

TRANSGENERATIONAL TRANSMISSION AND THE RELATIONSHIP BETWEEN  
PARENTS WITH SYMPTOMS OF POST TRAUMATIC STRESS DISORDER AND  
THEIR CHILDREN WITH SYMPTOMS OF ATTENTION DEFICIT  
HYPERACTIVITY DISORDER

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Dissertation Submitted in Partial Fulfillment of the  
Requirements for the Degree of  
Doctor of Philosophy  
Counseling

Liberty University

April, 2015

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The purpose of this study was to examine whether Transgenerational transmission of  
PTSD may be associated with ADHD like symptoms in their children.

Submitted to the  
Faculty of Liberty University  
in partial fulfillment of  
the requirements for the degree of  
Doctor of Philosophy

by

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© April, 2015

Liberty University, Lynchburg, Virginia

April, 2015

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## ABSTRACT

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This study examined parental symptoms of posttraumatic stress disorder (PTSD) and its effects on children referred for treatment with symptoms of attention deficit hyperactivity disorder (ADHD). Data was collected from children who had been diagnosed ADHD. This research attempted to determine whether negative family functioning can be predicted between caregivers with symptoms of PTSD and their children with symptoms of ADHD, and whether PTSD caregiver's behavior is an indication of ADHD like symptoms in their children. Results revealed that there was a not a significant difference in behavior of children with symptoms of ADHD when compared to parents with symptoms of PTSD and parents without symptoms of PTSD.

*Keywords:* Transgenerational transmission, Attention Deficit Hyperactivity Disorder, Post Traumatic Stress Disorder

## **Acknowledgements**

Undertaking and completion of this journey would not have been possible without the support and encouragement of my chairperson, Dr. John C. Thomas. I would also like to offer my sincere appreciation to committee members Dr. David Jenkins and Dr. Ed Barker. Support, encouragement, patience and love assisted greatly in this journey, thank-you with love to my wife, Kay Company, Ed.D., and my two children Courtney and Stacy. Courtney and Stacy thank you for your assistance in technical matters and for your support and encouragement. Michael Vollmer thank-you for all of your assistance, and your technical expertise, without your assistance this would have been even more challenging.

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## CHAPTER ONE: THE PROBLEM

Parental trauma has been shown to create persistent trauma in their child, compromising the child's sense of well-being (Cassidy & Berlin, 1994; Fonagy & Target, 2001; Scheeringa, & Zeanah, 2001). This phenomenon has been explained by believing the development of parental symptoms of Post Traumatic Stress Disorder (PTSD) may alter the parent's primary focus, from their child's need to self-survival, minimizing capacity and ability to attend to their child's needs (Cassidy & Berlin; Fongay & Target; Scheeringa, & Zeanah). In such cases, the child's needs become secondary; the parent's primary focus is self-survival (Cassidy & Berlin; Ein-Dor, Doron, Mikulincer, Solomon, & Shaver, 2010; et al.; Fonagy & Target).

Consequently, a parent's diminished capacity to attend to their children's need due to symptoms of PTSD may produce a family environment that is threatening (Cook, Spinazzola, Ford, Lanktree, Blaustein, Cloitre, DeRosa, Hubbard, Kagan, Liautaud, Mallah, Olafson, & van der Kolk, B. 2005; Kinniburg, Blaustein, & Spinazzola, 2005; Price, 2007; Scheeringa, & Zeanah, 2001). Accordingly, the child may have experienced hyperarousal, subjective anxiety, and impaired attention and concentration (Cook et al.; Cuffe, McCullough, & Pumariega, 1994; Fonagy & Target, 2001; Kinniburg et al.; Zilberstein, & Messer, 2010). The child's long-term behavior, cognitive development, physiological development, social skills, and self-regulation become secondary; survival and survival skills development become the child's primary need (Kinniburg et al.; Parent, Zhang, Caldji, Bagot, Champagne, Preussr, & Meany, 2005; Scheeringa & Zeanah; Zilberstein, & Messer).

Due to possible deficiencies or delays in cognitive capacity to make sense of their environment, the child may mimic behavior of significant others including that of parents with symptoms of PTSD (Cook et al., 2005; Fonagy & Target, 2001; Parent et al., 2005). Learned behavior as a result of parents with symptoms of PTSD may appear similar to symptoms of Attention Deficit Hyperactivity Disorder (ADHD), impaired attention, poor concentration, impulsivity and hyperarousal (Cook et al.; Kinniburgh et al., 2005; Parent et al., 2005; Scheeringa, & Zeanah, 2001; Zilberstein, & Messer, 2010). The child's behavior may be motivated by sensitivity to environmental dangers (Cuffe et al., 1994; Fonagy & Target; Zilberstein & Messer).

### **Background of Problem**

Evidence of the impact of trauma and PTSD goes well beyond the individual (Baranowsky, Young, Johnson-Douglas, Williams-Keller & McCarrey, 1998; Broekman, Olf, & Boer, 2007; de Graaf, 1998; Ein-Dor et al; Riggs, Byene, Weathers, & Litz, 1998; Solmon, 1990; Wessa & Rohleder, 2007; Yehuda, 1998). Symptoms of PTSD may have contributed to disruption of relationships with family, peers and social relationships (Baranowsky et al.; Broekman et al.; de Graaf; Riggs et al.; Wessa & Rohleder; Solmon; Yehuda). Veterans with symptoms of PTSD reported a decrease in satisfaction, cohesiveness, and expression in relationships as well as an increase in conflict and more violence. Emotional numbing, loss of interest, detachment from others, restricted affect, all contributed to relationship discord (Riggs et al.).

Survivors of the Holocaust who developed PTSD reported over-protectiveness of family members (van-Ijzendoorn, Bakermans-Kranenburg, & Sagi-Schwartz, 2003). Children who had been over protected may have developed anxious and ambivalent bonds, resulting in children being hampered in their quest for autonomy (van-Ijzendoorn et al.). Research revealed that children of Holocaust survivors have a higher rate of PTSD following exposure to war than individuals without a Holocaust background, thus confirming the impact of transgenerational background (Solomon, 1990). Transgenerational traumatization (may be referenced as secondary traumatization) has been demonstrated in the study of Vietnam veterans and their children (Rosenheck & Fontana, 1998).

Price (2007) concluded that Vietnam veterans with combat experience and development of symptoms of PTSD had displayed an increase in violent behavior, resulting in their children having higher risk for behavioral, academic and interpersonal problems. Compared to children of veterans without symptoms PTSD, parents who are veterans with symptoms of PTSD viewed their children as more depressed, anxious, aggressive, hyperactive, and delinquent. Price also found that Vietnam's veterans who had combat-related symptoms of PTSD; their children had difficulty in establishing and maintaining friendships. Additionally, the research found that such children exhibited impairment in concentration at school. Price suggested that these symptoms may have been the product of the children concentrating on their parents' difficulties or experiencing the response of their parents to symptoms such as nightmares.

Adolescent children of Vietnam veterans with symptoms of PTSD displayed poorer attitudes toward school, increased negative attitudes toward their father, and increased symptoms of depression and anxiety (Price, 2007). Adolescent children of Vietnam veterans, who developed combat-related symptoms of PTSD, had difficulty with psychological and behavioral issues (Price). One study compared children of Vietnam veterans, who experienced concrete and violent actions and atrocities with those who did not find there were twice as many children with serious behavioral problems (Rosenheck & Fontana, 1998).

Children raised in families with marital discord are affected by the events they witnessed, especially conflict (Cummings & Davies, 2002; Lombardo & Motta, 2008; Schechter, 2004). External problems may have occurred due to dysregulation of emotions and the effects of arousal created as a result of marital conflict. A change in parenting style affects how the child internalized the marital conflict (Cummings & Davies; Schechter & Wilhelm, 2009). The internalization of problems and the accompanying responses was based on the development of the brain-based experiences relating to early inflections (Cummings & Davies; Lombardo & Motta). Stress played a major role in the brain functioning and formation responses (Cummings & Davies).

Transgenerational transmission of parental PTSD may have altered an offspring's behavior which may have been characterized by aggressiveness, indecisiveness, or a lack of inhibitory conduct, such as is seen in individuals who had ADHD (Cuffe et al, 1994;

Lombardo & Motta, 2008; Schechter, 2004; Stafford, Zeanah, & Scheeringa, 2003; Yehuda, Bell, Bierer, & Schmeidler, 2008; Zilberstein & Messer, 2010). Individuals may have displayed behavior that was forged as a result of flight or fight responses (Cuffe et al; Lomberdo, Motta; Schechter, & Wilhelm, 2009). This study attempted to gain understanding of behavior of children who had been diagnosed with ADHD and the parent/parents have developed symptoms of PTSD, although they may or may not had been diagnosed with PTSD. Specifically, this study asks how a child's behavior, being raised with parents who had developed symptoms of PTSD, was affected.

### **Statement of Problem**

Young children may have experienced environmental conditions through their primary care giving relationships (Zeanah, Boris, & Larrieu, 1997). Responses to secondary trauma included symptoms of intrusive and avoidant thoughts, behavioral disruptions, and hyperarousal (Lombardo & Motta, 2008; Price, 2007; Stafford, Zeanah, & Scheerings, 2003). The association with the traumatized individual maybe the factors that determined the level of secondary traumatization (Lombardo & Motta; Price; Stafford et al.). Research indicated that a child may have responded to environmental stress via their mother beginning in the third trimester (Benoit, Parker, & Zeanah, 1997; Yehuda, Engel, Brand, Seckl, Marcus, & Berowitz, 2005, Yehuda et al., 2005). Mothers in their third trimesters who observed the World Trade Center attacks in 2001 and developed symptoms of PTSD had a lower cortisol level when compared to mothers in the their third trimester and did not develop symptoms of PTSD. It had been suggested

by Yehuda et al. 2005, that lower cortisol levels was associate with PTSD and a marker for the development of symptoms of PTSD following exposure a traumatic event. Lower cortisol levels were reported in babies born to the mother who had developed symptoms of PTSD following observation of the World Trade Center attack. Their findings suggested that effects of maternal symptoms of PTSD on cortisol underscore the relevance of *in utero* effects as a contributor to putative biological risk. The strong effect of symptoms of PTSD on cortisol levels in mothers exposed in the third trimester of pregnancy was an indication which implicates the influence of prenatal factors. Perceptions' concerning their unborn child in the third trimester was also a strong indication of the mother-child relationship when parent-child relationship was measured at 1 year of age (Benoit, Parker, & Zeanah, 1997). deGraff (1998) reported parents who had developed symptoms of PTSD may had assigned the negative symptoms of self ("bad child") to their child, resulting in the parent treatment of the child as a bad child. Communication of the traumatic experiences may had relieved the tension associated with the negative effects on the part of the parent thus creating a narrative lexicon transferring the negative self to their child (Schechter, 2004).

This study attempted to add to the current body of literature by examining the parent's behavior and influence with their children, when a parent had developed symptoms PTSD. Was the child emulating the parental behavior?

### **Purpose of Study**

The purpose of this study was to examine whether Transgenerational transmission of PTSD may be associated with ADHD-like symptoms in their children. Specifically, how did the effects of parental PTSD symptoms and how the parents' behavior affected their relationship with their children with symptoms of ADHD. This study also examined their children's behavior when their children have been diagnosed with ADHD.

### **Nature of Study**

This study utilized a predictive design and a multiple logistic regression analysis design, examining parental PTSD and how it affected their children who had been referred for treatment of ADHD. The instruments that were used to identify symptoms of PTSD among parents and ADHD among children that contain the variables needed for this predictive study were Family Assessment Measurement, Edition III (Skinner, Steinhauer, & Santa-Barbara, 1983); Trauma Symptom Inventory, Edition 2 (Briere, 2011), and Child Behavioral Checklist (Achenbach & Edelbrock, 1981). Parents were asked whether their child had been diagnosed with ADHD. The Family Assessment Measurement III (FAM III) (Skinner et al., 1983) measured family functioning and provides strong explanatory and predictive utility (Skinner et al., 1983). The Trauma Symptom Inventory 2 (TSI- 2) (Briere, 2011) measured the relative level of various forms of post-traumatic stress disorder (Briere, 2011). The Child Behavioral Checklist (CBCL) (Achenbach & Edelbrock, 1981), first developed by Achenbach, and Edelbrock, (1981) assessed internalizing (i.e., anxious, depressive, and over controlled) and

externalizing (i.e., aggressive, hyperactive, noncompliant, and under controlled) behaviors (Achenbach, 1992, 1991).

### **Research Questions**

Investigating the role that transgenerational transmission of parental PTSD might have played in ADHD symptoms in offspring; this study had two research questions:

*Research Question 1:* How did parental symptoms of PTSD affect their children's behavior?

*Research Question 2:* Can ADHD symptoms in children be predicted based on parental symptoms of PTSD?

### **Definition of Terms**

*Attention Deficit Hyperactivity Disorder (ADHD):* A persistent pattern of inattention and/ or hyperactivity-impulsivity which interferes with daily functioning (American Psychiatric Association, 2013).

*Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1981):* The Child Behavior Checklist (CBCL) is a parent-report questionnaire: the child is rated on various behavioral and emotional problems (Achenbach, 1991).

*Family Assessment Measurement III (FAM III) (Skinner et al., 1983):* Assessment of family functioning. It is unique in its ability to provide a multirater and multigenerational (within the family) assessment of functioning across six universal clinical parameters and two validity scales (Skinner et al., 1983).

*Post Traumatic Stress Disorder (PTSD)*: Emotional or other disturbance whose symptoms appear after a person has experienced a traumatic experience (APA, 2006)

*Trauma Symptom Inventory-2 (TSI-2)* (Briere, 2011): TSI-2 is to evaluate posttraumatic stress and other psychological sequel of traumatic events (Briere, 2011).

*Transgenerational transmission of PTSD*: Transgenerational transmission of PTSD refers to the effect trauma has on second-generational family members who did not experience the trauma. The trauma experience of the parents may or may not have been communicated to the children verbally or nonverbally (de Graff, 1998).

### **Significance of Study**

This study assisted in filling in a gap in knowledge of transgenerational transmission of PTSD. Parental symptoms of PTSD may have been transmitted to their children and their children's behaviors mimic ADHD symptoms. This study assisted in identifying behavior that may have been similar to symptoms of ADHD; however, the behavior had been due to transgenerational transmission of PTSD.

### **Assumptions, Delimitations, and Limitations**

The primary limitation and potential weakness of this study was that participants were taken from a convenience sample that were previously diagnosed children with ADHD and already in psychological treatment, including individual therapy, family therapy and medication management. Participants were not formally diagnosed by the researcher in a uniform and objective manner. The diagnoses of ADHD in children were

based upon licensed mental health practitioners' evaluation of each participant's inclusion in this study. Information was presented by participants, family history, and source the of referral information were utilized in providing the presenting diagnoses. Since convenience sample was used, findings of this study may not have accurately reflected the larger body of individuals with ADHD.

Another delimitation of the study was that participants were children referred for treatment for ADHD. Data was collected from individuals referred to treatment to a private independent facility. Socioeconomic status was reflected in the ability to pay for services. This study was limited to individuals who have the ability to pay for services; treatment included clinical comprehensive assessment and on-going treatment. Insurances are accepted; and limits of insurances are not considered as a part of who receives treatment. If income was a deciding factor, referrals to community mental health centers were suggested prior to the individual being scheduled for a clinical comprehensive assessment appointment. This factor limited any correlations of socioeconomic status and children's referral for ADHD.

The educational level of parents limited this study by potentially prohibiting their ability to comprehend the assessment tools and respond accurately. The current economic environment of the population sample was a work in progress. The local economic environment mainly consisted of furniture manufacturing. Historically, a goal in the area was to work in the manufacturing of furniture and education was not the primary focus. The area had experienced massive job loss due to companies' relocation. Frequently

individuals did not achieve academically, choosing to follow the family legacy of dropping out of school and relying on family connections for employment.

Participants were selected by those willing to volunteer. Participants were selected based on willingness to participate without consideration of gender.

A major assumption was that the measures accurately and reliably assessed the disorders of investigation. The measurements were based on subjectivity of parents completing the measurements thus their subjectivity may not have been accurately depicted the individual. Additionally, since this study was only assessing participants at a one point in time it only provided a snapshot of each participant at the time of assessment. The longevity of this study was limited to that present time in the individual's life. It did not address past or future only the present.

### **Theoretical Considerations**

Children have a strong and pressing need to form close affectional bonds, particularly with parent and adults (Cook et al., 2005). This relationship with adults, in order to have been satisfying, must have been reciprocal (Cassidy, & Berlin, 1994; Cook et al., 2005; Fonagy, 1999; Kinniburgh et al., 2005; Parent et al., 2005; Schechter, & Wilhelm, 2009; Stafford et al., 2003; Zilberstein, & Messer, 2010). Reciprocal relationships allowed children to develop normally with regard to emotions and behavior (Cook et al., 2005; Lieberman, 2011). When behaviors were reciprocated by the adult through touching, holding, and soothing, the relationship with the adult was strengthened,

and the behavior of the child was also strengthened, and a normal bond was built between the two (Fonagy, 1999; Parent et al., 2005; Lieberman et al.; Stafford et al.). The relationship behavior of the child toward the adult, however, depended upon the child's evaluation of environmental signals which gave the child a sense of either security or insecurity (Fonagy; Parent et al.; Schechter et al., 2007).

The emotional relationship with the parent allowed children to develop interactional skills that were appropriate for the child's level of development; this development was the primary focus of the child's growth, resulting in the primary subject of his or her attention (Cassidy, & Berlin, 1994; Cook et al., 2005; Liberman et al., 2011; Mikulincer, Shaver, & Pereg, 2003; Schechter et al., 2007; Stafford et al., 2003). When a child does not feel safe and secure there may have been a disruption in the child's natural, age-appropriate developmental process (Cook et al.). When there was a disruption in the child's developmental process because of parent-child relationship issues, the child may have reverted to having his or her most basic needs met rather than outwardly exploring his environment, which would have been a normal developmental milestone for most children (Cook et al.; Kinniburgh et al., 2005; Schechter et al.; Schechter, & Wilhelm, 2009). Difficulties from unmet needs in the parent-child relationship may have initiated immediate and long-term behavioral, negative functional and mental health outcomes (Morton, & Browne, 1998; Lifford, Harold, & Thapar, 2008; Seifer, & Schiller, 1995).

A child's environment is the major source of safety and stability (Grohol, 2000). Living with a parent who had symptoms of PTSD did not create PTSD for members of the family or others living in the shared environment. However, sharing an environment

with another who had symptoms PTSD may have created trauma on a secondary level, vicariously (Grohol). Research indicated that PTSD symptoms may have impaired a parent's ability to tend to the emotional needs of their children (Appleyard & Osofsky, 2003).

An individual's response to their experiences of trauma may have shifted emotional priorities away from attending to the interpersonal needs of family members and may have resulted in a cascade of negative feelings toward the individual child (Grohol, 2000). Family relationships had affected child development, social competence and peer relationships (Cowan, Millstein, & Perlstein, 2001). Patterns of relationships tended to be repeated across generations and breaking these patterns may have been difficult (Appleyard & Osofsky, 2003). Increased dysfunction by caregivers resulted in a greater negative impact on the child's life (Appleyard & Osofsky). Younger children were influenced most deeply during their developmental years by family relationships and disruptions in family relationships resulted in deficits and social skills and faulty responses to challenges (Appleyard & Osofsky). Middle latency age children appear to have been the least affected by parental emotional functioning, followed by adolescents. The impact of parental symptoms of PTSD was reduced the older the child was (Appleyard & Osofsky).

A child who had experienced inconsistency, neglect, or rejection from their primary source of security and safety was forced to rely on primitive and possible inadequate coping skills (Cook et al., 2005; Alexander, 1992). These skills include aggression, dissociation, and avoidance (Allen, Hauser, & Borman-Spurrell, 1996; Cook

et al.). The response to these challenges may have reflected a primal response set that resembles symptoms of ADHD, including disorganization and forgetfulness, impulsivity, emotional difficulties, and hyperactivity (Cook et al.; Allen et al.). A child who had experienced persistent vicarious or secondary trauma during their early years may have displayed all or some of these symptoms, but in many cases the symptoms were magnified to a degree which may have required the intervention of others, either professionally or by other caregivers (Cook et al.; Lifford et al, 2008).

### **Organization of Remaining Chapters**

Chapter Two consists of the review of literature developed in the following subsections; Family strengths and weaknesses, Post Traumatic Stress Disorder; Attention Deficit Hyperactivity Disorder, Similarities of ADHD and PTSD, Transgenerational Transmission of PTSD, Environmental Influences and affects with individuals, and Parental Influences with their children's behavior.

Chapter Three explains the research method, design appropriateness and selection of participants. Following Research Methods is the discussion on population and sample, and informed consent and protection of participants. Instrumentation and assumptions followed by description of data collection. Informed consent was required prior to any administration of the survey instruments, which included completion of CBCL (Achenbach & Edelbrock, 1981) and if appropriate followed by FAM III (Skinner et al., 1983) TSI-2 (Brier, 2011). Instrumentation was used to identify symptoms of PTSD among parents and symptoms of ADHD among children that contained the variables

needed for this predictive, correlation study. Procedures and data were analyzed followed by utilizing the Pearson's correlation coefficient and a multiple regression analysis.

Analysis of data was followed by Summary of the data.

Chapter Four consist of data analysis and results. A description of the participants is provided. Findings were based and presented according to each research question.

Chapter Five included summary, conclusions and recommendations. This chapter was organized in the following manner Summary, Conclusions addressing the two research questions, implications for practice and implications for research.

Recommendations and summary concluded this chapter.

### **Chapter Summary**

Development of parental symptoms of PTSD may had altered the parent's primary focus, minimizing capacity and ability in attending to their child's needs (Cassidy & Berlin, 1994; Ein-Dor et al., 2010; Fongay & Target, 2001; Scheeringa, & Zeanah, 2001). The child's needs became secondary; the parent's primary focus was self-survival (Cassidy & Berlin; Ein-Dor et al.; Fonagy & Target). The child may had mimicked behavior that was based on the parent's self-survival motivation, affecting parent-child relationship and compromising emotional regulation development (Cook et al., 2005; Lieberman, 2011). The child may have experienced hyperarousal and subjective anxiety while also impairing attention and concentration (Cook et al., 2005; Cuffe, McCullough, & Pumariega, 1994; Fonagy & Target; Kinniburgh et al., 2005; Zilberstein, & Messer, 2010). Behavior may have been motivated by sensitivity to

environmental dangers (Cuffe et al; Fonagy & Target, Zilberstein & Messer). Numerous factors affected children and parent's experiences. How they conveyed their experiences was a major factor in the development of parent-child relationship, which was a major influence in emotional regulation (Lombardo & Motta, 2008; Price, 2008; Stafford et al., 2003; Zeanah, Boris, & Larrieu, 1997).

## CHAPTER TWO: LITERATURE REVIEW

The purpose of this study was to examine the effects of parent with symptoms of PTSD and the behavior and relationships with their children who displayed symptoms of ADHD. The literature review included research of PTSD and ADHD. Parental symptoms of PTSD may have affected the quality of life for the developing child, and may have influenced the strengths and weaknesses within a family unit, consequently affecting all relationships. This present study used a predictive and multiple logical regression analysis design, examining parental symptoms of PTSD and its effects with their children who had been referred for treatment of ADHD.

Individuals, regardless of age, tend to seek and enjoy proximity to their secure, parent figures when experiencing times of need or stress (Aber & Allen, 1987; Alexander, 1992; Allen, Hauser, & Borman-Spurrell, 1996; Belsky, 1997; Liberman, 2011; Mikulincer et al., 2003; Mikulincer et al., 2001; Morton, & Browne, 1998; van-Ijzendoorn, 1995). Physical and/or psychological threats may have created a need by the individual in seeking the primary security figure (Aber, & Allen; Alexander; Morton, & Browne; Liberman; Mikulincer et al.; Mikulincer et al.). The individual may have used internalized representations of the parent figures or may have sought the support of others to maintain psychological or actual proximity (Aber & Allen; Alexander; Morton & Browne; Liberman; Mikulincer et al.; Mikulincer et al.). Research revealed that thoughts are geared to seek proximity to internalized secure parental figures in times of minimally threatening situations (Mikulincer et al.; Mikulincer et al.).

How a child interpreted its environment dictates their willingness to freely engage with others, thus early childhood experiences have profound effects (Collins & Feeney, 2000; Fonagy, 1999; Fonagy & Target, 2001). Parents' and caregivers' mindfulness concerning the infant's mental state appeared to be a major contributor and predictor of a secure parent-child relationship (Fonagy; Fonagy & Target). The child's social support system, especially the child's mother, is thought to be the most important factor in determining the parent-child relationship outcome, even more important than objective elements of victimization (Cook et al., 2005).

Interpretative neural mechanism, how a child needs are met, played a major role in the evolution of early childhood functioning in the development of relationships (Fonagy & Target, 2001). When a child's care-giver was the source of trauma, the relationship is severely compromised (Cook et al, 2005). Preoccupation, distance, lack of predictability or distress due to unreliable responses by the care-giver may have resulted in the child's failure to learn to rely on others when their own internal resources are perceived as inadequate (Baranowsky et al, 1998; Cook et al.). When confronted with social difficulties, early insecurities tended to display inappropriate social responses. An infant's responses to these difficulties were therefore limited; including hyperarousal, flight or fight, dissociative responses, playing dead or freezing (Fonagy & Target). Early social environment is a powerful influence in neural development, potentially affecting the infant's capability to adapt to stress in the long term, and perhaps throughout the child's life (Fonagy & Target).

Hyperactive behavior excites pathways, increasing the awareness of threats to self (Ein-Dor et al., 2010; Mikulincer et al., 2003). Perception of threats increased the potential for negative outcomes when the secure parent figure was not available (Aber & Allen, 1985; Cassidy & Berlin, 1994; Ein-Dor et al.; Mikulincer et al.; Seifer & Schiller, 1995). Intensification of negative emotional control to perceived threats allowed the individual to remain active in working memory (Ein-Dor et al.; Mikulincer et al.). Emotions are based on past experiences, utilizing past experiences to assist in coping with present situations (Ein-Dor et al.; Lifford et al.; Mikulincer et al.). Accessing painful memories the individual may have exhibited automatic negative emotions (Ein-Dor et al.; Lifford et al.; Mikulincer et al.).

Ein-Dor, Mikulincer, Solomon, and Shever's (2010) research with former Israeli prisoners of war (POW) and their wives, concluded that the wives experienced mental images and dreams of their spouse's war experiences. Spouses also tended to avoid activities that may have reminded them of their spouse's experiences. Results revealed that former POW's and their wives reported more severe symptoms of PTSD and stress related symptoms than non-POW and their wives. Wives were traumatized by their husband's war experiences when the husband was an ex-POW, and the wives assumed their husbands' avoidant and hyperarousal symptoms.

DeBellis (2001) and DeBellis et al. (1999) concluded that maltreatment experiences were associated with alterations of the biological stress system in children with PTSD. Results indicated that cortisol was positively associated with symptoms of PTSD and this association was altered based on the timeline since the most recent trauma

(DeBellis; DeBellis et al.; Weems & Carrion, 2007; Wessa & Rohleder, 2007; Yehuda, Morris, Labinsky, Zemelman, & Schmeidler, 2007). Cortisol assists in the self-regulation of anxiety and arousal, which may have influenced the manner in which parents interact with their children (Weems & Carrion; Yehuda et al., 1996). If cortisol concentrations are associated with risk for PTSD, it is logical to have examined the contributions of early developmental factors. Hypothalamic-pituitary-adrenal activity may have been programmed by early life influences including in-utero effects (Yehuda et al., 2005).

High risk of psychopathology, anxiety, and affective disorders are believed to be significantly influenced by early childhood experiences, thus potentially altered neurobiological changes (Broekman, Olf, & Boer, 2007; Heim & Nemeroff, 1999). Salivary cortisol levels were significantly lower in offspring of women who were exposed to the World Trade Center attacks during in their third trimester (Yehuda et al., 2005). Lower cortisol levels were also noted in a study of adolescent females with conduct disorder and participants' disorders were comorbid with ADHD (Pajer & Rubin, 2001).

### **Post Traumatic Stress Disorder**

PTSD, prior to inclusion in *Diagnostic and Statistical Manual of Mental Disorders III* (DSM-III; APA, 1980) had numerous names such as railway spine, war neurosis, shell shock, soldiers' heart, and rape trauma syndrome (Connors & Butterfield, 2003). The primary focus was on the individual and the effects from trauma or stress.

PTSD has been well documented to include symptoms such as: recurrent and intrusive distressing recall of the event, recurrent distressing dreams, feeling as if the event is recurring, efforts to avoid thoughts and feelings of the event, loss of interest in significant events, feelings of detachment, difficulty with concentration and hyper-vigilance (American Psychiatric Association [APA] 2013). Traditionally PTSD required that a person must have experience a traumatic event and react with strong negative emotion (APA). The individual had also displayed at least one re-experiencing symptom, and psychological and physiological distress at reminders of the event (APA). According to DSM-III (APA, 1980) three specific symptoms relating to the avoidance or numbing of the experience, and these symptoms might have been decreased interest, the individual lacked the ability to remember the event at all, decreased affect, a feeling of having been detached from others, and so on. Finally, a diagnosis would have depended on arousal symptoms, such as an obviously increased startle response, difficulties with concentration, difficulties with sleep, and hyper-vigilance. Symptoms must have been present for at least one month. There are differences, however, depending on the original source of the trauma and its duration; symptoms lasted up to three months are an acute case of trauma. Symptoms which lasted three-six months were a chronic response to ongoing trauma. Delayed onset symptoms appeared six months after the initial exposure to trauma.

When first introduced, the DSM-III was classified PTSD as an anxiety disorder (Connor & Butterfield, 2003; Nathan & Gorman, 1998/2002). It is the second most common anxiety disorder, following social anxiety disorder (Connor & Butterfield).

High rates of comorbidity are associated with PTSD affected the individual and family members (Connor & Butterfield; Guchereau, Jourkiv, & Zametkin, 2009). PTSD has a unique feature; it is the only psychiatric disorder that requires an external stressor (Connor & Butterfield; Cuffe et al., 1994).

PTSD has increasingly been reported and studied in medical literature during the last century. High rates of comorbidity and symptom overlap occurred in individuals with PTSD, including increased risk of aggression, impulsivity and self harm (Cuffe et al., 1994; Guchereau et al., 2009; Hubbard, Realmuto, Northwood, & Masten, 1995; Lipschitz, Winegar, Hartnick, Fotte, & Southwick, 1999). PTSD is a strong risk factor for the development of other comorbid conditions, which may have included depression and anxiety (Breslau, 2001; Seedat, Kamner, Lockhat, & Stein, 2000). PTSD treatment options included both psychopharmacological and psychosocial treatments. The most effective psychosocial treatment approach is cognitive behavioral therapy utilizing exposure and cognitive restructuring (Connor & Butterfield, 2003; Cuffe et al, 1994; Lipschitz et al., 1999).

According to Friedman, Brandes, Peri, and Shalev (1999), those who do not meet the full requirements for a diagnosis of PTSD may had been impacted negatively if they exhibited some of the symptoms, but not all (Friedman, et al., 1999). A person may had meet two of the three criteria, and failed to have met the full criteria and had difficulties in work environments, social environments, and family environments (Breslau, 2001; Friedman et al.).

Children who are more helpless and easily startled are at higher risk for symptomology of PTSD (Cline, 2007; Dwivedi, 2000). Older children and adults who have physically developed more fully, thus their physiques are better able to handle the stress (Cline; Dwivedi). The younger the child, the less knowledge they have about what to do in a traumatic circumstance (Cline). Younger children have less social status, less effective emotional resources, and have less developed perspectives on how one responds to trauma (Dwivedi; Scheeringa, & Zeanah, 2001). A child's ability to reason or to solve problems may have affected their reactions to trauma (Cline). Children may not have been able to fully understand the present danger or might overemphasize perceived danger in situations which are not dangerous (Dwivedi; Scheeringa, & Zeanah).

Kazak, Barakat, Meeske, Christakis, Meadows, Casey, Penati, and Stuber (1997) offered two examples child vulnerability; how younger children may not have been as traumatized by a diagnosis of cancer, for example, because they did not have a sufficient understanding of the disease or how its effects may become lethal. The second example, Three Mile Island Nuclear incident, children were symptom free of PTSD because they were not capable in envisioning the chronicity and lethality of the calamity. Children having been in such situations, especially when they were unsure of how to interpret such environmental cues, often looked to the nearest adult to interpret it for them. If the adults were traumatized by the experience, then it is likely that the children were also traumatized, even though they may not have fully understood.

Ehlers and Clark (2000) concluded younger children in particular also have an arousal system that is not mature, and such immaturity can put them at risk for

development of symptoms of PTSD following a traumatic event. Young children have difficulty modulating their emotions, and they were more easily aroused and startled than are adults. When children have difficulty inhibiting their own thoughts, they turned to adults to make them feel safe (Broekman, Olf, & Boer, 2007; Ehlers & Clark; Heim & Nemeroff, 1999 ). Younger children are vulnerable to PTSD symptoms if the adults or caretakers were absent, or if the adults were suffering from symptoms of PTSD (Brewin, & Holmes, 2003; Broekman et al.; Heim & Nemeroff; Dunmore, Clark, & Ehlers, A., 2001; Michael, Ehlers, Halligan, & Clark, 2005). When children were unable to accurately assess the trauma, they often do not feel any negative emotions. Intrusive thoughts for adults may not cause problems for the children because they were not traumatized (Brewin et al; Dunmore et al; Ehlers & Clark; Michael et al). On the other hand if there were negative emotions, children were disadvantaged because they lacked appropriately strong coping skills (Dunmore et al.; Ethan & Clark; Michael et al.; Murray et al.).

### **Attention Deficit Hyperactivity Disorder**

ADHD is the most common developmental disorder (Vaidya, Austin, Kirkorian, Ridlehuber, Desmond, Glover, & Gabrielli, 1998). ADHD frequently affects the first born child when either of the biological parents has a history of ADHD (Vaidya et al.). ADHD is the inability to sustain attention with or without symptoms of hyperactivity and impulsivity (American Psychiatric Association, 2013). Symptoms involve deficits in executive functioning (Barkley, 2000; Vaidya et al., 1998). ADHD is associated with a

myriad of accompanying behaviors: low academic achievement, school suspensions or expulsions, abject peer and family relationships, anxiety, depression, aggression and delinquency (Barkley, 1997; 2000). Children with ADHD have different controls on inhibitory performance (Barkley; Vaidya et al). Frontal cortex activation is greater in children with ADHD in response-control tasks and reduction in striatal-control tasks (Vaidya et al.). Difficulties associated with ADHD may last through the life span. Adults with ADHD may experience increased early substance experimentation and abuse, less than satisfactory driving record and difficulties in adult social relations, including marriage and employment (Barkley, 1997; 2000).

ADHD is frequently comorbid with other psychiatric disorders, such as conduct, learning, depressive, anxiety and affective disorders (August et al., 1996; Jensen et al., 1997; Schatz & Rostain, 2006). Children of veterans with PTSD are believed to have a higher risk of behavioral, academic and interpersonal problems (Price, 2007). Parental veterans with PTSD viewed their children as more depressed, anxious, aggressive, hyperactive and delinquent compared to the view of parental veterans who do not have PTSD (Price).

### **ADHD and PTSD**

Several studies have linked ADHD to PTSD through similarities in symptomatology, especially hyperarousal and hypervigilance (Adler, Kunz, Chua, Rotrosen, & Resnick, 2004). ADHD is a neuro-developmental disorder involving dysregulation of the central noradrenergic system. PTSD is also characterized by a

noradrenergic dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis (Husain, Allwood, & Bell, 2008). Research revealed higher levels of ADHD in childhood for PTSD patients in comparison to the levels of ADHD in childhood than for panic disorder (control group) (Adler et al.). This suggested that ADHD may be a vulnerability marker for PTSD. Childhood ADHD has a frequency of 36% for the individuals with PTSD, compared to 16% of the adults who did not have symptoms of ADHD as children (Adler et al.). Many children who experienced trauma also experienced symptoms of hyperarousal and avoidance, primary symptoms of ADHD. PTSD and ADHD may share a common etiology (Husain, Allwood, & Bell). Comorbidity rates of children with ADHD and PTSD were 30% in a study of Iranian children with ADHD (Ghanizadeh, Mohammadi, & Moini, 2008).

Females who resided in an Australian youth detention center participated in a study of comorbidity of mental disorders (Adler et al, 2004). Results revealed more than 14 psychiatric disorders were diagnosed in this population of 100 females. ADHD was reported in 13% of the sample and PTSD was reported in 37% of the sample. The researchers reported that only ADHD and separation anxiety disorder were more likely to occur prior to PTSD.

PTSD in children and adolescents may have been confused with chronic depression, ADHD, generalized anxiety, conduct and sleep disorders (Koltek et al., 1998). Children who have experienced physical or sexual abuse tend to display separation anxiety, delinquency, disruptive behavior, enuresis, and sleep disorders (Koltek et al.). Diagnosing of PTSD may have been difficult to establish due to the age

of the individual. Denial and difficulty with event recall may have interfered with diagnosing PTSD, leading to the possibility of the following diagnoses: major depression, attention deficit hyperactive, affective, and phobic and others disorders (Cuffe et al., 1994; Koltek et al.).

Traumatized children may have displayed symptoms of hyperarousal and/or hypervigilance and often have had problems with attention and hyperactivity (Cuffe et al., 1994). Traumatized children may have displayed motor hyperactivity, evidence of anxiety, impulsive behavior, and, particularly in the home, sleep problems and other manifestations of the trauma (Perry et al., 1995). The child responded to cues in the environment with a feared response, and these become more acute as a child develops. Stressors in the environment can have exaggerated the child's responses, and this may have caused the child to be labeled as hyperactive, while in fact the child may have been responding to persistent fear (Perry et al.). The child's feelings along this continuum may have changed very rapidly from appearing to be mildly anxious to having experienced real terror (Perry et al.). The child's responses to these feelings may have resulted in behavior, which was considered maladaptive in the emotional, behavioral, and cognitive domains (Perry et al.). These responses were based on how well the child was able to adapt to the original the trauma (Perry et al.).

Comorbidity of PTSD and ADHD has not been systematically studied, though a number of studies have been conducted. Famularo and colleagues (1996) studied childhood sex abuse survivors and found high rates of comorbidity (Famularo et al.). Their research concluded that children diagnosed with PTSD display concurrent ADHD,

anxiety disorders, and a tendency toward mood disorders. Moreover, children and adolescents presenting with symptoms of PTSD, 37% of the individuals surveyed also presented with symptoms of ADHD, in comparison with 17% of the individuals who presented with ADHD but not PTSD. Results from this research revealed that children diagnosed with PTSD demonstrate concurrent ADHD, anxiety disorders, a tendency toward major depression, dysthymic and mood disorders (Famularo et al.). Children and adolescents are significantly more likely to have comorbid diagnoses of ADHD, anxiety and psychotic disorder not-otherwise specified than individuals who were abused but did not meet the established criteria of PTSD (Lipschitz, Winegar, Hartnick, Foote, & Southwick, 1999).

Lipschitz, Winegar, Hartnick, Foote, and Southwick, (1999) report few studies have concentrated on the comorbidity of PTSD using adolescents only (Lipschitz et al., 1999). Their research revealed that 93% of the adolescents admitted for inpatient care presented with at least one traumatic event. Adolescents who experienced one traumatic event was 76%, 16% experienced two traumatic events, 23% had experienced three traumatic events and 16% had experienced four traumatic events. Females were more likely to experience sexual abuse and were more likely to have PTSD. Males and females did not have any significant difference with socio-demographic measures of age, ethnicity, and religion. Marital status of parents, family income, and composition of their household revealed no significant differences in prevalence of PTSD. History of sexual abuse was more common in both male and female adolescents with symptoms PTSD than individuals who did not present with symptoms of PTSD.

This study by Lipschitz et al. (1999) further revealed that the PTSD group of individuals had significantly higher rates of other manifestation of anxiety, specifically eating and somatization disorders. In addition, rates of ADHD with individuals with PTSD were 33.3%. When compared with individuals without PTSD, the rates of ADHD were 29.2%. Comorbidity of psychiatric diagnoses was higher with individuals who had PTSD than individuals without PTSD. Controlling for gender variances, adolescents with PTSD had almost double the comorbid psychiatric diagnoses as adolescents without PTSD. Males with PTSD had higher scores on psychopathological measures than non-PTSD inpatient residents.

### **Transgenerational Transmission**

Transgenerational transmission occurs when the trauma event may not have taken place in the life cycle of the developing child, but instead in the life of the parent(s). The parents may have communicated their traumatic experience to their children either verbally or non-verbally (van-Ijzendoorn, Bakermans-Kranenburg, & Sagi-Schwartz, 2003). Transgenerational transmission of PTSD is possible through biological and/or environmental influences. Biological transmission is controversial due to inconsistent results in research (Mason et al., 2008; Weems and Carrion, 2007). Research indicated that the serotonin transporter gene has a role in how individuals respond to stress (Broekman et al., 2007). Stress in the early critical developmental stages is thought to potentially induce neurobiological changes and to validate a higher risk of psychopathology, particularly anxiety and affective disorders (Broekman et al.). These

neurobiological changes may have lead to higher vulnerability to stress later in life (Broekman et al).

Some studies suggested that the intergenerational transmission of PTSD is due to alterations in parental care (Ahmandzideh & Malekin, 2004; Baranowsky et al.; Beckham, Braxton, Kudler, Feldman, Lytle, & Palmer, 1997; deGraff, 1998; Davidson, & Mellor, 2001; Dekel & Goldblatt, 2008; Parent et al., 2005; Pasold, 2006; Punamaki, Qouta, Samal, & Montgomery, 2000; Rosenbeck, & Fontana, 1998). Early stressors lower the threshold for development of anxiety and depressive disorders following exposure to additional stressful situations (Parent et al.). Early adverse experiences and the development of anxiety and affective disorders have been well documented (Broekman et al., 2007; Parent et al). Strong relationships existed between early childhood negative experiences and adults with anxiety and affective disorders (Broekman et al.; Parent et al.). All forms of mental disorders run in families (Perry et al.). For example, vulnerability is transmitted from parent to offspring, either through genomic or epigenetic processes of transmission or both (Parent et al.).

A study by Dekel and Goldblatt (2008) attempted to answer four questions about transgenerational transmission of PTSD and other stress related conditions from father to children. The four questions and the study which attempted to answer them were based on an earlier study by Galovski and Lyons (2004) which centered on cases involving the effects of a war veteran father's distress on his whole family. Dekel and Goldblatt (2008) used Kellerman's (2007) model of how trauma was transmitted transgenerationally in families of Holocaust survivors. The authors posed the following questions:

1. Which fathers have a greater tendency to transmit distress to their offspring?
2. What is transmitted from father to child?
3. What are the mechanisms of transmission?
4. Which children are more vulnerable to the transmission of posttraumatic stress disorder (PTSD) distress in the family?

The authors reviewed 17 other studies, and their review is quite interesting.

Ahmadzideh and Malekian (2004) studied 141 high school students whose fathers were veterans with PTSD, and 141 high school students whose fathers were not veterans. The authors reported that among the students whose fathers were veterans with symptoms of PTSD, there was a higher rate of aggression and anxiety, but there was no significant difference in the student social development as compared with the non-veteran children's control group.

Beckham, Braxton, Kudler, Feldman, Lytle, and Palmer (1997) investigated 20 males and 20 female children whose fathers were veterans with symptoms of PTSD. Inclusion criteria required that these children were seeking help. Findings showed that 78% of the children had at least one elevated score on the Minnesota Multiphasic Personality Inventory (University of Minnesota Press, 1940), 40% had issues with illegal drugs, 35% had behavioral problems, 15% reported occasional violent behavior, 45% of the children reported some PTSD symptoms, and 83% reported elevated hostility.

Davidson and Mellor (2001) examined 50 children whose fathers were Vietnam War veterans. Thirty of the parents showed symptoms of PTSD, while 20 did not. The authors found that there were no significant differences in self-esteem and PTSD

symptoms between the two groups of children, but that there were significant differences in the ways in which these children perceived their fathers' functional level. The children whose parents developed symptoms of PTSD viewed the family as having to experience appropriate emotional responses and to resolve problems within or outside of the family unit effectively.

Parsons, Kehle, and Owen (1990) suggested that parents who suffered from symptoms of PTSD perceived their children as being more dysfunctional socially and emotionally. Parents reported their children have difficulties with establishing and maintaining friendships. The children have difficulty being aware of the emotions of others and responding appropriately. The children were also viewed as a stand-off toward others and experience difficulty in connecting with other children.

A study conducted by Rosenbeck and Fontana (1998), revealed veterans who have fathers who served in combat scored higher in the following areas; PTSD symptoms, psychiatric symptoms, suicidal tendencies, guilt, and loss of religious faith as compared with veterans whose fathers did not have combat experience. Results from another sample in the same study showed that veterans who had symptoms of PTSD whose fathers had combat experience showed more severe PTSD symptoms, more survivor guilt, less social support, and an increased likelihood that these veterans would suffer a lifetime of panic disorder and drug abuse, than veterans with PTSD whose fathers did not serve in combat roles.

A 2006 study by Pasold examined the relationships among past parenting experiences, maltreatment, symptoms of PTSD, delinquency, and psychopathic traits, and

how those experiences played a role in transgenerational transmission. The author believed that past parenting experiences, maltreatment, and symptoms of PTSD would have accurately predicted callous-unemotional psychopathic, delinquency, and problems with future parenting. Students in the study who had attended regular high schools reported more fathers and mother warmth and fewer fathers and mother rejection, and more overprotection from the father. Those in the juvenile delinquent center reported more maltreatment, more PTSD, and higher callous-unemotional psychopathy. In general, the more positively a parental style was perceived, the less likely it was that the child would have experienced social and emotional difficulties either with peers or other adults. The converse is also true. The more negatively parental style was perceived, the higher the likelihood that the child did experience problems in school and at home, socially and emotionally.

Problems encountered with families of survivors of the Holocaust are believed to be similar with the families of today, where parents had been traumatized by events of their lives, including but not limited to war, early death of a parent or child abuse/neglect (de Graaf, 1998). Mental and emotional disorders in children may have been related to the traumatic past of one or both of the parents (de Graaf). Family members responded to trauma as a unit and each member's response affected the response of its other members (Punamaki, Qouta, Sarraj, & Montgomery, 2000). Emotional expression and cognitive coping were important for maintaining integrity for the unity of the family and for each individual member (Punamaki et al.).

Adult children of Holocaust survivors who developed symptoms of PTSD reported a greater volume of lifetime stress than adult children of Holocaust parents who did not develop PTSD, as measured by Tennant and Andrews (1976) who developed the Antonovsky Life Crises Scale (Yehuda et al, 1998). Additionally, adult children of Holocaust survivors with symptoms of PTSD did not experience more possible traumatic life events, as compared to adult children of Holocaust survivors without symptoms of PTSD, as measured by Trauma History Questionnaire, Green (1996). The results of this research also revealed that adult offspring of Holocaust survivors had a higher rate of current and lifetime symptoms of PTSD as well as other psychiatric disorder. Children of Holocaust survivors who developed symptoms of PTSD were more likely to develop symptoms of PTSD when they had experienced a trauma with consideration of demographics (Yehuda et al.).

Research showed that the children of Holocaust survivors tended to have lower cortisol levels than children of parents not exposed to trauma (Yehuda, 1998). The low cortisol levels in the children of Holocaust survivors were comparable to other groups of trauma survivors who had not developed symptoms of PTSD. Cortisol levels in the children of Holocaust survivors with symptoms of PTSD were low. This was especially true if the subjects had been exposed to traumatic stress and had developed symptoms of PTSD, or reported undue life stressors due to having been raised in a household with Holocaust survivors in the parental role with symptoms of PTSD (Parent et al., 2005; Yehuda, 1998).

The trauma of the parent may have become the trauma of the child. Some children of trauma victims showed secondary traumatization while others may have had latent symptoms of PTSD (Baranowsky et al., 1998). A latent vulnerability to symptoms of PTSD may occur when the symptoms tend to last longer with an increase in the diagnostic symptoms after exposure to trauma (Solomon, 1990). A ten year study of participants in the initial study of Holocaust survivors who had developed symptoms of PTSD and whose clinical symptoms remained the same revealed that cortisol levels continued to decline between the initial assessment and the follow up assessment (Yehuda, Morris, Labinsky, Zelman, & Schmeidler, 2007). Participants whose symptoms had decreased had an increase in their cortisol levels; while age could not be attributed to the increase in cortisol levels (Yehuda et al.).

Research with babies of mothers exposed to the World Trade Center attacks in 2001 revealed lower cortisol levels in mothers who had developed symptoms of PTSD following exposure to the attacks (Wessa & Rohleder, 2007). The babies of mothers who had developed symptoms of PTSD also showed a lower salivary cortisol level in the first year of life. Salivary cortisol levels were lower in the babies born to mothers who had developed symptoms of PTSD while in the third trimester. This suggested the effects of maternal symptoms of PTSD may be observed early in a child's life and the effects of prenatal contributions to biological risk factors for symptoms of PTSD (Parent et al., 2005; Wessa & Rohleder; Yehuda et al., 2005).

Studies on the effects of previous trauma on acute plasma cortisol level following rape revealed women who had a previous assault had a lower mean acute cortisol level,

but a higher probability of the development symptoms of PTSD (Resnick et al., 1995; Wessa & Rohleder, 2007). Women who did not have a previous history of being assaulted displayed an increased association of greater severity of rape and a higher cortisol level (Resnick et al., 1995). Mason and colleagues (2008) concluded cortisol alterations had revealed varied results, ranging from lower cortisol levels of patients who had sought treatment or higher levels of cortisol in patient groups who were recruited for intensive biological research following development of symptoms of PTSD after trauma. This study revealed that unpredictability in cortisol levels and a major difference in longitudinal pattern of cortisol functioning in combat veterans existed with symptoms of PTSD. Findings indicated the need to give closer examination of psychosocial factors as they are; the most important and influential influences on the cortisol system.

Mason and colleagues (2008), research also revealed the cortisol system is very sensitive to subtle everyday stimuli. Research by Mason, et al, 2008 through the National Center for PTSD revealed cortisol levels are closely linked to defensive ability along with other situational factors. Punamaki and colleagues (2000) revealed in their research that families displayed a high level of symmetry when all respond to trauma similarly. This research also revealed children and parents suffer equally in symptoms and those who lacked positive resources for resolution. Research with 65 Palestinian families of three generations exposed to war, refugee and military violence revealed that all families reported higher levels of symptoms of PTSD and depressive symptoms and low levels of resilient attitudes and satisfaction with life. This study revealed complementary dynamics between children and parents. When one family member displayed symptoms

of suffering others showed a lack of symptoms. When one member of the family displayed resilience and satisfaction, other members of the family's behavior revealed weakness.

A review of 37 studies examining basal cortisol levels in adults who had developed PTSD revealed no differences based on data utilizing meta-analysis (Baranowsky et al., 1998). Analyses revealed plasma cortisol levels were lower in PTSD groups when compared to individuals without previous trauma. Studies using only females, lower cortisol levels were present in individuals with PTSD when physical abuse or sexual abuse was the trauma-causing event (Baranowsky et al.).

### **Environmental Influences**

Environmental influences by parents have had a profound affect on establishing acceptable behavior for their children. Utilizing parental behavior and verbalizations, children modeled his or her perception of their parents (Appleyard & Osofsky, 2003; 2004; Parent et al., 2005; 2004; Rosenheck, & Fontana, 1998; Saenger, 2000; Shemesh et al., 2005). Children tended to embrace their parents' style of coping with life (Westerink & Giarratano, 1999). Research shows that when a father developed symptoms of PTSD as a result of exposure to trauma in war the mother and children revealed high levels of symptoms of PTSD and other psychiatric symptoms (Westerink & Giarratano). The manner in which primary caregivers coped with life and stressors have an effect on how their children coped with everyday life (August et al., 1996; Jensen et al., 1997; Kira, 2004; Koltek et al., 1998; Lipschitz et al., 1999; Perry et al., 1995).

Acute and chronic stressors impacted neurobiological systems in childhood (Parent et al., 2005). These systems were significantly influenced physical and cognitive development as well as emotional and behavioral regulation. Research suggested overwhelming stress resulting from maltreatment in childhood was associated with alterations of the biological stress system with adverse effects on brain development and functioning (De Bellis et al., 1999; Parent et al.). Genes as well as early childhood experiences has an important role the development and functioning of the brain. Research revealed a 39% rate of development of symptoms PTSD in nonclinical referred individuals for maltreatment within 8 weeks of abuse or neglect (Famularo et al., 1994). Following the cases for two years, about one third continued to have symptoms of PTSD (Famularo et al., 1996). The degree of the traumatic experience is based on the child's development and the biological stress system response of the child at the time of neglect. The developmental consequences of symptoms of PTSD may lend themselves to failures in behavioral and emotional regulation (De Bellis, 2001).

### **Parental Influences**

Parent and children interactions has an impact on identity development, identification of self and others, and emotional regulation (Main, 1996). Parental relationships assisted in the psychological representation of the self in all relationships (Fonagy & Target 2001; Zilberstein & Messer, 2010). Parental modeling assisted in forming the bases of the individual's competencies in distress tolerance, curiosity, and communication (Cook et al., 2005). One of the major functions of parent-child relationships is to control distress (Fonagy & Target). Attention processes play a major

role if the parent-child relationship is to be successful (Cook et al.; Fonagy & Target; Kinniburgh et al., 2005; Parent et al., 2005). Infants are born with an assortment of behaviors that maintain proximity to others who assisted in the regulation of distress (Fonagy & Target). Behaviors become associated with attention-lending networks that are believed to be developed during the first years of life (Fonagy & Target). As the infant becomes more secure, the security allowing the child to feel safe to explore beyond the early boundaries which necessitated total dependence on others for the meeting of needs (Fonagy & Target). Self-regulation is a key component in the development of children and has an enduring effect as children interface with others (Collins & Feeney, 2000; Ein-Dor et al., 2010). Self-regulation controls reaction to stress, ability to maintain focus, and capability to interpret the mental status of the self and others (Collins & Feeney; Ein-Dor et al.; Kinniburgh et al., 2005; Mikulincer et al., 2003). A child must be able to express emotions safely and to regulate internal experiences (Fonagy, 1999; Fonagy & Target).

Parental reactions and coping with trauma were expected to have an impact on their children's behavior, responses and adaptations (Parent et al., 2005, Wamboldt & Wamboldt, 2000). The more impaired the parental functions following a traumatizing event, the greater the impact was on their children (Appleyard & Osofsky, 2003; Parent et al., 2005). Parental stressors have a lasting impact on children due to their vulnerability, as children had not developed stress adaptation mechanisms. Infants cannot escape stressful situations, thereby increasing their vulnerability (Cook et al., 2005; Kinniburgh et

al., 2005; Parent et al., 2005). Infants are also more vulnerable to extremes due to potential for fundamentally altering their brain mechanisms. The range of an infant's response to stress is limited to hyperarousal (Fonagy & Target, 2001). A strong link has been identified between antenatal anxiety and child behavioral/emotional problems beginning at age 4. Elevated levels of anxiety in late pregnancy were associated with hyperactivity/inattention in males and behavioral/emotional problems in both males and females (O'Connor et al., 2002).

Families who had children with conduct problems report high rates of major stressful events in life (Parent et al., 2005). Families had been referred to clinical treatment have twice as many stressful events in their lives as non-clinical referrals. Data infers that parental psychosocial functioning may have influenced perceptions and interactions with their children. Stressful situations were more disruptive to individuals who have negative personality traits and stressors can amplify adjustments in life (Parent et al., 2005; Webster-Stratton, 1990).

A study of comorbidity of psychiatric disorders in a sample of Iranian children with ADHD revealed 7.6% of the males and 21.7% of the females with ADHD presented without other psychiatric disorders (Ghanizadeh et al., 2008). The results also revealed that the most common disorders co-occurring with ADHD are disruptive and anxiety disorders, regardless of gender. Almost 46% of fathers and 17.7% mothers presented with a lifetime prevalence of ADHD. Fathers also had a 45.5 % occurrence for major depressive disorder, but without

symptoms of PTSD the rate of major depressive disorder dropped to 33.3%.

Mothers with ADHD were also comorbid with major depressive disorders, with 64.3% for prevalence for ADHD and major depressive disorder. The frequency of comorbid psychiatric disorders in children with ADHD and PTSD is 7.4% in adolescent males and 14.3% in adolescent females (Ghanizadeh et al., 2008).

Wamboldt and Wamboldt (2000) concluded family dynamics were often critical in the outcome of a child's emotional health, mental health and in the formation of the relationships and interactions between the child and their parents. The shared environment is engaged in this dynamic; however, interactions may or may not be shared. Estimates range from 54.0% to 82.0% concerning the heritability for ADHD with the remaining non-shared environment. Shared environments, which affect family processes, are important in the manifestation of aggravating childhood psychiatric disorders. Inconsistent discipline, marital conflict, exposure to trauma, divorce, death or illness of a parent, multiple moves, financial status, and the environment of the neighborhood can all cause manifestation of these disorders (Wamboldt, & Wamboldt, 2000).

Wamboldt and Wamboldt (2000) utilized a clinical research rating, Emotional Expression link the course of outcome with psychiatric disorders in children. Children returned home following inpatient care, in which the home has a high Emotional Expression rating, were more likely to display a persistent mood disorder regardless of environmental or socio-demographic variables. Externalizing disorders in the shared environment affected the level of

development of the disorder. Family interventions focused on altering the social environment may prevent or reduce symptoms. Families played a key role in adherence to psychosocial treatments and clinical intervention can improve outcomes for the child.

Parent and colleagues (2005) suggested that a decrease in the quality of parental care alters the neural and endocrine systems. Introduction of models which increased the effect of emotional, autonomic, and endocrine responses to stress, also known as the defensive responses, result in an increase in the pre-disposition to illness. Vulnerability is the key question in research on anxiety disorders, like PTSD. Early family life was a significant predictor of vulnerability to development of symptoms of PTSD following trauma. Infants, early life events and environment may have altered the development of neural systems that control emotional and cognitive responses to adversity. Intergenerational transmission for the risk of PTSD is based on parental cares, which was consistent with previous studies indicating that anxiety is a strong negative predictor of maternal responsiveness. Current research revealed the potential for transmission of individual's response in behavior and gene expression from parent to offspring (Parent et al., 2005). This effect was modulated by the environmental conditions and the availability of parent-offspring interactions during early development (Parent et al.).

Parent and colleagues (2005) further concluded traits may have render in an individual vulnerable for psychopathology, resulting as a function of the

interaction of genetics and environment. Currently, there is confusion in understanding the characteristics of psychopathology and those of developmentally determined vulnerabilities. Regardless of the form of mental disorder, vulnerability is increased by a range of risk factors that are shared by families living in adverse conditions. Risk factors included genetic variations, complications of pregnancy or birth, family dysfunction, child abuse, neglect and maternal depression. All forms of mental disorders, regardless of diagnosis, run in families. The transmission by which vulnerability were passed from parent to child involves genomic and epigenetic processes of transmission (Parent et al.).

Riggs, Byrne, Weathers, and Litz (1998) deduced evidence of the impact of trauma and PTSD goes well beyond the individual. This assisted in disruption of relationships with family, peers and other social relationships. Veterans who had symptoms of PTSD report a decrease in satisfaction, cohesiveness, and expression in relationships as well as more conflict and more violence. Emotional numbing, loss of interest, detachment from others, restricted affect, all contribute to relationship discord.

Over-protectiveness had been reported in families of Holocaust survivors (van- Ijzendoorn et al., 2003). Children developed anxious and ambivalent bonds resulting in the children being hampered in their quest for autonomy (van- Ijzendoorn et al., 2003). Secondary traumatization had been demonstrated in the study of Vietnam veterans and their children (Rosenheck & Fontana, 1998). Research revealed that of the 4,418 families participating in this study, 32

participants disclosed significant differences in psychological well-being (van-Ijzendoorn et al.). Comparisons of adjustments between second-generation Holocaust survivors and their peers revealed second-generation Holocaust survivors experienced additional difficulty with adaption and adjustments to life with similar adversities (van-Ijzendoorn et al.). Research revealed that individuals with a Holocaust background had a higher rate of symptoms PTSD following exposure to war than individuals without a Holocaust background, thus increasing the impact of trans-generational background (Solomon, 1990). Solomon studied members of the Israel Defense, whom participated both in single conflicts and repeated exposure to conflicts. The conclusion of this study indicated that two and three years following participation in the Lebanon War the second generation of Holocaust survivors had significantly higher rates of symptoms of PTSD than individuals without a Holocaust background, also suggesting trans-generational transmission symptoms of PTSD.

Second generation survivors may have developed different characteristics from their counterparts whose parents did not experience the Holocaust as reported in a research study by Krell, Suedfeld, and Soriano (2004). Teenagers considered their own problems as trivial when compared to their parents who survived the Holocaust. Engagement in normal arguments was impossible as parents were hypersensitive to signs of disagreement and interpretation of disagreement was viewed with rejection or ingratitude. This resulted in over-reaction to the first sign of opposition. Children of Holocaust survivors who

developed symptoms of PTSD did not want to inflict additional pain on their parents' feelings and felt that their parents had already experienced so much anguish. The teenagers learned to suppress normal impulses to challenge parental views or authority. The teenagers of Holocaust survivors learned to maneuver through life alone, due to the absence of advice, support and love from their extended family. Life was considered a very serious undertaking, and one that was to be navigated in the absence of emotional support or counsel. Research also revealed two themes: (1) devotion in their early years to pleasing their parents, relaying only positive news and avoiding asking questions concerning the Holocaust, and (2) the children of survivors not being entitled to happiness, with a preoccupation to their parent's happiness setting the stage for pervasive and persistent feelings of guilt. This research also revealed four paradoxes pursuant to their research: (1) the children of Holocaust survivors must achieve no less than perfection. If not then they fell short of fulfilling their parents' expectations; (2) they received material things and the value of the possessions were decreased due feelings of inadequacy about other values; (3) complaints about the lack of parental empathy and the problems that they had with affect and empathy; and (4) parental silence about their experiences did not protect the family or their children; the silence only exacerbated other troubling aspects of the family life. The children of Holocaust survivors stated that they feel successful in work and relationships regardless of the parental flaws, while the parents feel that their children are successful due to their good upbringing (Krell et al, 2004).

Children raised in families with marital discord were affected by the events they witness, especially conflict. External problems may have occurred due to dysregulation of emotions and the effects of arousal created as a result of marital conflict. A change in parenting style affects how the individual internalizes the marital conflict. The internalization of problems and the accompanying responses were based on the development of the brain-based experiences relating to the early development (Cummings & Davies, 2002). Stress played a major role in the brain functioning and formation of an appropriate response (Cummings & Davies).

### **Present Study**

This study examined the relationship between parents and their children and the possible effects of transgenerational transmission of symptoms of PTSD from parents to their children. Interactions between parents and their children impacted negatively identity development, the identification of self and others, and the ability to regulate emotions (Main, 1996). Cumulative degradation in the parent-child relationship process may be associated with immediate and long-term behavioral difficulties (Kinniburgh et al., 2005; Parent et al., 2005).

Self-regulation is a key component in the development of children and has an enduring affect as children interface with others (Collins & Feeney, 2000; Ein-Dor et al., 2010). Self-regulation controls reaction to stress, ability to maintain focus, and capability to interpret the mental status of the self and others (Collins & Feeney; Ein-Dor et al.;

Kinniburgh et al., 2005; Mikulincer et al.). Parental relationships assist in the psychological representation of self in all relationships (Fonagy & Target 2001; Zilberstein & Messer, 2010). Parental modeling assists in forming the bases of the individual's competencies in distress tolerance, curiosity, and communication (Cook et al., 2005).

How children interpret their environment influences their willingness to freely engage with others, thus early childhood experiences have profound effects (Collins & Feeney, 2000; Fonagy, 1999; Fonagy & Target, 2001). The child's social support system, especially the child's mother, is thought to be the most important factor in determining the secure parent-child relationship outcome, even more important than objective elements of victimization (Cook et al., 2005). Children tended to mimic their parents style of coping with life's situations (Westerink & Giarratano, 1999). High risk of psychopathology, anxiety, and affective disorder are believed to be significantly influenced by early childhood experiences, thus potentially altered neurobiological changes (Broekman, Olf, & Boer, 2007; Heim & Nemeroff, 1999). This study explored the manner in which parental experiences, and coping with everyday stress affects their children.

### **Chapter Summary**

Symptoms of PTSD may have been transmitted by parent to their children by numerous methods; regardless of the method of transmission the effects may be detrimental (Ahmadzideh & Malekian, 2004; Baranovsky et al., 1998; Beckman et al.,

1997; Broekman et al., 2007; Davidson & Mellor, 2001; deGraff, 1998; Dekel & Goldblatt, 2008; Mason et al., 2008; Parent et al., 2005; Parsons, Kehle & Ownes, 1990; Pasold, 2006; Punamki et al. 2000; Resnick, et al. 1995; Rosenbeck & Fontana, 1998; Solomon, 1990; Wessa & Rohleder, 2007; Yehuda, 1999; Yehuda et al. 1998; Yehuda et al. 2005; Yehuda et al. 2007). Transgenerational transmission of symptoms of PTSD may have affected the manner in which children whose parents had developed symptoms of PTSD cope with everyday life (Aber & Allen, 1987; Alexander, 1992; Allen et al. 1996; Belsky, 1997; Cook et al. 2005; Fongay & Target, 2001; Kinniburg et al. 2005; Liberman, 2011; Main, 1996; Mikulincer et al. 2003; Mikulincer et al. 2001; Morton & Browne, 1998; Parent et al. 2005; van-Ijzendoorn et al. 1995; Yehuda, 1999; Zilberstein & Messer, 2010). Self-regulation of emotions may be very challenging, often relying on learned behavior from significant others (parent figures) as the source of their responses (Collin & Fenney, 2000; Cook et al.; Ein-Dor et al., 2010; Kinniburgh et al.; Mikulincer et al.; Morton & Browne). Perception of threats increased the potential for negative outcomes when the secure parent-child relationship figure was not available (Aber & Allen; Cassidy & Berlin, 1994; Ein-Dor et al.; Mikulincer et al.; Seifer & Schiller, 1995). Intensification of negative emotional control to perceived threats allowed the individual to remain active in working memory (Ein-Dor et al.; Mikulincer et al.). A child's ability to reason or to solve problems may have affected his or her reaction to perceived trauma (Cline, 2007). Intergenerational transmission for the risk of symptoms of PTSD are based, at least in part, on parental care, which is consistent with previous studies

indicating that anxiety is a strong negative predictor of maternal responsiveness (Parent et al., 2005).

## CHAPTER THREE: METHODS

This chapter provided a detailed discussion of the methods that were used to conduct the proposed research study. The research method and design were discussed first followed by the participants and sample size. Instrumentation was then presented along with the data collection methods, validity and reliability, the operational definition of the variables, data analysis methods, and ethical assurances.

The focus of this study was to investigate the impact of parental symptoms of Posttraumatic Stress Disorder (PTSD) on their relationship and on their children's with symptoms of Attention Deficit Hyperactivity Disorder (ADHD). It was hypothesized that transgenerational transmission of symptoms of PTSD may have created symptoms in offspring which emulated parental behavior. In other words, this study sought to determine whether parents with active symptoms of PTSD influence the nature of the relationship with their children in a manner that results in their children mimicking symptoms of ADHD. The focus of this research study was to answer the following research questions and to test the following hypotheses:

*Research Question 1:* How do parental symptoms of PTSD affect their children's behavior?

H1o: Parental symptoms of PTSD do not affect children's behavior based on scores on the Family Assessment Measure III (FAM-III; Skinner et al., 1983) questionnaire scores.

H1a: Parental symptoms of PTSD do affect children's behavior based on FAM-

III questionnaire scores (Skinner et al., 1983).

*Research Question 2:* Are ADHD symptoms in children related based on parental symptoms of PTSD?

H2o: Parental symptoms PTSD scores on the Trauma Symptom Inventory 2 (TSI-2; Briere, 2011) will be related to ADHD symptoms in their children as measured by Child Behavioral Checklist (CBCL; Achenbach & Edelbrock, 1981) scores.

H2a: Parents scores on the TSI-2 (Briere, 2011) will predict ADHD symptoms in their children as measured by CBCL (Achenbach & Edelbrock, 1981).

### **Nature of Research Method**

The research design is a quantitative predictive design. This design provides the ability to compare and analyze variables to determine whether a relationship exists (Cozby, 2001). The purpose of the predictive design is to investigate if there was a statistically significant relationship between two or more variables (e.g., parents who have experienced trauma, which developed symptoms PTSD and the effects on their children who have been referred to treatment for ADHD). The variables will be measured by the Family Assessment Measurement III (FAM-III; Skinner et al., 1983), Trauma Symptom Inventory-2 (TSI-2; Briere, 2011), and the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1981).

A predictive research design was the optimal choice for this study. It allows for the examination of a linear relationship between the symptoms of PTSD among parents and symptoms of ADHD among children (Burns & Grove, 2005). If the study revealed a

relationship between variables, the results of the study would provided additional insight into the child's environment and parental influences, and parental history may assisted in the development of specific treatment, thereby improving treatment outcome.

A qualitative research design was ruled out because it is used to obtain information regarding the experiences of the participants and their perceptions (Creswell, 2009). Since qualitative research was interested in addressing the how and why questions related to the research (Creswell), it is not applicable to study the relationship of parental symptoms of PTSD and children with symptoms of ADHD. A quantitative study is necessary to assess the correlations between the noted variables.

An observational or descriptive study design was considered, but rejected because it would not determine the direction of the relationship between having PTSD symptoms in parents and the symptoms of ADHD amongst their children (Creswell, 2009). Instead, an observational or predictive study will describe the current situation of PTSD symptoms in parents and ADHD amongst their children. The number of parents and children with these conditions can be identified. However, a descriptive study does not allow for an analysis for the relationship between the variables (Creswell). The purpose of the observational or predictive design is to observe and record information about the participants that describe the characteristics rather than determine an association between the information that is collected (Cozby, 2001). A predictive design allows for the determination of the direct influence of the variables upon each other.

## **Instrumentation**

The measurement instruments that were used to identify symptoms of parental PTSD and ADHD in children are FAM-III (Skinner et al., 1983,); TSI-2 (Briere, 2011); and the CBCL (Achenbach & Edelbrock, 1981). To assess ADHD, parents will be asked whether their child was formally diagnosed with ADHD by qualified mental health professionals, and completed the CBCL.

### **The Family Assessment Measurement III**

The FAM-III (Skinner et al., 1983) part of the survey instrument will contain 134 questions, and will provide data from two different perspectives around the family unit. The first perspective uses 50-items to assess the family as a whole. Specifically, the various relationships within the family, as between parents, between siblings, or any other combination, will be assessed with a series of 42 items (Skinner et al., 1983).

The FAM-III (Skinner et al., 1983) is a 134-item self-report assessment of family functioning the measure is comprised of three subscales: the General Scale (50 items), which assesses general family health; the Dyadic Relationships Scale (42 items), which examines how each member of the family perceives his or her relationship with each other family member; and the Self-Rating Scale (42 items), which is an individual assessment of level of functioning within the family unit. The Self-Rating Scales was not used in this study. The FAM-III (Skinner et al., 1983) assessment was used as a screening tool, and provides information for making decisions both in clinical assessments and in treatment monitoring. It targets family members from 10 years of age through adulthood. The parents completed all of the forms used.

The General Scale assessed family functioning. The respondent rated agreement with items employing a Likert continuum from 0 to 3, with zero representing strong agreement to the item and three representing strong disagreement. General Scale items are statements such as "We spend too much time arguing about what our problems are," "We tell each other about things that bother us," and "When you do something wrong in our family, you don't know what to expect."

The Dyadic Relationship Scale assessed individual relationships with other family members and relationships with others that consisted of 2 or more individuals. It uses the same Likert continuum. Dyadic Relationship Scale items are statements such as "I know what this person means when he/she says something," "This person can never accept my answer to a problem", and "This person often ruins things for me."

FAM-III (Skinner et al., 1983) was assessed for psychometric measures. According to the analyses, the average internal consistency of the subscales is .84 while the average test-retest reliability is at .83. The instrument was also determined to have an acceptable criterion validity. Thus, FAM-III (Skinner et al., 1983) will be used to measure the constructs of family relationships. The FAM-III (Skinner et al., 1983) was hand scored based.

Table 3.1

*Example of FAM-III Items*

Item	Response
My family and I usually see our problems the same way.	Disagree
My family knows what I mean when I say something.	Disagree
When I'm upset, my family knows what's bothering me.	Disagree
My family knows what to expect from me.	Disagree
I'm available when others want to talk to me.	Disagree
I know I can count on the rest of my family.	Disagree
When I'm with my family, I get too upset too easily.	Agree

**The Trauma Symptom Inventory -2**

The TSI-2 (Briere, 2011) consists of 100 questions that measure the relative level of various forms of posttraumatic stress disorder (Briere, 2011). The TSI-2 (Briere, 2011) is a 136-item self-report instrument that indicates areas requiring immediate intervention. Items measure sexual behavior, suicidal thoughts and/or behavior, appropriateness in relationships, fantasies or thoughts about hurting himself or someone else, levels of arousal or dissociation, anger, depression, and attachment security. The TSI-2 (Briere, 2011) assessment scores are derived from a Likert continuum of 0 (Strongly Disagree) to 3 (Strongly Agree) and are converted to T scores that are age and gender specific. Any T score derived that is greater than or equal to 65 is significant and worthy of further investigation using data from other assessment instruments. Briere analyzed the reliability and validity of the survey instrument.

Table 3.2

**Item-Total Correlations and Internal Consistencies by TSI-2 Scale for the  
Standardization Sample**

Scale	Average Item-total r	alpha
<b>Validity Scale</b>		
Response level (RL)	.66	.81
Atypical Response (ATR)	.61	.72
<b>Clinical Scale/subscale</b>		
Anxious Arousal (AA)	.75	.89
Anxiety (AA-A)	.77	.83
Hyperarousal (AA-H)	.72	.76
Depression (D)	.81	.94
Anger (ANG)	.75	.92
Intrusive Experiences (IE)	.74	.91
Defensive Experiences (DA)	.74	.91
Dissociation (DA)	.67	.86
Somatic Preoccupation (SOM)	.69	.84
Pain (SOM-P)	.75	.74
General (Som-G)	.68	.76
Sexual Disturbance (SXD)	.68	.84
Sexual Concerns (SXD-DSB)	.75	.80
Dysfunctional Sexual Behavior (SXD-DSB)	.78	.83
Suicidality (SUI)	.74	.88
Ideations (SUI-I)	.84	.88
Behavior (SUI-B)	.79	.85
Insecure Attachment (IA)	.76	.91
Relational Avoidance (IA-RA)	.82	.88
Rejection Sensitivity (IA-RS)	.81	.87
Impaired Self-Reference (ISR)	.73	.88
Reduced Self-Awareness (ISR-RSA)	.78	.84
Other-Directedness (ISR-OD)	.76	.81
Tension Reduction Behavior (TRB)	.64	.82

(Briere, 2011)

Based on the analysis, the Cronbach's alpha value, which measures the reliability of the questionnaire, was determined to be .75 whereas the correlations were determined to be higher than .60. Moreover, criterion validity was determined to be acceptable.

### **The Child Behavior Checklist (CBCL)**

The CBCL (Achenbach & Edelbrock, 1981), first developed by Achenbach and Edelbrock (1981), assessed internal experiences (i.e., anxious, depressive, and over controlled) and external (i.e., aggressive, hyperactive, noncompliant, and under controlled) behaviors (Achenbach, 1992, 1991). This assessment was used to determine whether a child meets DSM-5 (APA, 2013) criteria for ADHD and any disorders or problems related to ADHD. The Child Behavioral Checklist (Achenbach & Edelbrock, 1983) is widely used method for identifying problem behavior in children. This study considered the use of the school-age version (CBCL/6-18). CBCL (Achenbach & Edelbrock, 1983) is for children aged 6 to 18 years and a well-regarded measure to assess the emotional, behavioral, and social aspects of a child's life. It is used as a diagnostic tool for a variety of behavioral and emotional problems such as ADHD, oppositional defiant disorder, conduct disorder, childhood depression, separation anxiety, childhood phobia, social phobia, specific phobia and a number of other childhood and adolescent issues. The checklist consists of a number of statements about the child's behavior. Responses were recorded on a Likert scale: 0 = Not True, 1 = Somewhat or Sometimes True, 2 = Very True or Often True. The school-age version consists of 120 questions. Achenbach and Edelbrock (1981) analyzed the reliability and validity of CBCL (Achenbach & Edelbrock, 1981) through the use of 1753 subjects of 6 to 18 years old

from 100 sites in 40 states. Based on the analysis, CBCL (Achenbach & Edelbrock, 1981) has a test-retest reliability ranging from .95 to 1.00, an inter-rater reliability of .93 to .96, and an internal consistency of .78 to .97. It was also determined that the criterion validity of the questionnaire is acceptable. Thus, the questionnaire is reliable and valid in measuring the construct of children behavior considered in this study.

The chosen research design was quantitative because an association will be made between two variables (PTSD in parents and the symptoms of ADHD in their children). In this way, an association will be determined by quantitatively assigning numerical values to the variables (Cooper & Schindler, 2003). The ability to assign numerical values to the variables allows the quantification of responses via statistical procedures. This study included survey instruments which measures a child's behavior in terms of mimicking the symptoms of ADHD. Moreover, a questionnaire will also be utilized to measure the PTSD level of parents.

### **Demographic Questionnaire**

A demographic questionnaire containing items on demographic characteristics of participants and their children is also included in the study. The demographic characteristics include the gender, with and without PTSD, gender of the children of adult participants and the average age of the children of adult participants. The responses of participants in the demographic questionnaire were used to describe the participants in the study.

### **Population and Sample**

For the purpose of the study, a convenience sampling plan was used. The convenience sampling plan is a form of non-probability sampling where the participants are selected according to their availability, accessibility, and proximity to the researcher (Urdan, 2005). A convenience sampling plan was based on the potential respondents' willingness to participate in the study (Urdan). Willingness to participate in the study was characterized by the positive responses to the informed consent form (see Appendix C). The study proposes the use of a convenience sampling plan because it has an advantage over a probability sampling method. The advantage is the acquisition of more participants for the study in a shorter period of time (Cozby, 2001). Similarly, the convenience sampling plan is appropriate for this study because the final selection of participants will be based on whether they voluntarily chose to participate in the current study (Urdan).

The target population for this study is parents who have active symptoms of PTSD. The sample will be drawn from parents in the Southeastern region of the United States. All parent participants must meet the inclusion requirement which is to have active symptoms of PTSD. Potential participants will be existing clients of an independent mental health facility. A survey invitation will be mailed to participants. Prior to participating in the study, each participant must sign an informed consent form (see Appendix C).

## **Data Collection**

Data for this study was obtained by administering the survey instruments to the participants through the paper questionnaires. The researcher informed potential participants regarding the research study through written and in-person communication. The information contained included the purpose, scope, and risks associated with the study.

Prior to administration of the survey instrument, the participants agreed to the terms of the study, as indicated by the Informed Consent form (Appendix C). Participants were directed to respond to each of the questions in the FAM-III (Skinner et al., 1983) and the TSI-2 (Briere, 2011) by selecting the most appropriate response that reflects their conditions and experiences in terms of their relationship with their children. Moreover, parents were asked to answer the CBCL (Achenbach & Edelbrock, 1981) to determine the ADHD level of their children. All survey questionnaires will be in written form.

The raw data from the responses to the survey instruments were saved in a password-protected computer file. The responses provided to each of the questions on the survey instrument were imported into a Microsoft Excel® spreadsheet. All of the item responses were tabulated in the spreadsheet to conduct calculations for scale and subscale scores.

## **Data Analysis**

Prior to conducting data analysis, it was necessary to determine the minimum sample size needed to achieve statistical validity. When calculating the sample size for a

study, three factors were taken into consideration: the power of the test, effect size, and level of significance. The power of the test measures the probability of rejecting a false null hypothesis (Keuhl, 2000). This study necessitated a power of 80% will be selected to adequately reject false null hypotheses (Moore & McCabe, 2006); in other words, an 80% strength in terms of assessing the validity of the statistical tests that will be conducted. This implies that there is 80% confidence in rejecting false null hypotheses.

The second factor was the effect size, which measures the strength of the relationship between the variables in the study (Cohen, 1988). Cohen defined the effect size for different tests into three different categories, which include a *small effect*, *moderate effect* and a *large effect*. For the purpose of this study, a moderate effect size was selected because this provides evidence of a relationship between the independent and dependent variables without being too strict or lenient.

The final factor that was considered is the level of significance or the probability of rejecting a true null hypothesis, which is set at 5%. That is, there is a 5% chance that the results of the test will be due to chance and not to the variables affect on each other (Moore & McCabe, 2006). This confidence level is typical for tests of these types, and allows for stringency while being realistic about the odds of chance being a part of the results (Moore & McCabe). The level of significance is established to be equal to 5% which will provide a 95% confidence level that the conclusions drawn from the statistical tests is true.

The sample size also depended on the type of statistical analyses be conducted to investigate the research questions. For the purpose of this study, the type of analysis that

will be used is a multiple logistic regression analysis because the focus of this study was on relating the dependent variable (specify) to multiple independent variables (specify). In terms of the multiple logistic regression analysis, the sample size also depends on whether the alternative hypothesis is one-sided or two-sided. A one-tailed test assessed whether there is a directional relationship between the variables (Cozby, 2009). This means that it is assumed that there will be either a positive or a negative relationship between the variables. In other words, prior knowledge as to whether there will be a positive or negative relationship between the variables will be obtained. The two-tailed test assessed whether there is a relationship between the variables. This means that there could potentially be a positive or negative relationship between the variables, without any prior knowledge of a positive or negative relationship between the variables (Cohen et al., 2003).

Based on the above information, the minimum sample size was calculated through G\*Power v3.1.0 (Appendix E) considering 80% power, medium effect size, multiple logistic regression analyses, and a two-tailed alternative, which states that there will be a relationship between the variables, rather than assuming immediately there is a positive or negative relationship (Moore & McCabe, 2006). The minimum sample size for this present study must be no less than 55 participants to achieve 80% power for the statistical tests. If the collected samples are less than 55 participants, the strength of the analysis will decrease. Thus, this would have decreased the validity and the generalizability of the findings from the statistical tests.

Predictive statistics was used to describe the participants gathered in the study. In order to address the objectives of the study two different statistical procedures will be used. The tests include Pearson's correlation coefficients and a standard multiple logistic regression analysis. The correlation coefficient was appropriate for this study since the purpose of the coefficient was to indicate how two variables are related with one another. The data analysis that will be used in this study will include summary statistics, Pearson's correlation coefficients, and multiple logistic regression analysis. These analyses will be conducted using Statistical Package for Social Sciences (SPSS) Version 21.0®.

The predictive statistics for the proposed study was included frequency distributions as well as measures of central tendency. For the frequency distributions, the number and percentage of each occurrence was presented for the categorical or dichotomous variables in the study. These include the demographic characteristics of the participants as well as the measures of whether or not the parents show symptoms of PTSD and whether or not their children show symptoms of ADHD.

In determining whether hypotheses was rejected or accepted, two sets of analysis were used. These are Pearson's correlation analysis and multiple logistic regression analysis. Pearson's correlation analysis was used to test the first null hypothesis which states that PTSD parents will not show patterns of family dysfunction based on their scores on the FAM-III (Skinner et al., 1983). Pearson's correlation analysis is a statistical procedure that is used in order to determine whether there is a statistically significant relationship between two variables (Moore & McCabe, 2006). These variables included the scale and subscale scores on the PTSD and the FAM-III (Skinner et al, 1983)

questionnaires. The values of the correlation coefficient can range from a low of  $-1$  up to a high of  $+1$ . If a value of  $-1$  is observed between two variables, this would indicate that there is a strong negative relationship between the two variables (Moore & McCabe). This means that as one variable increases the other variable decreases. If a positive value of  $+1$  is observed, then this would indicate that there is a strong positive association between the variables (Moore & McCabe). This means that as one variable increases the other variable will tend to increase as well. Either a positive or a negative association would provide evidence that there are significant relationships between the two variables.

A value of  $0$  for the correlation coefficient would indicate there is no relationship between the two variables. This means the increase or decrease in one variable does not have an impact the other variable. For the purpose of this study, the scores of the participants on the questionnaires will be correlated with one another to determine whether there is a relationship between the dependent and independent variables considered in this study.

The multiple logistic regression analysis follows the same idea as the multiple linear regression analysis wherein the probability of one outcome is modeled as a function of the linear combination of several explanatory variables. The reason for potentially using multiple logistic regression analysis on the variables was that the investigator was able to see if a significant relationship existed between each variable as well as the direction of this relationship. For the purpose of this study, the independent variables involved measures of the relative level of various forms of PTSD as represented by the participants' scores on TSI-2. On the other hand, the dependent variable involved

the ADHD symptoms in children as described by the CBCL (Achenbach & Edelbrock, 1981) scores. This statistical analysis was used to test which of the independent variables could statistically predict the dependent variable in the study.

### **Ethical Considerations**

When conducting a study that includes human participants, a number of ethical concerns must be considered (Cozby, 2001). The initial priority was obtaining approval from the Institutional Review Board (IRB). Following IRB approval participants will be recruited. All participants were given the Informed Consent form to read and sign (see Appendix C). The form must be signed to participate in this study. Participants will be aware of how long it will take them to complete the entire survey, which is approximately 60 to 140 minutes.

There was identifiable information in the questionnaire and the survey questionnaires was sealed in a provided envelope and given to the researcher. Each participant who completed the instruments was assigned a unique control number. This control number was used to maintain confidentiality as well as to specify which responses correspond to the particular participants in the study. However, a numerical code instead of personal information was used to identify the responses of participants. For example, participants and their responses will be identified as Participant 1, Participant 2, etc. Personal information such as addresses of the respondents and email addresses were not collected. Paper copies of the data will be stored in a locked filing cabinet, which only the researcher can access.

## Chapter Summary

Chapter Three discussed the research methodology used in the current study. The research methodology was a quantitative, predictive research design. A predictive design was used to determine the linear relationship between two continuous variables (Burns & Grove, 2005). A quantitative research design was more appropriate for the proposed study than a qualitative design because a qualitative design would not allow the assessment of a direct relationship between two variables (Cozby, 2001). Rather, with a qualitative study, the how and why questions of the research topic were approached (Creswell, 2009).

The general populations for the proposed study were the parents who have active symptoms or past symptoms of PTSD. The participants will be informed about the research study by the participants' therapists. In order to obtain a sample of participants within this criterion, a convenience sampling plan will be used. The study will be limited to the first 55 participants that successfully completed both surveys.

Chapter Three also contained the information on the data collection process and the statistical analyses procedures conducted on the data, which includes a Pearson's correlation analysis as well as a multiple linear regression analysis. By using the Pearson's correlation analysis and linear regression analysis, the investigator will be able to determine whether significant relationship exists between the variables considered for this study. Chapter Four presented the results and findings for the statistical analysis conducted in this proposed study. This included an overview of the data collection techniques as well as a description of the sample. The description of the sample included

a presentation of the demographic characteristics of the participants. The results of the statistical analysis were presented in Chapter Four and the discussion, interpretations, and conclusions in Chapter Five.

## CHAPTER FOUR: RESULTS AND ANALYSIS

The purpose of this quantitative research study was to examine whether Transgenerational transmission of PTSD may be associated with ADHD-like symptoms in their children. Specifically, What are the effects of parental PTSD symptoms and parental behavior on their children 's symptoms of ADHD? The target population for this study was parents in the Southeastern region of the United States who have active symptoms of PTSD. In line with this, the analyses are guided by the following research questions and hypotheses:

*Research Question 1:* How does parental symptom of PTSD affect their children's behavior?

H1o: Parental symptoms of PTSD do not affect children's behavior based on scores on the Family Assessment Measure III FAM-III (Skinner et al., 1983) questionnaire scores.

H1a: Parental symptoms of PTSD do affect children's behavior based on FAM-III (Skinner et al., 1983) questionnaire scores.

*Research Question 2:* Are ADHD symptoms in children related based on parental PTSD?

H2o: Parental symptoms PTSD scores on the Trauma Symptom Inventory 2 (TSI-2; Briere, 2011) will be related to ADHD symptoms in their children as measured by Child Behavioral Checklist (CBCL; Achenback & Edelbrock, 1981) scores.

H2a: Parents scores on the TSI-2 (Briere, 2011) will predict ADHD symptoms in their children as measured by CBCL (Achenback & Edelbrock, 1981).

The focus of this chapter is to present the results of the analysis that was used to test the different research questions and hypotheses. The study outcomes are presented in tables and graphs with descriptive narratives. First, the descriptive statistics on the scores in the FAM-III (Skinner et al., 1983) questionnaire are presented. This is followed by the results of the Independent *t*-test to address the research hypotheses of the study. Correlation test of the different scores in the FAM-III (Skinner et al, 1983) questionnaire were also obtained.

The demographics of the 55 participants and their children who have symptoms of ADHD included three males (fathers) and 52 females (mothers). Overall 94.54% of the participants were females (mothers) and father's representing 05.54%. Thirty seven females report symptoms of PTSD within the last six months, and all of the fathers. Participants reporting without symptoms of PTSD females represented 27.27% and no fathers participated that did not report symptoms of PTSD. Participating parents report male children in 45.45%, and 27.27% females of children whose parents having symptoms of PTSD. Parents without symptoms of PTSD reported 16.36% male children with ADHD and less than 1% was females, of the make-up of the participants. The means age of the children of participating parents range in age was from 10-17 years old and the average age was 11 years and 4 months. The high percentages of parents with symptoms of PTSD presented higher than normal. PTSD is based on the individual's perceptions which lends to questioning the impact everyday life has with the individual. Parents were not asked to participated based on any criteria except they child having been diagnosed or referred to treatment for symptoms of ADHD.

Table 4.1 Demographics of Participants

<b>Participants</b>	<b>MALES %</b>	<b>FEMALES %</b>
Parent With Symptoms of PTSD	.0545	67.27
Parent Without symptoms of PTSD	0000	27.27
Children with parents with symptoms of PTSD	45.45	27.27
Children with parents without symptoms of PTSD	16.36	0.70

**Descriptive Statistics of *T*-Scores in the FAM-III**

Tables 4.2 and 4.3 summarized the descriptive statistics of *t*-scores of the general scales overall rating, and dyadic relationships scales in the FAM-III (Skinner et al., 1983), (questionnaire to assess the family function of the children and adults in the family, respectively). The general scales, overall rating, assessed general family health, while the dyadic relationships scales measured how each member of the family perceives his or her relationship with each other family member. The general scales and the dyadic relationship scales and self scales each have seven measures of family functioning which

include task accomplishment, role performance, communication, affective expression, involvement, control, and values and norms. The descriptive statistics include the measure of dispersion measures of means and standard deviation.

Parental symptoms of PTSD do not affect their child behavior based on results of FAM-III (Skinner et al., 1983). The only statistically significant differences were in the *t*-test in the measurement of Affective Expression in the dyadic relationships. Results meant how each member of the family perceives his or her relationship with each other family members in terms of affective expression were significantly different with parents who have symptoms of PTSD and against parents without symptoms of PTSD. The affective expression does not affect children who parents do not have symptoms of PTSD. The manner in which a person uses affective expression has major implication in how others interpret our verbal as well as non-verbal behavior. The results of FAM-III (Skinner et al., 1983) parents with symptoms of PTSD and parents without symptoms of PTSD failed to reject the null hypothesis.

For the *t*-scores of the children in the general scale of the FAM-III (Skinner et al., 1983) questionnaire, the mean *t*-scores in each of the seven measures range between 58.57 and 62.89. The highest mean *t*-scores in the general scale were observed for the measures of communication ( $M = 62.98$ ) and role performance ( $M = 62.89$ ) while the lowest mean *t*-score was for the measure of affective expression ( $M = 58.47$ ). The *t*-scores of the children in the dyadic relationship scale of the FAM-III Skinner et al., 1983) questionnaire, the mean *t*-scores in each of the seven measures range between 51.27 and 57.85. The highest mean *t*-score in the dyadic relationship scale was observed for the

measure of role performance ( $M = 57.85$ ) while the lowest mean  $t$ -score was for the measure of affective expression ( $M = 51.27$ ). It was also observed that the  $t$ -scores of the children in the general scale were higher than the  $t$ -scores in the dyadic relationship scale. Lastly, the mean  $t$ -score of overall rating of family function for the children was 59.82.

Table 4.2

*Descriptive Statistics of T-Scores of General Scale, Dyadic Scale, and Overall Ratings in FAM-III Survey for Assessment of Family Functioning of Child*

	N	Minimum	Maximum	Mean	Std. Deviation
Task Accomplishment (General-Child)	55	44	80	60.00	9.29
Role Performance (General-Child)	55	38	80	62.89	9.92
Communication (General-Child)	55	40	80	62.98	9.70
Affective Expression (General-Child)	55	30	80	58.47	10.47
Involvement (General-Child)	55	34	80	61.09	10.48
Control (General-Child)	55	28	76	60.18	10.11
Values & Norms (General-Child)	55	32	80	59.96	11.56
Task Accomplishment (Dyadic Relationships-Child)	55	34	80	53.51	10.80
Role Performance (Dyadic Relationships-Child)	55	32	80	57.85	11.15
Communication (Dyadic Relationships-Child)	55	34	80	54.73	9.18
Affective Expression (Dyadic Relationships-Child)	55	34	76	51.27	9.19
Involvement (Dyadic Relationships-Child)	55	32	80	54.40	11.00
Control (Dyadic Relationships-Child)	55	30	74	54.84	9.12
Values & Norms (Dyadic Relationships-Child)	55	34	80	54.00	9.75
Overall Rating Child	55	34	80	59.82	8.99

For the *t*-scores of the adults in the general scale of the FAM-III (Skinner et al., 1983) questionnaire, the mean *t*-scores in each of the seven measures range between 57.53 and 64.36. The highest mean *t*-scores in the general scale were observed for the measures of role performance ( $M = 64.36$ ) and communication ( $M = 62.73$ ) while the lowest mean *t*-score was for the measure of task accomplishment ( $M = 57.53$ ). For the *t*-scores of the adults in the dyadic relationship scale of the FAM-III (Skinner et al., 1983) questionnaire, the mean *t*-scores in each of the seven measures range between 55.05 and 63.49. The highest mean *t*-scores in the dyadic relationship scale were observed for the measures of role performance ( $M = 63.49$ ) and values and norms ( $M = 62.91$ ) while the lowest mean *t*-score was for the measure of involvement ( $M = 55.05$ ). It was also observed that the *t*-scores of the adults in the dyadic relations scale were higher than the *t*-scores in the general scale. Lastly, the mean *t*-score of overall rating of family function for the adults was also 59.82. Both the children and adult respondent have the same overall rating of family function.

### **Correlation Results of Overall General Family Health Score between Adults and Children**

Pearson product moment correlation coefficient was conducted to examine whether adult's behavior and children's behavior in terms of the general family health or family function were correlated or not. The Pearson Product Moment Correlation Coefficient is

a statistical test that determines correlation between two variables. A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationships among the stated variables. A level of significance of 0.05 was also used in the correlation test. Significant correlation between variables is observed if the *p*-value of Table 4.3

*Descriptive Statistics of T-Scores of General Scales, Dyadic Scale, and Overall Rating in FAM-III Survey for Assessment of Family Functioning of Adult*

	N	Minimum	Maximum	Mean	Std. Deviation
Task Accomplishment (General-Adult)	55	34	80	57.53	9.84
Role Performance (General-Adult)	55	38	80	64.36	10.71
Communication (General-Adult)	55	40	80	62.73	10.25
Affective Expression (General-Adult)	55	30	80	58.22	10.98
Involvement (General-Adult)	55	34	80	58.47	13.05
Control (General-Adult)	55	28	80	61.89	12.62
Values & Norms (General-Adult)	55	34	80	59.76	10.98
Task Accomplishment (Dyadic Relationships-Adult)	55	46	80	61.24	9.76
Role Performance (Dyadic Relationships-Adult)	55	38	80	63.49	9.96
Communication (Dyadic Relationships-Adult)	55	44	80	59.16	10.43
Affective Expression (Dyadic Relationships-Adult)	55	42	80	59.31	7.06
Involvement (Dyadic Relationships-Adult)	55	28	80	55.05	13.53
Control (Dyadic Relationships-Adult)	55	40	80	60.58	10.64

Values & Norms (Dyadic Relationships-Adult)	55	42	80	62.91	10.39
Overall Rating Adult	55	34	80	59.82	10.40

the  $r$  statistics of the Pearson correlation test is less than the critical value of the level of significance set at 0.05. The overall rating  $t$ -scores of the adults and children on the FAM-III (Skinner et al., 1983) instrument for assessment of family function were used in the correlation analysis. Table 4.3 summarized the results of the correlation test.

The results of the correlation test that the overall rating  $t$ -scores of the adults and children on the FAM-III (Skinner et al., 1983) ( $r(53) = 0.45, p < 0.001$ ) were significantly positively correlated. The strength of the correlation was moderate. The positive correlation means that as the overall rating  $t$ -scores of parents on the FAM-III (Skinner et al., 1983) questionnaire increase, the overall rating  $t$ -scores of children on the FAM-III (Skinner et al., 1983) questionnaire also increase. This means that the children will have better general family health such as family functioning and provide strong explanatory and predictive utility if the adults in the family also have better general family health.

Table 4.4

*Pearson Correlation Results between Overall Rating T-Scores for Assessment of Family Functioning between Child and Adult*

		Overall Rating Adult
Overall Rating Child	Pearson Correlation	0.56*
	Sig. (2-tailed)	0.00
	N	55

\*. Correlation is significant at the 0.05 level (2-tailed).

### **Independent Sample *T*-test Results of Differences of Overall Rating T-Scores for Assessment of Family Functioning between Parents with PTSD and Parents without PTSD**

The independent sample *t*-tests were conducted to examine whether parental symptoms of PTSD affect their children's behavior. This analysis determined whether there are significant differences existing in the general family health, as measured by the overall rating *t*-score for family functioning in the FAM-III (Skinner et al., 1983) questionnaire between parents with symptoms of PTSD and parents without symptoms of PTSD. The independent sample *t*-test compares the means of the overall rating *t*-scores from the FAM-III (Skinner et al., 1983) questionnaire. A level of significance of 0.05 was used in the *t*-test analysis. Significant difference is observed if the *p*-value of the *t* statistics does not exceed the critical value of the level of significance set at 0.05. Table 4.5 showed the *t*-test results. This analysis addressed research question one.

The Levene's Test for Equality of Variances was first conducted to test whether the variances in the overall rating *t*-score for family functioning in the FAM-III (Skinner et al., 1983) questionnaire of the two independent groups of those parents with symptoms of PTSD and parents without symptoms of PTSD were equal or not. The Levine's test for equality of variance table showed that the variances in the overall rating *t*-score for family functioning in the FAM-III (Skinner et al., 1983) questionnaire ( $F = 0.13, p = 0.72$ ) were equal across the two population groups of parents with symptoms of PTSD and parents without symptoms of PTSD since the *p*-value was greater than the level of significance of 0.05, implying equality of variances.

Analysis of the independent sample *t*-test in Table 4.4 revealed that the overall rating *t*-score for family functioning in the FAM-III (Skinner et al., 1983) questionnaire ( $t(108) = -0.99; p = 0.33$ ) were not statistically significantly different between the two population groups of parents with symptoms of PTSD and parents without symptoms of PTSD. This was because the *p*-value was greater than the level of significance value of 0.05. The findings of the *t*-test failed to reject the null hypothesis for research question one “Parental symptom of PTSD does not affect children’s behavior based on score on the FAM-III (Skinner et al., 1893) questionnaire scores”. Thus, the result of the *t*-test showed that the general family health or family functioning of the children was not affected by whether their parents have symptoms of PTSD or not. The children’s behavior in their family was not affected by parents’ PTSD symptoms. With this result, the null hypothesis for research question one that “Parental symptoms of PTSD do not affect children’s behavior based on scores on the Family Assessment Measure III (FAM-III) (Skinner et al., 1983) questionnaire scores” was not rejected.

Table 4.5

*Independent Sample T-test Result of Differences of Overall Rating T-Scores for Assessment of Family Functioning between Parents with Symptom's of PTSD and Parents without Symptoms of PTSD*

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Overall Rating	Equal variances assumed	0.13	0.72	-0.99	108	0.33	-2.04	2.07	-6.15	2.06
	Equal variances not assumed			-0.94	48.05	0.35	-2.04	2.16	-6.39	2.31

**Independent Sample *T*-test Result of Differences of T-Scores for Assessment of Family Functioning in the General and Dyadic Relationship Scales for Assessment of Family Functioning between Parents with Symptoms of PTSD and Parents without Symptoms of PTSD**

The independent sample *t*-tests were conducted to determine whether there are significant differences existing in the family functioning, as measured by the *t*-scores in the general and dyadic relationship scales in the FAM-III (Skinner et al., 1983) questionnaire between parents with symptoms of PTSD and parents without symptoms of PTSD. The independent sample *t*-test compares the means of each of the seven measures of family functioning of task accomplishment, role performance, communication, affective expression, involvement, control, and values and norms and the general scales overall rating, self scales and dyadic scales in the FAM-III (Skinner et al., 1983) questionnaire. A level of significance of 0.05 was also used in the *t*-test analysis. Table 5 showed the *t*-test results. This analysis addressed research question two.

The Levene's Test for Equality of Variances was first conducted to test whether the variances in each of the seven measures of family functioning for both the general scales, and dyadic relationship scales, and overall rating in the FAM-III (Skinner et al., 1983) questionnaire of the two independent groups of those parents with symptoms of PTSD and parents without symptoms of PTSD were equal or not. The Levine's test for equality of variance table showed that the variances in the general scale measures of task accomplishment ( $F = 0.70, p = 0.41$ ), role performance ( $F = 3.59, p = 0.06$ ), communication ( $F = 0.04, p = 0.84$ ), affective expression ( $F = 0.93, p = 0.34$ ),

involvement ( $F = 0.91, p = 0.34$ ), control ( $F = 0.28, p = 0.60$ ), and values and norms ( $F = 0.23, p = 0.63$ ) and that of the dyadic relationships scale measures of task accomplishment ( $F = 0.03, p = 0.86$ ), role performance ( $F = 0.24, p = 0.63$ ), communication ( $F = 0.00, p = 0.89$ ), affective expression ( $F = 3.07, p = 0.08$ ), involvement ( $F = 1.78, p = 0.19$ ), control ( $F = 1.08, p = 0.30$ ), and values and norms ( $F = 0.36, p = 0.55$ ) were all equal across the two population groups of parents with symptoms of PTSD and parents without symptoms of PTSD since the p-values were all greater than the level of significance of 0.05, implying equality of variances.

Analysis of the independent sample *t*-test in Table 5 revealed that only the *t*-scores in the measure of affective expression ( $t(108) = -2.02; p = 0.05$ ) in the dyadic relationships scale of the FAM-III (Skinner et al., 1983) questionnaire was statistically significantly different between the two population groups of parents with symptoms of PTSD and parents without symptoms of PTSD. This was the only p-value less than the level of significance value of 0.05. Thus, the result of the *t*-test showed that the how each member of the family perceives his or her relationship with each other family member in terms of affective expression were significantly different in families with parents with symptoms of PTSD against families with parents without symptoms of PTSD. Thus, the result of the *t*-test showed that the general family health or family functioning of the children was not affected by whether their parents have symptoms of PTSD or not. The children's behavior in their family was not affected by parents' PTSD symptoms. With this result, the null hypothesis for research question one that "Parental symptoms of

PTSD do not affect children's behavior based on scores on the Family Assessment Measure III (FAM-III) (Skinner et al, 1983) questionnaire scores" was not rejected.

Table 4.6

*Independent Sample T-test Result of Differences of T-Scores for Assessment of Family Functioning in the General and Dyadic Scales for Assessment of Family Functioning between Parents with Symptoms of PTSD and Parents without Symptoms of PTSD*

		Levene's Test for Equality of Variances		<i>t</i> -test for Equality of Means						
		F	Sig.	<i>t</i>	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
Task Accomplishment (General)	Equal variances assumed	0.70	0.41	-1.36	108.00	0.18	-2.79	2.05	-6.85	1.27
	Equal variances not assumed			-1.41	55.76	0.16	-2.79	1.98	-6.76	1.18
Role Performance (General)	Equal variances assumed	3.59	0.06	-0.72	108.00	0.47	-1.60	2.21	-5.98	2.78
	Equal variances not assumed			-0.66	44.06	0.52	-1.60	2.43	-6.50	3.30
Communication (General)	Equal variances assumed	0.04	0.84	-1.40	108.00	0.17	-2.96	2.12	-7.16	1.24
	Equal variances not assumed			-1.40	52.32	0.17	-2.96	2.11	-7.20	1.28

Affective Expression (General)	Equal variances assumed	0.93	0.34	-0.45	108.00	0.66	-1.03	2.30	-5.57	3.52
	Equal variances not assumed			-0.47	57.35	0.64	-1.03	2.19	-5.41	3.36
Involvement (General)	Equal variances assumed	0.91	0.34	-1.22	108.00	0.23	-3.09	2.53	-8.11	1.93
	Equal variances not assumed			-1.19	49.23	0.24	-3.09	2.61	-8.34	2.15
Control (General)	Equal variances assumed	0.28	0.60	-0.32	108.00	0.75	-0.78	2.45	-5.65	4.08
	Equal variances not assumed			-0.33	56.36	0.74	-0.78	2.36	-5.51	3.94
Values & Norms (General)	Equal variances assumed	0.23	0.63	-0.49	108.00	0.62	-1.19	2.41	-5.97	3.59
	Equal variances not assumed			-0.48	49.41	0.63	-1.19	2.48	-6.17	3.80
Task Accomplishment (Dyadic Relationships)	Equal variances assumed	0.03	0.86	-1.30	108.00	0.20	-3.03	2.34	-7.67	1.60
	Equal variances not assumed			-1.30	52.17	0.20	-3.03	2.34	-7.72	1.66
Role Performance (Dyadic Relationships)	Equal variances assumed	0.24	0.63	-1.71	108.00	0.09	-3.95	2.31	-8.53	0.63
	Equal variances not assumed			-1.70	51.58	0.10	-3.95	2.33	-8.62	0.72
Communication (Dyadic Relationships)	Equal variances assumed	0.00	0.98	-1.38	108.00	0.17	-2.95	2.14	-7.19	1.29
	Equal variances not assumed			-1.44	56.86	0.16	-2.95	2.05	-7.05	1.15

Affective Expression (Dyadic Relationships)	Equal variances assumed	3.07	0.08	-2.02	108.00	0.05*	-3.88	1.92	-7.69	-0.08
	Equal variances not assumed			-1.84	44.08	0.07	-3.88	2.11	-8.14	0.38
Involvement (Dyadic Relationships)	Equal variances assumed	1.78	0.19	-1.54	108.00	0.13	-4.03	2.61	-9.20	1.15
	Equal variances not assumed			-1.41	44.41	0.17	-4.03	2.86	-9.79	1.74
Control (Dyadic Relationships)	Equal variances assumed	1.08	0.30	-1.49	108.00	0.14	-3.27	2.19	-7.60	1.07
	Equal variances not assumed			-1.39	45.65	0.17	-3.27	2.36	-8.01	1.48
Values & Norms (Dyadic Relationships)	Equal variances assumed	0.36	0.55	-1.44	108.00	0.15	-3.38	2.34	-8.01	1.26
	Equal variances not assumed			-1.39	48.35	0.17	-3.38	2.44	-8.27	1.52

\*Significant difference at level of significance of 0.05

## Chapter Summary

The objective of this quantitative research was to determine whether Transgenerational transmission of PTSD may be associated with ADHD-like symptoms in their children. This chapter presented the results and the calculations of the *t*-test results to address the research questions and hypotheses of this study. The results were generated through the SPSS statistical software.

The results of the *t*-test analysis showed that there was no statistically significant difference in the overall rating *t*-score for family functioning in the FAM-III (Skinner et al., 1983) questionnaire between parents with symptoms of PTSD and parents without symptoms of PTSD. This result indicated that parental symptom of PTSD does not affect children's behavior based on score on the FAM-III (Skinner et al., 1983) questionnaire scores. The results of the *t*-test analysis also showed that there was only a statistically significant difference in the *t*-scores in the measure of affective expression in the dyadic relationships scale of the FAM-III (Skinner et al., 1983) questionnaire between parents with symptoms of PTSD and parents without symptoms of PTSD. This result meant how each member of the family perceives his or her relationship with each other family member in terms of affective expression were significantly different in families with parents with symptoms of PTSD against families with parents without symptoms of PTSD. Chapter Five concludes this study. Chapter Five contains findings from the study, findings as they relate to literature, implications for action, and recommendations for future research.

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **Summary**

The purpose of this study was to investigate the effects of parental symptoms of PTSD has with their children who have symptoms of ADHD. This study examined the parent's perceptions of their children who have ADHD and how parent's symptoms affect their children. The Child Behavior Checklist (Achenbach & Edelbrock 1981), Trauma Symptom Inventory-2 (Briere, 2011) and the Family Assessment Measurement III (Skinner et al., 1983) were utilized to identified similarities and differences with regards to parent's behavior and that of their children. The Child Behavior Checklist (Achenbach & Edelbroch, 1981) was provided to each parent to identify if the child met the symptoms for ADHD. Trauma Symptoms Inventory-2 (Briere, 2011) was administered to a parent of the child who met the diagnostic criteria for ADHD. The FAM-III (Skinner et al., 1983) was completed by parents, one set of questionnaires was completed identifying perception of self and the second set was completed by the parent identifying their perception of their child. The FAM-III (Skinner et al., 1983) has three scales of measurement, General, Dyadic Relationship and Self Scales. Each set of scales has subscales: the General scales measures; Task Accomplishment, Role Performance, Communication, Affective Expression, Involvement, Control, Values and Norms, Overall, Social Desirability and Defensiveness. The overall rating score was used for question one. The General Scores, Dyadic Relationship Scale and Overall has seven sub scales; Task Accomplishment, Role Performance, Communication, Affective Expression,

Involvement, Control, and Values and Norms. This chapter summarizes the effects of parental symptoms of PTSD has with their children who have symptoms of ADHD and conclusions related to the findings. Identifying how the findings relate to research questions one and two. This chapter also explores implications for practice in the treatment of individuals who were referred for symptoms of ADHD. This chapter also explored implications for future research in the area of parents with symptoms of PTSD and the relationship with their children with symptoms of ADHD and concluding with recommendations and chapter summary.

The parent was classified as a parent with or without symptoms of PTSD. The sample size consisted of 55 children ranging in age from 10-17 year old, who met the criteria for symptoms of ADHD as measured by CBCL (Achenbach & Edelbrock, 1981). The sample sizes for parents were based on the children who met the criteria for ADHD and their parents with and without symptoms of PTSD. Families were referred by the treating licensed professional without regard to parents being diagnosed with PTSD. The sample sized consisted of 55 parents; 40 parents who displayed symptoms of PTSD and 15 parents who did not display symptoms of PTSD per TSI-2 (Briere, 2011). This equates to 72.72% of parents in the sample sized acknowledge that they had experienced symptoms of PTSD with in the past six months. Twenty five male children/adolescents (45.45%) whose parent responded are children that parents reported symptoms of PTSD. Nine male children/adolescent (16.36%) parents reported without symptoms of PTSD. Fifteen female children/adolescents (27.27%) have parents with symptoms of PTSD, and six female children/adolescent (0.70%) parents who participated reported without

symptoms of PTSD. The child's mother participated in this research with the exception of three father's who participated. The average age of the children was 11 years and 4 months. No parent had been or was currently in treatment for symptoms of PTSD.

### **Discussions Related to Findings**

The findings of the research revealed that parents who reported symptoms of PTSD in the past six months did not have a significant influence with their children as compared to parents who did not report experiencing symptoms of PTSD and their children. The results also revealed that children whose parents did report symptoms of PTSD in the past six months as compared to the parents who did not report symptoms of PTSD within the past six months displayed a significant difference in Affective Expression.

There may have been several reasons for the results including but not limited to the following explanations. The parents could have chosen not to report their own symptoms, or their partner may have experienced the symptoms of PTSD and not the parent who participated and completed the questionnaires. The participating parent may have been attempting to protect their partner. The age of the children whose parent participated in completion of the questionnaire cannot be considered in their early childhood, the average age of the children was 11 years and 4 months.

Educational levels and understanding the questions may have also affected the results. The legacy as previously stated in the community was to quit school as soon as the individual reached the age of sixteen and their parents to help them get a job in

furniture manufacturing which has since moved their operations overseas. Education was not viewed as being necessary for successful employment or a happy fulfilling life. The individuals in the environment are very protective of self and family, they may have minimized their responses to show themselves and family in a positive manner.

Another factor may have been that this researcher did not know the families who participated. Trust may have been an issue due to lack of familiarity and the lack of a relationship. The referral source may not explained the research as thoroughly as necessary and the participant may had agreed that they understood due to concern about appearing less intelligent or altering their therapist opinion of them. Their partner may have altered the participant answers to the questionnaire as a means of protecting family and themselves due to concerns of what will really be revealed by someone that they did not know. Again, trust may have figured into the results of this research.

### **Conclusions Related to Research Question #1**

The first question stated: How do parental symptoms of PTSD affect their children's behavior? The general scales overall rating was used to address: How do parental symptoms of PTSD affect their children's behavior? The statistical data revealed that parental symptoms of PTSD have no significates in the relationship with their child's behavior who is displaying symptoms of ADHD as compared to parents who did not display symptoms of PTSD. Results indicated that a child's behavior is the child's responsibility and parental symptoms of PTSD as compared to results of parents who reported no symptoms of PTSD had no effect on the child's general overall

functioning. Strong relationships exist between early childhood negative experiences and adults with anxiety and affective disorders, (Brockman et al., 2007; Parent et al., 2005). How a child interprets the environment dictates their willingness to freely engage with others, thus early childhood experiences have profound effects (Collins & Feeney, 2000; Fonagy, 1999; Fonagy & Target, 2001).

A latent vulnerability to symptoms of PTSD may occur when symptoms tend to last for a longer period with an increase in the diagnostic symptoms following exposure to an event that develops into trauma (Solomon, 1990). Younger children are influenced most during their developmental years by family relationships and disruptions in family relationships resulted in deficits in social skills and faulty responses to challenges (Appleyard & Osofsky, 2003). Middle latency age children appear the least affected by parental emotional functioning, followed by adolescents. The impact of parental symptoms of PTSD is reduced the older the child (Appleyard & Osofsky, 2003). The average age of the participant's children was 11 years and 4 months of adults who participated and reported symptoms of PTSD in the last six months. The average of the participant's children was not indicative of the range of early childhood.

The results of this research indicated that parental symptoms of PTSD had no significant differences when compared to parents without symptoms of PTSD. Speculations as to the reasons for contradictions may be the age of the children of participating adults. Research also indicated that the younger the child the more effective their care giver behavior had influenced their behavior (Appleyard & Osofsky, 2003)

The effect of parents with symptoms of PTSD has with their children who have symptoms of ADHD may have been reduced due to the age of the children. Younger children were impacted the most during their developmental years by family relationships and disruptions in family relationships resulted in deficits and social skills and faulty responses to challenges (Appleyard & Osofsky, 2003). Middle latency age children appear the least affected by parental emotional functioning, followed by adolescents (Appleyard & Odofsky, 2003). The impact of parental symptoms of PTSD is reduced as the child matures. Gender influences were taken into consideration although mothers represented 52 of the 55 participant's.

One conclusion that is as a child continues the maturation process into adolescents, this process reduced the parental influences. The parental influences had become reduced with peer and socialization has increased the impact of peers and socializations increased. Our environment assists in defining what acceptable behavior is. These two influences may have assisted the child/adolescent in the development of coping strategies with a parent who has symptoms of PTSD. The age of the child/adolescents may be an important factor in addressing this question, younger children were influenced most during their developmental years by family relationships resulted in deficits and social skills and faculty responses to challenges (Appleyard & Osofsky, 2003). The parents having experienced symptoms of PTSD lending to the possible interpretation that the child/adolescent has the cognitive functioning to better understand the events and effects of the event. The parents may have created a strong base of coping for the children prior to the event or occurring events that created the

trauma which then developed symptoms of PTSD. The children of participating adults may have peers and interacts with the peers family in a different manner and the child may had chosen to use their peers and peers family as their model for their behavior. The partner of the participating adult (husband/wife or significant other) may be able to balance the effect on the children. The adolescent child may had been using behavior that he/she feels is more appropriate thus the adolescent did not rely on the participating parent as the sole model for behavior. The adolescent may had also utilized teachers, school administrators, spiritual leaders, community leader or the participating parent's partner as the primary model of behavior. Symptoms of ADHD may have a stronger influence on the child that the behavior of parents with symptoms of PTSD. There may be numerous reasons for the results of no significant difference in parental symptoms of PTSD and without symptoms of PTSD and their children with symptoms of ADHD, opening the possibilities' for future research.

### **Conclusions Related to Research Question #2**

The second question stated: Are ADHD symptoms in children related to parental symptoms of PTSD? Based on results, ADHD symptoms in children's behavior are not related to parental symptoms of PTSD. Results reveal that there is no significant relationship between parents with PTSD and without PTSD as measured with the Dyadic Relationship Scale with the exception of Affective Expression (content, intensity, and timing of emotions) ( Skinner et al., 2013). This has several implications; children may use their parents Affective Expression as a base to display emotions. The child may not

understand how to display emotions due to parent's symptoms of PTSD. The parent first priority may have been with survival and not the needs of the child. This phenomenon has been explained by believing that the development of parents with symptoms Post Traumatic Stress Disorder (PTSD) may alter the parent's primary focus, from their child's need to self-survival, minimizing capacity and ability to attend to their child's needs (Cassidy & Berlin, 1994; Fongay & Target, 2001; Scheeringa, & Zeanah, 2001). In such cases, the child's needs become secondary; the parent's primary focus is self-survival (Cassidy & Berlin; Ein-Dor et al., 2010; Doron, Mikulincer, Solomon, & Shaver, 2010; et al.; Fonagy & Target). The child may have been seeking emotional proximity with their parent during time of stress or anxiety (Aber & Allen, 1987; Alexander, 1992; Allen, Hauser, & Borman-Spurrell, 1996; Belsky, 1997; Liberman, 2011; Mikulincer et al., 2003; Mikulincer et al., 2001; Morton, & Browne, 1998; van-Ijzendoorn, 1995). Physical and/or psychological threats may have created a need by the individual to seek the primary security figure (Aber, & Allen; Alexander; Morton, & Browne, 2005; Liberman; Mikulincer et al.; Mikulincer et al.). The individual may have used internalized representations of the parent figures or may have sought the support of others to maintain psychological or actual proximity (Aber & Allen; Alexander; Morton & Browne; Liberman; Mikulincer et al.; Mikulincer et al.). Research reveals that thoughts are geared to seek proximity to internalized secure parental figures in times of minimally threatening situations (Mikulincer et al.; Mikulincer et al.). Accordingly, the child may have experienced hyperarousal, subjective anxiety, and impaired attention and

concentration (Cook et al., 2005; Cuffe, McCullough, & Pumariega, 1994; Fonagy & Target, 2001; Kinniburgh et al., 2005).

The display of Affective Expressions may be interpreted as symptoms of ADHD to the untrained person. Teacher, school administrator and others in roles of authority may misinterpret the behavior as inappropriate or impulsive. The behavior of the individual who may have been startled may be interpreted as not paying attention or poor concentration and impulsive behavior when the child may be seeking emotional proximity to the secure figure in the parent child relationship (Appleyard & Osofsky, 2003). The younger the child the more influence parental behavior had with the child during the developmental years which may have resulted in deficits and social skills and faculty responses to challenges (Appleyard & Osofsky, 2003).

Children of parents with symptoms of PTSD may be aware of the difficulty that their parent is experiencing, the other partner the non-PTSD partner may be the balance for the child. The child may also be reacting to parent's behavior and with their parent the emotional reaction and how we express of affect may be the normal for that family. The child may not use the same behavior with others that they use with parents knowing that the behavior is not acceptable or appropriate. The child may also realize via their friends and environmental influence that their parent reactions and situation are not right for them. This insight may be the catalyst for the child to behavior in a manner that is different from the parent with symptoms of PTSD. The parent may beware of their symptoms of PTSD and has altered their parenting to increase the positive behavioral

modeling. There are endless possibilities that one can speculate which opens for additional research.

Children may over react in situation due to lack of control of Affective Expression, which also affects communication. Emotions are based on past experiences, utilizing past experiences to assist in coping with present situations (Ein-Dor et al., 2010; Lifford et al., 2008; Mikulincer et al., 2003). Accessing painful memories the individual exhibits automatic negative emotions (Ein-Dor et al.; Lifford et al.; Mikulincer et al). Children may not be able to fully understand the present danger or might overemphasize perceived danger in situations which are not dangerous (Dwivedi, 2000; Scheeringa, & Zeanah, 2001).

The results of this phenomenon may affect the child's education and life in general. The child may be view as uncooperative, defiant, hostile toward authority figures, and viewed as being impulsive all due to affective expression. The child may also be viewed as having poor attention and poor concentration due to his responses coupled with his delivery of his verbal reply. The child may be neither of the above, he may be startled or mimicking his parent affective expression. Regardless, is it a stretch to conclude, frequently individuals may be referred by teachers and others due to symptoms ADHD?

## **Implications**

### **Implications for Practice**

One implication for practice is the need for additional research to determine if these findings are replicated with other demo-graphic populations. Similar studies using the variables have been limited. Based on this study it appears that affective expression is affected, thus affecting communication in children with symptoms of ADHD whose parents have symptoms of PTSD.

The second implication would be the need to use the FAM-III (Skinner et al., 1983) with equal participants with and without PTSD. This may reveal additional information regarding similarities and differences in the behavior of their children who have symptoms of ADHD. The psychological health of the parents may be reflected in the psychological health of their children.

The third implication of practice may be pre- and post-evaluation of treatment of parent and their children. Administrations of a pre-evaluation of parents who present for treatment of PTSD who have children who have symptoms of ADHD, following treatment, administer a post-evaluation by the use of FAM-III (Skinner et al, 1983). The use of CBCL with the child pre and post may produce more revealing results.

### **Implications for Research**

Several suggestions for future research have become apparent following the implications from this research project. Future research could use a similar research design utilizing both parents to complete the TSI-2 (Briere, 2011), FAM-III (Skinner et al., 1983), and only one parent completing the CBCL (Achenbach & Edelbrock, 1981). Using both parents may offer additional insight and results may be affected.

Research in the future may look at Parents with symptoms PTSD and how symptoms of PTSD affect attachment with their children. This may assist in explaining the high percentage of children with ADHD and parents with symptoms of PTSD. This study revealed that parent's with symptoms of PTSD rate was 72.72%, all children in this displayed symptoms of ADHD per CBCL (Achenbach & Edelbrock, 1981).

Research in the future may look at parent's with treatment and without treatment to gain understanding how parents with symptoms of PTSD affect their children with symptoms of ADHD. This study revealed no parent participating in this study had been in or are currently participating in treatment for symptoms of PTSD. The development of coping strategies would appear to have an influence in the family coping with a parent with symptoms of PTSD.

### **Recommendations**

Two recommendations are made based on the findings of this study. First, a psycho-social assessment, at the time of clinical admission, needs to include the history of the parent as well as the child. The clinician may be able to better understand and provide treatment to the individual with additional insight into behavior through the use of a complete psycho-social history of not just the individual but by including the family's psycho-social history.

The second recommendation is based on treatment. Individuals would benefit from increasing their knowledge of how PTSD affects not only the individual but the affects with children and other family members. The increased education of PTSD and

affects with family may allow the clinician to education school administrators, teachers and school personnel including school counselors and school psychologist to provide for the psychological needs of the individual. Frequently individual with the above stated behavior are referred to mental health professionals due to symptoms of ADHD, thus the individual and family are faced with dealing with a label that may not be descriptive of the individual. Family therapy is viewed as the primary treatment of the child who has referred to treatment for symptoms of ADHD. The use of family therapy will allow the trained therapist to identify the behavior exhibited when displaying affective expression as well as identification of the model for the child in expression of affect.

### **Chapter Summary**

PTSD is a disorder that does not affect only the individual it affects the entire family. Although, the symptoms do not translate from parents with symptoms of PTSD to their children who have symptoms of ADHD, Affective Expression does not a strong correlation with parents who have symptoms of PTSD. Affective Expression has many unspoken ramifications. How we express our feelings, verbally and non-verbal expression describes us as individuals. This expression may be confusing to others as well to the treatment professional.

Additional research as well as education is important in the treatment of any disorder especially a disorder that does not only affect the individual but the family. The continuous label of a child with a negative label has an affect on anyone. The reduction of labeling has only positive benefits for all. Individuals may be subjected negative

inferences by teacher and school administrators who are responsible for management of classroom behavior. The understanding of how the individual expresses their feelings and the motivation for that expression would only benefit all concerns as well as assisting in referral and treatment of the individual.

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## **APPENDIX A**

### **IRB LETTER PERMISSION TO COLLECT DATA**

Dear Donald,

We are pleased to inform you that your above study has been approved by the Liberty IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases are attached to your approval email.

Your IRB-approved, stamped consent form is also attached. This form should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document should be made available without alteration.

Please retain this letter for your records. Also, if you are conducting research as part of the requirements for a master's thesis or doctoral dissertation, this approval letter should be included as an appendix to your completed thesis or dissertation.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

Fernando Garzon, Psy.D.  
Professor, IRB Chair  
Counseling

(434) 592-4054

## **APPENDIX B**

### **LETTER TO PARTICIPANT**

Address

Dear

As a graduate student in the Counseling Department at Liberty University, I am conducting research as part of the requirements for a Doctor of Philosophy in Counseling. I am conducting research to better understand a phenomenon of the relationship of Transgenerational Transmission and the relationship between parents with symptoms Post-Traumatic Stress Disorder and Attention Deficit Hyperactivity Disorder symptoms in children. The purpose of my research is to gain an understanding of how parents with symptoms of Post-traumatic Stress Disorder affect their children with Attention Deficit Hyperactivity Disorder.

Your therapist has referred you to this researcher to invite you as a possible participant in the research that I am conducting. Your child will need to meet the criteria as measured by the Child Behavior Checklist for Attention Deficit Disorder and your child must be between the ages of 10-16. Your identity and the identity of your child will be confidential. Collected data will be coded with this researcher having the coded information.

If you would like to participate in this study, you will be asked to complete the Child Behavior Checklist; if your child meets the criteria for symptoms of Attention Deficit Hyperactivity Disorder then you will be requested to complete the Trauma Symptom

Inventory-2 (TSI-2) as well as the Family Assessment Measurement-III (FAM-III). The TSI-2 is a measurement of trauma related symptoms and behaviors. The FAM-III consists of three scales, general scales, dyadic scales, and self-rating scales. You will be asked to complete a set of scales for you as well as your child. The time to complete the questionnaire is as follows: Child Behavior Participation 15-30 minutes, TSI-2 20-30 minutes and the FAM-III 30-40 minutes, total time is 65-140 minutes.

A signed consent form is required for your participation prior to your agreement to participate. If you would like to participate, please let your therapist know, they will contact me with this information. If you have any questions please ask your therapist or contact me at the following 1-828-773-4207. I will be available either in person or telephone to address any questions or concerns. The consent to participate form contains additional information that may address your concerns.

## **APPENDIX C**

### **INFORMED CONSENT FORM**

The Relationship between Post-Traumatic Stress Disorder and Transgenerational  
Transmission in the Development of Attention Deficit Hyperactivity Disorder in Children

Dissertation Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

Counseling

BY

Donald D. Company

Liberty University

Doctor of Philosophy Counseling

You are invited to participate in a research study concerning Parental  
Posttraumatic Stress Disorder (PTSD) and the effect on children who have symptoms of  
Attention Deficit Hyperactivity Disorder (ADHD). We ask that you read this form and  
ask any questions you may have before agreeing to be in the study.

This study is being conducted by Donald D. Company, MA.Ed., LPC, NCC,  
Department of Counseling, Liberty University, in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy in Counseling.

**Background Information:**

The purpose of this study is to gain an understanding of how parental PTSD may affect their children's behavior? How does living with parent/parents who have developed PTSD affect their child/children's behavior? Can ADHD like symptoms in children be predicted based on parent's behavior and how their parents respond to stress situations? This study will help identify behaviors that mimic behavior associated with ADHD.

**Procedures:**

The participants' will be protected by signing the informed consent. If you participate in this research study your identity will be protected; every aspect of your participation is confidential. The questionnaires completed will be assigned a code that only this researcher will have access. On a separate form will be identity of the participants and their coded questionnaire. No information will be released without the written consent of the participant informing the researcher of the information to be released, to whom the information is to be released, and the purpose of the release of information.

If you agree to be in this study, you will be ask to do the following things:

- 1: complete the informed consent form.
- 2: Complete the Child Behavior Checklist (ages 6-18) (this form ask questions about your child).
- 3: Complete the Trauma Symptom Inventory- 2 (this is to be completed by you, asking questions about yourself). If you qualify for this study based on results of

the TSI-2 for this research study you will then be contacted to complete an additional three (3) questionnaires' concerning you and your child/children. If you do not meet the criteria for this study you will be contacted by the researcher with the results of the TSI-2. 3:

4: Complete the Family Assessment Questionnaire-III (identifying you as the person for whom the questionnaire is addressing).

5: Complete the Family Assessment Questionnaire-III (identifying your child as the person for whom the questionnaire is addressing).

The total time to complete the first questionnaire takes between 15-30 minutes. If the results of the TSI-2 meet the criteria for this research study you will be ask to complete three (3) additional questionnaires which may take 60-90 minutes. If the result of the TSI-2 questionnaire rules you of for this study you will be notified with the results and this will complete your participation in this research. This will be the only time your will ask to participate until the results of the research has been completed. You will have the options of meeting with the researcher once the results have been obtained to review the results. Following your review of the results you will be ask if you desire a referral to a licensed professional in the field of human services for treatment or if you would like the results to be released to your current treatment professional.

### **Risk and Benefits of being in the Study**

All research may have risk. The following are identified as possible risk.

1: The primary risk involved in this research study is memory of past events may resurface thus compromising your coping with the events which have you have or had difficulty coping.

2: Your child's behavior may be identified as Attention Deficit Hyperactivity Disorder, you may need assistance in locating a licensed professional to assist you with your child's behavior. Referral to a licensed professional to treat your child will be provided by this researcher without any charge to the individual participating in this study.

**Benefits:** The following are possible benefits from participating in this study.

1: You may gain a better understanding of your parenting style.

2: You may gain understanding into your child's behavior and how your behavior affects your child's behavior.

3: If you or your child would benefit from professional services (therapy) as a result of the results of your participation then free referral services are offered to all who participate in this research study.

### **Injury or Illness**

This researcher, New Directions Counseling Services, and/or Liberty University will not provide medical treatment or financial compensation if you are injured or become ill as a result of participating in this research project. This does not waive any of your legal rights nor release claim you may have based on negligence.

**Compensation:** You will NOT receive payment for your participation in this research study.

**Confidentiality:** The records of this study will be kept private. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely and only researchers will have access to the records. This researcher will have access to the identity of participants. All questionnaires will be coded, participant's name will be on a separate record with the codes for each participant. If the participants desire to release the information to a person of their choice then a release of information will be required stating what information is to be released, to whom and the purpose of the release of information.

**Voluntary Nature of the Study:**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University, New Directions Counseling Services or this researcher. If you decide to participate, you are free to not answer questions or withdraw at any time without affecting those relationships.

**Contact and Questions:**

The researcher conducting this study is: Donald D. Company. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him

at New Directions Counseling Services, Lenoir, NC, or call him 1(828)-733-4207 or e-mail him at [campanyd@gmail.com](mailto:campanyd@gmail.com). You have also contact Dr. John C. Thomas at Liberty University by e-mail [jcthomas@liberty.edu](mailto:jcthomas@liberty.edu).

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact Human Subject office, 1971 University Blvd., Suite 2400, Lynchburg, VA 24502 or email at [irb@liberty.edu](mailto:irb@liberty.edu).

**You will be given a copy of this information to keep for your records.**

**Statement of Consent:**

I have read the above information. I have asked questions and have received answers. I consent to participate in this study.

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Signature of parent/guardian:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Signature of Investigator:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Participants Name: \_\_\_\_\_ Research Id. No: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

**APPENDIX D**

**Authorization to Release Information**

I authorize Donald D. Campany MA.ED., LPC, NCC to release the above individual's information as described below.

Name of person/agency to release information to information is to be:

---

---

Address: \_\_\_\_\_

City/ State: \_\_\_\_\_

**Please initial each type of information to be released**

\_\_\_\_\_ Results of CBCL

\_\_\_\_\_ Results of TSI-2

\_\_\_\_\_ Results of FAMIII

I understand this information will be used for the following: treatment use, coordination of services and/or assessment purposes.

I understand that I have the right to revoke this authorization at any time. I understand that if I revoke this authorization I must do so in writing and present my written revocation to Donald D. Campany address. However, my revocation will not effect prior information to release this information prior to the fact.

This authorization will expire: \_\_\_\_\_

\_\_\_\_\_  
**Signature of client or legal Representative**

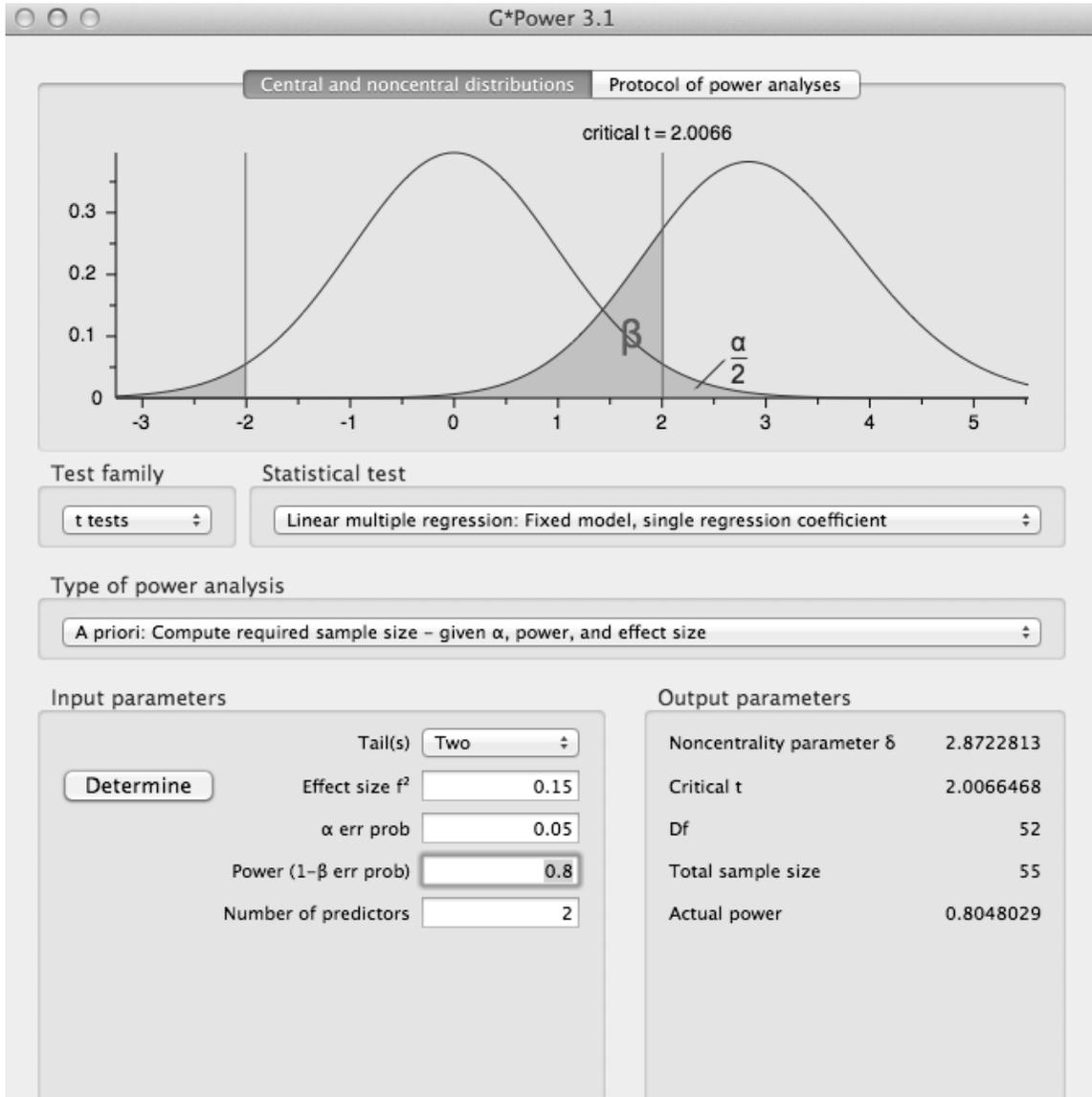
\_\_\_\_\_  
**DATE**

\_\_\_\_\_  
**WITNESS**

\_\_\_\_\_  
**date**

## APPENDIX E

### G\*Power Calculation of Minimum Sample Size



## **APPENDIX F**

### **VITA**

Donald D. Campany was born in Lumberton, NC. He attended elementary and high school in Wilmington, NC, and graduated from New Hanover High School in June 1968. In the fall of 1968 he entered Southeastern Community College. He entered the US Army in February of 1971, and was Honorably Discharged in 1972 following in service in Republic of South Vietnam. He entered Piedmont College in the fall of 1972 and was awarded the Bachelor of Arts, in Psychology. In the fall of 1977, he entered Western Carolina University; in 1979 he was awarded a Master of Arts in Education in Counseling. He was earned the distinction of License of Professional Counselor in North Carolina in November 1998. In the spring semester of 2005, he entered Liberty University, and in April 2015 he was awarded the Doctor of Philosophy in Professional Counseling.

Dr. Campany has been a therapist/counselor and Director of drug abuse in Savannah, GA, and a behavioral specialist in Rome, GA. He was employed in Jacksonville, FA as a consultant to the state of Florida serving children and adolescents who were to be placed outside of the home. Dr. Campany has also worked in North Carolina as a program administrator in Shelby, NC and as Clinical Director in West Jefferson. He started a Independent Practice in 1998 which remains operational, and has served as a subcontractor for independent businesses. He serviced as the primary therapist/counselor for Hospice and Palliative Care in Caldwell County, NC.

Dr. Company is National Board Certified Counselor, A Licensed Professional Counselor and a member of the Adlerian Society of SC. His parents are the late C.W. Company of Lowville, NY and S. Company of Wilmington, NC. He is married to Kay H. Company, Ed.D., and they have a son, Courtney, and a daughter, Stacy, and a grandson, Robert. He and Kay have resided in Boone, NC since 1988.