

PARENTING PERSPECTIVES ON FAMILY
ADAPTATION TO ADHD: EFFECTS OF
FAMILY STYLE, COPING, AND
STRESS ON CHILD OUTCOMES
FIVE YEARS LATER

By

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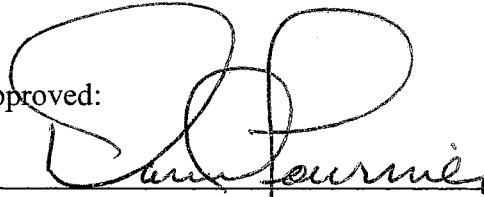
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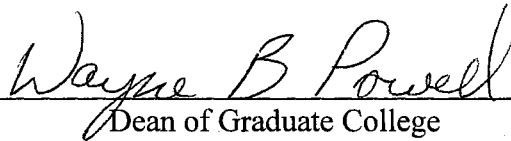
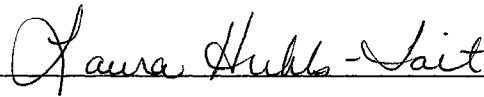
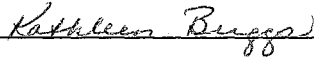
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CHAPTER ONE

INTRODUCTION

Parenting, one of civilization's oldest roles, is a tremendous responsibility. Virginia Satir (1972) describes parents as "people-makers." While an almost universal experience, either as a parent or certainly as one who had parents, it remains a role that eludes mastery. Both the lay and professional literature, in many disciplines, have given parenting widespread attention. It seems that an inherent feature of parenting is some degree of stress. The responsibilities and challenges involved in the care and guidance of children can be overwhelming at times. The study of parenting stress is often focused on transitions or extraordinary events or crises. However, there is also 'everyday' stress associated with parenting. In families where one or more of the children have behavioral, learning, and social challenges beyond the norm, the stress can be even greater. It is generally accepted that parents of children with Attention Deficit Hyperactivity Disorder (ADHD), or Attention Deficit Disorder (ADD), are faced with an exceptional amount of parenting stress.

Attention Deficit Hyperactivity Disorder (ADHD) is the most common child psychiatric disorder, accounting for at least half of all referrals to child guidance clinics and mental health professionals (Taylor, 1994). Between 5 to 10% of all children in the United States are afflicted with this syndrome. Barkley (1995) estimates that ADHD

affects 3.5 million children in the United States, and persists into adulthood in over half of these. It has been reported that between 5% and 10% of all elementary-school children receive the most common medication for treating ADHD, Ritalin. Recent studies have found that about 80% of those diagnosed with ADHD as children still met the diagnostic criteria at age 15, and over half still did into adulthood (Barkley, DuPaul, & McMurray, 1990; Barkley, 1995). One of the largest studies, conducted in Ontario, surveyed an entire province and found that 10.1% of males, 4 -11 years old, were diagnosable with ADHD (Szatmari, Offord, & Boyle, 1989).

ADHD is a disorder which affects children and adults, often in a significant and debilitating manner. The essential feature of ADHD is a “persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development” (American Psychological Association, 1994, p.78). By definition ADHD is chronic, meaning lifelong, and pervasive, meaning it is present in all aspects of the person’s daily life. There is general agreement throughout the literature that children with ADHD suffer from problems in social and family relations, learning and cognition, as well as psychological development.

Attention can be thought of as an ability of the brain to focus on what is relevant and to “sort” incoming information appropriately. Inattentiveness includes problems with: getting started on a task (procrastinating and poor time estimation), sustaining concentration, effort and motivation to complete a task, resisting distraction by irrelevant stimuli, making transitions, and poor organizational skills. Distractibility, an inability to filter out unnecessary or irrelevant stimuli, is frequently and closely related to attentional difficulties. The ADHD child is essentially bombarded and overwhelmed with stimuli

that non-ADHD individuals are able to ignore. This problem not only compounds the difficulties with paying attention but may lead to impulsivity. The impulsive behaviors reflect the cognitive overload which accompanies the inability to filter out the irrelevant from the important information (Barkley, 1995). As a result, everything the individual hears, sees, feels, or thinks is perceived as being equally important; thus, the ADHD child impulsively jumps from one thing to the next without considering the consequences. Common impulsive behaviors include: blurting out answers, extreme difficulty waiting in line, acting or speaking before thinking, impatience, little social tact, poor anger control, low frustration tolerance, excessive risk taking behavior, as well as excessive talking and movement.

ADHD children can be especially challenging to rear. When young, they experience all the normal struggles and problems of childhood, often, to an exaggerated degree. Taylor (1994) lists and categorizes the most common characteristics seen in children with ADHD as follows:

1. Mental Difficulties: distractibility, confusion, faulty abstract thinking, inflexibility, poor verbal skills, aimlessness, perceptual difficulties, and inattentiveness to body states.
2. Physical Difficulties: constant movement, variable rates of development, food cravings (i.e. sweets or cheeses), allergies and sensitivities, sleep problems, or coordination problems.
3. Emotional Difficulties: self-centeredness, impatience, recklessness, extreme emotionalism, weak conscience.

It is important to note that these behaviors are all on a spectrum and vary in intensity,

from extreme to non-existent, in any given individual.

Hyperactivity poses severe stresses on a marriage in many different ways. A wide variety of problems, misbehavior, and a general state of chaos can be relentless and overwhelming. Intense sibling rivalry is the norm. ADHD children are also more accident prone and more likely to be seriously injured than the normal pediatric population (Barkley, 1990). Older children with ADHD often develop additional emotional and behavioral problems that produce defiance, aggression, depression, and anxiety. Between ages 7 and 10, 30 to 50% are likely to develop symptoms of conduct disorder or antisocial personality disorder, with behavior problems such as lying, stealing, fighting, and truancy (Barkley, 1995). As adolescents, they continue to struggle. About 30% have either developed a conduct disorder, substance abuse problem, or have dropped out of school. Those who are in school often have low academic achievement in math, reading, and spelling, and about 58% have failed or skipped one grade. Researchers have also found ADHD adolescents to be at somewhat higher than normal risk for alcohol use (Barkley, 1990). Unfortunately, for many, the problems do not vanish even in adulthood. Some of the symptoms, however, may change over time, depending in part on the individual's ability to compensate for the challenges of ADHD.

An additional challenge for parents is the lack of clarity in the information available regarding the disorder. Inconsistent facts and advice from professionals, in addition to sensationalized popular media coverage, only add to the problem (Taylor, 1994). These facts illustrate the compelling need to study, understand, and find treatment for those afflicted.

The diagnosis of ADHD encompasses a large spectrum of behaviors such that any

one individual with ADHD may not display all the same symptoms that another does. Because the symptoms of ADHD are relatively non-specific, differential diagnosis is problematic due to the possibility of overlap with other disorders (Kelly & Aylward, 1992). The primary symptoms of a child with ADHD include: (a) distractability, or short attention span (inattentiveness), (b) impulsivity, especially within a group setting, and (c) hyperactivity. Current diagnostic practices use the presence or absence of hyperactivity to divide those with Attention Deficit Disorders into two groups: the Inattentive type and the Hyperactive-Impulsive type. According to the Diagnostic and Statistics Manual of Mental Disorders, third edition, revised (DSM-III-R) and the fourth edition (DSM-IV), in order to meet the diagnostic criteria, the child must exhibit the onset of the symptoms for at least a six month period before the age of seven (American Psychiatric Association, 1987). They must also exhibit these symptoms in a variety of different contexts.

The cause of ADHD remains inconclusive and controversial. Though total understanding is illusive, research has established an organic, biochemical basis for the disorder. Though research continues in many areas, the most consistent evidence points toward probable genetic influences upon the development and function of the central nervous system, specifically the monoaminergic mechanisms involving dopamine and norepinephrine storage and release (Barkley, 1995). It is generally accepted that no strong evidence exists to support dietary factors as being causative of ADHD. Additionally, there is no evidence that social factors such as poor parenting or teaching cause ADHD either. These social, environmental, and dietary factors, however, increase the intensity of the symptoms for some people with this disorder. The current theory regarding children with ADHD is that they have either a deficiency of a specific neurotransmitter, or that the

neurotransmitters they produce are not as effective as in other individuals. The theory behind the use of stimulant medication is to improve the efficiency of neurotransmitter functioning thus allowing the person a better chance to pay attention (Barkley, 1995).

The prognosis, or long term outcome, for those with ADHD has been reported in the literature for decades, but few studies have controlled for other diagnoses. For this reason the clinical outcome is not generally an optimistic one. Researchers and clinicians agree that outcome is dependent on many interrelated factors, and there is no simple way to predict the outcome (any more than there is a way to predict the outcome of anyone in childhood). Only a few more invested research groups and authors have identified the various strengths and assets that often are characteristic of those with ADHD. As with other issues involving people and their behavior, there is a wide diversity of outcomes in a person's life, from unspeakable depths to exalted heights.

Problem Statement

Attention Deficit Hyperactivity Disorder (ADHD) has been studied extensively in recent years on the individual level. These investigations have focused on such topics as the symptoms, diagnosis, confounding factors, comorbid conditions, management, and treatment of the child. In a recent review of childhood adjustment, Lavigne and Faier-Routman (1993) encouraged the inclusion of child, family/parent, social, and medical factors. They concluded that much attention has been paid to the severity of disorders, but a need exists for more information on the parent/family, life stress, and child variables because these have proven to be the most helpful in understanding and predicting child adjustment. Therefore, they suggested more direct examination of the role of coping and

self-concept as intervening variables which affect the child's adjustment.

Recently, the presence of ADHD or ADD in adulthood has been affirmed (Barkley et al., 1990; Barkley, 1995; Taylor, 1994; Wender, 1987). This new dimension has renewed the interest in this common disorder and the role of the family has emerged as a more essential component of a meaningful understanding of this condition. Research has investigated the effects of ADHD on parental attitudes, parental satisfaction and depression, discipline style, parent-child relationships, marital stress, and family conflicts (Barkley, 1995; Brown & Pacini, 1989; Donenberg & Baker, 1993). Contemporary research is clear that ADHD impacts the family in various ways.

Exciting possibilities exist for increasing the understanding of ADHD and ADD through better understanding of the family dynamics involved. Gaps exist in the current understanding of this disorder, raising questions such as:

1. Is there a 'type' of ADHD family?
2. Are certain family characteristics associated with outcomes for the child?
3. Are there coping skills or family styles which enhance adjustment to ADHD?
4. Is the family trajectory always downward? Do the hyperactive child's difficulties and the family's problems work synergistically to create a deteriorating family situation, as Hechtman (1981) proposed?

What remains unclear in the literature is the process of how families with ADHD adjust to the challenges. More information is needed about the effective interventions and family responses to ADHD. It is unclear what the correlation is between the functioning of the ADHD child and the characteristics of the family. The impact ADHD has on the family unit over time also remains unclear. This information is critical to the individuals,

families, and clinicians involved in working with ADHD. The answers to these questions may reveal key principles to the successful adjustment and eventual outcome of those affected by this disorder.

Purpose

This project is intended to gain insight into how a child's ADHD interacts with the family unit as perceived by parents. It is assumed that parents who have spent years working with this disorder have a wealth of knowledge and wisdom available, and that others could profit from their experience. Therefore, parents will be asked to provide insights into both parenting and coping strategies that worked for them and their family.

Another intention of this project is to understand the factors which effect the outcomes of ADHD children and their families. To date, few attempts have been made to correlate the functioning of the ADHD child with the characteristics of the family. Neither has there been any investigation of the impact ADHD has on the family unit over time. Few studies in ADHD have attempted to use a longitudinal perspective to isolate family coping characteristics and the ADHD child's outcome. Wender (1995) adds that even in the longitudinal studies that have been conducted, there is a failure to distinguish between ADHD and other related disorders. As a result, these studies only tell us about the mixed syndromes and not about "pure" ADHD and its course. This type of inquiry requires a sample of ADHD children and their parents which can be observed over time. Some of the specific research questions include:

1. Over time, how has the ADHD family changed?
2. Which family variables correlate with child outcomes?

3. Are there family characteristics which correlate to better coping and adjustment for the individual and the family?
4. Are there coping skills and family styles which enhance adjustment to ADHD?
5. In what ways do families with ADHD change their levels of adaptability and cohesion in response to the stress of ADHD?
6. Does ADHD impact the family style? (i.e. does it push the family in any direction on the Circumplex Model of Marital and Family Systems)
7. Behaviorally and clinically, how are ADHD youth functioning five years later?
8. Which treatments do the parents report as helpful in accommodating and coping with the stresses of raising an ADHD child?

Theoretical Models

Family Systems Theory

The family systems perspective will provide the broad conceptual framework to aid in the understanding of the ADHD family. This is most appropriate when the goal is to investigate family dynamics and to understand the reciprocal influences of parts (individuals) or wholes (family), in the context of time. Patterson (1991) concluded that the influence of a child's disability on the functioning of the family, and the influence of the family system on the course of the child's disability mutually impact each other.

Patterson (1983) refers to the 'mutuality of effects,' using the following example (see

Appendix A). A child's aggressiveness (often associated with ADHD) "defines a system, by providing reactions maintaining these behaviors. By the same token, the aggressive child is a master at eliciting the very reactions that will extend and maintain his aggressive initiations" (p. 236). The dialectic notion of being connected and yet simultaneously separate is systemic. This paradoxical task is at the core of growth and development for both individuals and families. Patterson (1991) refers to the family systems approach as 'an optimal model' for working with youth who have disabilities.

Family Stress Theory

Family stress theory will be utilized as a model for understanding the process by which a family adapts to living with ADHD. According to family stress theory, individual and family adaptation is influenced, in part, by the combination of stressors which occur and the perception of the situation (Hill, 1949). Reuben Hill (1958) depicted this relationship in the ABCX Model (see Appendix B). In this model the extent to which families and their members experience "crisis" (x factor) resulting from family stress depends upon a combination of the stressor event (a factor); the social, psychological, and financial resources of the family (b factor); and the definition attributed to the situation by the family (c factor). Crisis is defined as disorganization and change in the family unit resulting from a demand-capability imbalance (McCubbin & Patterson, 1983a).

McCubbin and Patterson (1981, 1983b) noted that Hill's ABCX Model (1958) only addressed the short-term disruption a family experiences based upon the stressor event. They proposed that the level of family adaptation could be more adequately understood by following the family processes even after the initial family response to stressor events.

Therefore, McCubbin and Patterson (1983b) developed the Double ABCX Model by adding a post-crisis component to the original ABCX Model. This expanded model examines both the pre-crisis and post-crisis family dynamics which occur in response to the stressor (see Appendix C). The post-crisis component adds the pile-up of stressors (aA factor), existing and new resources (bB factor), family definition and meaning (cC factor), and adaptation (xX factor). Thus, families experiencing crisis will enter the Double ABCX Model in the pre-crisis stage and exit the model at post-crisis adaptation.

According to McCubbin and Patterson (1983a), adaptation is the central focus in the Double ABCX Model. The concept of adaptation refers to the outcome of the family's efforts to achieve a new level of balance and fit at both the individual-to-family and the family-to-community levels of functioning. The initiation of change in the family system in response to the crisis marks the beginning of family adaptation. The family unit may restore stability at a lower level of family functioning, at a previous level of family functioning, or at a higher level of family functioning (McCubbin & Patterson, 1983a). Hence, adaptation falls on a continuum ranging from bonadaptation to maladaptation. The level of post-crisis adaptation is related to the combination of factors in the Double ABCX Model.

A stressor is defined as an expected or unexpected life event that produces, or has the potential to produce, alterations in the family system (McCubbin & Patterson, 1982). Individuals and families vary in their ability to adapt to a stressor according to their available resources, perception, and the type of stressor (McCubbin & Patterson, 1983b). Stressors can be inside or outside of the family system, extend to part or all of the family members, emerge gradually or suddenly, be intense or mild, be short-term or long-term,

be expected or unexpected, or be perceived as solvable or uncontrollable.

Normative transitions refer to events that occur to most families, and result in changes in role expectations and interaction rules (McCubbin & Patterson, 1983a). These transitions are expected at certain points in the family life cycle, and are generally short-term. Examples of normative stressors may include marriage, parenthood, birth of a child, adolescence, and divorce. Individuals and families are rarely confronted with a solitary stressor. Instead, they experience multiple demands on the family unit which are referred to as the 'pile-up of stressors' (McCubbin & Patterson, 1983a). Pile-up includes the strains and stressors which emerge from the efforts of the individual and family to cope in the crisis situation. For example, detrimental coping strategies such as ventilating feelings and avoiding problems have the potential to contribute to the pile-up of stressors (Carson, 1995).

In addition to the stressor and the pile-up, the individual and family have resources which contribute to the type of adaptation experienced. McCubbin and Patterson (1983b) refer to family adaptive resources as the individual's and family's capabilities to fulfill the emerging demands of the crisis. Three types of resources relate to adaptation: the personal resources of individual family members, the internal resources of the family system, and the external social supports. Examples of personal resources include financial status, educational level, emotional and physical health, intelligence, problem-solving skills, and psychological resources (e.g. self-esteem, personality characteristics, mastery). Internal resources of the family systems could include family cohesion, family adaptability, family harmony, and a supportive family environment (McCubbin & Patterson, 1983b; Olson, Sprenkle, & Russell, 1979). Social supports include the

professional and personal relationships in a social network, such as: neighbors, self-help groups, extended kin, clergy, and professionals in education and mental health (McCubbin & Patterson, 1983b). Collectively these resources play an integral role in the family's ability to adjust to the crisis and emerge well-adjusted. Individuals and families which perceive sufficient resources are less likely to perceive a crisis as problematic.

According to family stress theory, perception may be the most important factor in understanding adaptation to stress (Hill, 1958). The definition of the situation is derived from the perception of the crisis, in the context of the pile-up of stressors, and the available resources (McCubbin & Patterson, 1983b). In the midst of crisis, the individual and family are challenged to give new meaning to their situation. When an individual or family is able to define a stressful situation in a way which helps them see the possibility of making beneficial changes, they are more likely to experience bonadaptation.

The concept of coping is comprised of the interaction between the individual and family resources and the definition of the situation (Patterson & McCubbin, 1987). Coping is defined as the behaviors, strategies, and patterns which utilize perceived resources in an effort to adapt to the demands of the situation (McCubbin & McCubbin, 1991). Coping refers to the family's strategies, patterns, and behaviors designed to maintain the stability and well-being of the family members. This includes both the family's internal efforts and the utilization of external and community resources to manage the situation (Deardorff, 1992). Therefore, adaptation is dependent upon the initial stressor, the pile-up of stressors, and the coping strategies perceived by the individual.

Circumplex Model

The Circumplex Model will be used to conceptualize the family's functioning (see Appendix D). Measures on the family's levels of adaptability and cohesion, taken from FACES-III, will be used to compare ADHD families across a variety of dimensions. Olson et al. (1979) devised the circumplex model to examine the relationship of the two key factors of family functioning, adaptability and cohesion. The four levels of adaptability are: 1) rigid, 2) structured, 3) flexible, and 4) chaotic. The four levels of cohesion are: 1) disengaged, 2) separated, 3) connected, and 4) enmeshed. In this model a family's adaptability and cohesion scores allow the family to be located on the circumplex matrix. There are three basic family subtypes: balanced, midrange and extreme. Optimal family functioning is usually associated with the balanced area. The families in the midrange, however, are ordinarily considered to experience adequate levels of functioning. Difficulties in functioning are often associated with extreme subtypes.

The Circumplex Model has been widely used to assess family functioning. For example, families with hyperactive and aggressive boys were found to be low in cohesion (McGee, Williams, & Silva, 1984). Lewis (1992) reported that families with extreme scores had children with more severe ADHD symptoms. In another study, Lewis-Abney (1993) found that families with older ADHD children reported poorer family functioning. A study by Brown and Pacini (1989) revealed that family structure was related to the quality of the interpersonal relationships, the level of individual achievement, and the level of intellectual aspiration. Extreme levels of adaptability and cohesion have been

linked to problem behaviors in the child. Nevertheless, many questions remain about family functioning when a child has ADHD.

Assumptions

Assumptions for this study were adopted from the systems perspective. Mash (1989) outlined some basic concepts or assumptions that are especially relevant for behaviorally based research and practice, including:

1. the view of child and family disorders as constellations of interrelated systems and subsystems;
2. the need to consider the entire family situation when assessing the impact of any single variable;
3. the idea that similar behaviors may be the result of different sets of initiating factors;
4. a recognition that intervention is likely to lead to multiple outcomes, including readjustment of relationships within the family system; and
5. the notion that family systems and subsystems possess dynamic properties and are constantly changing over time.

Conceptual Hypotheses

Family Profile

The child's behavior has been studied extensively, as have the individual characteristics or profile of the child. Few attempts have been made to identify the family

types and characteristics of families with ADHD children. It remains unclear what the family profile might look like for the ADHD family. It is anticipated that a pattern, or typical profile, will emerge as the characteristics of the ADHD families are compiled. The Circumplex Model will be used to evaluate and summarize the characteristics of the ADHD family and then to compare these findings with norms based on data from national samples. Because of the hyperactive and inattentive symptoms of ADHD, and the ensuing relational patterns, it was predicted that families with ADHD would be more chaotic on the Circumplex Model.

Developmental

Current understandings in family development suggests that parents are more structured in the early years and move in a more flexible direction as the children mature and become increasingly independent. That is, normal family patterns of development tend to move from low adaptability (set more rules) to greater flexibility over time (Olson & Lavee, 1991). For the ADHD family, however, the prediction is for the adaptability to start high and remain relatively high.

Child and Family Outcomes

Research with ADHD children and their families suggests that ADHD tends to generate chaos and more difficulties in regulating and directing behavior. Therefore, these parents are frequently required to administer more parenting interventions. Consequently, both parents and children report increased levels of stress (Breen & Barkley, 1989). Based on the previous research, it is predicted that families who access a variety of

treatment options will have better outcomes in child behavior and more balanced levels of family adaptability over time.

Parent Perspective

The general consensus of the current literature asserts that life in the ADHD family is more stressful for both parents and children (Brown & Pacini, 1989). Based on the Double ABCX model of family stress, over time parents will have increased resources, as well as new definitions of their situation which will lead to more successful adjustment to ADHD. Family systems theory also suggests that as time passes a family will evolve in both their definitions and their adaptive responses to the context. Minuchin (1974) indicated that stress often produces the need for change in the system. This stress could be produced by internal or external pressures in the family, usually by events such as new members in the family or developmental changes in the members (i.e. adolescence). Based on this, it is predicted that both parents and children will adjust to the stress of ADHD over time, and therefore will be more well-adjusted at follow-up.

Child Perspective

Much of the current literature regarding the ADHD child indicates that the self-esteem of the child is generally lower than average. Weiss and Hechtmen (1993) concluded that the consensus of follow-up studies reveals that ADHD children are characterized by low self-esteem. This is thought to be due in part to the constant failures, frustration, and rejection that the child has experienced. Taylor (1994), said, "Self-esteem is a key issue of paramount importance for personal change. Without a strong basic sense

of self-esteem, the child has no reason to care whether a behavior is desirable” (p. 161). The importance of self-esteem is well documented in normal development, and is no less significant in ADHD; therefore, it is considered an outcome variable. The child’s view of himself is especially relevant as another measure of adaptation to ADHD. The longitudinal nature of this variable also adds insight into how ADHD, the family, and time relate to the youth’s self-concept. It is predicted, therefore, that at follow-up the youth’s self-esteem will be improved but will still be below norms.

The importance of the information from this project is in its potential to enhance the clinical and educational resources for helping parents, families and children cope successfully with ADHD. The need for more understanding and for clear direction in intervention is apparent to most researchers and clinicians. “Although it has been written about more than any other pediatric disorder it remains grossly under-recognized, misdiagnosed and incorrectly managed” (Taylor, 1994, p. 2). This study advances the current understanding of how the family and the symptoms of ADHD impact each other. The obvious goal is to help families apply their resources and energies most effectively to produce the best outcomes possible for all involved with ADHD.

In order to investigate these questions, a follow-up study was conducted on twenty-five (25) ADHD boys and their families. Child and family data collected five years ago on the original sample will be compared to the current data. Due to the limited sample size and broad scope, the analyses will be limited to descriptive, correlational, and comparative statistics. The intention of this study to observe the relevant and yet unclear dynamics in ADHD families, looking for trends and clues which will give insight and provide a basis for further and more in-depth research.

Definitions

1. Adaptation - the outcome (final disposition) of the family's efforts to achieve a new state of balance after a crisis or stressor event (McCubbin & Patterson, 1983a).
2. Attention Deficit Hyperactivity Disorder (ADHD). - is a neurological disorder characterized by developmentally inappropriate degrees of inattention, impulsivity, and hyperactivity (American Psychiatric Association, 1987). Though the current label for this diagnosis has changed slightly (1994), for continuity of the follow-up study, the label of ADHD will continue to be utilized.
3. Coping - the behaviors, strategies, and patterns which utilize perceived resources in an effort to adapt to the demands of the situation and maintain family stability (Figley, 1989).
4. Family Adaptability - the ability of the system to respond to developmental or situational stressors with appropriate shifts in the power structure, relationship roles, and rules (Figley, 1989).
5. Family Cohesion - the level of emotional bonding that family members have toward one another (Olson et al., 1979).
6. Family stress - according to Figley (1989), is a state that arises from an actual or perceived imbalance between the demands or challenges and the family's capability to deal with the demand (with resources and skills).
7. Outcome - the eventual or resulting status of a person or a family at the end of a period of time (McCubbin & Patterson, 1983b).
8. Perception - how the family unit and individual family members define the situation

and their subjective evaluation of their ability to respond to the stressful situation (Figley, 1989).

9. Pile-up - the accrual of stressors, strains, and demands that the family experiences (McCubbin & Patterson, 1983a).
10. Reciprocal - the process of mutual impact that takes place between two or more interacting subsystems.
11. Resources - the internal and external adaptive resources which aid the family in meeting the demands of a crisis (McCubbin & Patterson, 1983a).
12. Self-esteem - the feelings and thoughts that one has about his/her sense of competence and value, about their abilities to meet challenges and succeed, about their aptitude to learn from success and failure, as well as the will to treat themselves and others with respect.
13. Stress - the state of physical or psychological strain that imposes demands for adjustment upon the individual (Figley, 1989).
14. Stressor - an expected or unexpected life event that produces, or has the potential to produce, alterations in the family system (McCubbin & Patterson, 1983a).

CHAPTER TWO

REVIEW OF LITERATURE

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) and Attention Deficit Disorder (ADD) are the most common child psychiatric disorders and account for at least half of all referrals to child guidance clinics. Between five and ten percent of all children in the United States are afflicted with this syndrome (Taylor, 1994). Some estimates are as high as twenty percent.

One of the largest studies, conducted in Ontario, surveyed an entire province (Szatmari, et al., 1989). The results showed that 10.1% of males 4 -11 years old and 3.4% of males 12-16 years old met the diagnostic criteria, while the number for females was only 3.3%. This demonstrates the significantly higher prevalence of ADHD in boys, two to three times that of girls. (This notion should be remembered when reviewing statistics on prevalence, taken separately, boys will have a much higher frequency than girls.) However, Aust (1994) asserts that girls are greatly underdiagnosed, possibly due to the less frequent occurrence of hyperactivity in girls. Barkley and his colleagues (1990), found that 83.3% of those diagnosed with ADHD as children still met the diagnostic

criteria at age 15, and over 50% continued to meet the criteria into adulthood.

This review of literature is the result of a comprehensive literature search which included computer searches from the last 15 years in a number of computer bases including: Psychological Literature and Abstracts, Dissertation Abstracts International, Social Sciences Citation Index, ERIC, Medline, CINAHL, and The Inventory of Marriage and Family Literature by the National Counsel on Family Relations (NCFR). In addition, the abstracts and bibliographies of relevant books and articles in print and on the internet were included in this search process.

This review of the literature is intended to provide both the necessary background for understanding the concepts and the rationale for this study of parenting in an ADHD family. Because the study is primarily descriptive in nature, looking for patterns in the families and the outcomes of children with ADHD, the review of literature summarizes the literature in the areas which are relevant to this study. The remainder of this review has been organized into three additional sections: individual level variables in ADHD research, family level variables in ADHD research, and methodological issues in the study of ADHD and the family.

Individual Level Variables in ADHD Research

Description of ADHD

ADHD is a condition which affects children and adults, often in a significant and debilitating manner. It is a lifelong disorder which affects all areas of the person's life.

ADHD is described as a constellation of symptoms that is present before the age of seven

years, persists for greater than six months, causes problems in two or more settings, and significantly interferes with various aspects of the child's life (Cantwell & Baker, 1992). There is general agreement throughout the literature that ADHD children suffer from problems in social and family relations, learning and cognition, as well as psychological development.

A childhood disorder by definition, ADHD is usually diagnosed between the ages of six and ten years old when the symptoms become more pronounced. The long-term nature of the disorder is clearly evident in recent research which has validated the experiences of many with ADHD as adolescents and adults. The disorder varies with the individual and changes over time, so the specific symptoms vary, while the core features remain. Research has shown the significant long-term consequences for those with ADHD, which include, poor social adjustment and relational difficulties, academic and low self-esteem, vocational underachievement (in spite of above average intelligence), and in some cases, delinquency, substance abuse, and criminal behavior.

The three core symptoms of ADHD are: inattention, impulsivity, and hyperactivity. Children with ADHD, characteristically, do not "look before they leap." They have great difficulty sitting still, frequently talk out of turn and interrupt, and are seen as fidgety and restless. These children have difficulty finishing tasks, following directions, focusing and sustaining their efforts (Amaya-Jackson, Mesco, McGough, & Cantwell, 1992).

Diagnosis is challenging because there is no external validating instrument which can be used to confirm the diagnosis. In addition, there are numerous medical factors which can cause distractibility, and imitate many of the other features of ADHD (Cohen, 1994). The diagnostic process is based on clinical observations in light of reports from

parents, the family history, and often feedback from the school. Neurological assessment and psychoeducational testing are often included in a thorough evaluation of the individual. The diagnosis of ADHD requires that there is no other obvious explanation for the symptoms; such as, intellectual deficits, thought disorders, or emotional disturbances, and that there are no family or environmental difficulties provoking the problems (Henker & Whalen, 1989).

Of those who have ADHD, 25% also have a learning disability, 40% have or develop either conduct disorder or oppositional defiant disorder, with more severe behavioral, relational, and emotional problems. Biederman and colleagues (1996) highlight the risk among children with ADHD to have other comorbid psychological conditions which affect the course and outcomes. It is also this point that makes it necessary for more refined research criteria which will sort those with comorbid conditions from those who have ADHD only in order to identify the course and outcomes of this population. Criteria are needed because most of the previous research has been on undifferentiated samples of ADHD subjects, many of whom we now understand have other disorders in addition to ADHD.

In a study where a very high percentage of those with mania also met the criteria for ADHD, the author's concluded that mania and its symptoms overlap with ADHD (Wozniak, Biederman, Kiely, Ablon, Farone, Mundy, & Mennin, 1995). This illustrates that a thorough assessment needs to be conducted to determine if these children have ADHD, or some other disorder, or both. In short, while much has been studied about the outcomes of ADHD in children there is still much to learn.

Historical Background

ADHD has been observed for more than a century and has had many different labels including: postencephalitic behavior disorder, organic drivenness, restlessness syndrome, minimal brain damage syndrome, minimal brain dysfunction (MBD), hyperkinetic reaction of childhood, hyperactivity, Attention Deficit Disorder (ADD), and Attention Deficit Hyperactivity Disorder (ADHD). Interestingly, over one hundred years ago psychologist William James took notice of this disorder and proposed that it was caused by a neurological deficiency, a proposal now supported by discoveries made possible through recently developed technology (Amaya-Jackson et al., 1992). Currently, there is a growing body of evidence to support the biological basis for this pervasive and chronic disorder (Zametkin et al., 1990; Shaywitz & Shaywitz, 1992).

Current Research: Issues, Variables and Findings

Self-Esteem

As far back as 1977, Campbell, Endman, and Bernfeld demonstrated that ADHD children as young as six to eight years old already could be shown to have lower self-esteem than normal children. Some have linked this trend to the increased likelihood that hyperactive children also were diagnosable as depressed. In his study of resilience in children, Brooks (1994) identified self-esteem as the most important internal-individual characteristic. Those who are resilient seem to be able to maintain a high level of self-esteem, a realistic sense of personal control, and a feeling of hope. Self-esteem can be

described as feelings and thoughts that one has about their sense of competence and worth about their abilities to make a difference, to meet challenges, to learn from success and failure, and to treat themselves and others with respect. Self-esteem develops in the dynamic interaction between the child's inborn temperament and the environmental forces that respond to the child (Brooks, 1991). Self-esteem is itself reciprocal; it guides action and the outcomes of those actions, which in turn, shape self-esteem (Brooks, 1992).

Hyperactive children generally have low self-esteem and are often as frustrated with themselves as are the others around them (Taylor, 1994). Low self-esteem takes many different forms in children and varies from situation to situation. While some children display low self-esteem when they do not feel successful, others feel a global and persistent sense of failure or worthlessness. Some lack confidence and hope which is evident in frequent comments like: "I'm stupid," "I mess everything up," or "I could never do that." Others are not as direct, and their self-esteem must be inferred from their actions and attitudes, especially when under stress (Brooks, 1992). Children with high self-esteem display adaptive strategies that promote growth (e.g., requesting help with reading difficulties and spending more time learning this skill). Children with low self-esteem, however, frequently rely on coping behaviors that are counterproductive (e.g., quitting, clowning, bullying, avoiding, or excusing), actually intensifying the difficulty (Brooks, 1994). Children with low self-esteem are prone to feel they are powerless to correct a situation; believing that mistakes are the consequences of factors that can not be changed (such as lack of ability or intelligence). This notion is supported by research which has identified that ADHD children have an external orientation or locus of control

(Lufi & Parish-Plass, 1995; Linn & Hodge, 1982). One interpretation offered for this observation is that these children encounter an excess of difficulty, frustration, and failure such that they come to believe they are helpless to alter their own fate. They gradually become adept at discounting any positive messages and explaining away any success. In some cases this thinking pattern combines with the child's experience, leading to self-hatred, pessimism, unhappiness, or hopelessness (Taylor, 1994).

According to Slomkowski, Klein, and Mannuzza (1995), ADHD adolescents also reported lower self-esteem, were judged to have lower levels of overall adjustment, and had lower levels of educational achievement as compared to controls. Most ADHD children experience the frustrated comments of parents, teachers, and other adults. Berating comments such as, "If you would only try harder and pay more attention you would do better," "You aren't trying," "Just do it," or "What's the matter with you? Are you dumb or just lazy?", only serve to heighten hopelessness, defensiveness, and anger, particularly when they harmonize with the child's existing negative beliefs about himself.

Ziegler and Holden (1988) referred to three aspects of a child's development that are undermined by ADHD: self-esteem, self-control, and the ability to manage frustration. The ability to manage frustration is an important emotional skill if the child is to remain connected to the learning process. The maintenance of self-esteem requires appropriate modification of expectation by both children and parents. The child's sense of self-control must be reinforced continually so that the impulsivity and poor judgment characteristic of these children do not further erode their fragile self-confidence. While the children face these and other developmental struggles, the parents need to adjust their parenting style because each stage imposes differing challenges (Lobar & Phillips, 1994).

The child needs to have a sense of his parent's pride and support of his efforts to help him deal with the disabilities. For these reasons, self-esteem is considered an important aspect of assessing the current functioning of an ADHD youth.

Social

Intertwined with self-esteem is the child's social functioning. According to Whalen and Henker (1985), "social difficulties are woven into the fabric of this disorder" (p. 471). Peer rejection is a devastating experience often associated with feelings of loneliness, low self-esteem, delinquency, school problems, academic failure, and even depression. ADHD children display a relatively higher rate of immature, bothersome, or even aggressive behavior while also showing problems in their social maturation, particularly in prosocial skills. Additionally, many are also disruptive and irritating in the classroom which further estranges them from their peer group (Guevremont, 1990). Milich and Dodge (1989) showed that children with ADHD had distortions in their ability to process social information. Specifically, ADHD children do not interpret social cues very well. It is also plausible that the same characteristics which give rise to the relational difficulties ADHD children have with parents would also impact peer relationships. Guevremont (1990) estimated that 50% to 60% of ADHD children experience some form of social rejection from their peer group.

Though it is not clear how these experiences impact the child later in life, it is reasonable to assume they are associated with some of the maladjustment experienced by youth and adults with ADHD. Most experts agree that positive relationships with peers during childhood provide a critical buffer against stress as well as psychological and

psychiatric problems (Guevremont, 1990). A noted ADHD research group recently found ADHD children to be at significant risk of interpersonal deficits which further compromise the adaptive resources and capabilities of the individual (Biederman et al., 1996).

Academic

The academic performance of ADHD children has been found to be considerably poorer than controls. In a 1990 study by Barkley, DuPaul, and McMurray, the ADHD youth were three times more likely to have failed a grade or to have been suspended, and over eight times more likely to have been expelled or to have dropped out of school than the normal controls. This study also found academic achievement of the ADHD students to be significantly below normal on math, reading, and spelling. At least one-third of the students had received help from special education services through the schools.

When longitudinally compared to controls, ADHD children were more likely to have learning disabilities, repeat grades, be placed in special classes, and get tutoring. These results support the observation that despite average or above intelligence, the cognitive deficits at the core of the disorder are neurological in nature, and that subsequent behavior problems only exacerbate the symptoms (Biederman et al., 1996). Fisher, Barkley, Fletcher, and Smallish (1993) concluded that adolescent academic skills were related to childhood cognitive ability, as measured by IQ, and academic competence, as measured by level of enrollment in special education. School conduct, however, was not associated with cognitive, but with family variables, such as increased family stress and increased family moves.

Treatment

Parents inevitably influence a child's development by modeling ways of thinking and acting. For example, family assessments sometimes show, that a child's cognitive deficits or distortions reflect limited parental capabilities or maladaptive parental world views (Kaplan, Thompson, & Searson, 1995). If this is the case, treating the child in isolation will result in limited success. Treating children in the context of the family appropriately emphasizes that a child's difficulties are a joint problem to be addressed as a partnership.

The use of medication, most commonly, Methylphenidate (Ritalin), has been found to be effective in helping children, youth, and even adults increase sustained attention, reduce distractibility, increase organizational ability, enhance performance on a task, and improve behavior. In his review, Greenhill (1989) found Ritalin to be effective in 75% to 90% of the subjects from a variety of controlled studies.

Other stimulants are used when the use of Ritalin is contraindicated. Dextroamphetamine sulfate (Dexodrine) has long been known to be effective in reducing impulsivity and inattentiveness. Pemoline (Cylert) is another stimulant with a longer effective period, allowing children to take it only once a day.

In addition to the stimulants, antidepressants are also used for treatment of ADHD. The tricyclics like imipramine and desipramine have been used successfully (Gomez & Cole, 1991). The primary advantage is a longer effective duration with only one dose daily. Biederman et al. (1989) found that of those who did not respond to stimulants, 69% responded favorably to this type of medication. Catapres, Norpramin, and Tegretol are

among those which have been reported in the literature (Greenhill, 1989).

Medication alone is not enough according to Ziegler and Holden (1988), who suggest that education, environmental adjustments, individual treatment, family therapy, and other modalities must also be used when possible. Unless treatment addresses the impact of the ADHD on the lives of both the children and parents, increasingly maladaptive responses can occlude healthy development on the individual and the family level. The children need the input of parents and others (therapist and teachers) to understand and manage the frustrations associated with weak skills and short attention spans. The child must come to understand and accept the disability and manage the consequent anger for successful coping and compensating to occur (Ziegler & Holden, 1988).

Because medications do not teach the child to compensate for symptoms of their disorder, other forms of therapy are necessary to optimize the probability of long-term improvements in the behavioral and academic status of children with ADHD (DuPaul, Barkley, & McMurray, 1991). Rosenberger (1991) concluded that “we must seek better medication, and more workable techniques for changing behavior and engineering environments to encourage academic productivity in the face of this aptitude deficit” (p. 402).

In combination with medication, behavior therapy, behavior modification, and brief behavioral treatments have been used effectively to reduce the behavioral problems (Coker & Thyer, 1990). These forms of treatment are specifically targeted to improve impulsivity and hyperactivity as well as aggressiveness in children and youth. Behavior therapies usually rely on adult supervision and intervention. Examples of this type of

treatment include: reinforcement, consequences, environmental restructuring, and time-outs. Results of outcome data on the effectiveness of cognitive behavior therapy have unfortunately not been encouraging. The literature indicates that the use of cognitive behavioral techniques have been effective in reducing impulsivity, but have had little impact on restlessness or distractibility (Kaplan, Thompson, & Searson, 1995).

Cousins and Weiss (1993) discussed the need for a psychosocial aspect of treatment to address the symptoms or negative peer status of these children. Parent training seems to reduce disruptive behavior and family stress while increasing parental confidence and competence. Trained parents are more likely to be more positive, relaxed, flexible, and satisfied in their interactions with their children (Cousins & Weiss, 1993). Bibliotherapy, using reading as a therapeutic technique, appears to offer promise as an adjunct to multimodal intervention with ADHD children and parents (Long, Rickert, & Ashcraft, 1993). Other forms of intervention include: cognitive training, parenting skill training, group therapy for the child, family support groups, psychoeducational groups, and support groups. Greenhill (1989) asserts that the most crucial aspects of treatment are the parental attitudes and cooperation.

No single treatment modality is sufficient to address all aspects of ADHD and its impact on the child and the family. The current consensus among researchers and clinicians is that a multi-specialty team of caregivers is needed to work with the family and the child if adaptation is to be optimized. Medication and effective management skills for the child, parents, and teachers are among the most commonly used treatments for symptom relief. Additional help is available through special education services, training in self-control, social skills, and in the management of emotions. The literature

has shown clearly that if the long-term outcome is to be significantly improved, these treatments must be maintained over a longer period of time than was previously believed (Barkley & Murphy, 1991).

Individual Outcome

Despite a reduction in their levels of hyperactivity and the improvement in attention and impulse control, 70 to 80% of ADHD children are likely to continue to display these symptoms into adolescence to a degree inappropriate for their age (Barkley, 1990). This adds to the normal struggles of adolescence with issues such as: identity, acceptance, dating and courtship, physical development, and increased demands for independent and responsible conduct. Weiss and Hechtman (1993) found that families viewed their children as functioning significantly worse than controls in almost all areas. However, parents also recognize strengths and improvements. For instance, most parents see their child's behavior as being less restless as they grow older (Weiss & Hechtman, 1993). It is likely that over time hyperactive children are influenced by complex interrelationships between multiple childhood variables (Biederman et al., 1996).

Variables that predicted the functioning of the ADHD child in adolescence were summarized by Barkley (1990). The first predictor is a combination of the socioeconomic status (SES) of the family and the general level of intelligence of the child. When combined, these factors were related to academic outcome, eventual educational attainment, and level of employment. The family SES was also related to the severity of the ADHD symptoms in adolescence; such that, lower SES was associated with higher degrees of ADHD symptomology. The second predictor was the degree of peer

relationship problems and how this predicted later interpersonal problems.

Aggressiveness and conduct problems in childhood predicted more of the same types of behavioral problems at follow-up. The degree of parental hostility and conflict in the interactions with their ADHD children is significantly associated with the degree to which these parent-child conflicts, and even aggression, extend into adolescence. Fisher et al. (1993) also found that emotional problems in adolescence were predicted by more special education enrollment and that adolescent social competence was associated with parental personal competence.

In terms of treatment received, it is not surprising that ADHD children received significantly more treatment than control groups. In Barkley's eight year follow-up (1990), he found that ADHD children received substantial periods of medication therapy (mean of 36 months); individual and family therapy (mean of 16 and 7 months respectively); and special education for learning (mean of 65 months), behavior (mean of 59 months); and speech disorders (mean of 40 months). The length of mental health treatment was negatively associated with adolescent outcome, (i.e. the longer the treatment the worse the outcome). The researchers in this study interpreted this as being a measure of the severity of the behavioral disorder rather than the failure of treatment to be helpful (Fisher et al., 1993). On the other hand, Satterfield and associates (1981) found that the subjects who had received more than two years of multimodal treatment were further ahead academically, had less antisocial behavior, were more attentive, and had better school and home adjustment than those with less treatment. These findings illustrate that there is still some conflict in the current understanding of the best methods of treatment.

Research has found inconsistent results regarding the relationship between ADHD students and illegal drug use, especially if conduct disorders are removed from the sample (Fergusson, Lynskey, & Horwood, 1993). Follow-up studies have repeatedly found evidence to support the conclusion that conduct disorder and attention deficit disorder are distinct dimensions of child behavior; and though they are correlated, these disorders have quite different consequences for long term development (Fergusson, Horwood, & Lynskey, 1992).

Individual Adaptation

Many factors in the child, family, and environment interact in “a dynamic way to determine whether early vulnerabilities give way to a life of productivity, success, and happiness - a life truly characterized as resilient - or whether these vulnerabilities intensify, resulting in a life punctured with disappointment, despair, envy, underachievement, and ongoing failure” (Brooks, 1994, p. 78). Fergusson and Lynskey (1993) concluded that externalizing behavior problems in adolescents arose largely from the contextual influences, the main one being parental marital instability. A child’s adaptation was found to be a function of the additive effects of the child’s temperament and the mother’s mental state, accounting for 72% of the child adaptation in boys (Stevenson, Thompson, & Sonuga-Barke, 1996).

The literature regarding the resiliency of children who are under stress, states that resilient children reported a more nurturing relationship with their primary caregivers, more stable family environments, and family discipline practices which were more inductive, age-appropriate, and consistent (Wyman, Cowen, Work, Raoof, Gribble,

Parker, & Wannon, 1992). These findings are similar to prior findings which report that when under stress, a supportive family milieu predisposes a child to resilient outcomes (Rutter, 1979; Werner & Smith, 1982). This concept of a supportive family milieu is consistent with what Wyman, Cowen, Work, and Parker (1991) discovered in interviews with parents; specifically, closer parent-child relationship and more inductive and consistent family discipline were key to better outcomes.

Adaptive functioning is another concept used to understand the individual development of ADHD children. Adaptive functioning has been defined as “the performance of the daily activities required for personal and social sufficiency” (Sparrow, Balla, & Cicchetti, 1984, p. 64). The emphasis here is the performance of the behaviors not just the ability. Deficits in adaptive functioning among ADHD populations have clustered in the domains of communication, socialization, and care skills, in spite of at least average intellectual abilities (Barkley, DuPaul, & McMurray, 1990).

Biederman et al. (1995) studied the family risk factors associated with ADHD. Rutter (1979) developed a scale to index the level of adversity in a child’s life and the associated outcomes. He found six risk factors that correlated significantly with childhood mental disturbances (severe marital discord, low social class, large family size, paternal criminality, maternal mental disorder, and foster care placement). Rutter found that no one variable was responsible for increased risk, but that the presence of two risk factors resulted in a fourfold increase in the likelihood of mental disorders, and that the presence of four factors yielded a 10-fold increase in risk. Biederman’s (1995) study confirmed that in an ADHD population, higher scores on Rutter’s (1979) adversity index predicted ADHD-related psychopathology (depression, anxiety, and conduct disorder),

learning disabilities, cognitive impairment, and psychosocial dysfunction. These analyses showed that with each increase in the number of adversity indicators, intellectual ability (measured by IQ) decreased in children with ADHD but not in controls. There was also a positive association between Rutter's index and the number of ADHD symptoms (Biederman et al., 1995). This work demonstrated the complexity of the interaction between adversity factors and the child's functioning, while also revealing the importance of looking at family environment variables as risk factors for a child's adaptation to ADHD.

Family Level Variables in ADHD Research

Variables to Describe the ADHD Family

Adaptability and Cohesion. Family cohesion and adaptability were delineated by McCubbin and Patterson (1983a) as two of the most important resources in the management of stressful events. Families which are resistant to disruption when confronted with change and are adaptive when in crisis are termed "resilient" (McCubbin & McCubbin, 1988). An important family resource was the presence of a set of beliefs and assumptions about the family and its relationship to the community, termed, a family schema. In their 1988 study, McCubbin and McCubbin found the most commonly reported goal of the family was cohesion, which is the expression of unity, support, and emotional bonding between family members. Phipps and Mulhern (1993) found that family cohesion acted as a protective factor promoting resilience of children under stress, while conflict was associated with adverse reactions to stress. Cheatam (1982) also

observed that extreme levels of adaptability and cohesion directly impacted the child and was reflected in the child's behavior. Family structure was found to be influential in interpersonal relationships, achievement level, and intellectual aspirations of the ADHD individual.

Contrary to what is hypothesized in this present study, Lewis (1992) found no difference between the family functioning of ADHD families and the norms that Olson et al. (1983) established for the Circumplex Model. Lewis (1992) also reported that as the complexity of the symptoms and behavior problems increased so did the chances of the family being in an extreme area of the Circumplex.

Communication. Olson, Sprenkle, and Russell (1979; 1982) emphasized the role of family communication in facilitating family functioning. They saw communication as the change mechanism of the family. Through the use of communication, the family is able to change its levels of adaptability and cohesion allowing for healthy adaptation and growth.

In a thorough review of childhood adjustment, Lavigne and Faier-Routman (1993) recommended the inclusion of child, family/parent, social, and medical factors in future research. They observed that much attention has been paid to the severity of disorders while a need exists for more information on the parent/family, life stress, and child variables because these have proven the most helpful in understanding and predicting child adjustment. The authors suggested more direct examination of the role of coping skills and self-concept as intervening variables which affect the child's adjustment.

Demands and Stressors in the ADHD Family

Family Stress. Children with ADHD do not exist in a vacuum. They are an integral part of a social system, or more accurately several systems. The original and most important system is the family. To understand who develops ADHD, who continues to struggle with ADHD over time, who will develop other problems, who will turn out well, and who will not, requires understanding this social network and the reciprocal influences involved (Barkley, 1995).

The Family Systems model suggests that the difficulties facing the parents of an ADHD child would impact other aspects of individual, marital, and family functioning (Epstein, Bishop, & Levine, 1978). Consistent with this theoretical notion, research has found that ADHD children elicit a more controlling, less positive, and less consistent parenting approach (Barkley, 1995; Barkley & Cunningham, 1979). Parents of ADHD children have reported lower parenting self-esteem, increased guilt, more social isolation, higher levels of maternal stress, alcoholism, and depression (Befera & Barkley, 1985; Breen & Barkley, 1989; Mash & Johnson, 1983). Brown and Pacini (1989) showed that parents of ADHD children were also more frequently divorced or separated than controls. Anastopoulos et al. (1992) documented that parenting stress increases as the severity of the child's symptoms increases.

Taylor (1994) described parents of ADHD children as among the most misunderstood, overburdened, and underhelped groups in the world. With emotional stresses beyond what most people can comprehend; the intense desires to protect and love one's child are contorted by feelings of incredible rage against that same child's behavior

(Taylor, 1994). Prior to diagnosis, the parents are confronted by an array of outsiders offering advice. Teachers, in-laws, neighbors, friends, mental health professionals, clergy, doctors, and complete strangers all may offer their contribution to the pool of confusing and often insulting comments. The criticisms range from too much harsh discipline, to not enough. This can leave any parent, already frustrated and discouraged by the child's behavior, feeling very alone. Taylor (1994) suggested the following sequence of emotions experienced by parents of ADHD children.

1. Feeling misunderstood and criticized
2. Feeling guilty and inadequate
3. Feeling the need to protect and serve
4. Feeling angry
5. Feeling emotionally bankrupt

Marital Stress. Raising a hyperactive child can be threatening to a marriage due to the types and amounts of stress it exerts. Parents will find that they supervise, monitor, teach, organize, plan, structure, reward, punish, guide, buffer, protect, and nurture their ADHD child far more than is demanded of a typical parent. There are more meetings with school staff, doctors, and mental health professionals, who are trying to help. In addition, there are interventions with neighbors, coaches, scout masters, and others necessitated by the behavior problems the child often has with outsiders (Barkley, 1995). These external stressors are in addition to all the internal struggles in the home and among the family members, parents, and siblings alike. Parents often complain that their ADHD child does not accept household responsibilities which are generally appropriate for his/her age.

ADHD children require more help, supervision, and accountability, and more often revert to emotional tantrums when frustrated. Most parents encounter these situations and stressors, but with ADHD the frequency and intensity is significantly increased. The high level of the personal strain and exhaustion is matched by the concern and hurt a parent feels for a child who is unhappy, failing, and rejected. Left unattended, the strain can harm the emotional stability of a marriage and place the relational health of the family at risk.

Child or Adolescent Stress. Adolescents with ADHD are at higher risk for aggression, antisocial behavior, and defiance relative to other peers (Barkley et al., 1991). Impulsivity, inattentiveness, and academic failure continue to plague the youth, while the need to complete complex school assignments that require organization, self discipline, and sustained attention increases (Kelly & Aylward, 1992). Murphy and Hagerman (1992) suggested that these symptoms and behaviors may lead to conflict with school and parents, which can lead to social problems like stealing, cheating, fighting, and delinquency. Comfort (1992) described the adolescent stage for the ADHD youth as belligerent, independent, introspective, and peer-oriented. They may have difficulty making and keeping friends, as well as, have problems with social cues and customs, causing increased frustration and concern for the family (Kramer, 1986).

Understanding the family context of an ADHD child is critical. ADHD family interactions have been shown to be more negative and stressful to all members. Marital relationships tended to be worse in hyperactive families. In an eight-year follow up, Barkley (1990) found that parents were three times more likely to have separated or

divorced. At ten year follow-up, Weiss & Hechtman (1993) reported that the emotional climate of the home had grown significantly worse, characterized by arguments and negative interactions in a generally tense atmosphere. In fact, this pattern held up until the adolescent was no longer in the home. There is also much evidence that suggests that parents and siblings of an ADHD child are more likely to experience their own psychological distress.

Just as the ADHD child affects others in his family, so to, other family members affect him/her. The literature suggests that interactions between parents and children with ADHD develop into self-reinforcing dysfunctional behavior patterns (Bernier & Siegel, 1994). The child's noncompliant, disruptive actions contribute to the chronic stress in the parent which in turn, generates unproductive parenting behaviors that exacerbate the ADHD symptoms. No credible authority would deny the powerful effect that social factors have on the expression of ADHD. However, this does not imply that the parents cause the ADHD or behavior problems; it only suggests that the child's environment can affect the severity of the child's problems (Anderson, Hinshaw, & Simmel, 1994; Barkley, 1995). Both parents and children often emerge from these interaction patterns feeling frustrated, helpless, angry, and incompetent (Bernier & Siegel, 1994).

Parental Perspectives

Parent-Child Relationship. The interactions of ADHD children and their mothers were studied by Campbell (1975), who observed that hyperactive boys initiated more interaction than the control group when working on a task with their mothers. They seemed to require more feedback, guidance, and attention from their mothers. In turn,

mothers gave more suggestions, approval, disapproval, and redirection in attempt to manage their child's behavior. Hyperactive children were also found to be less compliant, more talkative, more negative, and less able to complete or persist on task. Mothers were more negative, less responsive, and gave more directives (Barkley, 1995; Gomez & Sanson, 1994). Over time these patterns seemed to decrease, but never reached the norm of non-ADHD families.

Complicating the strain on the mother-child relationship and the marriage, is the nearly universal observation that the child behaves differently with the father than with the mother. Studies have found support for this observation, confirming that the behavior of the child to be less negative, more compliant, and diligent on tasks with fathers than with mothers (Barkley, 1995). Obviously, this can create additional tension in the marriage, where two sets of observations may clash, leading to blaming or minimizing which interferes with parental teamwork. There are many ideas about why this dynamic occurs, however, no conclusive information is yet available.

Impact on Parenting Stress. The impact of the stress of parenting an ADHD child is evidenced by studies which report lower levels of parenting confidence, more depression, self-blame, and social isolation in mothers. While other sources of stress are also involved, Barkley and his colleagues (1991) found that the primary source of stress for mothers was directly related to the child's ADHD. Results from a study by Anastopoulous, Gueveremont, Shelton, and DuPaul, (1992) also found extremely high levels of parenting stress (above the 90th percentile). Three child variables emerged as significant predictors of parenting stress: aggressive behavior, severity of the ADHD, and

health status of the child. According to work by Brown and Pacini (1989), ADHD parents perceive their families as less supportive, having less outside social contact, more controlling, less expressive, less independent, and less cohesive.

Parenting an ADHD child has a negative impact on social life, feelings about the role of parenting, and higher stress (Doneberg & Baker, 1993). Hechtman (1981) confirmed that the increased tension and poorer emotional climate were related to the presence of the ADHD child. When the adolescent was no longer living in the home the emotional environment improved. Her conclusion was that the child's problem and the tension in the family worked synergistically to create a deteriorating situation.

Positive Perspectives. It must be pointed out, however, that ADHD children have many positive qualities and parenting them can be tremendously fulfilling, provided the parents, siblings and the ADHD child learn to cope and adjust to the extra stress involved (Barkley, 1995). Weiss and Hechtman (1993) affirm that parents do not view their hyperactive offspring in a static or globally negative manner, but are aware of positive and negative changes over time. They are also not pessimistic regarding the future of their children. After watching their child struggle and often succeed, improve, or at least survive, parents often see the strengths and character that can develop in adversity. Parenting stress associated with ADHD decreased as the number of years married increased, suggesting that over time there are adjustments made which aid in the adaptation process. There may also be a stress-buffering effect of the long-term marriage relationship (Weerts-Whitmore, Kramer, & Knutson, 1993).

Family Outcome

Maladaptive Responses to ADHD. In their review of literature on ADHD families, Bernier and Siegel (1994) found four interrelated factors which impacted child and family outcomes: family instability and marital disruption, conflict-laden parent-child interactions, high levels of parental stress, and maternal depression. Research has shown a consistent relationship between parenting style and the resulting behavior problems in adolescents. A relationship characterized by hostility and lack of warmth displayed by both parents accounted for the rate of delinquency among adolescents and their use of dysfunctional coping methods (Bernier & Siegel, 1994). Cunningham and Barkley (1979) concluded that an intrusive, controlling parenting style, while initially a response to the child's behavior, may further contribute to the difficulties and behavior problems he experiences later in life. A parent's verbal and nonverbal messages are also significant in teaching the child reasons for and against various behaviors and choices. Inconsistent discipline has been found to be associated with problem behaviors in several studies (Cameron, 1977; Feehan, McGee, Stanton, & Silva, 1991). Frequent moves, insecure employment, and low income are other sources of family stress which exacerbate ADHD symptomology (Cadoret, & Stewart, 1991).

In a longitudinal study, Campbell (1987) looked at changes in ADHD symptoms reported by parents of children from age three to six. She concluded that conflict in the mother-child relationship and ongoing family disruption are key factors in persistent childhood problems. She warned that ADHD children are at increased risk if they are not raised in a supportive environment which promotes self-control and encourages positive

interactions with adults and peers. Anderson, Hinshaw, and Simmel (1994) found maternal negativity to explain a significant amount of the eventual non-compliance of ADHD children. They also reported that parenting practices seem to contribute to the child's problem behavior.

A family's socioeconomic status can influence the parent-child relationship, the availability of treatment, and the parents' psychopathology. The value of socioeconomic status in predicting the outcome for ADHD individuals, however, is not significant. A variety of studies have used this variable, all finding it to be a weak predictor of any particular outcome measure (Huessy, Metoyer, & Townsend, 1974; Loney, Whaley-Kahn, Kosier, & Conboy, 1981; Weiss, Minde, Werry, Douglas, & Nemeth, 1971). Research has also failed to show evidence of any connection between abusive parenting reactions and ADHD behavior (Weerts-Whitmore, Kramer, & Knutson, 1993).

Another common variable is the intactness of the biological family of the ADHD child. Though undoubtedly significant to the child, intactness has not been found to be a strong predictor of adolescent outcome (Loney, et al., 1981; Mendelson, Johnson, & Stewart, 1971; Milman, 1979). This is consistent with those who have stated that it is better to live in a household where divorce or separation has occurred, than to live with a lot of marital conflict (Chess, Thomas, Korn, Mittleman, & Cohen, 1983).

Constructive Responses to ADHD

Understanding and Acceptance. Each of the stages of development a child encounters imposes different challenges for the family attempting to cope with ADHD. Erikson (1963) described the development of identity as the core task for the adolescent.

This stage of development presents major challenges for the family as the adolescent experiences both cognitive and physiologic changes and the formation of identity (Lobar & Phillips, 1994). Friedman (1992) notes that developmental tasks for the family with adolescents includes an overall goal of loosening the ties to allow greater responsibility and freedom for the adolescents as they mature and become more independent. Lewis-Abney, (1993) reported that family functioning was significantly correlated to the age of the child and the level of impulsivity or hyperactivity. She identified that families with older ADHD children had poorer family functioning. Balancing the need for freedom with the need for responsibility becomes an ongoing challenge for the youth and the parents, especially with ADHD.

Adaptive Tasks of Parenting. Canam (1993) investigated the common adaptive tasks facing parents of children with various chronic conditions. She delineated eight tasks from the theoretical research and clinical literature:

1. Accept the child's condition
2. Manage the child's condition on a day-to-day basis
3. Meet the child's normal developmental needs
4. Meet the developmental needs of the other family members
5. Cope with ongoing stress and periodic crises
6. Assist family members to manage their feelings
7. Educate others about the child's condition
8. Establish a support system

Social Support. Family adjustment was greater with strong social support and when the mother had an internal locus of control; believing her actions made a difference in the situation (Henderson & Vandenberg, 1992). After evaluating various predictors of adolescent outcome in ADHD, Fisher et al., (1993) concluded that family and parental competence, as well as treatment of defiance and aggression, significantly improved the outcome of the child. Studies of parent training consistently reveal the positive effects of this intervention and suggest that this may be the most beneficial to the family and the adolescent (Anastopoulos et al., 1993; Barkley, Gueveremont, Anastopoulous, & Fletcher, 1992).

According to Weisner, Beizer and Stolze (1991), direct measures of adjustment did not differ significantly between religious and nonreligious families. However, religious parents tended to be more family oriented, emphasize parental nurturance, and said their child was an opportunity rather than a burden. Religious parents described the 'purpose' of their delayed children in emotionally powerful ways that were clearly helpful to them.

Parental Attributions. A parent's attributions about a child's behavior also may impact a parent's level of stress. Unlike a physical handicap, which is more obvious and unquestionably not the child's fault, ADHD behaviors are easily attributed to the child's intentions or parenting deficiencies (Doneberg & Baker, 1993). Barkley, Anastopolous, Gueveremont, & Fletcher (1992) found mothers of ADHD boys to be more extreme in their negative interaction and their beliefs about the child. Weiss and Hechtman (1993) assert that parents do not view their hyperactive offspring in a negative manner, but are aware of positive and negative changes over time. They are also not pessimistic regarding

the future for their child; they see the strengths and character that often can develop in adversity. Lie (1992) suggested the following comment after thoroughly reviewing the follow-up literature on ADHD, "It is important to inform subjects with 'pure' ADHD that the disorder is benign and that the chances to become happy and well-adjusted citizens are equal for those with and without ADHD. The hyperactives and their parents might have heard the opposite." (p. 33)

The global measures of family functioning, in contrast to measures of specific aspects of the family, appear to be related to the functioning of the adolescent at follow-up. Weiss et al. (1971) found that measures of the overall functioning of the family were influential in determining the youth's antisocial behavior. In another work (Weiss et al., 1975), family and the medication variables were isolated, and a good overall family situation was found to correlate with good academic achievement, emotional adjustment, and absence of delinquency in youth. These findings and others suggest a possible interaction between the emotional stability of the family and the use of medication which affects outcome in the adolescent (Conrad & Insel, 1967; Loney et al., 1981; Weiss & Hechtman, 1993).

Methodological Approach to the Study of the ADHD Family

Design Issues

The research literature on ADHD is relatively consistent in calling for more studies which truly isolate ADD and ADHD from other associated disorders (Weiss & Hechtman, 1993). There is a consensus that more longitudinal designs are needed with

this population, to appraise the type of long-term impact this disorder has on the individual and the family (Lie, 1992). Another theme is the quest to understand the contextual or social impact on the course of ADHD. Very few studies have looked at the family dimensions in ADHD, those that have demonstrated a significant correlation between adaptive family functioning and positive long-term outcomes for ADHD children and adolescents (Hechtman, 1991; Weiss et al., 1975; Weiss & Hechtman, 1993). Most research to date has not restricted the sample to those with ADHD only, limiting the usefulness of the results. Walen and Henker (1991) point out the problem is that long-term questions cannot be answered with short-term studies. Much of the research on ADHD has not linked treatment to long-term outcome and adjustment. The goals and research questions of this project are best served by a longitudinal design with subjects who have no disorder other than ADHD, for the purpose of describing the adaptation of the ADHD families and individuals over time.

Methodological Decisions

Other methodological decisions for the present study were based on the themes and the recommendations made in previous studies (see Appendix E). The variables, purpose, measures, and results of several studies on ADHD families were compiled to identify themes and gaps. Many of these recommendations were able to be addressed due to the availability of data collected five years earlier. A sample of ADHD boys with a body of unanalyzed family data was available for follow-up. Due to the nature of the current research questions, these data were used as a foundation for this study. The use of standardized instruments for the repeat measures, by both the child and the parent to

assess change over time was also determined to be the optimal choice to describe characteristics and changes in the ADHD family over time.

It is preferable to have more than one source of information to increase the strength of the findings and to allow for comparisons between respondents (Olson et al., 1985). This project utilized three sources of information for each case, the individual ADHD youth, his mother, and his physician. Supporting the decision to seek the maternal perspective, Farone, Biederman, and Milberger (1995) and Biederman et al. (1993) found that maternal reports of their children's behavior and psychopathology proved to be a reliable and accurate means of assessment. Mothers also represent well the overall parenting perspectives, a notion consistent with Cunningham, Behness, and Siegal (1988) who report that there were no difference between the mother's and father's perceptions of the family functioning. Boys were targeted due to the overwhelming demographics which show boys to be many times more likely to be diagnosed as hyperactive than girls.

Contributions to Science

This review summarizes the literature and describes how this study contributes to the overall body of knowledge of ADHD and of the family. Many limitations and recommendations from previous research have been addressed by the design of this study. This study was intended to identify patterns and describe a sample of ADHD families while asking some very relevant questions with the hope of generating solid hypotheses and questions for subsequent research.

CHAPTER THREE

METHODOLOGY

Overview

The facts about ADHD provide a compelling need to study, understand and find treatment for those afflicted. This research project was designed to conduct a five year follow up study of 25 ADHD boys and their families. Data collected five (5) years ago were compared to current data. Analyses compared the original parent data with current child and family outcomes. Due to the sample size and broad scope, analyses are primarily descriptive-comparative, longitudinal and correlational. The primary intent of this study is to identify quantitative and qualitative information on parenting and family adjustment to ADHD and to identify productive variables for future research.

Descriptive studies, according to Miller (1986), begin with specific variables and seek to describe their distribution among a certain group of people. The aim is to describe how individuals and families change over long periods of time. This type of design is particularly important when the study of development is a priority. In this study, the development of the ADHD child and his family were assessed with special attention given to the reciprocal impact of each on the other. A comparative approach was used in

this study to compare the differences between national norms and the current sample on the various measures. Comparisons in this study are not causal-comparisons but descriptive-comparisons for the purpose of generating variables for future research and clinical insight.

Longitudinal research designs are those in which observations or assessments are made on the same subjects more than once so that naturally occurring changes can be detected. The most common form of a longitudinal design is one in which the subjects are measured at regular intervals (Miller, 1986). A correlational study attempts to identify the degree to which two or more variables covary together, assessing the relationship between the variables. Unlike experimental designs, the correlational approaches are used to describe relationships which are not under the control of the researcher (Miller, 1986).

Original Study - 'Time 1'

Foundational to the current research project is the original study by Istre (1992). Her study was designed to determine if boys with ADHD had fewer social skills than a comparison group. The sample consisted of 25 ADHD boys and 25 classmate comparisons. The study was a sample survey design in which teachers and parents completed several behavior rating scales. Findings indicated that differences did exist between these two groups of children. ADHD boys were less socially skilled than the comparison group, had more interfering problem behaviors, and had fewer social skill strengths. The results suggested that ADHD boys had more social skill acquisition deficits in cooperation, assertion and self-control and had performance deficits in self-control (Istre, 1992).

Sample - Time 1

The population for which this study was intended is the 3.5 million ADHD children and their families (Barkley, 1995). In an attempt to narrow the focus and control potentially confounding variables, the study population was screened for over a dozen characteristics. In the original clinical sample of ADHD children (see Table 1), boys were chosen instead of girls because of their overrepresentation in the diagnosed condition of ADHD (Istre, 1992). Another reason was to identify patterns of problems that existed within gender categories that might otherwise have been obscured by analysis performed on heterogeneous samples (Achenbach & Edelbrock, 1978). The clinical sample was screened to remove boys with specific learning disabilities, serious emotional disturbances, or major physical handicaps in attempt to control for potential confounding effects from these factors. The full criteria for selection of subjects was determined by Istre (1992) (see Appendix F).

The sample was selected from the caseload of a developmental pediatrician specializing in the care of ADHD children. An outpatient clinical population receiving treatment from a specific physician was chosen for several reasons. First, this population represented the largest single grouping of ADHD children in the state. Second, it was preferable to select children who were typical of those functioning in the community rather than in-patient psychiatric settings. Last, any potential confounding effects of different approaches to diagnosis would be avoided and a more homogenous ADHD population would be obtained if only one well trained and experienced physician was used to diagnose the clinical sample. The diagnosis of ADHD was originally made by the

developmental pediatrician based on the child exhibiting at least 8 of the 14 criteria for ADHD described in the DSM-III-R; as well as the physician's clinical judgment regarding the presence of other factors including family, genetic, developmental, and behavioral history; parent and teacher reports regarding the pervasiveness of the problem; and the presence or absence of neurological soft signs.

Parents of the ADHD children who agreed to participate were asked to provide demographic information on their family. Considerable data, including child instruments and family assessments, were collected from the parents in the 1992 study that were not formally analyzed. These data, in addition to the social skills assessments reported in the original study, comprised the 'Time 1' assessment in this current longitudinal study.

Research Design

Sample for 'Time 2'

The sample for the time 2 study was comprised of eighteen (18) of the original twenty five (25) ADHD boys and their parents (Istre, 1992). Table 1 compares the demographic characteristics (e.g. education, marital status, and child's age) of the sample. Statistical comparisons were done using Chi-square (likelihood ratio test) and paired t-test to assess differences between the subsamples. No differences were found. Due to the five year interval between 'Time 1' and 'Time 2' some attrition was expected. Table 2 compares those who continued in the longitudinal follow-up study with those who did not (non-continuers) on the major conceptual variables. These comparisons were done to identify if any significant differences existed between those who continued and those who

dropped out. The results of t-test comparisons were not significant, indicating that no appreciable difference existed between the continuers and non-continuers.

Table 1

DEMOGRAPHIC CHARACTERISTICS OF THE TIME 1 SAMPLE (N = 25), TIME 1 SUBSAMPLE (N = 18), AND TIME 2 SAMPLE (N = 18)

Characteristics	Time 1 Sample		Time 1 Subsample		Statistical Computation	Time 2 Sample	
	f	%	f	%		f	%
<u>Age</u>							
7	1	4	0	0	Chi = 5.89, p = n.s		
8	4	16	3	17			
9	7	28	5	28			
10	6	24	4	22			
11	7	28	6	33			
	Mean = 9.5		Mean = 9.7				
13						3	17
14						2	11
15						5	28
16						6	33
17						2	11
						Mean = 15.1	
<u>Number of Siblings</u>							
0	1	4	1	6	Chi = 1.49, p = n.s	0	0
1	9	36	5	28		6	33
2	12	48	11	61		11	61
3	2	8	1	6		1	6
4	1	4	0	0		0	0
	Mean = 1.72		Mean = 1.70			Mean = 1.72	
<u>Mother's Education</u>							
Graduate/professional	9	36	9	50	Chi = 3.89, p = n.s		
Four year college	3	12	2	11			
Some college/technical	11	44	7	39			
Finish high school	2	8	0	0			
<u>Father's Education</u>							
Graduate/professional	14	56	10	59	Chi = 5.49, p = n.s		
Four year college	5	20	2	11			
Some college/technical	4	16	5	30			
Finish high school	1	4	0	0			
Unknown	1	4	0	0			

Table 2

COMPARING NON-CONTINUERS ($n = 7$) AND CONTINUERS ($n = 18$)
ON CONCEPTUAL VARIABLES AT TIME 1

Variables	Non-continuers ($n = 7$)	Continuers ($n = 18$)	Statistical Test	Significance
<u>Conceptual Variables</u>				
Cohesion	40.6	41.1	$t = .20$	$p = n.s$
Adaptability	37.2	35.9	$t = -.53$	$p = n.s$
Family Stress	43.8	45.1	$t = .25$	$p = n.s$
Family Communication	35.7	35.6	$t = -.04$	$p = n.s$
Family Problem Solving	28.4	27.8	$t = -.21$	$p = n.s$
Family Satisfaction	30.7	33.6	$t = .61$	$p = n.s$
Self Concept (Youth)	63.6	56.0	$t = -1.4$	$p = n.s$
Problem Behaviors	49.4	53.8	$t = .42$	$p = n.s$

Instruments

In the original study (Istre, 1992), numerous rating scales were used to yield a comprehensive picture of the social skills and related behaviors of ADHD children. These rating scales consisted of behavior checklists that were designed to provide standardized descriptions of behavior rather than diagnostic inferences (Achenbach & Edelbrock, 1983). The resulting behavior assessment of individuals was based upon multiple observations, perceptions and interactions of persons associated (parent, physician and teachers) with the individual being tested (Wilson & Bullock, 1989). As suggested by Achenbach and Edelbrock (1978), only those instruments which were well standardized and had good reliability and validity were used so that the findings from this study could

be integrated with previous work in the field. For additional information on the instruments used in time 1, the original study (Istre, 1992) may be consulted. Table 3 provides a comparison of the Time 1 instruments with those of Time 2.

Table 3

TIME 1 AND TIME 2 ASSESSMENTS

<u>Time 1 Assessment</u>	<u>Time 2 Assessment</u>
Physician	Physician
Questionnaire	Follow-up Questionnaire
diagnosis	diagnosis
other disorders	other disorders
academic skills	neurological status
neurological status	family response to ADHD
Parent	Parent
Questionnaire	Follow-up Questionnaire
Demographic data	Demographic data
SRS-Parent form	CBCL
CBCL	FACES &
CPRS-48	family assessment
FACES & family assessment	
Child	Child
Questionnaire	Follow-up Questionnaire
SRS-Student form	FACES & family profile
Piers-Harris	Piers-Harris
Teacher	
SRS-Teacher	
CBCL-Teacher	
CTBS-28	
ACTERS	
Walker-McConnell	

Cronbach's (1951) alpha reliability coefficients from this study are reported for each scale (see Table 4). Because the sample size in this study ($N = 18$) is too small to obtain a stable reliability, these results are intended only as a supplement to the values reported in the literature. The following review of the instruments used in this study

elaborates on the type of information yielded, and the technical features of the instrument, such as reliability and validity. Where permission was granted, the instruments were reprinted, otherwise, the commercial versions were administered.

Table 4
RELIABILITIES OF SCALES

Scale	Normed Reliability*	Current Reliability*
Child Behavior Checklist	.95**	.89
Family Cohesion	.81	.83
Family Adaptability	.75	.72
Family Problem Solving	.83	.74
Family Communication	.79	.72
Family Stress	.85	.84
Family Satisfaction	.91	.93
Piers-Harris (Youth)	.87	.89
Family Responsiveness (Physician)		.94

*Cronbach's alpha **CBCL reported Test-Retest reliability

The Child Behavior Checklist.

The Child Behavior Checklist (Achenbach, & Edelbrock, 1983) was used at Time 1 and Time 2 as a measure of behavioral functioning (see Appendix G). The Child Behavior Checklist (CBCL) is a standardized instrument assessing the behavioral problems and competencies of children and adolescents as reported by their parents. The 20 social competence items assess parents' reports of the amount and quality of their child's participation in sports, hobbies, organizations, games, activities, jobs and chores, friendships, and school functioning. Each of the 118 behavior problem items are scored on a 3-step response scale. This section of the CBCL provided a description of the

child's' behavior problems (Achenbach, & Edelbrock, 1983). The nine specific domains of problem behaviors measured in the CBCL are anxious, depressed, uncommunicative, obsessive-compulsive, hyperactivity, somatic complaints, social withdrawal, aggressive, and delinquent. The authors of the CBCL identified the parent as the preferred respondent in this type of assessment for the following reasons:

1. Parents are the most universally available informants.
2. Parents are the most knowledgeable about their child's behavior across time and situations.
3. Parents are almost always involved in the evaluation and treatment of their children.
4. Although their reports may be biased, parents' views of their children's behavior are usually crucial in determining what will be done about it.
5. Problems arising from the interactions with parents are likely to be especially important for a child's long-term adaptation regardless of what causes the problems.
6. In evaluating outcomes, the parents' perceptions of change are important in determining whether further help will be needed or sought (Achenbach, & Edelbrock, 1983).

Achenbach reports reliability of the CBCL in the following ways. The overall Test-Retest reliability on item scores was reported to be .95 for the 118 behavior problems ($N = 72$). Interparental agreement was .98 for the 118 behavior problems ($N = 168$). The Test-Retest reliability on Total Scores was .89. On the Social Competence Scales the reliabilities were .80 for Activities, .89 for Social, .95 for School, and .93 for Total Score.

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CONTENTS

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iability was not reported by the authors. An estimate due to the
ts in this study, the internal consistency reliability (Cronbach's
s .89.

alidity pertains to the accuracy with which a procedure measures
measure. Content, construct, and criterion-related validity were
t manual. Content validity was presented by Achenbach by relating
mental health concerns independently established by parents and
s. For construct validity, the developer found reasonable agreement
that are rough counterparts of the CBCL. The correlations between
BCL and other measures were similar to those found between other
ence. Criterion related validity was established by discriminating

differences between normal and clinical samples.

Family Adaptability and Cohesion Evaluation Scale - III. Olson, Bell, and Portner
(1979) developed FACES (see Appendix H for FACES-III) to assess family type
according to the Circumplex Model of Marital and Family Systems and to measure the
quality of children's family relations. Cohesion, defined as the emotional closeness that
family members have toward one another (Olson et al., 1982), taps the dimension of
family affect and warmth. Adaptability, defined as the ability of a marital or family
system to adjust its power structure, role relations and relationship rules in response to
situational and developmental stress (Olson et al., 1982), taps a dimension that is similar
to parental control and permissiveness - restrictiveness. Scores derived from FACES-III
enable researchers to locate a family on a circumplex matrix that is defined by four levels

of cohesion and four levels of adaptability. A basic premise of the Circumplex Model is that cohesion and adaptability have a curvilinear association with the psychosocial functioning of family members. In effect, extremely high or low cohesion or adaptability tend to be associated with family problems. An analysis of the similarities and differences among families with an ADHD child provided information about family adjustment, coping skills and response to treatment.

Used in more than 500 research projects, FACES III has demonstrated good evidence of reliability and validity. Olson, Portner, and Lavee (1985) reported the internal consistency to be good for both cohesion ($\alpha = .77$) and adaptability ($\alpha = .62$). Internal consistency reliability (Cronbach's α) for the scale from the current study was .85 for cohesion and .72 for adaptability. Test-retest reliability, (reported for FACES II) was high at .83 for cohesion and .80 for adaptability. Face and content validity was very good as was the correlation with social desirability ($\alpha = .39$). The lack of correlation between the scales was also very good at $r = .03$. However, the concurrent validity for FACES III was not as high as previous versions of FACES. This conclusion came from studies indicating that other instruments measuring constructs similar to cohesion and adaptability correlate higher with FACES II than FACES III (Green, 1989; Hampson, Hulgus, & Beavers, 1991).

The family stress, communication, family problem solving, and family satisfaction scales were used to provide additional depth to the family outcome analysis. Responses to the items are recorded on a five-point, Likert-type scale from 1 = "Strongly Disagree" to 5 = "Strongly Agree." These scales are normed and have cut-points based on a national study, similar to FACES III. The scales yield a five level categorical rating from very low

to very high. The Cronbach's alpha reliability, mean, and standard deviation for each scale was reported as: family stress, $\alpha = .85$, $M = 38.9$, $SD = 11.7$; family communication, $\alpha = .79$, $M = 35.7$, $SD = 6.5$; family problem solving, $\alpha = .83$, $M = 35.7$, $SD = 7.2$; family satisfaction, $\alpha = .91$, mean = 35.3, $SD = 8$ (Olson, et al., 1982). The Cronbach's alpha for this study was estimated to be .82 though the assumptions were compromised by the small number of cases (Nunnally, 1964).

The Piers-Harris Children's Self-Concept Scale. The Piers-Harris (Piers, 1984) is an 80-item self-report questionnaire designed to assess how children and adolescents think and feel about themselves (see Appendix I). Children were shown a number of statements that tell how some people feel about themselves and then were asked to indicate whether each statement applies to them using a 'yes' or 'no' response. A high score suggests a positive self-evaluation. The Piers-Harris was developed as a research instrument to provide a quantitative, self-report measure of children's self-concepts. The Piers-Harris has been used by researchers both to provide a global measure of self-esteem and to monitor changes in self-concept over time (Piers, 1984). Cronbach's alpha for the Piers-Harris is reported to be .87. Face and content validity were reportedly very good, as was the test-retest reliability, .82 (Piers, 1984). The Piers-Harris Cronbach's alpha for this study was estimated to be .89.

The Follow-Up Questionnaires

Parent Follow-Up Questionnaire. The Parent Follow-Up Questionnaire was developed by the author and was compiled from clinical observations and summaries of

the research variables used in previous studies of the ADHD population (see Appendix J). Updated demographic information, the child's current and historical level of functioning and parenting perspectives were the primary focus of this instrument. These variables were developed in the context of a 5-year longitudinal follow-up on children and families who had been previously studied.

Physician Follow-Up Questionnaire. The Physician Follow-Up Questionnaire (see Appendix K) is a brief questionnaire completed by the same physician as in the original study (Istre, 1992). This provided updated diagnostic and treatment information. Another purpose for the physician's questionnaire was to obtain his perspective on the ADHD child and the family, his assessment of the responsiveness of the family, and his updated view of the of the ADHD youth. The last seven (7) items on the physician's questionnaire were combined to create an outcome score, referred to as the Family Responsiveness scale. These items were constructed in a Likert-type format, with scores ranging from 7-35. This score represents the physician's view of how the family has coped with ADHD and how they cooperated with treatment. Higher scores reflect a more cooperative family with stronger coping skills. The Family Responsiveness scale was created for this project and as such has no previous reliability. The Cronbach's alpha for this sample is .94 and will be presented in Chapter 4.

Youth Follow-Up Questionnaire. The Youth Follow-Up Questionnaire consists of two parts (see Appendix L). The first part is an adaptation of the family questionnaire including FACES-III. This was intended to summarize the ADHD youth's perception of the family functioning. The second portion of the youth questionnaire is a brief

assessment of the youth's subjective experience with ADHD and its impact on his family. The tool was designed to provide data on the ADHD child's perspective of the impact of ADHD on his life and on his family. Included in this section was an opportunity for the youth to give advice to an ADHD peer and their parent. The questionnaire was piloted on a very small sample to evaluate the readability, clarity, and the approximate amount of time needed for completion.

Procedure

Following approval from the Institutional Review Board (# HE-96-058), potential participants were initially contacted by the physician by mail (see Appendix M). The parents of the ADHD subject were introduced to both the project and to this researcher, and were asked to participate in this follow-up research project. The youth received a separate letter of introduction which paralleled the parent letter (see Appendix N). The confidential and voluntary nature of the research were also explained. All participants were offered a small monetary incentive in appreciation for their efforts and time. Potential respondents were then asked to return a signed parental consent form to confirm their interest in participating.

Participating families were sent a packet which included the letters of instruction (see Appendix O), both the parent and youth instruments, and a prepaid return envelope. The parent instruments included: the Child Behavior Checklist (CBCL) (see Appendix G), and the Parent Questionnaire (see Appendix K) which consisted of the demographic update, the subjective assessment of their parenting experience, and the Family Profile which includes the Family Adaptability and Cohesion Evaluation Scale III (FACES-III)

(see Appendix H),. The Youth instrument included the Piers-Harris Children's Self Concept Scale (P-H) (see Appendix I), a youth version of the Family Profile which includes the Family Adaptability and Cohesion Evaluation Scale III (FACES-III), and the one page Youth Questionnaire (see Appendix L). The physician also completed a follow-up survey to provide updated ADHD status, any additional diagnoses, the latest report of the child's medication, progress over the past five years, as well as the physician's perspective on the family's response to ADHD and to treatment.

From the initial physician letter, twenty two (22) of the possible twenty five (25) families returned the consent forms indicating they would like to participate in the follow-up study. Two families could not be contacted and one family declined. Packets were sent to all who agreed to participate. Twelve (12) families returned the packet. A series of three follow-up letters (see Appendix P) were sent to the remaining families, one included a new assessment packet. Four more completed packets were returned (for a total of 16). The final two packets were completed and returned after a brief phone conversation with either the physician or this researcher.

Of the twenty three (23) who were able to be contacted, a total of eighteen (18) packets were returned to the researcher, an 78% return rate. The return rate based on the original sample was 72%. The demographic and conceptual variables were analyzed and showed no significant difference on any measure, therefore, the attrition which took place did not affect the sample (see Table 2).

All of the data received were complete with the exception of one youth questionnaire which was only half finished and a parent questionnaire with a small section left blank. Once the instruments were completed and returned, the participants

were sent the cash incentive as promised. Parents were asked to indicate on the questionnaire if they wanted a summary of the findings to be sent to them upon completion of the project. Of the eighteen participants, seventeen asked for a summary of the results. The data were hand coded, checked and then double checked. Data were then entered into the computer, checked and then checked again by another person.

The physician retained all patient records, and all data used in this study were coded without identifying information, to guarantee confidentiality. The participants, both parents and youth, were assigned the same code numbers used in the original study to maintain confidentiality and comparability. All records and data were free of identifying information, with all confidential information retained in the physician's office.

Repeat administrations of some instruments were used to measure change over time (see Table 2). The repeated measures for the parent were the CBCL and FACES-III. The CBCL was used to assess the child's overall behavioral functioning which was used as a measure of child outcome (see Appendix G). FACES provided the parents' view of the family functioning, primarily on cohesiveness and adaptability, as a measure of family outcome (see Appendix H). The youth repeated the Piers-Harris which allowed for a comparison of the youth's view of himself and his functioning after five years of dealing with ADHD (see Appendix I). It also provided a current assessment of self-concept, another important outcome measure. These instruments were selected due to their normed reliability and validity, and because of their wide acceptance as tools to measure the constructs associated with the study of ADHD and the family. In order to assess change over time, similarities and differences between the Time 1 and the Time 2 assessments were analyzed. The data were also compared to standardized norms when possible.

Differences were evaluated between this ADHD sample and the general ADHD population. Correlations were then used to examine specific relationships between items, in order to aid in the interpretation of the various findings.

This design includes multiple observers for the purpose of enriching the accuracy and relevance of the findings. According to Family Systems Theory, families function in a multi-dimensional context with systems operating within larger systems. In this study an effort was made to involve several of these systems which are commonly associated with the ADHD subject. The individual system is represented by the youth, parent and physician reports, the family system by the parent report, and the mesosystem by the physician report. When outcome measures are of interest it is particularly valuable to have both 'insider' and 'outsider' observations, from those directly involved in the family and those not involved. While the parental perspective is the primary focus of the study, it is enhanced by the additional information and perspective provided by the child and the physician.

Operational Hypotheses

Hypothesis 1

Families with an ADHD child will have higher adaptability scores at Time 1 than normative families from a national study. Non-parametric chi square and an estimated t-test computations will be conducted to determine whether an ADHD sample is significantly different from normative families at similar developmental stages (families with young adolescents). National norms will be used to provide percentages of families

in all levels of adaptability as a comparison to the sample of ADHD youth and their families in the current study.

Hypothesis 2

Family adaptability and cohesion scores, as reported by the mother, will be lower (more balanced) at Time 2 than at Time 1. Although this hypothesis is counter to the typical developmental pattern of families moving from pre-adolescence to adolescence, ADHD families are hypothesized to be unique due to the adjustment to the symptoms of ADHD. A t-test will be conducted to compare the differences between Time 1 and Time 2.

Hypothesis 3

Families with ADHD who have higher participation in treatment scores will have lower (more balanced) adaptability scores at Time 2 than at Time 1. The number of treatment forms the family participated in will be summed. The total number of treatments the family has accessed will determine whether each family is grouped into High or Low categories of participation in treatment. A t-test will be used to compare the groups and the change in family adaptability scores from Time 1 to Time 2. T-test will also compare the high and low treatment groups and their level of adaptability at time 2 .

Hypothesis 4

ADHD youth, in families who have accessed more forms of treatment between Time 1 and Time 2, will score higher on overall child behavioral functioning as measured

by the CBCL than families using fewer treatment options. The number of treatment forms in which the family participated will be summed. The number of treatments the families accessed will determine whether the families are grouped into High (accessed 9 or more treatment forms) or Low (accessed 8 or less treatment forms) categories of participation in treatment. A t-test will be conducted to compare the High and Low groups with the change in youth's scores on the problem behavior scale from Time 1 to Time 2.

Hypothesis 5

Families who have greater movement towards the balanced area on the Circumplex Model (adaptation, cohesion, and the combination of adaptability and cohesion) will experience more positive outcomes in family functioning after 5 years. In other words, the family outcomes (DV) will be influenced by the amount of movement towards the balanced area on the family typology variables (IV). A score to differentiate the groups will be based on calculating the differences between Time 1 and Time 2 on the Circumplex (FACES). This analysis will be conducted according to the "Distance From Center" (DFC) formula (Olson et al., 1985), which yielded scores for Time 1 and Time 2. These scores were then used to divide the subjects into "More Balanced" and "Less Balanced" groups by using a median split procedure. T-tests will be conducted to compare the groups on the measures of child and family functioning (see Chapter 4).

Hypothesis 6

Stress scores of ADHD parents at Time 1 will be higher than non-ADHD parents on national norms. The z-test formula using mean, standard deviation, and sample size will

be used to calculate the difference between the Time 1 sample and the normed sample. The nationally normed sample mean was 24.8, standard deviation was 4.8, and the number of subjects was 1315.

Hypothesis 7

Parents' stress scores at Time 2 will be lower than at Time 1. A t-test will be conducted to examine the differences between the parenting stress scores.

Hypothesis 8

ADHD youth will have (a) lower self-concept scores (Piers-Harris) than norms at Time 1 and (b) will be higher (more similar to norms) at Time 2. The scores on the Piers-Harris will be compared to the published normative data so this sample can be compared to the normative sample. The t-test formula using mean, standard deviation and sample size will be used to compare Time 1 with Time 2.

Rationale for Statistical Analysis

Chi-Square. Chi-Square is a non-parametric analysis which is designed to identify patterns or trends based on the relationship between the Expected and Actual values. The variations provide probability estimates on the strength of the association (Isaac & Michael, 1993). The cutoff points for family adaptability taken from national norms (Olson et al., 1985) follow: very low = 10-34; low-moderate = 35-40; high-moderate = 41-45; very high = 46-50. The expected values, as a percentage of the sample, can be calculated and inserted into the chi-square formulas.

Z-test. A Z-test, or Critical Ratio, formula uses the mean, standard deviation, and sample size to calculate the estimated difference between two samples. The z-test calculates the scores expected for each cell (based on the levels of the variable) using the mean, standard deviation, and the number of subjects for the first sample, then calculates the difference between the expected and the actual values. The calculated formula yields a single score which is then evaluated using a table to determine if the z-value is significant (Isaac & Michael, 1990).

T-test. A t-test is a parametric statistic which is designed to compare scores (interval level data) between two groups. Mean differences relative to standard deviations allow a statistical estimate of the probability of the difference being due to chance. The t-test formula using mean, standard deviation, and sample size was used for this analysis.

Paired T-Test. A paired t-test is an appropriate statistic for comparing the same subjects under two conditions or at two times (Norusis, 1990). Paired analyses are useful when subjects can be meaningfully paired based on their relationship to an important variable. In this case the relationship is that the subjects are the same person being studied longitudinally.

Correlation. There is a correlation between two variables when knowing the value of one variable tells something about the value of the other variable. Correlations are used to indicate the strength of a linear relationship and to estimate scores based on the correlation between two variables (Norusis, 1990). The Pearson correlation coefficient (r) is used to measure the strength of the correlation between two variables. Coefficient

values range from -1 to +1, where -1 represents a perfect negative linear correlation and +1 represents a perfect positive linear correlation. A correlation matrix is a table which displays the correlations between variables. In this study, correlations were used to examine specific relationships between variables, in order to aid in the interpretation of the various findings.

Cronbach's Alpha. Internal consistency reliability is established using the Cronbach coefficient alpha, widely considered to be a robust estimate of reliability (Cronbach, 1951).

Operational Terms

Behavior rating scales. Behavior rating scales are instruments which allow for selected responses to Likert scale items that indicate a description of another person's behavior as the respondent sees it.

Child outcome. Child outcome is the level of functioning of the ADHD subject at time 2. This was measured using both the CBCL (completed by the subject's mother) and the Piers-Harris (completed by the youth).

Family Outcome. Family Outcome is measured by the responses on the family assessment which includes: FACES III, Family Problem Solving, Family Communication, Family Stress and Family Satisfaction.

Problem behaviors. Problem behaviors are actions that hinder the performance of a learned social skill, as measured by the CBCL. These behaviors impede social and cognitive development and are a source of stress for the individual and those associated with him.

Limitations

Limitations in the study relate primarily to the small sample size. This reduces the generalizability but does not affect the value of the description of a purposively selected sample. In light of the small sample size and the large number of statistical operations performed, results should be interpreted with caution to reduce the risk of Type I errors. The subjects, all preadolescent boys, were selected from the private practice of one developmental pediatrician in one southwestern state.

The subject selection process, which screened for significant learning disabilities may have resulted in an unrepresentative sample of ADHD children (Douglas, 1983). However, despite findings from several studies that indicate a relationship exists between LD and ADHD, the nature of the relationship remains unclear (Shaywitz & Shaywitz, 1988). Further restricting the generalizability is lack of variability in the socioeconomic and racial dimensions. The sample consisted primarily of middle and upper income families, who presumably have more resources with which to afford multi-modal treatment. The influence of race is also unknown in this study since only Caucasian families participated.

The research population for which generalizability may be appropriate includes families with a child diagnosed with ADHD who seek long term treatment from a pediatric physician and are screened for specific learning disabilities, serious emotional disturbances, or major physical handicaps. The actual numbers that fit this description are not available. In short, this sample may represent a best-case scenario for the broader population of all children who have ADHD.

CHAPTER FOUR

RESULTS

Overview

The purpose of this study is to examine the characteristics of ADHD families, to investigate the differences between ADHD families at Time 1 and Time 2, and to compare ADHD families to national norms. This study was designed to include multiple methods and multiple systems in the analysis and description of the sample. The original data were gathered from 25 families with an ADHD child. Approximately five years later, data were gathered from 18 of the original 25 families. First, frequency analyses were conducted to examine characteristics of the sample. Next, chi-square, z-test, t-tests, and correlations, as appropriate, were conducted to assess differences between the various groups in the dependent variables as stated in the hypotheses. Then, parametric and nonparametric statistics were used to examine the questions derived from the gaps in the research on ADHD families which are stated in Chapter 1.

Sample Characteristics (Time 1 and Time 2)

The selection criteria for the subjects in Time 1 were that the family would have a pre-adolescent boy who was diagnosed with ADHD and who had no additional clinical

diagnosis. Refer to Appendix F for more specific selection criteria. Of the 25 initial families, 18 agreed to participate in the follow-up approximately five years later. As noted in the selection criteria, none of the subjects were adopted nor did they have any major medical, psychological, or educational problems. The ages ranged from thirteen to seventeen at Time 2, with approximately equal numbers of youth in each grade. The ADHD youth currently have an average of two siblings, the same as five years earlier. Parents were still generally in the middle to upper income categories, as defined by the Hollingshead two-factor index (Hollingshead & Redlich, 1958). At Time 1, sixty-four percent of the ADHD parents were in their first marriage, at follow-up, there had been one divorce and one remarriage. The majority of the families were urban residents, a pattern consistent over time. The mean age at onset of attentional problems was approximately five years, with the mean age of diagnosis being approximately six and a half years. Full scale IQ scores at Time 1 ranged from 90 to 139, with an average of 115 (Istre, 1992). A summary of the sample characteristics from Time 1 and Time 2 are shown in Table 1 (see Chapter 3). Table 1 also provides a comparative analysis of dropouts ($n = 7$) and study participants ($n = 18$) to establish whether any significant differences exist between those in the study at Time 2 and those who did not continue.

The conceptual variables used in this study are divided into three groups: the family variables, the youth variables, and a physician variable (see Table 5). The family variables include adaptability, cohesion, family stress, family communication, family satisfaction, family problem solving, and the distance from center on the Circumplex Model (DFC). The youth variables include problem behaviors, social competence, and

self-concept. The physician variable is a measure of family responsiveness. Table 5 summarizes these variables and how they were used for this study sample.

TABLE 5
SUMMARY OF CONCEPTUAL VARIABLES

Variable Name	# Items	Mean	SD	Range	Levels
<u>Family Variables</u>					
Adaptability					1-Rigid 2-Structured 3-Flexible 4-Chaotic
Time 1	10	35.8	4.2	24-44	
Time 2	10	34.0	5.1	22-43	
Cohesion					1-Disengaged 2-Separated 3-Connected 4-Enmeshed
Time 1	10	41.1	5.7	28-48	
Time 2	10	35.1	6.3	23-47	
Stress					1-Very Low 5-Very High
Time 1	10	45.1	10.0	30-68	
Time 2	10	53.4	11.7	31-71	
Communication					1-Very Low 5-Very High
Time 1	10	35.6	3.4	19-39	
Time 2	10	31.7	7.6	4-39	
Satisfaction					1-Very Low 5-Very High
Time 1	10	32.7	6.6	28-48	
Time 2	10	33.0	8.2	19-47	
Problem Solving					1-Very Low 5-Very High
Time 1	10	27.7	4.8	28-48	
Time 2	10	29.8	5.3	19-39	
Distance From Center					Recode 1 < 13.5 2 > 13.5 1 < 12 2 > 12
Time 1	20	13.4	2.9	6-21	
Time 2	20	12.9	3.9	6-21	
<u>Youth Variables</u>					
Problem Behaviors					
Time 1	112	53.8		24.6	17-98
Time 2	112	42.1		26.3	6-96
Social Competence					
Time 1	20	18.8		4.1	9-25
Time 2	20	16.5		5.9	3-28
Self-Concept					
Time 1	80	56.0		13.9	32-76
Time 2	80	63.0		9.3	44-76
<u>Physician Variable</u>					
Family responsiveness	7	25.3		8.1	7-35

Findings

Family Adaptability

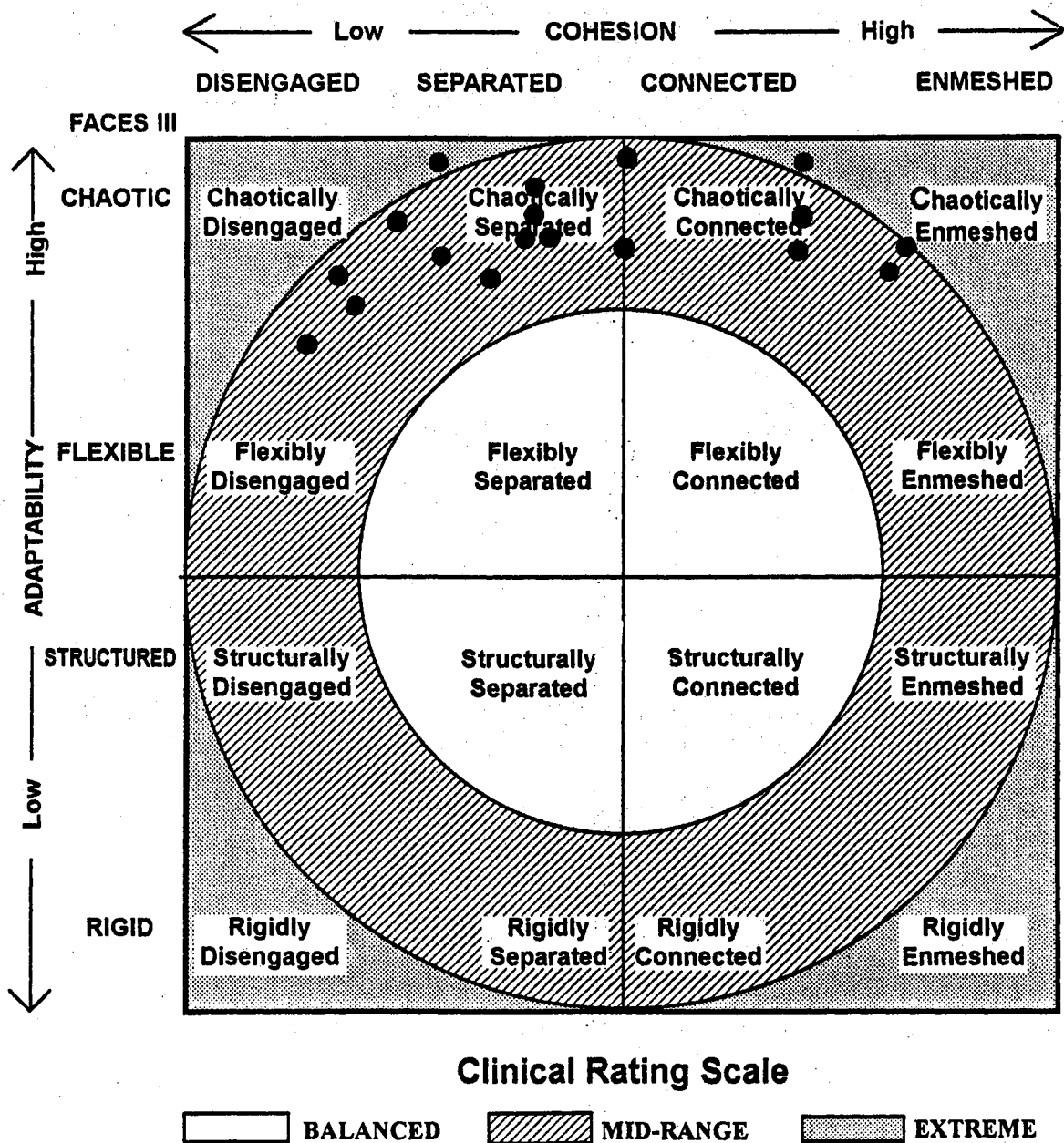
Hypothesis 1: *Families with an ADHD child will have higher adaptability scores at Time 1 than normative families from a national study.* Few attempts have been made to identify the characteristics of families with ADHD children. It was anticipated that a pattern, or typical profile, would emerge as the characteristics of the ADHD families were compiled. The Circumplex Model was used to evaluate and summarize the characteristics of the ADHD family and then to compare these data with normed data. Because of the hyperactive and inattentive symptoms of ADHD, and the ensuing relational patterns, it was predicted that families with ADHD would be more chaotic. Evaluating this prediction involved the use of adaptability scores taken from FACES-III.

Comparisons of family adaptability scores were conducted between families with an ADHD child at Time 1 and normative families from a national study. As hypothesized, the family adaptability scores at Time 1 reported by the mothers of the ADHD child were in the extreme range. More specifically, the family adaptability scores fell within the chaotic range on the Circumplex Model. Refer to Figure 1 which plots the mother reports of family adaptability and cohesion (FACES) at Time 1.

FIGURE 1

FACES SCORES AT TIME 1 PLOTTED ON CIRCUMPLEX MODEL

CIRCUMPLEX MODEL OF MARITAL & FAMILY SYSTEMS



The z-test formula, using mean, standard deviation, and sample size was used to calculate the estimated difference between the Time 1 sample and the normed sample (see Table 6). The results of the z-test calculation found that adaptability at Time 1 in the ADHD sample is significantly different than the normed group ($z = 11.37$; $p < .001$, one-tailed). These findings, while only estimations, display a pattern similar to the scores plotted in Figure 1.

TABLE 6
FAMILY ADAPTABILITY: SAMPLE VERSUS NATIONAL NORMS

Variable	Normative Sample	Time 1	Test Statistic	Estimated p value
Adaptability	$N = 1315$ $M = 24.3$ $SD = 4.8$	$n = 18$ $M = 35.89$ $SD = 4.17$	z test $z = 11.37$.001

A Chi Square calculation was also used to compare scores on family adaptability from the study group and the national norms for family adaptability (refer to Figure 2). Chi-square is a non-parametric analysis which is designed to identify patterns or trends based on the relationship between Expected and Actual values. Variations provide probabilities on the strength of the association. Cutoff points (which divide family adaptability into four levels) taken from Olson et al. (1985) are: 19-34 = very low, 35-40 = low-moderate, 41-45 = high-moderate, and 46-50 = very high. The expected values, as a percentage of the sample, were calculated and inserted into the chi-square formula.

The results were consistent with the above z test. The Chi value calculated was 564.9 with 9 degrees of freedom, which is significant beyond the .001 level of

confidence. This estimate represents a significant difference between the expected values, based on the normative sample, and the actual values obtained in this study. This provides evidence that the ADHD sample diverges significantly from what Olson et al. found in the national norms, and that chaotic levels of adaptability may represent a defining characteristic of the ADHD family. The sample was close to the national norm on cohesion. Whereas with family adaptability all the subjects were in the uppermost sections of the Circumplex Model, with cohesion, however, the subjects were distributed across all four sections with only a slight overrepresentation by those with higher cohesion (enmeshed).

FIGURE 2

CHI-SQUARE: NORMS VERSUS SAMPLE ON ADAPTABILITY

	Disengaged	Separate	Connected	Enmeshed	
Chaotic	3.0	4.7	5.4	2.9	<i>Expected %</i>
	5.6	27.8	33.3	27.8	<i>Actual %</i>
	2.6	-23.1	-27.9	-24.9	<i>Difference</i>
	($z = .0499$; ns)	($z = 2.3253$; $p < .05$)	($z = 5.2371$; $p < .01$)	($z = 6.2956$; $p < .01$)	<i>Proportions test</i>
Flexible	4.7	10.0	11.3	3.5	<i>Expected %</i>
	5.6	0.0	0.0	0.0	<i>Actual %</i>
	-0.9	10.0	11.3	3.5	<i>Difference</i>
	($z = .1804$; ns)	($z = 1.4142$; ns)	($z = 1.5143$; ns)	($z = .8080$; ns)	<i>Proportions test</i>
Structured	5.8	13.3	14.1	5.0	<i>Expected %</i>
	0.0	0.0	0.0	0.0	<i>Actual %</i>
	5.8	13.3	14.1	5.0	<i>Difference</i>
	($z = 1.0528$; ns)	($z = 1.6607$; ns)	($z = 1.7168$; ns)	($z = .9733$; ns)	<i>Proportions test</i>
Rigid	2.9	5.7	5.7	2.1	<i>Expected %</i>
	0.0	0.0	0.0	0.0	<i>Actual %</i>
	2.9	5.7	5.7	2.1	<i>Difference</i>
	($z = .0396$; ns)	($z = 1.0430$; ns)	($z = 1.0430$; ns)	($z = .6214$; ns)	<i>Proportions test</i>

Chi = 564.97; $DF = 9$; $p < .001$

The chi-square was conducted to estimate the overall relationship between the expected and actual distribution of families in this study and the national norms in the 4 x 4 chi-square representing the Circumplex Model. Because percentages from the national sample and study sample were used instead of actual counts, this analysis was conducted for descriptive purposes rather than statistical testing. The intention was to estimate the chi value for this comparison.

The use of percentages rather than actual counts, and the discrepancy between sample sizes, was recognized as a limitation. A proportions test (Newmark, 1997) was conducted on each of the sixteen cells to more formally test the binomial distribution and probability of these findings. The proportions test formula is very conservative with small samples, making significance very difficult to obtain. An analysis of each cell identified the significant versus non-significant differences between ADHD families in this sample and the national sample of non-clinical families showing where differences exist.

Results from the proportions test (see Figure 2) supplement the description given in the chi-square table by identifying the specific areas in the model which account for the discrepancy between the study sample and the normative sample. Most of the ADHD families were more chaotic and less balanced than the national norms. No family scored in the 'balanced' portion, which was a significant deviation from the norm. Therefore, the chi-square test, z test, and the proportion test results supported the hypothesis.

Hypothesis 2: It was hypothesized that the mother of the ADHD youth would report lower (more balanced) family adaptability and cohesion at Time 2 than at Time 1.

According to the Circumplex Model, most families are in the balanced area on the

adaptability scale. In families with ADHD, however, the prediction is that the adaptability scores would be extremely high due to the interpersonal adjustments required by the symptoms of ADHD over time. While families typically increase or maintain their adaptability as the children develop, it was hypothesized that ADHD families would experience a decrease in adaptability during this time period (although they are likely to still be above the average). Mothers' reports were used to maintain consistency with Time 1 procedures and because there was evidence to suggest that there is no significant difference between mother's and father's perception of family functioning in families with ADHD children (Cunningham et al., 1988).

A paired t test was conducted to examine the differences in mean family adaptability scores between Time 1 and Time 2 as reported by the mothers. Although the mean of the Time 2 family adaptability scores was still in the chaotic range, the results of the t test (refer to Table 7) found that the mothers of the ADHD youth reported significantly lower family adaptability at Time 2 than at Time 1 ($t = 1.74, p < .05$). Families with an ADHD youth seem to experience decreased adaptability (more balanced) during the transition from pre-adolescence to adolescence, a trend which differs from the normative family pattern (Olson & Lavee, 1991). At Time 1, mothers of ADHD children reported family adaptability scores in the extreme range. Therefore, the family adaptability scores would be expected to decrease towards more balanced levels as the families develop coping mechanisms and adjust their perception of the situation. In other words, the family with an ADHD child develops strategies for adapting to the unique challenges associated with ADHD. The child's symptoms generate chaos but some families make adjustments in their structure and style to cope with these unique features

and challenges (Olson et al., 1979). These adjustments appear to stabilize over time and become a defining characteristic of families with an ADHD child.

TABLE 7
CHANGE IN FAMILY ADAPTABILITY AND COHESION
FROM TIME 1 TO TIME 2

Variable	Time 1	Time 2	Test Statistic	<i>Estimated</i> p value
Adaptability	$\underline{M} = 35.88$ $\underline{n} = 17$	$\underline{M} = 34.00$ $\underline{n} = 17$	\underline{t} test $\underline{t} = 1.74$.05
Cohesion	$\underline{M} = 40.7$ $\underline{n} = 17$	$\underline{M} = 35.1$ $\underline{n} = 17$	\underline{t} test $\underline{t} = 4.71$.001

Families in this sample responded as predicted in the literature (Olson & Lavee, 1991), that is, cohesion decreased from childhood to adolescence. This finding indicates that mothers of ADHD youth reported that their families were less cohesive than they were five years previous. Therefore, the hypothesis was supported by these findings. Additional correlational analysis was conducted to examine the direction and the strength of the relationship between cohesion and the individual and family outcomes. Bivariate correlations revealed that the individual and family outcomes were positively related to cohesion in this sample of ADHD families (see Table 15). Specifically, when family cohesion was high so was family satisfaction and youth self-concept. Since the family satisfaction score is reported by the mothers, this result indicates that mothers are less satisfied at Time 2 with the lower level of family cohesion.

Hypothesis 3: *Families with ADHD who have higher participation in treatment scores will have lower (more balanced) adaptability scores at Time 2 than at Time 1.* One family coping strategy is to seek treatment such as individual therapy, medication, support groups, and so on. Based on the Double ABCX Model of Family Stress, as the family's resources increase in development and availability, their capacity to cope with stress increases. The degree of participation in treatment was measured, ranked, and grouped into high or low 'participation in treatment' categories. The overall number of treatments the families accessed designated whether the families were grouped into "High" (accessed 9 or more treatment forms) or "Low" (accessed 8 or fewer treatment forms) categories of participation in treatment.

It was postulated that those families who engaged in or accessed more treatment options would develop the ability to cope with and adjust to the effects of ADHD more readily than those who did not. A *t* test was conducted to examine the differences in family adaptability scores between high and low treatment groups. Contrary to the hypothesis, significant differences were not found between the high and low treatment groups in the statistical analysis (refer to Table 8).

TABLE 8

PARTICIPATION IN TREATMENT RELATED TO FAMILY ADAPTABILITY

Variable	Group 1 (Low Treatment)	Group 2 (High Treatment)	Test Statistic	Estimated p value
Adaptability	$\bar{M} = 33.20$ $n = 9$	$\bar{M} = 34.80$ $n = 8$	<i>t</i> test <i>t</i> = -.65	ns

One explanation for the lack of significant differences is that many of these treatments may actually be focusing on the child's problems instead of the family structure or family interaction patterns such as family adaptability. Therefore, changes in family adaptability may not result from the treatment options accessed. Another explanation is that the number of treatments participated in may not be a good indicator of the effectiveness of the resources utilized in relation to family adaptability. In other words, families who engaged in a few, but effective, treatments might experience enhanced adaptability compared to those families who participated in many treatments but did not find the help they needed. A third explanation is that the number of treatments may not be indicative of the amount of time spent in treatment. According to some research, for the treatment to be effective in producing lasting change it must be done for a relatively extended time (Barkley et al., 1990). Lastly, specific treatments may relate to a change in the family's adaptability. Therefore, further analyses should be conducted in an attempt to identify if any specific treatments options relate to family adaptability scores.

Outcome

Hypothesis 4: It was hypothesized that the youth in families who participated in more treatment options would experience improved behavioral functioning from Time 1 to Time 2. It is a common family systems contention that a family system will impact the individual members and their 'symptomatic' behavior. Minuchin (1974) studied various types of families with medical and psychiatric conditions and found patterns in how they interact. These patterns of interaction also impact the behavioral responses of each

member directly and indirectly. If an ADHD youth is in a family system which seeks to understand, adjust, communicate, and solve problems together, theoretically this individual has a better opportunity to learn new, more functional behaviors. This would hold true even if there was a biological component to this person's disorder. This hypothesis seeks to investigate whether there is a relationship between the youth's behavior at follow-up and the family's involvement in treatment.

The 'participation in treatment' groups used in hypothesis three were again used to identify high and low participation groups. A *t* test was conducted to compare level of participation in treatment with the change in youth's scores on the problem behavior scale from Time 1 to Time 2. The results indicated that there was a significant difference between the high and low participation groups, however, in the opposite direction of what was predicted (see Table 9). The low treatment group actually had the most reduction in problem behaviors at Time 2.

TABLE 9
PARTICIPATION IN TREATMENT RELATED TO CHANGE IN
CHILD PROBLEM BEHAVIORS

Variable	Low Treatment	High Treatment	Test Statistic	Estimated p value
Change in Problem Behavior	$\bar{M} = 20.5$ $n = 9$	$\bar{M} = 2.8$ $n = 9$	<i>t</i> test $t = 2.12$.05

The significant decrease in problem behaviors in the group who participated in fewer treatment options, indicates that the most improved behavior was in the group who sought fewer types of treatment. Upon detailed examination of the analysis, additional

explanations emerged for this discrepancy from the hypothesis. Of the eighteen families in the sample, two families reported that their child had considerably more behavior problems at Time 2 and both were in the high treatment group. This suggests that the amount of treatment sought relates to the severity of the problems. Future research needs to have a larger sample and more rigorous analyses of specific treatment variables.

Although contrary the hypothesis, it is the low treatment group which had the best behavioral functioning at Time 2. This result makes logical sense because it indicates that those with the most significant ongoing behavior problems sought more treatment options than those whose behavior improved with fewer treatment options. This does not mean that treatment was not effective, but rather that this method of measuring treatment was not effective in assessing the impact of treatment. This finding may more closely reflect the extent of the youth's ongoing behavior problems.

Another aspect of behavioral functioning is assessed by the youth's social competence. It was hypothesized that the ADHD youth in families who participated in more treatment options would experience improved social competence from Time 1 to Time 2. A child's social competence is crucial for successful development, and in ADHD youth, social difficulties are the norm (Whalen & Henker, 1985; Istre, 1992). Barkley (1990) found that relational problems were predictive of later behavioral problems. Thus, the social development of the ADHD youth is a significant concern.

A t test was conducted to assess the differences between high and low participation in treatment groups and the change in youth's scores as reported by the mothers on the social competence scale from Time 1 to Time 2. Contrary to the hypothesis, the results

indicated that there was no significant difference between the high and low participation in treatment groups and youth social competence (see Table 10; $t = -.38$).

TABLE 10
PARTICIPATION IN TREATMENT RELATED TO CHANGE IN CHILD SOCIAL
COMPETENCE

Variable	Low Treatment	High Treatment	Test Statistic	Estimated p value
Change in Social Competence	$\bar{M} = 1.9$ $\bar{n} = 9$	$\bar{M} = 2.9$ $\bar{n} = 9$	t test $t = -.38$	ns

One explanation for this finding is that treatment may not focus on increasing social competencies in the ADHD youth. In light of the research which shows that ADHD children have increased social difficulties, practitioners working with this population may want to work with these youth to facilitate social competence. Another explanation is that certain treatments may not encourage social competence in youth, while others might. For example, medication is a favored treatment option for ADHD youth. Some of these treatment options may have prescribed medication to the ADHD youth which may modify the behavioral problems, yet have little impact on social competence. Since it is possible that fewer and more effective treatment options might lead to better social competence, further research should be conducted to assess whether specific treatment options relate to enhanced social competence in youth.

Hypothesis 5: Families who have greater movement towards the balanced area on the Circumplex Model (Adaptation, Cohesion and the combination of Adaptability and Cohesion) will experience more positive outcomes in family functioning, after 5 years.

According to the Circumplex Model, families with more balanced levels of adaptability and cohesion are better able to make adjustments and hold together under stress (Olson et al., 1979). Research has identified that interaction is a problem in families with ADHD (Lewis, 1992). As in other areas of family interaction, positive communication skills will facilitate balanced levels of adaptability and improved family functioning. Positive communication skills include: sending clear and congruent messages, empathy, supportive statements, and effective problem-solving skills (Olson, Sprenkle, & Russell, 1979). Negative communication skills, it is theorized, minimize the family system's ability to maintain balanced and healthy levels of adaptation, and in general limit their ability to resolve problems and adjust to change in a productive manner. Therefore, if circumstances (such as the presence of ADHD in a family member) push families away from a balanced type of functioning, their ability to communicate and resolve conflicts will then play a critical role in determining the families' eventual adjustment to the stressful event.

Based on the Circumplex Model, the family's typology was assessed using the adaptability and cohesion scores from FACES III. It was proposed that if the family moves towards the balanced area, this should positively impact their eventual adjustment. The family variables which measure family satisfaction, communication, problem solving skills, family stress, and number of treatments accessed, were used to assess the family outcome at the five year follow-up. This analysis is an attempt to estimate the association between a family's typology and the process of adjusting to the challenges of ADHD.

A score to differentiate the groups was based on calculating the differences between Time 1 and Time 2 on the Circumplex (FACES). This analysis was done according to the

'Distance From Center' (DFC) formula described by Olson et al. (1985), which yielded scores for Time 1 and Time 2. These scores were then used to divide the subjects into 'More Balanced' and 'Less Balanced' groups, utilizing a median split procedure.

Individual t-tests were conducted assessing the difference between high and low distance from center change from Time 1 to Time 2 in relation to the dependent variables: mother reports of family satisfaction at Time 2, mother reports of overall level of family stress at Time 2, mother reports of family communication at Time 2, mother reports of family problem solving, mother reports of family adaptability, mother reports of family cohesion, mother reports of youth problem behaviors at Time 2, adolescent reports of their self-concept, and the physician's rating of family responsiveness. No differences were found between the high and low change in distance from center between Time 1 and Time 2 on any of the dependent variables.

TABLE 11
OUTCOME VARIABLES COMPARING MORE AND LESS BALANCED FAMILIES
AT TIME 2

Variable	Less Balanced Mean ($n = 9$)	More Balanced Mean ($n = 8$)	t test value	Estimated p value
Family Satisfaction	34.8	31.1	.90	<u>ns</u>
Family Stress	54.7	51.6	.52	<u>ns</u>
Family Communication	34.1	32.4	1.07	<u>ns</u>
Family Problem Solving	32.0	30.1	.58	<u>ns</u>
Family Adaptability	33.1	35.0	-.75	<u>ns</u>
Family Cohesion	38.1	31.8	2.34	<u>ns</u>
Youth Problem Behaviors	37.5	44.5	-.52	<u>ns</u>
Youth Self-concept	75.8	79.1	-.33	<u>ns</u>
Physician's Family Responsiveness	27.2	24.3	.74	<u>ns</u>

This finding indicates that the degree of change from the center of the Circumplex Model was not related to the level of family satisfaction, family stress, family communication, family problem solving, family adaptability, family cohesion, youth problem behaviors, youth self-concept, or the physician's rating of family responsiveness. Though there was movement towards the center it was not sufficient to affect any of the outcome variables. The distance from center scores were not predictive of outcome in this sample. One explanation for these findings is that the level of change from the center of the model from Time 1 to Time 2 varied from more extreme functioning at Time 2 for some families to more balanced functioning for others. Another explanation is that these families may be experiencing other developmental changes in family structure due to the transition to adolescence that may relate to the outcome variables. The sources of these variations need to be evaluated in future research.

Parenting Stress

Hypothesis 6: *Stress scores of ADHD parents at Time 1 will be higher than non-ADHD parents on national norms.* Research has consistently suggested that the parents of ADHD children experience higher levels of stress associated with their role as parents (Brown & Pacini, 1989). Some researchers have compared the ADHD samples to control samples, but few attempts have been made to compare ADHD parents with normative samples on stress. This sample of ADHD parents, if their responses are consistent with the literature, could provide additional insight into the family dynamics which surround the task of parenting an ADHD child. Measures for this analysis will be taken from the

family stress index, then compared to test norms provided by Olson, Portner, and Lavee (1985).

The z -test formula using mean, standard deviation, and sample size was used to calculate the difference between the Time 1 sample and the normed sample (see Table 12). The nationally normed sample of 1315 subjects, had a mean of 24.8, with a standard deviation of 4.8. The results of the z test found that stress at Time 1 in the ADHD sample is significantly different than the normed group ($z = 7.24$; $p < .001$, one-tailed). These findings are consistent with the hypothesis and with previous research on ADHD children and their families. ADHD tends to generate chaos and more difficulties in regulating and directing behavior, requiring more parenting intervention. These findings add to the consensus of the current literature which affirms that life in the ADHD family is more stressful for both parents and children (Lobar & Phillips, 1994).

TABLE 12
COMPARISON OF SAMPLE WITH NATIONAL NORMS: STRESS

Variable	Normative Sample	Study Sample	Test Statistic	Estimated p value
Stress	$N = 1315$ $M = 38.9$ $SD = 11.7$	$n = 18$ $M = 45.1$ $SD = 10$	z -test $z = 7.24$.001

Hypothesis 7: *It was hypothesized, that the parents stress scores at Time 2 would be lower than at Time 1 for families with an ADHD child.* Although the current and previous research indicates that the level of stress in an ADHD family appears to be higher than the norm, the level of stress during the adolescent years is unclear. Based on the Double

ABCX model of family stress, however, over time parents should have increased resources, as well as new definitions of their situation which it is predicted would lead to more successful adjustment to ADHD. Family systems theory would also suggest that over time a family will evolve in their definition and their adaptive responses to the context. Because parents and children adjust to stress over time, it was predicted that ADHD parents' stress scores at Time 2 will be lower than at Time 1.

A t-test was conducted to examine the differences in parenting stress score of ADHD parents at Time 1 and Time 2. Contrary to the hypothesis and to the results reported by Baker (1994), the results of the t-test found that parenting stress was significantly higher at Time 2 than at Time 1 ($t = -3.04, p < .01$). This indicates that the trend for parenting stress is upward from pre-adolescence to adolescence.

TABLE 13
PARENTING STRESS: TIME 1 VERSUS TIME 2

Variable	Group 1 (Time 1)	Group 2 (Time 2)	Test Statistic	Estimated p value
Parenting Stress	$\bar{M} = 45.1$ $\bar{n} = 18$	$\bar{M} = 53.4$ $\bar{n} = 18$	t test $t = -3.04$.01

One explanation for these findings is that at Time 1, the ADHD youth was between 7 and 11 years old, however, at Time 2 the ADHD youth was an adolescent. Minuchin (1974), indicated that stress often produces the need for change in the system. This stress could be produced by internal or external pressures in the family, usually by events such as, new members in the family or developmental changes in the members (e.g.

adolescence). The level of parenting stress reported by the parent may have increased due to the increased developmental demands of adolescence. Item analysis of the family stress scale (labeled 'Family Issues' in Appendix H), leads to the observation that this scale is sensitive to normal developmental patterns in families with adolescents. Of the twenty items on the scale, as many as nine are arguably associated with typical family patterns when children reach adolescence. Norms based on the developmental stage of the family were not available for this scale. Because this elevated stress score is likely to be typical of the family stage and the age of the children, conclusions regarding the ADHD family's stress in this study should be made cautiously. It is likely that many factors in the adolescent's environment interact and that further investigation is necessary to understand these dynamics.

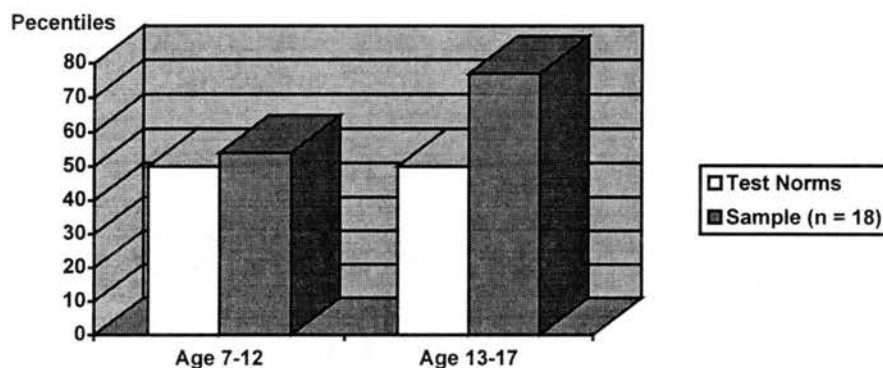
Hypothesis 8: *ADHD youth will have (a) lower self-concept scores (Piers-Harris) than norms at Time 1, and (b) will be higher (more similar to norms) at Time 2.* Much of the literature regarding the ADHD child indicated that the self-esteem is generally lower than average. Weiss and Hechtmen (1993) conclude that the consensus of the follow-up studies shows that ADHD children are characterized by low self-esteem. This was thought to be due in part to the constant failures, frustration and rejection that the child has experienced. Taylor (1994), referred to self-esteem as the key issue for personal change. Without a strong basic sense of self-esteem, the child has no reason to care whether a behavior is desirable. The importance of self-esteem has been well documented in normal child development, and is no less significant in ADHD. Therefore, it was considered an important outcome variable and was measured at Time 1 and Time 2 by the youth's scores on the Piers-Harris Self-Concept Scale.

This study predicted that ADHD youth would have lower self-concept scores than norms at Time 1, but that by Time 2, scores would be higher, closer to the normative scores. This prediction was based on the notion of adaptation, according to the Family Stress Theory (McCubbin, & Patterson, 1983a). Counter to the first part of this hypothesis, mean self-concept scores at Time 1 were above the fiftieth percentile (59). Thus, for this study, the mean self-concept scores of ADHD children were slightly higher than normative scores.

In support of the second part of this hypothesis, the scores were higher at follow-up. By Time 2 the mean score had risen to the seventy-fourth percentile. T-tests were computed to compare Time 1 with Time 2 and found that at Time 2 the scores were significantly higher ($t = -2.25, p < .01$).

FIGURE 3

NATIONAL NORMS TO SAMPLE COMPARISON



Higher than normal self-concept scores were an unexpected finding, in light of the literature, which is replete with findings to the contrary (Ziegler & Holden, 1988; Slomkowski et al., 1995; Taylor, 1994; Brooks, 1992). Results of this analysis (see Figure 3) may be due in part to the fact that the adolescents know they are being studied

and that there is no social desirability scale built into the Piers-Harris. This may account for scores which could be artificially elevated. Further study is needed to determine if this is true. Another possible explanation is that this sample is well-adjusted, in spite of their ADHD experiences. This notion also calls for further observation and analysis of other samples using methods of observation which would provide more objectivity and perspective. There may also be justification for further analysis on this population to attempt to extract some relevant differences which account for this result.

TABLE 14
CHANGE IN YOUTH SELF CONCEPT FROM TIME 1 TO TIME 2

Variable	Group 1 (Time 1)	Group 2 (Time 2)	Test Statistic	<i>Estimated</i> p value
Change in Self-Concept (Percentiles)	$\bar{M} = 59.0$ $\bar{n} = 18$	$\bar{M} = 74.0$ $\bar{n} = 18$	t test t = -2.25	.01

The second part (b) of this hypothesis related to the increase in self-concept scores at Time 2. A t-test was conducted, and the results indicate that there is a significant increase in the self-concept of the youth over time. Table 14 summarizes the results for the t-test on percentile scores of the youth's reports of self-concept, which were significant ($t = -2.25$, $p < .01$). These results provide evidence of a trend for self-concept to increase between pre-adolescence and adolescence. Consistent with Family Stress Theory, self-concept, one indicator of adaptation, would increase as the youth develops resources, enabling the youth to perceive his situation in a constructive manner. At follow-up the youth has also had five years to learn and apply better coping and

compensation skills to aid him in meeting the challenges associated with ADHD. Future analysis should investigate the specific role the family system plays in fostering a stronger self-concept in ADHD youth.

Additional Findings

The following is a discussion of noteworthy findings which were in addition to the hypotheses. Many of these findings were based on the correlations between variables which are presented in Table 15. The Family Responsiveness scale, created for this project, represents the physician's view of how well the family members coped with ADHD and how they cooperated with treatment. Higher scores reflect more cooperation with treatment and stronger coping skills. The physician's rating of the family was expected to reflect better overall family adaptation. Scores on this scale were significantly correlated with youth outcome scores on the degree of problem behaviors and social competence. Contrary to expectation the family responsiveness scale was not correlated with family satisfaction. This might be partially explained by the link between lower cohesion and satisfaction scores at Time 2. The level of family satisfaction reported by the mothers appears to be connected to the level of family cohesion, or emotional closeness. Overall functioning and family cooperation with treatment appear to facilitate better outcome functioning by the youth (behaviorally and socially), which is generally a primary concern for parents bringing families into treatment.

Analysis of the correlation matrix provides tentative responses to important research questions which were not included in formal hypotheses (see chapter one). Several involved identifying which family variables correlate with positive family and child

outcomes. Table 15 reveals that the level of family problem solving skill is significantly correlated at Time 2 with several outcome measures, including, the amount of problem behavior of the youth, the level of family communication, family cohesion and family satisfaction. In each area, increased family problem solving skill at Time 1 was associated with more well adjusted outcomes.

Family communication was correlated with the other family variables at both Time 1 and Time 2 (see Table 15). The pattern is that if communication is high then cohesion, adaptability and overall satisfaction will be high as well. There appears to be some overlap between the various measures of family functioning . Generally, these overlaps echo themes in family theory and highlight the necessity of effective interpersonal communication , strategies for family problem solving, a sense of connectedness and balance.

Family cohesion (emotional closeness) had a significant positive correlation at both Time 1 and Time 2 with family satisfaction, communication, problem solving, adaptability, and with youth behavior (see Table 15). This suggests that both emotional closeness as well as problem solving skills are family variables which are important to outcomes. Cohesion, problem solving skills as a family, and communication appear to be coping mechanisms which aid in successful long-term adjustment in the family with an ADHD child. In general it seems that families which are functioning well, in spite of the presence of ADHD, seem to be happier and more satisfied. Reciprocally, families who are happier seem to be functioning better after five years. This is not a causal statement but rather an association between these variables. However, treatment and research efforts should aim at these tangible skills (communication, problem solving and connectedness)

and the eventual condition (family satisfaction), for they seem to be connected to the long-term level of adjustment of both the individual and the family.

According to Table 15, there was a notable lack of significant correlations between youth self-concept and the other variables. While the family variables seemed to interact and be related to each other, there was no such interrelationship found with self-concept at Time 2. Interestingly, youth self-concept at Time 1 was significantly correlated with family cohesion and family problem solving at Time 2. This implies that a youth's positive self-concept may have benefits for the family after five years. It is logical that a youth with positive self-concept could be an asset in developing closeness and constructive problem solving skills in the family.

A significant negative correlation was found between the level of problem behaviors experienced by the youth at Time 2 (outcome), and the Time 1 scores on family stress, adaptability, cohesion, problem solving and satisfaction (see Table 15). This relationship deserves further research as the outcome of the child's behavior may be significantly influenced by the various family variables. These family variables are malleable and responsive to family treatment efforts and therefore have clinical promise. Another significant inverse relationship was found between the level of problem behaviors and the youth's self-concept scores, meaning that as self-concept increases, the level of problem behaviors decreased. Not surprising was the significant correlation between the youth's problem behavior and the levels of family stress reported by the mother. As problem behavior increases so did the level of stress experienced by these families. During the five year period of this study, the youth had a decrease in the degree of problem behaviors.

Although all the families in this study had high levels of adaptability, some families had better coping skills and were more satisfied. This reinforces the notion that although the family may be in the chaotic range on the adaptability scale, this does not imply that they are “dysfunctional or pathological.” It is possible for the family to make adjustments and to emerge with a functional and satisfying family life.

Table 15

ASSOCIATION BETWEEN FAMILY, YOUTH, AND PHYSICIAN VARIABLES TIME 1 AND TIME 2

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1 Family Satisfaction 1	1.00																					
2 Cohesion 1	.86**	1.00																				
3 Adaptability 1	.54*	.75**	1.00																			
4 Stress 1	-.39	-.38	-.19	1.00																		
5 Self esteem 1	.06	.22	.30	-.25	1.00																	
6 Problem Behavior 1	-.55*	-.69**	-.55*	.72**	-.28	1.00																
7 F. Communication 1	.56**	.66**	.55*	-.25	-.12	-.57*	1.00															
8 F. Problem Solving 1	.64**	.74**	.60**	.63**	.41	.67**	.49*	1.00														
9 Family Satisfaction 2	.51*	.60*	.50*	-.52*	.48	-.44	.40	.85**	1.00													
10 Cohesion 2	.72**	.68**	.53*	-.33	.49*	-.28	.27	.73**	.81**	1.00												
11 Adaptability 2	.14	.26	.56*	-.19	.25	-.17	.50*	.41	.57*	.36	1.00											
12 Stress 2	.05	.03	.09	.44	-.19	.07	.22	-.39	-.62**	-.39	-.05	1.00										
13 Self esteem 2	-.37	-.14	.23	.04	.57*	.11	-.39	.06	.21	.29	.22	-.33	1.00									
14 Problem Behavior 2	-.18	-.48*	-.47*	.56*	-.49*	.71**	-.15	-.55*	-.57*	-.39	-.18	.37	-.50*	1.00								
15 F. Communication 2	.64**	.54*	.56*	-.41	.41	-.37	.40	.62**	.73**	.72**	.56*	-.40	.19	-.37	1.00							
16 F. Problem Solving 2	.25	.40	.30	-.64**	.51*	-.57*	.17	.76**	.83**	.51*	.44	-.60**	.18	-.65**	.47	1.00						
17 Distance from Center 1	.46	.54*	.78**	-.14	.21	-.34	.53*	.46	.26	.41	.35	.14	.21	-.20	.45	-.05	1.00					
18 Distance from Center 2	-.30	-.31	.08	.05	-.19	.25	.35	-.09	.07	-.15	.70**	.07	-.05	.30	.13	-.07	.24	1.00				
19 Social Competence 1	-.01	.13	.23	-.10	.01	-.22	-.08	.10	.06	.06	-.30	-.40	.49*	-.33	.09	-.02	.34	-.33	1.00			
20 Social Competence 2	-.34	-.12	.24	.07	.10	-.06	-.20	-.13	.20	-.05	.23	-.36	.58*	-.48*	.24	.12	.04	.08	.54*	1.00		
21 Doctor Total Score	-.07	.30	.54*	-.12	.33	-.50*	.15	.33	.32	.09	.14	-.24	.34	-.58*	.22	.38	.25	-.20	.55*	.57*	1.00	

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The research literature, like a clinical waiting room, is filled with evidence of the exceptional stress facing the parents of children with Attention Deficit Hyperactivity Disorder (ADHD). Between 5 to 10% of all children in the United States are afflicted with this syndrome (Taylor, 1994). Barkley (1995) estimates that ADHD affects 3.5 million children in the United States, and persists into adulthood in over half of these. This chronic and pervasive disorder significantly affects a child's social, cognitive and psychological development. The essential feature of ADHD is a "persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development" (American Psychological Association, 1994, p.78).

ADHD children can be especially challenging to rear. When young, they experience all the normal struggles and problems of early childhood, often, to an exaggerated degree. Parenting an ADHD child brings many additional challenges, which are only made worse by the lack of clear and consistent information on the most effective responses. Adding to

the strain is the often long and frustrating process of identifying and diagnosing a child's problems, then sorting through the advice to select a plan of treatment. Hyperactivity poses severe stresses on a marriage in many different ways. A wide variety of problems, misbehavior, and a general state of chaos can be relentless and overwhelming.

Older children with ADHD often develop additional emotional and behavioral problems that produce defiance, aggression, depression, and anxiety. Taken as a whole, the long term outcome studies on ADHD have not yielded encouraging findings, however, these studies have not isolated a sample of ADHD subjects who are free of any additional diagnosis, which complicate the subject's outcome. This characteristic confounds the interpretation of the findings in previous outcome studies. The impact of the family on the child's ADHD, and the impact of ADHD on the family unit over time are aspects of this field which need further investigation. Researchers and clinicians agree that outcome is dependent on many interrelated factors, and there is no simple or sure way to predict it.

This study was intended to gain insight into how a child's ADHD interacts with the family unit and to understand how family characteristics may effect the eventual adjustment of both the ADHD children and their families. Since family perspectives on the experience of adjustment to ADHD remains unclear and under-represented in the research literature, this study was developed to extract significant information regarding the experience of the parents of ADHD children. The intent of this study was to evaluate the need for further recognition and investigation of these systemic issues. The importance of the information from this study lies in the potential to enhance the clinical and educational resources for helping parents, children and families cope successfully

with ADHD. The obvious goal is to help families apply their resources and energies most effectively to produce the best outcomes for all those involved with ADHD.

Family Systems Theory provided the theoretical underpinnings for this research effort. This is most appropriate when the goal is to investigate family interactive patterns and to understand the reciprocal influences of parts (individuals) or wholes (family), in the context of time. Family Stress Theory was used as a model for understanding the processes by which a family adapts to living with ADHD. The Circumplex Model offered the specific conceptual dimensions and provided a means of evaluating and comparing families with normative data on families at similar stages of development. In an effort to advance the understanding of ADHD families and to integrate these findings into the existing theory; hypotheses were based on these theories of the family.

The review of literature summarized the growing body of knowledge in the field of ADHD. Variables related to the individual were described in the context of the disorder. Family characteristics and issues were discussed and integrated with the individual variables. The reciprocal impact of the ADHD child on the family and the family on the ADHD child were considered. The possible responses to these stressors, both positive and negative were identified from the literature. Finally, the methodological approach to this study was supported by the recommendations, findings and gaps in the current body of research.

The design used in this study was primarily descriptive-comparative, longitudinal and correlational. The central aim was to identify quantitative and qualitative information on parental and family adjustment to ADHD and to identify productive variables for future research. The original sample consisted of twenty five pre-adolescent

boys diagnosed with ADHD. The sample was selected from the caseload of a developmental pediatrician specializing in the care of ADHD children. Eighteen of the boys and their mothers were available five years later to participate in this longitudinal follow-up assessment. Repeated administrations of standardized instruments allowed for direct comparisons of the change over time. Normative samples were utilized as representative of the general population, in an effort to assess differences with this sample. The parents and youth who participated were mailed packets of material to complete and return. Twenty-two (22) of the original twenty-five (25) families were located. Of these, eighteen (18) completed Time 2 assessments for a return rate of 82% of the identified subjects. The effective return rate based on the original sample is 72% after five years. An analysis of the demographic characteristics of the seven non-responding families and the eighteen (18) study families revealed no significant differences.

The hypotheses were focused on describing the experiences, adjustments and current status of these parents and children. This was done by comparing the data collected from this sample of families with normed samples, and by comparing them during pre-adolescence (Time 1) and again five years later (Time 2). The hypotheses were based on a solid theoretical base and were shaped by the experience of clinicians as well as the research literature on ADHD. This approach to research was taken so that the findings could be integrated with the current understandings in the field and so there would be practical significance to this effort.

Summary of Findings

The following summary is a review of the results found in this study. There are several recognizable themes in this investigation which are intertwined throughout. These

themes provide structure for this review. One of the goals of this research was to learn more about the unique features and patterns which characterize the ADHD family. The primary variables of interest included the levels of family adaptability, cohesion, stress, communication, problem solving, and satisfaction. These family variables were examined in relation to national norms and they were compared over time.

Adaptability and Cohesion

The first theme, adaptability and cohesion, combine to illuminate the dynamics in the ADHD family. Partial support was found for the hypotheses regarding family adaptability. Adaptability refers to the ability of the family to respond to stress, to change and adjust as needed but also to maintain the uniqueness and integrity of the family unit. ADHD parents report that their families are extremely high in adaptability. They are more flexible than the normative family and maintain that flexibility over time. Adaptability, then, is a key feature of the ADHD family. This strength, like all characteristics of individuals and families, especially when out of balance, has a corresponding weakness. Too much adaptability can be chaotic, which can lead to stress and insufficient stability. Results indicate that over time the ADHD family stays at a very high level of adaptability, a pattern different from what would normally be expected for families at this stage (Olson & Lavee, 1991). Adaptability remained in the extreme range regardless of the number of treatment options the families accessed. Though still very high, the level of adaptability did significantly move towards more balanced levels over time, a testament to the strength of these families.

Exceptionally high levels of adaptation, referred to as the chaotic range on the circumplex, are not necessarily dysfunctional or unhealthy. These families may operate more flexibly in an effort to accommodate the learning style and behavioral characteristics of the ADHD child. There is less structure and more parental involvement at all levels and in most situations, especially during the younger years. This is partially due to the limited ability of the child to follow through, remember and focus on relevant tasks. The features which characterize ADHD demand creativity, flexibility, adjusted expectations and methods from the parents and other adults who work with these children. Parents comment that interventions which are effective one day are often not effective the next. Chaos does describe the way the child thinks and acts, it also describes the patterns which seem to develop in the family. ADHD children are hyperactive, which by definition involves behavior that is overactive and inefficient. These characteristics seem to influence the context of the family, who must accommodate and integrate the hyperactive member as part of the whole. A highly adaptable state in these families is not considered a negative or pathological feature. Some families' needs are well served in this type of environment, while others experience significant symptomatic problems, such as high levels of conflict, anger, withdrawal, or unacceptable behavior. Ultimately the family (with an emphasis on the parents) must evaluate whether or not the patterns in the family are yielding satisfying results.

The family with a child diagnosed with ADHD seems to vary on the cohesion dimension in a relatively normal way. There are families in each of the four levels of cohesion. Over time these families saw reductions in their levels of cohesion, a trend similar to the one found in the literature for all families (Olson & Lavee, 1991). A direct

correlation was found between cohesion and family satisfaction as well as with the youth's self-concept scores at outcome.

Family cohesion emerged as a relevant measure of family functioning. Olson et al. (1979) referred to the emotional bonding that family members have toward one another as family cohesion. Family cohesion assesses the degree to which family members are separated from or connected to their family. The scores measuring the amount of change in the Distance from Center (of the Circumplex) from Time 1 to Time 2 were influenced by the cohesion dimension more than the adaptability dimension. At Time 2 the movement which families made was more closely associated with the cohesion scores.

Even though family adaptability scores typically increase as children move into adolescence, families with an ADHD youth experienced decreased adaptability during the transition from pre-adolescence to adolescence. Since mothers of ADHD children at Time 1 reported family adaptability scores in the extreme range, adaptability scores would be expected to shift more towards balanced levels as the families develop coping mechanisms and adjust their perception of the situation. In other words, the family with an ADHD child develops strategies for coping with and adapting to the unique challenges associated with ADHD.

Family Stress

Another key feature of the ADHD family is the elevated levels of stress. This may be reciprocally influenced by the level of chaos in the family environment. Mothers of the ADHD youth reported high levels of stress in the overall family environment as well as stress specifically related to parenting the ADHD child. Research and parents agree that

there are many exceptional demands and challenges associated with parenting a child with ADHD. Parents were significantly above the average in levels of stress. This was true at Time 1 and at Time 2, where stress continued to increase into adolescence. However, despite these increased levels of chaos and stress, the families did not show any notable decrease in satisfaction. This implies that they have adapted to these elevated levels and have maintained their level of satisfaction.

Impact of Treatment

The goal of assessing the impact of treatment on the outcomes of the youth and the family was not realized in this study. The items used to measure treatment were not sufficient to provide meaningful data. Identifying the number of treatment options accessed by the families did not adequately represent the impact of treatment. Youth whose families participated in more treatment showed no more improvement in behavior at Time 2 than those who had less treatment. Also, no relationship was demonstrated between the levels of participation in treatment and the youth scores on the social competence scale.

Child Outcomes

Another important goal of this study was to gain insight into the current status of the ADHD adolescent at Time 2. The results indicate that the subjects in this study are developing well. They seem to have adjusted to challenges and obstacles associated with ADHD. Specifically, the parents reported that the number and degree of problem behavior has been significantly reduced at follow-up. This is not to suggest that problems

have been eliminated, but rather that the child and the family have found ways to adapt and cope with the challenges they face.

Another result which suggests that the youth and parents found ways to adjust to ADHD is the youth's self-concept. Youth report higher than normative self-concept, as measured by the Piers-Harris. At Time 2 youth self-concept scores were significantly higher than at Time 1. While this finding is a deviation from the consensus of the literature, it does represent one indicator of healthy adjustment on the part of the youth. It is also a reflection of the family environment and the constructive efforts to help the ADHD child.

Other Questions Addressed

There appears to be some overlap between the various measures of family functioning . Generally, these overlaps echo themes in family theory and highlight the necessity of effective interpersonal communication , strategies for family problem solving, a sense of connectedness and balance. For instance, family problem solving skills at both Time 1 and Time 2 were significantly correlated with family satisfaction. Family satisfaction at outcome (Time 2) was significantly correlated with family problem solving at Time 1. Also interesting is that when communication is high so is cohesion, adaptability and overall satisfaction as well. Cohesion, problem solving skills as a family, and communication appear to be coping mechanisms which aid in successful long-term adjustment in the family with an ADHD child. In general it seems that families which are functioning well, in spite of the presence of ADHD, seem to be happier and more satisfied. This supports the notions of the literature which suggest that conflict

resolution skills are crucial to family adjustment and fulfillment (Olson, Sprenkle, & Russell, 1979).

In summary, ADHD families were found to be extremely high in adaptability. As hypothesized, these families remained high yet moved towards more balanced levels of adaptability over time. Family cohesion in this sample varied in a normative manner for families with adolescents, showing a slight reduction in cohesion over time. Parents, as hypothesized, reported significantly more stress than existing norms. Additionally, parents reported higher stress at Time 2 than at Time 1. Youth in this sample appear to be developing well, as evidenced by lower numbers of problem behaviors and higher self-concept scores. Family cohesion, communication, and problem solving skills appear to be important variables in successful long-term adjustment in the family with ADHD. The ADHD families in this sample exhibited strength in their ability to cope with and adapt to the challenges, without decreasing their level of satisfaction.

Conclusion

Families in this study have helped to further the understanding of the reciprocal patterns of interaction in the ADHD family and the changes which occur over time. Their collective experience has illuminated the processes which are constructive and destructive, as well as the relative strengths and weaknesses which tend to be present in ADHD families. Figure 4 summarizes the key features of this study.

FIGURE 4

STUDY SUMMARY USING LITERATURE REVIEW FORMAT

Author	Subjects	Analysis	Variables & Measures	Results
Holderness 1997	n = 18	Chi-Square	Family Adaptability	ADHD families have extremely high adaptability
		Correlations	Family Cohesion	Family cohesion decreased over time
		Proportions	Family Stress	Families made adaptive changes to cope with ADHD
		Test	Family Communication	Outcomes (indiv. and fam.) correlated with cohesion
		T-test	Family Problem Solving	conflict resolution skills directly relate to satisfaction
		z-test	Family Satisfaction	ADHD parents perceive high levels of family stress
			Child Behavior Problems	Parents report higher stress at 5 year follow-up
		Longitudinal	Youth Self Concept	Family satisfaction was in the moderate range
		Follow-up (5 years later)	Physician Evaluations	Families make adaptive changes to cope with ADHD
				Youth self-esteem was higher than norms
Purpose				Youth self-esteem improved at 5 year follow-up
To describe the family patterns and outcomes associated with ADHD through a longitudinal analysis.				Youth self-concept correlated with family cohesion
To identify family variables relevant to child outcomes.				Youth had fewer problem behaviors after 5 years

Research Implications

The current study highlights important implications for future research with ADHD families. Researchers should consider using larger sample sizes from a more diverse population, including youth diagnosed with ADHD who did not continue in long term treatment. Larger samples would allow for more flexibility in analysis, provide more substantive conclusions, and allow for greater generalizability. Additionally, future research would benefit from others' reports of the ADHD family such as father's or siblings' reports as well as teacher or physician .

This study was not designed to identify which treatment options were beneficial to individual and family outcomes. The question of the relative effectiveness of the various treatment options is still a relevant area of research, potentially beneficial to all involved. Future research should be conducted to assess whether specific treatment options relate to enhanced family life and to improved social and behavioral adjustment for the youth with ADHD.

Study youth reported unexpectedly higher self-concept scores than normative samples. This raises many questions and requires further study. In addition, self-concept was not correlated with other variables in ways that were intuitively expected. Further investigation is needed to understand better the role of the family in fostering stronger self esteem and improving behavioral functioning in youth.

The reciprocal impact of the family, parents, and the ADHD child has been affirmed in these findings. Future research needs to incorporate these concepts and variables to further understand the role and the nature of the family relationship aspect of treating ADHD. Also more longitudinal studies are recommended to continue the study of the developmental changes in both the individual and the family.

Clinical Implications

Based on this study, the clinician working with ADHD children should encourage the participation of the entire family in the treatment process. Specifically the parents, both mother and father, can benefit from learning as much as possible about ADHD and how to cope with the unique challenges it brings. Though the levels of adaptability are in the extreme range, the clinician need not feel compelled to make major modifications in

the family style. However, the ADHD child will function better and the family relationships will improve with increased structure, improved communication and more effective problem solving skills. The clinician should evaluate to what degree the family needs to move towards a balanced level of adaptability. Frequently this involves some modifications in the parental leadership and in the counterproductive behavior patterns which may have developed over time.

Parents are also interested in family cohesion (closeness) and interpersonal relationships in the family, even through the adolescent years. Family cohesion is a significant variable for the child with ADHD and his parents. A clinician should be sensitive to the goals and needs of all the members of the family when establishing treatment objectives and interventions.

Fortunately, there are an increasing number of resources available to clinicians and parents; from seminars, to articles and books. It is essential that the clinician be well informed and equipped to help this population. These families need accurate information and additional support especially early in the adjustment process. The clinician should keep in mind that normal expectations are not within reach for the ADHD child or his parents. Care should be taken to avoid unnecessarily burdening these stressed parents; they need tools and guidance to help them cope more effectively, resources for their ADHD child, and to be reminded not to overlook the rest of the family. Specifically, parents need discipline strategies, stress management techniques, and appropriate expectations for their child, family, and themselves as parents. The child needs understanding, education, coping strategies, compensation techniques, and time. The family unit is strengthened by sufficiently high levels of problem solving skill,

communication skill, and cohesion. Assisting the parents in coping with the increased stress associated with parenting an ADHD child is also a long-term need in these families. It is critical for the health of the family, and therefore for the welfare of the ADHD youth, for the marriage relationship to be strong and healthy. These family issues should be considered a relevant long-term clinical objective in assisting families to adjust to the challenges of ADHD.

Practical Implications for Parents

Briefly, parents first need to hear that the stress and chaos they are experiencing is normal in ADHD families. Parents are doing a lot of things right, based on this study. Treatment, in all forms, is a sacrifice in many ways, especially when the child is resistive. Parents need to participate actively in the treatment process and not rely on medication alone. Parents should practice stress management and develop a family lifestyle which promotes some structure for the family, with routines and consistency. This study showed growth and positive change took place in the five year period. Parents need to be reminded that the difficult years will not last forever and that the ADHD child can actually grow up to be a successful and happy adult. Parents should take an active role in the shaping of the family. Parents need to seek to develop the type of family environment that will promote the success of all the individuals as well as the family as a whole. ADHD children need to be helped to structure their chaotic lives and need loving accountability to help them learn appropriate behavior, study skills, and social skills. This is facilitated by appropriate expectations, structure, emotional closeness, open communication, effective problem solving strategies and lots of loving patience.

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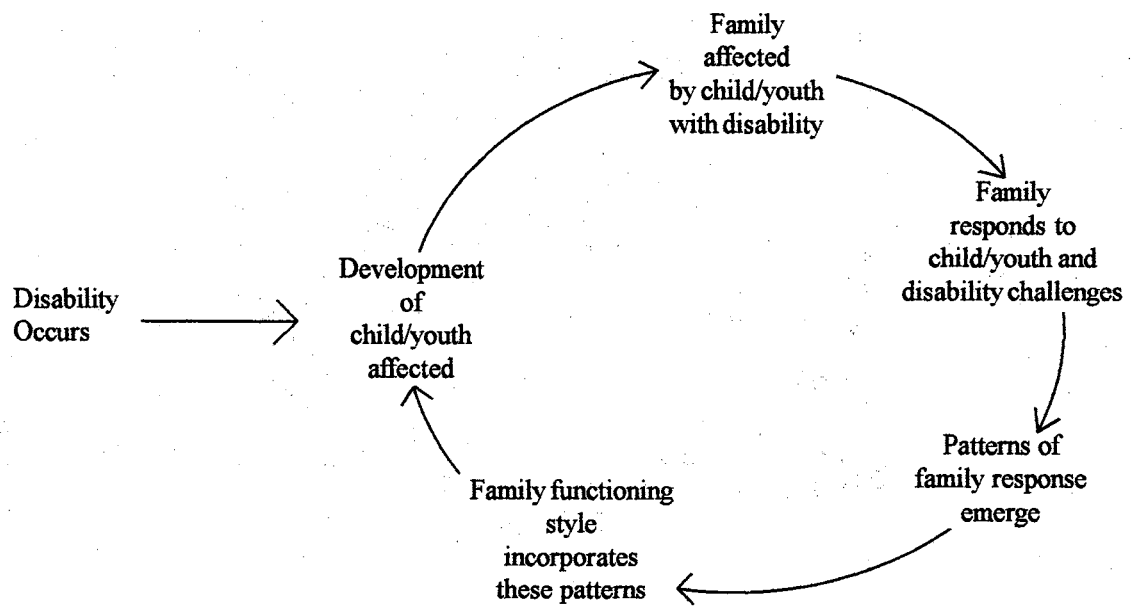
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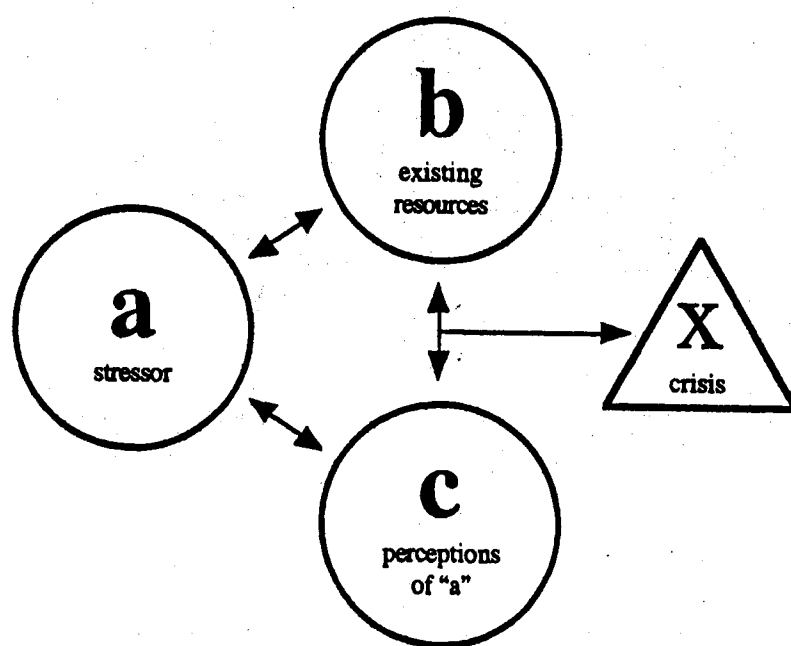
Appendix A

“CIRCULAR SEQUENCE”
(Patterson, 1991, p. 131)



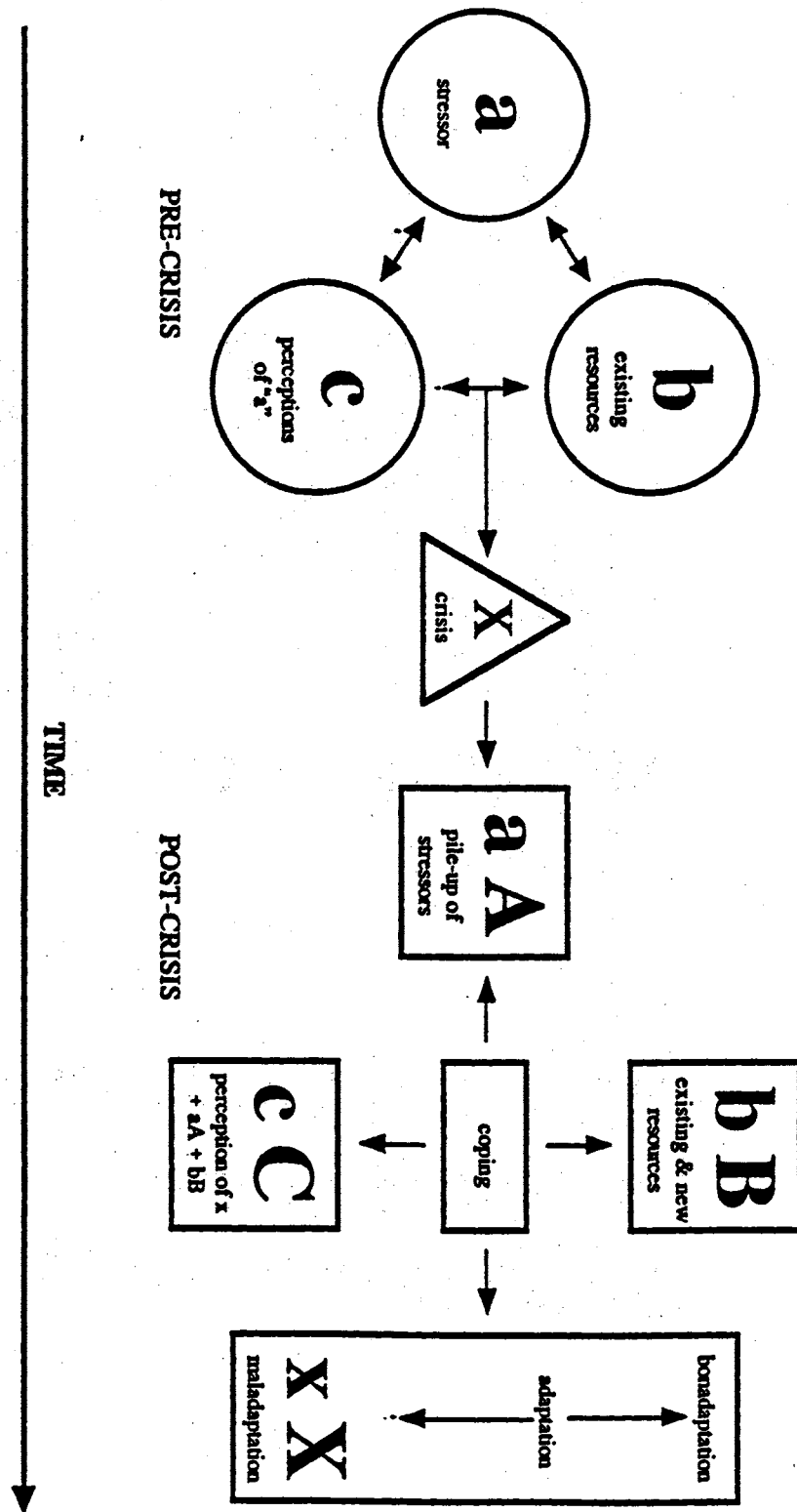
Appendix B

ABCX MODEL OF FAMILY STRESS



Appendix C

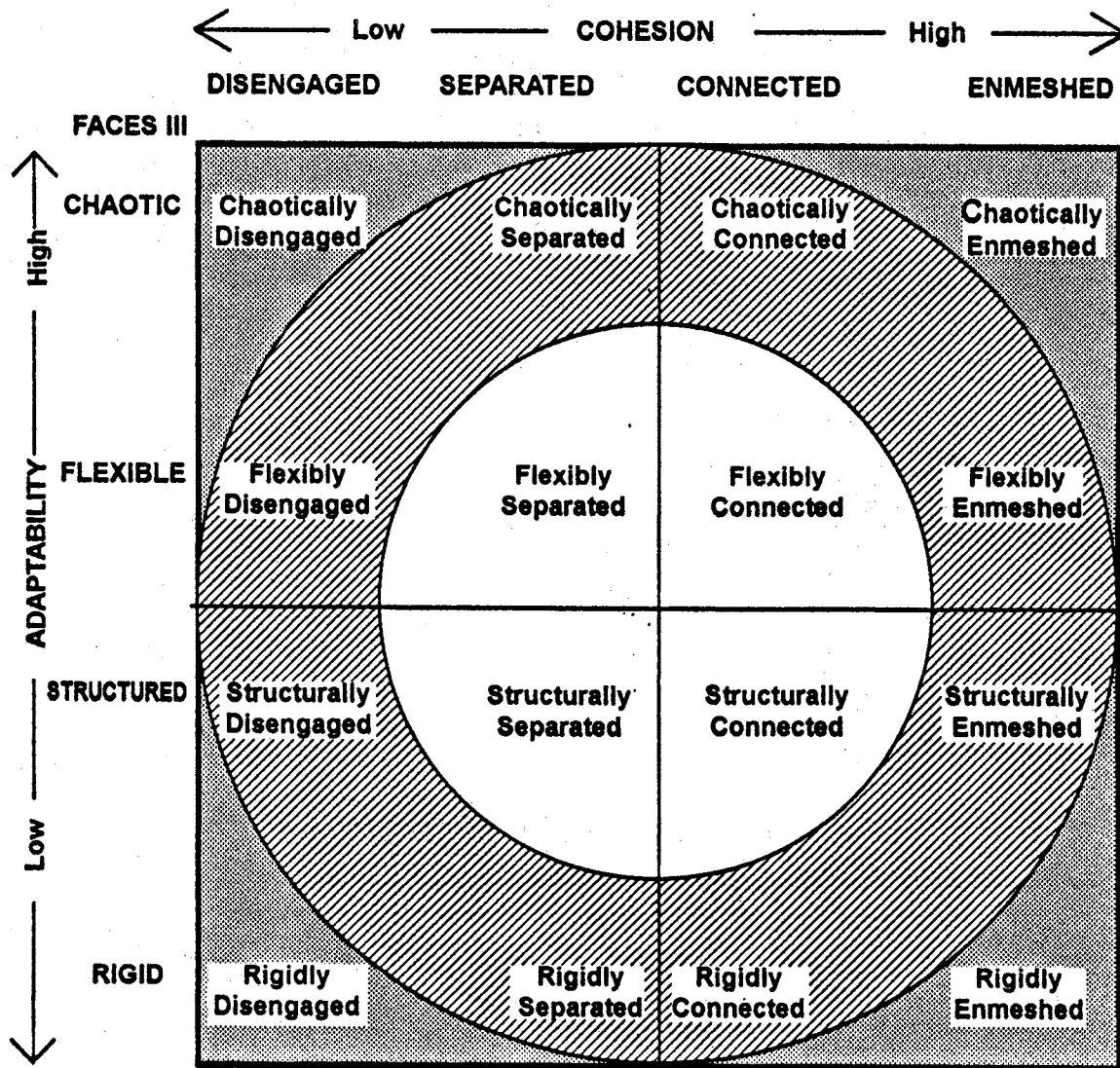
DOUBLE ABCX MODEL OF FAMILY STRESS



Appendix D

CIRCUMPLEX MODEL OF FAMILY SYSTEMS

CIRCUMPLEX MODEL OF MARITAL & FAMILY SYSTEMS



Clinical Rating Scale

BALANCED
 MID-RANGE
 EXTREME

INITIAL LITERATURE REVIEW CHART

Author/Date	# Subjects	Analysis	Variables & Measures	Results
Cunningham (1988) Behness Siegel	N=26 26=control	Control group MANOVA	Time allocation Father's perception Mother's perception Family Functioning (FAD) Child Behavior Beck Depression Scale Conners Parent Questionnaire (CPQ)	ADHD parents have increased alcohol consumption. ADHD mothers suffer from depression more than fathers. ADHD parents report decreased contact with extended families. * No difference between mother's and father's perception of family functioning. No difference (ADHD vs. normal) in time spent alone. No difference (ADHD vs. normal) in time spent alone as couple or family.
Purpose To compare time use/allocation for ADHD and normal families.				
Brown (1989) Pacini	N=51	Control group Spearman Corr.	Depression (CES-D scale used) Family Environment (FES)	ADHD parents perceive their family as less supportive with less outside social involvement. ADHD parents perceive their family as more stressful and controlling. ADHD Parents perceive their family as less expressive and independent. ADHD parents perceive their family as less cohesive. Family structure was related to interpersonal relationships, achievement and intellectual aspiration. Parents of ADHD were more frequently divorced or separated than parents of control group.
Purpose To examine ADHD parents' perception regarding their family environment and depression.				
Barkley (1991) Fischer Edelbrock Smallish	N=100 ADHD 60 Normal	8 year follow-up Control coded video MANOVA ANCOVA	Psychoeducational assessment Locke Wallace-Marital Satisfaction HSQ-Home Situation Questionnaire Beck Depression Family demographics	Hyperactives continue to have more problems than normals. ADHD families encounter more frequent and more intense family conflicts. Mothers of hyperactives are more distressed than mothers of control group. *ODD accounted for most of the differences between normal and ADHD.
Purpose To examine degree to which hyperactive adolescents differ from normal adolescents in their current behavioral adjustment.				
Lewis (1992)	N=123 parents of ADHD	Chi-square ANOVA ANCOVA	Adaptability/Cohesion/Communication Family type (FACES III) (DFC model)	Family not different in functioning than norms by Olson. The more complex the symptom, behavior, or problem, the more likely to be extreme on the Circumplex.
Purpose To describe adaptation, cohesion and family type in ADHD families.				

Author/Date	# Subjects	Analysis	Variables & Measures	Results
Anastopoulos(1992) Guevremont Shelton DuPaul	104 mothers	Regression	ADHD Symptoms (CBCL) Parental stress Family demographics	5 of predictors of parent stress were child variables; 2 were parental variables. Parental stress increased with increased severity of symptoms.
Purpose To investigate degree to which stress was related to child, parent and family variables in addition to child's ADHD.				
Donenberg (1993) Baker	N=64	MANOVA ANOVA	Family Impact Q (FIQ) Parental perception of impact of ADHD Dyadic Adjustment (DAS) Parental Depression (Beck) Parental Stress (PSI) [FIQ included in article]	ADHD and Autistic groups different from normal control group, but not from each other. Demographics didn't account for any variance. Parents reported the impact did not generalize to their marriage or siblings. Parents of ADHD reported negative impact on social life, feelings about parenting, and higher stress.
Purpose To study impact of externalizing (ADHD) autistic and normal - predicting ADHD would be between autistic and normal in impact.				
Lewis-Abney (1993)	N=76 mothers 47 fathers 6-11 yrs old	Regression Zero order correlation	FACES w/ DFC scores Parenting sense of competence scale Conners CPRS-48 Parental perception of child's behavior Parenting competence Demographics	Families with older children had decreased family functioning. More problematic child behavior = lower parent satisfaction and parental confidence. Older age and level of impulsivity were predictors of level of family functioning.
Purpose To examine predictor variables for family functioning with ADHD.				
Fischer (1993) Barkley Fletcher Smallish	N=123 ADHD kids	Regression 8 year follow-up	Academic, psychiatric and social outcomes Maternal personal adjustment Family instability Duration of therapy Other diagnosis	Increased defiance predicted increased arrests. Parental personal competence predicted adolescent social competence. Impulsivity + paternal antisocial predicted ODD. Recommended early intervention in providing parenting skills, family relations and treating aggression and defiance.
Purpose To investigate predictions of adolescent outcome in ADHD.				

Author/Date	# Subjects	Analysis	Variables & Measures	Results
Anderson (1994) Hinshaw Simmel	N=49 37 control 6 - 12 yrs old	Regression F-tests Observation Control group	Family interaction patterns Family environment variables Child behavior (observed) Mother-child interaction (videotaped) Child Psychoeducational Evaluation	ADHD boys more likely to demonstrate externalized behavior than control group. Parenting practices seem to contribute to externalized behavior of ADHD children. Support notion of maternal negativity explaining significant amount of noncompliance.
Purpose To determine if a link exists between familial processes and aggressive behavior in children.				
Baker (1994)	N=20	T-tests Regression	Child Behavior (CBCL) Parenting Stress (PSI) Socioeconomic status Years married Parental gender	Parent gender had little influence on stress. Fathers felt less attached to children. Parenting stress decreased as number of years married increased.
Purpose To determine if child or family characteristics make unique contributions to stress in parents of ADHD.				

Appendix F

SUBJECT SELECTION CRITERIA FOR ORIGINAL SAMPLE
(Istre, 1992)**ADHD Subjects**

- Male child in grade 2 through 5 (aged 7-11 years old)
- Biological child of the mother
- Diagnosed as ADHD by the same developmental pediatrician
- Seen by the developmental pediatrician within the last year
- Meets the DSM-III-R criteria for ADHD
- Does not meet the DSM-III-R Criteria for ODD, Conduct Disorder or any other major psychiatric disorder for children
- Does not have a school-based diagnosis of a learning disability or any abnormal test results that would indicate the presence of a learning disability (except auditory memory deficit, dysgraphia or articulation disorder)
- Does not have any major medical disorders
- Within normal limits for height and weight
- Maternal absence of substance abuse during pregnancy
- Pregnancy was carried to term
- Birthweight as >6 lbs. and <10 lbs
- Absence of fetal distress
- Absence of hard neurological findings
- Achieved appropriate developmental milestones
- Absence of moderate or severe vision or hearing problems
- Absence of any history of physical or sexual abuse

Appendix G

CHILD BEHAVIOR CHECKLIST (CBCL)

CHILD BEHAVIOR CHECKLIST FOR AGES 4-18

For office use only
ID #

Please Print

CHILD'S FULL NAME FIRST MIDDLE LAST			PARENTS' USUAL TYPE OF WORK, even if not working now. (Please be specific—for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)	
SEX <input type="checkbox"/> Boy <input type="checkbox"/> Girl	AGE	ETHNIC GROUP OR RACE	FATHER'S TYPE OF WORK: _____	
TODAY'S DATE Mo. _____ Date _____ Yr. _____		CHILD'S BIRTHDATE Mo. _____ Date _____ Yr. _____	MOTHER'S TYPE OF WORK: _____	
GRADE IN SCHOOL _____	Please fill out this form to reflect your view of the child's behavior even if other people might not agree. Feel free to print additional comments beside each item and in the spaces provided on page 2.		THIS FORM FILLED OUT BY:	
NOT ATTENDING SCHOOL <input type="checkbox"/>			<input type="checkbox"/> Mother (full name) _____ <input type="checkbox"/> Father (full name) _____ <input type="checkbox"/> Other—name & relationship to child: _____	

<p>I. Please list the sports your child most likes to take part in. For example: swimming, baseball, skating, skate boarding, bike riding, fishing, etc.</p> <p><input type="checkbox"/> None</p> <p>a. _____</p> <p>b. _____</p> <p>c. _____</p>	<p>Compared to others of the same age, about how much time does he/she spend in each?</p> <table border="1"> <thead> <tr> <th>Don't Know</th> <th>Less Than Average</th> <th>Average</th> <th>More Than Average</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	Don't Know	Less Than Average	Average	More Than Average	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Compared to others of the same age, how well does he/she do each one?</p> <table border="1"> <thead> <tr> <th>Don't Know</th> <th>Below Average</th> <th>Average</th> <th>Above Average</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	Don't Know	Below Average	Average	Above Average	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<p>II. Please list your child's favorite hobbies, activities, and games, other than sports. For example: stamps, dolls, books, piano, crafts, cars, singing, etc. (Do not include listening to radio or TV.)</p> <p><input type="checkbox"/> None</p> <p>a. _____</p> <p>b. _____</p> <p>c. _____</p>	<p>Compared to others of the same age, about how much time does he/she spend in each?</p> <table border="1"> <thead> <tr> <th>Don't Know</th> <th>Less Than Average</th> <th>Average</th> <th>More Than Average</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	Don't Know	Less Than Average	Average	More Than Average	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Compared to others of the same age, how well does he/she do each one?</p> <table border="1"> <thead> <tr> <th>Don't Know</th> <th>Below Average</th> <th>Average</th> <th>Above Average</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	Don't Know	Below Average	Average	Above Average	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<p>III. Please list any organizations, clubs, teams, or groups your child belongs to.</p> <p><input type="checkbox"/> None</p> <p>a. _____</p> <p>b. _____</p> <p>c. _____</p>	<p>Compared to others of the same age, how active is he/she in each?</p> <table border="1"> <thead> <tr> <th>Don't Know</th> <th>Less Active</th> <th>Average</th> <th>More Active</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	Don't Know	Less Active	Average	More Active	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																	
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<p>IV. Please list any jobs or chores your child has. For example: paper route, babysitting, making bed, working in store, etc. (Include both paid and unpaid jobs and chores.)</p> <p><input type="checkbox"/> None</p> <p>a. _____</p> <p>b. _____</p> <p>c. _____</p>	<p>Compared to others of the same age, how well does he/she carry them out?</p> <table border="1"> <thead> <tr> <th>Don't Know</th> <th>Below Average</th> <th>Average</th> <th>Above Average</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	Don't Know	Below Average	Average	Above Average	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																	
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Please Print

- V. 1. About how many close friends does your child have? None 1 2 or 3 4 or more
 (Do not include brothers & sisters)
2. About how many times a week does your child do things with any friends outside of regular school hours?
 (Do not include brothers & sisters) Less than 1 1 or 2 3 or more

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

- | | Worse | About Average | Better | |
|---|--------------------------|--------------------------|--------------------------|---|
| a. Get along with his/her brothers & sisters? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Has no brothers or sisters |
| b. Get along with other kids? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| c. Behave with his/her parents? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| d. Play and work alone? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

- VII. 1. For ages 6 and older—performance in academic subjects. Does not attend school because _____

Check a box for each subject that child takes

	Falling	Below Average	Average	Above Average
a. Reading, English, or Language Arts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. History or Social Studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Arithmetic or Math	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Science	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other academic subjects—for example: computer courses, foreign language, business. Do not include gym, shop, driver's ed., etc.				
e. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Does your child receive special remedial services or attend a special class or special school? No Yes—kind of services, class, or school: _____

3. Has your child repeated any grades? No Yes—grades and reasons: _____

4. Has your child had any academic or other problems in school? No Yes—please describe: _____

When did these problems start?

Have these problems ended? No Yes—when?

- Does your child have any illness or disability (either physical or mental)? No Yes—please describe: _____

What concerns you most about your child?

Please describe the best things about your child:

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

Please Print

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

- | | | | | | | | | | |
|---|---|---|-----|---|---|---|---|-----|--|
| 0 | 1 | 2 | 1. | Acts too young for his/her age | 0 | 1 | 2 | 31. | Fears he/she might think or do something bad |
| 0 | 1 | 2 | 2. | Allergy (describe): _____ | 0 | 1 | 2 | 32. | Feels he/she has to be perfect |
| | | | | _____ | 0 | 1 | 2 | 33. | Feels or complains that no one loves him/her |
| 0 | 1 | 2 | 3. | Argues a lot | 0 | 1 | 2 | 34. | Feels others are out to get him/her |
| 0 | 1 | 2 | 4. | Asthma | 0 | 1 | 2 | 35. | Feels worthless or inferior |
| 0 | 1 | 2 | 5. | Behaves like opposite sex | 0 | 1 | 2 | 36. | Gets hurt a lot, accident-prone |
| 0 | 1 | 2 | 6. | Bowel movements outside toilet | 0 | 1 | 2 | 37. | Gets in many fights |
| 0 | 1 | 2 | 7. | Bragging, boasting | 0 | 1 | 2 | 38. | Gets teased a lot |
| 0 | 1 | 2 | 8. | Can't concentrate, can't pay attention for long | 0 | 1 | 2 | 39. | Hangs around with others who get in trouble |
| 0 | 1 | 2 | 9. | Can't get his/her mind off certain thoughts; obsessions (describe): _____ | 0 | 1 | 2 | 40. | Hears sounds or voices that aren't there (describe): _____ |
| | | | | _____ | | | | | |
| 0 | 1 | 2 | 10. | Can't sit still, restless, or hyperactive | 0 | 1 | 2 | 41. | Impulsive or acts without thinking |
| 0 | 1 | 2 | 11. | Clings to adults or too dependent | 0 | 1 | 2 | 42. | Would rather be alone than with others |
| 0 | 1 | 2 | 12. | Complains of loneliness | 0 | 1 | 2 | 43. | Lying or cheating |
| 0 | 1 | 2 | 13. | Confused or seems to be in a fog | 0 | 1 | 2 | 44. | Bites fingernails |
| 0 | 1 | 2 | 14. | Cries a lot | 0 | 1 | 2 | 45. | Nervous, highstrung, or tense |
| 0 | 1 | 2 | 15. | Cruel to animals | 0 | 1 | 2 | 46. | Nervous movements or twitching (describe): _____ |
| 0 | 1 | 2 | 16. | Cruelty, bullying, or meanness to others | | | | | _____ |
| 0 | 1 | 2 | 17. | Day-dreams or gets lost in his/her thoughts | 0 | 1 | 2 | 47. | Nightmares |
| 0 | 1 | 2 | 18. | Deliberately harms self or attempts suicide | 0 | 1 | 2 | 48. | Not liked by other kids |
| 0 | 1 | 2 | 19. | Demands a lot of attention | 0 | 1 | 2 | 49. | Constipated, doesn't move bowels |
| 0 | 1 | 2 | 20. | Destroys his/her own things | 0 | 1 | 2 | 50. | Too fearful or anxious |
| 0 | 1 | 2 | 21. | Destroys things belonging to his/her family or others | 0 | 1 | 2 | 51. | Feels dizzy |
| 0 | 1 | 2 | 22. | Disobedient at home | 0 | 1 | 2 | 52. | Feels too guilty |
| 0 | 1 | 2 | 23. | Disobedient at school | 0 | 1 | 2 | 53. | Overeating |
| 0 | 1 | 2 | 24. | Doesn't eat well | 0 | 1 | 2 | 54. | Overtired |
| 0 | 1 | 2 | 25. | Doesn't get along with other kids | 0 | 1 | 2 | 55. | Overweight |
| 0 | 1 | 2 | 26. | Doesn't seem to feel guilty after misbehaving | | | | 56. | Physical problems <i>without known medical cause</i> : |
| 0 | 1 | 2 | 27. | Easily jealous | 0 | 1 | 2 | a. | Aches or pains (<i>not</i> stomach or headaches) |
| 0 | 1 | 2 | 28. | Eats or drinks things that are not food—
<i>don't</i> include sweets (describe): _____ | 0 | 1 | 2 | b. | Headaches |
| | | | | _____ | 0 | 1 | 2 | c. | Nausea, feels sick |
| | | | | | 0 | 1 | 2 | d. | Problems with eyes (<i>not</i> if corrected by glasses) (describe): _____ |
| 0 | 1 | 2 | 29. | Fears certain animals, situations, or places, other than school (describe): _____ | 0 | 1 | 2 | e. | Rashes or other skin problems |
| | | | | _____ | 0 | 1 | 2 | f. | Stomachaches or cramps |
| | | | | | 0 | 1 | 2 | g. | Vomiting, throwing up |
| 0 | 1 | 2 | 30. | Fears going to school | 0 | 1 | 2 | h. | Other (describe): _____ |

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

0	1	2	57. Physically attacks people	0	1	2	84. Strange behavior (describe): _____
0	1	2	58. Picks nose, skin, or other parts of body (describe): _____				_____
			_____	0	1	2	85. Strange ideas (describe): _____
			_____				_____
0	1	2	59. Plays with own sex parts in public	0	1	2	86. Stubborn, sullen, or irritable
0	1	2	60. Plays with own sex parts too much	0	1	2	87. Sudden changes in mood or feelings
0	1	2	61. Poor school work	0	1	2	88. Sulks a lot
0	1	2	62. Poorly coordinated or clumsy	0	1	2	89. Suspicious
0	1	2	63. Prefers being with older kids	0	1	2	90. Swearing or obscene language
0	1	2	64. Prefers being with younger kids	0	1	2	91. Talks about killing self
0	1	2	65. Refuses to talk	0	1	2	92. Talks or walks in sleep (describe): _____
0	1	2	66. Repeats certain acts over and over; compulsions (describe): _____				_____
			_____	0	1	2	93. Talks too much
0	1	2	67. Runs away from home	0	1	2	94. Teases a lot
0	1	2	68. Screams a lot	0	1	2	95. Temper tantrums or hot temper
0	1	2	69. Secretive, keeps things to self	0	1	2	96. Thinks about sex too much
0	1	2	70. Sees things that aren't there (describe): _____	0	1	2	97. Threatens people
			_____	0	1	2	98. Thumb-sucking
			_____	0	1	2	99. Too concerned with neatness or cleanliness
0	1	2	71. Self-conscious or easily embarrassed	0	1	2	100. Trouble sleeping (describe): _____
0	1	2	72. Sets fires				_____
0	1	2	73. Sexual problems (describe): _____	0	1	2	101. Truancy, skips school
			_____	0	1	2	102. Underactive, slow moving, or lacks energy
			_____	0	1	2	103. Unhappy, sad, or depressed
0	1	2	74. Showing off or clowning	0	1	2	104. Unusually loud
0	1	2	75. Shy or timid	0	1	2	105. Uses alcohol or drugs for nonmedical purposes (describe): _____
0	1	2	76. Sleeps less than most kids	0	1	2	106. Vandalism
0	1	2	77. Sleeps more than most kids during day and/or night (describe): _____	0	1	2	107. Wets self during the day
			_____	0	1	2	108. Wets the bed
			_____	0	1	2	109. Whining
0	1	2	78. Smears or plays with bowel movements	0	1	2	110. Wishes to be of opposite sex
0	1	2	79. Speech problem (describe): _____	0	1	2	111. Withdrawn, doesn't get involved with others
			_____	0	1	2	112. Worries
0	1	2	80. Stares blankly				113. Please write in any problems your child has that were not listed above:
0	1	2	81. Steals at home				_____
0	1	2	82. Steals outside the home	0	1	2	_____
0	1	2	83. Stores up things he/she doesn't need (describe): _____	0	1	2	_____
			_____	0	1	2	_____

PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS.

UNDERLINE ANY YOU ARE CONCERNED ABOUT.

Appendix H

FAMILY PROFILE

FAMILY ISSUES

In the past year, how often have these issues created stress in your family?

Mark your answers as follows:

1 = ALMOST NEVER 2 = OCCASIONALLY 3 = SOMETIMES 4 = OFTEN 5 = VERY OFTEN

- | | |
|-----------|---|
| 1 2 3 4 5 | 1. Arguments between parents(s) and children. |
| 1 2 3 4 5 | 2. Parents(s) away from home on business. |
| 1 2 3 4 5 | 3. Too much money is charged on credit cards. |
| 1 2 3 4 5 | 4. Physical illness or death of a family member. |
| 1 2 3 4 5 | 5. Child(ren) fail to adequately complete chores. |
| 1 2 3 4 5 | 6. Conflicts tend to go unresolved. |
| 1 2 3 4 5 | 7. Difficulty paying monthly bills. |
| 1 2 3 4 5 | 8. Difficulty with child care. |
| 1 2 3 4 5 | 9. Emotional problem(s) with family member(s). |
| 1 2 3 4 5 | 10. Child(ren) fail to do schoolwork. |
| 1 2 3 4 5 | 11. Issues with parent(s), in-laws or relatives. |
| 1 2 3 4 5 | 12. Household tasks are left undone. |
| 1 2 3 4 5 | 13. Child(ren) fails to act their age. |
| 1 2 3 4 5 | 14. Concern about alcohol and/or drug use. |
| 1 2 3 4 5 | 15. Difficulty managing child(ren). |
| 1 2 3 4 5 | 16. Problems regarding who does what chores. |
| 1 2 3 4 5 | 17. Issues because of pregnancy or recent baby. |
| 1 2 3 4 5 | 18. Lack of time to relax and unwind. |
| 1 2 3 4 5 | 19. Moving created problems or adjustments. |
| 1 2 3 4 5 | 20. Family obligations create stress. |

FAMILY COPING STYLE

When there is stress in your family, how often does the following happen?

- | | |
|-----------|---|
| 1 2 3 4 5 | 21. We make decisions quickly and without much discussion. |
| 1 2 3 4 5 | 22. We become more isolated and independent. |
| 1 2 3 4 5 | 23. There is little cooperation among family members.. |
| 1 2 3 4 5 | 24. We become more disorganized. |
| 1 2 3 4 5 | 25. We have trouble finding new ways to solve our problems. |
| 1 2 3 4 5 | 26. One person's bad mood makes the whole family feel down. |
| 1 2 3 4 5 | 27. The parent(s) become more strict and controlling with the child(ren). |
| 1 2 3 4 5 | 28. We tend to stay out of the person's way who is under stress. |
| 1 2 3 4 5 | 29. We find it difficult to have privacy and think things over.. |
| 1 2 3 4 5 | 30. We share our feelings about the issue. |

FAMILY COMMUNICATIONS

How well to your family members communicate with each other?

- | | |
|-----------|---|
| 1 2 3 4 5 | 31. We are satisfied with how family members communicate with each other. |
| 1 2 3 4 5 | 32. Family members are good listeners. |
| 1 2 3 4 5 | 33. Family members express affection to each other. |

- 1 2 3 4 5 34. Family members avoid talking about important issues.
 1 2 3 4 5 35. When angry, family members say things that would be better left
 unsaid.
 1 2 3 4 5 36. Family members discuss their beliefs and ideas with each other.
 1 2 3 4 5 37. When we ask questions of each other, we get honest answers.
 1 2 3 4 5 38. Family members try to understand each other's feelings.
 1 2 3 4 5 39. We can calmly discuss problems with each other.
 1 2 3 4 5 40. We express our true feelings to each other.

FAMILY RELATIONSHIPS

Please indicate how you typically operate as a family.

Mark your answers as follows:

1 = ALMOST NEVER 2 = OCCASIONALLY 3 = SOMETIMES 4 = OFTEN 5 = VERY OFTEN

- 1 2 3 4 5 41. Family members ask each other for help.
 1 2 3 4 5 42. We compromise when problems arise.
 1 2 3 4 5 43. We approve of each other's friends.
 1 2 3 4 5 44. We are flexible in how we handle discipline.
 1 2 3 4 5 45. We like to do things with just our immediate family.
 1 2 3 4 5 46. When there are problems, our family become confused and
 disorganized.
 1 2 3 4 5 47. Family members really enjoy being together.
 1 2 3 4 5 48. Our family changes its ways of handling tasks.
 1 2 3 4 5 49. Family members like to spend free time together.
 1 2 3 4 5 50. Our family changes its ways of handling tasks.
 1 2 3 4 5 51. Family members feel very close to each other.
 1 2 3 4 5 52. The parent(s) and child(ren) make decisions together in our family.
 1 2 3 4 5 53. When our family gets together for activities, everybody is present.
 1 2 3 4 5 54. We have a hard time finding good ways to solve our problems.
 1 2 3 4 5 55. We can easily think of things to do together as a family.
 1 2 3 4 5 56. We shift household responsibilities from person to person.
 1 2 3 4 5 57. Family members consult each other on their decisions.
 1 2 3 4 5 58. Our family is too rigid.
 1 2 3 4 5 59. Family togetherness is very important.
 1 2 3 4 5 60. We are flexible in our lifestyle.

FAMILY SATISFACTION

Please indicate how satisfied you are with the situations below by answering as follows:

**1 = VERY DISSATISFIED 2 = SOMEWHAT DISSATISFIED 3 = SOMEWHAT SATISFIED
 4 = SATISFIED 5 = VERY SATISFIED**

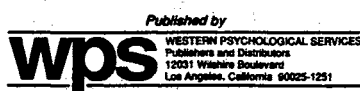
- 1 2 3 4 5 61. The degree of closeness between members of your family?
 1 2 3 4 5 62. Your family's ability to cope with stress.
 1 2 3 4 5 63. Your family's ability to be flexible?
 1 2 3 4 5 64. Your family's ability to share positive experiences?
 1 2 3 4 5 65. The amount of arguing that occurs between family members?
 1 2 3 4 5 66. Your family's ability to resolve conflicts?
 1 2 3 4 5 67. The amount of time you spend together as a family?
 1 2 3 4 5 68. The way problems are discussed?
 1 2 3 4 5 69. The fairness of the criticism in your family?
 1 2 3 4 5 70. Your family's concern for each other?

Appendix I

PIERS-HARRIS CHILDREN'S SELF-CONCEPT SCALE

"THE WAY I FEEL ABOUT MYSELF"**The Piers-Harris Children's Self-Concept Scale**

Ellen V. Piers, Ph.D. and Dale B. Harris, Ph.D.



Name: _____ Today's Date: _____

Age: _____ Sex (circle one): Girl Boy Grade: _____

School: _____ Teacher's Name (optional): _____

Directions: Here is a set of statements that tell how some people feel about themselves. Read each statement and decide whether or not it describes the way you feel about yourself. If it is *true or mostly true* for you, circle the word "yes" next to the statement. If it is *false or mostly false* for you, circle the word "no." Answer every question, even if some are hard to decide. Do not circle both "yes" and "no" for the same statement.

Remember that there are no right or wrong answers. Only you can tell us how you feel about yourself, so we hope you will mark the way you really feel inside.

TOTAL SCORE: Raw Score _____ Percentile _____ Stanine _____

CLUSTERS: I _____ II _____ III _____ IV _____ V _____ VI _____

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- | | | | | | |
|--|-----|----|--|-----|----|
| 1. My classmates make fun of me | yes | no | 21. I am good in my school work | yes | no |
| 2. I am a happy person | yes | no | 22. I do many bad things | yes | no |
| 3. It is hard for me to make friends | yes | no | 23. I can draw well | yes | no |
| 4. I am often sad | yes | no | 24. I am good in music | yes | no |
| 5. I am smart | yes | no | 25. I behave badly at home | yes | no |
| 6. I am shy | yes | no | 26. I am slow in finishing my school work | yes | no |
| 7. I get nervous when the teacher calls on me | yes | no | 27. I am an important member of my class | yes | no |
| 8. My looks bother me | yes | no | 28. I am nervous | yes | no |
| 9. When I grow up, I will be an important person | yes | no | 29. I have pretty eyes | yes | no |
| 10. I get worried when we have tests in school | yes | no | 30. I can give a good report in front of the class | yes | no |
| 11. I am unpopular | yes | no | 31. In school I am a dreamer | yes | no |
| 12. I am well behaved in school | yes | no | 32. I pick on my brother(s) and sister(s) | yes | no |
| 13. It is usually my fault when something goes wrong | yes | no | 33. My friends like my ideas | yes | no |
| 14. I cause trouble to my family | yes | no | 34. I often get into trouble | yes | no |
| 15. I am strong | yes | no | 35. I am obedient at home | yes | no |
| 16. I have good ideas | yes | no | 36. I am lucky | yes | no |
| 17. I am an important member of my family | yes | no | 37. I worry a lot | yes | no |
| 18. I usually want my own way | yes | no | 38. My parents expect too much of me | yes | no |
| 19. I am good at making things with my hands | yes | no | 39. I like being the way I am | yes | no |
| 20. I give up easily | yes | no | 40. I feel left out of things | yes | no |

- | | |
|---|--|
| 41. I have nice hairyes no | 61. When I try to make something, everything seems to go wrongyes no |
| 42. I often volunteer in schoolyes no | 62. I am picked on at homeyes no |
| 43. I wish I were differentyes no | 63. I am a leader in games and sportsyes no |
| 44. I sleep well at nightyes no | 64. I am clumsyyes no |
| 45. I hate schoolyes no | 65. In games and sports, I watch instead of playyes no |
| 46. I am among the last to be chosen for gamesyes no | 66. I forget what I learnyes no |
| 47. I am sick a lotyes no | 67. I am easy to get along withyes no |
| 48. I am often mean to other peopleyes no | 68. I lose my temper easilyyes no |
| 49. My classmates in school think I have good ideasyes no | 69. I am popular with girlsyes no |
| 50. I am unhappyyes no | 70. I am a good readeryes no |
| 51. I have many friendsyes no | 71. I would rather work alone than with a groupyes no |
| 52. I am cheerfulyes no | 72. I like my brother (sister)yes no |
| 53. I am dumb about most thingsyes no | 73. I have a good figureyes no |
| 54. I am good-lookingyes no | 74. I am often afraidyes no |
| 55. I have lots of pepyes no | 75. I am always dropping or breaking thingsyes no |
| 56. I get into a lot of fightsyes no | 76. I can be trustedyes no |
| 57. I am popular with boysyes no | 77. I am different from other peopleyes no |
| 58. People pick on meyes no | 78. I think bad thoughtsyes no |
| 59. My family is disappointed in meyes no | 79. I cry easilyyes no |
| 60. I have a pleasant faceyes no | 80. I am a good personyes no |

For examiner use only

	1-20	+21-40	+41-60	+61-80	=1-80	Total
I						
II						
III						
IV						
V						
VI						
Total Score						

Appendix 0

ADHD FOLLOW-UP STUDY
PARENT QUESTIONNAIRE

Family ID # _____

Please answer the following questions in the space provided.
Where appropriate place an "X" in the box, or circle the number, which best describes your response. THANK YOU in advance for helping us to learn more about the impact of ADHD on children and families. If you need more space to answer an item, please use the back side of the page.

General Family Information:

Your relation to the ADHD Child is:
Mother__ Stepmother__ Father__ Stepfather__
Other (please explain) _____

Please include all the children in your current family
(Y=Yes, N=No / ADHD = Attention Deficit Hyperactivity Disorder)

Oldest Child	2nd Oldest Child	3rd Oldest Child	4th Oldest Child	5th Oldest Child
Sex M F	Sex M F	Sex M F	Sex M F	Sex M F
Age	Age	Age	Age	Age
ADHD Y N	ADHD Y N	ADHD Y N	ADHD Y N	ADHD Y N
Adopted Y N	Adopted Y N	Adopted Y N	Adopted Y N	Adopted Y N
Stepchild Y N	Stepchild Y N	Stepchild Y N	Stepchild Y N	Stepchild Y N
Living in Your Home Y N	Living in Your Home Y N	Living in Your Home Y N	Living in Your Home Y N	Living in Your Home Y N

Education Completed (check one) self spouse

- 1 Graduate / Professional
- 2 Four Year College
- 3 Some College / Technical
- 4 Finished High School
- 5 Some High School
- 6 Finished Elementary
- 7 Some Elementary

Is your current residence _____ Rural or _____ Urban (within a metropolitan area)

How many times have you moved in the past 5 years? _____

Mother's Occupation or Job Title _____

Father's Occupation or Job Title _____

	Yourself	Spouse
1. Professional, Doctor, Lawyer, Executive		
2. Other Professional, Manager, Teacher, RN		
3. Skilled and Building Trades, Farmer		
4. Sales, Technician, Clerical		
5. Laborer, Factory Worker, Waitress		
6. General Service Employee		
7. Homemaker		
8. Student		
9. Unemployed		
10. Other (please describe) _____		

ETHNIC BACKGROUND

	Yourself	Spouse
1. Afro-American (Black)		
2. Asian-American		
3. Caucasian (White)		
4. Native American (Indian)		
5. Spanish Descent		
6. Other (Please describe) _____		

MARITAL STATUS

	Yourself	Spouse
1. Single, Never Married		
2. Single, Previously Married		
3. Single, Widowed		
4. Married, Separated		
5. Married, First Marriage		
6. Remarried		

Has this status changed in the last 5 years _____ yes _____ no

Marital History:	Year Married	Year Divorced
1st Marriage		
2nd Marriage		
3rd Marriage		

	Yes	No
Does your child get along with his brothers and sisters as well as other children his age?		
If no, is it because he starts more fights?		
Is your child able to make friends easily?		
Does your child usually keep friends a long time? - - - - -		
Does your child currently have a "best friend"?		
Has your child ever been aggressive to other children?		
Is your child still aggressive?		
Have you had difficulty disciplining your child?		
Has your ADHD child been more difficult to discipline than his brothers or sisters?		
On the average, does your ADHD child mind you:		
Two or three times out of ten?		
Four to six times out of ten? - - - - -		
More than six times out of ten?		
Will he eventually do what you ask him to?		
Please indicate which discipline strategies you use:		
Verbal reprimands		
Time-out (isolation) - - - - -		
Removal of priviledges		
Rewards		
Physical punishment - - - - -		
Giving in to the child		
Avoiding or ignoring the child		
Have you ever obtained counseling to help you deal with any problem behaviors of your ADHD child?		
Did it help?		
Overall, would you say your child has social skills problems?		
If yes, did you or the child's other parent have similar problems as a child?		

FAMILY STRESS INDEX

Have any of the following stressful events occurred in your family within the last twelve months?

	Yes	No
Change(s) in people living in your household		
Family accident or illness		
Death in the family - - - - -		
Parent changed job		
Changed Schools		
Family moved - - - - -		
Family financial problems		
Other event that was traumatic to the child		

Your experience is extremely valuable. PLEASE carefully consider the following questions related to your experience as a parent.

What advice would you offer to a parent just beginning the process of adjusting to ADHD?

List 3 mistakes you made along the way in parenting an ADHD child.

- a. _____
- b. _____
- c. _____

List 3 things you did as a parent that were beneficial.

- a. _____
- b. _____
- c. _____

Have you as a parent taken any steps to rejuvenate yourself as an individual in the past 5 years?

- a. _____
- b. _____

Have you as parents taken any specific steps to strengthen your marriage in light of the demands of parenting?

___yes ___no

If yes, please list some examples:

Do you have clear rules and consequences for the children?

___yes ___no

Are these written?

___yes ___no

Would you rate the enforcement of these consequences as (please circle)

absolutely consistent 50/50 almost never
 5 _____ 4 _____ 3 _____ 2 _____ 1

Do you find it necessary to use different discipline techniques for your ADHD child than for your other children?

___yes ___no

What positive things have happened in your family as a result of your experience with ADHD ?

From your perspective what were the most helpful things you as parents did to help your family cope with ADHD?

What were the most important treatments for your ADHD child? (rank the top 4)

- | | |
|---|--|
| ___ educational adjustments (in school) | ___ educational adjustments (outside school) |
| ___ family therapy | ___ books and information on ADHD |
| ___ individual therapy | ___ diet |
| ___ parenting skills | ___ structure (routines and consistency) |
| ___ medication | ___ other _____ |

What were the most helpful sources of information you encountered?
 (books, videos, newsletters, other publications)

How would you describe the impact of ADHD on your:

a. Family-- _____

example: _____

b. Marriage-- _____

example: _____

c. Home environment-- _____

example: _____

d. ADHD Child-- _____

example: _____

e. Other Children-- _____

example: _____

Which treatment options did your family try?
(check all that apply and rate your satisfaction)

	Check Here	Satisfaction Circle One	1=very dissatisfied 5=extremely satisfied
support group for parent or child (like, Ch.A.D.D.)	___	1 2 3 4 5	
group therapy	___	1 2 3 4 5	
educational adjustments (home-based) like tutoring	___	1 2 3 4 5	
Individualized Education Plans (school-based)	___	1 2 3 4 5	
medication	___	1 2 3 4 5	
dietary limitations	___	1 2 3 4 5	
dietary supplements	___	1 2 3 4 5	
reading materials on ADHD	___	1 2 3 4 5	
reading materials on Parenting	___	1 2 3 4 5	
special school	___	1 2 3 4 5	
marital therapy	___	1 2 3 4 5	
Individual therapy for your ADHD child	___	1 2 3 4 5	
light therapy	___	1 2 3 4 5	
sports programs	___	1 2 3 4 5	
hospital or residential treatment	___	1 2 3 4 5	
social skills training	___	1 2 3 4 5	
inpatient evaluation for ADHD	___	1 2 3 4 5	
psychoeducational testing	___	1 2 3 4 5	
Other (please list) _____	___	1 2 3 4 5	

What age was the most difficult for you as his parent ? _____
 From your perspective is your son's ADHD: _____ mild _____ moderate _____ severe
 In the past 5 years has it gotten _____ better or _____ worse overall?

Is your son on Medication? _____ yes _____ no
 Which Medication ? _____
 Dosage amount and frequency? _____

As a parent of an ADHD child, rate the degree to which you have experienced the following:
 (very low = 1) 1 2 3 4 5 (very high = 5)

- guilt or shame _____
- joy _____
- frustration _____
- confidence _____
- defeated _____
- relief _____
- fear _____
- victorious _____
- embarrassment _____
- pride _____
- depression _____

Did your ADHD son have social problems prior to 1991? _____ yes _____ no
 Does he have social problems now? _____ yes _____ no

What interventions have been used to help him socially? a. _____
 Circle the interventions which were helpful.
 b. _____
 c. _____

Has your son shown above average aggressiveness? _____ yes _____ no

Has your son had any supplemental educational help? _____ yes _____ no
 Which were beneficial?
 a. _____
 b. _____
 c. _____

Does your son get into trouble more than most? _____ yes _____ no
 Has your son used or abused drugs ? _____ yes _____ no

Has your son been held back in school since the 1991 study? _____ yes _____ no
 Prior to 1991 study? _____ yes _____ no
 More than once in his entire school career so far? _____ yes _____ no
 Currently, how is your son doing academically in school?
 (very poorly = 1) 1 2 3 4 5 (extremely well=5) _____

In which areas of his life has your son shown the most growth in these past 5 years
 a. _____
 b. _____
 c. _____

Additional comments:

THANK YOU again for your participation in this most valuable project !!

I would like a summary of the findings _____ yes _____ no

Appendix K

PHYSICIAN FOLLOW UP QUESTIONNAIRE

ID # _____

From your perspective is this child's ADHD: ____ mild ____ moderate ____ severe
comment:

Is it better or worse than 5 years ago?
comment:

Current diagnosis? _____

Please list any changes or additions to diagnosis in the past 5 years? _____

Treatment length (number of months in treatment) _____

Does this child have notable social problems now? ____yes ____no
 Has this child shown above average aggressiveness? ____yes ____no
 Has this child had any supplemental educational help? ____yes ____no
 Which were beneficial?

a.

b.

Is this child on Medication? ____yes ____no

Which Medication? _____

Dosage amount and frequency? _____

From your perspective how would you rate this family:

(1=very low 5=very high)

____ open to help and advice
 ____ responsive to your treatment recommendations
 ____ compliant and consistent with medication
 ____ making needed adjustments at home in parenting
 ____ making needed adjustments with the schools
 ____ managing discipline needs effectively with ADHD child
 ____ managing parental stress effectively

Appendix L

YOUTH QUESTIONNAIRE

ID # _____

FAMILY RELATIONSHIPS*Please indicate how you typically operate as a family.*

Mark your answers as follows:

1 = ALMOST NEVER 2 = OCCASIONALLY 3 = SOMETIMES 4 = OFTEN 5 = VERY OFTEN

- 1 2 3 4 5 41. Family members ask each other for help.
 1 2 3 4 5 42. We compromise when problems arise.
 1 2 3 4 5 43. We approve of each other's friends.
 1 2 3 4 5 44. We are flexible in how we handle discipline.
 1 2 3 4 5 45. We like to do things with just our immediate family.
 1 2 3 4 5 46. When there are problems, our family become confused and disorganized.
 1 2 3 4 5 47. Family members really enjoy being together.
 1 2 3 4 5 48. Our family changes its ways of handling tasks.
 1 2 3 4 5 49. Family members like to spend free time together.
 1 2 3 4 5 50. Our family changes its ways of handling tasks.
 1 2 3 4 5 51. Family members feel very close to each other.
 1 2 3 4 5 52. The parent(s) and child(ren) make decisions together in our family.
 1 2 3 4 5 53. When our family gets together for activities, everybody is present.
 1 2 3 4 5 54. We have a hard time finding good ways to solve our problems.
 1 2 3 4 5 55. We can easily think of things to do together as a family.
 1 2 3 4 5 56. We shift household responsibilities from person to person.
 1 2 3 4 5 57. Family members consult each other on their decisions.
 1 2 3 4 5 58. Our family is too rigid.
 1 2 3 4 5 59. Family togetherness is very important.
 1 2 3 4 5 60. We are flexible in our lifestyle.

FAMILY SATISFACTION*Please indicate how satisfied you are with the situations below by answering as follows:***1 = VERY DISSATISFIED 2 = SOMEWHAT DISSATISFIED 3 = SOMEWHAT SATISFIED
4 = SATISFIED 5 = VERY SATISFIED**

- 1 2 3 4 5 61. The degree of closeness between members of your family?
 1 2 3 4 5 62. Your family's ability to cope with stress.
 1 2 3 4 5 63. Your family's ability to be flexible?
 1 2 3 4 5 64. Your family's ability to share positive experiences?
 1 2 3 4 5 65. The amount of arguing that occurs between family members?
 1 2 3 4 5 66. Your family's ability to resolve conflicts?
 1 2 3 4 5 67. The amount of time you spend together as a family?
 1 2 3 4 5 68. The way problems are discussed?
 1 2 3 4 5 69. The fairness of the criticism in your family?
 1 2 3 4 5 70. Your family's concern for each other?

FAMILY COPING STYLE

When there is stress in your family, how often does the following happen?

Mark your answers as follows:

1 = ALMOST NEVER 2 = OCCASIONALLY 3 = SOMETIMES 4 = OFTEN 5 = VERY OFTEN

- | | |
|-----------|---|
| 1 2 3 4 5 | 21. We make decisions quickly and without much discussion. |
| 1 2 3 4 5 | 22. We become more isolated (withdrawn from others) and independent. |
| 1 2 3 4 5 | 23. There is little cooperation among family members.. |
| 1 2 3 4 5 | 24. We become more disorganized. |
| 1 2 3 4 5 | 25. We have trouble finding new ways to solve our problems. |
| 1 2 3 4 5 | 26. One person's bad mood makes the whole family feel down. |
| 1 2 3 4 5 | 27. The parent(s) become more strict and controlling with the child(ren). |
| 1 2 3 4 5 | 28. We tend to stay out of the person's way who is under stress. |
| 1 2 3 4 5 | 29. We find it difficult to have privacy and think things over.. |
| 1 2 3 4 5 | 30. We share our feelings about the issue. |

FAMILY COMMUNICATIONS

How well do your family members communicate with each other?

- | | |
|-----------|---|
| 1 2 3 4 5 | 31. We are satisfied with how family members communicate with each other. |
| 1 2 3 4 5 | 32. Family members are good listeners. |
| 1 2 3 4 5 | 33. Family members express affection to each other. |
| 1 2 3 4 5 | 34. Family members avoid talking about important issues. |
| 1 2 3 4 5 | 35. When angry, family members say things that would be better left unsaid. |
| 1 2 3 4 5 | 36. Family members discuss their beliefs and ideas with each other. |
| 1 2 3 4 5 | 37. When we ask questions of each other, we get honest answers. |
| 1 2 3 4 5 | 38. Family members try to understand each other's feelings. |
| 1 2 3 4 5 | 39. We can calmly discuss problems with each other. |
| 1 2 3 4 5 | 40. We express our true feelings to each other. |

YOUTH QUESTIONNAIRE

ID # _____

YOUTH Perspective on ADHD

Five years ago, was your ADHD: ___ Mild ___ Moderate ___ Severe
 Today, would you say your ADHD is: ___ Mild ___ Moderate ___ Severe
 (circle)

How much has ADHD influenced your life? (very little =1) 1 2 3 4 5 (5 = a lot)
 How much has ADHD influenced your family? (very little =1) 1 2 3 4 5 (5 = a lot)

List some ways **your family** members have been effected by ADHD

- 1- _____
- 2- _____
- 3- _____

How has your family adjusted? (very poorly =1) 1 2 3 4 5 (5 = extremely well)
 (list a examples) _____

Which treatment options did your family try ?
 (check all that apply and rate your satisfaction)

	Check Here	Satisfaction Circle One	1=very dissatisfied 5=extremely satisfied
support group for parent or child (like, Ch.A.D.D.)	___	1 2 3 4 5	
group therapy or counseling	___	1 2 3 4 5	
educational adjustments (home-based,like tutoring)	___	1 2 3 4 5	
Individualized Education Plans (school-based)	___	1 2 3 4 5	
medication	___	1 2 3 4 5	
dietary limitations (cut out some foods)	___	1 2 3 4 5	
dietary supplements (like vitamins)	___	1 2 3 4 5	
reading materials on ADHD (books or articles)	___	1 2 3 4 5	
reading materials on Parenting (for your folks)	___	1 2 3 4 5	
pecially designed school	___	1 2 3 4 5	
marital therapy (counseling for parents relationship)	___	1 2 3 4 5	
Individual therapy or counseling for you	___	1 2 3 4 5	
light therapy (if you had this you'd know it)	___	1 2 3 4 5	
sports programs(involvement in organized sports)	___	1 2 3 4 5	
hospital or residential treatment	___	1 2 3 4 5	
social skills training	___	1 2 3 4 5	
evaluation for ADHD in a hospital	___	1 2 3 4 5	
psychoeducational testing	___	1 2 3 4 5	
Other (please list) _____	___	1 2 3 4 5	

Please comment on:

Your experience with ADHD _____

Your family's experience with your ADHD _____

Your parents and how they handled things _____

If you could give some advice to another guy who just found out he had ADHD,
what would you say ?

What advice would you give to parents ? _____

Appendix M

INITIAL LETTER OF INTRODUCTION - WITH CONSENT FORM

4520 South Harvard
 Suite 200
 Tulsa, Oklahoma 74135-2900
 (918) 743-3224 Fax (918) 743-9623

Tulsa Developmental Pediatrics & Center for Family Psychology

10 May 1996

Dear _____,

Thank you very much for agreeing to participate in our study on ADHD children and their parents. Your input will be very important and all information will be kept strictly confidential. To keep you and your child entirely anonymous, all information will be referred to only as a "case number".

To help us in this regard, please review, sign, and immediately return this **Release of Confidential Information** which will allow me to share chart information with Stuart Holderness for purposes of statistical analysis (a self-addressed stamped envelope is enclosed for your convenience).

Specific material to be released: Selected items from prenatal, birth and past medical history, family-social history, developmental-behavioral history, school history, and psychoeducational information.

Purpose of disclosure: For the sole use by Richard C. Irwin, M.D. and Stuart L. Holderness, M.S., L.M.F.T. for research purposes regarding this study of "Parenting Perspectives on Family Adaptation to ADHD".

Release of Confidential Information

Tulsa Developmental Pediatrics and Center for Family Psychology / Richard C. Irwin, M.D.

requests permission from _____

to release confidential information regarding _____

(Child's Date of Birth) _____

This information will be released to:

Stuart L. Holderness, M.S., L.M.F.T.
 10730 South Sandusky
 Tulsa, Oklahoma 74137

My signature indicates that I know this information is being disclosed, that I may revoke this consent at any time (in writing), and am also aware of the consequences as a result of my signing. My signature also means that I have read this form and/or have had it read to me in a language I understand. All blank spaces have been filled in except my signature and the date. This consent form expires one year after the date of signing unless revoked by me prior to that time. A photostatic copy of this authorization shall be considered as valid as the original.

 (Signature of Client/Parent/Guardian)

 (Date signed)

THANK YOU!

Richard C. Irwin, M.D.

4520 South Harvard
Suite 200
Tulsa, Oklahoma 74135-2900
(918) 743-3224 Fax (918) 743-9623

Tulsa Developmental Pediatrics & Center for Family Psychology

10 May 1996

Ms. / Mrs. _____

RE: ADHD Research

Dear Mrs. _____

Awareness of Attention Deficit Hyperactivity Disorder is on the rise, but there is still so much that is not thoroughly understood. As a parent of an ADHD child, you have a special appreciation for the specific challenges and joys associated with the role of parenting, as well as a wealth of valuable information and a unique perspective which could be very helpful to others.

As you recall, your family was part of a research project about five years ago, which yielded some significant findings. Because you were so helpful then, I ask that you please consider participating in a follow-up to that study which would focus on how your son and family are doing five years later. This information will aid professionals in planning the most beneficial treatment programs for ADHD children, as well as their families who must also embrace the ADHD.

This research is being performed by Stuart Holderness, a doctoral student in Family Relations and Child Development from Oklahoma State University. He is also an experienced family therapist who has helped many children and families with this and other needs in his eight years of private practice in Tulsa. A unique aspect of Mr. Holderness' background is his own personal experience with ADHD. He has undertaken this research not only to complete the requirement of his degree, but also to help find answers for families confronted with ADHD.

I would very much appreciate your participation in this important research study. It would require the involvement of you and your child (teacher input is not required). Your role would be to fill out a questionnaire and a few rating forms describing your experience with an ADHD child. Your child would only need to fill out a brief checklist and a one page survey. Every participant in the study will be paid a small amount: each parent will receive \$5.00, and your son will receive \$5.00 as an incentive to complete the forms. A pre-paid envelope will be provided for you to return the forms.

All information obtained will be kept very confidential and reported only in terms of the combined research results. We will send you a summary of the results, if you desire. Be assured that your participation is completely voluntary and that no negative consequences will result if you choose not to participate in this study.

Please let me know if you are willing to assist us with this research by signing the enclosed Release Form and returning it to me in the self-addressed stamped envelope. If I have not heard from you in 10-14 days, I will try to contact you regarding your decision.

I do hope you will agree to help with this important research project studying the impact of ADHD on children and their families. You will make an important contribution to our limited knowledge in this area. Thank you.

Sincerely,

Richard C. Irwin, M.D., F.A.A.P.
Developmental Pediatrician
Clinical Associate Professor of Pediatrics
University of Oklahoma College of Medicine-Tulsa

Appendix N

YOUTH LETTER OF INTRODUCTION

A Study of "Parenting Perspectives on Family Adaptation to ADHD"

19 June 1996

Dear _____,

About five years ago, you may remember that your parents and one of your teachers took part in a research study regarding your Attention Deficit Disorder. This project was designed to help parents, teachers, doctors, and scientists understand more about ADD (now called "ADHD"), especially in the area of social development (i.e., whether or not your ADHD affects the way you get along with your family and friends). If you recall, you filled out a few pages of questions about yourself. Your folks and your teacher also completed some forms and answered some questions.

Well, that research study was very successful and produced some valuable information which is being used to help other ADHD teenagers like yourself. There's a whole lot we still have to learn about ADHD, and you may have noticed how many people are now talking about it on TV and in the magazines. You and your parents have worked with your ADHD for a long time and you have very important experience and opinions that are needed to help professionals assist kids, teenagers, and families who are just now beginning to learn about ADHD and how to deal with it in the family.

We need your help! Because you participated in the research study 5 years ago, you are extremely important for helping us with a new research study that is looking at how ADHD teenagers and their families are doing 5 years later. We are trying to see what you and your parents did that helped with your ADHD and how things are going now.

Of course, everything is totally confidential, meaning that NO one will ever know your name or how you answer anything. All the information will be put together in a computer and summarized only as "numbers". Also, just like last time, you are not required to participate, and even if you do, you are not required to answer every question if you don't want to. This is totally VOLUNTARY... but we sure hope you'll help us out!

If you agree to do this, you'll have a few pages of questions to answer. Most of them are "quick answer" questions (like circle the number for "yes" or "no"), then there are a few short answer questions where you write a sentence or so. Remember, this is NOT a test!... we're just real interested in knowing how you see things in your life right now. The whole thing shouldn't take more than 30 minutes maximum and, if you complete it and get it back to us, you will then get \$5.00... not bad for only 30 minutes of your time!

We really hope that you and your folks will help us out with this research study. Tell them that you want to make an easy \$5.00! ... and then we'll be in touch again real soon. Thanks.

Sincerely,

Richard C. Irwin, M.D., F.A.A.P.
Developmental Pediatrician

Stuart L. Holderness, M.S., L.M.F.T.
Doctoral Candidate, OSU

Appendix O

LETTER OF INSTRUCTION

<p style="text-align: center;">A Study of "Parenting Perspectives on Family Adaptation to ADHD"</p>

19 June 1996

Mrs.

Dear Mrs. _____,

Thank you so much for agreeing to participate in our study entitled "Parenting Perspectives on Family Adaptation to ADHD". We hope that it will make a significant contribution to the professional literature enabling others working with ADHD children to be more aware of the special social problems they encounter.

Enclosed is a packet of rating scales and questionnaires for you and your son. Although they may "look" long, they do not take very much time to complete since they only require that you circle a number for your answer, or fill in a brief response.

We would like you to be the person coordinating the return of these materials. This involves completing your forms and also sitting down with your son to encourage him to complete his forms. You can remind him that we will pay five dollars for completing the forms as an incentive to do them quickly. We would also like to offer you a five dollar coordination fee as a small token of our thanks for the work you will do as part of this study, and on behalf of the ADHD children and families who will benefit from such.

Once all the forms have been completed, please check them to make sure all the questions have been answered. **IT IS VERY IMPORTANT TO TRY ANSWERING ALL QUESTIONS SO THE SCORING WILL BE ACCURATE.** After you and your son have completed your forms, please return them to Stuart Holderness in the pre-paid self-addressed envelope provided. As soon as your forms are received, the payments will be sent to you and your son. Upon completion, we will share with you a summary of the study results.

Our goal is to have all the questionnaires returned as soon as possible. If you have any questions or problems, please feel free to call Stuart at 918-745-0095 or Dr. Irwin at 918-743-3224.

THANK YOU AGAIN FOR YOUR WILLINGNESS TO PARTICIPATE IN THIS STUDY!! We greatly appreciate your help.

Sincerely,

Richard C. Irwin, M.D., F.A.A.P.
Developmental Pediatrician

Stuart L. Holderness, M.S., L.M.F.T.
Doctoral Candidate, OSU

Appendix P

FOLLOW-UP CORRESPONDENCE

4520 South Harvard
Suite 300
Tulsa, Oklahoma 74135-2900
(918) 743-3224 Fax (918) 743-9623

Tulsa Developmental Pediatrics & Center for Family Psychology

17 February 1997

Ms. / Mrs....

RE: ADHD Research

Dear

PLEASE HELP US! Deadlines are drawing near for this important research on ADHD and we definitely need the assistance of both you and _____ for our numbers and statistical analysis to be valid and meaningful. Again, the time involved on your part is minimal and, in fact, we'll even send _____ \$25.00 as a little "increased incentive" to participate.

If you have misplaced the original packet of questionnaires to be completed, simply call my office (743-3224) and another one will be mailed to you immediately. If you prefer NOT to participate in this research, Mr. Holderness and I will certainly understand and ask only that you sign the bottom of this letter and return it in the self-addressed stamped envelope provided.

I appreciate your consideration of this important matter and promise not to disturb you again regarding our research endeavors. Thank you.

Sincerely,

Richard C. Irwin, M.D., F.A.A.P.
Developmental Pediatrician
Clinical Associate Professor of Pediatrics
University of Oklahoma College of Medicine-Tulsa

I have changed my mind and choose not to participate in the research regarding "Parenting Perspectives on Family Adaptation to ADHD".

X

Parent

Date

4520 South Harvard
Suite 200
Tulsa, Oklahoma 74135-2900
(918) 743-3224 Fax (918) 743-9623

Tulsa Developmental Pediatrics & Center for Family Psychology

9 December 1996

Ms. / Mrs. _____

RE: Research -- "Parenting Perspectives on Family Adaptation to ADHD"

Dear _____,

PLEASE HELP! Admittedly, this is one of the busiest times of the year... but I'm really asking only a very few minutes of your time "in the spirit of giving" toward helping us with this very important research project. (Surely you could afford to sit down and relax for a moment!). Your input is vital toward completion of this project and, because of the numbers involved for meaningful statistical analysis, the research effort will have to be abandoned if we don't receive your response.

If you're anything like me, the previous papers are probably buried in a "to do" pile somewhere. Therefore, I've enclosed a new packet that simply needs to be completed and returned in the self-addressed stamped envelope enclosed.

Your response will be immediately followed by a token compensation for both you and _____ . More importantly, however, you will have contributed to important research which will help other children and families in their efforts to live and cope with ADHD.

Once again, THANK YOU for your important contribution and have a Happy Holiday!

Sincerely,

Richard C. Irwin, M.D., F.A.A.P.
Developmental Pediatrician
Clinical Associate Professor of Pediatrics
University of Oklahoma College of Medicine-Tulsa

4520 South Harvard
Suite 200
Tulsa, Oklahoma 74135-2900
(918) 743-3224 Fax (918) 743-9623

Tulsa Developmental Pediatrics & Center for Family Psychology

"Parenting perspectives on family adaptation to ADHD"

17 September 1996

Ms. / Mrs. _____

Dear _____,

If you are like most parents, you've just finished a busy summer and are adjusting to the new routine of another school year. We realize how busy and hectic life becomes, so we are sending you a gentle reminder about the ADHD research project of which you are a vital and essential part. We are so grateful for your help with this project, but there are still a few packets which have not yet been returned. Those who have mailed back their packets have already received their compensations for such.

Your help is still very much needed for the success of this important research. Please complete and return the entire packet of information as soon as you are able.

If your packet has been misplaced, a new one will be mailed to you immediately upon notifying:

Richard C. Irwin, M.D.
4520 South Harvard, #200
Tulsa, Oklahoma 74135-2900
918-743-3224 or 918-743-9623 (FAX)

Once again, **THANK YOU** for your important contribution to this contemporary and unique research regarding ADHD.

Sincerely,

Richard C. Irwin, M.D., F.A.A.P.

Stuart L. Holderness, M.S., L.M.F.T.

<p>A Study of "Parenting Perspectives on Family Adaptation to ADHD"</p>
--

19 June 1996

Dear _____

About five years ago, you may remember that your parents and one of your teachers took part in a research study regarding your Attention Deficit Disorder. This project was designed to help parents, teachers, doctors, and scientists understand more about ADD (now called "ADHD"), especially in the area of social development (i.e., whether or not your ADHD affects the way you get along with your family and friends). If you recall, you filled out a few pages of questions about yourself. Your folks and your teacher also completed some forms and answered some questions.

Well, that research study was very successful and produced some valuable information which is being used to help other ADHD teenagers like yourself. There's a whole lot we still have to learn about ADHD, and you may have noticed how many people are now talking about it on TV and in the magazines. You and your parents have worked with your ADHD for a long time and you have very important experience and opinions that are needed to help professionals assist kids, teenagers, and families who are just now beginning to learn about ADHD and how to deal with it in the family.

We need your help! Because you participated in the research study 5 years ago, you are extremely important for helping us with a new research study that is looking at how ADHD teenagers and their families are doing 5 years later. We are trying to see what you and your parents did that helped with your ADHD and how things are going now.

Of course, everything is totally confidential, meaning that NO one will ever know your name or how you answer anything. All the information will be put together in a computer and summarized only as "numbers". Also, just like last time, you are not required to participate, and even if you do, you are not required to answer every question if you don't want to. This is totally VOLUNTARY... but we sure hope you'll help us out!

If you agree to do this, you'll have a few pages of questions to answer. Most of them are "quick answer" questions (like circle the number for "yes" or "no"), then there are a few short answer questions where you write a sentence or so. Remember, this is NOT a test!... we're just real interested in knowing how you see things in your life right now. The whole thing shouldn't take more than 30 minutes maximum and, if you complete it and get it back to us, you will then get \$5.00... not bad for only 30 minutes of your time!

We really hope that you and your folks will help us out with this research study. Tell them that you want to make an easy \$5.00! ... and then we'll be in touch again real soon. Thanks.

Sincerely,

Richard C. Irwin, M.D., F.A.A.P.
Developmental Pediatrician

Stuart L. Holderness, M.S., L.M.F.T.
Doctoral Candidate, OSU

4520 South Harvard
Suite 200
Tulsa, Oklahoma 74135-2900
(918) 743-3224 Fax (918) 743-9623

Tulsa Developmental Pediatrics & Center for Family Psychology

24 May 1996

Ms. / Mrs. _____

RE: ADHD Research

Dear Ms. _____,

On 5-10-96, I tried to contact you by letter regarding a new and important research study examining "follow-up" on your ADHD son, and how he and your family have adapted to his ADHD (5 years after the earlier research study in which you participated). In case you did not receive my first mailing, or have misplaced it, I have enclosed copies of that Letter and the Release of Information Form which is in need of your signature/approval for this study to be performed.

As of this date, 3/4 of the original "study population" have agreed to participate in this follow-up study and I respectfully request that you strongly consider helping us with this next step in research toward assisting many ADHD children and their families.

If you agree to help out, simply sign and date the enclosed Release of Information Form and return it in the enclosed self-addressed stamped envelope. If you do NOT wish to participate in this study, please write "NO" on the Release Form and return it in the same envelope. As mentioned in the original letter, there will be absolutely no negative consequences whatsoever should you choose not to participate in this research study.

Needless to say, however, I hope you will agree! With only a very small amount of time required for both you and your son, valuable research information will help other families with their ADHD children. I thank you for your consideration in this regard.

Sincerely,

Richard C. Irwin, M.D., F.A.A.P.
Developmental Pediatrician
Clinical Associate Professor of Pediatrics
University of Oklahoma College of Medicine-Tulsa

Appendix Q

Institutional Review Board Approval Form

**OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW**

Date: 05-08-96

IRB#: HE-96-058

**Proposal Title: PARENTING PERSPECTIVES ON FAMILY ADAPTION TO ADHD:
EFFECTS OF FAMILY STYLE, COPING AND STRESS ON CHILD OUTCOMES
FIVE YEARS LATER.**

Principal Investigator(s): David Fournier, Stuart L. Holderness

Reviewed and Processed as: Expedited

Approval Status Recommended by Reviewer(s): Approved

**ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD
AT NEXT MEETING.**

**APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A
CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD
APPROVAL.**

**ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR
APPROVAL.**

**Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval
are as follows:**

Signature:


Chair of Institutional Review Board

Date: June 6, 1996

2

VITA

Stuart L. Holderness

Candidate for the Degree of

Doctor of Philosophy

Dissertation: PARENTING PERSPECTIVES ON FAMILY ADAPTATION TO ADHD:
EFFECTS OF FAMILY STYLE, COPING, AND STRESS ON CHILD
OUTCOMES FIVE YEARS LATER.

Major Field: Human Environmental Sciences

Biographical:

Personal Data: Born in Oak Park, Illinois, On February 8, 1960, son of Dr.
and Mrs. Alan W. Holderness. Married Carol L. Brooks, in 1983.
Father of four children Joshua, Ashley, Zachary, and Heather.

Education: Graduated from Cuyahoga Valley Christian Academy, Akron,
Ohio in June, 1978; received Bachelor of Arts degree in Theology,
Religious Education in May 1982, and Psychology in May 1983 from
Oral Roberts University, Tulsa, Oklahoma. Received Masters of Science
degree with major in Counseling Psychology from Northeastern State
University, Tahlequah, Oklahoma in December 1988. Completed the
requirements for the Doctor of Philosophy degree with a major in
Family Relations and Child Development at Oklahoma State University
in December 1997.

Experience: Psychiatric Counselor on adolescent psychiatric unit. Private
Practice of Individual, Marital and Family Therapy in Tulsa, Oklahoma,
1988-Present. Instructor in Department of Behavioral Sciences at Tulsa
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Certifications: Licensed Marital and Family Therapist (LMFT), Licensed
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