marital Status

Variable	*n*	*Mean (SD)*	Minimum	Maximum	Skewness	Kurtosis	Test	*p*
Gender								
Female	317	18.51 (6.86)	2	38	-0.17	-0.25	$t(429) = -2.80$	0.0025
Male	114	16.39 (7.20)	3	35	.22	-.60		
Marital Status								n.s.
Married	240	17.45 (7.16)	2	38	-.03	-.43		
Divorced	20	17.50 (8.42)	5	35	.03	-.61		
Separated	12	18.42 (9.04)	4	35	.49	-.34		
Single	63	18.98 (6.41)	6	33	.04	-.48		
Other	7	21.43 (5.96)	12	29	-.17	-.61		
Educational Level							$F(4, 402) = 5.74$	.0005
Less than High School	21	21.76 (5.88)	9	29	-.91	-.06		
High or Technical School Degree	137	19.64 (7.05)	2	38	-.10	-.02		
2 Year Degree	49	17.98 (7.47)	2	35	.03	-.18		
4 Year Degree	103	16.92 (6.61)	3	30	-.08	-.97		
Completed Graduate Degree	97	16.18 (7.04)	3	30	-.08	-.78		

Note. SD = Standard Deviation

In addition to completing the bivariate analyses, the correlations between the demographic variables were analyzed and are reported in Table 5. The correlations between the variables ranged from .01 to .27. There was not a strong relationship between the independent variables, which suggests that multicollinearity was not a concern with the current sample. Several significant correlations emerged. First, there was a significant positive correlation between caregiver gender and PSS-10 score (r = .15, N = 331, p < .005, one-tailed). This suggests that females have a significantly higher PSS-10 score compared to males. There also was a significant negative correlation between educational level and PSS-10 score (r = -.27, N = 331, p < .005, one-tailed), which suggests that caregivers with less education reported higher levels of perceived stress. Additionally, there was a significant positive correlation between caregiver gender and being single (r = .10, N = 331, p < .05, one-tailed), which suggests that female caregivers were more likely to be single than male caregivers. Finally, there was a negative correlation between being single and educational level (r = -.11, N = 331, p < .05, one-tailed), which suggests that caregivers who were single had less education than those who were not single.

Table 5

Correlation Matrix for PSS-10, Caregiver Gender, Educational Level, and Marital Status

	Variable	1	2	3	4	5	6	7
		PSS-10	Caregiver Gender	Educational Level	Divorced	Separated	Single	Other
1	PSS-10							
2	Caregiver Gender 0 = Male 1 = Female	.15**						
3	Educational Level	-.27**	.01					
4	Divorced[a]	-.01	.08	-.02				
5	Separated[a]	.03	.02	.03	-.05			
6	Single[a]	.07	.10*	-.11*	-.12*	-.09		
7	Other[a]	.07	.08	-.06	-.04	-.03	-.07	

Note.: [a] = married was used as the referent variable * p < .05, ** *p* <.005

After examining the correlations among the variables, multiple regression analysis was used. Table 6 provides the results of the unstandardized and standardized coefficients for each of the predictor variables. The model explained 8.1% of the variance, F (6, 324) = 5.88, $p < .0005$. Table 6 gives the information for the predictor variables in the model. Both educational level and caregiver gender were significant predictors of stress, but marital status was not.

Table 6

Unstandardized and Standardized Regression Coefficients for Variables Predicting Stress

Variables	*B*	Standard Error of *B*	β
Gender	2.42	0.91	.14*
0 = Male			
1 = Female			
Educational Level	-1.47	0.30	-.26**
Marital Status (Married = Reference category)	0		
Divorced	-.72	1.63	-.02
Separated	1.34	2.15	.03
Single	0.62	1.01	.03
Other	2.32	2.68	.05

Note: N = 331 *p < .05 **p <.0005

Research question three. What is the relationship between caregiver perceived strss and child behavior problems?

In order to answer research question three, several analyses were conducted to examine caregiver perceived stress related to child behavior problems. First, descriptive statistics were used to calculate the mean CBCL scores as well as skewness and kurtosis. Second, correlations between the variables were reviewed to ensure there was no multicollinearity. Finally, multiple regression analyses were used to determine the relationships among these variables.

Table 7 presents the descriptive statistics for the PSS-10, Internalizing score on the CBCL, and Externalizing score on the CBCL. On the CBCL, T scores are considered to be in the “at-risk range” when they are between 65 and 69 and in the “clinical range” when they are 70 or above. As the table shows, the mean CBCL Internalizing score was 57.22, which is in normal limits. The mean CBCL Externalizing score was 59.68, which

is also within normal limits. The standard deviations (11.29 and 11.91, respectively) demonstrate that there was considerable variability in these scores, with Internalizing scores ranging from 29 to 83 and Externalizing score ranging from 28 to 92.

Table 7

Mean and Standard Deviation for PSS-10, CBCL Internalizing Score, and Externalizing Score

Variable	n	Mean (SD)	Minimum	Maximum	Skewness	Kurtosis
PSS-10	433	17.95 (6.99)	2	38	-0.08	-0.43
CBCL Internalizing Score	334	57.22 (11.29)	29	83	-0.04	-0.42
CBCL Externalizing Score	334	59.68 (11.91)	28	92	0.30	-0.07

After completing the descriptive statistics analyses, a correlation matrix was calculated. The results are presented in Table 8. There was a significant positive correlation between the PSS-10 and Internalizing CBCL score (r = .231, N = 315, p < .005, one-tailed). In addition to this, a significant positive correlation was found between the PSS-10 and Externalizing CBCL score (r = .27, N = 315, p < .005, one-tailed). The correlations between the variables ranged from .23 to .67. The strongest correlation was between the Internalizing and Externalizing scores on the CBCL (0.67). Based on the correlations, there was no concern that multicollinearity was present for the regression analyses.

Table 8

Correlation Matrix for PSS-10 and CBCL

	Variable	1	2	3
		PSS-10	Internalizing	Externalizing
1	PSS-10			
2	CBCL Internalizing Score	0.23***		
3	CBCL Externalizing Score	0.28***	0.67***	

Note. ***$p < 0.0005$

Table 9 provides the results of the unstandardized and standardized coefficients for each of the variables. Using the enter model, a significant model emerged: F (2, 312) = 13.81, $p < .005$). This model explains 7.5% of the variance with perceived stress (adjusted $R^2 = 0.075$). Table 9 gives the information for the predictor variables entered into the model. The Externalizing score on the CBCL was significant, but the Internalizing score was not. Examples of externalizing behaviors are noncompliance, aggression, and temper tantrums. In contrast, some examples of internalizing behaviors include withdrawal, sadness, and worry. As such, parents who had children with externalizing behavior problems reported higher levels of stress whereas internalizing behavior problems were not associated with greater stress among parents.

Table 9

Unstandardized and Standardized Regression Coefficients for Variables in the Model

Variables	b	Standard Error of b	β
CBCL Internalizing Score	0.051	0.05	0.08
CBCL Externalizing Score	0.13	0.04	0.22*

Note: *$p < .05$, **$p < .005$

Research question four. What is the relationship between perceived stress and the presence or absence of a preexisting child behavioral/developmental diagnosis?

In order to answer this question, analysis of variance (ANOVA) was used. Table 10 provides a display of the mean and standard deviations of caregiver PSS-10 scores as reported by caregivers. There was not a statistically significant effect of whether or not a child had a reported diagnosis on caregiver's PSS-10 scores, F (2, 431) = 0.77, p =.382, $\eta^2 = 0.002$. Less than 1% of the variance ($\eta^2 = 0.002$) is accounted for by whether the child had a diagnosis.

Table 10

Mean and Standard Deviation of Variables related to Reported Child Diagnosis

Variable	Percent	Mean	*SD*
Diagnosis	63.5%	18.2	6.8
No Diagnosis	36.5%	17.6	7.3

Note: N = 433 SD = Standard Deviation

Research question five. Do parents who attend three or more sessions have lower perceived stress compared to participants who attended two or fewer sessions?

In order to address this research question, several analyses were completed. First, participants were grouped in one of two categories: (a) those who attended two or less sessions or (b) those who attended three or more sessions. Next, the mean and standard deviation are reported based on the number of sessions they attended. Table 11 provides a display of the mean and standard deviations for each of the variables.

Table 11

Mean and Standard Deviation of Variables related to PSS-10

Variable	Percent	Mean	*SD*
2 or fewer sessions	12.7%	18.2	5.8
3 or more sessions	87.3%	17.9	7.2

Note: *N* = 433 *SD* = Standard Deviation

In order to analyze the possible changes between the number of sessions caregivers attended, a one-way Analysis of Variance (ANOVA) was used. There was not a statistically significant difference in caregiver perceived stress between caregivers who attended 2 or less sessions and those who attended 3 or more sessions, F (2, 431) = 0.104, p = .747, η^2 = 0.000.

Research question six. To what degree do the caregiver and child demographic variables in this study predict perceived stress (taking into account the relationships between the variables)?

In order to analyze the relationship between caregiver perceived stress and caregiver gender, educational level, marital status, internalizing score on the CBCL, externalizing score on the CBCL, caregiver number of sessions attended, and whether or not a child had a reported a diagnosis, correlation and regression analyses were used. For these analyses, participants needed to have complete data. As such, the sample size was reduced from 474 to 260. The means, standard deviations, and frequencies for each of the variables included in the analyses are presented in Table 12.

Table 12

Percents, Means, and Standard Deviations by Variable

Variable	Percent	Mean	Standard Deviation
PSS-10		18.43	7.29
Caregiver Gender		0.78	0.41
Female	78.46%		
Male	21.54%		
Educational Level		2.17	1.27
Less than High School Degree	5.77%		
Completed High School/Technical School	36.54%		
Two-Year Degree	12.31%		
Four-Year Degree	25.77%		
Graduate Degree	19.62%		
Marital Status (1 = married)			
Married	73.46%		
Divorced	6.92%		
Separated	3.46%	0.03	0.18
Single	13.46%	0.13	0.34
Other	2.69%	0.03	0.16
Internalizing CBCL Score		57.19	11.05
Externalizing CBCL Score		59.55	11.71
Sessions Attended (0 = 2 or less; 1 = 3 or more)			
Two or less sessions	8.46%		
Three or more sessions	91.54%		
Reported Child Diagnosis (0 = no diagnosis; 1 = diagnosis)		0.60	0.49
No Diagnosis	40.38%		
Diagnosis	59.62%		

Note. $N = 260$

In addition to completing the descriptive analyses, a correlation matrix was calculated. Table 13 presents the correlation matrix. Several significant correlations emerged. The significant correlations are noted in Table 13 with an asterisk. Correlations ranged from -.01 to .48. There were no strong correlations between the variables, which suggests that mutlicolinearity is not a current concern with the present sample.

Table 13

Correlation Matrix for the Variables Entered in the Model

		1	2	3	4	5	6	7	8	9	10	11
	Variable	PSS-10	Caregiver Gender	Education Level	Divorced	Separated	Single	Other	Child Diagnosis	Caregiver Attendance	CBCL Internalizing Score	CBCL Externalizing Score
1	PSS-10											
2	Caregiver Gender (0 = male; 1 = female)	.09										
3	Education Level	-.20***	.04									
4	Divorced	-.05	.07	-.04								
5	Separated	.07	.05	-.01	-.05							
6	Single	.12*	.12*	-.20***	-.11	-.08						
7	Other	.07	.09	-.06	-.05	-.03	-.07					
8	Child Diagnosis	.15*	.07	-.26***	.10*	.03	.10	-.01				
9	Attendance	.01	.04	.06	-.08	-.02	-.00	-.04	-.05			
10	CBCL Internalizing	.25***	.03	-.30***	-.13*	.05	.17*	.10	.48***	-.13*		
11	CBCL Externalizing	.32***	.01	-.31***	-.01	.06	.20***	.02	.43***	-.10	.69***	

Note. * $p < .05$, ** $p < .005$ ***$p < .0005$

After examining the correlations among the variables, multiple regression analysis was used. Table 14 provides the results of the unstandardized and standardized coefficienct for each of the variables. The model explained 9.6% of the variance, F (10, 249) = 3.76, $p < .005$. Table 14 gives the information for the predictor variables in the model. The only predictor variable that was significant was the CBCL Externalizing score.

Table 14

The Unstandardized and Standardized Regression Coefficients for the Variables Predicting Stress

Variable	*B*	SE *B*	β
Caregiver Gender (0 = male; 1 = female)	1.49	1.07	.08
Educational Level	-0.65	0.37	-.11
Marital Status (Married = referent category)			
Divorced	-1.13	1.78	-.04
Separated	2.01	2.38	.05
Single	0.80	1.34	.04
Other	2.26	2.71	.05
Reported Child Diagnosis (0 = no diagnosis; 1 = diagnosis)	0.03	1.03	.00
Sessions Attended (0 = 2 or less; 1 = 3 or more)	1.01	1.57	.04
Internalizing CBCL	0.01	0.06	.02
Externalizing CBCL	0.16	0.05	.26**

Note. $N = 260$, $^{**}p < .005$

Summary of the Results

After completing the individual analyses, several key findings emerged. First, participants had an overall PSS-10 score of 17.95 (*SD* = 6.99). Participant gender and level of education were related to perceived stress. In contrast, marital status was not significantly related to perceived stress. In addition to this, participants' perceptions of the severity of the child's problem behavior were related to significantly higher levels of perceived stress. The higher the Internalizing and Externalizing scores on the CBCL, the higher the participant's perceived stress. In contrast, whether or not the child had a reported diagnosis was not significantly related to caregiver stress. Similarly, the number of parent training classes attended by the participant was not significantly related to stress. Finally, when both caregiver and child demographic variables were entered into a regression equation, only the Externalizing CBCL score was a significant predictor; all others were not (gender, education, marital status, child diagnosis, attendance, Internalizing CBCL score).

Chapter Five: Discussion

Overview

Existing literature highlights the many concerns that arise for parents raising children who exhibit behavioral problems (Pellerin, Costa, Weems, & Dalton, 2010; Webster-Stratton, 1990). Challenging behavior problems are a significant source of concern for many parents raising young children. Unfortunately, research shows that young children with challenging behaviors are on a trajectory for continued behavior problems without intervention services (Campbell, 1995; Pianta & Cox, 2000). To exacerbate this problem, caregivers with high levels of stress due to their child's behavior often fail to use effective problem solving strategies or seek outside resources (Pellerin, Costa, Weems, & Dalton, 2010).

The present study sought to develop a fuller understanding of the stress levels of caregivers upon beginning a behavioral parent training program to address challenging behaviors in young children. In particular, the study sought to examine how stress varies among caregivers by gender, education, marital status, caregiver perceptions of the target child's behavior, and the presence or absence of a child diagnosis. The study also examined how initial levels of stress were related to continuation in the parent training program. Stress was measured with the PSS-10, a measure of general stress that has been used in other studies to examine overall levels of stress among caregivers.

Perceived Stress Among Caregivers Beginning a Behavioral Parent Training Program

The results of the current study indicate that caregivers raising children with challenging behaviors report relatively high levels of perceived stress overall. The average PSS-10 total score in the current study was 17.95. This number was compared to the PSS-10 total score found in Cohen and Williamson's sample (1988) of individuals who had at least one child living in their home. Caregivers in the Cohen and Williamson study had an average PSS-10 total score of 13.0.

The PSS-10 total score was higher for caregivers in the current study (M = 17.95) than for those in Cohen and Williamson's 1988 study who had 4 or more children (M = 15.1). Cohen and Williamson did not account for whether children had behavioral difficulties or a medical diagnosis. These findings are not surprising given the past research on caregivers raising children with challenging behaviors. Specifically, past research reflects that caregivers raising children with challenging behaviors have higher levels of stress than those whose children who display more typical behavior (Estes, Munson, Dawson, Koehler, Zhou, & Abbott, 2009; Gupta, 2007; Spratt, Saylor, & Macias, 2007). This suggests that even having a large family (i.e., 4 children in this case) is not associated with as much parental stress as having at least one child with challenging behaviors.

In a study by Tehee, Honan, and Hevey (2008) of parents raising children with autism, the mean PSS-10 score was 17.7 with a standard deviation of 6.7. This is similar to the mean PSS-10 total score found in this study (17.95). This suggests that parents of children with autism experience similar levels of stress compared to parents seeking

behavioral parent training due to their child's challenging behaviors. This study highlights the increased stress found among parents raising children with challenging behaviors.

Overall, results of this study demonstrate that parents entering a parent training program for children with challenging behaviors reported higher levels of stress than the general population and individuals with 4 or more children. The findings of this study are consistent with past research on parents raising children with challenging behaviors, which found mean PSS scores to be similar to those found in the current investigation (Tehee, Honan, & Hevey, 2008).

Perceived Stress Related to Caregiver Demographic Variables

Another question addressed in the current study is how demographic characteristics relate to perceived stress among parents raising children with challenging behaviors. It was expected that female caregivers, those with less education, and participants who were not married to have higher levels of perceived stress. This hypothesis was somewhat supported by the data. Results of this study indicated that there were significant differences in perceived stress between males and females as well as between individuals of varying educational levels, with females and those with less education experiencing greater perceived stress. These findings are similar to previous literature (Muhammad & Gagnon, 2009; Webster-Stratton, 1998). In Cohen and Williamson's standardization sample (1988), in which female caregivers reported significantly higher levels of perceived stress than male caregivers. In past research on individuals raising children, similar findings have been found between mothers and fathers raising children with Autism Spectrum Disorders (ASD) (Tehee, Honan, & Hevey, 2008).

These findings suggest that it is women who report higher levels of stress than men when they are raising a child with challenging behaviors. There are many possible reasons for this finding. First, historically, women have been expected to assume a greater amount of responsibility for child-rearing (Webster-Stratton, 1990). Women also may experience higher levels of stress because of having to balance childcare responsibilities with work responsibilities. Although information on work outside of the home was not available for the current sample of mothers, future research should examine how level of parenting stress among mothers raising children with challenging behaviors is impacted by having to balance work with child-rearing.

Another possible reason for the finding that women experience higher levels of stress than men when raising a child with challenging behaviors is because women may take on more responsibility for finding help for the child than men do. For example, Raffaele Mendez and colleagues (2010) conducted a study on coparenting among couples raising children with challenging behaviors. They found that mothers typically took the lead in researching interventions for the child, with fathers playing a much smaller role in this process.

Women also may perceive more problematic behaviors in their child than men perceive. For example a study conducted by Calzada and colleagues (2004) examined the different experiences of 53 mothers and fathers raising preschoolers with Oppositional Defiant Disorder (ODD). They found that mothers reported significantly higher levels of disruptive behaviors and more stress than fathers. In addition to this, mothers engaged in more responsive behaviors to their child's misbehavior than fathers.

There was a significant difference in perceived stress among those participants of different educational levels. This finding was not surprising and consistent with past research (Cohen & Williamson, 1988). In the present study there were significant differences between those with a high degree or less and those with an advanced degree, which is similar to Cohen and Williamson (1988). Webster-Stratton and Hammond (1998) identified having less education as a risk factor associated with raising children with challenging behaviors.

There was not a significant difference in perceived stress among those of different marital statuses. This finding is surprising given the past research, which has found single parents to experience greater stress than married parents (Webster-Stratton & Hammond, 1998). In examining the data, a possible explanation for why a significant difference did not emerge in this study may have to do with the sample. Over 53% of the sample was married, creating restriction of range for this variable. In another study in which a similar percentage of participants were married (86%), the researchers examined how mothers and fathers experienced child behavior problems and stress over time among couples raising a child with a DD and those raising a typical child (Baker, McIntyre, Blacher, Crinic, & Low, 2003). Mothers and fathers' ratings of their child's behavior were similar on the CBCL. In addition, mothers and fathers of children with DD had higher parenting stress, which was related to their child's behavior problems rather than whether or not their child had developmental delay. Those parents raising a child with a developmental delay did experience more stress than those raising a typically developing child.

In another study by Salinas, Smith, and Armstrong (in press), the researchers conducted a qualitative study with male participants to better understand their

experiences of attending HOT DOCS, which was the same curriculum participants in the current study were completed. The researchers found that spouses' motivation to attend the sessions was most related to their spouse or partner encouraging them to attend. Thus, couples would attend the sessions together.

Overall, results of this study show that female caregivers and those with less education reported significantly higher levels of perceived stress. These findings are similar to previous literature (Muhammad & Gagnon, 2009; Webster-Stratton, 1998). In addition to this, the present study did not find significant differences between caregivers' perceived stress based on their marital status. These findings suggest that raising children with challenging behaviors is significantly more stressful for parents who have a lower level of education and/or are female.

Caregiver Perceived Stress Related to Perceptions of Child Behavior

It was expected that those participants who rated their children higher on the CBCL would experience greater levels of perceived stress than those participants who did not perceive their children to exhibit challenging behaviors. This hypothesis was supported by the data. The results of the present study indicated that there was significant positive relationship between the PSS-10 and the CBCL internalizing score and CBCL externalizing score. This suggests that as caregiver's perceptions of their child's externalizing and internalizing behaviors increase, so does their perceived stress. This finding is not surprising given the past research on raising children with challenging behaviors. For example, parents raising children with a DD rated their child's behavior on the CBCL as more problematic than those of a typically developing child (Baker, McIntyre, Blacher, Crinic, & Low, 2003).

In addition, caregivers' ratings of their child's externalizing behaviors, as measured by the externalizing score on the CBCL, served as a significant predictor variable. The Externalizing score on the CBCL explained 8% of the variance in the regression equation. This suggests that the more severe a caregiver rates his or her child on the CBCL externalizing score, the more likely he/she is to experience higher levels of perceived stress. This suggests that caregivers who perceive their child to engage in more "acting out" type behaviors are predicted to have higher levels of stress. In contrast, the CBCL internalizing score was not a significant predictor variable of participants' stress. A possible reason that this variable was not a significant predictor is because internalizing behaviors are internal to the child. Thus, the child may not display external behaviors, such as tempter tantrums, which may be more stressful for caregivers to handle.

These findings converge with past research related to raising children with challenging behaviors. The results suggest that children who engage in acting out behaviors, such as noncompliance, temper tantrums, etc., are associated with higher levels of perceived stress for caregivers. Webster-Stratton's theory on stress focused on a "pile up" effect that environmental stressors have on caregivers (1990). For parents, dealing with their child's challenging behaviors can be difficult and put more stress on them as they try to manage their child's behaviors. Research shows that parents have greater difficulty accessing outside resources and coming up with solutions to address their child's behavior when they are stressed (Pellerin, Costa, Weems, & Dalton, 2010). Moreover, parents who have children with challenging behavior are more likely to experience poor mental health (Webster-Stratton, 1990) and psychological distress

(Estes, Munson, Dawson, Koehler, Zhou, & Abbott, 2009). These feelings of stress can have further implications for the parent-child relationship (Webster-Stratton, 1990), which can make it more challenging for them to handle their child's behavior (i.e., Abidin, 1992; Deater-Deckard, 1998). This past research highlights the cycle that can occur when caregivers feel stressed about their child's behavior and feel like they cannot control it.

In addition to this, the present findings suggest that caregivers' perceptions of their child's behavior play an important role in how they perceive their own stress. Both the PSS-10 and the CBCL rely on caregivers' perceptions of their child's behavior and their perceived stress. Thus, these measures provide subjective measures of the child's behavior and the caregiver's stress. Several studies have used the CBCL or the Eyberg Child Behavior Inventory (ECBI; Boggs, Eyberg, & Reynolds, 1990) to evaluate caregivers' perceptions of their child's behavior (Baker, McIntyre, Blacher, Crinic, & Low, 2003; Webster-Stratton & Hammond, 1998). In one study, parents rated their children higher on the CBCL when they were raising a child with a DD compared to those who did not have a child with a DD (Baker, McIntyre, Blacher, Crinic, & Low, 2003). The findings of the current study further demonstrate that caregivers raising children that they perceive as having higher levels of externalizing problems also experience greater perceived stress.

Perceived Stress Related to Reported Child Diagnosis

It was expected that caregivers who reported a child diagnosis would have higher levels of perceived stress than those who did not. However, this hypothesis was not supported by the data analyses. A significant difference did not emerge between

caregivers who reported a diagnosis and those did not report a diagnosis. This finding was unexpected because past research has found that caregivers raising children with a behavioral diagnosis have higher levels of stress compared to raising a child with no diagnosis (Gupta, 2007; Spratt, Saylor, & Macias, 2007). In one study that classified children in one of four groups (behavior, developmental, medical, and control), those raising children with ADHD or DD had significantly higher levels of stress compared to those raising children with no medical diagnosis or who are typically developing (Gupta, 2007).

There are several possible explanations for why differences did not emerge between the two groups (diagnosis vs. no diagnosis) in this study. First, caregivers self-referred themselves to the behavioral parent training program. This suggests that caregivers perceive their child's behavior as being severe enough to warrant outside services in the form of parent training classes. As demonstrated in research question four, caregivers' rating of their child's externalizing behaviors served as a significant predictor variable for higher levels of perceived stress. Thus, caregivers' perceptions of their child's behavior may serve as a more important predictor variable rather than whether or not their child has a diagnosis.

A second possible explanation for the lack of differences in caregiver stress by child's diagnosis was that caregivers self-reported whether or not their child has a diagnosis. This information was not corroborated with medical records. For the current study, almost 37% of the target children did not have a diagnosis while approximately 64% reportedly had a medical, developmental, or psychological diagnosis. Children with a medical condition, like Cerebral Palsy, were coded the same as ADHD or ASD.

Different results may have been obtained if the research question was analyzed by each diagnosis rather than collapsing into one variable.

In future research it may be beneficial to change the way this data are collected and analyzed. For example, researchers may ask participants to submit a copy of medical records or a copy of the medicine prescription bottle (if the child takes medication) to verify the child's diagnosis. Another possibility would be to take the child's medical diagnosis and break it down into one of the following categories: medical, behavioral, developmental, or psychological. Past research has been done on different categories of child diagnosis, and significant differences have emerged in caregivers' parenting stress (Gupta, 2007; Spratt, Saylor, & Macias, 2007).

Caregiver Initial Perceived Stress Related to Persistence in Behavioral Parent Training Program

For the current study, it was expected that a significant difference would emerge between caregivers' level of perceived stress when they entered a behavioral parent training program and the number of behavioral parent training sessions they attended. Approximately 13% of caregivers attended two or less behavioral training sessions while 87% attended three or more sessions. There was not a significant difference between caregivers who attended two or less parent training sessions and those who attended three or more sessions. This finding was surprising as past research demonstrates that those participants who do not complete a treatment plan have significantly higher levels of stress than those who complete a treatment program (Pellerin, Costa, Weems, & Dalton, 2010).

A possible reason for why a significant difference did not emerge between the two groups is that the variable was dichotomized into two groups. Caregivers were coded as either attending two or less sessions or attending three or more sessions. Differences may emerge between the groups based on the total number of sessions attended and which sessions they attended. During the first few sessions, caregivers learn the basics of child development and how to determine the function of their child's behavior. In later sessions, participants are taught interventions to use to address their child's challenging behaviors. For example, session one of the parent training program focuses on child development. In later sessions, caregivers are taught specific skills to deal with challenging behaviors. For a more complete description of each session, see Appendix A and B. In future research, it may be beneficial to compare caregivers based on the number of sessions they attend and the content to which they are exposed. For example, a difference may emerge between those who signed up for the parent training classes and only attend the first session and those caregivers who completed all six sessions. Premature dropout from intervention programs has been linked to not having enough supports in the home and having more stress (Pellerin, Costa, Weems, & Dalton, 2010).

Perceived Stress Related to Caregiver and Child Demographic Variables

The final research question was designed to determine what caregiver and child variables put into the same multiple regression equation would predict caregiver's perceived stress. It was expected that entering both caregiver and child variables into the equation would explain a large portion of the variance. Past research has shown that both child and caregiver variables relate to the amount of stress caregivers feel (Webster-Stratton, 1990). Almost 10% of the variance in PSS-10 scores was explained by the

variables in the regression equation. This suggests that approximately 90% of the variance was not accounted for in the present regression model, which means that there are other variables that were not included in the present study which may better predict caregiver stress.

The single best predictor of caregiver perceived stress was the child's externalizing score on the CBCL. This suggests that caregivers' perceptions of their child's behavioral difficulties is an important predictor of caregivers' perceived stress. These findings are consistent with past research (Gupta, 2007; Spratt, Saylor, & Macies, 2007), in that caregivers who have children with challenging behaviors have higher levels of stress compared to caregivers raising children without difficult behaviors.

While 10% of the variance is accounted for in this model, this suggests that approximately 90% of caregivers' perceived stress could not be predicted based on the variables entered in the model, which means that there are other variables that may shed more light on what predicts caregivers to feel more stressed. Webster-Stratton's conceptualization of stress included extrafamilial, interpersonal, and child factors that impact caregivers' stress (1990). For example, factors such as unemployment or the hassles of daily life may impact caregiver's perceived stress. Another factor that may impact caregivers' perceived stress is the availability of resources to them. For example, the number of friends or family they have to help them raise their child may be an important factor. Another variable that may impact caregiver's perceived stress is their mental health. For example, in past studies on caregiver's stress, researchers found that those individuals raising children with challenging behaviors experience poor mental health (Webster-Stratton, 1990) and psychological distress (Estes, Munson, Dawson,

Koehler, Zhou, & Abbott, 2009). In future studies, it may be beneficial to gather additional information related to the number of supports available to caregivers and measures of caregivers emotional wellbeing.

Implications for School Psychologists

The results of the current study have several implications for school psychologists. Specifically, the current study indicates that there are certain caregiver and child variables that are significant predictors of caregiver's perceived stress. The results of the present study and past research converge and demonstrate that child behavior problems predict caregiver stress (Calzada et al., 2004; Esdaile & Greenwood, 2007; Muhammad & Gagnon, 2009). In reviewing Webster-Stratton's conceptualization of stress related to caregivers, it is clear that stress can have a pile up effect and there are several factors that impact how both the child and caregiver react and interact with each other (1990). School psychologists can work with those caregivers who are most at risk for experiencing high levels of stress and help mediate the relationship between parent and child. Young children who exhibit challenging behaviors are on a trajectory for behavioral problems over time (Campbell, 1995; Patterson, DeBaryshe, Ramsey, 1989). Patterson and colleagues (1989) noted that children who have a long history of antisocial behavior come from families with inconsistent and harsh discipline practices. School psychologists can offer parent training services to caregivers to help them learn positive discipline practices. This way, caregivers are better equipped to manage their child's behavior. Based on the current study, we know that female caregivers, those with less education, and those who perceive their child to exhibit challenging behaviors are more likely to experience higher levels of stress. One intervention that can be used with parents is

parent training. Behavioral parent training has been shown to have a moderate effect on parents (Singer, Ethridge, & Aldana, 2007). The *HOT DOCS* parent training program has been shown to increase participant knowledge of appropriate skills (Williams, 2007). In a study conducted by Weinberg (1999), he implemented a parent training program for parents raising children with ADHD. At the end of the program, parent's knowledge of ADHD increased significantly, and they experienced a significant decrease in parenting stress. Hastings and Beck (2004) reviewed psychological interventions that help alleviate parenting stress when raising a child with an intellectual disability. Using interventions that teach parents ways to reduce problem behaviors in their children appears to improve both parents' well-being and children's behavior. School psychologists can work with caregivers to provide services to help parents learn parenting strategies and find ways to manage their stress.

Additionally, the current study found that caregivers' ratings of their child's externalizing behavior of stress was a significant predictor of perceived stress as well as it was significantly correlated with higher scores on the PSS-10. This suggests that the more a caregiver perceives their child to engage in externalizing behaviors, the higher their perceived stress will be. Another way that school psychologists can work with children is to provide early intervention services to teach prosocial behaviors. By providing supports for families, this may help to mediate the stress associated with the child's behavior. For example, school psychologists can work with children and teach them new skills. Examples of this may include teaching them how to express their wants and needs or teaching them social skills. These services may occur in the home or preschool setting, which may help with the transition to formalized schooling.

Limitations of the Present Study

Although this study provides several important implications for school psychologists, there are several limitations to the present study. First, this study is archival in nature. The research team collected all of the data before the development of the current study. The researcher did not have control over the instruments selected and used with the participants as well as the methods of data collection. A second limitation of the present study is the relatively small sample size (N = 474), which required that several of the variables be collapsed or dichotomized for the statistical analyses. With a larger sample size, it would be possible to analyze the different levels of the variables. For example, in the current study caregivers reported whether or not their child had a diagnosis and participants were either coded as "diagnosis" or "no diagnosis." As a result, participants who reported their child had an ASD or ADHD were in the same category as DD or a medical disorder. A third limitation of the present study is the reliance on the caregiver' self-report and perceptions of their child's behavior problems. Data were primarily collected using a demographic questionnaire and rating scales. Medical records, direct observations of the child, or use of other informants (e.g., the child's preschool teacher) were not used to verify the intensity of the child's behavior or disorder. Another limitation of the present study is that the PSS-10 does not have classification guidelines. Therefore, one is left to interpret PSS-10 total scores has higher levels of stress based on the higher the score. In past research, PSS-10 total scores were comparable to the participants in this study (Tehee, Honan, ???). They interpreted the PSS-10 scores they obtained as low levels of stress. A final limitation of the present study is that marital status was used as a predictor variable in the regression equations used in

the current study. This variable may not encompass all of the stress that entails being in a relationship with another adult and how one handles stress related to raising a child with challenging behaviors. It mat be beneficial to consider more central variables, such as coparenting or dyadic adjustment as predictors of stress.

Directions for Future Research

Despite the limitations mentioned above, the present study provides a starting point for future research studies. There are several ways that future studies would expand on current study. First, it may be beneficial to gather additional data from participants. This could include the number of stressors the caregiver has had to deal with over the past year (e.g., job loss, effects of the economy, death of a loved one, eligibility for government assistance or Medicaid, etc). A second idea would be to collect data on the resources participants have to buffer stress (e.g. family living in the same area, financial resources, involvement in the church or a religious group, number of friends he or she had, etc). Second, it may be worthwhile to consider using additional measures that are designed to specifically measure stress related to parenting. For example, most studies use the Parenting Stress Index (PSI; Abidin; 1990). Third, it may be beneficial to use a pre-test/post-test design to assess caregiver's change in perceived stress as they progress through the parent training program. Also, the booster sessions could be used as another time point of measurement to see if results of the parent training program are maintained after the parent training program ends. A final idea would be to provide the *HOT DOCS* training in places where caregivers most likely not to attend have an opportunity to attend. For example, future trainings could be offered when children are in school or day

care, at the YMCA who provides free childcare, or partnering with a school district who has a parent involvement initiative.

Conclusions

The results from the current study demonstrate that female caregivers beginning a behavioral parent training program have higher levels of perceived stress than their male participants. Also, the results of the study demonstrate that there are differences between perceived stress based on caregiver's gender and educational level, with female caregivers and caregivers with less education reporting higher levels of stress. No differences were found among those of different marital statuses. In addition, caregiver's perceptions of the severity of their child's externalizing behavior are a significant predictor of the stress they perceive, but internalizing behavior and presence/absence of a diagnosis were not. Perceived stress upon entering the behavioral parent training was not a significant predictor of number of sessions. The results of this study have implications for how school psychologists work with caregivers and their children and help them to manage their stress. Also, the present study provides additional directions that can be addressed by future research projects.

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Appendices

Appendix A: Description of HOT DOCS Parent Training Program

Helping our Toddlers Developing our Children's Skills (*HOT DOCS)* is a manualized parent training program designed to help parents and caregivers understand child development and learning, understand child behavior, and use a problem-solving model to understand and address their children's behavior problems (Armstrong, Lilly, Curtis, 2006; Williams, 2010). *HOT DOCS* has four goals: "1) to improve understanding of the developmental milestones; 2) to increase knowledge of how children learn; 3) to address challenging behavior issues using a proactive approach; and 4) to provide guidance to promote health and mental health practices" (Armstrong, Lilly, & Curtis, 2006, p. iv). The program is comprised of six sessions that meet once per week and last approximately two hours each. Also, a seventh booster session is included in the manual.

Session one. During the first class, the participants learn about early child development, developmental milestones, and brain development. As with each subsequent class a "parenting tip" or pivotal parent skill is introduced and a "special play" activity, which is designed to provide home-based practice. Prior to class starting, participants completed demographics information, a pre-test on HOT DOCS, and rating scales. The ratings scales include the Perceived Stress Scale-10 (PSS-10:Cohen & Williamson, 1988), Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000), and Sleep Disorders Inventory for Students-Children's Form (SDIS-C) (Luginbuehl, 2004). These data are entered into a database by the HOT DOCS team.

Session two. In the second class, the importance of routines and rituals to development are discussed. Routines are described as daily activities that occur during

the day that have a clear beginning and ending. Rituals are described as the smaller components that comprise a routine. The session two parenting tip teaches parents to use positive verbal reinforcement to support appropriate behaviors. The special play activity focuses on developing a reading routine.

Session three. In the third class, behavior theory is discussed. Parents are taught to look at behavior within the context of antecedents, consequences, and reinforcement. The parenting tip for this class focuses on teaching children to use a calm voice by first modeling this to them. The special play activity for the week is coloring, with an emphasis on developing beginning and ending times with an activity.

Session four. Class four focuses on teaching antecedents or preventions. Preventions are described as things that parents can do prior to misbehavior occurring. The parenting tip for this session is to practice the use of preventions. The special play activity for the use is to use play dough and a mat. This activity is designed to teach children boundaries, as well as reinforce cleaning up, transitions, and mutual enjoyment.

Session five. Class five teaches caregivers how to help their children develop new skills by identifying behavioral goals and task analysis to teach new skills. During this session, the proper use of time out is expanded. The parenting tip for the week is to use follow through. The special play activity is a ball, which encourages turn taking between caregiver and child.

Session six. Class six focuses on stress management and pulls from content emphasized in the previous five classes. The parenting tip “take 5 for yourself” and a progressive relaxation CD are combined to help caregivers relieve their stress.

Appendix A (Continued)

Booster session. Four to eight weeks after class six a booster session is scheduled. This session brings participants back together to review material taught during the six classes and helps to address any new or resistant concerns.

Appendix B: Table of Skills Taught During HOT DOCS

Table 15. Summary of Topics covered during *HOT DOCS*

Session	Topic Covered	Parenting Tip	Special Play Activity
1	Child Development	Use positive words	Bubbles
2	Routine and rituals	Catch them being good	Reading
3	Behavior and development	Use a calm voice	Coloring
4	Preventing problem behavior	Use preventions	Fun Dough
5	Teaching new skills	Follow-though	Balls
6	Managing parent stress	Take time for yourself	Progressive Relaxation CD
7	Review	Review	Review

Appendix C: Perceived Stress Scale: 10 Items

Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts **during the last month.** In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

Name . . . . . Date . .

Age . . Gender (*Circle*): M F Other . . . . . .

	0 = Never	1 = Almost Never	2 = Sometimes	3 = Fairly Often	4 = Very Often
1. In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2. In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
3. In the last month, how often have you felt nervous and "stressed"?	0	1	2	3	4
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
5. In the last month, how often have you felt that things were going your way?	0	1	2	3	4
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
7. In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
8. In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
9. In the last month, how often have you been angered because of things that were outside of your control?	0	1	2	3	4
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Please feel free to use the *Perceived Stress Scale* for your research.

Mind Garden, Inc.
info@mindgarden.com
www.mindgarden.com

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The PSS Scale is reprinted with permission of the American Sociological Association from Cohen, S., Kamarck, T., and Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24,* 385-396.

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Appendix D: HOT DOCS Demographic Questionnaire

HOT DOCS
Demographic Questions for Caregivers

HOT DOCS ID Code:		Your Country of Origin:	
Are you the child's: *Circle one response*	Biological Parent Adoptive Parent Foster Parent Grandparent	Aunt/Uncle Child Service Provider: _____ *Other*:	
Marital status:	Married Single Divorced Separated *Other*:	Your Zip Code:	
Your Age:		Your Gender:	Male Female
Referred Child's Age:		Child's Gender:	Male Female
Child's Diagnosis: *Circle/Write all that apply, medical, genetic, behavioral*	No diagnosis ADHD Developmental Delay	Autism spectrum disorder (Autism, PDD, Asperger's syndrome, etc) Speech/Language Delay *Other*:	
Number of other children in the home: *Not including target child*		Age(s) of your other children:	
Does your child have health insurance? *Circle one response*	Private insurance Medicaid No insurance	Are you the child's primary caregiver or legal guardian:	Yes No *If not, who is?* _____

B

Appendix D: (Continued)

Does your child currently receive any therapies or services? *Circle/Write all that apply.*	None Speech/Language Therapy Physical Therapy (PT) Occupational Therapy (OT) Early Intervention (Eary Steps) Special Education (School IEP)	Individual Counseling/Therapy for: _____ Group Counseling/Therapy for: _____ *Other therapies:*
Does your child currently attend school or daycare?	Home with parent/relative Daycare (friend/relative) Daycare (professional) Preschool	Voluntary Pre-Kindergarten Elementary School *Other:*
What racial group do you identify with? *Circle one response*	African American/Black American Indian/Alaskan Native Asian/Asian Indian	Caucasian/White Hawaiian/Pacific Islander *Other:*
What ethnic group do you identify with? *Circle one response*	Hispanic or Latino	NOT Hispanic or Latino
What is your highest level of education? *Circle one response*	Less than high school Completed high school Technical school degree	Two-year college degree Four-year college degree Graduate degree