ABSTRACT

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| Title of Dissertation: | PARENTS' STRESS AND COPING WITH THEIR CHILDREN'S ATTENTION DEFICIT HYPERACTIVITY DISORDER |
| | Mary Moser Mitchell, Doctor of Philosophy, 2006 |
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In a previous study, the National Institute of Mental Health enrolled 579 children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) in a randomized controlled trial to test the efficacy of a stimulant medication. ADHD affects 3-5% of children before age 7 and is characterized by difficulties in controlling impulsive and hyperactive behaviors and/or paying attention. Studies of children with ADHD indicate that the disorder can be extremely disruptive to family functioning.

While the original NIMH study examined the children's outcomes, this investigation explored quality of life among the parents of these children. Quality of life was considered in terms of emotional well-being and social functioning. Various studies within the health psychology discipline have suggested that coping strategies, social support, and stress appraisal significantly influence and predict quality of life.

It was hypothesized that stress appraisal, social support, coping skills, and symptom severity would predict quality of life indicators (i.e. spouse relationship, parent/child relationship, and psychological/emotional functioning) for parents. This main effects hypothesis was tested using baseline data and using longitudinal data, while controlling for baseline measures. The second set of hypotheses proposed that social support and coping skills would moderate the relationship between stress appraisal and quality of life. These relationships were tested using the baseline data as well as the longitudinal data, while controlling for baseline measures and a variety of covariates (i.e. demographic variables). In addition, the relationship between objective stressors and stress appraisal was tested, as well as the direct effects of objective stressors on the quality of life outcomes.

A combination of structural equation modeling and multiple regression analyses were used to analyze the data. Stress appraisal was the most consistent and strongest predictor of quality of life outcomes for parents. Social support, coping, and symptom severity played significant, yet modest roles in prediction. Objective stressors significantly predicted stress appraisal as well as the quality of life indicators.

These results indicated support for both the main effects and moderating hypotheses. Recommendations for health educators seeking to develop intervention programs for this population of parents were offered.

PARENTS' STRESS AND COPING WITH THEIR CHILDREN'S ATTENTION
DEFICIT HYPERACTIVITY DISORDER


BY

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BACKGROUND

## 1.1     Statement of the Problem

Attention Deficit Hyperactivity Disorder is a condition that affects 3 to 5% of

children before age 7 (American Psychiatric Association, 1994).  ADHD is a

neurologically based disorder that is the result of a neurochemical deficiency in specific

areas of the brain (Silver, 2004) and is characterized by difficulties in controlling

impulsive and hyperactive behaviors and/or paying attention (NIMH, 2005).

ADHD not only impairs children's functioning, but also has a great impact on the

functioning of their families, especially their parents.  It has been documented that

parents, especially mothers, have greater difficulties than other mothers, with depression,

parenting stress, and self-esteem, since raising an ADHD child can be extremely

frustrating and challenging.  Although there are many studies investigating the effects of

an ADHD child on parent and family functioning, there has been limited research on the

efficacy of specific parent interventions.  In fact, there is little description of the content

of existing parent interventions.

However, part of the psychosocial treatment arm for the Multimodal Treatment

Study of Children with Attention-Deficit/Hyperactivity Disorder (MTA) study was a

parent intervention, which is described in chapter 3.  During the course of this 14-month,

randomized controlled trial, conducted by the National Institute of Mental Health

(NIMH), a great deal of data were collected to determine the effects of medication and

psychosocial treatments, both alone and in combination, on ADHD symptoms and

behaviors in children.  This investigation uses publicly available data collected from this

study, with the permission of the University of Maryland IRB (#05-0301; Appendix F) to

understand how the data on coping strategies and social support can be used in creating effective parent interventions.

Researchers have speculated that the ways in which people cope with stressful circumstances may be important moderators in the stress-illness paradigm (Billings & Moos, 1981). Other researchers have built models that explain how coping skills and social support moderate the effect of stress on well-being and quality of life. In addition, coping and social support may interact such that various coping strategies may increase or decrease social resources.

These main and interaction effects between social support and coping, on quality of life will be the focus of this investigation. These effects will be tested using structural equation modeling techniques. These techniques will indicate the causal influences of the independent variables on the dependent variable as well as measure the amount of variance that each independent variable, alone and in combination with others, explain in the dependent variable.

From the results of these tests, conclusions will be drawn regarding the constructs that are important in explaining quality of life among parents of children with ADHD. These conclusions in turn, will aid in the development of recommendations for program planners who are creating parent interventions.

## 1.2    Significance of the Study

The current study seeks to understand which constructs (i.e. social support and coping strategies, either alone or in combination) predict the quality of life. Which construct accounts for the largest proportion of variance in the quality of life construct? Do social support and coping strategies interact to explain greater variance than any one

variable by itself?  Answers to these questions in the proposed analyses will lead to

recommendations for future parent training sessions, since it is documented that parent

training programs are well-established interventions for teaching parents techniques for

managing their children's problem behaviors and encouraging pro-social behavior

(McKee et al., 2004).

Finding that social support, either in terms of number of important others or in

terms of the quality of these relationships, accounts for a greater proportion of variance in

quality of life would lead to conclusions that parent programs should help parents widen

and/or strengthen their social network.  Or, perhaps coping strategies, such as active

problem solving or positive reframing, are most important in explaining why some

parents have better quality of life than others.  This result would indicate that program

planners should find ways to teach these coping skills to parents.  These programs could

educate parents on more effective coping strategies, as well as give parents the

opportunity to practice these skills so that they can use them in everyday situations.

Knowing which constructs should be the focus of parent programs is vital to enhancing

these interventions that aid parents in helping their ADHD children.  It is then up to the

program planners to use this information in creating more effective programs.  A great

deal of research has documented the adversities that families with ADHD children face,

while at the same time reducing their social support systems.  It is clear that parent

interventions are a vital tool to helping parents successfully raise their ADHD children, as

well as their non-ADHD children.

**1.3     Specific Aims**

The specific aims of this investigation are to:

1.       To determine which predictors (e.g. coping strategies, social support, stress

indicators, and symptom severity scores) account for the most variance in the quality of

life construct.

2.       To determine the relationship between coping, social support, stress, and

symptom severity, with quality of life, specifically examining the direct and indirect

effects of the independent variables on the outcome variable.

3.       To test several models explaining the causal pathways between predictors that are

significantly associated with quality of life using baseline data as well as longitudinal

data to predict 14-month outcomes.

4.       To use these results to make recommendations regarding future parent

interventions.

**1.4     Hypotheses**

        Hypotheses were adapted from theories and models proposed by health

psychologists such as Moos (1981), Cobb (1976), and Ogden (2000).  These hypotheses

will be used to test the amount of variance explained in the dependent variable, quality of

life, as well as the significance of the direct and indirect paths between the independent

variables and the outcome.  These will be presented below and followed by a figure that

illustrates each hypothesis.

Hypothesis 1: Each construct (coping, social support, stress, and symptom severity) will

have its own main effect on quality of life.

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┌──────────┐
│Social    │
│Support   │
└──────────┘ ╲
┌──────────┐  ╲  ┌──────────┐
│Coping    │───→ │          │
└──────────┘     │Quality of│
┌──────────┐     │   Life   │
│Stress    │───→ │          │
│Appraisal │     └──────────┘
└──────────┘  ╱
┌──────────┐ ╱
│Symptom   │
│Severity  │
└──────────┘
```

Hypothesis 1b: Objective stressors will have both direct and indirect effects on quality of

life outcomes.  The indirect effects will occur with stress appraisal as a mediator, such

that the stressful life events will lead to an appraisal of the situation.  Quality of life

indicators will be affected based on the evaluation or appraisal of the stressful situation

(i.e. stress appraisal).

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                              ┌──────────┐
┌──────────┐   ┌──────────┐   │Quality of│
│Objective │──→│Stress    │──→│   Life   │
│Stressors │   │Appraisal │   │          │
└──────────┘   └──────────┘   └──────────┘
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Hypothesis 2: Based on the buffering model of social support, stress appraisal will

moderate the relationships between social support and quality of life, as well as between

coping and quality of life.
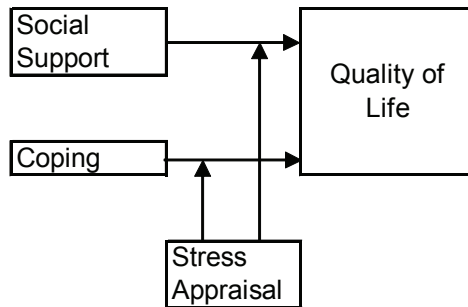


Hypothesis 3: Baseline scores of social support, coping, stress appraisal, and symptom

severity will impact the 14-month scores of quality of life.
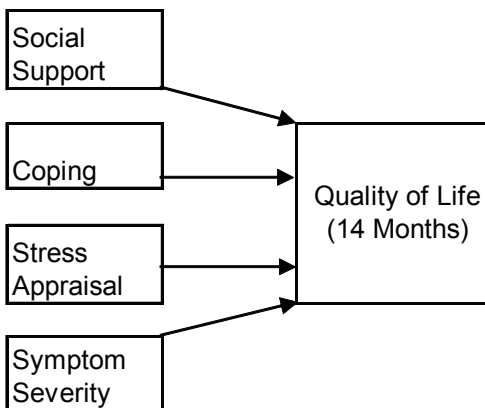


Hypothesis 4: Based on the buffering model of social support, stress appraisal will

moderate the relationships between social support and quality of life scores over time, as

well as between coping and these future quality of life scores.
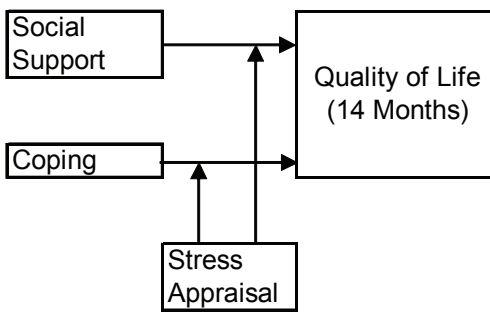
## 1.5     Definition of Terms

*Quality of Life:*"a patient-perceived multidimensional construct that encompasses an evaluation of at least three basic aspects of quality of life; namely, emotional well-being, physical state, and social functioning." (Power et al., 1999, p. 495).

*Coping:* cognitive and behavioral efforts to manage stressful circumstances (Smith, Wallston, & Dwyer, 2003)

*Social Support:* the perceived caring, esteem, or help a person receives from other people or groups (Sarafino, 2002)

*Stress Appraisal:* the perceived discrepancy between the demands placed on individuals and the resources that they have to deal with the demands (Sarafino, 2002).

*Attention-Deficit Hyperactivity Disorder (ADHD):* a disorder, described in the Diagnostic and Statistical Manual of the American Psychiatric Association (1987), that is characterized by either inattention and/or by hyperactivity and impulsivity.

LITERATURE REVIEW

## 2.1 Overview

This literature review explores the relationship between children's attention deficit/hyperactivity disorder and their parents' coping with the disorder. The review begins with a description of three conceptual models from health psychology, a field which analyzes the impact of psychosocial variables on health. These frameworks theorize which constructs are important in linking stress and quality of life or well-being and describe the relationships between these variables.

## 2.2 Conceptual Frameworks

The first model describes the link between stressful life circumstances and health or well-being. Moos (2002) studied the ways in which people cope with life transitions, serious health problems, and other personal crises. He created a conceptual framework to diagram their understanding of the coping process as well as the role of social support and personality characteristics in moderating the relationship between stress and adaptation. Although stress can impede progress toward achieving life goals, he found that most people find satisfactory solutions to difficult situations. Many people manage to survive, while a select few mature and find deeper meaning in difficult hardships. These observations led Moos to consider the roles of coping strategies and social support resources in helping people adapt to and overcome obstacles in their lives. In particular, he wanted to understand how personal factors interact with environmental factors to shape social networks and coping strategies in adapting to stressful life circumstances, all of which shape health and well-being.

At the far left of the model (see Figure 2-1), Moos (2002) describes environmental factors, such as the physical surroundings and policies governing behavior, and personal factors such as socio-demographic characteristics, health status, and functioning level. He proposed that these two systems shape each other and that these sets of variables influence the next panel, which focuses on the interaction between stressful life circumstances and social network resources. He hypothesized that these factors lead to cognitive appraisals which interact with coping responses. The interaction of appraisals and coping strategies impact health and well-being. However, he did not specify the nature of the interaction. Since the model is recursive (i.e. bidirectional), each construct not only interacts with the other concepts, but also has a direct effect on health and well-being as well.

Moos describes an example of using the model to understand behavior. For example, factors in the environmental system, such as a high crime rate, and factors in the personal system, such as a vigilant perceptual style, can lead to cognitive appraisal (e.g. the perception of danger to personal safety) and coping responses (placing safety locks on windows and doors). This response in turn influences the environmental system and reduces the probability of experiencing a stressful event (e.g. being robbed).

Figure 2-1. Model of the Relationship Between Personal and Environmental Factors and Adaptation
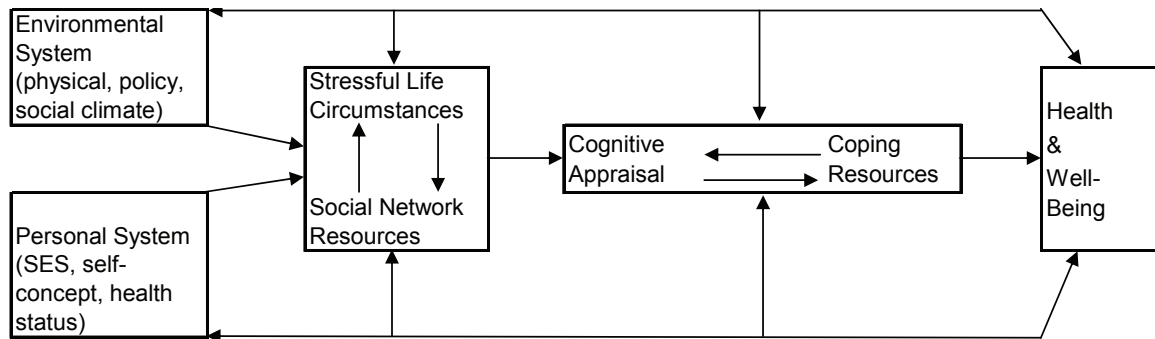


(Moos, 2002)

Another theory by Ogden (2002) describes beliefs and behaviors that may influence cancer development. These beliefs, which appear to stem from the Health Belief Model, include such statements about susceptibility as, "I won't get lung cancer" or about benefits such as, "smoking helps me relax." Ogden lists behaviors that promote cancer such as smoking and diet. These constructs are placed on the extreme left hand side of the diagram (Figure 2-2) and are the only constructs proposed to influence the onset of cancer. Other constructs such as coping with the diagnosis, psychological consequences, and illness representations, are described next since they would affect the patient shortly after diagnosis. Ogden (2002) describes research linking cognitive responses, such as having a fighting spirit, with better emotional outcomes. Other researchers have found links between cancer onset and emotional responses such as depression, anger, and anxiety. Then, as the illness progresses, the patient must make behavior changes, learn to cope with the illness, and deal with life stressors, all of which impact the patient's quality of life (Ogden, 2002).

Figure 2-2. The Potential Role of Psychology in Cancer



Ogden, 2000
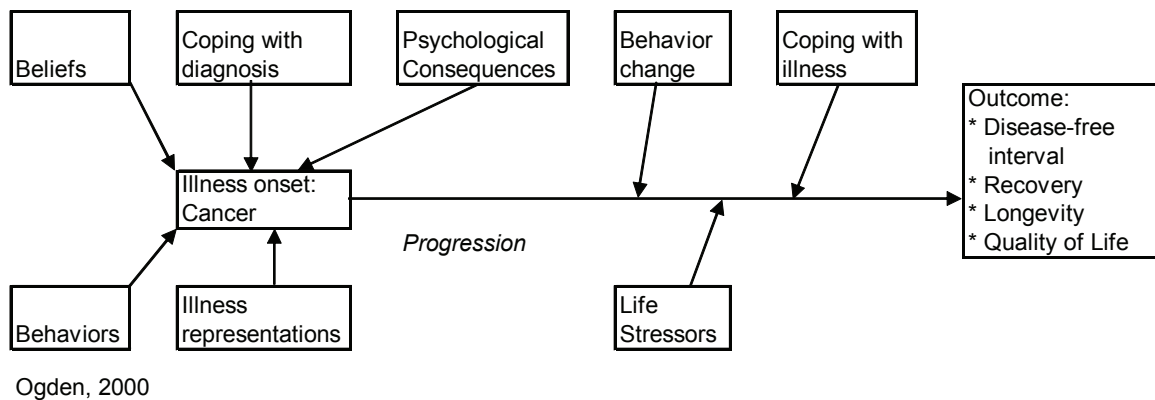
Although all of these models from the health psychology field describe the processes that people with a chronic illness use to achieve a sense of well-being or maintain their quality of life, these models can be easily adapted for use with a healthy population. The main idea of these models is that people face stressors in their lives. How people handle these stressors, through the use of various coping strategies or using social support resources, can influence their level of well-being or quality of life. These ideas represent the foundation or conceptual model for the current study.

## 2.3 Study Variables

### Quality of Life

The dependent variable, quality of life (QOL), has been defined as people's self-appraisal of the level of satisfaction or excellence of their lives (Sarafino, 2002). The World Health Organization's definition of quality of life is, "a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships and their relationship to the salient features in their environment (WHOQOL Group, 1993). Quality of life has also been defined as,

> "a patient-perceived multidimensional construct that encompasses an evaluation
> of at least three basic aspects of quality of life; namely, emotional well-being,
> physical state, and social functioning." (Power et al., 1999, p. 495).

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Building on the definitions, QOL has been conceptualized in several ways. Some measures created by researchers are based on universal basic needs, while others are based on the needs and wants that are salient to the individual (Ogden, 2002). The former approach is used in the current study.

QOL has been measured as a unidimensional and as a multidimensional construct. For example, Fallowfield (1990) defines four dimensions for QOL that include psychological (i.e. mood, emotional distress, adjustment to illness), social (i.e. relationships, social and leisure activities), occupational (paid and unpaid work), and physical (i.e. mobility, pain, sleep, and appetite) domains.

In this study with parents of ADHD children, quality of life has been defined as social and emotional or psychological functioning. Social functioning among parents of ADHD children has been studied with respect to parent/child relationships (Lange et al., 2005; Woodward, et al., 1998; Fischer, 1990; Lovejoy et al., 2000) and marital discord (Woodward, et al., 1998; Cunningham et al., 1988). Emotional functioning has been studied, especially with regards to depression among mothers of ADHD children (Woodward et al., 1998; Cunningham et al., 1988). This literature will be discussed in more detail in section 2.7.4 Parents Coping with Their Children's ADHD.

**Social Support**

Sarafino (2002) defines social support as the perceived caring, esteem, or help a person receives from other people or groups. According to Cobb (1976), people with social support believe they are loved and cared for, esteemed and valued, and part of a social network, that can provide goods, services, and mutual defense in times of need or

danger.  Social support can come from a partner, other relatives, friends, and social or community ties (Taylor et al., 2003).

Social support has been associated with mortality in prospective studies (Berkman & Syme, 1979; House et al., 1982; S), as well as with physical illness and psychological distress (Wallston, Alagna, DeVellis, & DeVellis, 1983).  Even though levels of mortality vary greatly across studies due to variations in sample composition (e.g. race, ethnicity, sex, geographic location), similar associations exist between social integration (i.e. the number of and frequency of social contacts and relationships) and mortality (House, Landis, & Umberson, 2003).  Being married is most beneficial, while being widowed is more detrimental for men than for women.  Additional prospective studies have shown that social relationships are predictive of mortality when controlling for all causes, especially cardiovascular mortality, in studies with elderly people or people who have serious illnesses.

Taylor et al. (2003) note that affiliation with other appears to be especially common under stress.  Research has shown that social support effectively reduces distress during times of stress and when dealing with adverse changes in health.

Beneficial psychosocial and physiological benefits accrue from having social support, such as preventing illness, speeding recovery from illness, and reducing the likelihood of mortality due to serious disease.  In laboratory experiments, social support is associated with reduced heart rate, blood pressure, and cortisol.  Similar results have been found in animal studies as well as in studies of humans in stressful contexts.  Researchers have found that people who experience greater than average levels of

chronic stress, and especially those people who suffer severe health declines, often report that their social support resources decline as well (Sarafino, 2002).

According to Sarafino (2002), there are five basic types of social support. First, emotional support is the expression of empathy, caring, and concern toward another person, while esteem support includes people's expressions of positive regard, encouragement, or agreement with the person's ideas or feelings, as well as positive comparison of the person with others. Tangible or instrumental support is providing a person with direct assistance such as providing material goods or services. Informational support is giving advice, directions, suggestions or feedback on how the person is doing, while network support provides people with a feeling of membership in a group of people who share common interests and social activities.

Taylor et al. (2003) also define another type of support, called appraisal support, as help from another person that improves one's understanding of a stressful event and helps to gather resources and coping skills to deal more effectively with the problem. Through the exchange of appraisals, a person facing a stressful event can more accurately assess the level of threat associated with the event and can reduce uncertainty about the nature of the stressor.

Another concept related to social support is social network. A social network comprises relationships that people have with others in their families and their communities (Sarafino, 2002). Social networks vary by size, frequency of contacts, composition, and intimacy. Network size is related to social prestige, income, and education with lower prestige, income and education people having smaller social

networks.  In addition, the social networks of people from lower socioeconomic strata tend to be more homogenous with more family or relatives in the network.

There are two hypotheses regarding how social support effects health, each with its own supporting research (Sarafino, 2002).  The first is the buffering model and the other is the direct effect hypotheses.

The buffering hypothesis posits that social support affects health by protecting people against the negative effects of high stress, but this protection only occurs under times of high stress (Sarafino, 2002).  Under low-stress conditions, little or no buffering occurs.

There are two possible ways in which the buffering hypothesis works.  First, people with higher levels of social support appraise situations as less stressful.  Second, social support may modify people's responses to a stressor after the initial appraisal, such as someone provides them a solution to the problem.

The direct effects hypothesis on the other hand posits that social support benefits health and well-being regardless of the amount of stress people experience (i.e. social support is equally beneficial under high and low amounts of stress) (Sarafino, 2002). There are two possible ways in which the direct effects hypothesis works.  First, people with greater social support have strong feelings of belonging and self-esteem.  This positive outlook is beneficial to health.  In fact, studies of those young and middle aged adults with greater levels of social support had lower blood pressures in daily life and in laboratory tests.  Second, greater social support encourages people to adopt and maintain healthy lifestyles because others care about them and need them.

*Studies of Social Support*

Researchers have found an inverse relationship between social resources and psychological impairment as well as psychosomatic symptoms (Cobb, 1976). Therefore, the presence and use of social resources may moderate the effects of stress (Billings & Moos, 1981). Social resources are not only the number of important others who are available, but the quality of support gained from these others as well ( Billings & Moos, 1981).

Sarason, Sarason, Shearin, & Pierce (1987) write that personal adjustment, social behavior, maintaining one's health, and recovery from illness can all be influenced significantly by a person's access to supportive others. However, one study found that support provided by family, but not by peers, moderated the relationship between job stress and symptoms of depression. Perceived support or peoples' appraisals of available support may be more important than their actual interpersonal contacts. Scales assessing received support and total network size were unrelated to any of the psychological symptoms, while support satisfaction was negatively related to all of the symptom indices. Sarason et al. (1987) found that low social support is related to an external locus of control, a difficulty in persisting on demanding tasks, increased levels of cognitive interference, and relative dissatisfaction with life. Low social support is also associated with less adequate coping behavior.

Sarason, Levine, Basham, and Sarason (1983) define the two functions of social support as contributing to positive adjustment and personal development (i.e. direct effects hypothesis) and providing a buffer against the effect of stress (i.e. buffering hypothesis). In one study they reviewed, the outcome of women's complications in

pregnancy was predicted by recent stressful life events and psychosocial assets, including

the availability of social support.  The researchers found that women who scored higher

on life changes and lower on psychosocial assets had many more birth complications than

any other group.  Another study found that stressful life events were associated with more

psychiatric disorder among those living alone or unmarried compared to those living with

others or married.  Still another study found that the combination of recent stressful life

events, low levels of social support, and adverse childhood experiences predicted the

occurrence of maladjustment in adults.  There was also evidence that depressed people

tend to report the lack of availability of supportive others.  The authors conclude that

long-term social support helps to maintain psychological and physical health.

Several studies with parents of ADHD children have been conducted in the area

of social support.  Lange et al. (2005) examined overall levels of social support for

parents, Kendall described the family isolation that resulted from having a child

diagnosed with ADHD, Woodward et al. (1998) studied instrumental support received by

parents, and Cunningham et al. (1988) discussed the social networks of mothers of

ADHD children.  These studies are discussed further in section 2.7.4 Parents Coping with

Their Children's ADHD.

**Coping**

Coping is defined as cognitive and behavioral efforts to manage stressful

circumstances (Smith, Wallston, & Dwyer, 2003).  Coping is considered a central

construct to understanding why people adjust or fail to adjust to chronic and acute

illnesses along with other variables that have also shown promise (e.g. social support).

Coping skills (Sarafino, 2002) aim to reduce the demands of a stressful situation or to expand one's resources to deal with the situation (i.e. problem-focused coping) or coping skills can be focused on controlling one's emotional response (i.e. emotion-focused coping) to a stressful situation, through either behavioral (i.e. watching TV, seeking social support through friends) or cognitive approaches (i.e. change the meaning of the situation). Sarafino (2002) argues that problem-focused is considered more adaptive than emotion-focused. Problem-focused coping usually occurs when the individual can change the circumstances of the situation, while emotion-focused coping usually occurs when the individual is powerless to change or remedy the problem (Vollrath et al., 1994). Examples of problem-focused or active coping styles may include attempting to maintain activity levels in the face of pain or stress, distraction to ignore the stressor, or actively seeking advice or help from others (Smith, Wallston, & Dwyer, 2003), while examples of emotion-focused or passive coping styles might include using drugs or alcohol, denying the problem, or venting emotions. Therefore, , coping skills serve two main functions, to either influence or change the problem causing the stress or to regulate one's emotional response to a problem (Sarafino, 2002).

Another consideration is the measurement of coping as a dispositional trait versus a context specific behavior (Smith, Wallston, & Dwyer, 2003). Carver et al. (1989) believe there are stable coping styles or dispositions that people bring with them to the stressful situations that they encounter. This means that people already have a preferred set of coping strategies that they tend to use when confronting potential stressors. Second, it is possible that coping strategies flow from personality characteristics. This means that having certain personality characteristics predisposes people to using certain

coping strategies. There are two ways to assess coping strategies: first, questions assessing dispositional coping styles ask respondents what they usually do in a given situation, while questions assessing situational coping ask respondents what they did or are currently doing in a specific coping episode or during a specific time period.

In predicting quality of life, researchers (Smith, Wallston, & Dwyer, 2003) argue that the dispositional coping trait is more appropriate to assess the long-term cumulative effects of general coping strategies. This dispositional trait is usually measured with coping inventories such as the COPE scale (Smith, Wallston, & Dwyer, 2003).

*Studies of Coping*

From a review of previous coping studies, Deisinger et al. (1996) write that previous researchers (Pearlin & Schooler, 1978; McCrae & Costa, 1986) found that using adaptive coping strategies, such as self-reliance or positive comparisons, tended to reduce stress. This led to the conclusion that effective coping was predictive of good psychological health (Pearlin & Schooler, 1978). Other studies have supported this finding, proposing that adaptive coping was negatively associated with psychopathology and that maladaptive coping behaviors were positively associated with psychological dysfunction (Billings & Moos, 1981). Nowack (1989) suggests from reviewing the stress and coping literature that coping is a potential moderator of stress and illness.

McKee et al. (2004) conclude from reviewing previous studies that some emotion-focused coping styles (e.g. focusing on or venting emotions) and avoidant-focused styles are associated with greater psychopathology compared to adaptive emotion-focused strategies (e.g. positive reappraisal), problem-focused styles, and seeking social support, all three of which are linked with fewer psychological problems.

There is also evidence that depressed people are more likely to use emotion-focused and avoidant-focused coping styles and less likely to use problem-focused coping strategies.

Billings & Moos (1981) surveyed 194 couples to determine if coping and social resources predicted symptom and mood levels, after controlling for the incidence of recent negative events, and if the individual's coping responses and social resources moderated the impact of life events on personal functioning. Health-related stressors tended to elicit fewer problem-focused and more emotion-focused coping than work or family stressors. Billings & Moos found that more use of active attempts to cope with an event and fewer attempts to avoid dealing with it were associated with less stress. The use of more active strategies was more prevalent among those with more education and income. Measures of social support also moderated the relationship between stressful events and functioning.

Carver & Sheier (1994) note that coping research has tended to find significant associations between maladaptive coping strategies and negative outcomes, rather than between adaptive coping skills and positive outcomes. For example, they found that there are far more significant results showing associations between avoidance coping and distress than any other association.

In a Pearlin & Schooler (1978) study, women were worse copers than men were, indicating that women reported significantly more stress as a result of coping strategies than men did. With regards to income and education, those who were higher in each reported fewer hardships and less stress, compared to people who were poorer and less educated. They conclude that lower socio-economic groups have more than their fair share of hardships and burdens, as well as a decreased ability to deal with these problems.

From using the COPE scale, researchers (Carver & Scheier, 1994; Deisinger et

al., 1996) have found that women were more likely to focus on or vent emotions and to

seek social support for both instrumental and emotional reasons, while men were more

likely to use alcohol or drugs as a way of coping.  Correlations with other measures

showed that seeking social support may be both adaptive and maladaptive, depending on

what other coping processes are also occurring.  However, alcohol use as a means of

coping was associated with poorer psychological functioning.  Carver & Scheier (1994)

also found that coping did not predict a reduction of negative emotions.  Instead, all of

the significant associations indicated that coping led to increases in negative emotion.

Coping strategies were investigated among parents with children diagnosed with

ADHD.  These studies generally found that parents tended to use fewer adaptive coping

and more maladaptive coping strategies that resulted in worse outcomes (Woodward et

al., 1998; Fischer, 1990; Podolski & Nigg, 2001; McKee et al., 2004; Cunningham et al.,

1988).  These studies are discussed in more depth in section 3.7.4 Parents Coping with

Their Children's ADHD.

**Stress**

Stress is defined as the perceived discrepancy between the demands placed on

individuals and the resources that they have to deal with the demands (Sarafino, 2002).

Stress requires biopsychosocial resources for successful coping efforts.  Psychologists

believe that the amount of stress that an individual experiences increases with the stressor

frequency, intensity, and duration.

One of the earliest models of stress was Canon's fight or flight model (Ogden,

2000).  This model suggested that external threats elicited the fight or flight response

involving an increased activity rate and arousal.  These physiological changes would enable the individual to either escape from the source of stress or fight.

Later, Selye developed the general adaptation syndrome (GAS) in the 1950's, which included three stages in the stress process (Ogden, 2000).  The first stage was called the "alarm" stage, which was marked by an increase in activity and occurred immediately after the individual was exposed to a stressful situation.  The next stage was called "resistance," which was characterized by coping efforts and attempts to reverse the effects of the alarm phase.  The third and final stage was called "exhaustion," which was reached when the individual had been repeatedly subjected to the stressful situation and was incapable of showing further resistance.

Both of these models posit that individuals react automatically in responding to an external stressor and describe stress within a straightforward stimulus-response framework (Ogden, 2000).  These models discount any psychological factors that may influence the individual's coping style and instead, focus on the individual as passive and responding automatically.

One way to measure stress is to use a life events scale, which is a self-report paper and pencil survey assessing the number of changes that have occurred in the previous year (Sarafino, 2002).  These changes are prespecified by the researcher and are believed to cause some level of psychological re-adjustment.  This model, like the previous two, views the individual as being a passive reactor to stressful life events.

In the 1970's, Lazarus developed a model based on the role of appraisal in the stress and coping process (Ogden, 2000).  Lazarus argued that in the stress process, there was a transaction between the individual and the external world with the individual

perceiving a potentially stressful event as stressful. This model differed in that Lazarus described people as appraising and acting on the outside world, not passively reacting to it. Lazarus also described two forms of appraisal. Primary appraisal was defined as the individual's initial appraisal of an event. The primary appraisal can conclude that the event is irrelevant, that it is benign and positive, or that it is harmful and negative. The secondary appraisal involves the individual evaluating coping strategies to respond to the threat.

Stress appears to increase among people of a minority group or among those who are poorer (Sarafino, 2002). Also, men tend to have greater reactivity to psychological stress as compared to women.

*Studies of Stress*

Significant life events may effect an individual's physical, social, and emotional functioning, even though these events may not be associated with long-term detriment (Billings & Moos, 1981). Events that are positively assessed are less likely to be associated with impaired functioning than negative events (e.g. job loss). Researchers have shown a relationship between life changes and psychiatric symptoms, specifically, finding that life stress is related to episodes of depression, anxiety, and tension (Sarason, Johnson, & Siegel, 1978; McCrae & Costa, 1986).

Sarason and colleagues (1978) also argue that it is negative events that have the greatest impacts on peoples' health. They believed that a new measure should include a list of experienced events, allow for ratings of the favorability of the events, and allow individualized ratings of the personal impact of the events.

Carver, Scheier, and Weintraub (1989) describe the three processes involved in stress. These are primary appraisal or the process of perceiving a threat, secondary appraisal or the process of considering a possible response to a threat, and coping which is the process of performing that response action.  The cycle is not necessarily linear, but rather, an individual can cycle through all of the phases several times before resolving a threat or situation.

One study (Mitchell, Cronkite, & Moos, 1983) found that greater numbers of life events and chronic strains, less use of problem-focused coping, and decreased family support were significant predictors of depressive symptoms.  As part of their model, they predicted that chronic strains would lessen an individual's support seeking attempts, indicating that stresses and strains would have a negative impact on social support, which would in turn increase depressive symptoms.  Through their survey of 157 patients with clinical depression and their spouses, Mitchell et al. found support for their model depicted in Figure 2-3.

Figure 2-3. Coping and Family Support as Potential Mediators in the Relationship Between Negative Events and Ongoing Strains on Depression
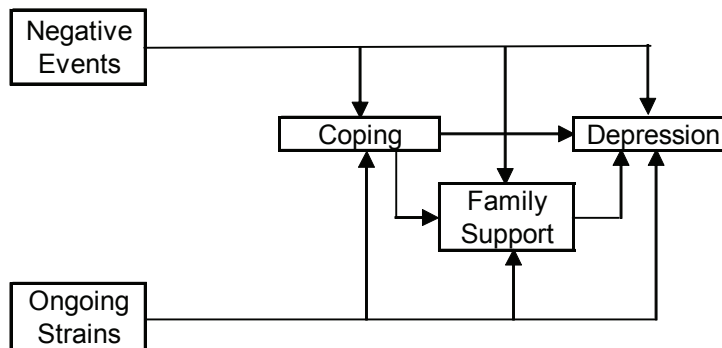


Mitchell, Cronkite, & Moos, 1983

Several studies have examined various aspects of stress among parents with children diagnosed with ADHD, finding a link between stress and having a child with ADHD (Cunningham et al., 1988; Podolski & Nigg, 2001; Fischer, 1990; Breen & Barkley, 1988; Mash & Johnston, 1983). These studies are discussed in more detail in section 2.7.4 Parents Coping with Their Children's ADHD.

**Attention Deficit Hyperactivity Disorder (ADHD)**

*Historical Background*

ADHD was first described by Dr. Heinrich Hoffman in 1845 in a series of children's books that he wrote for his son, but it was not until 1902 that Sir George F. Still published a series of lectures for the Royal College of Physicians in England in which he described a group of impulsive children with significant behavioral problems, caused by a genetic dysfunction and not by poor parenting (Silver, 2004). He described these children as aggressive, defiant, resistant to discipline, and excessively emotional (Barkley, 1998).

During the 1980's, several parent support associations were formed, such as Children and Adults with ADD (CHADD) and the Attention Deficit Disorders

Association (ADDA) (Silver, 2004).  These groups gave parents and teachers information

about the disorder and how to cope with children at home and in the classroom.  They

also wielded political power to include ADHD children in special education services as

mandated by Public Law 94-142 and later, by the Individuals with Disabilities in

Education Act (IDEA).  However, in the late 1980's, the Church of Scientology launched

a campaign to convince parents that their children were being over medicated.  This

campaign led many parents and children to cease stimulant medication usage and

seriously undermine the advances in ADHD treatment.  Contrary to popular belief,

clinical evidence shows that ADHD medications do not stunt growth and that lapsing in

medication intake for vacation times is not recommended (Silver, 2004).

Although the diagnosis of ADHD has been in use formally as part of the

International Classification of Diseases (ICD) since 1968, the number of people receiving

the diagnosis in the past two decades has multiplied significantly (Silver, 2004).

Receiving the diagnosis usually meant taking stimulant medication.  Barkley (1998)

explains that this increase in stimulant medication use was due to success of stimulant use

with hyperactive children in clinical studies.  A backlash ensued with the public accusing

doctors of "drugging" children and that the real cause of hyperactivity was

environmental, particularly diet related.  However, studies were undertaken, finding that

changing diet had little impact on hyperactivity.

Since then, thousands of scientific papers have been published on the disorder,

explaining its nature, course, causes, impairments, and treatments (NIMH, 2005).

Barkley (1998) describes several phases of conceptualizations of ADHD as a result of

minimal brain damage (MBD) and as a result of poor parenting or other environmental factors.

Great debate subsequently ensued regarding the classification of the illness as being primarily a problem with hyperactivity or with inattention (Barkley, 1998). The Diagnostic and Statistical Manual of Mental Disorders (DSM) went through several revisions of classifying the disorder with the last revision specifying three cases of ADHD, one with inattention, one with hyperactivity, and one that is a combined type with patients displaying both inattentive and hyperactive symptoms (Barkley, 1998).

*Diagnosis of Attention Deficit Hyperactivity Disorder*

There is no definitive laboratory test to establish the diagnosis of ADHD (Silver, 2004). Diagnosis is based on three assessments including the clinical interview, the medical examination, and the completion and scoring of behavior rating scales from parents and teachers (Barkley, 1998) The assessment focuses on detecting the presence, or absence of ADHD as well as differentiating ADHD from other psychiatric disorders (Barkley, 1998).

The rate of ADHD tends to be higher in boys (Silver, 2004). This may be due to underdiagnosis in girls, who tend to be less disruptive (i.e. less hyperactive) and experience more attentional difficulties. About 40-50% of children will out-grow or learn how to compensate for their ADHD symptoms, while the other 50% will experience symptoms into adulthood (Silver, 2004). There is also evidence that ADHD is a familial disorder (Faraone and Biederman, 1994).

A variety of comorbid disorders are common among people diagnosed with ADHD. For example 30-40% of people with ADHD have a learning disability as well

(Silver, 2004).  As many as half of all children with ADHD are diagnosed with oppositional defiant disorder (ODD), which is more common among boys with ADHD (NIMH, 2005).  These children are described as stubborn and non-compliant, have outbursts of temper, can become belligerent and generally argue and refuse to obey adults.  About 20-40% of ADHD may eventually develop conduct disorder (CD), which is a more serious pattern of antisocial behavior than ODD (NIMH, 2005).  These behaviors include stealing, fighting with or bullying others, and getting into trouble at school or with the police.  These individuals are aggressive towards other people and/or animals, destroy property, break into people's homes, commit thefts, and carry or use weapons (NIMH, 2005).  These children and teenagers are at greater risk for substance experimentation, dependence, and abuse.  Other disorders that are also commonly comorbid with ADHD are anxiety, depression, learning disorders, bipolar disorder, and Tourette syndrome.

Making an accurate diagnosis of ADHD can be very difficult for clinicians (Silver, 2004).  The three principle characteristics of ADHD are inattention, hyperactivity, and impulsivity (NIMH, 2005).  Inattention is defined as the ability to find what one wants to pay attention to and to focus on it, the ability to maintain that focus, and once the task is finished, the ability to switch attention and move on to something else (Silver, 2004).  Each of these processes can be interrupted by factors other than ADHD, such as avoidance, anxiety, depression, or learning disorders.  Data must be collected from the patient, as well as from informed others, for descriptions of the behaviors in order to make a decision about the most likely causes of the inattentive behavior.  Not everyone who is overly hyperactive, inattentive, or impulsive has ADHD

(NIMH, 2005).  The ADHD diagnosis requires that these behaviors are excessive

considering the person's age (NIMH, 2005).  Also, the diagnosis requires that these

behaviors cause problems for the individual in at least two life domains (e.g. school,

work, home, community) or that they are pervasive.  Finally, the symptoms must begin

before age 7 and continue for at least 6 months, to be considered long-term.

According to the DSM-IV (American Psychiatric Association, 1994), there are

three subtypes of ADHD.  These include ADHD combined type, ADHD, predominantly

inattentive type, and ADHD, predominantly hyperactive.  For the predominantly

inattentive type, six or more of the following symptoms of inattention must have

persisted for at least 6 months to a degree that is inconsistent with the individual's

developmental level:

1) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities;
2) often has difficulty sustaining attention in tasks or play activities;
3) often does not seem to listen when spoken to directly;
4) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
5) often has difficulty organizing tasks and activities
6) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
7) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
8) is often easily distracted by extraneous stimuli
9) is often forgetful in daily activities

For the predominantly hyperactive type, six or more of the following hyperactivity-

impulsivity symptoms need to have persisted for at least six months to a degree that is

inconsistent with the individual's developmental level:

*Hyperactivity*
1) often fidgets with hands or feet or squirms in seat
2) often leaves seat in classroom or in other situations in which remaining seated is expected
3) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
4) often has difficulty playing or engaging in leisure activities quietly
5) is often "on the go" or often acts as if "driven by a motor"
6) often talks excessively

*Impulsivity*
1) often blurts out answers before questions have been completed
2) often has difficulty awaiting turn
3) often interrupts or intrudes on others (e.g., butts into conversations or games)

In addition to showing symptoms of inattention and/or hyperactivity/impulsivity, four additional conditions must be met. The individual must have had some hyperactive-impulsive or inattentive symptoms that caused impairment before the age of 7 years. Some impairment from the symptoms must be present in two or more settings (e.g., at school [or work] and at home). There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning. Finally, the symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder) (Silver, 2004).

The DSM-IV provides a categorical system of identifying psychiatric syndromes (Podolski & Nigg, 2001) and specifies two dimensions for ADHD: inattention-disorganization and hyperactivity-impulsivity. Secondarily, children can be diagnosed with conduct disorder (CD) or oppositional defiant disorder (ODD) or both. Another way of measuring ADHD symptoms uses problem domains rather than categories. These

domains are measured using the Child Behavior Checklist (CBCL) or the Conners Parent Rating Scale (CPRS) and include domains such as withdrawn, somatic complaints, anxious/depressed, social problems, thought problems, attention problems, delinquent behavior, aggressive behavior, sex problems, internalizing scale, externalizing, and total score for the CBCL and conduct problem factor A, anxious-shy factor B, restless-disorganized factor C, learning problem factor D, psychosomatic factor E, obsessive compulsive factor F, antisocial factor G, hyperactive-immature factor H, hyperactivity index, and a total score for the CPRS.

Hyperactivity Diagnosis

According to the NIMH (2005), hyperactive children always seem to be in motion, or "on the go." Some children may dash around the room, playing with everything in sight, while most others exhibit fidgety or squirmy behavior. They cannot sit still, and may noisily tap their pencil, wiggle their feet, swing their legs, and constantly get up from their seat in the classroom or at the dinner table. Some individuals may also show verbal hyperactivity, or constantly talking (Silver, 2004). Hyperactive teenagers or adults may feel internally restless, needing to stay busy and even trying to do several things at once (NIMH, 2005).

Impulsivity Diagnosis

Impulsivity refers to the inability to stop and think before speaking or acting. Impulsive children will often blurt out inappropriate comments, display their emotions without restraint, and act without regard for the possible consequences of their conduct (NIMH, 2005). They may have difficulty waiting for things, especially for their turn in a game. They may also grab toys, push their way into line, or hit others when they are

upset. Older individuals may engage in dangerous behaviors because they do not think before they act, such as unsafe driving behavior or quitting a job before they get another one.

<u>Inattentive Diagnosis</u>

Inattentive children may not cause as many problems in the classroom and may have better social relationships with their peers, both of which may cause a teacher to overlook their difficulties (NIMH, 2005). These children are described as having a hard time concentrating on any one topic and may become bored with a task after only a few minutes. However, if they are doing something they really enjoy, then they will be very attentive. But focusing attention on organizing and completing a task, especially if it involves learning something new, is very difficult.

Homework is particularly problematic for inattentive children. They tend to forget to write down assignments, to leave them at school, leave the book at school, or bring the wrong book home. Their homework tends to be full of errors and erasures.

These children are often described as "spacey," easily confused, or slow moving. They may have trouble processing information as quickly and as accurately as other children. These children may sit quietly and look studious, but they may not be fully focusing on the task or understanding the directions.

*Treatment Overview*

After diagnosis, a treatment plan is drafted. This document identifies the diagnosed disorders for the child and the specific recommendations for psychopharmacological treatments, psychological therapy, school interventions, and behavioral management strategies.

At the beginning of treatment, it is vital to educate the child, as well as the family and important others, to understand that ADHD is as debilitating as any other handicapping condition and that the child is not 'dumb' or 'bad' (Silver, 2004). The child needs to understand how this disability affects him or her throughout the lifespan. Increasing understanding of the condition and the treatment plan increases compliance (Silver, 2004). Teachers also need to be educated in terms of understanding and accepting the clinical findings, implementing appropriate accommodations for the child, knowing which behaviors are expected to change with the use of medication, as well as possible side effects that may afflict the child. Silver (2004) believes that a thorough educational session with the individual and the family is crucial to the future success of the ADHD child.

Treatment with Medication

There are two types of medications for treating ADHD (Silver, 2004). The first group comprises stimulant medications such as Ritalin, Dexedrine, Dextrostat, and Adderall. These medications increase the level of norepinephrine, a neurotransmitter. All of these medications have differing release mechanisms, which means that a single tablet could last between 4 and 12 hours. Four hour tablets are usually given 3-4 times each day and usually take 45-60 minutes to begin working. Parents and teachers are asked to observe side effects of the medication. For example, spacey behavior and overly emotional behavior may indicate too high of a dose. Additional side effects may include loss of appetite, sleep problems, stomachaches, headaches, and tic disorders.

If the side effects are too bothersome, a second group of medications, tricyclic antidepressants (TCAs), may be used (Silver, 2004). These medications also increase the

level of neurotransmitters, not by adding more of them, but by slowing down their absorbtion, thus maintaining a greater amount at the nerve endings. These medications include Tofranil, Norpramin, Pamelor, Wellbutrin, Catapres, Tenex, and Strattera. These TCAs might be helpful in conjunction with the stimulant medications. The TCAs require close monitoring of liver function and white blood cell counts. Some of the TCAs have side effects as well, such as sleepiness, constipation, dry mouth, or blurred vision. It is up to the clinician, parents, and teachers to work together to monitor side effects and to find the best combination of stimulants and antidepressants for the ADHD child.

Psychological Treatment

Often, psychological treatment is a necessary adjunct to the treatment plan to help the child deal with the years of frustration, poor school performance, and conflicts with family and friends (Silver, 2004). The child may need individual therapy, especially those children who take ownership of their problems, compared to those children who externalize or blame others for all of their difficulties. The latter are described as not being 'available' for the learning and understanding process that occurs during individual therapy. The child may also need social skills training, to understand how to read social cues, such as facial expressions, tone of voice, or body language, as well as to learn about acceptable social distance. ADHD children must first develop an awareness of their gaps in social skills, learn the new skills, and then practice these new techniques. In addition to individual therapy for the child, individual or couple's therapy may be needed for the parents, who have had to endure the stress of parenting a difficult child. For example, an individual parent may need help with feelings of inadequacy or failure as a parent. In couples therapy, the marital relationship may need to be nurtured and strengthened from

years of stress and neglect or the parents may need help on learning and implementing more productive behavioral management approaches to help their ADHD child, as well as the other siblings.  Finally, family therapy can be implemented, to help siblings address conflicts, to give control back to the parents, and to focus on reducing unacceptable behavior and strengthening positive behaviors.

One aspect of the treatment plan might include school interventions (Silver, 2004).  For example, the child may have academic needs, such as catching up to grade level, since ADHD may have rendered the child 'unavailable' for learning.  Also, the school system may need a psychologist to confirm any learning disorders and to implement services and accommodations for these disorders.

In most cases, behavioral modification interventions will be needed as well (Silver, 2004).  After behaviors are under better control, the ADHD child can improve in his or her functioning within the family in addition to improving in coping with stress.  First, parents need to reward good behavior on a consistent basis.  Then, a component called 'reflective talking' is added, where the parent discusses incidents with the child.

*Parents Coping with Their Children's ADHD*

Articles regarding studies of parents coping with their children's Attention-Deficit Hyperactivity Disorder pursue many different lines of inquiry, examining family functioning, parental stress, in addition to parental psychological and emotional functioning.  These avenues of research are summarized briefly here and related to the proposed investigation in this section's conclusion.

One study that encompasses nearly all of the constructs of interest in the current investigation is a project conducted by Lange et al. (2005) in which the researchers

compared families with ADHD children or emotional disorders (ED), such as depression or anxiety, with normal control families within four domains: stress, support, and quality of life; current family functioning; parenting style and satisfaction in the family of origin and current family; and current and past parental functioning.  The samples were matched, except that the ADHD group included significantly younger parents and were members of lower socio-economic groups than parents in the control group (i.e., the mean SES for the control groups were 3.3, while the mean SES for the ADHD group was 2.1).

Lange et al. (2005) found that parents of ADHD and ED children reported greater stress, less overall social support, less social support from family and friends, and a lower quality of life than parents in the control group.  Compared to fathers, mothers reported more support from friends.  Parents from ADHD and ED groups reported lower levels of parenting satisfaction than parents in the control group.  These parents also reported greater difficulties in terms of psychological functioning, with mothers reporting greater psychological health problems than fathers.  As a result of these findings, Lange et al. (2005) recommended helping parents develop a network of supportive others, finding solutions to both intrafamilial and extrafamilial life stresses, exploring ways to enhance their quality of life, improving family communication and problem-solving skills, and encouraging an emotionally warmer and more responsive family climate.

Family Functioning

In considering how parents cope with their children's ADHD, it is important to note that influences between parents and children are bidirectional and that family

context can exacerbate ADHD symptoms (Podolski & Nigg, 2001). Just as parents impact their children's behaviors, ADHD children can increase parental distress as well.

One study that is noteworthy for its descriptive and holistic approach to understanding ADHD and its effects on the family is a qualitative investigation by Kendall (1999). Kendall (1999) interviewed and analyzed diary entries for 11 families with ADHD children. All of the families were Caucasian and three of the eleven were of lower socio-economic status.

Kendall (1999) found that having an ADHD child isolates families and decreases the likelihood that they will seek support and assistance to adequately cope with a disabled child. Achieving a 'normal' family life is not a realistic goal since ADHD children tend to be extremely disruptive (Kendall, 1999). Siblings of ADHD children described their family life as "chaotic, conflictual, and exhausting." (Kendall, 127, 1999). Siblings said that they never knew what to expect or what problem would have to be dealt with next. They also reported feeling victimized by aggressive acts, including physical violence, verbal aggression, and manipulation and control. Siblings said that their parents often minimized and disbelieved the seriousness of the aggression. Many parents that she interviewed dismissed the aggression as 'normal' sibling rivalry. ADHD children felt they could get away with these aggressive acts at home, but not at school, since parents were either too exhausted or too overwhelmed to intervene. One ADHD teenager said that he could get away with hitting his brother at home, but that he would get into trouble if he hit other students at school. As a result of the disruptions, many siblings reported feeling anxious, worried, and sad. Many of the ADHD children who Kendall interviewed also had diagnoses of Oppositional-Defiant Disorder (ODD), a

precursor to Conduct Disorder. ODD is reported to be diagnosed in 50-65% of clinic-referred children with ADHD (Culbertson, 1996).

Kendall (1999) describes the affect of ADHD on siblings and parents of ADHD children, perspectives which are often overlooked in the ADHD psychopathology literature. Kendall (1999) suggests that parents and siblings affected by an ADHD child need more support, which would allow the development of relationships between spouses and between parents and their non-ADHD children. She also suggests that interventions should focus on family life and how to cope with the disruption imposed by ADHD behaviors.

Psychosocial factors in the development of ADHD are garnering increasing attention and examination (Woodward et al., 1998). In particular, researchers are increasingly scrutinizing the quality of family relationships and parenting practices within these families in contributing to the severity and comorbidity of this disorder. Hyperactive boys, compared to non-hyperactive boys, tended to be less compliant, more off-task, more negative, and more attention seeking. In addition, these boys were more talkative and more demanding of their parents. In response, mothers of these boys tended to be more commanding and negative, and provide their sons with more structure and supervision than mothers of non-hyperactive boys. These mothers were less responsive to positive or neutral child communications and more frequently reprimanded and punished their sons compared to mothers of non-hyperactive boys. Woodward et al. (1998) concluded in their literature review that children who are over active, noncompliant, or impulsive tend to elicit greater conflict and negative affect from their parents.

Woodward et al. (1998) found in their study that parents of hyperactive boys had more negative feelings toward their child and were less likely to use reasoning and positive incentives to influence behavior. Their study included boys and their parents who lived in two boroughs in the south east of London. The sample respondents were socio-economically and ethnically mixed (i.e., mothers were British, African, West Indian, Australasian, and Asian). These parents lost their temper and used physical punishment more frequently compared to parents of control children. The parents in the hyperactive group were less sensitive to their child's needs and were coping less efficiently with child behavior than the parents in the control condition. These parents had more psychopathology and reported receiving less practical support from family and friends. No significant differences appeared between the two groups on the total score of the Dyadic Adjustment Scale (DAS), indicating that marital discord was not associated with hyperactivity. The results led the researchers to believe that the way in which parents treated their hyperactive sons may influence their children's behavior problems. In logistic regression analyses, disciplinary aggression was the best predictor of hyperactivity and classified 80% of the hyperactive children and 79% of the control children. However, given that this study was cross-sectional, the direction of effect between parenting practices and hyperactivity cannot be determined. Researchers concluded that depression, anxiety, and social disorders may keep parents of hyperactive children from establishing greater social support networks.

According to Cunningham et al. (1988), ADHD symptoms such as restlessness, concentration, and impulse control contribute to difficulties in social relationships between the child's family and community members. They believed that ADHD

symptoms can negatively impact individual, marital, and familial functioning. Parents of ADHD children reported less self-esteem, increased guilt, greater social isolation, greater maternal stress, and higher depression scores compared to parents of the children in the control group. Studies have also noted increased psychiatric difficulties and alcoholism among parents of ADHD children. Family fights were one of the most frequently cited factors that contribute to child problems. ADHD is associated more with family dysfunction than with marital conflict. Although it is documented that parents in ADHD families report higher levels of stress than parents in nonproblem families, it is still unclear the types of coping strategies that have been used to deal with this increased stress.

The Cunningham et al. study (1988) compared the reports of mothers and fathers of ADHD and non-ADHD children with regards to child behavior, family functioning, extended family relationships, and their individual emotional adjustment. Cunningham et al. (1988) matched ADHD children and non-problem children on age, sex, number of children per family, and SES status (e.g., all participants were middle class with mean SES scores of 3.3 or 3.4) to study the differences between ADHD and normal children.

Parental adjustment was measured by the Beck Depression Inventory (BDI) and the number of alcoholic drinks consumed per week. Parents of ADHD children reported significantly more alcoholic drinks per weeks than parents of non-problem children, with fathers reporting more drinks per week compared to mothers Parents of ADHD children also reported more difficulties with regards to problem-solving, communication, roles, behavioral control, affective responsiveness, and affective involvement compared to parents of normal children. Mothers of ADHD children reported more depression than

either their husbands or the mothers of normal children. Mothers and fathers of ADHD children reported fewer contacts with extended family members, with the ADHD mothers indicating that these contacts were less helpful than did parents of normal children. When these extended family relationships were poor, mothers judged their children's behaviors to be more difficult. These findings are consistent with previous conclusions regarding social network relationships and mothers' evaluations of, and responses to, their children. Children's responses to fathers did not differ between the ADHD and normal groups, but children's responses to mothers were more negative and noncompliant in the ADHD group, compared to the normal group. In ADHD families, mothers reported that their children were more difficult and their extended families were less helpful, while they were more depressed. This contrasted with paternal depression, which was only linked to family functioning. Child behavior seemed to be linked to parental management strategies, parenting stress, maternal depression, and extended family relationships, while children had a limited impact on patterns of communication, problem solving, role distribution, affective responsiveness, and affective involvement.

Danforth et al (1991) examined parent-child relationships during interactions between ADHD children and their parents. Hyperactive boys tended to be more off-task and more negative, while their parents were more directive, compared to the control group. These differences were more apparent in the task-oriented situation as opposed to the free play session. Within the hyperactive group, boys were much more compliant with their fathers than with their mothers. Parents gave more attention to overactive and impulsive behaviors of their ADHD children by using verbal direction, repeated commands, verbal reprimands, and corrections. Simultaneously, these parents gave

fewer rewards for compliance and attended less to appropriate behavior. There were few differences between the way parents related with their hyperactive sons and daughters, except that mothers tended to give more praise to their hyperactive sons.

Biederman et al. (1995) found that familial and environmental adversity factors were much greater for ADHD children than for control children. To control for confounding factors, Beiderman et al. (1995) included only White, non-Hispanic respondents and excluded members of the lowest socio-economic status (i.e., SES-V). ADHD children lived in households with significantly greater parental conflict, less family cohesion, greater number of psychiatrically ill parents during the child's lifetime, and a greater proportion of the child's life was exposed to maternal psychopathology. Their study showed significant associations between family conflict and the child's psychosocial functioning affecting relationships with peers, siblings, and parents. The index measuring family conflict was also associated with child psychopathology as assessed by the CBCL. These findings were consistent with previous studies which found that low maternal warmth and high maternal criticism were associated with ADHD in children. The authors conclude that psychosocial risk factors might be as influential as genetic factors in producing ADHD in children.

Stress

There is evidence that mothers of children with ADHD report greater global psychological distress as well as greater role specific distress, in addition to less parenting competence (Podolski & Nigg, 2001). Also, severity of a child's ratings on the DSM-III-R ADHD symptom checklists has been associated with maternal parenting stress. Therefore, the more troubled the child is, the more stressful it is for the parent. Several

researchers (Podolski & Nigg, 2001; Fischer, 1990) note that most of the studies have addressed parental coping and stress only with regards to the mother, but not with regards to the father. Podolski & Nigg also cite evidence that child problem behaviors, as measured by the CBCL aggression scale, accounted for 37% of the variance in parental stress. Therefore, it is not only a diagnosis of ADHD, but the degree of aggression that influence the level of parental distress.

Podolski & Niggs (2001) note that parents coping with an ADHD child have been studied very little. However, in one study, researchers found that social support differentiated groups with varying amounts of parental stress (Johnston, 1996). However, coping strategies besides social support have not been studied in this population (Podolski & Niggs, 2001).

In their study (Podolski & Niggs, 2001), children were judged to have ADHD through the use of both the DSM-IV symptom checklist and the CBCL factor scores. Their sample was primarily Caucasian (76%), but also included Hispanic (9.5%) and Asian-American (7.9%) families and ranged from lower to upper class. Podolski and Niggs used both global parental distress measures, such as the Parenting Stress Index (PSI), as well as role-specific measures such as Parenting Satisfaction Scale (PSS). Mother and father ratings of children's behaviors were averaged, but in the ANOVAs, mothers and father outcomes were analyzed separately.

Podolski and Niggs (2001) found an effect of gender, such that girls elicited more distress than boys. Using community resources, which the authors define as accessing community resources outside of religion, was associated with greater maternal distress. Less maternal distress was associated with greater reports of positive reframing.

Therefore, positive reframing was a very useful coping measure. Using community resources, however, is unclear. Perhaps parents who were worse off in general used more community resources or perhaps the community resources were unhelpful and caused the families more stress. Podolski and Nigg (2001) suggest that the social isolation that results from having a problem child may result in a downward spiral, resulting in greater difficulty and stress associated with parenting, leading to increased isolation, and the potential with increasingly negative parent-child interactions.

McKee et al. (2004) write that a variety of studies indicate that parents of children with ADHD experience more stress (Fischer, 1990), use more commands, display more disapproval, use more physical punishment, cope less efficiently with their children's problem behaviors, and display more negative behavior overall compared to parents of nonproblem children. Overall, ADHD symptom behaviors greatly strain the parent-child relationship (Fischer, 1990). McKee et al argue that since parents of ADHD children are under a great deal of stress, their coping behaviors may be a vital influence over their parenting behaviors.

The McKee et al. study included 46 mothers and 26 fathers, most of whom were White with a mean income of $57,000 and a mean level of education of 14.5 years. McKee et al. found in their study that mothers of ADHD children who reported being depressed were more likely to use avoidant-focused coping styles, less adaptive-focused coping styles, and sought social support less often. Depressed fathers tended to use avoidant-focused coping styles.

In another study, mothers of hyperactive sons reported significantly greater amounts of stress than parents of normal children (Mash & Johnston, 1983). Stress in

this study was linked with child characteristics such as distractibility as well as parent characteristics including depression, self-blame, social isolation, and perceived incompetence in parenting skills.

Breen and Barkley (1988) found that in comparing the stress induced by hyperactive girls, hyperactive boys, and nonhyperactive children, they found that hyperactive girls and boys are similar in their nature of psychopathology and did not differ in the amount of parenting stress associated with their upbringing. These results conflicted with previous findings that hyperactive girls are less likely to have conduct disorders, resulting in less stress to parents.

Parental stress and parent-child conflict in ADHD samples are more likely to be associated with oppositional defiant disorders (ODD) than with symptoms of ADHD (Johnston, 1996). Families in which a child has a comorbid oppositional defiant disorder diagnosis had more psychiatric disorders, substance abuse, family adversity, marital separations, parenting stress, and criminal activities. However, the Johnston (1996) study did not support the finding that parents of ODD children experience more stress. Johnston matched sample respondents in the experimental groups on the ages of the parents and children, as well as on socio-economic status, with a range in SES of 2.5 to 2.9). In comparing groups of children with ODD and without ODD, the ODD children's families experienced more family adversity, but the two groups experienced similar levels of parental psychopathology, life stress, and marital dissatisfaction.

Similarly to the Podolski & Niggs (2001) study, the Johnston (1996) study averaged mother and father ratings, where both were available. This study compared family difficulties of ADHD children with and without accompanying ODD diagnoses.

Mothers' reports of the severity of child symptoms, observed child oppositional behavior, and parenting self-esteem were the only outcomes that distinguished the two groups. Other outcome measures including observed parent behaviors, father reports of child behavior, child behavior in an academic situation, mother psychological functioning, and general marital adjustment showed few differences between the ODD and non-ODD groups. Marital adjustment was lower in ADHD families than in nonproblem families. Mothers in both ADHD groups reported more psychological disturbance than mothers in the nonproblem families. For father, ADHD symptoms and ODD behavior seemed to produce additive effects on levels of psychological disturbance.

<u>Psychological and Emotional Functioning</u>

Lovejoy et al. (2000) found that during interactions with their children, depressed mothers showed higher levels of hostility and disengaged behavior and less positive social interaction (e.g. praise, affection) than nondepressed mothers. Therefore, mothers suffering from depression tended to be less engaged and more negative overall with their children than other mothers.

Families with hyperactive children reported more external stress factors, such as lower social class and living in dangerous neighborhoods, suggesting that environmental factors could cause ADHD problem behaviors in children and depression in mothers (Fischer, 1990). Increased stress among mothers was associated with greater hyperactivity ratings among their children. Among mothers of hyperactive boys, there was significantly greater marital problems and maternal depression. There was evidence that ratings of parental stress were linked with maternal depression and severity of child psychopathology, especially aggression, conduct problems, and hyperactivity. Fischer

(1990) concludes in her literature review that parenting stress is not unique to raising

hyperactive children, but is associated with parenting any child with psychopathology,

especially those with externalizing disorders.  Fischer also notes that many of these

studies are cross-sectional and that there are no definitive causal relations between child

psychopathology and parental stress.

Mothers of ADHD children frequently have psychopathology, as noted from

clinical work with hyperactive children (Fischer, 1990).  For example, three studies have

documented that mothers of hyperactive children report greater depression as measured

by the Parenting Stress Inventory (PSI) and the Beck Depression Inventory (BDI).  This

is an issue since psychopathology may negatively affect their participation in parent

training programs.  Depression in parents is believed to intensify their perceptions of their

children's problem behaviors and to increase the amount of controlling behavior (e.g.

through the use of commands) that they use while interacting with their children.

Therefore, it is possible that depression could exacerbate and prolong their children's

problem behaviors, as well as diminish their response to treatment and maintain stress.  In

fact, hyperactive children were found to have more than twice as many

psychopathological disorders, as well as a high prevalence of alcoholism, in their nuclear

and extended families, compared to normal children.

In a review of the literature, Lange et al. (2005) write that ADHD is more

prevalent in boys than in girls, preadolescents than adolescents, and in urban rather than

rural children.  According to the diathesis-stress model, the authors predict that parents,

who are coping with multiple family stressors along with limited social support and

reduced quality of life, will be less tolerant of children with a vulnerability to ADHD.

This model also predicts that parents will experience reduced parenting satisfaction and that they will be prone to developing psychological problems as a result of parenting an ADHD child. These hypotheses were somewhat supported by previous studies, such as Cunningham et al. (1988), in which there were lower levels of social support and greater levels of maternal depression in families with ADHD children, as compared to control families.

<u>Conclusions</u>

Many of the primary constructs included in this proposed investigation have a history in the ADHD research literature, discussed in the earlier sections of this chapter. It is evident that children with ADHD tend to disrupt family functioning. While there is clear evidence that parent-child relationships suffer, there are mixed findings regarding spouse relationships. Clearly, stress is linked with having an ADHD child, and with having greater depression. This finding supports the relationship between stress and quality of life, as measured by psychological functioning, in the hypotheses and corresponding figures or models. Social support, while beneficial, tends to be elusive for some parents of ADHD children. The literature on ADHD research suggests that the level of social support in the MTA sample would be lower than it would be for the total population. However, there may still be enough variation in social support that will enable conclusions regarding its relationship with coping, stress, symptom severity, and quality of life. Therefore, the findings from the ADHD research literature and from the health psychology field directly inform the hypotheses under review with regards to the relationships between stress, coping, social support, and symptom severity, as they impact parents' quality of life.

METHODS

**3.1     Study Design**

This investigation used data collected by the National Institutes for Mental Health (NIMH) as part of a randomized multi-center clinical trial with children diagnosed with ADHD.  Children were assigned to one of four groups: medication alone, psychosocial treatment alone, combination of medication and psychosocial treatments, and a non-experimentally treated community comparison group.  Data were collected from the children, ages 7-9 years, and their parents at four assessment points concluding with the 14th month assessment visit.

The current investigation used data collected in the clinical trial from two points in time: baseline and 14 months.  The baseline data were used to test the first three hypotheses (i.e. hypotheses 1, 1b, and 2), while the 14-month data were used to test hypotheses 3 and 4.

**3.2     Study Population**

A total of 579 participants participated in the study  from six sites.  There were no attempts to obtain representative samples at each site with regards to gender, SES, or ethnicity.  However, due to the broad range of recruitment and referral strategies and the inherent diversity of the sites, the study sample as a whole was designed to be broadly representative of the population who suffer with this disorder.

These six sites were selected after conducting a competitive review of 20 applications submitted by sites interested in joining the multicenter, collaborative randomized controlled trial.  The participating sites include the University of Pittsburgh, Western Psychiatric Institute and Clinic in Pittsburgh, PA; University of California at

Irvine & UCLA; Columbia University and New York State Psychiatric Institute in Mt. Sinai Medical School, NY; University of California at Berkeley and UCSF; Duke University Medical Center in Durham, NC; and the Long Island Jewish Medical Center in New Hyde Park, NY and McGill University in Montreal, Canada. Therefore, children participating in the study were primarily from mid to large sized cities, predominantly from the United States, and were drawn from a variety of locations, although perhaps concentrated in the northeast (e.g. Pittsburgh, PA New Hyde Park, New York City, and Mt. Sinai, NY). The west coast was represented by two sites in California, the south was represented by the site in Durham, NC, and Canada was represented by the site in Montreal. At each site, there was a principal investigator, who made clinical decisions regarding individual participants; a site coordinator who was responsible for day-to-day project management; therapists and/or consultants who coordinated the psychosocial treatment for all of the participants; an educational coordinator who taught the training course to the classroom paraprofessionals; a project pharmacotherapist who prescribed the medication; the classroom paraprofessionals who worked in the children's classrooms; school observers who rated outcome measures; research assistants who conducted telephone screenings, mailed packets of information to parents, and other administrative tasks; data entry personnel; and a project secretary.

To enter the study, children and their families had to meet specified inclusion and exclusion criteria. Both males and females were admitted to the study. Adaptive randomization of gender was used to ensure that females were assigned to each treatment group in equal proportions. A child had to be between the ages of 7 and 9 inclusive at the time of initial contact with the study, defined as the Phase A Telephone Screening

Interview. The child must have been at least in first grade and at most in the fourth

grade. The child must have met DSM-IV criteria for ADHD Combined subtype using the

Diagnostic Interview Schedule for Children, Version 3.0 (DISC 3.0). Participants must

have continuously resided with a primary caretaker who has known the child well for at

least six months prior to study entry and was legally able to sign the consent form.

Participants and families must agree, in writing, to "full participation" in the study. Full

participation was defined as agreement to comply with the requirements of each of the

treatment groups because random assignment to treatment group did not occur until after

signing the agreement. The study required that initiation or continuance of formal

treatment for ADHD and/or other mental health problems from non-study sources was

not allowed, except as noted within the protocol. However, school-based special

education procedures were permitted. Finally, the families completed rating scale scores

which must have indicated at least a one-standard deviation above the national norm for

the child based on age and sex on the Conners Parent Rating Scale Hyperactivity Index or

Factor. On the Conners Teacher Rating Scale Hyperactivity Index, the child must have

scored at least one standard deviation above the mean, while on the Hyperactivity Index

or Factor, the child must have scored at least a 1.5 standard deviations above the national

norm for age and sex.

### 3.3    Subject Selection and Recruitment

The target population, which was defined by the NIMH as "the population to

which the study results are intended to generalize" included all US and Canadian children

ages 7-9 inclusive meeting the DSM-IV combined subtype ADD. All children at each

site potentially referable for study entry from multiple referral sources formed the

sampling frame, with those children who entered into the study comprising the sample.

Children were referred from a variety of sources including mental health clinics, primary

care, teacher or school referrals, and families who self-referred as a result of advertising.

Each site attempted to recruit via all four sources, although no minimum recruitment

numbers were established for each method. According to the NIMH, it was not possible

to determine each family's method of recruitment.

Recruitment involved mailing written information about the study to mental

health practitioners, school personnel, and primary care physicians; contacting suitable

referral sources regarding presentations; and advertising the study through press releases,

contacting advocacy groups, and, where possible, newspaper, TV, and/or radio public

service announcements.

The recruitment package consisted of: written materials in the form of general

flyers and pamphlets describing the study; a series of slides presenting the study in a

semi-scripted fashion; general guidelines for site personnel to use in describing the study

over the telephone to potential referral sources; and scripted advertisements.

The entry/consent package was implemented when families contacted the site

based on one or more of the referral sources previously described. In addition to written

materials, the entry/consent package consisted of a uniform series of steps or gates that

were followed in order for a subject to qualify for entry into the study.

1) Phase A was a semi-scripted telephone screening procedure that elicited preliminary

inclusion/exclusion information and provided information to the caller, including the

need for additional assessment procedures. This screening phase decided clearly

excluded cases. All others went on to Phase B. If the caller was excluded from the

study, a list of referring organizations or possible treatment settings was provided on request.

2) Phase B consisted of standardized materials that were mailed to the parent, including parent and teacher rating scales, a cover letter, a flyer describing the study, written instructions regarding completion of the rating scales, stamped return envelopes, time frame for their return, and instruction about who to contact at the study site for additional information or instructions.  To ensure valid assessment of ADHD symptoms, the child had to be stimulant medication free for at least one week.  Other medications had varying timelines with tricyclic antidepressants requiring two weeks of discontinuation and neuroleptics requiring two months of discontinuation.

Following the receipt of the Phase B rating scales by site personnel, all materials were reviewed to determine eligibility.  If criteria were met, then the parents were notified via an appointment letter and telephone call to come to the site's clinic for an in-person visit that included both the child and the primary caretaker(s).

3) Phase C followed after the completion of Phase B.  It included an intake procedure consisting of a formal presentation of the informed consent and assent agreements, an assessment of mental status, determination of a diagnosis, and completion of a physical examination of the child.  The purpose of this visit was to establish "caseness" and to obtain informed consent.  Next, the child was administered an IQ test (WISC-III) and the parents were administered the child diagnostic instrument (DISC-3).  Parents then completed an in-depth demographics questionnaire.  The Phase C visit took approximately 2.5 hours.

All participants were required to attend a Phase C2 visit, in which the clinician conducted an additional clinical interview with the parents in order to review all diagnostic data as well as clinical, social, and treatment history data. Any vague issues were verified and clarified.

4) Phase D was completed only for subjects who met the full entry criteria, signed informed consent forms, and for whom school agreement was obtained. This assessment visit consisted of ratings and scales for the parents about the parent, about the child and about the family and parent/child relationship; for the child about the child and about the parent/child relationship; and for the teacher about the child.

After completion of the Phase D Baseline Assessment, the randomization procedure occurred. At each site, subjects were randomized into one of four groups. Randomization was done at the subject level. Precautions were taken concerning classroom assignments such that any one classroom could contain only one child in the study at any one time.

An orientation visit followed, where subjects and their families were informed of their group assignment in the study. At this time, families were also given a verbal and written summary report of the baseline evaluation measures. This orientation visit was considered the start of treatment. For subjects in the medication and combined treatment arms, this visit was used to explain the details of the titration trial and to collect side effects ratings as a baseline. For subjects in the psychosocial treatment, this orientation visit was used to explain the parent training program and schedule to the family, give them an overview, and acquire information from them about their schedule to be used in planning appointments.

### 3.4 Human Subjects

The MTA study followed procedures for minimizing risks and ensuring the safety and confidentiality of participants as established by the Department of Health and Human Services and by the Office of Protection of Research Risks. In addition, each local IRB approved the study for the local site. The study was fully explained to children and their families including a description of all possible treatment assignments in addition to the potential risks and benefits associated with each. Sites took measures to ensure the confidentiality and the well-being of each participant.

Participants were informed about the purposes of the research study. Specifically, they were informed about the diagnosis of ADHD and its treatment. Through the use of a combination of materials such as written information, a videotape, and a consent form, they were informed that in this treatment study, they would be assigned to one of the four arms. The families were also told that their family's and their child's identity would be kept confidential through the use of a code number which allowed data to be entered into the database anonymously. This meant that information could not be traced back to an individual or family. Aside from planning the children's treatment, the data would only be used in aggregate statistical analyses.

All participants were told the length of the study and informed that their consent could be withdrawn at any time, without jeopardizing any future treatment at that clinical setting. Alternatives to participation, such as receiving outside individual therapy, were also explained on the consent form and throughout the course of the study. The consent form clearly stated that child abuse would be reported to the appropriate authorities.

Child assent was obtained by clinicians skilled in working with children. These clinicians considered any verbal or non-verbal cues that implied reluctance to participate in the study.

Potential risks included risks of violation of confidentiality, adverse effects of medications, or possible negative effects of psychotherapeutic procedures. However, the medications used in the study (primarily stimulants) have been used for over 50 years in the treatment of ADHD and closely related conditions, and are considered among the safest medications used in psychiatry. Clinicians monitored side effects closely using both clinical interview procedures and scales. In case of serious difficulties with taking the medication, suitable measures, such as emergency triage, hospitalization, and medication discontinuation occurred.

Each site obtained a Certificate of Confidentiality for all study participants to protect all research records, but not clinical records, in case of court action or legal proceedings. This Certificate protected research data from forced disclosure to a party in a custody hearing, criminal justice authorities investigating a parent, etc.

Ongoing safety assurance for study participants was addressed through various clinical panels and a safety monitoring committee, which was responsible for reviewing safety issues and treatment issues for difficult cases.

Potential benefits to children and their families included the systematic delivery of efficacious treatments for ADHD. Participants in the community comparison arm received systematic, intensive assessments at no cost as well as regular follow-up visits. Since this project entailed only modest risks involved with keeping confidential information and the risks associated with standard treatments of ADHD, and the benefits

included both state-of-the-art assessment and treatment for participants, it was felt that the benefits outweighed the risks.

Families participating in the community assessment arm of the study received $100 for each major assessment in-clinic visit (ie, Baseline, 9, 14, and 24 months). They also received $50 for the three-month assessment point since it did not require a clinic visit. Those families participating in any of the other three arms received $100 for the in-clinic 24-month follow-up visit only, since the treatment provided was considered adequate reimbursement. In addition, teachers were paid $40 for each assessment period, as well as $100 during the medication titration phase.

For the proposed secondary data analysis, these data collection and analysis procedures were approved by the University of Maryland's Institutional Review Board (IRB). A copy of the IRB agreement can be found in Appendix F.

## 3.5    Subject Drop-outs

Any subject who had completed the baseline interviews but was not assigned to a group was not considered a study participant. Although participants were randomized to group immediately after the Baseline Assessment, they were not informed of treatment assignment until their Orientation Visit. Therefore, participants who refused to continue anytime prior to learning their group assignment at the Orientation Visit were not counted as randomized into the study. Psychosocial and combined treatment subjects who dropped out immediately after the Orientation visit but prior to treatment or very early in treatment (within one month) were replaced only in the sense that attempts were made to enter and randomize additional subjects to the study.

A description of the study participants is displayed in Appendix D. A majority of the participants were Caucasian males. The participants represented a wide range of income and parent education categories. Fewer than half of the participants were diagnosed with Oppositional Defiant Disorder (ODD) at baseline (41.3%).

**3.6    Treatment Descriptions**

There were three treatment groups (psychopharmacology only, psychosocial only, combined pharmacologic and psychosocial) plus a fourth, non-experimentally treated community comparison group. The course of active treatment during the study (and assessment and monitoring for the community comparison group) lasted for 14 months following the completion of the Orientation Visit, with follow-up for assessments at selected time points up to two years after the Orientation Visit.

*Psychopharmacology (Medication)*

Treatment for this group began with a four-day run-in followed by a four-week double-blind medication titration phase using methylphenidate. The run-in allowed a gradual build-up of medication dosage and was intended to identify potential side effects. The medication titration sought to estimate the most efficacious dosage for each child on which to start the subsequent maintenance treatment. During the run-in and the entire titration phase, the Side Effects form was collected daily from both parent and teacher. At the end of the trial, a decision was made regarding the dosage of methylphenidate to use for the start of the maintenance trial. The maintenance phase assessed side effects and symptoms as reported by parents and teachers, to help determine the efficacy of pharmacologic treatment over the remainder of the fourteen months.

*Psychosocial*

The psychosocial treatment consisted of three components: a parent-training module, an educational/school-based module, and a child-directed module.

*Parent Training*

Parent training was provided by a Ph.D. level, child clinical psychologist or comparably trained professional. Parent training consisted of 27 group sessions: three per month for the first six months, two per month for two months, once per month through the end of 27 sessions. Individual sessions occurred once for every three group sessions initially and then approximately once for every four group sessions until the end of treatment, for a total of eight. The Parent Training Manual specified the actual distribution of both Group and Individual sessions. Also, parents received weekly, 15-minute telephone calls from their therapist/consultant that were intended to provide general support, to assess and prompt parental homework compliance, and to collect dependent measures of home behavior based on parental report.

*School Interventions*

The school-based component focused on classroom interventions which were directed at target symptoms of ADHD. These interventions had two components: a classroom consultant who worked with each child's teacher(s) over the 14 months of treatment and a paraprofessional aide who worked for a half day, each day for 12 weeks with each child in his/her classroom.

*Child-Directed Treatments*

In the Summer Treatment Program (STP), children were grouped by 12 and were supervised by five staff. The STP lasted 9 hours Monday through Friday for eight weeks.

It was a broad spectrum behavioral intervention consisting of a point system with reward and cost components, time out, social reinforcement, daily report cards, and a peer relationship intervention.  In the STP, children spent 3 hours in academic, computer, and art activity classrooms and the remainder of the day in group recreational activities, during which the peer interventions were implemented.  The peer interventions taught a variety of skills pertaining to sports, socializing, friendship, cooperative group tasks, and problem-solving.  The point system provided an effective approach to modifying the dysfunctional peer relationships that characterize children with ADHD.

*Combined Medication and Psychosocial Treatments*

This treatment arm consisted of all the components from both the medication-only and the psychosocial-only arms.  Both the titration trial and the psychosocial treatment components were begun simultaneously.

*Community Comparison Group*

This group received no treatment within the study protocol.  However, these participants were reassessed periodically throughout the study.  These participants were also given a list with the name, phone number and contact person of regional and local child mental health and primary care associations that make referrals or issue lists of providers.  The families in this group were given a written summary report from the baseline evaluation which could be given to their treatment provider.  The treatment provider could also request from the study team a list of all baseline measure scores.

**3.7     Data Management**

This study had the potential for generating approximately 450 scheduled rating scales per full-term participant over the course of the recruitment and 14-month treatment

periods. Measures across the domains of psychopathology, internalizing and

externalizing symptomatology, social interaction and functioning, peer relations,

academic and school performance, family processes and interaction, parenting,

medication, and side effects were completed at various assessment points throughout the

study. Paper data forms were designed specifically for this study (or were purchased

rather than re-designed). Forms were organized into booklets, which were printed in

were different colors for each major assessment point to make them easily

distinguishable. Each booklet contained a standardized identification block consisting of

study subject number, subject name, type of assessment, and booklet identification.

## 3.8    Data System

A clinical trials microcomputer-based data system, CRS-IV, was used for data

entry at each site and transmittal of data to the NIMH Data Center. Data was backed up

at each site at the end of each day.

Data were double-key entered at each site by two separate data entry staff. Data

were extracted from each site's database on a regular schedule and were transmitted to

the NIMH Data Center. The Data Center re-edited the data for out-of-range and missing

items as well as editing for logical inconsistencies.

As each Phase A Telephone Screening Interview was conducted, a subject

number was assigned. That subject number was a four digit number with the lead digit

designating the site and the next three digits designated as the subject number. If the

subject qualified and agreed to continue with Phase B, all rating scales and material in the

mailed packets were labeled with the same subject number as assigned in Phase A.

### 3.9 Instrumentation

For each domain (i.e. quality of life, stress, symptom severity social support, and coping), measures will be described including reliability and validity data that was available in the literature or from the MTA dataset. Cronbach's alpha coefficients are presented for each subscale for both mothers and fathers. Since the ADHD research literature indicates that stress, coping, and social support work in different ways for mothers and fathers, the reliabilities and all of the analyses were calculated separately.

It is also noted in this section which subscales and whole scales were retained for analysis after bivariate correlations were conducted. Since multicollinearity is a problem for multivariate analyses, scales that correlated highly with another measure were dropped from the analysis.

*Operationalization of key variables*

Quality of Life: Although quality of life is typically measured by a variety of domains, the data collected for this study focused on two domains: social and role functioning as the first domain and psychological well-being as the second domain. The social and role functioning domain was measured by three constructs: spouse relationship, positive parent/child relationship, and negative parent/child relationship. The spouse relationship was measured by the Dyadic Adjustment Scale total score. The positive parent/child relationship was measured by a combination of variables from the Parent Child Relationship (PCR) questionnaire and the Alabama Parenting (AP) questionnaire and included subscale scores on involvement, positive parenting, affection, pro-social behaviors, and praise. The negative parent/child relationship was also measured by a variety of subscale scores, including harsh discipline, appropriate discipline, and

quarreling, measured in the same two questionnaires (i.e. PCR and AP). The second

domain, psychological well-being, was measured by the Beck Depression Inventory

(BDI) and the Global Affective Functioning scale (GAF).

Stress Three scales measured the stress construct. These included the Parenting Stress

Index (PSI), the Coddington Questionnaire, and the Inventory of Small Life Events

(ISLE).

Symptom Severity: The Conners Parent Rating Scale was used as the score for ADHD

symptoms, including inattention, hyperactivity, and impulsive behavior.

Social Support: Social support was measured by two subscale scores, one measuring the

number of supportive others (i.e. quantity or size of social network) and the other

assessing the level of satisfaction with the available others (i.e. quality of network).

Coping: Two dimensions comprised the coping construct: the adaptive coping dimension

that included subscale scores on active coping, planning, suppression, restraint, social

support for instrumental reasons, social support for emotional reasons, reinterpretation,

acceptance, and humor; and the maladaptive domain that included subscale scores on

denial, behavioral disengagement, mental disengagement, and drugs or alcohol.

*Quality of Life*

Dyadic Adjustment Scale (DAS)

The Dyadic Adjustment Scale (see Appendix J, Quality of Life Scales) was

created to assess the quality of marital and nonmarital dyadic relationships (Spanier,

1976). According to Spanier (1976), dyadic adjustment can be defined as having five

dimensions: the degree of troublesome differences of opinions, consensus on matters of

importance, dyadic satisfaction, interpersonal tensions and anxiety, and dyadic cohesion.

This definition was used to create a 32-item scale with five factors. The first two dimensions were combined to create the dyadic consensus factor, while the other three dimensions formed the next three factors: dyadic satisfaction, dyadic cohesion and affectional expression. Finally, a total dyadic adjustment factor was created that was a sum of all four of the previous factors.

First, the scale was evaluated as acceptable on content validity by three judges (Spanier, 1976). Next, the scale was tested with samples of married and divorced people and was found to have significant correlations between items and marital status, establishing criterion-related validity.

To establish construct validity, the DAS was administered to a sample of respondents who also completed the Locke-Wallace Marital Adjustment Scale, the most frequently used scale. Spanier (1976) found correlations of .86 among married respondents and .88 among divorced respondents between the two scales. The DAS had excellent Cronbach's alpha coefficients in the MTA study sample, as shown in Table 3-1.

Table 3-1. Cronbach's Alpha Coefficients for DAS Factors

| DAS (Dyadic Adjustment Scale) | | Mothers | Fathers | # Items |
|---|---|---|---|---|
| | Consensus | 0.90 | 0.89 | 13 |
| | Satisfaction | 0.90 | 0.87 | 10 |
| | Cohesion | 0.85 | 0.83 | 5 |
| | Affectional Expression | 0.69 | 0.66 | 4 |
| | Total Adjustment | 0.95 | 0.94 | 32 |

Parent Child Relationship Questionnaire

Wyndol Furman created the Parent Child Relationship questionnaire (Furman & Buhrmester, 2001) used in this study. Two versions of the scale exist. The longer version has 57-items and the shorter version uses only the first 40 items of the longer measure.

The 57-item version was used for this study and has 19 subscales (see Appendix J, Quality of Life Scales). These subscales had been factor analyzed by Furman and Buhrmester (2001), who determined the subscales loaded on five factors. The five factors include possessiveness and protectiveness; affection, admiration of parent and admiration by parent; quarreling, dominance, physical punishment, deprivation of privileges, verbal punishment, and guilt induction; pro-social, similarity, intimacy, nurturance, and companionship; and praise, shared decision making, and rationale. The current investigation used the last four factors.

The alpha estimates for the four factors, as measured in the MTA study, are listed below:

Table 3-2. Cronbach's Alpha Coefficients for Four Factors From the Parent Child Questionnaire

| PCRP (Parent Child Questionnaire with parent respondents) | | | | |
|---|---|---|---|---|
| | | Mothers | Fathers | # Items |
| | Affection, Admiration of Parent & Admiration by Parent | 0.80 | 0.85 | 6 |
| | Pro-social, Similarity, Intimacy, Nurturance & Companionship | 0.83 | 0.85 | 10 |
| | Praise, Shared Decision Making & Rationale | 0.72 | 0.76 | 6 |
| | Quarreling, Dominance, Phys Punishment, Deprivation of Privileges, Verbal Punishment, Guilt Induction | 0.83 | 0.80 | 12 |

Alabama Parenting Questionnaire

The purpose of the Alabama Parenting Questionnaire (APQ) was to measure those aspects of parenting related to disruptive behaviors in children, including parental involvement, monitoring/supervision, use of positive parenting techniques, inconsistency in discipline, and harsh discipline (Shelton, Frick, & Wootton, 1996). The questionnaire

(see Appendix J, Quality of Life Scales) was designed to assess parenting practices over multiple sources (i.e. parent and child) and through multiple formats (i.e. paper and pencil as well as telephone). After a thorough literature review and deleting redundant items, thirty-five items assessing the five constructs remained. Seven items were added subsequently to measure discipline practices other than corporal punishment. Each item was rated on a five-point scale from 1 = "never" to 5 = "always."

Validity of the APQ was tested by associating its subscale scores with group membership (Shelton, Frick, & Wootton, 1996). Children were either in the disruptive behavior disorder (DBD) group, which included children diagnosed with ADHD, oppositional defiant disorder (ODD), and conduct disorder (CD), or in the normal community control group. As expected, children in the DBD group had higher scores on the three negative parenting subscales as compared with the control children. The scales were also highly consistent over time, indicating stable estimates of the constructs.

In the MTA clinical trial sample, the Cronbach's alpha coefficients are shown in Table 3-3.

Table 3-3. Cronbach's Alpha Coefficients for Alabama Parent Subscales

| ALAP (Alabama Parenting Scale) | Mothers | Fathers | # Items |
|---|---|---|---|
| Involvement | 0.74 | 0.81 | 10 |
| Positive Parenting | 0.81 | 0.85 | 6 |
| Harsh Discipline | 0.66 | 0.55 | 4 |
| Appropriate Discipline | 0.33 | 0.45 | 6 |

Global Affective Functioning (GAF)

The Global Affective Functioning scale represents a revision of the Global Assessment Scale and is included in both the DSM-III-R and the DSM-IV version of the American Psychiatric Association's primary diagnostic manual (DSM-IV, American Psychiatric Association, 1994). The GAF is a rating scale for trained clinicians to assign

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a score to an individual's "psychological, social, and occupational functioning on a hypothetical continuum of mental health-illness" (DSM-III-R, American Psychiatric Association, 1987). This scale ranges from 1, the sickest individual, to 100, the healthiest. The scale has labels every 10 points, with descriptive characteristics, including psychological, social, and occupational functioning. The score does not include impediments to these domains that result from physical or environmental limitations (DSM-IV, American Psychiatric Association, 1994).

In a study testing the validity of the GAF, researchers (Startup et al., 2002) found that inter-rater reliabilities between a trained interviewer and a briefly trained (i.e. 5 minutes) informant were excellent, ranging from .89 to .95 over three assessment periods (baseline, 6-, and 12-months). Startup et al. (2002) conclude that global measures, such as the GAF, are more sensitive to change than single symptom dimension measures over time, making the GAF an ideal instrument for measuring patient functioning in longitudinal clinical trials.

Beck Depression Inventory (BDI)

The purpose of this scale was to measure the behavioral aspects of depression (Beck et al., 1961). The 21 items of the scale were derived from clinical observations of depressed patients including their typical attitudes and symptoms (see Appendix J, Quality of Life Scales). Each item was rated from 0 to 3, where zero represented a complete absence of the symptom and three indicated the most severe level of the symptom (Katz, Katz, & Shaw, 1994). While the scale was first intended as a structured interview, it was later revised and used as a self-rating instrument that could be completed in 10-15 minutes.

Criterion validity for the scale was assessed by having each respondent evaluated by an experienced psychiatrist either directly before or after completing the BDI. The psychiatrist rated the patients on a 4-point scale for depth of depression and gave each one a diagnosis in addition to filling out a comprehensive form designed for the study. The four psychiatrists involved in the study agreed in their ratings on the 4-point scale within one degree in 97% of the cases.

A split-half reliability test showed that internal consistency for the scale was .86, rising to .93 with a correction factor (Beck et al., 1961). The Cronbach's alpha reliability estimates for the MTA sample were .85 for both mothers and fathers. Test-retest reliability tests in the Beck et al. studies (1961) were not conducted since the estimate could be spuriously inflated due to memory factors. However, a sample of 38 patients completed the scale at two points in time, with 2-6 weeks in between administrations. Patients' scores correlated with their clinical depth of depression rating.

*Stress*

Parent Stress Index (PSI)

This scale measures child characteristics, maternal factors, and situation and demographic life stress variables as possible contributors to parenting stress (Fischer, 1990). Specifically, the scale, created by Dr. Richard Abidin, uses 36 items to measure four dimensions (i.e. defensive responding, parental distress, parent-child dysfunctional interaction, and difficult child) and a total score (See Appendix J, Stress Scales for the instrument). Cronbach's alpha coefficients for these four dimensions and the total score are listed in Table 3-4.

Table 3-4. Cronbach's Alpha Coefficients for the PSI Subscales and the Total Score

| PSI (Parent Stress Index) | Mothers | Fathers | # Items |
|---|---|---|---|
| Defensive Responding | 0.76 | 0.77 | 7 |
| Parental Distress | 0.84 | 0.85 | 12 |
| Parent-Child Dysfunctional Interaction | 0.80 | 0.84 | 12 |
| Difficult Child | 0.85 | 0.88 | 12 |
| Total Score | 0.91 | 0.92 | 36 |

Coddington Questionnaire

In creating a stressful life event index, Coddington (1971a) used the methods of

Holmes and Rahe (1967), but modified them for use with children. Coddington

employed the help of 243 experts including teachers, pediatricians, and mental health

workers who were employed in academic divisions of child psychiatry. Items were

chosen from the literature and from experience with normal and abnormal children.

Experts were instructed to rate the amount and duration of change that a particular event

would elicit, the relative degree of readjustment for children, and to compare the amount

of readjustment of each item with an index item. This index item was the birth of a

brother or sister, which was assigned a value of 500, on a scale from 1 to 1000. The

geometric means divided by 10 were calculated for each item to obtain the Life Change

Units. Coddington found that every expert in the sample agreed on the relative

importance of all items and explained that the sum of the Life Change Units represents

the amount of social-psychological adjustment for the child during a specified time

period.

A follow-up study established normal values for children of varying ages, while

examining the influence of demographic variables such as sex, race, socio-economic

class, and religion. Coddington (1971b) found that for elementary students, an average of

3.37 life events occurred in the past year.  No differences were detected between sexes, races, or members of different social economic classes.  The average number of life change units for elementary school males was 104.16 and for elementary school females was 101.39.

Inventory of Small Life Events (ISLE)

This list of life stressors was meant to be an adjunct measure to other lists of more catastrophic life events (Zautra et al., 1986).  These events, on the other hand, comprise smaller, more easily solvable, everyday life events (see Appendix J, Stress Scales).  Zautra and colleagues (1986) suspected that over time, these stressors, any one of which could be inconsequential, could accumulate and cause mental health problems.

In creating the list, care was taken not to overlap events with symptom reports (e.g. feeling depressed).  Researchers also distinguished small life events based on their causes, such as personal behavior (e.g. losing you keys), the behavior or condition of the person's social environment (e.g. your phone call was not returned), or some combination of these spheres (e.g. fought with your boss).  Also in creating the scale, small life events were distinguished from everyday activities by specifying that they were changes from usual daily occurrences.  To achieve this, a small life event had to have a discrete beginning rather than occurring on a day-to-day basis.  Also, the events had to be observable.  Because this list only included the events, personal reactions to events would need to be assessed separately through coping strategies and other response measures.

Examples of stressors on the list include, "Your pet died," "Your rent or mortgage payment increased," and "Involved in a traffic accident."  The items were scored with yes = 1 and no = 0.  Scores were summed for each dimension and for the total index.

After collecting data from a sample of college students, Zautra and colleagues (1986) found that readjustment scores for the items in the small life events inventory were lower than those scores for another list of major life stressors. The researchers also compared the students' scores with data collected from a community sample. The two sets of scores had a strong correlation (r = .88), which Zautra et al. (1986) explained as evidence of the validity of the ISLE ratings. Experts as well as students rated the items in the major life events scale and the small life events inventory and showed moderately high agreement with each other. Zautra et al. (1986) concluded that their classification of events on the ISLE was fairly reliable and valid.

*Symptom Severity*

Connors Parent Rating Scale (CPRS)

The CPRS is a comprehensive checklist of behavior problems commonly reported by parents of school-aged children referred to psychiatric treatment (Conners, 1994). The purpose of the scale (see Appendix J, Symptom Scales) is to identify hyperactive children and to evaluate treatment effectiveness (Goyette, Conners, & Ulrich, 1978). The CPRS usually forms the basis of an in-depth interview with parents to obtain a detailed description of their children's problems.

The 93-item parent questionnaire (PQ-93), comprising nine subscales, is a checklist of symptoms with reference to the last month (Conners, 1994). In this investigation, only the total score was used in the analysis. The items were rated on a 4-point Likert scale from "not at all" to "very much". The hyperactivity index correlated highly with the DSM-IIIR rating scale for ADHD (r = .92), and with the externalizing scales from Achenbach's Child Behavior Checklist. This instrument was shown to

discriminate between normal and hyperactive children (Goyette et al., 1978). The

hyperactivity, inattentive, and conduct problem scale scores of the shorter version (PQ-

48) correlated with the DSM-III R rating scales for ADHD (Conners, 1984). The PQ-93

effectively discriminated between children with ADD, specific learning disabilities, and

matched normal controls. Item-to-total correlations for the PQ-48 ranged from .13 to .65.

The 10-item hyperactivity index, which is one of the subscales of the PQ-93, was found

to have an internal consistency reliability coefficient of .92. The MTA study used both

the PQ-93 and the TQ-39, although only the former was used and reported in the current

investigation. The reliabilities for the ADHD sample for each of the subscales are listed

in Table 3-5.

Table 3-5. Cronbach's Alpha Coefficients for the CPRS Subscales and the Total Score

| CPRS (Conners Parent Rating Scale) | Mothers | Fathers | # Items |
|---|---|---|---|
| Conduct Problem | 0.89 | 0.91 | 24 |
| Anxious/Shy | 0.75 | 0.78 | 13 |
| Restless-Disorganized | 0.76 | 0.80 | 8 |
| Learning Problem | 0.52 | 0.52 | 6 |
| Psychosomatic | 0.73 | 0.64 | 8 |
| Obsessive Compulsive | 0.80 | 0.77 | 3 |
| Antisocial Factor | 0.63 | 0.60 | 5 |
| Hyperactive/Immature | 0.74 | 0.78 | 17 |
| Hyperactivity Index | 0.83 | 0.87 | 10 |
| CPRS Total Score | 0.92 | 0.94 | 93 |

Both the 93-item parent scale (PQ-93) and the 39-item teacher scale (TQ-39) have

been factor analyzed and found to have a fairly stable factor structure (Goyette et al.,

1978). Reliabilities of the teacher questionnaire ranged from .7 to .9. Parent reliabilities

are expected to be similar to those for teachers, even though no specific reliability

estimates have been reported (Goyette et al., 1978).

<u>Columbia Impairment Scale (CIS)</u>

The Columbia Impairment Scale is a 13-item instrument (see Appendix J, Symptom Scales) that assesses parents' responses to items covering four main areas of functioning, including symptoms, school problems, home problems, and peer problems (Glied et al., 1997). Each item is scored from 0 (no problem) to 4 (a very bad problem). The internal consistency reliability estimate for the scale is $r = .88$. The CIS also has excellent test-retest reliability and evidence for construct and predictive validity. In the MTA study, the alpha coefficient was .72 for mothers and .83 for fathers. This measure was subsequently dropped from the analysis after determining that this scale score was highly correlated with the Connors Parent Rating Scale (CPRS).

<u>Swanson, Nolan, and Pelham Rating Scale (SNAP)</u>

The SNAP-IV (Swanson et al., 2001) assesses the 18 ADHD and 8 ODD symptoms specified in the DSM-IV and ICD-10 (International Classification of Mental and Behavioral Disorders). This scale (see Appendix J, Symptom Scales) uses a 4-point scale assessing the severity of each symptom from 0 = "not at all" to 3 = "very much."

Subscale scores are calculated by averaging the item scores within the three domains of inattention, hyperactivity/impulsivity, and opposition/defiance. In the MTA study, clinicians gathered SNAP data from both parents and teachers over the three domains, yielding six scores per child. The MTA study specified that the average score within a domain should be equal to or less than one, in order to be considered a success. These low scores indicate very few or no symptoms. This cut-off resonates with norms studies which found that most school-aged children did not show any of the

psychopathology described in the SNAP-IV subscales.  In the MTA study, the Cronbach

alpha reliability coefficients are listed in Table 3-6.

Table 3-6.  Cronbach's Alpha Coefficients for the SNAP Subscales and Total Score

| SNAP | Mothers | Fathers | # Items |
|---|---|---|---|
| Inattention | 0.89 | 0.92 | 9 |
| Hyperactivity | 0.82 | 0.85 | 6 |
| Impulsivity | 0.80 | 0.82 | 3 |
| ADD/WO | 0.84 | 0.88 | 10 |
| ODD | 0.89 | 0.91 | 8 |
| Total | 0.94 | 0.96 | 39 |
| ADHD | 0.91 | 0.93 | 18 |
| Hyperactive/Impulsive | 0.87 | 0.90 | 9 |
| Composite DBD | 0.92 | 0.94 | 26 |

In spite of the high reliability estimates, this scale was dropped from the analysis after

finding that it was highly correlated with the Connors Parent Rating Scale (CPRS).

Child Behavior Checklist (CBCL)

The Child Behavior Checklist (CBCL) was developed in the 1980's and was

considered to be more comprehensive, more rigorously developed, and better-normed

than the Conners Rating Scales (Barkley, 1998).  The CBCL (see Appendix J, Symptom

Scales) was one of multiple instruments designed to assess children's

behavioral/emotional problems and competencies through a variety of sources, such as

parents, teachers, standardized tests, physical examinations, and direct assessments

(Achenbach, 1994).  Comprehensive assessments of children required multiple sources

since behaviors had to be monitored over a variety of contexts (e.g. home and school).

Deriving the items for the CBCL was purely on an empirical, as opposed to a theoretical,

basis.  Items were pooled from literature reviews, suggestions by mental health

professionals, and previous research.

The instrument was tested on a large number of children who had been referred for behavioral/emotional problems (Achenbach, 1994). Principal components analyses using varimax rotation were performed on the data. Sets of items that remained together on a particular factor throughout multiple tests were kept as a basis for syndromes describing children of a certain age or gender. Profiles were constructed for children based on sex and age based on normative sample data for children's sex and age. Scores below 67 were considered normal, while those above 70 were in the clinical range.

From reviewing previous studies, Biederman et al. (2001) determined there was good agreement between CBCL scale scores and diagnostic categories from the DSMIII-R, as derived from the Diagnostic Interview Schedule for Children (DISC), version 2.3. Therefore, they concluded that a dimensional approach to measuring child psychopathology (i.e. the CBCL) performed nearly equally well compared with the categorical approach (i.e. the DISC 2.1) with regards to agreement with external validators. However, there was enough disparity in the results of the two methods that experts recommended that both approaches be used to gain the most information about child psychopathology.

After conducting their own study with the CBCL, Biederman et al. (2001) concluded that the instrument was a useful measure for tracking ADHD children longitudinally. They found that the CBCL measurements were stable over time. In the MTA study, the alpha coefficients for the internal reliability of the subscale scores are listed in Table 3-7.

Table 3-7.  Cronbach's Alpha Coefficients for the CBCL Subscales and Total Score

| CBCL (Child Behavior Checklist) | | Mothers | Fathers | # Items |
|---|---|---|---|---|
| | Withdrawn | 0.70 | 0.72 | 9 |
| | Somatic Complaints | 0.68 | 0.74 | 9 |
| | Anxious/Depressed | 0.82 | 0.83 | 14 |
| | Social Problems | 0.66 | 0.66 | 8 |
| | Thought Problems | | 0.58 | 7 |
| | Attention Problems | 0.65 | 0.70 | 11 |
| | Delinquent Behavior | 0.67 | 0.64 | 13 |
| | Aggressive Behavior | 0.88 | 0.89 | 20 |
| | Sex Problems | 0.56 | 0.61 | 6 |
| | Internalizing Scale | 0.86 | 0.87 | 31 |
| | Externalizing Scale | 0.89 | 0.80 | 33 |
| | Total Score | 0.93 | 0.94 | 117 |

However, this scale was also dropped from the analysis due to its high correlation with

the Connors Parent Rating Scale (CPRS), which is considered the gold-standard for

assessing child pathology.

*Social Support*

Social Support Inventory (SSI)

Sarason et al. (1983) state that social support has two basic elements: the

perception that there is a sufficient number of available others to whom one can turn in

times of need and second, a degree of satisfaction with the available support.  These

elements were used in creating their instrument that would measure the availability and

satisfaction with perceived social supports (Sarason et al., 1983; Sarafino, 2002).

The Social Support Questionnaire (SSQ) that Sarason et al. (1983) created

consisted of 27 items (See Appendix J, Social Support Questionnaire).  First, each

question asked respondents to list the people to whom they can turn and on whom they

can rely in a given set of circumstances.  Second, questions asked how satisfied

respondents were with these social supports.  The instrument produced an availability

index, which was calculated as the number of persons listed divided by the number of items.

In one study using the SSQ, the researchers found that social support was related inversely to states of psychological discomfort for women, but not significantly so for men (Sarason et al., 1983). Overall, the scale correlated in expected ways with other measures such as recent life events, personality characteristics such as depression, anxiety, hostility, extroversion, and self-esteem, as well as outlook about the future. In another study of the SSQ, the researchers found that while negative and positive life events combined were associated with an increased probability of physical illness, only the high frequency of negative events appeared to be related to psychological distress. In addition, they found that people reporting a greater number of supportive others indicated not only the occurrence of more positive events than people having a fewer number of supportive others, but they also reported that the positive events were more expectable and exerted a greater impact on their lives.

The authors tested two shorter versions (SSQ3 and SSQ6) of the 27-item Social Support Questionnaire. They found that while the psychometric properties of the SSQ6 were adequate, the longer SSQ was preferable, especially if the respondent time and burden were not significant limitations.

In the MTA study, the SSQ6 version or 6-item version of Sarason's Social Support Questionnaire was used to measure this construct. These questions, which measured perceived social support under a variety of circumstances, covered a majority of the five dimensions of social support, as defined by Sarafino (2002). Like the longer version, each question in the SSQ6 had two parts, measuring number of supportive others

and satisfaction with these others.  The SSQ6 scale asked "Whom do you feel would help if a family member very close to you died?" and respondents listed peoples' names.  In the MTA study, respondents were asked the number of people who would help them.  The second part of each question addressed the level of satisfaction with these perceived supportive others using a 6-point Likert scale from "very dissatisfied" to "very satisfied."

A factor analysis using Varimax rotation for the 6-item scale yielded a 2 factor solution (eigenvalues greater than 1.0), indicating one dimension referred to the number of supportive others while the other dimension measured the respondent's satisfaction with these supportive others (Sarason, Sarason, Shearin, & Pierce, 1987).  These results were similar to the original 27-item version that showed the items measured two different dimensions (Sarason, Levine, Basham, & Sarason, 1983).  In addition, these dimensions tended to have low to moderate correlations (ie .3 to .4).

The internal reliabilities for the SSQ6 were .90 for the Number dimension and .93 for the Satisfaction dimension (Sarason et al., 1983).  The internal reliabilities generated from the MTA data are listed in Table 3-8.

Table 3-8.  Cronbach's Alpha Coefficients for the Social Support Subscales

| SOCSUP (Social Support) | Mothers | Fathers | # Items |
|---|---|---|---|
| Number of Contacts | 0.93 | 0.91 | 6 |
| Satisfaction | 0.92 | 0.93 | 6 |

The SSQ6 version was judged psychometrically to be an acceptable substitute (Sarason et al., 1983).  No significant differences were found in correlations between the SSQ6 and the SSQ27 versions, indicating that the shorter 6-item form obtained very similar scores to the longer 27-item version.  Also, the SSQ6 version had an acceptable distribution of scores, while the shorter SSQ3 version suffered skew and kurtosis problems.

The dimensions of the SSQ6 correlated in expected ways with other scales measuring anxiety, depression, loneliness, and social skills, providing evidence of construct validity (Sarason et al., 1983). The authors concluded that the SSQ6 was an acceptable substitute, since it had similar psychometric properties as the full SSQ 27-item version and had satisfactory internal and test-retest reliability scores.

*Coping*

COPE scale

Researchers (Smith, Wallston, & Dwyer, 2003) state that the primary method of measuring coping is by using standardized questionnaires such as the COPE (Carver et al., 1989). Inventories, such as the COPE scale (see Appendix J, Coping Questionnaire), yield numerical values for various coping strategies that can be compared across groups or correlated with other psychosocial constructs (Smith, Wallston, & Dwyer, 2003).

The COPE scale comprises 13 conceptually distinct scales: active coping, planning, suppression of competing activities, restraint coping, seeking social support for instrumental reasons, seeking social support for emotional reasons, focusing on and venting of emotions, behavioral disengagement, mental disengagement, positive reinterpretation and growth, denial, acceptance, and turning to religion (Carver, Scheier, & Weintraub, 1989).

Table 3-9.  Cope Subscales and Their Definitions.

| COPE subscales | Examples |
| --- | --- |
| 1 Active Coping | initiating direct action |
| | increasing one's effort |
| | trying to execute a coping attempt |
| 2 Planning | thinking about how to cope with a stressor |
| 3 Suppression of Competing Activities | putting other projects aside to deal with the stressor |
| 4 Restraint Coping | waiting until an acceptable opportunity presents itself before acting |
| 5 Seeking Social Support for Instrumental Reasons | seeking advice or information |
| 6 Seeking Social Support for Emotional Reasons | getting moral support, sympathy, or understanding |
| 7 Humor | Laughing or joking about the situation |
| 8 Behavioral Disengagement | giving up |
| | feeling helpless |
| 9 Mental Disengagement | escaping through sleep |
| | immersion in watching television |
| 10 Positive Reinterpretation and Growth | coping aimed at managing distressing emotions rather than dealing with the stressor |
| 11 Denial | refusal to believe that the stressor exists |
| | trying to act as though the stressor is not real |
| 12 Acceptance | Coming to terms with or acknowledging that the event has happened |
| 13 Drugs or Alcohol | Using alcohol or drugs to feel better |

Each of the 60 items was rated on a 4-point scale from "I usually don't do this at all" to "I usually do this a lot."  Each subscale score was the sum of its corresponding four items with each subscale ranging in value from 4 to 16.

Cronbach's alpha reliability coefficients were calculated for the13 original

subscales with all of the estimates acceptably high, except one that fell below .6, which

was the mental disengagement scale (Carver et al., 1989).  It was hypothesized that the

mental disengagement scale represented more of an index than a scale.  The Cronbach's

alpha coefficients generated for each subscale from the MTA data are as follows:

Table 3-10. Cronbach's Alpha Coefficients for COPE Subscales

| COPE | | Mothers | Fathers | # Items |
|---|---|---|---|---|
| 1 | Active coping | 0.65 | 0.71 | 4 |
| 2 | Planning | 0.86 | 0.88 | 4 |
| 3 | Suppression of competing activities | 0.69 | 0.69 | 4 |
| 4 | Restraint coping | 0.76 | 0.65 | 4 |
| 5 | Seeking social support for instrumental reasons | 0.82 | 0.85 | 4 |
| 6 | Seeking social support for emotional reasons | 0.86 | 0.84 | 4 |
| 7 | Positive Reinterpretation | 0.80 | 0.78 | 4 |
| 8 | Acceptance | 0.71 | 0.68 | 4 |
| 9 | Humor | 0.91 | 0.91 | 4 |
| 10 | Denial | 0.72 | 0.73 | 4 |
| 11 | Behavioral disengagement | 0.67 | 0.70 | 4 |
| 12 | Mental disengagement | 0.47 | 0.49 | 4 |
| 13 | Alcohol-Drug disengagement | 0.91 | 0.94 | 4 |

The test-retest reliabilities of the subscales using two samples of college students,

tested eight weeks and six weeks apart, respectively, ranged from .42 to .89. These test-

retest correlations indicated that the COPE scale was relatively stable over time, although

not as stable as personality traits.  Carver also calculated means and standard deviations

for each subscale from the data gathered with these college student samples.  The pattern

of associations between the COPE subscales and personality characteristics indicated that

the more functional coping strategies were associated with more beneficial personality characteristics, such as optimism and control.

Researchers have used factor analysis to reduce the number of subscales in the COPE scale (Carver et al., 1989; Vollrath et al., 1994; McKee et al., 2004). A factor analysis procedure was used in this investigation and is described in further detail in section 3.12.2.

In a factor analysis, Carver et al. (1989) found that the scales formed two clusters with the first including the more adaptive strategies (i.e. active coping, planning, suppression of competing activities, restraint, seeking social support for instrumental reasons, seeking social support for emotional reasons, positive reinterpretation, and humor*)* and the second comprising the less adaptive strategies (i.e. denial, mental disengagement, behavioral disengagement, and use of alcohol) (Carver & Scheier, 1994). With rotation, the subscales loaded on 11 factors. Planning and active coping measures tended to load together, while the two types of social support also tended to load together.

Researchers have merged the COPE subscales in a variety of ways. For example, McKee et al. (2004) divided the COPE subscales into three composites, based on factor analyses from previous studies and on theoretical knowledge of stress and coping. They combined active coping, planning, suppression of competing activities, restraint coping, positive reinterpretation, and acceptance into an adaptive-focused domain. Seeking social support for instrumental reasons and for emotional purposes were combined into a single seeking social support factor. Finally, McKee et al. (2004) combined denial, behavioral disengagement, and mental disengagement into an avoidant-focused domain.

The focusing on/venting of emotions scale was examined alone because it was unclear on which factor it should load.

Some researchers (Vollrath et al., 1994) have merged the subscales into three larger subscales that include dimensions based on the type of coping (problem or emotion-focused) and by its adaptability. The first dimension, problem-focused coping, included active coping, planning, suppression of competing activities, restraint, and seeking social support for instrumental reasons. The second dimension, potentially adaptive emotion-focused coping, comprised seeking social support for emotional reasons, positive reinterpretation, acceptance, religion, and humor. The third dimension, potentially maladaptive emotion-focused strategies, included denial, mental disengagement, behavioral disengagement, focusing on and venting of emotions, and the use of alcohol or drugs.

While Volrath et al. (1994) merged the subscales based on theory, Deisinger et al. (1996) merged the 15 subscales into 5 subscales based on empirical support from using factor analysis with oblique rotation. Deisinger et al. (1996) labeled these five factors as problem-focused coping, avoidance, social support, positive reappraisal, and hedonistic escapism.

*Limitations of Instrumentation and Methods*

The MTA study was originally designed to test treatment options for children with ADHD, using a rigorous randomized controlled trial. This investigation was a secondary analysis of a portion of the data gathered in the 14-month trial. Therefore, this analysis was somewhat limited in testing the hypotheses for the present study. For

example, the coping measures were only assessed at baseline.  The present study would be stronger if the data collection had included 14-month assessments of coping strategies.

The MTA scales provided limited information regarding quality of life of the parents of their ADHD children.  The scales that were included in the MTA study only assess two domains of the quality of life construct, including social and role functioning, as well as psychological health.  However, quality of life also comprises other areas of well-being such as physical health, environment, and global health perceptions (Stewart et al., 1992).

Finally, the MTA study sought to collect data from all parental figures in the participants' lives.  However, the sample of fathers had approximately half as many respondents compared to the mothers' sample.  Therefore, limited sample size may have reduced the power to achieve convergence for estimating paths in the structural equation models.

## 3.10    Preliminary Data Manipulation and Analysis

To obtain the data from the NIMH MTA study, a University of Maryland Institutional Review Board (IRB) application was submitted on June 15, 2005.  On June 17, 2005, the IRB retuned a letter of permission to conduct the study (IRB Application #05-0301).  A copy of this letter (see Appendix F) was sent to the National Institutes of Mental Health with an application form to obtain the data.  The data from the NIMH arrived on a compact disk in 50 separate files.

After studying the questionnaires from each of the files to determine which variables were pertinent to this study, variables from eighteen of the files were deemed relevant.  Most of the variables selected for this analysis were subscale or total scale

scores. For each of these scales, SPSS was used to calculate Cronbach's alpha reliability coefficients. These reliability coefficients (see Appendix A) were used to investigate the list of variables and subscales that would be used in the analysis.

The next step was to create two large datasets, one with all of the baseline data and one with baseline and 14-month data, matched over time by parent responder. This meant that if the mother responded at baseline and she responded again at 14 months, then this case would be retained. However, if the mother responded at baseline and the step-mother responded at 14-months, then this case would be excluded. The same procedure was used for fathers as well.

Careful consideration led to the inclusion of only mothers, fathers, step-mothers, and step-fathers, although many more family members answered questionnaires, including aunts, uncles, older siblings, and grandparents. However, to reduce unnecessary and possibly confounding variation in the study, only primary parental figures, including mothers, step-mothers, fathers, and step-fathers, were included in the analysis. Excluding questionnaires from other family members resulted in eliminating a small percentage of the total sample population. Table 3-11 shows the sample of primary parents who completed the Alabama Parenting Questionnaire over four assessment points.

Table 3-11. Sample Distribution

| Person | N | % |
|---|---|---|
| Mother | 1865 | 58.0 |
| Father | 1022 | 31.8 |
| Step-Mother | 20 | 0.6 |
| Step-Father | 116 | 3.6 |
| Total: | 3023 | 94.0 |

Table 3-11 shows that there were more mothers who completed questionnaires compared to fathers. However, there were not 1865 mothers in this study. The Alabama Parenting Questionnaire was completed by mothers at baseline, 3-months, 9-months, and 14-months.

In the MTA study, there were a total of 579 children who participated. Each of the 579 children in this analysis could have multiple respondents over multiple time periods, completing the questionnaires. The actual total of completed APQ scales for the entire study was 3217, which included all responders (i.e. mothers, fathers, aunts, uncles, grandparents, older siblings, etc.) during all four assessment points. The total of 3023 in Table 3-11 is comprised of only mothers, fathers, step-mothers, and step-fathers over four points in time. The database used for this secondary analysis only included baseline and 14-month data. Respondents other than mothers, fathers, step-mothers, and step-fathers were excluded. Also, early terminators or participants who left the study before 14-months, were excluded.

For hypotheses 1, 1b, and 2, only the baseline data were used, while for the last two hypotheses, examining quality of life over time, the baseline and 14-month data were used. Including data from two points in time simplified the data manipulation and analysis, while maintaining a longitudinal quality to the study.

The data in the Alabama Parenting Questionnaire file had 3217 cases, or entries for each ADHD child on each variable. The data could not be analyzed in this form. Therefore, a great deal of data manipulation was necessary before the data were in a usable form. Also, SPSS has size limitations, so SAS was used to do the merging and analys SAS works from temporary datasets (Delwiche & Slaughter, 2003). Therefore,

smaller datasets were constructed that broke apart responses based on responder and assessment period. Specifically, each variable was broken down into eight separate variables: mother at baseline, father at baseline, step-mother at baseline, and step-father at baseline, mother at 14 months, father at 14 months, step-mother at 14 months, and step-father at 14 months. Each of these mini datasets had 579 or fewer cases, which also meant that they had unique identification numbers for each child in the study. This contrasts with the whole ALAP dataset that could have 10 or more cases with the same identification number, since multiple people answered questionnaires over multiple time periods on behalf of the child participant.

This process was repeated with 17 of the 18 datasets of interest. The 18[th] dataset did not require this manipulation, since it had exactly 579 cases, which contained demographic information on each participant.

In all, 136 mini datasets were created. At this point, the data were merged based on the specifications of the table that needed to be created. The first table only contained the baseline data. Therefore, mothers at baseline, fathers at baseline, step-mothers at baseline, and step-fathers at baseline were match merged by identification number. This meant that the table had no more than 579 cases, but contained hundreds of columns, each with values for variables specifically labeled by responder and point in time. Performing this manipulation also meant that the dataset was heavily 'padded' with missing data. For example, if the mother and father responded at baseline and 14-months, then columns referring to step-mothers and stepfathers at baseline and at 14-months would all be missing, or blank. However, this was considered acceptable since

SAS could easily handle large datasets and because each column needed to be data from a unique responder (e.g. only mothers) at a unique point in time (e.g. only baseline data).

After completing the baseline dataset, the 136 mini datasets were then used to create a file matched by parent responder across points in time. A series of "If…then" statements were used to only retain data from respondents who completed questionnaires at both baseline and at 14-months. This manipulation simply revised and reduced the number of cases in each of the 136 mini datasets. For example, mothers who answered questionnaires at baseline, but not at 14-months were eliminated from the mini datasets. Then, the mini datasets were match merged by the identification number of the child participant.

In each of the two larger merged datasets, the step-parents and biological parents were subsequently combined to create four subdivided variables: mothers at baseline, fathers at baseline, mothers at 14 months, and fathers at 14 months. Mothers and step-mothers were considered to play a similar role in a child's life, as were fathers and step-fathers. This reduction was performed since the models were designed to estimate relationships between the constructs for mothers and fathers separately. Some studies have combined parent data by averaging their responses, but this data reduction strategy produces a loss of information. Also, for this study, coping and social support research suggests that these mechanisms may be different in their approach and quantity based on sex.

**Bivariate Correlations**

Next, bivariate correlations were calculated for the subscales of interest. These correlation statistics described the amount of overlap or redundancy among the scales.

An assessment of this overlap led to the elimination of several subscales that resulted in a more parsimonious model.

*Social Support*

The correlation between the number of supportive others and the satisfaction with that support was calculated for mothers (r = .34, p<.01). This correlation between number of supportive others and satisfaction with those others was also calculated for fathers (r = .29, p<.01). Since these correlations were modest, although significant, the decision was made to keep both of the items as measures for two different dimensions of social support.

*Stress*

Next, stress was examined. The Parent Stress Index (PSI) had four subscale scores and a total score. The first subscale score, Defensive Responding, had a subset of items of the Parental Distress subscale, and was deleted since it was considered redundant. The correlation matrices below indicate that for mothers and fathers, the total stress scores were highly correlated with each of the subscale scores. Since the purpose of this investigation was to use a global measure of stress, not to differentiate between the different types of stress, the decision was made to remove the stress subscales and only use the total stress scores. Please note that statistics significant at the p=.01 level are in bold.

Table 3-12. Mothers Parent Stress Index (PSI) Correlations between Subscales and Total Score

|  | I | II | III | IV |
|---|---|---|---|---|
| I Parental Distress |  | **.52** | **.43** | **.80** |
| II Parent-Child Dysfunctional Interaction |  |  | **.54** | **.83** |
| III Difficult Child |  |  |  | **.82** |
| IV Total Stress Score |  |  |  |  |

Table 3-13. Fathers Parent Stress Index (PSI) Correlations between Subscales and Total Score

|  | I | II | III | IV |
|---|---|---|---|---|
| I Parental Distress |  | .54 | .43 | .79 |
| II Parent-Child Dysfunctional Interaction |  |  | .56 | .84 |
| III Difficult Child |  |  |  | .83 |
| IV Total Stress Score |  |  |  |  |

Next, the total score from the PSI was correlated with scores from the Coddington Questionnaire and the Inventory for Small Life Events (ISLE), the other two scales measuring parent stress.

Table 3-14.  Correlations among stress variables for mothers

|  | I | II | III |
|---|---|---|---|
| I CODD |  | .15 | .25 |
| II PSI |  |  | .31 |
| III ISLE |  |  |  |

Table 3.15.  Correlations among stress variables for fathers

|  | I | II | III |
|---|---|---|---|
| I CODD |  | .06 | .16* |
| II PSI |  |  | .36 |
| III ISLE |  |  |  |

 * Significant at p<.05.

Since there were small correlations among these scale scores among mothers (e.g. the highest correlation was r = .36, p<.01), it was decided to retain all three scores to explain stress.

*Symptom Severity*

Symptoms of the children's Attention Deficit Hyperactivity Disorder were measured with the Conners Parent Rating Scale (CPRS), Child Behavior Checklist (CBCL), the Swanson, Nolan, and Pelham (SNAP) Questionnaire, and the Columbia

Impairment Scale (CIS). However, the CIS was subsequently dropped due to the small

sample size for fathers (n=11). Therefore, the first three measures were correlated:

Table 3-16. Correlations between Symptom Severity Scores for Mothers

|  | I | II | III |
|---|---|---|---|
| I Child Behavior Checklist Total |  | .76 | .61 |
| II Conners Parent Rating Scale Total |  |  | .77 |
| III SNAP Total Score |  |  |  |

Table 3-17. Correlations between Symptom Severity Scores for Fathers

|  | I | II | III |
|---|---|---|---|
| I Child Behavior Checklist Total |  | .71 | .63 |
| II Conners Parent Rating Scale Total |  |  | .80 |
| III SNAP Total Score |  |  |  |

The correlations of the Conners Parent Rating Scale (CPRS) with the other two measures

represent the highest correlations in the tables (i.e. r = .76 and r = .77 for mothers and r =

.71 and r = .80 for fathers). Since these high correlations indicate substantial overlap in

variance between these measures, only the CPRS score was retained, allowing for a more

parsimonious model.

*Quality of Life*

Bivariate correlations among all of the quality of life subscales are shown in

Appendix B. Psychological and emotional well-being were assessed with the Beck

Depression Inventory (BDI) and the Global Affective Functioning (GAF) scale. From

analyzing the mother's data, these two scales were significantly negatively correlated (r =

-.42, p<.01), which makes sense theoretically as higher scores on the GAF indicate better

mental/emotional functioning, while higher scores on the BDI indicate greater

depression. Social functioning was measured in terms of spousal relationship using the

Dyadic Adjustment Scale (DAS), and in terms of the parental relationship with the

ADHD child, using the Parent Child Relationship Questionnaire and the Alabama

Parenting Questionnaire. Some of the highest correlations in the matrix were among the

DAS subscales and their total score. In fact, the Total Dyadic Adjustment score was

correlated between .67 and .91 with each of its subscale components. Based on this

observation, only the Total Dyadic Adjustment score was retained for future data

analysis. Dropping the subscale scores enhanced model parsimony and reduced problems

with multicollinearity. In terms of the parent-child relationship, the correlations

confirmed expected associations. For example, involvement, positive parenting,

affection/admiration of parent, pro-social, and praise were all highly correlated, while

harsh discipline and quarreling were strongly associated. These trends were also similar

for the father's data as well.

*Coping*

Next, correlations were calculated among subscale scores from the COPE (shown

in Appendix C). For the mothers, the first nine subscales, all of which theoretically

describe adaptive coping styles (e.g. active, planning, and suppression of competing

activities) have moderate to high correlations (i.e. from $r = 16$ to $r = .75$, significant at

$p<.01$). However, only the first eight subscale scores correlated for the fathers. The

ninth subscale, humor, correlated more strongly with the maladaptive coping style. For

the mothers, humor correlated with both the adaptive and maladaptive coping styles.

Perhaps the use of humor as a coping strategy depends on the context, as proposed by

Folkman and Lazarus (1984) in their studies of coping. The last four coping styles,

theoretically descriptive of maladaptive coping styles, were all significantly correlated for

mothers. However, for the fathers, use of drugs or alcohol were only correlated with

mental disengagement, but not with behavioral disengagement or denial.  As a result of this analysis, the decision was made to keep all of the subscale scores and submit them to principal components analysis, as described next in the factor analysis section.

**Principal Components Analysis (PCA)**

An analysis of the bivariate correlations examined the relations between scale scores could potentially be used in the final multivariate analyses.  In this case, it was decided that only the total scores for the Dyadic Adjustment Scale (DAS) and the Parent Stress Index (PSI) would be used because the correlations between their total scores and their constituent parts could cause multicollinearity problems.  To analyze the relationships between the subscale scores within the coping domain and within the quality of life domain, a principal components analysis (PCA) was conducted.  This analysis indicated how many factors or underlying dimensions should be used to replace each individual variable score, in order to achieve enhanced model parsimony.  Deciding how many dimensions were truly underlying the variables was very subjective.

There has been great debate regarding the definitive number of factors to use in an analysis based on results of PCA.  First, it is assumed that the number of factors is smaller than the number of observed variables.  A variable that loads or correlates with a factor at least .4 (either plus or minus), is considered to load on that factor.

Kim and Mueller (1978) describe several ways of choosing the number of factors. Perhaps one of the most popular methods is the Kaiser rule of retaining factors with Eigenvalues equal to or greater than one.  This means that the factor explains at least as much variance as one of the variables.  However, while this method seems to work well and gives researchers results that are consistent with their expectations, critics have

argued that this method is much too liberal and results in too many factors being extracted.

The scree test, developed by Cattell, is another method for deciding the number of factors. The scree test provides a graph of Eigenvalues. In the scree test, the researcher retains factors until the eigenvalues level off or until they form a straight line with a slope equal to zero (i.e. a horizontal line).

Another technique described by O'Connor (2000) is Velicer's MAP test, or minimum average partial test. O'Connor explains that although a factor analysis requires many decisions, perhaps the most crucial one is deciding how many factors to retain. He asserts that the two most popular methods, eigenvalues-greater-than-one (i.e. Kaiser's rule) and the scree plot, are problematic, in regards to their validity and reliability. In contrast, Velicer's MAP test is superior to these other more popular methods because it typically results in optimal solutions. This procedure uses statistical methods, rather than rules-of-thumb. The focus in this test is on the amounts of systematic and unsystematic variance remaining in correlation matrices after a component or factor is extracted. Specifically, the MAP test partials out the first principal component from the correlation matrix and then calculates an average of the squared coefficients on the off-diagonals of the resulting matrix. Next, the first two principal components are partialed out of the matrix and the resulting coefficients on the off-diagonals are squared and averaged. This process repeats for one less than the total number of variables. The average squared partial correlations from each of the steps are lined up and the number of components is determined by the squared partial correlation that is lowest. This means that factors are

retained as long as there is proportionately more unsystematic variance than systematic variance in the matrix.

Kim and Mueller (1978) suggest deciding the number of factors on substantive importance, based on the theoretical or substantive knowledge of the particular field of study. This is a subjective method that depends on the factors' interpretability and the theoretical importance of including or omitting factors.

These decision rules and methods were applied to stress, symptom severity, quality of life, and coping domains. All of the methods were taken into consideration, but ultimate conclusions were based on theoretical grounds, as recommended by Kim and Muller (1978).

*Stress*

Three stress scales (i.e. Coddington questionnaire, Inventory of Small Life Events, and the Parent Stress Index) were entered in a principal components analysis. As expected, all three scales loaded on one component for mothers and one for fathers. This one component for mothers had an eigenvalue of 1.49, explaining 49.77% of the variance, while the component for fathers had an eigenvalue of 1.44, explaining 47.86% of the variance. All three of the loadings for the stress component for the mothers were significant (see Table 3-18).

Table 3-18. Principal Components Analysis for Stress Scales for Mothers

Principal Components Analysis
Without Rotation

| Stress Scales for Mothers | I |
| --- | --- |
| Coddington Questionnaire | **.65** |
| Inventory of Small Life Events | **.76** |
| Parent Stress Index | **.70** |

All three of the loadings for the stress component for fathers were significant as well (see

Table 3-19).

Table 3-19. Principal Components Analysis for Stress Scales for Fathers

Principal Components Analysis
Without Rotation

| Stress Scales for Fathers | I |
| --- | --- |
| Coddington Questionnaire | **.46** |
| Inventory of Small Life Events | **.80** |
| Parent Stress Index | **.76** |

As a result of these principal component analyses, all three scales were retained

and used to form the stress component. The PCA indicated that stress should be

considered as a single dimension (component) with all three scales contributing to its

definition.

*Symptom Severity*

Symptom severity scores were examined using PCA. All three of the symptom

severity scale scores were highly correlated for mothers and fathers. To determine if one

score could represent all three scale scores, the variables were entered into a principal

components analysis.  Results of the analyses for mothers and fathers are shown in

Tables 3-20 and 3-21.

Table 3-20. Principal Components Analysis of Symptom Severity Scales for Mothers

| Principal Component Analysis Without Rotation Symptom Severity - Mothers (Baseline) | I |
| --- | --- |
| Child Behavior Checklist Total | **.88** |
| Conners Parent Rating Scale Total | **.94** |
| SNAP Total | **.88** |

Table 3-21. Principal Components Analysis of Symptom Severity Scales for Fathers

| Principal Component Analysis Without Rotation Symptoms Severity - Fathers (Baseline) | I |
| --- | --- |
| Child Behavior Checklist Total | **.88** |
| Conners Parent Rating Scale Total | **.93** |
| SNAP Total | **.90** |

One principal component emerged with an Eigenvalue of 2.44 for mothers and

2.45 for fathers, each of which explained 81-82% of the variance in the three variables.

Although all three scale scores correlated highly with the principal component, the largest

loading was for the CPRS.  Based on this greater loading, it was decided to use the CPRS

to represent symptoms and to drop the other subscales [i.e. Child Behavior Checklist

(CBCL), Swanson, Nolan, and Pelham questionnaire (SNAP), and the Columbia

Impairment Scale (CIS)].

*Quality of Life*

Next, the subscale scores of the quality of life construct, listed in Appendix A,

were submitted to a principal components analysis.  PCA was used to reduce the number

of dependent variables in this analysis and to understand the number of dimensions or factors underlying these subscales.

All of the dyadic adjustment subscales, as well as the total dyadic adjustment scale score, loaded on the first factor. Therefore, this factor was labeled positive spouse relationship. In analyses for the current study, only the total dyadic adjustment score was used to describe this construct, since the total dyadic adjustment variance overlaps substantially with its subscale scores. The second factor was labeled positive parent/child relationship since five positive scales, such as parent involvement, positive parenting, and affection, were among the items that loaded on this factor. The third factor was labeled negative parent/child relationship since discipline and quarreling loaded on this factor. The fourth factor includes the Beck Depression Inventory scale and the Global Affective Functioning scale, indicating that this dimension concerned psychological functioning. Three subscales (i.e. possessiveness, inconsistent discipline, and low monitoring/supervision) did not load on any of these four factors and were dropped from the analyses.

Therefore, four factors (i.e. spouse relationship, positive parent/child relationship, negative parent/child relationship, and psychological functioning) were retained for future analyses. The best result, evaluated in terms of intrepetability and theoretical sense, occurred with the orthogonal rotation (i.e. called Varimax). The first five subscales that correlated with or loaded on the first dimension were Dyadic Adjustment subscales and the total scale score. Because all of these subscales correlated highly with the total score, the subscale scores were eliminated from further analyses. Subscales that loaded on the second dimension were from the Alabama Parenting Questionnaire (i.e.

involvement and positive parenting) and from the Parent Child Questionnaire (i.e. affection, pro-social, and praise).  The third dimension had three subscales that loaded on it, including the harsh discipline and appropriate discipline from the Alabama Parenting Questionnaire (APQ) and the quarreling subscale from the Parent/Child Relationship questionnaire.  The Global Affective Functioning scale (GAF) and the Beck Depression Inventory loaded significantly on the fourth dimension.  Loadings or correlations between scales and components, as well as Eigenvalues or amount of explained variance for each component are reported in Tables 3-22 through 3-25.

Table 3-22. Principal Components Analysis for Quality of Life for Mothers

Principal Component Analysis With Orthogonal Rotation

Quality of Life for Mothers at Baseline

| | I | II | III | IV |
|---|---|---|---|---|
| Dyadic Consensus | **.88** | -.03 | .02 | .13 |
| Dyadic Satisfaction | **.87** | .05 | -.03 | .14 |
| Affectional Expression | **.67** | -.02 | -.11 | .17 |
| Dyadic Cohesion | **.80** | .25 | .06 | -.01 |
| Total Dyadic Adjustment | **.98** | .06 | -.00 | .13 |
| Involvement | .10 | **.78** | -.04 | .05 |
| Positive Parenting | .02 | **.78** | -.01 | -.08 |
| Affection, Admiration of Parent & Admiration by Parent | .01 | **.66** | -.37 | .16 |
| Pro-social, Similarity, Intimacy, Nurturance & Companionship | .05 | **.84** | -.03 | .17 |
| Praise, Shared Decision Making & Rationale | .08 | **.82** | -.07 | .03 |
| Quarreling, Dominance, Phys Punishment, Deprivation of Privileges, Verbal Punishment, Guilt Induction | -.00 | -.27 | **.83** | -.17 |
| Harsh Discipline | -.06 | -.15 | **.77** | .02 |
| Appropriate Discipline | .04 | .30 | **.57** | -.05 |
| Global Affective Functioning | .15 | .10 | -.06 | **.82** |
| Beck Depression Inventory | -.31 | -.08 | .09 | **-.76** |

Table 3-23.  Explained Variance for Quality of Life for Mothers

| | **PCA for QoL for Mothers at Baseline** | | | |
|---|---|---|---|---|
| **Factor** | **Definition** | **Eigenvalue** | **Proportion** | **Cumulative** |
| I | Positive Spouse Relationship | 4.67 | .26 | .26 |
| II | Positive Parent/Child Relationship | 3.07 | .17 | .43 |
| III | Parent/Child Authoritarian Discipline (Negative) | 1.88 | .10 | .53 |
| IV | Positive Psychological Quality of Life | 1.21 | .07 | .60 |

Table 3-24.  Principal Components Analysis for Quality of Life for Fathers

Principal Component Analysis with Orthogonal Rotation
Quality of Life for Fathers at Baseline

|  | I | II | III | IV |
|---|---|---|---|---|
| Dyadic Consensus | **.85** | .15 | -.11 | .01 |
| Dyadic Satisfaction | **.87** | .04 | -.09 | .11 |
| Affectional Expression | **.76** | -.08 | -.13 | .16 |
| Dyadic Cohesion | **.73** | .28 | .13 | .04 |
| Total Dyadic Adjustment | **.98** | .13 | -.07 | .08 |
| Involvement | .09 | **.81** | -.08 | .07 |
| Positive Parenting | .21 | **.72** | -.03 | -.00 |
| Affection, Admiration of Parent & Admiration by Parent | -.02 | **.61** | -.34 | .07 |
| Pro-social, Similarity, Intimacy, Nurturance & Companionship | .06 | **.84** | -.08 | .05 |
| Praise, Shared Decision Making & Rationale | .11 | **.85** | -.10 | -.00 |
| Quarreling, Dominance, Phys Punishment, Deprivation of Privileges, Verbal Punishment, Guilt Induction | -.19 | -.13 | **.75** | -.06 |
| Harsh Discipline | -.13 | -.16 | **.74** | -.07 |
| Appropriate Discipline | .12 | .26 | **.59** | .21 |
| Global Affective Functioning | .08 | .08 | -.09 | **.88** |
| Beck Depression Inventory | -.34 | -.00 | -.07 | **-.68** |

Table 3-25. Explained Variance for Quality of Life for Fathers

| | PCA for QoL for Fathers at Baseline | | | |
|---|---|---|---|---|
| Factor | Definition | Eigenvalue | Proportion | Cumulative |
| I | Positive Spouse Relationship | 4.90 | .27 | .27 |
| II | Positive Parent/Child Relationship | 2.78 | .15 | .43 |
| III | Parent/Child Authoritarian Discipline (Negative) | 1.94 | .11 | .53 |
| IV | Positive Psychological Quality of Life | 1.28 | .07 | .60 |

*Coping*

Next, coping skills were examined. Carver, Scheier, and Weintraub (1989) designed the COPE scale to have 15 separate dimensions. However, for the purpose of this analysis, considering each subscore separately could restrict power to find significant effects. Therefore, the number of subscales was reduced. To accomplish this reduction, a principal components analysis was conducted with the 15 subscale scores for mothers and fathers. Two factors emerged from this analysis of the unrotated factors, one representing adaptive coping strategies and the other comprised of maladaptive coping styles. The loadings for each subscale score on the components and the amount of variance explained by the components are reported in Tables 3-24 through 3-27.

Table 3-26. Principal Components Analysis of COPE Subscales for Mothers

Principal Component Analysis Without Rotation

COPE - Mothers (Baseline)

| | I | II |
|---|---|---|
| Active Coping | **.77** | -.25 |
| Planning | **.83** | -.27 |
| Suppression of Competing Activities | **.60** | -.01 |
| Restraint | **.58** | .12 |
| Seeking Social Support for Instrumental Reasons | **.75** | -.02 |
| Seeking Social Support for Emotional Reasons | **.61** | .12 |
| Positive Reinterpretation | **.71** | -.18 |
| Acceptance | **.55** | .13 |
| Humor | **.43** | .36 |
| Denial | -.02 | **.70** |
| Behavioral Disengagement | -.08 | **.79** |
| Mental Disengagement | .18 | **.68** |
| Drugs or Alcohol | .03 | **.42** |

Table 3-27. Explained Variance for COPE Subscales for Mothers

| **PCA for COPE for Mothers at Baseline Without Rotation** | | | | |
|---|---|---|---|---|
| **Factor** | **Definition** | **Eigenvalue** | **Proportion** | **Cumulative** |
| I | Adaptive (problem-focused) coping strategies | 4.1 | .27 | .27 |
| II | Maladaptive (emotion-focused) coping strategies | 2.3 | .15 | .42 |

Note: 42% of the variance explained by two factors

Table 3-28. Principal Components Analysis for COPE Subscales for Fathers

Principal Component Analysis Without Rotation

COPE - Fathers (Baseline)

|  | I | II |
|---|---|---|
| Active Coping | **.81** | -.16 |
| Planning | **.85** | -.22 |
| Suppression of Competing Activities | **.75** | .01 |
| Restraint | **.62** | .14 |
| Seeking Social Support for Instrumental Reasons | **.75** | -.04 |
| Seeking Social Support for Emotional Reasons | **.55** | .02 |
| Positive Reinterpretation | **.81** | -.05 |
| Acceptance | **.52** | .32 |
| Humor | .22 | **.47** |
| Denial | -.14 | **.70** |
| Behavioral Disengagement | -.13 | **.76** |
| Mental Disengagement | .13 | **.71** |
| Drugs or Alcohol | -.06 | .26 |

Table 3-29. Explained Variance for COPE Subscales for Fathers

| PCA for COPE for Fathers at Baseline Without Rotation | | | | |
|---|---|---|---|---|
| Factor | Definition | Eigenvalue | Proportion | Cumulative |
| I | Adaptive (problem-focused) coping strategies | 4.4 | .29 | .29 |
| II | Maladaptive (emotion-focused) coping strategies | 2.3 | .15 | .44 |

Note: 44% of the variance explained by two factors

After conducting the PCA, the decision was made to use two principal

components.  Thirteen of the fifteen original subscales loaded on one of two factors in the

unrotated analysis with the mothers' data. This solution appeared most desirable since it was the most parsimonious. These two components had theoretical import and were easily identified, based on the loadings of the subscales, as an adaptive set of strategies and a maladaptive set of strategies. Two subscales, turning to religion and venting of emotion, loaded on neither of these two components and were subsequently dropped from the analyses. This decision, based on theoretical grounds, coincides with the results of Velicer's MAP method, which is based on a statistical rationale.

*Summary of Principal Components Analysis*

Principal Components Analyses were conducted with scales from four domains including stress, symptoms, quality of life, and coping. One component emerged for the stress scales, with each scale loading moderately highly on the component. The symptoms scores were submitted to PCA analysis and loaded on one component as well. Although the scales loaded highly on one component, the decision was made to keep the Connor's Parent Rating Scale to represent symptom severity and drop the other two scales, since their bivariate correlations were high enough to warrant multicollinearity concerns. The PCA with orthogonal rotation of the quality of life scales yielded four components. These components represented a positive spouse relationship, a positive parent-child relationship, a negative parent-child relationship due to authoritarian discipline practices and quarreling between parent and child, and psychological or emotional functioning of the parent. Two of the subscales in the quality of life PCA were dropped from the analysis (i.e. possessiveness/protectiveness and inconsistent discipline) because they did not load on any of the four components. Finally, thirteen of the fifteen COPE subscales loaded on two factors, named adaptive and maladaptive coping styles.

The other two subscales, turning to religion and venting of emotions, did not load on either of the components and were subsequently dropped from the analysis. The principal components analyses will form the basis of the measurement portion of the structural equation modeling techniques described in the next section.

**3.11    Data Analysis Strategies**

Structural equation modeling (SEM) was used to examine hypotheses 1 and 1b for mothers and hypothesis 1b for fathers in this study. The models in this study (see Diagrams 1 and 1b in Appendix E) are called structural regression (SR) models because they contain both measured variables, represented by the boxes, and latent variables or unobserved variables, represented by the circles (Kline, 2004).

First, some terms or vocabulary associated with structural equation modeling will be defined. These models have two parts, a structural part and a measurement part. The structural part of the model identifies the relationships between the latent variables and the measurement part specifies the relationships between the latent and observed variables (Loehlin, 1998).

The observed variables that are dependent are called endogenous and have arrows pointing to them, while exogenous variables are independent variables that have arrows pointing away from them. Endogenous latent variables have disturbance terms, which specify the amount of unexplained variance (i.e. $1-R^2$). Endogenous observed variables have error terms, which represent both unexplained variance and measurement error. The errors and disturbance terms were omitted from the diagrams due to lack of space and to improve readability.

Single-headed arrows between constructs represent causal pathways which are estimated similarly to unstandardized regression weights. Standardized path coefficients, which are similar to beta weights in multiple regression, will be used to compare paths between indicators and to calculate the amount of variance that a particular indicator explains in its latent variable.

Structural equation modeling was the best available technique for this investigation because the paths or arrows in the models were derived from health psychology theory. Second, latent variables are by definition, void of measurement error. Measurement error decreases power by increasing the noise surrounding the true score. Therefore, removing measurement error from a research technique increases the power to find significant relationships among the constructs.

However, structural equation modeling can also be limiting. This research might have been better described or estimated with a non-recursive model that allows dual causality between variables (i.e. variable A causes variable B, which in turn causes variable A). For example, ADHD symptoms may directly cause negative parent/child relationships, which may in turn cause worsening symptoms. This type of non-recursive relationship would require more advanced techniques for estimation.

To estimate any model in SEM, the number of free parameters must exceed the number of observations (Kline, 2004). Free parameters are variances, correlations, and paths that are to be estimated by the model. The number of parameters is equal to the total number of variances and covariances in addition to the number of direct effects on endogenous variables. The number of observations is equal to $v (v+1) / 2$, where $v$ is equal to the number of observed variables. If the number of free parameters is equal to

the number of observations, the model is just-identified and will only produce one set of estimates. The difference between the number of free parameters and the number of observations is equal to the degrees of freedom for the model. Models that have more parameters than observations are under-identified and cannot be estimated, while models that have more observations than parameters are over-identified. Over-identified models are preferable since multiple estimates can be generated for each parameter. However, the job of EQS is to find the best values for each estimate. This optimization is achieved through the maximum likelihood method. This estimation method uses an iterative approach to minimizing the discrepancy between the observed variances and covariances and the model-implied values by substituting parameter estimates into the model-implied matrices (Hancock and Mueller, 2001). Thus, the maximum likelihood method chooses parameter estimates that maximize the likelihood of the observed data. While this method tends to be robust to violations of normality, a robust option is available in EQS for estimating variables that have non-normal distributions. In the case of these variables, less stringent criteria for the p-value is used to compensate for increased standard errors due to the non-normal distribution. Maximum Likelihood with the robust option was used for this analysis.

The estimates generated by EQS for the paths in the model specify the model-implied variance and covariance matrices. These model-implied parameters are compared with the values produced from the observed variables. The discrepancy between these values impacts the overall fit of the model, which were assessed by various fit indices.

These indices are divided into three categories (Loehlin, 1998; Kline, 1998). Absolute fit indices, such as the model Chi-Square statistic, the Standardized Root Mean Square Residual (SRMR), and the Goodness of Fit Index (GFI) indicate the amount of discrepancy between the observed and model-implied variances and covariances. These indices tend to improve with increasing model complexity. Parsimonious fit indices, such as the Adjusted Goodness of Fit Index (AGFI) and the Root Mean Square Error of Approximation (RMSEA) take into account the degree of complexity of the model in assessing the discrepancy between the observed and model-implied variances and covariances. Finally, incremental fit indices, such as the Normed Fit Index (NFI) and the Comparative Fit Index (CFI) test the fit of the model compared to a baseline model with fewer parameters. Joint criteria for acceptable fit require a $CFI >= .96$ together with an $SRMR < .09$ or with $RMSEA < .06$ (Hancock and Mueller, 2001)

A valid measurement model is required before the structural component of the model can be evaluated (Kline, 2004). Thus, the researcher is required to obtain an adequate fit for the measurement portion of the model before assessing the fit of the structural portion of the model. The criteria described previously were used to determine adequate model fit.

Once acceptable model fit was obtained, direct and indirect effects were evaluated. Standardized path coefficients, which are similar to beta weights in regression, were examined to determine the strength of causation of exogenous on endogenous variables. In addition, these pathways were squared, which yielded the amount of variance explained by individual exogenous variables.

**Tests of the Hypotheses**

These hypotheses were constructed based on the models proposed by Moos (2002) and Ogden (2000), in which stress, coping skills, and social support moderate the effects of an illness on quality of life. The parents in this dataset do not have illnesses, but are coping with major life stressors, one of which is parenting a child with ADHD. Therefore, these models have been adapted to understand the relationships between stress, symptom severity, coping, and social support with quality of life among this specialized population of parents with ADHD children.

A computer program called EQS, which tests structural equation models, was used to test the relationships proposed in the hypotheses. The figures shown below (see pages 110-112) are theoretical representations of pathways between the constructs. However, to test the models, latent variable models were constructed (see Appendix E). Therefore, the figures shown below represent conceptual models, while the latent variable models translate the conceptual models into testable hypotheses. These diagrams provided the basis for the syntax or code that told EQS the exact nature of the model.

The first set of diagrams in Appendix E (i.e. Figures E.1 through E.6) depict the measurement portions of the models. These measurement models define the variables, shown in boxes, which comprise each latent factor, shown in the circles. These models needed to achieve satisfactory fit, according fit indices such as Root Mean Squared Error (RMSE) <.06 or the Comparative Fit Index > .96.

Once the measurement portion of the model achieved adequate fit, the structural portions of the models were added and tested. Hypotheses 1 and 1b for mothers and hypothesis 1b for fathers compiled in the EQS software and produced path estimates.

After completion of the analysis, new diagrams were generated with significant paths between constructs (see Figures F.1 through F.13). These paths used a beta weight, or standardized regression coefficient, to compare the strength of association between the paths. Therefore, if the path in Hypothesis 1 for mothers between stress and quality of life was .35, $p<.01$ and the path from stress to social support was .06, $p>.01$ and from social support to quality of life was .10, $p>.01$, then we can conclude that stress had a direct effect, but not an indirect effect on quality of life.

For those models in which EQS could not converge on solutions for the path coefficients, due to model complexity and/or lack of sample size, multiple regression equations were used to estimate the beta weights. Multiple regression was used to estimate hypotheses 1 through 4 for fathers and hypotheses 2-4 for mothers. Each of the eleven quality of life variables was a dependent variable in separate regression equations. For each quality of life variable, four unique regression equations were tested. One equation included the covariates, stress appraisal, social support, and the interaction between appraisal and social support. Another equation included the covariates, stress appraisal, adaptive coping, and the interaction between the appraisal and coping. The third equation included covariates, stress appraisal, maladaptive coping, and the interaction between appraisal and this type of coping. Finally, the fourth equation included covariates and objective stressors, to measure the direct effect of stressors on quality of life indicators, as proposed in hypothesis 1b.

Each of these four tests was completed for each of the eleven quality of life variables and for each of the four samples (i.e. mothers at baseline, mothers at 14 months, fathers at baseline, and fathers at 14 months). Due to the large number of tests, only those tests significant at $p<.01$ were considered significant and were discussed in detail in chapters 4 and 5. Those estimates with large beta weights, but significant at $p<.05$, were discussed as having marginal significance.

To estimate the regression equations, a step-wise approach was used with three separate blocks of variables entered sequentially. The first block of variables included only the covariates. Estimates were produced for these variables. Next, the main effects (i.e. either social support, adaptive coping, or maladaptive coping) were added to the model along with another main effect, stress appraisal. Estimates were produced for these variables, controlling for the covariates. Since hypotheses 2 and 4 addressed interaction effects, the third block of variables added to the regression models were interaction terms. In addition, a separate set of analyses were conducted with objective stressors as the only block of variables in the regression model, to address hypothesis 1b, which tested direct effects of objective stressors on quality of life variables.

**Hypothesis 1:** Each construct (coping, social support, stress, and symptom severity) will have its own main effect on quality of life.
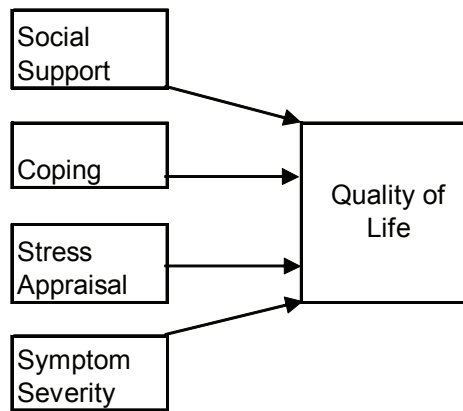
For the mother's data, structural equation modeling was used to test this hypothesis. First, the figure above was translated into an EQS-friendly diagram, as shown in Figures E.1 through E.11. While the diagrams in Appendix E showed all paths that were tested, the Diagrams in Appendix F show only those that were significantly associated with the latent variables. The coefficients that were significant within the structural portion are shown in Figure F.11. The data for the mothers was also entered into regression equations, which controlled for covariates such as ethnicity and income.

For the father's data, EQS could not converge on solutions for the path estimates. Therefore, multiple regression analysis was used to estimate the associations between the main effects and the quality of life variables, while controlling for the covariates.

**Hypothesis 1b:** Objective stressors will have both direct and indirect effects on quality of life outcomes. The indirect effects will occur with stress appraisal as a mediator, such that the stressful life events will lead to an appraisal of the situation. Quality of life indicators will be affected based on the evaluation or appraisal of the stressful situation (i.e. stress appraisal).
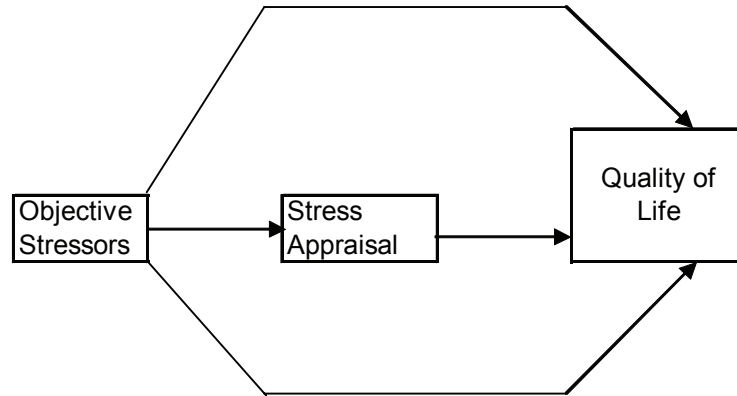
For the mothers, this hypothesis was tested using structural equation modeling, as shown in Diagram 1 and 1b in Appendix E. For fathers, the path between objective stressors and stress appraisal was tested with structural equation modeling, but the direct effects of objective stressors on quality of life variables was tested using multiple regression analyses.

**Hypothesis 2:** Based on the buffering model of social support, stress appraisal will moderate the relationships between social support and quality of life, as well as between coping and quality of life.
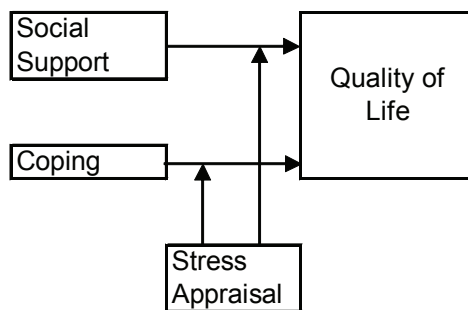


Multiple regression analyses were used to test this hypothesis for both mothers and fathers. A set-wise approach was used, entering covariates in the first block, main effects in the second block, and the interaction terms in the third block.

**Hypothesis 3:** Baseline scores of social support, coping, stress appraisal, and symptom severity will impact the 14-month scores of quality of life.
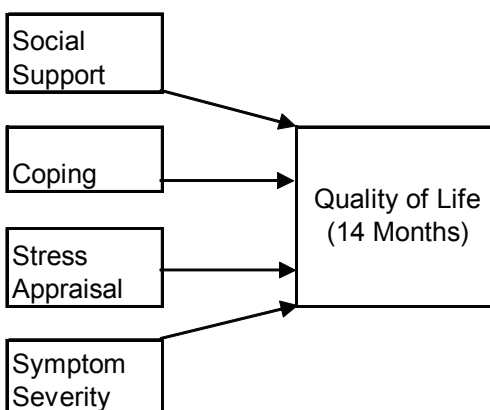
Multiple regression analyses were used to test the effects of social support, coping, stress appraisal, and symptom severity on 14-month quality of life indicators for both mothers and fathers. These regression analyses used the longitudinal dataset, which matched responders at baseline and 14 months.

**Hypothesis 4:** Based on the buffering model of social support, stress appraisal will moderate the relationships between social support and quality of life scores over time, as well as between coping and quality of life scores at 14 months.
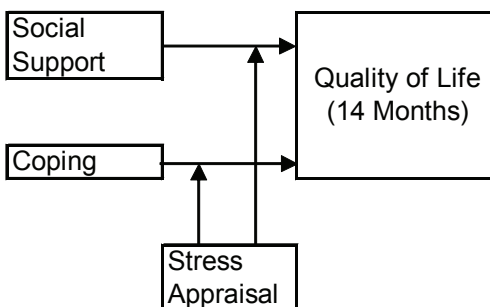


Multiple regression analyses were used to test the interaction effects of social support with stress appraisal, and coping with stress appraisal on 14-month quality of life indicators for both mothers and fathers. These regression analyses also used the longitudinal dataset, which matched responders at baseline and 14 months.

RESULTS

## 4.1 Overview

This chapter presents the results of the structural equation modeling and multiple

regression analyses used to test hypotheses 1 through 4. First, the structural equation

modeling analyses testing hypotheses 1 and 1b for mothers and hypothesis 1b for fathers

will be discussed. Multiple regression and logistic regression analyses were used

subsequently to test hypotheses two through four, as well as hypotheses 1 and 1b for

fathers. Finally, the R-square values associated with the variance explained by each

successive block of variables entered into the multiple regressions equations will be

discussed.

The researcher attempted to use structural equation modeling (SEM) techniques to

test hypotheses 1-4 for mothers and fathers. This technique uses multiple iterations to

determine the best-fitting beta weights or path estimates between latent, or unobserved,

variables. The purpose of the path analysis is to specify causal vs. non-causal links

between latent variables (Kline, 1998). This supposition of causation is based on theory,

not necessarily on fulfilling the three rules for establishing causation (i.e. temporal

precedence, correctly specified causal direction, and no third variables that account for

the relationship; Kline, 1998).

However, due to sample size limitations and the complexity of the models, only

three models compiled and produced estimates. These were hypotheses 1 and 1b for

mothers and hypothesis 1b for fathers. The model diagrams for hypotheses 1-4 are in

Tables E.1 through E.10 in Appendix E. These diagrams were used subsequently as

guides for conducting multiple regression analyses, which were used in lieu of the SEM

techniques for hypothesis 1 for fathers and hypotheses 2 through 4 for both mothers and fathers.

Compared to SEM, multiple regression does not make claims of causation. Significant beta weights indicate association, either positive or negative, between two variables. Since multiple regression only uses observed variables, which contain measurement error, multiple correlations tend to be smaller than the path estimates in SEM. This aspect makes it more difficult to find significance using multiple regression and may downplay the true association between variables. However, these are the two best methods for analyzing the data in this sample regarding the proposed hypotheses.

## 4.2    Description of the Sample

The 579 children enrolled in this study met the criteria for the combined subtype of ADHD, having both inattentive and hyperactive symptoms (see Table D.1 in Appendix D for tables of demographic information). The sample was predominantly male (80.3%), Caucasian (60.8%), and the first child born in the family (55.6%). More than half of the children had a concurrent diagnosis of Oppositional Defiant Disorder (58.8%), lived in a large sized city (54.6%), and had never been expelled from school (82.0%). The mean age for the children was 7.8 with a standard deviation of .8. The mean grade for the children was second grade with a standard deviation of .9 and the mean family income was $30,000-$40,000.

The children's families in the sample had a mean number of people in the household of 4.2 with a standard deviation of 1.4. More than a third of the families had other family members with ADHD (37.5%).

Parents in the sample were most likely to be married (65.0%). Mothers had a mean age of 37.6 years with a standard deviation of 7.2 years, while fathers had a mean age of 40.1 years with a standard deviation of 7.4 years. More than half of the parents had some college or more education (mothers:73.4%, fathers: 65.2).

### 4.3.1 Hypothesis 1

For hypothesis 1, the results from the SEM analysis of mothers' data for hypothesis 1 will be discussed first, along with a brief discussion of the $R^2$ values associated with the quality of life outcome variables in the model. Next, multiple regression analyses will be presented to describe the results for hypothesis one for both mothers and for fathers.

As explained in chapter 3, structural equation modeling techniques require an assessment of model fit before the researcher can confidently present the path estimates that were generated. Both the measurement and structural models for mothers achieved excellent fit with root mean squared error of approximation (RMSEA) estimates of .001 and comparative fit indices (CFI) of 1.000.

**Measurement Model for Hypothesis 1 with Mothers' Data**

Using the mothers' data, the measurement model diagrams were tested not only to assess fit of the model with the observed data, but to generate path estimates between each latent variable and its corresponding indicator or observed variables (see Diagrams E.1 through E.6 in Appendix E for measurement model diagrams and see Diagrams F1. through F.10 in Appendix F for measurement models with coefficients). These diagrams will be discussed in the following sections, labeled by the type of variables (e.g. stress appraisal).

*Stress Appraisal*

The Parent Stress Index was the only indicator for the stress appraisal latent variable (see Figure F.2 in Appendix F). In EQS syntax, this stand alone variable must be associated with a latent factor. Therefore, a factor was added to the model and the path coefficient fixed to one.

*Symptom Severity*

The ADHD symptoms latent variable had two indicators. Connors Parent Rating Scale had a beta of -1.000 and Oppositional Defiant Disorder had a beta of -.723 (see Figure F.3 in Appendix F). Through the repeated iterations to find the best possible fit for the data to the model, EQS determined that negative coefficients were optimal in this measurement model. Negative coefficients however, alter the meaning of the latent variable label. Therefore, this latent variable becomes a lack of ADHD symptoms. This clarification is vital before making further conclusions regarding causal impacts of one latent variable on another in the structural model phase of analysis.

*Adaptive Coping*

The adaptive coping latent variable model also required re-naming as well. The negative coefficients indicated that a one-unit increase in the latent dimension called adaptive coping caused a .414 unit decrease in restraint, a .270 unit decrease in reinterpretation, and a .234 unit increase in humor (see Figure F.4 in Appendix F). These coefficients suggest that this dimension was not adaptive coping, but rather, a lack of adaptive coping. The results also suggest that humor was not positively correlated with adaptive coping strategies, as proposed by Carver (1989) and the principal components analyses (see chapter 3), but was positively associated with a lack of adaptive coping.

*Maladaptive Coping*

A similar change occurred with the maladaptive coping latent variable model.

Only one indicator, mental disengagement, was significantly predicted with a one unit

increase in maladaptive coping causing a .302 unit decrease in mental disengagement

(see Figure F.5 in Appendix F). This coefficient suggests that the underlying latent

variable may need to be renamed as a lack of mental disengagement, which is

theoretically equivalent to mental engagement.

*Social Support*

The social support latent variable had only one significant indicator, satisfaction

with supportive others. A one-unit increase in social support led to a .408 unit increase in

social support satisfaction (see Figure F.6 in Appendix F).

*Quality of Life*

Positive Spouse Relationship

The dependent variable, quality of life, comprised four dimensions. The spouse

relationship was measured by a single indicator, the Dyadic Adjustment Scale (DAS). Its

path was fixed to one since the latent variable and the indicator variable were the same

(see Figure F.7 in Appendix F).

Positive Parent/Child Relationship

All five of the positive parent/child relationship indicator variables were

significantly predicted by their associated latent variable. A one-unit increase in the

positive parent/child relationship latent variable caused a .472 unit increase in parental

involvement, a .569 unit increase in the positive parent variable, a 1.000 unit increase in

affection, a .694 unit increase in the pro-social variable, and a .735 unit increase in the praise variable (see Figure F.8 in Appendix F).

Negative Parent/Child Relationship

All three of the indicators for the negative parent/child relationship latent variable were significantly predicted. A one-unit increase in the latent variable caused a .469 unit increase in harsh punishment, a .502 unit increase in appropriate punishment, and a .959 unit increase in quarrel (see Figure F.9 in Appendix F).

Positive Psychological Functioning

Finally, the psychological functioning latent variable caused a .989 unit increase in the Beck Depression Inventory (BDI) and a .455 unit increase in the Global Affective Functioning score (GAF) (see Figure F.10 in Appendix F). At first, it appeared that these coefficients were contradictory, since an increase in BDI means greater depression, while an increase in the GAF indicates better psychological functioning. However, the variable used in the analysis for the BDI was trichotomized into low, medium, and high, based on its skew and kurtosis values (see Table A.1 in Appendix A) and then reversed, so that it would be aligned with the GAF, which has greater scores associated with better levels of functioning. Therefore, this latent variable should be named positive psychological functioning.

*Conclusions from Measurement Model*

Very few of the indicators for the latent variables were significant. Social support was reduced to satisfaction with supportive others, adaptive coping lost the active coping and planning variables, and maladaptive coping lost the behavioral disengagement, denial, and drug and alcohol variables. Loss of these variables, due to non-significant

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path estimates, meant that the measurement model reduced some of its explanatory power.  In some cases, the meanings of the latent variables changed.  Principal component analyses (PCA), conducted previously, determined that these variables loaded on their corresponding latent variables.  However, PCA only analyzed one latent variable at a time, not as part of a comprehensive model.  SEM found different solutions than the PCA did because the former worked with many latent variables and their indicators simultaneously.

**Structural Model for Hypothesis 1 with Mothers' Data**

*Symptom Severity*

Somewhat convoluted is the explanation of the symptoms results.  After examining the measurement model, the symptom latent variable was renamed lack of ADHD symptoms.  This lack of symptoms caused a .335 unit decrease in the negative parent/child relationship (see Figure F.11 in Appendix F).  Thus, fewer ADHD symptoms meant a better parent/child relationship due to fewer parent/child negative events.

*Social Support*

Finally, social support (see Figure F.11 in Appendix F), which was defined in the measurement model as satisfaction with supportive others, predicted a positive spouse relationship ($\beta = .897$, $p<.05$), a negative parent/child relationship ($\beta = .283$, $p<.05$), and good psychological functioning ($\beta = .316$, $p<.05$).  The relationship between social support satisfaction and a negative parent/child relationship was unexpected.  Perhaps the causal direction was misspecified and that parents seek social support as a result of quarreling with their children.

*Adaptive Coping*

As a result of the analyses, the adaptive coping latent variable became a lack of

adaptive coping strategies.  This lack of adaptive coping skills caused decreases in the

positive parent/child relationship ($\beta = -.448$, p<.05), negative parent/child relationship ($\beta$

$= -.313$, p<.05), and positive psychological functioning ($\beta = -.315$, p<.05).  Lack of

adaptive coping was characterized as decreased restraint and positive reinterpretation.

Decreased restraint is logically related to increased discipline, which is one component of

the negative parent/child relationship.  Decreases in positive reinterpretation could be

related to parents viewing their children in a more negative light, which in turn could lead

to decreases in the positive parent/child relationship latent variable (i.e. spending time

together or doing nice things for each other).

*Maladaptive Coping*

Maladaptive coping, which was defined by the SEM measurement model as a

lack of mental disengagement or more concisely, mental engagement, was positively

predictive of good psychological functioning ($\beta = .584$, p<.05) and negatively predictive

of positive parent/child relationship ($\beta = -.280$, p<.05).  Therefore, this latter finding is

contrary to expectations, since theoretically, mental engagement should be associated

with better parent/child relationships.  It is possible that these parents were so busy with

demands from work and other responsibilities that they do not have time to relax (i.e.

mental disengagement), nor do they have time to spend with their children (i.e. positive

parent/child relationship).

*Amount of Explained Variance of Dependent Latent Variables*

The other important question that was answered by the structural equation

modeling technique was the amount of variance accounted for by the independent latent

factors. The $R^2$ varied between .42 for negative parent/child relationship to 1.000 for

positive spouse relationship. Overall, positive spouse relationship and psychological

functioning were the most explained latent variables, while only about half of the

variance was explained for the positive and negative parent/child relationship latent

variables.

**Multiple Regression Analysis**

Next, multiple regression analyses were conducted for both mothers and fathers to

test Hypothesis 1. Several assumptions must be met before the estimates can be

considered reliable and valid. These assumptions include normality, independence of

error terms, homoscedasticity, linearity, and multicollinearity.

*Testing Multiple Regression Assumptions*

<u>Normally Distributed Residuals</u>

First, the residuals must be normally distributed (Hair et al., 1998; Tabachnick &

Fidell, 2001). This assumption is tested by generating normal probability histograms of

the residuals. This plot illustrates that the residuals have a mean of zero and a standard

deviation of 1.0 (see Table G.1 in Appendix G). A linear plot can also be generated (see

Table G.2 in Appendix G), showing little deviation from the regression line, indicating

normality of residuals (Hair et al., 1998). Both the histogram and linear plot show

reasonably normal distributions for the data, indicating that this assumption has been met.

<u>Independence of Error Terms</u>

Another assumption is the independence of error terms. This assumption cannot be tested statistically. It must be assumed that data collection was properly conducted and that any one person's answers did not influence another person's responses. This assumption for this data is most likely credible, since a team of experts managed the study at NIMH and the MTA study sites had strict protocols for data collection.

<u>Homoscedasticity</u>

Homoscedasticity, which is characterized by a distribution of error terms that is constant at all levels of the dependent variable (Hair et al., 1998), was tested with scatterplots for each regression, graphing the studentized residuals against the predicted values. In Figure G.3 in Appendix G, the scatterplot for the variable, involvement, using data from mothers at baseline, shows an oval. This shape indicates homoscedasticity (Hair et al., 1998).

<u>Linearity</u>

Multiple regression assumes a linear relationship between the independent variables and the dependent variable. According to theory, both direct and moderated effects of the study variables should influence the quality of life outcomes. These direct effects are hypothesized to be linear, rather than quadratic or cubic. Hair et al. (1998) recommend testing this assumption with a series of partial regression plots, showing the relationship between a single independent variable and the dependent variable. A sample of these plots is presented in Figure G.4 in Appendix G. Linearity will be assumed for this data, primarily based on the underlying theory, rather than on the partial regression plots, which are too subjective to offer a definitive conclusion.

<u>Multicollinearity</u>

Finally, multicollinearity was tested by running Pearson correlations between all of the continuous independent variables in each regression equation. Variables with perfect correlations are considered singular or redundant (Hair et al., 1998). None of the main effects variables correlated above .75. Many of the main effects correlated .8 or even .9 with their interaction terms. Since a set-wise approach was used in the regression analyses, these correlations did not effect the estimates within each set. However, these correlations probably diminished the estimates of the true explanatory power for the interaction terms. While multicollinearity would not be a problem for conducting the tests, these high correlations between main effects and their interaction effects would decrease the beta weights for the interaction coefficients, which were entered into the model after the main effects. This means that the interaction effects could be underestimated in the models. This in turn indicates that the true moderating relationships could be much greater than indicated by the regression beta weights.

*Multiple Regression Results*

<u>Summary Findings</u>

After confirming that the assumptions had been met for generating accurate estimates, the regression equations were tested using SPSS. The set-wise approach was used, entering blocks or sets of variables into the model (see Figures G.4 and G.5 for examples of SPSS output for regression coefficients and $R^2$ values). First, the covariates, including ADHD symptoms, gender, income, ethnicity (i.e. White, Black, and Hispanic), and having an ADHD family member were entered into the model in block one.

In block two, main effects were entered. There were four distinct sets of block two variables. The first set tested the effects of social support. This block consisted of social support satisfaction, social support number, and stress appraisal. The second set of block two variables included adaptive coping (i.e. active coping, planning, suppression, restraint, seeking social support for instrumental reasons, seeking social support for emotional reasons, positive reinterpretation, and acceptance, although humor was also included in this block for mothers) and stress appraisal. The third set of block two variables included maladaptive coping (i.e. denial, behavioral disengagement, mental disengagement, and drugs and alcohol, although humor was included in this block for fathers) and stress appraisal. Stress appraisal was entered into block two for these three sets of variables (i.e. social support, adaptive coping, and maladaptive coping) because the interactions between stress appraisal and each of these variables would later be entered into block three in these equations. According to Allison (1999), main effects that are used in interaction terms must be included in the model. The fourth and final block two used the objective stressor variable, Inventory of Small Life Events (ISLE) to predict quality of life outcomes. Objective stressors were not hypothesized to interact with stress appraisal. Thus, stress appraisal was not entered in this series of regressions.

Finally, block three variables, which contained the interaction terms, were entered into the regression equations. For social support, there were two interaction terms (i.e. stress appraisal x social support number and stress appraisal x social support satisfaction). The second set of variables in block three included the interactions between stress appraisal and adaptive coping, and the third set of block three variables comprised the interaction terms between stress appraisal and maladaptive coping variables.

A separate multiple regression equation was conducted for each of the 11 quality of life outcome variables for mothers and fathers at baseline and at 14 months. Four types of block two variables were used: social support, adaptive coping, maladaptive coping, and objective stressors (i.e. Inventory of Small Live Events or ISLE). The tables for all of these of results are in Tables H.1.1 through H.4.11 in Appendix H. Tables H.1.1 through H.1.11 are the results for the social support block, Tables H.2.1 through H.2.11 are results for the adaptive coping block, Tables H.3.1 through H.3.11 are the results for the maladaptive coping block, and Tables H.4.1 through H.4.11 are the results for the objective stressors block.

*Stress Appraisal*

Stress appraisal was included as a main effect in thirty-three tests (i.e. 11 tests of social support, 11 of adaptive coping, and 11 of maladaptive coping). Stress appraisal needed to be included in each of these equations because it was part of the interaction terms that were tested in all of the block three variables. Four of those tests for mothers and fathers at baseline did not produce estimates. Therefore, the total number of tests for stress appraisal was 29 for mothers and 29 for fathers. Nearly all of these beta weights for stress appraisal were significant at the $p<.01$ level (see Table 4.1). The coefficients for stress appraisal spanned negative and positive numbers, depending on the quality of life variable used as the dependent variable in the regression equations.

With numerous significant beta weights, the results indicate a great deal of support for the direct effects between stress appraisal and quality of life outcomes proposed in hypothesis 1. A summary of these results are provided below in Table 4.1.

Tabel 4.1. Summary of Beta Weight Coefficients for Stress Appraisal Predicting Quality of Life Outcomes.

| Main Effects | Baseline | |
| --- | --- | --- |
| | Mothers | Fathers |
| Total Number of Tests | 29$^{\Phi}$ | 29$^{\Phi}$ |
| Number Significant | 28 | 25 |
| Number sig. at p<.05 | 0 | 2 |
| Number sig. at p<.01 | 28 | 23 |
| range$^{\ddagger}$ | -.51 to .30 | -.45 to .24 |
| mean | -.18 | -.19 |
| median | -.27 | -.26 |

$^{\Phi}$ Beck Depression Inventory and Global Affective Functioning did not converge in the adaptive and maladaptive COPE tests to produce estimates.
$^{\ddagger}$ Refers to $R^2$ values for Block 2, after Block 1 covariates have been entered.  Covariates include:ADHD Symptoms, Gender, Income, Opposition Defiant Disorder (ODD), White, Black, Hispanic, and ADHD Family Member.

Next, summary findings for the other three block two variables are presented. Social support, adaptive coping, and maladaptive coping, unlike stress appraisal, were entered in only eleven regression equations each because they were not hypothesized to interact with each other.  Therefore, these results will be analyzed by examining the $R^2$ values or the amount of variance explained by the block two variables above and beyond that explained by the covariates entered in block one.

*Social Support*

Social support number and social support satisfaction were entered into block 2 along with stress appraisal.  This block was included in regression analyses for each of the 11 quality of life variables.  For mothers, this block was highly significant in every

regression, while the block was significant for a majority of the fathers' regression

analyses. These findings indicate support for the direct effect of social support variables

on quality of life indicators. The lower half of the table, describing interaction effects,

will be referred to in the hypothesis two section of results.

Tabel 4.2. Summary of Significance Tests ($R^2$ values) for Social Support and Stress

Appraisal Predicting Quality of Life Outcomes

| | Baseline | |
| --- | --- | --- |
| Main Effects | Mothers | Fathers |
| Total Number of Tests | 11 | 11 |
| Number Significant | 11 | 9 |
| Number sig. at p<.05 | | |
| Number sig. at p<.01 | 11 | 9 |
| range[‡] | .03 to .19 | .04 to .24 |
| mean | .11 | .13 |
| median | .10 | .11 |
| Interactions | | |
| Total Number of Tests | 11 | 11 |
| Number Significant | 0 | 0 |
| Number sig. at p<.05 | | |
| Number sig. at p<.01 | | |
| range | | |
| mean | | |
| median | | |

[‡] Refers to $R^2$ values for Block 2, after Block 1
covariates have been entered. Covariates
include:ADHD Symptoms, Gender, Income, Opposition
Defiant Disorder (ODD), White, Black, Hispanic, and
ADHD Family Member.

*Adaptive Coping*

Next, summary findings for the adaptive coping block of variables are presented.

This block was included in regression analyses for each of the 11 quality of life variables.

These findings indicate support for the direct effect of adaptive coping variables on

quality of life indicators. The lower half of the table, describing interaction effects, will

be referred to in the hypothesis two results section.

Tabel 4.3. Summary of Significance Tests ($R^2$ values) for Adaptive Coping and Stress

Appraisal Predicting Quality of Life Outcomes

| | Baseline | |
|---|---|---|
| Main Effects | Mothers | Fathers |
| Total Number of Tests | 9[†] | 9[Ψ] |
| Number Significant | 9 | 7 |
| Number sig. at p<.05 | 0 | 0 |
| Number sig. at p<.01 | 9 | 7 |
| range[‡] | .05 to .24 | .08 to .20 |
| mean | .14 | .15 |
| median | .11 | .15 |
| Interactions | | |
| Total Number of Tests | 9[†] | 9[Ψ] |
| Number Significant | 0 | 0 |
| Number sig. at p<.05 | | |
| Number sig. at p<.01 | | |
| range | | |
| mean | | |
| median | | |

[†]Beck Depression Inventory and Dyadic
Adjustment Scale could not converge to produce
estimates.

[Ψ] Beck Depression Inventory & Global Affective
Disorder did not converge to produce estimates.

[‡] Refers to $R^2$ values for Block 2, after Block 1
covariates have been entered. Covariates
include:ADHD Symptoms, Gender, Income,
Opposition Defiant Disorder (ODD), White, Black,
Hispanic, and ADHD Family Member.

*Maladaptive Coping*

A summary table with maladaptive coping variables, denial, behavioral disengagement, mental disengagement, drugs/alcohol, and humor (in fathers' analyses only) is presented below.

Tabel 4.4. Summary of Significance Tests ($R^2$ values) for Maladaptive Coping and Stress Appraisal Predicting Quality of Life Outcomes

| | Baseline | |
|---|---|---|
| Main Effects | Mothers | Fathers |
| Total Number of Tests | 9[†] | 9[Ψ] |
| Number Significant | 8 | 9 |
| Number sig. at p<.05 | 0 | 0 |
| Number sig. at p<.01 | 8 | 9 |
| range | .04 to .19 | .05 to .16 |
| mean | .10 | .10 |
| median | .10 | .10 |
| Interactions | | |
| Total Number of Tests | 9[†] | 9[Ψ] |
| Number Significant | 0 | 1 |
| Number sig. at p<.05 | | 1 |
| Number sig. at p<.01 | | |
| range | | .05 |
| mean | | |
| median | | |

[†]Beck Depression Inventory and Dyadic Adjustment Scale could not converge to produce estimates.

[Ψ] Beck Depression Inventory & Global Affective Disorder did not converge to produce estimates.

[‡] Refers to $R^2$ values for Block 2, after Block 1 covariates have been entered. Covariates include:ADHD Symptoms, Gender, Income, Opposition Defiant Disorder (ODD), White, Black, Hispanic, and ADHD Family Member.

Nearly all of the $R^2$ values for the maladaptive coping block were significant at the $p<.01$ level for mothers and fathers. The range and mean were of similar magnitude, although just slightly lower than those for social support, which were slightly lower than those for adaptive coping. These findings indicate support for the direct effect of maladaptive coping variables on quality of life indicators.

Specific Findings by Variable

*Positive Spouse Relationship*

*Dyadic Adjustment Scale (see Tables H.1.1, H.2.1, and H.3.1 in Appendix H)*

Social support satisfaction (see Table H.1.1) was a significant predictor for the Dyadic Adjustment Scale (DAS) for mothers ($\beta = .83$, $p<.01$) and for fathers ($\beta = .29$, $p<.01$). In addition, the number of supportive others among fathers was significantly associated with their DAS scores ($\beta = .18$, $p<.01$).

*Positive Parent/Child Relationship*

Involvement (see Tables H.1.2, H.2.2, and H.3.2 in Appendix H)

Fathers reported that behavioral disengagement (see Table H.2.2) was significantly associated with a decreased level of involvement at baseline ($\beta = -.19$, $p<.01$), while mothers reported that drugs and alcohol were associated with a decreased level of involvement at baseline ($\beta = -.14$, $p<.01$). Mothers reported that suppression ($\beta = .18$, $p<.001$) and reinterpretation ($\beta = .18$, $p<.01$) were significantly related to increased involvement at baseline (see Table H.2.2), while fathers reported that acceptance was negatively associated with involvement at baseline ($\beta = -.22$, $p<.001$). The number of supportive others (see Table H.1.2) was positively associated with involvement at baseline for both mothers ($\beta = .18$, $p<.001$) and fathers ($\beta = .17$, $p<.01$).

<u>Positive Parenting (see Tables H.1.3, H.2.3, and H.3.3 in Appendix H)</u>

For fathers, emotional support (see Table H.1.3) predicted positive parenting ($\beta$ = .22, p<.01), while acceptance negatively predicted outcome ($\beta$ = -.18, p<.01). For mothers, reinterpretation ($\beta$ = .18, p<.01) predicted greater scores on positive parenting. For both parents, income was a consistent significant predictor of positive parenting across all three moderator domains (i.e. social support, adaptive coping, and maladaptive coping), although with a modest beta weight (($\beta$ = -.14, p<.01).

<u>Affection (see Tables H.1.4, H.2.4, and H.3.4 in Appendix H)</u>

For fathers emotional support with positively associated with affection ($\beta$ = .24, p<.01), while acceptance was negatively associated with the outcome ($\beta$ = -.18, p<.01). Fathers also reported a significant positive association between their number of supportive others and their scores on affection ($\beta$ = .12, p<.01). For mothers, reinterpretation was positively associated with affection ($\beta$ = .19, p<.001). ADHD symptoms significantly predicted lower scores on affection for mothers and fathers at baseline ($\beta$ = -.12, p<.01 to $\beta$ = -.27, p<.001), with greater beta weights for men, compared to women.

<u>Pro-social (see Tables H.1.5, H.2.5, and H.3.5 in Appendix H)</u>

For mothers, the number of supportive others ($\beta$ = .14, p<.01), suppression ($\beta$ = .13, p<.01), and reinterpretation ($\beta$ = .18, p<.001) were also positively associated with pro-social scores. For fathers, emotional support ($\beta$ = .24, p<.01) and denial ($\beta$ = .16, p<.01) were positively associated with pro-social scores, while behavioral disengagement ($\beta$ = -.19, p<.01) was negatively associated with pro-social scores.

*Negative Parent/Child Relationship*

Harsh Discipline, Appropriate Discipline, and Quarrel (see Tables H.1.7, H.1.8, H.1.9, H.2.7, H.2.8, H.2.9, H.3.7, H.3.8, and H.3.9 in Appendix H)

Suggestive findings indicate that both mothers and fathers who used restraint as a coping mechanism experienced less quarreling with their ADHD children ($\beta = -.11$, $p<.05$ and $\beta = -.14$, $p<.05$, respectively). Denial by both mothers and fathers positively predicted harsh discipline scores ($\beta = .11$, $p<.05$ and $\beta = .20$, $p<.01$, respectively). Humor positively predicted appropriate discipline scores for fathers ($\beta = .17$, $p<.01$).

Several of the covariate or block one variables were significant as well. For both mothers and fathers, ADHD symptoms were significantly positively associated with harsh discipline, appropriate discipline, and quarreling. There was a gender effect such that fathers of boys, as compared to fathers of girls, reported greater harsh discipline scores ($\beta = -.15$, $p<.01$). Both mothers and fathers of boys, compared to parents of girls, reported increased appropriate discipline scores. Fathers who reported having an ADHD family member had significantly greater appropriate discipline scores ($\beta = .15$, $p<.01$ to $\beta = .18$, $p<.01$) and increased depression scores (B = .65, $p<.05$).

*Positive Psychological Functioning*

Global Affective Functioning (GAF) (see Tables H.1.7, H.2.7, and H.3.7)

For mothers, ADHD symptoms negatively predicted GAF scores, while income positively predicted GAF scores. Mental disengagement for mothers was negatively associated with GAF scores ($\beta = -.13$, $p<.01$).

<u>Explained Variance as Measured by R-square Change Scores</u>

The R-square values for each of the blocks in the multiple regression analyses were analyzed as well. A majority of the R-square values for baseline main effects of social support, adaptive coping, and maladaptive coping were significant at the $p<.001$ level (see Tables 4.2 through 4.4). However, none of the interaction effects across all three moderator domains was significant at the $p<.01$ or $p<.001$ levels. The R-square values ranged between .03 and .24 over the three domains with means of .12 for social support, .14 for adaptive coping, and .10 for maladaptive coping.

After comparing the R-square values across the three domains of moderator variables, social support, adaptive coping, and maladaptive coping, the ranges in values were relatively similar. The mean and median R-square value for adaptive coping were just slightly higher than the other two. Adaptive coping strategies also had more R-square values reaching significance, and more values attaining a greater level of significance. These comparisons suggest that adaptive coping strategies were slightly more associated with quality of life variables than maladaptive coping strategies, which were slightly more associated with quality of life than social support.

While comparisons of the three types of moderator variables showed some variability with adaptive coping having the greater beta weights and $R^2$ values, all three moderator categories were associated with and explained a significant amount of variance in the quality of life variables. Therefore, hypothesis one was supported. Stress appraisal, social support, adaptive coping, and maladaptive coping were significantly and directly associated with quality of life indicators.

### 4.3.2 Hypothesis 1b

Hypothesis 1b proposed that objective stressors had a direct effect on stress appraisal and an indirect effect on the quality of life variables through the stress appraisal construct. It was also hypothesized that objective stressors would have direct effects on the quality of life variables as well, though these relationships would be weaker.

**Measurement Model for Hypothesis 1b for Mothers**

Structural equation modeling was used to test this hypothesis for mothers. A measurement model was tested for fit and coefficients were generated to describe the relationships between objective stressors and its two indicator variables. A structural model was subsequently estimated to produce beta weights between objective stressors and stress appraisal, as well as between objective stressors and quality of life outcomes.

In the measurement model, the Coddington questionnaire and the Inventory of Small Life Events were strongly associated with the stressors latent variable (see Figure F.1 in Appendix F). This means that there was support for the conclusion that the underlying dimension of objective stressors had a direct causal impact on each of its two indicators. With strong standardized betas, ranging between .763 and 1.000, most of the variance in the stressors latent variable was explained in the model.

**Structural Model for Hypothesis 1b for Mothers**

A structural model for hypothesis 1b with mothers' data is included in Figure F.11. Objective stressors were significantly associated with spouse relationship, negative parent/child relationship, and psychological functioning in the predicted directions, such that an increase in objective stressors caused a decrease in a positive spouse relationship,

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an increase in the negative parent/child relationship, and a decrease in good psychological functioning.

After testing the direct effects of objective stressors on quality of life, indirect effects mediated by stress appraisal were assessed. The structural equation modeling analysis estimated that stressors caused stress appraisal such that a one unit increase in the stressors latent variable caused a .274 unit increase in the stressor appraisal latent variable. The stressor appraisal latent variable in turn had a significant positive effect on the negative parent/child relationship latent variable and significant negative effects on the positive spouse relationship, positive parent/child relationship, and psychological functioning latent variables. Therefore, stressors had an indirect effect on positive spouse relationship (-.06), positive parent/child relationship (-.15), negative parent/child relationship (.07), and psychological functioning (.12). In addition, the objective stressors latent variable had direct effects on positive spouse relationship (-.295), negative parent/child relationship (.161), and positive psychological functioning (-.331). Using the 14-month data, none of the tests of the direct effects of objective stressors on the quality of life variables were significant.

**Measurement Model for Hypothesis 1b for Fathers**

Hypothesis 1b was tested for fathers as well. A second structural equation model (shown in Figure F.12) was generated to test the effect of objective stressors on stress appraisal for fathers. First, the measurement model was estimated to ensure satisfactory fit and to produce beta weights for the relationships between objective stressors with each of its indicators. Then, a structural model was estimated in order to understand the effect of objective stressors on stress appraisal.

The fathers' measurement model had excellent fit with Normed Fit Indices of 1.00 for both the measurement and structural models. The objective stressors latent variable had significant pathways with Inventory of Small Life Events ($\beta$ = .67, p<.05) and with the Coddington questionnaire [i.e. another measure of stressful life events ($\beta$ = .34, p<.05)]. The model estimated that the beta weight between objective stressors and stress appraisal was .54, p<.05. Approximately 29% of the variance in the stress appraisal latent variable was accounted for by the objective stressor latent variable. These results from the structural equation modeling support hypothesis 1b.

**Structural Model for Hypothesis 1b for Fathers**

However, a structural model could not be generated with the fathers' data to test the direct effects of objective stressors on the quality of life variables. Therefore, multiple regression analyses were used to estimate these effects.

**Multiple Regression Results**

*Summary Findings*

Multiple regression equations were used to test the direct relationship of the objective stressors variable, Inventory of Small Life Events (ISLE), with each of the quality of life dependent variables for fathers, as well as for mothers. A summary table of the results is shown below.

Table 4.5.  Summary of Significance Tests ($R^2$ values) for Objective Stressors Predicting Quality of Life

| Main Effects | Baseline Mothers | Fathers |
|---|---|---|
| Total Number of Tests | 10[Φ] | 9[Ψ] |
| Number Significant | 3 | 2 |
| Number sig. at p<.05 | 1 | |
| Number sig. at p<.01 | 2 | 2 |
| range[‡] | .02 to .03 | .03 to .06 |
| mean | .02 | .05 |
| median | .02 | .05 |

[Φ] Beck Depression Inventory did not converge to produce estimates.

[Ψ] Beck Depression Inventory & Global Affective Disorder did not converge to produce estimates.

[‡] Refers to $R^2$ values for Block 2, after Block 1 covariates have been entered.  Covariates include:ADHD Symptoms, Gender, Income, Opposition Defiant Disorder (ODD), White, Black, Hispanic, and ADHD Family Member, Treatment Group, and Baseline measures of Quality of Life indicators.

The table shows that very few of the block two $R^2$ values explained a significant amount of variance above and beyond that explained by the block 1 covariates.  The few that were significant were of very low magnitude (e.g. .03 to .06 for fathers and .02 to .03 for mothers).  These results indicate that objective stressors, as measured by the Inventory of Small Life Events, had very little direct impact on baseline measures of quality of life indicators.

In addition to testing these relationships with the baseline data, Table 4.6 presents results from the tests of the objective stressor variable on the 14 month quality of life variables.  Although this test was not specifically hypothesized by Hypothesis 1b, which pertained only to baseline data, this analysis was feasible and had the potential to explain

additional variance.  However, few of the tests produced significant $R^2$ values and those

that were generated were of low magnitude (e.g. .01 to .04).  Therefore, objective

stressors had very little direct influence on quality of life variables using 14 month data.

Table 4.6.  Summary of Significance Tests ($R^2$ values) for Objective Stressors Predicting

Quality of Life at 14 Months

| | 14 Months | |
|---|---|---|
| Main Effects | Mothers | Fathers |
| Total Number of Tests | 8[§] | 9[Ψ] |
| Number Significant | 1 | 3 |
| Number sig. at p<.05 | | 2 |
| Number sig. at p<.01 | 1 | 1 |
| range | .02 | .01 to .04 |
| mean | | .02 |
| median | | .02 |

[Φ] Beck Depression Inventory did not converge to produce estimates

[Ψ] Beck Depression Inventory & Global Affective Disorder did not converge to produce estimates

[§] Beck Depression Inventory, Global Affective Disorder, & Dyadic Adjustment Scale did not converge to produce estimates

[‡] Refers to $R^2$ values for Block 2, after Block 1 covariates have been entered.  Covariates include:ADHD Symptoms, Gender, Income, Opposition Defiant Disorder (ODD), White, Black, Hispanic, and ADHD Family Member, Treatment Group, and Baseline measures of Quality of Life indicators.

*Specific Findings by Variable*

At baseline, the Inventory of Small Life Events (ISLE) had a significant effect on

the Dyadic Adjustment Scale (DAS) for fathers ($\beta$ = -.25, p<.01) and on Quarrel for

mothers and fathers ($\beta$ = .18, p<.01).  At 14 months, the Inventory of Small Life Events

(ISLE) was significantly associated with Harsh Discipline for fathers ($\beta$ = .05, p<.01).

These results indicate that like baseline data, the 14-month data indicates significant, but

weak associations between objective stressors and quality of life indicators. There was

greater evidence for the indirect or mediated effects of objective stressors with quality of

life indicators through stress appraisal.

**4.3.3          Hypothesis 2**

**Multiple Regression Results**

*Summary Findings*

Hypothesis 2 tested the interaction effects of stress appraisal with social support,

adaptive coping, and maladaptive coping on quality of life indicators for mothers and

fathers at baseline. Of interest in testing hypothesis 2 is the significance of the $R^2$ value

of block 3, above and beyond the $R^2$ generated by blocks 1 and 2. Also of interest are the

individual beta weights for interaction terms in the regression analyses.

Tables 4.2 through 4.4 show $R^2$ values for the interaction terms that were entered

in the third block of the regression equations. Only one of the interaction blocks had a

significant $R^2$ value at the p<.05 level. The significant interaction that precipitated this

significant $R^2$ occurred for fathers at baseline in predicting their dyadic adjustment scale

(DAS) scores (e.g. Stress Appraisal x Denial $\beta$ = - 1.00, p<.01).

This significant interaction can be interpreted as the total effect of stress appraisal

on dyadic adjustment scale scores as a linear function of denial (Allison, 1999; Hair et al.,

1998). This effect is calculated by the following equation:


Total Effect of Stress Appraisal on DAS = $b_1$ + $b_3$ * Denial,

where $b_1$ is the unstandardized regression coefficient for Stress Appraisal, $b_3$ is the

unstandardized regression coefficient for the interaction of Stress Appraisal and Denial,

and Denial is the specific value of that variable, which ranges from 4 to 15 (see minimum

and maximum columns for Denial for fathers in Appendix A). Using this equation, the

total effect of Stress Appraisal on Dyadic Adjustment scores ranges from –1.45 when

denial is low to -5.74 when denial is high. This means that for those fathers who use very

little of denial, stress appraisal was associated with a 1.45 point decrease in dyadic

adjustment scores, while those fathers who used a great deal of denial, stress appraisal

nearly quadrupled its impact on dyadic adjustment scores with a 5.74 point decrease.

*Specific Findings by Variable*

Other interactions were of great magnitude, but only suggestive of significance

(e.g. for fathers, Stress Appraisal x Social Support for Emotional Reasons $\beta$ = - .95, p<.05

and Stress Appraisal x Mental Disengagement $\beta$ = .98, p<.05 were significantly

associated with Dyadic Adjustment Scale scores). Stress Appraisal x Active Coping

negatively predicted Global Affective Functioning (GAF) scores for mothers at baseline

($\beta$ = -1.00, p<.05). Although these interactions produced large beta weights, they did not

significantly raise the $R^2$ value for their blocks in the regression analyses.

However, the significant (p<.05) Stress Appraisal x Mental Disengagement

interaction term may have aided in producing a significant $R^2$ value for the maladaptive

coping interaction block that predicted Dyadic Adjustment Scale (DAS) scores for

fathers. This block was discussed above in the Multiple Regression: Summary Findings

section in reference to the significant (p<.01) Stress Appraisal x Denial interaction term.

Using the same interaction equation, the total effect of stress appraisal on DAS scores as

a linear function of mental disengagement was determined. The effect ranged from .39 for fathers who used little mental disengagement and nearly tripled to 1.16 for fathers who used a great deal of mental disengagement.

Like the summary tables, the specific findings by variable indicate limited support for the second hypothesis. Even though several variables produced beta weights of .95 or greater, these results should be considered with caution due to the large number of tests performed.

**4.3.4        Hypothesis 3**

**Multiple Regression Results**

*Summary Findings*

Hypothesis 3 tested the main effects for mothers and fathers at baseline of social support, adaptive coping, and maladaptive coping on the quality of life outcome variables at 14 months, while controlling for treatment group and baseline measures of quality of life measures. The 14-month analyses had substantially higher $R^2$ values compared to the baseline analyses. This phenomenon was most likely due to the 14-month equations including baseline covariates for the dependent variable. For example, for the Dyadaic Adjustment Scale (DAS) 14-month dependent variable, Table I.1.1 shows correlations between the baseline covariate Dyadic Adjustment Scale (DAS) with the 14 month dependent variable of DAS of .21 (p<.001) for mothers and .74 (p<.001) for fathers. This baseline covariate is responsible for the substantially greater $R^2$ values for 14-month analyses.

<u>Stress Appraisal</u>

The analysis of stress appraisal using the 14-month data was similar to its analysis strategy with the baseline data. Stress appraisal was entered jointly in block two of the regression analyses in 11 tests of social support, 11 tests of adaptive coping, and 11 tests of maladaptive coping. Six of these tests for mothers and six for fathers did not compile in SPSS, as noted in Table 4.6. None of the beta weights for fathers were significant, while a dozen of the betas for mothers were significant. Half of these were significant at p<.05 while the other half were significant at p<.01. Although significant, the beta weights were small to moderate. Overall, there was support for stress appraisal having a direct effect on the quality of life indicators at 14 months for mothers, but not for fathers.

Tabel 4.7. Summary of Beta Weights for Stress Appraisal Predicting Quality of Life at 14 Months

| | 14 Months | |
|---|---|---|
| <u>Main Effects</u> | <u>Mothers</u> | <u>Fathers</u> |
| Total Number of Tests | 27[§] | 27[Ψ] |
| Number Significant | 12 | 0 |
| Number sig. at p<.05 | 6 | |
| Number sig. at p<.01 | 6 | |
| range[‡] | -.15 to -.09 | |
| mean | -.12 | |
| median | -.13 | |

[§] Beck Depression Inventory, Global Affective Disorder, & Dyadic Adjustment Scale did not converge to produce estimates

[Ψ] Beck Depression Inventory & Global Affective Disorder did not converge in the social support, adaptive coping, and maladaptive coping tests to produce estimates

[‡] Refers to $R^2$ values for Block 2, after Block 1 covariates have been entered. Covariates include:ADHD Symptoms, Gender, Income, Opposition Defiant Disorder (ODD), White, Black, Hispanic, ADHD Family Member, Treatment Group, and baseline measures for Quality of Life indicators.

The two social support variables, social support number and social support satisfaction, were entered into block two for eleven regression analyses of quality of life indicator variables at 14 months.  A summary of the results are presented in Table 4.8. While none of the $R^2$ values reached significance for fathers, four $R^2$ values achieved significance for mothers, although the range indicates very low magnitude (e.g. .01 to .03).  Therefore, regression analyses suggest that social support played a very minimal role in predicting quality of life outcomes for mothers.

Table 4.8.  Summary of Significance Tests ($R^2$ values) for Social Support and Stress

Appraisal for Predicting Quality of Life at 14 Months

| | 14 Months | |
|---|---|---|
| Main Effects | Mothers | Fathers |
| Total Number of Tests | 10[Ψ] | 9[ΨΦ] |
| Number Significant | 4 | 0 |
| Number sig. at p<.05 | 2 | |
| Number sig. at p<.01 | 2 | |
| range[‡] | .01 to .03 | |
| mean | .02 | |
| median | .02 | |
| Interactions | | |
| Total Number of Tests | 10 | 9 |
| Number Significant | 0 | 1 |
| Number sig. at p<.05 | | 1 |
| Number sig. at p<.01 | | |
| range[‡] | | .02 |
| mean | | |
| median | | |

[Ψ] Global Affective Disorder was not collected at 14 Months.

[Φ] Beck Depression Inventory did not converge to produce estimates.

[‡] Refers to $R^2$ values for Block 2, after Block 1 covariates have been entered.  Covariates include:ADHD Symptoms, Gender, Income, Opposition Defiant Disorder (ODD), White, Black, Hispanic, ADHD Family Member, Treatment Group, and baseline measures for Quality of Life. indicators.

Adaptive Coping

In another set of eleven regression models, adaptive coping variables were entered

in block two.  A summary of the $R^2$ values is presented in Table 4.9.  Five of the

equations yielded significant increases in $R^2$ values for mothers with a mean of .03.  Only

one regression equation yielded a significant $R^2$ value for fathers with a larger estimate of

.09.  These multiple regression results suggest that adaptive coping may explain more

variance in the quality of life outcomes compared to the explanatory power of social

support.  However, the amount of explained variance is very low for mothers and more

substantial for fathers in only one equation.  Therefore, the effects of adaptive coping on

quality of life are still quite modest.

Table 4.9.  Summary of Significance Tests ($R^2$ values)for Adaptive Coping and Stress

Appraisal Predicting Quality of Life at 14 Months

| | 14 Months | |
|---|---|---|
| Main Effects | Mothers | Fathers |
| Total Number of Tests | $9^{\Psi\Phi}$ | $9^{\Psi\Phi}$ |
| Number Significant | 5 | 1 |
| Number sig. at p<.05 | 2 | |
| Number sig. at p<.01 | 3 | 1 |
| range[‡] | .03 to .04 | .09 |
| mean | .03 | |
| median | .03 | |
| Interactions | | |
| Total Number of Tests | $9^{\Psi\Phi}$ | $9^{\Psi\Phi}$ |
| Number Significant | 1 | 0 |
| Number sig. at p<.05 | 0 | |
| Number sig. at p<.01 | 1 | |
| range[‡] | .03 | |
| mean | | |
| median | | |

[Ψ] Global Affective Disorder was not collected at
14 Months.

[Φ] Beck Depression Inventory did not converge to
produce estimates.

[‡] Refers to $R^2$ values for Block 2, after Block 1
covariates have been entered.  Covariates
include:ADHD Symptoms, Gender, Income,
Opposition Defiant Disorder (ODD), White, Black,
Hispanic,  ADHD Family Member, Treatment
Group, and baseline measures for Quality of Life.
indicators.

<u>Maladaptive Coping</u>

In a third set of eleven regression models, maladaptive coping variables were entered in block two. A summary of the $R^2$ values is presented in Table 4.10. Five of the tests produced significant $R^2$ values for mothers, while four of the tests for fathers yielded significant $R^2$ values. The $R^2$ values for fathers were higher than those for mothers, but all were relatively small in magnitude. Therefore, maladaptive coping may explain more variance in quality of life indicators, compared to the amount explained by social support or adaptive coping, but the effects are still relatively modest.

Table 4.10.  Summary of Significance Tests ($R^2$ values) for Maladaptive Coping and

Stress Appraisal Predicting Quality of Life at 14 Months

| | 14 Months | |
|---|---|---|
| Main Effects | Mothers | Fathers |
| Total Number of Tests | $8^{\S\Phi\Psi}$ | $9^{\Phi\Psi}$ |
| Number Significant | 5 | 4 |
| Number sig. at p<.05 | 3 | 2 |
| Number sig. at p<.01 | 2 | 2 |
| range[‡] | .02 to .03 | .04 to .06 |
| mean | .02 | .05 |
| median | .02 | .04 |
| Interactions | | |
| Total Number of Tests | $8^{\S\Phi\Psi}$ | $9^{\Phi\Psi}$ |
| Number Significant | 1 | 2 |
| Number sig. at p<.05 | | 1 |
| Number sig. at p<.01 | 1 | 1 |
| range[‡] | .04 | .04 to .06 |
| mean | | .05 |
| median | | .05 |

[§]Dyadic Adjustment Scale did not converge to produce estimates.

[Φ] Beck Depression Inventory did not converge to produce estimates.

[Ψ] Global Affective Disorder was not collected at 14 Months.


[‡] Refers to $R^2$ values for Block 2, after Block 1 covariates have been entered.  Covariates include:ADHD Symptoms, Gender, Income, Opposition Defiant Disorder (ODD), White, Black, Hispanic,  ADHD Family Member, Treatment Group, and baseline measures for Quality of Life. indicators.

*Specific Findings by Variable*

For fathers, humor was positively associated with involvement ($\beta$ = .14, p<.01;

see Table I.3.2), positive parenting ($\beta$ = .19, p<.01; see Table I.3.3), pro-social scores ($\beta$

= .16, p<.01; see Table I.3.5), and praise ($\beta$ = .16, p<.01; see Table I.3.6).  Instrumental

support was negatively associated with quarreling for fathers ($\beta$ = -.22, p<.01; see Table

I.2.9). For mothers and fathers, both at baseline and at 14 months, satisfaction with available social support was negatively associated with depression scores (see Table I.1.10). For fathers, ADHD symptoms of the child were negatively associated with praise across all three moderator domains ($\beta$ = -.16, p<.01; see Tables I.1.6, I.2.6, and I.3.6 in Appendix I).

While the results of the summary tables indicated $R^2$ values of small magnitude, the individual beta weights ranged in absolute value from .14 to .22, indicating greater support for the hypothesis, even after controlling for treatment group and baseline measures of the quality of life variables. Therefore, these results suggest limited support for hypothesis 3.

### 4.3.5 Hypothesis 4

Hypothesis 4 focused on the moderating or interaction effects of stress appraisal with social support, adaptive coping strategies, and maladaptive coping strategies in predicting 14 month outcome scores, while controlling for treatment group and baseline measures of the quality of life variables. As in testing hypothesis 2, or the interaction effects at baseline, three separate sets of analyses were conducted for each of the three groups of moderating variables: social support, adaptive coping, and maladaptive coping. In the first set of analyses, stress appraisal was entered with social support variables. Their interaction terms, Stress Appraisal x Social Support Number and Stress Appraisal x Social Support Satisfaction, were added to the model in block 3. Of interest in testing hypothesis 4 is the significance of the $R^2$ value of block 3, above and beyond the $R^2$ generated by blocks 1 and 2. Also of interest are the individual beta weights for interaction terms in the regression analyses.

**Multiple Regression Results**

*Summary Findings*

Tables 4.8, 4.9, and 4.10 show the summary results for the blocks of interaction terms entered in the regression analyses. One $R^2$ value in the social support block was significant for fathers at the p<.05 level, most likely due to a significant stress appraisal x social support satisfaction interaction term in predicting DAS scores, while one $R^2$ value in the positive coping block was significant at p<.01 for mothers, due to the significant stress appraisal x seeking social support for emotional reasons interaction term that predicted pro-social scores. Finally, two $R^2$ values were significant for fathers in the maladaptive coping block, both of which were predicting harsh discipline scores. One significant $R^2$ value was at the p<.05 level, due to the significant stress appraisal x behavioral disengagement interaction, and another at the p<.01 level, due to a significant stress appraisal x mental disengagement interaction term. The $R^2$ values analysis suggests significant, yet limited support for hypothesis 4. The interaction terms were significantly associated with quality of life variables, which supports the supposition that the relationship between stress appraisal and quality of life variables is moderated by social support, adaptive coping, and maladaptive coping.

*Specific Findings by Variable*

Although the longitudinal data produced many more significant interaction terms compared to the baseline data, many of these interactions were of marginal significance (i.e. p<.05) or they were not associated with a block that significantly increased the $R^2$ values for the equation. Only those interaction terms significant at the p<.05 or p<.01 levels that were associated with a significant $R^2$ value for their block will be discussed.

Positive Parent/Child Relationship

The Stress Appraisal x Denial interaction for mothers was positively associated with involvement at 14 months ($\beta = .65$, p<.01; see Table H.3.2). The interaction equation from hypothesis 2 produced an estimate near zero (i.e. -.004) for the effect of stress appraisal on positive parenting scores, as a linear function of denial for mothers with low denial scores. Mothers with high denial scores, however, produced a total effect of stress appraisal on positive parenting of .44. As denial increases, positive parenting scores also increase.

For mothers, the Stress Appraisal x Seeking Social Support for Emotional Reasons interaction was negatively associated with pro-social scores ($\beta = - .81$, p<.01; see Table H.2.5). Using the interaction equation discussed in hypothesis 2, the total effect of stress appraisal on pro-social scores for mothers at 14 months, as a linear function of seeking social support for emotional reasons more than doubled in its effect between mothers who reported minimal seeking compared with those who indicated a great deal of seeking. Mothers who reported minimal seeking of social support for emotional reasons decreased their pro-social scores by .009 of a unit, while mothers who reported the maximum seeking decreased .021 of a unit on their pro-social scores.

Negative Parent/Child Relationship

Among fathers, Stress Appraisal x Behavioral disengagement negatively predicted harsh discipline ($\beta = -.95$, p<.05; see Table H.3.7), while Stress Appraisal x Mental Disengagement positively predicted harsh discipline scores ($\beta = 1.51$, p<.001; see Table H.3.7). Both of these interaction terms led to the significant $R^2$ increase for this block, though the latter may have had more influence since its beta weight was larger.

The total effect of stress appraisal on harsh discipline, as a linear function of mental disengagement was .07 for those fathers who reported minimal mental disengagement and .12 for those fathers reporting greater mental disengagement.

The total effect of stress appraisal on harsh discipline, as a linear function of behavioral disengagement was -.15 for fathers reporting minimal behavioral disengagement and -.42 for fathers indicating greater behavioral disengagement. This means that fathers in the latter category experience a decrease in harsh discipline scores at three times the rate of the decrease for fathers in the former category. Therefore, stress appraisal x behavioral disengagement was associated with lower harsh discipline scores.

*Conclusions*

Overall, many more of the beta weights for the interaction terms were significantly associated with 14 month quality of life outcomes compared to the analyses for hypothesis 2 using baseline quality of life measures. Although the summary $R^2$ values tables (Tables 4.8, 4.9, and 4.10) offer limited support, the analyses of individual beta weights within the regression analyses provide greater support for hypothesis four (i.e. the relationship between stress appraisal and quality of life is moderated by social support, adaptive coping, and maladaptive coping).

DISCUSSION

## 5.1     Overview

All of the hypotheses were supported to varying degrees by the analyses.

Hypothesis 1, or the proposition that stress appraisal, social support, adaptive coping, and

maladaptive coping had direct effects on the quality of life outcomes, was greatly

supported with significant $R^2$ values and beta weights for individual variables.

There was mixed support for Hypothesis 1b, which added objective stressors to

the model.  The purpose of Hypothesis 1b was to test both the direct effects of objective

stressors on the quality of life outcomes, as well as its indirect effects through stress

appraisal.  The structural equation models which tested these relationships for mothers

yielded significant beta weights of moderately high magnitude.  The structural model

testing the effect of objective stressors on stress appraisal for fathers also produced

moderately high beta weights.  But the analyses conducted with multiple regressions for

mothers and fathers testing these relationships yielded much more modest, yet significant

relationships.  These differences in the magnitudes of the beta weights are most likely

due to statistical differences between the two methods.  Structural equation modeling

may better estimate the true (i.e. greater) association between two variables, while

multiple regression may underestimate this relationship, due to measurement error.

The analyses provided only limited support for Hypothesis 2, which proposed that

the relationship between stress appraisal and quality of life would be moderated by social

support, adaptive coping, and maladaptive coping.  Very few of the $R^2$ values or beta

weights were significant from the regression analyses.

There was moderate support for Hypothesis 3, which proposed that baseline measures of the main effects (i.e. stress appraisal, social support, adaptive coping, and maladaptive coping) would be associated with 14 month quality of life outcomes. Significant $R^2$ values and beta weights provided some support for Hypothesis 3.

Finally, there was some support for Hypothesis 4, which proposed that the relationship between stress appraisal and quality of life would be moderated by social support, adaptive coping, and maladaptive coping over time. While there were few significant $R^2$ values, there were more beta weights that achieved significance in these analyses than in those conducted to test Hypothesis 2.

## 5.2    Hypothesis 1

Hypothesis 1 focused on the main effects of social support, adaptive coping, and maladaptive coping, on quality of life variables. These analyses included structural equation modeling for mothers and multiple regression analyses for both mothers and fathers.

**Structural Equation Modeling Results**

In the structural equation modeling analysis with the mothers' data for testing hypothesis 1, the quality of life latent variables, including positive parent/child relationship, negative parent/child relationship, and psychological functioning, explained their indicator variables extremely well, while other latent variables were explained poorly (e.g. adaptive coping, maladaptive coping, and social support). These differences could indicate the variables that were more salient or important in the mothers' coping behaviors. For example, all of the indicators for positive parent/child relationship were significant, indicating that this latent variable was an extremely important dimension for

mothers. Adaptive coping, which was renamed lack of adaptive coping, only had three significant indicators: restraint, reinterpretation, and humor. These findings indicate that a lack of restraint is an important coping mechanism used by many of the mothers. This coping mechanism, as shown in Figure F.11, leads to worse quality of life outcomes, such as decreased positive parent/child relationships, increased negative parent/child relationships, and decreased psychological functioning. Therefore, the measurement model statistically selected the coping strategies on which parenting programs for mothers should focus. These foci include increasing mothers' use of restraint, increasing reinterpretation or viewing the problem in an optimistic light, and decreasing the use of humor. By finding the other adaptive coping strategies such as active coping or planning non-significant, these strategies decrease in importance for parent programs. By the same token, mental engagement (i.e. the opposite of mental disengagement) was linked with positive quality of life outcomes. Therefore, parent programs should seek to enhance mental engagement among mothers. Parenting programs could help mothers plan activities with their children, in which the mothers are engaging socially with their children. Also, program facilitators could solicit suggestions from the group to discuss what activities other parents have successfully done with their children. These parents' stories could serve as models for other parents who are still struggling to engage meaningfully with their children.

Social support in the SEM analysis for women significantly predicted a positive spouse relationship. Support in this model was measured by satisfaction with supportive others. It is unclear on whom the mothers relied for their primary supportive others. The supportive others could be the spouses, which would mean the relationship between

social support satisfaction and positive spouse relationship would be bidirectional. The social support could also be provided by close friends or family members. This support in turn could positively affect the spouse relationship. Future research should focus on who is providing the social support and the mechanism by which this support enhances spouse relationships. The Sarason Social Support Inventory used in this study may not have been a sufficiently sensitive measure of social support. In future research, the Interview Schedule for Social Interaction (Henderson, Duncan-Jones, Burne, & Scott, 1980) should be used, which is more in-depth and elicits a list of people in the respondent's network of supportive others. Using this questionnaire would require more time, but would help to clarify who is providing the support. As for determining how this social support is used to enhance a spouse relationship, in-depth interviews might be necessary to understand this process. For example, mothers may have close friends or family members with whom they vent frustrations or problem-solve interpersonal conflicts with their spouses. After these episodes, mothers may return to their relationships renewed or feeling better about themselves and their spouses.

**Multiple Regression Results**

Results from the multiple regression analyses included finding significant covariates such as ADHD symptom severity, gender, income, diagnosis of Oppositional Defiant Disorder (ODD), ethnicity, and having a family member with ADHD. These variables were included because they were either mentioned in previous research studies as important covariates (e.g. ADHD symptom severity in Cunningham et al., 1988; gender in Breen & Barkely, 1988; Oppositional Defiant Disorder, Johnston, 1996;

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income in Biederman, 2001) or they were implied by the literature (e.g. having a family member with ADHD would increase stress in the household).

As Biederman (2001) pointed out, context is extremely important to consider when analyzing data from ADHD children and their families. In particular, environmental adversities such as low socio-economic status or crowded housing, can lead to greater household conflict, which can in turn exacerbate ADHD symptoms. The incomes of the participants in the MTA sample were very diverse, from less than $10,000 (9% of the sample) to more than $75,000 per year (13.9% of the sample). Income appeared to be the most prevalent significant predictor, in that there were worse outcomes for lower income families. This suggests that families with ADHD children may be in need of additional social services above and beyond basic psychosocial interventions. These families may need help finding subsidized housing, obtaining food stamps, and enrolling in other programs for low-income populations. Greater overall stress could lead to more negative attitudes toward their ADHD children, which Woodward et al. (1998) found led to more physical punishment and using fewer positive incentives for good behavior. Lessening these outside stresses for parents however, could lead to better overall functioning, which could lead to more positive parenting behaviors. For example, Lange et al. (2005) speculate that less stress could lead to more tolerant parenting styles, which could alleviate, rather than exacerbate children's ADHD symptoms. Therefore, it is evident from the previous literature that environmental stresses, such as having lower income, could increase parental stress levels, which in turn could decrease their positive parenting behaviors and lead to worsening of ADHD symptoms for their children.

Future research should elucidate the linkage between ADHD symptoms and income. It is possible that there could be a significant interaction between income and symptoms, such that lower income families, who are highly stressed by environmental factors, could view their children's ADHD symptoms as more severe than those families with higher incomes that reduce outside stressors.

Gender was also a significant predictor for several variables, particularly with parents of boys reporting greater harsh (e.g. Table I.1.7, $\beta = -.17$, p<.01 for fathers) and appropriate discipline scores (e.g. Table H.2.8 and Table H.3.8, $\beta = -.14$, p<.01 for mothers and $\beta = -.12$, p<.05 for fathers). These findings support previous studies that found that boys tended to be more hyperactive while girls tended to be more inattentive (Silver, 2004). Perhaps the hyperactive boys were more difficult to manage and appeared to require more discipline than the inattentive girls. Previous studies have found mixed results with regards to boys and girls causing differing amounts of stress for mothers. One study found a significant relationship between ADHD boys and maternal stress (Mash & Johnston, 1983), while another study found no evidence of a differential effect of gender on stress (Breen & Barkley, 1988). These results suggest that parents with ADHD sons may feel more stressed and may believe they need to use more discipline and harsher discipline in order to make their sons behave. Future research should study the connection between boys and hyperactivity. Specifically, a possible interaction should be explored between ADHD symptoms and gender, such that hyperactive boys are more problematic for parents than hyperactive girls.

As discussed previously in this section, stress may be associated with decreased tolerance for ADHD symptoms and increased punishment and reprimands. Due to the

connections between stress and punishment, parents of sons in this study may need stress

reduction programs even more than parents who have daughters with ADHD.  The

former may need extra help coping with their sons' hyperactivity and may need to

develop parenting skills specifically for hyperactive children.  Separate parenting

programs should be held that focus on parenting hyperactive children.  The Children and

Adults with Attention Deficit/Hyperactivity Disorder (CHADD) organization has a

website (http://www.help4adhd.org/en/treatment/behavioral/wwk7.pdf) with

recommendations for parents of ADHD children.  The authors recommend using the

ABC's, which stand for antecedent, behavior, and consequences.  They write that in order

to change the child's behavior, parents should modify the antecedents that occur prior to

and the consequences that follow the behavior they wish to alter.  They admonish parents

to set small goals, be consistent, sustain the behavioral interventions, and expect gradual

improvement.  Recommendations also include establishing structure in the household,

using praise or positive reinforcement, and using appropriate commands.  Although there

are many books on this subject, these behavior modification techniques can be difficult to

implement.  Parents should also consider enrolling in a parenting program.  Model

programs include The Incredible Years and Triple P: Positive Parenting Program.

Surprisingly, the current investigation did not find that Oppositional Defiant

Disorder (ODD) was a significant predictor of parental quality of life indicators in the

multiple regression analyses.  This lack of a significant relationship does not support one

study (Johnston, 1996) that found that ODD was significantly associated with stress and

parent/child conflict.  Perhaps in the NIMH study, the severe ODD children were self-

selected out of the study.  These children might have been so defiant that parents could

not bring them to the clinics to participate in the research. Children in the Johnston study may have had more ODD symptoms that were of greater severity, which could have had a greater impact on parental outcomes. This severity of ODD symptoms may not have been present in the NIMH sample. Although ODD was not a significant variable in this analysis, parent programs should still consider this segment of the population of parents with children who have a diagnosis of both ADHD and ODD. These parents, like those for the hyperactive boys, may be in greater need for parenting help than the parents of other children with ADHD. According to the CHADD website (http://www.hlp4adhd.org/documents/wwk5b3.pdf), parent training has been shown to be effective for treating children with ODD. Parenting strategies include positive attending, ignoring, using rewards and punishment effectively, using token rewards, and using time outs. Parents and children can also enroll in programs that teach parent-child interaction therapy, which teaches parents how to strengthen their relationship with their ADHD child and to learn behavior management strategies. There are programs for Collaborative Problem Solving, which teaches children how to handle frustration and learn to adapt better to their environment. This program also teaches parents and children to resolve disputes with less conflict. In addition, the CHADD website advises parents to consider family therapy since parents of ADHD children may have marital difficulties, siblings may have behavior problems, and mothers may suffer from depression.

Stress appraisal was the strongest and most consistent predictor of quality of life outcome variables for both mothers and fathers. This was not surprising since previous researchers have found significant effects of stress on quality of life outcomes, such as parenting satisfaction (Lange et al., 2005) and psychological functioning (Lange et al.,

2005; Woodward et al., 1998; Podolski & Nigg, 2001; Cunningham et al., 1988; Fischer, 1990). By finding that stress appraisal was a consistent predictor of quality of life, the current analysis adds to the literature supporting Lazarus' theory of primary appraisal. This study underscores the notion that it is not necessarily the objective stressors themselves, but the ways in which people perceive the stress in their lives that impacts their social and emotional functioning.

People with high scores on stress appraisal tended to have worse quality of life outcomes. Therefore, it is vital that future parent programs focus on reducing perceived stress in parents' lives. Many intervention strategies are currently available for reducing stress, such as progressive muscle relaxation, biofeedback, and cognitive restructuring (Sarafino, 2002). Progressive muscle relaxation focuses on tightening and releasing specific muscle groups. Biofeedback allows individuals to monitor their stress reactions, such as heart rate or muscle tension, and teaches them how to gain control over these physiological processes. Cognitive restructuring focuses on reducing the individual's stress-inducing thoughts with more realistic ones that reduce the person's negative stress appraisals or cognitions.

Future research should focus on whether parents of ADHD children perceive stress differently from the general population. For example, do these parents tend to over-react to small everyday stressors, or do they tend to deny large stressors until they explode with rage? Understanding the way in which these parents tend to process stress could lead to designing more effective interventions. For example, cognitive therapy can help parents more objectively assess the weight or importance of a stressor. Talking or

writing about stressors on a daily basis may help parents to alleviate the strain from the build up of stressful events, rather than ignoring them.

Similar to the stress appraisal predictor was the ADHD symptoms variable that was entered on the first step of the multiple regression analyses as a covariate. Symptoms were positively associated with outcomes within the negative parent/child relationship factor as well as with depression. These findings support previous conclusions that symptoms strain the relationship between parents and children (Fischer, 1990). Therefore, in order to improve quality of life outcomes for parents, parent-child relationships could be improved by reducing ADHD symptoms. Symptom reduction can be achieved through a variety of methods, such as stimulant medication, psychotherapy, family therapy, parent training, and educational interventions (Silver, 2004). ADHD symptoms were no longer a significant predictor in hypothesis 4 tests using the longitudinal data, which also included treatment group as a covariate. Perhaps controlling for treatment group eliminated the significant association between symptoms and quality of life because children within each treatment group did not differ significantly in terms of symptom ratings. This might imply that having children taking effective medication and participating in psychotherapy could greatly improve parents' quality of life.

To implement this finding, parent intervention programs could influence children's ADHD symptoms by giving parents information on recommended doctors and encouraging them to consider medication and psychotherapy for their children. Other parents could share their stories regarding medications that did or did not work for their children and the results of the medications, including both the intended effects as well as

the side effects.  The programs could teach parents what to expect and how to respond so that the symptoms are more understandable, more manageable, and less mysterious or unexpected.

From conducting the multiple regression analyses, both the number of supportive others and the amount of satisfaction gained from these others were associated with the quality of life outcome variables as expected.  The importance of social support predictors was reinforced by the highly significant $R^2$ values, accounting for 3% to 24% of the variance in outcome variables over and above the variance explained by the covariates.

These findings suggest that fostering and developing relationships among parents of ADHD children is another vital ingredient of successful interventions.  Maes and Boersma (2004) review the literature on effective psychosocial interventions that include social support components.  One study with metastatic breast cancer patients found that weekly group meetings focused on problems that the patients experienced and on ways to improve their social relationships was beneficial (Spiegel, Bloom, Kraemer, & Gottheil, 1989)  Another intervention with melanoma patients found evidence that attendance at six weekly 90 minute sessions that included group discussion and informational support such as education, stress management, and coping skills, was associated with better psychosocial outcomes compared to the control group (Fawzy et al., 1993).

Other interventions focused on combined approaches with social support as one component of a comprehensive program.  For example, one study with HIV-positive gay men used cognitive-behavioral stress management in a weekly relaxation training meeting (Lutgendorf, Antoni, Schneiderman, Ironson, & Fletcher, 1995).  The men were

taught how to recognize their own cognitive distortions and how to replace them with more realistic beliefs. Maladaptive coping strategies such as substance abuse and denial were described and more problem-focused strategies were taught. The final component focused on social support through group interaction, identifying possible sources of social support, and recognizing potential problems with support systems.

The intervention program for parents with children diagnosed with ADHD could include both didactic components on ways to reduce perceived stress, as well as a social support component, whereby participants could converse informally and expand and/or deepen their social networks. The program components could be adapted from published psychosocial interventions, discussed previously, that have been beneficial for various groups of people, such as the cancer patients or HIV-positive gay men. It is also evident from these studies that the proposed intervention should be multi-faceted to be as effective as possible. At the very least, the program should address stress appraisal and social support, since these were the strongest variables associated with quality of life outcomes for mothers in the structural equation modeling. However, coping skills should also be considered in the program as an important mix of psychosocial variables.

Several adaptive coping variables significantly predicted quality of life outcomes in expected ways. Restraint, suppression, and reinterpretation were mentioned by mothers and fathers. As defined by the questionnaire items in Carver's COPE scale, restraint refers to waiting for the right moment to act, while suppression of competing activities refers to focusing on the problem at hand and putting aside other distracting issues. Reinterpretation refers to finding a silver lining in a stressful situation or finding something positive or learning form the experience. These findings support previous

research (Carver et al., 1989; Vollrath, 1994; Billings & Moos, 1981; Carver & Scheier, 1994) that found that these variables, as adaptive coping strategies, were associated with more positive and fewer negative outcomes.

Specifically within the adaptive coping realm, restraint was negatively predictive of appropriate discipline and quarreling. This means that parents who reported using restraint as an adaptive coping strategy refrained from punishing or arguing with their ADHD children. Perhaps they considered the source of the misbehavior as the disorder and not the children themselves.

This finding of restraint leading to fewer episodes of harsh discipline could be an added teaching point for a parent interventions and future research. Health educators facilitating the intervention could elicit stories from parents who use restraint coping as a way to reduce quarreling and the use of reprimands. Parents could share their thought processes, especially concerning how they controlled their anger and frustration. They could also describe the specific circumstances surrounding the event to provide a model for other parents who are faced with similar situations. Future research on restraint coping could explore the personality characteristics of parents who use restraint coping as well as how to teach people the mechanics of using this type of adaptive coping strategy.

As expected, maladaptive coping strategies, especially behavioral disengagement, were significantly negatively associated with quality of life indicators in the multiple regression analyses. Using drugs or alcohol and mental disengagement were negative predictors for mothers. It is surprising that the drugs/alcohol predictor was significant for women. Cunningham et al. (1988) reported in their study of parents of ADHD children that fathers were more likely than the mothers to use alcohol as a coping strategy. This

may also be the case in the NIMH study that fathers used alcohol and drugs more often than mothers, but when mothers did use alcohol or drugs, their use may have had a greater negative affect on their quality of life. Perhaps the use of alcohol or drugs by mothers illustrates greater coping difficulties, which are associated with worse quality of life outcomes.

It is not surprising however, that mental disengagement was significantly associated with lower Global Affective Functioning (GAF) scores for mothers, since this finding supports previous research that found a significant association between depression and avoidant coping (McKee et al., 2004). Mental disengagement, as defined by the COPE questionnaire, is daydreaming, watching TV, or using other activities such as work to forget about the troubling stressor. These activities are examples of avoidant coping. Therefore, since avoidant coping has been associated with depression, it is logical that mental disengagement would be associated with lower Global Affective Functioning (GAF) scores which indicate greater depression or worse affective functioning.

A number of unexpected findings within the coping domains emerged for fathers. For example, greater denial (as defined by the COPE questionnaire, denial was refusing to believe anything had happened or acting as though nothing had happened) was associated with higher pro-social scores (i.e. defined as talking about the next day's plans with your child, knowing who your child is spending time with, or doing nice things for each other), while acceptance (defined as understanding the reality of the situation and that it cannot be changed as well as learning to live with the situation) was negatively associated with involvement, positive parenting, and affection. In this investigation,

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denial for fathers, appears became an adaptive coping strategy, while acceptance became a maladaptive strategy. Perhaps fathers could feel more connected to their ADHD children if they denied that there was anything clinically wrong with their children. Assuming that their child was 'normal' led to better relationships. On the other hand, fathers who accepted their child's 'fate' distanced themselves more, spent less time and effort on connecting and socializing with the child. These findings echo the sentiments of Carver et al. (1989) in their development of the COPE scale when they explained that any coping strategy can be considered adaptive or maladaptive, depending on the environment and the way in which it is used. In this study, denial was used in an adaptive way, facilitating greater connections between parents and children, while acceptance led to distancing and aloof behaviors, perhaps indicating that acceptance was a sign of the fathers' failure to help their children.

Behavioral disengagement was significantly associated with poorer quality of life outcomes for fathers. Health promotion efforts could address how to reduce behavioral disengagement strategies, specifically counteracting the 'giving up' attitude described in the COPE questionnaire items. Martin Seligman (1975) calls this phenomenon 'learned helplessness.' He writes that learned helplessness results when events are perceived as uncontrollable. It decreases one's motivation to respond, disrupts one's ability to learn, and produces emotional problems. From animal studies, Seligman found that 'directive therapy' was necessary in order to overcome the learned helplessness. This meant that Seligman forced the animals to act to avoid or resolve the trauma. Overcoming the helplessness required a great deal of practice. The other way Seligman found to

overcome learned helplessness was through immunization or the experience of having controllability over the trauma, even if the control was only for a brief time.

The theory of learned helplessness indicates that the longer a father feels powerless in aiding or shaping their ADHD child, the less likely he will try to alleviate the situation. So, research should test whether fathers of long-time diagnosed ADHD children or children who have exhibited ADHD symptoms for a long time, display more 'learned helplessness' attitudes and behaviors than fathers of newly diagnosed ADHD children. In addition to understanding the etiology of learned helplessness in fathers of ADHD children, researchers should focus on how to remedy this feeling of powerlessness. Seligman recommended immunization, or inoculation against feelings of learned helplessness. However, immunization is probably less likely to be successful, since diagnosis most likely would occur after extensive behavioral problems. Seligman found evidence in his animal studies that the concept of directive therapy was an effective remedy. This finding could be translated into interventions with fathers of ADHD children. One example of testing a directive therapy technique is having a child behavior expert monitor and provide constructive feedback on positive parenting practices for fathers in their homes.

## 5.3    Hypothesis 1b

The focus of Hypothesis 1b was the objective stressor latent variable causing the stress appraisal latent variable. Results generated from the structural equation model with mothers' data included estimations of both the direct and indirect effects of objective stressors on each of the quality of life variables. The structural equation model for fathers only estimated the direct effect of objective stressors on stress appraisal.

In the structural equation model for mothers, objective stressors had significant direct effects on positive spouse relationship, negative parent/child relationship, and psychological functioning. Stressors also had significant indirect effects, mediated by stressor appraisal, on all of these factors as well as the last factor, positive parent/child relationship. Since there was evidence of both direct and indirect effects, the results generated mixed support for Lazarus' stress appraisal model (Lazarus & Folkman, 1984), which stipulates that objective stressors must be appraised as stressful (primary appraisal) before they have an effect on outcomes (i.e. there would be no direct effects between objective stressors and quality of life). The current study found strong beta weights with the mothers' data for both direct and indirect effects of objective stressors on quality of life latent variables. Therefore, Lazarus' model did not hold true for this sample of mothers.

However, the results from the multiple regression analyses for both mothers and fathers provided greater support for Lazarus' model. The stress appraisal variable had a much greater association with the quality of life variables than did the objective stressor variable. Since these were tests for both mothers and fathers, the results overwhelmingly favor Lazarus' model. This means that primary appraisal was a vital component in the stress and coping process for the mothers and fathers in this sample. It was not the objective stressors per se, but the way in which people perceived those stressors that impacted their relationships and their psychological functioning.

Similar effects were found for fathers, where there was a significant effect of objective stressors on stress appraisal in a structural equation model (see Figure E.7 in Appendix E). From multiple regression analyses, fathers also had significant associations

between stress appraisal and the quality of life outcome variables, although far fewer than the number for mothers in the structural equation modeling.  These findings, like the results for the mothers, also provided mixed support for the appraisal model, since both direct and indirect effects for stressors on quality of life outcomes were significant.

Very few of the R-square values were significant for the addition of objective stressors to explain variance after controlling for all of the covariates.  The R-square values that were significant were only at $p<.05$, which could have been due to chance, considering the great number of tests conducted.  This finding provides additional support for Lazarus' model, which stipulates that it is the perception of stress (i.e. stress appraisal) rather than the objective events that impacts coping outcomes.  Since R-square values changed very little with the addition of the objective stressors variable, this component contributed little to the overall model.  However, stress appraisal contributed a great deal to the multiple regression analyses, since this variable was often significant in analyses.  Finding that stress appraisal was a stronger predictor, compared to objective stressor, provides additional evidence for supporting Lazarus' model.

## 5.4    Hypothesis 2

The purpose of the second hypothesis was to test the interaction effects of stress appraisal with social support, adaptive coping, and maladaptive coping, in predicting quality of life outcome measures.  This hypothesis was adapted from the Moos model (2002) that specified interactions between stressful life circumstances with social support, and between cognitive appraisal and coping resources.  This model also took into consideration the ideas of Lazarus' model of primary appraisal (Lazarus & Folkman, 1984) and Ogden's (2000) model of coping with cancer.

Few of the many interaction tests were significant. Some of the coefficients were of moderate to large magnitude (e.g. betas were at or above -.5) but the p-values never achieved significance beyond the p<.05 level. This may have been due to large standard errors for these variables, or it may have been due to entering the interaction terms into the multiple regression models in blocks after entering the main effects in a previous block. According to Allison (1999), interaction effects are only interpretable when main effects are in the model. Therefore, interaction effects could not be entered in an earlier block. Also problematic to testing this hypothesis was the substantial overlap in explained variance between the main effects and their associated interaction terms. This meant that if these two blocks were entered into the model simultaneously, multicollinearity problems would render the coefficients uninterpretable. Structural equation modeling would have been the best way to test this hypothesis, but the interaction terms made the model too complex and the sample size insufficient to conduct the analyses. Therefore, there is limited support from the multiple regression analyses with this sample for the supposition that social support, adaptive coping, and maladaptive coping moderate the effects of stress appraisal on quality of life outcome measures.

Future research should obtain a larger sample so that the sample size is conducive to structural equation modeling (SEM) latent variable analysis techniques that include interaction factors. Using SEM means that interactions are given equal footing with main effects terms in explaining variance in the dependent variables. This is in contrast to using multiple regression, where the interactions must be entered after the main effects have explained as much variance as possible, leaving little unique variance for the interaction terms. Until a sample is collected that is large enough for SEM analyses,

comparing the main effects with the moderated effects hypotheses will not be conducted
at a level rigorous enough to support more than tentative conclusions.

**5.5     Hypothesis 3**

The analyses for this hypothesis tested the associations between baseline
measures of the main effects with 14 month measures of the quality of life outcome
variables.  The purpose of these analyses was to accumulate support for a temporal or
causative relationship between the main effects and the outcomes.

Humor was consistently associated with four of the five positive parent/child
relationship outcomes for fathers.  Contrary to the results of the earlier principal
components analyses, humor appears to have switched from a maladaptive to an adaptive
coping strategy for fathers.  Having longitudinal data supports the conclusion that humor
precedes positive parenting outcomes for fathers.

Further research should be conducted to understand specifically how humor
impacts these positive outcomes for fathers.  Humor can have different connotations and
uses.  It would be interesting to determine the tone and the purpose of humor as an
adaptive coping strategy, as intended by the COPE questionnaire, compared to its use as a
maladaptive strategy, as suggested by the principal components analyses.  It is surprising
that a particular strategy could be used as both adaptive and maladaptive in the same
sample of fathers.  Only after these meanings are teased out in future research could
parent programs consider including the use of humor as an adaptive coping strategy.

**5.6            Hypothesis 4**

Analyses for Hypothesis 4 focused on testing the effects of the interactions with
the 14-month longitudinal data.  Substantially more interactions were significant at the

p<.01 level in the longitudinal data than in the baseline data. However, relatively few of these significant interactions caused significant increases in their associated $R^2$ values (see Tables H.1.1 through H.1.3). This means that the increases, while significant, were not large enough to increase the overall amount of variance explained by the addition of the block of interaction terms in the multiple regression analyses. This suggests that these significant beta weights were relatively small in magnitude.

The significant interaction terms tended to be dispersed among all of the outcome variables, but some patterns emerged. The Stress Appraisal x Denial interaction was positively associated with involvement and positive parenting for mothers. This finding suggests that mothers under higher stress who use denial interact better with their ADHD children. Also, Stress Appraisal x Restraint was negatively predictive of harsh discipline and appropriate discipline. That is, mothers with higher stress appraisal who coped by using more restraint, tended to use less reprimands and discipline practices on their children. This means that mothers who use restraint, even under conditions of greater stress, would be more likely to control their anger and emotions. They would more likely use more positive parenting practices, rather than using physical discipline. According to Beiderman (2001), who discusses the reciprocal influence between parent and child in alleviating or exacerbating the child's ADHD symptoms, more positive parenting practices should lead to a reduction in ADHD symptoms. This reduction may then lead to an improved quality of life for parents.

Greater numbers of significant interaction terms at the 14-month time interval were surprising and indicated more support for a moderating relationship between stress appraisal and quality of life outcomes. Considering that matching was used to pair

mothers at time one and time two, the dataset at 14 months was smaller and would have provided less power to find significant results. Since many interactions achieved significance in this dataset compared to the baseline dataset, the effect sizes for these interactions must be substantially larger than the effect sizes associated with the interactions in the baseline data. This finding suggests that the longitudinal data was a better test of the moderating hypothesis. Time could be the important factor that is lacking in the baseline dataset. It takes time to gather supportive persons into one's network and deepen those connections so that number of supportive others and satisfaction with that available support can have enough time to work as a buffer against poor quality of life outcomes. Therefore, time needs to have passed before effects can be detected in the quality of life variables.

It is also possible that the buffering hypothesis is more of a process than a static theory. The longitudinal data may have provided a better test of the model, compared to the potential of the static baseline data. The 14 months could have afforded parents the opportunity to gain more support and nurture relationships that would better help them cope with their children's disorders. Therefore, using the longitudinal dataset was most likely a more accurate and sensitive test of the buffering hypothesis.

Of important note, these results garner additional support for the theories (Moos, 2002; Lazarus & Folkman, 1984; Cobb, 1976) posing coping strategies and social support as moderators in the relationship between stress appraisal and outcomes. These models may not have gained much support from the tests of hypothesis 2, but they have gained greater support from the tests of hypothesis 4, which examined these relationships over time.

**5.7    Limitations**

As with most social science research studies, there are numerous limitations associated with this investigation.  These limitations are within the realms of measurement adequacy, sampling design, theoretical basis, the age of the data.

Measurement adequacy may have been compromised in this analysis since the data were not collected for the purpose of conducting these analyses.  The measures used to represent quality of life may not have been the best items to assess this construct.  There are numerous quality of life measures in the literature, none of which were used in this study.  The distribution of responses on the variables may have been less than ideal.  Many of the variables had adequate distributions, as measured by the skew and kurtosis statistics (see Table A.1 in Appendix A), but several had to be dichotomized for regression analyses or trichotomized for SEM analysis.  Non-normal variables can produce unreliable and/or invalid multiple regression coefficients.  In the cases of the Dyadic Adjustment Scale, Beck Depression Inventory, and Global Affective Functioning, the responses were recoded into dichotomous variables to be used as outcomes in logistic regression analyses.  Recoding a continuous variable into a dichotomous variable means that information and variance are lost.  This loss of variance can reduce the power of the test to find significant results.  Therefore, recoding these variables could have compromised their measurement adequacy.

The sample size was sufficient to conduct the originally planned tests for the MTA study (i.e. to identify the treatment group or groups with the best outcomes), but may have been insufficient to test the research questions of interest in this investigation.

For example, the models lacked an adequate sample size to compile and converge on a solution in EQS.

Also, the number of mothers in the sample was substantially larger than the number of fathers in the investigation. This may indicate that the results from the analyses may be more applicable to mothers than to fathers. There may have been more drop-out among fathers, which means the final sample may have been less representative than it could have been. Therefore, even though the sample included fathers, the results might be more pertinent for mothers.

The study design may be applauded for achieving internal validity, but the sample may have lacked external validity. The proportion of children with Oppositional Defiant Disorder (ODD) in the sample (41%) was slightly under national estimates of 50-60% (Culbertson, 1996). Children from smaller cities and towns were most likely under-represented in this dataset that was collected in larger urban areas. However, it is understandable that the research protocol chose urban sites since large numbers of ADHD children had to be recruited and retained for the study.

In terms of theoretical basis, the underlying models (e.g. Ogden, 2000; Moos, 2002; Lazarus & Folkman, 1984) that informed the creation of the adapted models tested in this investigation could have been too simple or too general to adequately explain quality of life in this population of parents. The relatively small amount of variance explained in the quality of life outcomes suggests that other factors, in addition to objective stressors, stress appraisal, symptom severity, social support, and coping strategies, along with demographic characteristics are insufficient to explain why some parents cope better with their children's disorders than other parents. Another model

should be developed, one that is specific to Attention Deficit Hyperactivity Disorder, or rather the parents of children diagnosed with ADHD. This new model may need to include variables such as the parents' levels of self-esteem in addition to their levels of functioning and coping before their children were displaying behavior problems. Perhaps parents were having conflicts in their own lives that would decrease their quality of life indicators independently from having a difficult child. This new model could include indicators of school and teacher quality. The right teacher can make a substantial difference in connecting with and helping children to learn. If the child felt more successful in school, this could translate into better self-image and better overall behavior. This better behavior could reduce the stress and frustration that parents feel, which might translate into better quality of life outcomes for parents.

Perhaps an improved model for understanding how coping and social support moderate the effects of stress appraisal on quality of life for parents with ADHD children requires a non-recursive design (Kline, 2004), or one that allows bi-directional arrows. While this model might be more difficult to test and interpret, it could be more accurate in describing the bi-directional impact of the child on the adult and the adult on the child (Kendall, 1999). Future research could test such a model to tease out the causal direction of the variables. This study did not allow bi-directional effects. This restriction enabled the researcher to use simpler techniques, such as structural equation modeling and multiple regression to estimate the effects of the independent variables on the dependent variables.

Finally, it is important to note the these data were collected between the end of 1994 and the beginning of 1998, which is 8-12 years before this analysis was conducted.

It is vital to consider any changes that may have occurred during this decade that may influence the implications of these findings. Therefore, a principal investigator from the NIMH study was contacted (i.e. Stephen Hinshaw) to explain the changes that have occurred over time with respect to the diagnosis and treatment of ADHD in children.

ADHD continues to be diagnosed using normed checklists from parents and teachers, as well as from detailed histories from parents (personal communication with Stephen Hinshaw, May 30, 2006). Although brain imaging has shown that certain regions of the brain are clearly linked with ADHD, these images are not advanced enough to enter the diagnosis process. With reference to treatments, advances in the past decade have focused on the development of long-acting stimulants, which means that children take one dose per day instead of 3-5 doses throughout the day.

While these are significant scientific advances in the study of ADHD, it is unlikely that these changes over the past decade would critically effect the interpretation of the findings from this study. Therefore, the findings from the data gathered ten years ago, with reference to stress and coping, can still be analyzed with confidence that these outcomes are still applicable today.

## 5.8    Final Comments

Despite all of the limitations with this investigation, this study represents an extension of previous research in the area of parental stress and coping, an area in which others have noted has been studied predominantly from the viewpoint of the mothers of ADHD children (Podolski & Nigg, 2001; Fischer, 1990). This study is an important addition to the literature in this field since it includes data from both the mothers and fathers of children with ADHD.

Also, this study adapted models and constructs from health psychology to provide a theoretical framework for the study of stress and coping among parents of ADHD children.  Using these models not only builds on the health psychology literature, but upon the research studies of parents coping with their children who have been diagnosed with ADHD.

Overall, these analyses provided support for the hypotheses that social support and coping strategies, individually, lead to better quality of life indicators.  Hypothesis 1b had some support since there were direct effects of objective stressors on quality of life measures, as well as indirect effects, through stress appraisal on the outcomes.  There was also support for the moderating effect of social support and coping strategies in explaining the link between stress appraisal and quality of life outcomes.  This support was stronger for the longitudinal data compared to the baseline data.

Table A.1.  Descriptive Statistics for Quality of Life Variables

**Quality of Life Scales**

| Variable | N | Mean | Std Dev. | Median | Mode | Min | Max | Kurtosis | Skew |
|---|---|---|---|---|---|---|---|---|---|
| Involvement (mothers at baseline) | 457 | 37.5 | 5.0 | 38.0 | 34.0 | 24.0 | 50.0 | -.3 | -.2 |
| Involvement (mothers at 14 months) | 458 | 36.9 | 5.1 | 37.0 | 39.0 | 19.0 | 50.0 | .9 | -.4 |
| Involvement (fathers at baseline) | 242 | 34.3 | 5.7 | 35.0 | 34.0 | 16.0 | 49.0 | .1 | -.2 |
| Involvement (fathers at 14 months) | 242 | 34.8 | 4.9 | 35.0 | 39.0 | 19.0 | 49.0 | -.0 | -.2 |
| Positive Parenting (mothers at baseline) | 457 | 24.7 | 3.1 | 25.0 | 24.0 | 16.0 | 30.0 | -.4 | -.3 |
| Positive Parenting (mothers at 14 months) | 458 | 24.6 | 3.2 | 24.0 | 23.0 | 15.0 | 30.0 | -.2 | -.3 |
| Positive Parenting (fathers at baseline) | 242 | 23.6 | 3.7 | 24.0 | 24.0 | 10.0 | 30.0 | .3 | -.5 |
| Positive Parenting (fathers at 14 months) | 242 | 23.8 | 3.3 | 24.0 | 23.0 | 13.0 | 30.0 | -.3 | -.2 |
| Harsh Discipline (mothers at baseline) | 457 | 8.4 | 2.2 | 8.0 | 8.0 | 4.0 | 17.0 | .3 | .6 |
| Harsh Discipline (mothers at 14 months) | 459 | 7.1 | 2.1 | 6.0 | 6.0 | 4.0 | 17.0 | .7 | .9 |
| Harsh Discipline (fathers at baseline) | 240 | 8.4 | 2.2 | 8.0 | 7.0 | 4.0 | 16.0 | -.4 | .4 |
| Harsh Discipline (fathers at 14 months) | 242 | 7.0 | 2.1 | 7.0 | 5.0 | 4.0 | 13.0 | .0 | .8 |
| Appropriate Discipline (mothers at baseline) | 458 | 16.9 | 2.7 | 17.0 | 17.0 | 9.0 | 25.0 | -.1 | -.0 |
| Appropriate Discipline (mothers at 14 months) | 459 | 17.1 | 2.9 | 17.0 | 17.0 | 8.0 | 25.0 | .5 | -.4 |

| Variable | N | Mean | Std Dev. | Median | Mode | Min | Max | Kurtosis | Skew |
|---|---|---|---|---|---|---|---|---|---|
| Appropriate Discipline (fathers at baseline) | 240 | 16.6 | 2.7 | 17.0 | 17.0 | 10.0 | 25.0 | -.1 | .1 |
| Appropriate Discipline (fathers at 14 months) | 242 | 17.0 | 2.9 | 17.0 | 18.0 | 9.0 | 27.0 | .5 | -.3 |
| Beck Depression Inventory (mothers at baseline) | 472 | 6.6 | 5.9 | 5.0 | 0.0 | 0.0 | 32.0 | 2.0 | 1.3 |
| Beck Depression Inventory (mothers at 14 months) | 472 | 6.8 | 6.7 | 5.0 | 0.0 | 0.0 | 34.0 | 2.6 | 1.5 |
| Beck Depression Inventory (fathers at baseline) | 242 | 4.1 | 4.3 | 2.2 | 0.0 | 0.0 | 28.0 | 3.9 | 1.6 |
| Beck Depression Inventory (fathers at 14 months) | 244 | 4.2 | 4.6 | 3.0 | 0.0 | 0.0 | 28.0 | 4.5 | 1.8 |
| Global Affective Functioning (mothers at baseline) | 411 | 75.5 | 9.7 | 80.0 | 80.0 | 40.0 | 90.0 | .3 | -.8 |
| Global Affective Functioning (fathers at baseline) | 267 | 76.4 | 11.2 | 80.0 | 80.0 | 8.0 | 90.0 | 10.0 | -2.4 |
| Dyadic Adjustment Scale Total (mothers at baseline) | 314 | 107.3 | 19.8 | 110.0 | 112 | 22.0 | 144.0 | 2.1 | -1.1 |
| Dyadic Adjustment Scale Total (mothers at 14 months) | 315 | 106.8 | 21.9 | 111.0 | 115.0 | 19.0 | 141.0 | 2.4 | -1.3 |
| Dyadic Adjustment Scale Total (fathers at baseline) | 224 | 108.9 | 16.8 | 110.0 | 109.0 | 56.0 | 143.0 | .6 | -.7 |
| Dyadic Adjustment Scale Total (fathers at 14 months) | 220 | 111.6 | 17.0 | 113.0 | 111.0 | 57.0 | 146.0 | .4 | -.7 |

| Variable | N | Mean | Std Dev. | Median | Mode | Min | Max | Kurtosis | Skew |
|---|---|---|---|---|---|---|---|---|---|
| Affection, Admiration of Parent & Admiration by Parent (mothers at baseline) | 459 | 4.2 | .5 | 4.2 | 4.3 | 2.2 | 5.0 | .5 | -.6 |
| Affection, Admiration of Parent & Admiration by Parent (mothers at 14 months) | 462 | 4.3 | .5 | 4.3 | 4.3 | 2.3 | 5.0 | .4 | -.8 |
| Affection, Admiration of Parent & Admiration by Parent (fathers at baseline) | 243 | 4.2 | .5 | 4.2 | 5.0 | 2.7 | 5.0 | -.6 | -.3 |
| Affection, Admiration of Parent & Admiration by Parent (fathers at 14 months) | 245 | 4.3 | .5 | 4.3 | 4.0 | 2.5 | 5.0 | -.3 | -.3 |
| Quarreling, Dominance, Phys Punishment, Deprivation of Privileges, Verbal Punishment, Guilt Induction (mothers at baseline) | 461 | 2.7 | .5 | 2.7 | 2.5 | 1.3 | 4.5 | -.2 | .0 |
| Quarreling, Dominance, Phys Punishment, Deprivation of Privileges, Verbal Punishment, Guilt Induction (mothers at 14 months) | 460 | 2.4 | .6 | 2.4 | 2.2 | 1.2 | 4.3 | -.0 | .3 |

| Variable | N | Mean | Std Dev. | Median | Mode | Min | Max | Kurtosis | Skew |
|---|---|---|---|---|---|---|---|---|---|
| Quarreling, Dominance, Phys Punishment, Deprivation of Privileges, Verbal Punishment, Guilt Induction (fathers at baseline) | 243 | 2.6 | .5 | 2.6 | 2.5 | 1.4 | 3.9 | -.2 | .1 |
| Quarreling, Dominance, Phys Punishment, Deprivation of Privileges, Verbal Punishment, Guilt Induction (fathers at 14 months) | 245 | 2.4 | .5 | 2.3 | 2.5 | 1.2 | 3.9 | -.1 | .1 |
| Pro-social, Similarity, Intimacy, Nurturance & Companionship (mothers at baseline) | 461 | 3.6 | .5 | 3.6 | 3.6 | 2.1 | 5.0 | .3 | -.1 |
| Pro-social, Similarity, Intimacy, Nurturance & Companionship (mothers at 14 months) | 461 | 3.6 | .5 | 3.6 | 3.6 | 1.2 | 5.0 | 1.6 | -.3 |
| Pro-social, Similarity, Intimacy, Nurturance & Companionship (fathers at baseline) | 243 | 3.4 | .5 | 3.4 | 3.5 | 1.8 | 5.0 | .3 | |

| Variable | N | Mean | Std Dev. | Median | Mode | Min | Max | Kurtosis | Skew |
|---|---|---|---|---|---|---|---|---|---|
| Pro-social, Similarity, Intimacy, Nurturance & Companionship (fathers at 14 months) | 245 | 3.5 | .5 | 3.5 | 3.7 | 1.6 | 5.0 | .3 | -.3 |
| Praise, Shared Decision Making & Rationale (mothers at baseline) | 461 | 3.7 | .5 | 3.7 | 3.7 | 2.3 | 5.0 | -.1 | -.1 |
| Praise, Shared Decision Making & Rationale (mothers at 14 months) | 462 | 3.7 | .5 | 3.8 | 3.8 | 1.5 | 5.0 | 1.4 | -.4 |
| Praise, Shared Decision Making & Rationale (fathers at baseline) | 243 | 3.6 | .5 | 3.7 | 3.7 | 1.7 | 5.0 | .8 | -.4 |
| Praise, Shared Decision Making & Rationale (fathers at 14 months) | 245 | 3.6 | .5 | 3.7 | 3.7 | 1.3 | 5.0 | 2.0 | -.6 |

Table A.2.  Descriptive Statistics for Social Support Variables

**Social Support Scales**

| Variable | N | Mean | Std Dev. | Median | Mode | Min | Max | Kurtosis | Skew |
|---|---|---|---|---|---|---|---|---|---|
| Social Support Number of Others (mothers at baseline) | 446 | 22.4 | 11.9 | 20.5 | 14.0 | 0.0 | 54.0 | -.2 | .6 |
| Social Support Number of Others (fathers at baseline) | 243 | 22.4 | 12.5 | 20.0 | 16.0 | 0.0 | 54.0 | -.2 | .6 |
| Social Support Satisfaction with Supportive Others (mothers at baseline) | 425 | 31.4 | 5.4 | 33.0 | 36.0 | 7.0 | 36.0 | 2.7 | -1.6 |
| Social Support Satisfaction with Supportive Others (fathers at baseline) | 234 | 31.2 | 5.2 | 32.5 | 36.0 | 6.0 | 36.0 | 3.6 | -1.6 |

Table A.3.  Descriptive Statistics for Coping Variables

**Coping Scales**

| Variable | N | Mean | Std Dev. | Median | Mode | Min | Max | Kurtosis | Skew |
|---|---|---|---|---|---|---|---|---|---|
| Active Coping (mothers at baseline) | 526 | 11.2 | 2.4 | 11.0 | 12.0 | 4.0 | 16.0 | -.5 | -.1 |
| Active Coping (fathers at baseline) | 340 | 11.2 | 2.5 | 11.0 | 11.0 | 4.0 | 16.0 | -.1 | -.1 |
| Planning (mothers at baseline) | 523 | 12.1 | 2.7 | 12.0 | 12.0 | 4.0 | 16.0 | -.3 | -.4 |
| Planning (fathers at baseline) | 340 | 11.9 | 2.8 | 12.0 | 12.0 | 4.0 | 16.0 | -.5 | -.3 |
| Suppression of Competing Activities (mothers at baseline) | 523 | 9.3 | 2.3 | 9.0 | 8.0 | 4.0 | 16.0 | .0 | .2 |
| Suppression of Competing Activities (fathers at baseline) | 340 | 9.4 | 2.3 | 9.0 | 8.0 | 4.0 | 16.0 | .3 | .2 |
| Restraint (mothers at baseline) | 523 | 9.4 | 2.5 | 9.0 | 8.0 | 4.0 | 16.0 | -.3 | .2 |
| Restraint (fathers at baseline) | 340 | 9.7 | 2.3 | 10.0 | 8.0 | 4.0 | 16.0 | .3 | .2 |
| Seeking Social Support for Instrumental Reasons (mothers at baseline) | 527 | 11.4 | 2.8 | 12.0 | 12.0 | 4.0 | 16.0 | -.5 | -.2 |

| Variable | N | Mean | Std Dev. | Median | Mode | Min | Max | Kurtosis | Skew |
|---|---|---|---|---|---|---|---|---|---|
| Seeking Social Support for Instrumental Reasons (fathers at baseline) | 339 | 9.7 | 2.8 | 9.0 | 8.0 | 4.0 | 16.0 | -.2 | .2 |
| Seeking Social Support for Emotional Reasons (mothers at baseline) | 524 | 11.2 | 3.0 | 11.0 | 12.0 | 4.0 | 16.0 | -.6 | -.1 |
| Seeking Social Support for Emotional Reasons (fathers at baseline) | 340 | 8.6 | 2.7 | 8.0 | 8.0 | 4.0 | 16.0 | -.11 | .5 |
| Positive Reinterpretation (mothers at baseline) | 526 | 11.3 | 2.6 | 12.0 | 12.0 | 4.0 | 16.0 | -.5 | -.2 |
| Positive Reinterpretation (fathers at baseline) | 340 | 11.3 | 2.5 | 11.0 | 12.0 | 4.0 | 16.0 | -.1 | -.2 |
| Acceptance (mothers at baseline) | 523 | 9.9 | 2.7 | 10.0 | 9.0 | 4.0 | 16.0 | -.3 | .1 |
| Acceptance (fathers at baseline) | 340 | 9.6 | 2.5 | 9.0 | 8.0 | 4.0 | 16.0 | -.3 | .2 |
| Denial (mothers at baseline) | 523 | 4.9 | 1.5 | 4.0 | 4.0 | 4.0 | 15.0 | 6.8 | 2.4 |
| Denial (fathers at baseline) | 340 | 5.0 | 1.7 | 4.0 | 4.0 | 4.0 | 15.0 | 5.9 | 2.2 |
| Behavioral Disengagement (mothers at baseline) | 523 | 5.7 | 1.8 | 5.0 | 4.0 | 4.0 | 14.0 | 1.1 | 1.1 |
| Behavioral Disengagement (fathers at baseline) | 339 | 5.6 | 1.9 | 5.0 | 4.0 | 4.0 | 13.0 | 1.3 | 1.3 |
| Mental Disengagement (mothers at baseline) | 527 | 7.2 | 2.0 | 7.0 | 7.0 | 4.0 | 15.0 | .6 | .7 |

| Variable | N | Mean | Std Dev. | Median | Mode | Min | Max | Kurtosis | Skew |
|---|---|---|---|---|---|---|---|---|---|
| Mental Disengagement (fathers at baseline) | 340 | 7.0 | 1.9 | 7.0 | 7.0 | 4.0 | 15.0 | .8 | .6 |
| Drugs or Alcohol (mothers at baseline) | 524 | 4.3 | 1.2 | 4.0 | 4.0 | 4.0 | 16.0 | 32.1 | 5.0 |
| Drugs or Alcohol (fathers at baseline) | 340 | 4.5 | 1.5 | 4.0 | 4.0 | 4.0 | 13.0 | 11.4 | 3.3 |
| Humor (mothers at baseline) | 524 | 6.9 | 2.8 | 7.0 | 4.0 | 4.0 | 16.0 | .2 | .8 |
| Humor (fathers at baseline) | 340 | 7.5 | 2.8 | 8.0 | 8.0 | 4.0 | 16.0 | -.3 | .5 |

Table A.4. Descriptive Statistics for ADHD Symptom Variables

**ADHD Symptoms**

| Variable | N | Mean | Std Dev. | Median | Mode | Min | Max | Kurtosis | Skew |
|---|---|---|---|---|---|---|---|---|---|
| Conners Parent Rating Scale Total (mothers at baseline) | 447 | 170.7 | 27.8 | 169.0 | 170.0 | 112.0 | 281.1 | .4 | .5 |
| Conners Parent Rating Scale Total (fathers at baseline) | 242 | 163.4 | 28.6 | 163.4 | 162.0 | 103.0 | 253.7 | -.2 | .4 |

Table A.5. Descriptive Statistics for Stress Variables

**Stress Scales and Indices**

| Variable | N | Mean | Std Dev. | Median | Mode | Min | Max | Kurtosis | Skew |
|---|---|---|---|---|---|---|---|---|---|
| Inventory of Small Life Events Total Score (mothers at baseline) | 373 | 14.5 | 8.0 | 14.0 | 11.0 | 0.0 | 47.0 | .9 | .7 |
| Inventory of Small Life Events Total Score (fathers at baseline) | 209 | 12.1 | 7.7 | 11.0 | 13.0 | 0.0 | 37.0 | .7 | .8 |
| Parent Stress Index Total Score (mothers at baseline) | 465 | 92.8 | 19.4 | 94.0 | 89.0 | 44.0 | 146.0 | -.23 | -.04 |
| Parent Stress Index Total Score (fathers at baseline) | 240 | 86.2 | 18.5 | 87.0 | 89.0 | 36.0 | 137.0 | .3 | -.1 |
| Coddington Total (mothers at baseline) | 525 | 3.3 | 2.2 | 3.0 | 3.0 | 0.0 | 12.0 | .7 | .8 |
| Coddington Total (fathers at baseline) | 336 | 3.1 | 2.9 | 3.0 | 3.0 | 0.0 | 12.0 | 1.2 | .9 |

Table B.1. Correlations between quality of life outcome measures for mothers at baseline.

**Quality of Life for Mothers at Baseline**

| | I | II | III | IV | V | VI | VII | VIII | IX | X | XI | XII | XIII | XIV | XV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I Global Affection Functioning | | .13 | .02 | -.21 | .01 | -.42 | .24 | .32 | .23 | .18 | .28 | .15 | -.18 | .14 | .11 |
| II Involvement | | | .56 | -.20 | .22 | -.13 | .07 | .14 | .13 | .28 | .17 | .42 | -.22 | .63 | .55 |
| III Positive Parenting | | | | -.12 | .19 | -.06 | .00 | .09 | .04 | .18 | .09 | .39 | -.17 | .52 | .61 |
| IV Harsh Discipline | | | | | .10 | .16 | -.06 | -.14 | -.14 | -.09 | -.11 | -.22 | .56 | -.15 | -.18 |
| V Appropriate Discipline | | | | | | -.03 | .03 | .03 | .05 | .13 | .06 | .03 | .23 | .15 | .19 |
| VI Beck Depression Inventory | | | | | | | -.38 | -.38 | -.32 | -.26 | -.41 | -.18 | .21 | -.19 | -.12 |
| VII Dyadic Consensus | | | | | | | | .73 | .56 | .60 | .91 | .03 | -.05 | .06 | .06 |
| VIII Dyadic Satisfaction | | | | | | | | | .55 | .67 | .91 | .07 | -.14 | .08 | .09 |
| IX Affectional Expression | | | | | | | | | | .45 | .67 | .09 | -.13 | .07 | .08 |
| X Dyadic Cohesion | | | | | | | | | | | .80 | .20 | -.06 | .26 | .24 |
| XI Total Dyadic Adjustment | | | | | | | | | | | | .09 | -.09 | .11 | .14 |
| XII Affection, Admiration of Parent & Admiration by Parent | | | | | | | | | | | | | -.38 | .62 | .48 |
| XIII Quarreling, Dominance, Phys Punishment, Deprivation of Privileges, Verbal Punishment, Guilt Induction | | | | | | | | | | | | | | -.20 | -.18 |
| XIV Pro-social, Similarity, Intimacy, Nurturance & Companionship | | | | | | | | | | | | | | | .65 |
| XV Praise, Shared Decision Making & Rationale | | | | | | | | | | | | | | | |

Table B.2.  Correlations between quality of life outcome measures for fathers at baseline.

| | I | II | III | IV | V | VI | VII | VIII | IX | X | XI | XII | XIII | XIV | XV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Quality of Life for Fathers at Baseline** | | | | | | | | | | | | | | | |
| I Global Affection Functioning | | .14 | .10 | -.14 | .13 | **-.42** | .15 | **.21** | .15 | **.17** | **.20** | .09 | -.10 | .10 | .08 |
| II Involvement | | | **.61** | **-.15** | **.18** | -.11 | **.15** | .10 | .04 | **.28** | **.19** | **.41** | **-.19** | **.66** | **.60** |
| III Positive Parenting | | | | -.12 | .10 | **-.15** | **.31** | **.16** | **.17** | **.28** | **.29** | **.43** | **-.21** | **.53** | **.66** |
| IV Harsh Discipline | | | | | **.15** | .02 | **-.16** | **-.15** | -.11 | -.04 | -.15 | -.11 | **.45** | -.12 | **-.20** |
| V Appropriate Discipline | | | | | | -.03 | .13 | .10 | .04 | .12 | .13 | -.04 | **.26** | .09 | **.18** |
| VI Beck Depression Inventory | | | | | | | **-.29** | **-.36** | **-.36** | **-.30** | **-.39** | -.09 | .11 | -.09 | -.07 |
| VII Dyadic Consensus | | | | | | | | **.66** | **.60** | **.54** | **.89** | .09 | **-.17** | .14 | **.20** |
| VIII Dyadic Satisfaction | | | | | | | | | **.60** | **.58** | **.89** | .07 | **-.19** | .07 | .12 |
| IX Affectional Expression | | | | | | | | | | **.42** | **.72** | .04 | **-.19** | .03 | .05 |
| X Dyadic Cohesion | | | | | | | | | | | **.75** | .11 | -.04 | **.28** | **.25** |
| XI Total Dyadic Adjustment | | | | | | | | | | | | .10 | **-.19** | **.16** | **.20** |
| XII Affection, Admiration of Parent & Admiration by Parent | | | | | | | | | | | | | **-.31** | **.62** | **.49** |
| XIII Quarreling, Dominance, Phys Punishment, Deprivation of Privileges, Verbal Punishment, Guilt Induction | | | | | | | | | | | | | | **-.17** | **-.16** |
| XIV Pro-social, Similarity, Intimacy, Nurturance & Companionship | | | | | | | | | | | | | | | **.71** |
| XV Praise, Shared Decision Making & Rationale | | | | | | | | | | | | | | | |

Table C.1. Correlations between COPE outcome measures for mothers at baseline.

**Bivariate Correlations Among COPE Subscale for Mothers**

| | I | II | III | IV | V | VI | VII | VIII | IX | X | XI | XII | XIII |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I Active Coping | | .75 | .40 | .32 | .50 | .31 | .58 | .35 | .24 | -.13 | -.21 | .03 | -.06 |
| II Planning | | | .52 | .37 | .55 | .37 | .60 | .37 | .21 | -.15 | -.24 | -.01 | -.04 |
| III Suppression of Competing Activities | | | | .36 | .32 | .20 | .34 | .25 | .16 | .03 | -.08 | .13 | .03 |
| IV Restraint | | | | | .30 | .22 | .38 | .40 | .26 | .10 | .07 | .12 | -.01 |
| V Seeking Social Support for Instrumental Reasons | | | | | | .70 | .44 | .24 | .23 | -.09 | -.08 | .11 | .08 |
| VI Seeking Social Support for Emotional Reasons | | | | | | | .27 | .21 | .20 | .03 | -.00 | .11 | .09 |
| VII Positive Reinterpretation | | | | | | | | .33 | .25 | .03 | -.15 | .06 | -.08 |
| VIII Acceptance | | | | | | | | | .28 | .06 | .10 | .11 | .00 |
| IX Humor | | | | | | | | | | .18 | .16 | .22 | .16 |
| X Denial | | | | | | | | | | | .44 | .39 | .15 |
| XI Behavioral Disengagement | | | | | | | | | | | | .40 | .22 |
| XII Mental Disengagement | | | | | | | | | | | | | .16 |
| XIII Drugs or Alcohol | | | | | | | | | | | | | |

Table C.2. Correlations between COPE outcome measures for fathers at baseline.

**Bivariate Correlations Among COPE Subscale for Fathers**

| | I | II | III | IV | V | VI | VII | VIII | IX | X | XI | XII | XIII |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I Active Coping | | .76 | .60 | .40 | .50 | .28 | .63 | .40 | .12 | -.18 | -.20 | -.01 | -.06 |
| II Planning | | | .61 | .45 | .56 | .34 | .67 | .37 | .10 | -.23 | -.27 | -.02 | -.08 |
| III Suppression of Competing Activities | | | | .41 | .48 | .32 | .54 | .28 | .03 | -.04 | -.07 | .16 | -.05 |
| IV Restraint | | | | | .37 | .18 | .46 | .41 | .19 | -.01 | .03 | .18 | -.02 |
| V Seeking Social Support for Instrumental Reasons | | | | | | .67 | .50 | .20 | .10 | -.10 | -.02 | .01 | -.06 |
| VI Seeking Social Support for Emotional Reasons | | | | | | | .33 | .08 | .05 | -.07 | -.02 | .04 | .04 |
| VII Positive Reinterpretation | | | | | | | | .41 | .17 | -.10 | -.12 | .09 | -.08 |
| VIII Acceptance | | | | | | | | | .31 | .05 | .16 | .20 | .05 |
| IX Humor | | | | | | | | | | .18 | .17 | .26 | .12 |
| X Denial | | | | | | | | | | | .52 | .31 | -.05 |
| XI Behavioral Disengagement | | | | | | | | | | | | .37 | .09 |
| XII Mental Disengagement | | | | | | | | | | | | | .22 |
| XIII Drugs or Alcohol | | | | | | | | | | | | | |

APPENDIX D

Table D.1  Descriptive Statistics of the Sample

| Sex | N | % |
|---|---|---|
| Male | 465 | 80.3 |
| Female | 114 | 19.7 |

| Treatment Group | N | % |
|---|---|---|
| Assessment & Referral | 146 | 25.2 |
| Medication | 144 | 24.9 |
| Medication & Psychosocial | 145 | 25.0 |
| Psychosocial | 144 | 24.9 |

| Ethnicity | N | % |
|---|---|---|
| Caucasian | 352 | 60.8 |
| Black | 115 | 19.9 |
| Non-Black Hispanic | 40 | 6.9 |
| Black Hispanic | 9 | 1.6 |
| Asian | 6 | 1.0 |
| Mixed | 53 | 9.2 |
| Other | 4 | .7 |

| Mother's Education | N | % |
|---|---|---|
| 8th Grade or less | 4 | .7 |
| Some high school | 29 | 5.0 |
| High School or GED | 120 | 20.9 |
| Some college | 211 | 36.7 |
| College graduate | 124 | 21.6 |
| Advanced degree | 87 | 15.1 |

| Father's Education | N | % |
|---|---|---|
| 8th Grade or less | 10 | 2.2 |
| Some high school | 34 | 7.5 |
| High School or GED | 113 | 25.0 |
| Some college | 133 | 29.4 |
| College graduate | 80 | 17.7 |
| Advanced degree | 82 | 18.1 |

| Income ($) | N | % |
|---|---|---|
| < 10,000 | 51 | 9.0 |
| 10,000 - 20,000 | 68 | 12.0 |
| 20,000 - 30,000 | 86 | 15.2 |
| 30,000 - 40,000 | 83 | 14.6 |
| 40,000 - 50,000 | 67 | 11.8 |
| 50,000 - 60,000 | 60 | 10.6 |
| 60,000 - 70,000 | 49 | 8.6 |
| 70,000 - 75,000 | 24 | 4.2 |
| >75,000 | 79 | 13.9 |

| ODD Diagnosis - Baseline | N | % |
|---|---|---|
| Yes | 231 | 41.25 |
| No | 329 | 58.75 |

| Age | N | % |
|---|---|---|
| 6 | 7 | 1.2 |
| 7 | 243 | 42.0 |
| 8 | 203 | 35.0 |
| 9 | 123 | 21.2 |
| 10 | 3 | .5 |

| Grade | N | % |
|---|---|---|
| 1 | 94 | 16.2 |
| 2 | 237 | 41.0 |
| 3 | 175 | 30.2 |
| 4 | 73 | 12.6 |

| Total Number of People in Household | N | % |
|---|---|---|
| 2 | 51 | 8.9 |
| 3 | 109 | 19.0 |
| 4 | 213 | 37.1 |
| 5 | 137 | 23.9 |
| 6 | 44 | 7.7 |
| 7 | 8 | 1.4 |
| 8 | 5 | .9 |
| 9 | 2 | .4 |
| 10 | 3 | .5 |
| 12 | 2 | .4 |

| Birth Order | N | % |
|---|---|---|
| 1 | 318 | 55.6 |
| 2 | 183 | 32.0 |
| 3 | 57 | 10.0 |
| 4 | 9 | 1.6 |
| 5 | 4 | .7 |
| 6 | 1 | .2 |

| Ever Expelled? | N | % |
|---|---|---|
| Yes | 104 | 18.0 |
| No | 475 | 82.0 |

| City Size | N | % |
|---|---|---|
| Large City | 312 | 54.6 |
| Small City | 165 | 28.9 |
| Small Town | 69 | 12.1 |
| Farm or Country | 15 | 2.6 |
| Moved Constantly | 11 | 2.0 |

| Marital Status | N | % |
|---|---|---|
| Married | 374 | 65.0 |
| Living Together | 32 | 5.5 |
| Separated | 40 | 7.0 |
| Divorced | 60 | 10.4 |
| Widowed | 18 | 3.1 |
| Never Married | 54 | 9.3 |

| Does anyone else in the family have ADHD? | N | % |
|---|---|---|
| Yes | 212 | 37.5 |
| No | 353 | 62.5 |

Figure E.1.  Latent variable model for the objective stressors factor.  Note that asterisks indicate paths to be estimated.
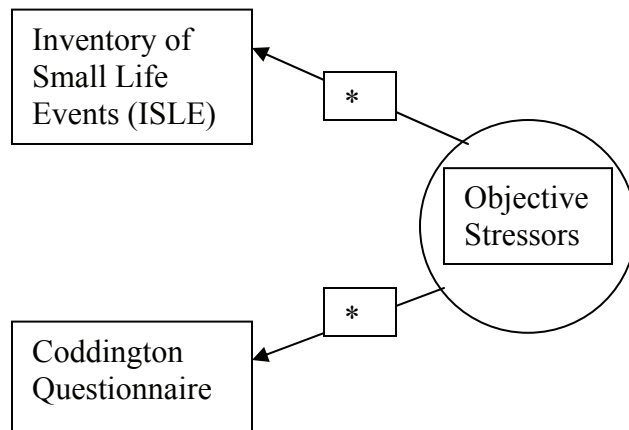
Figure E.2.  Latent variable model for the stress appraisal factor.  Note that asterisks indicate paths to be estimated.
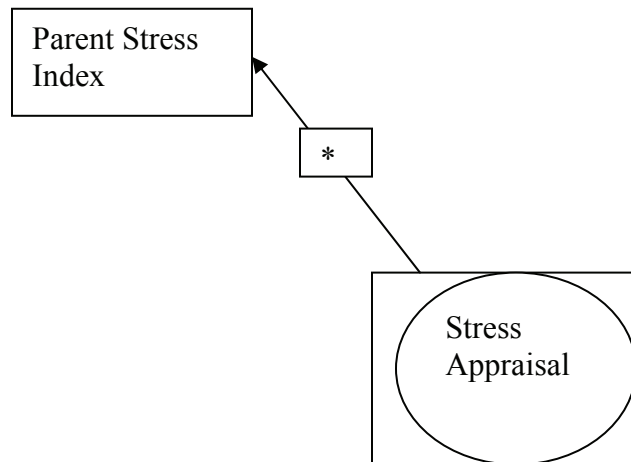
Figure E.3.  Latent variable model for the adaptive coping factor.  Note that asterisks indicate paths to be estimated.
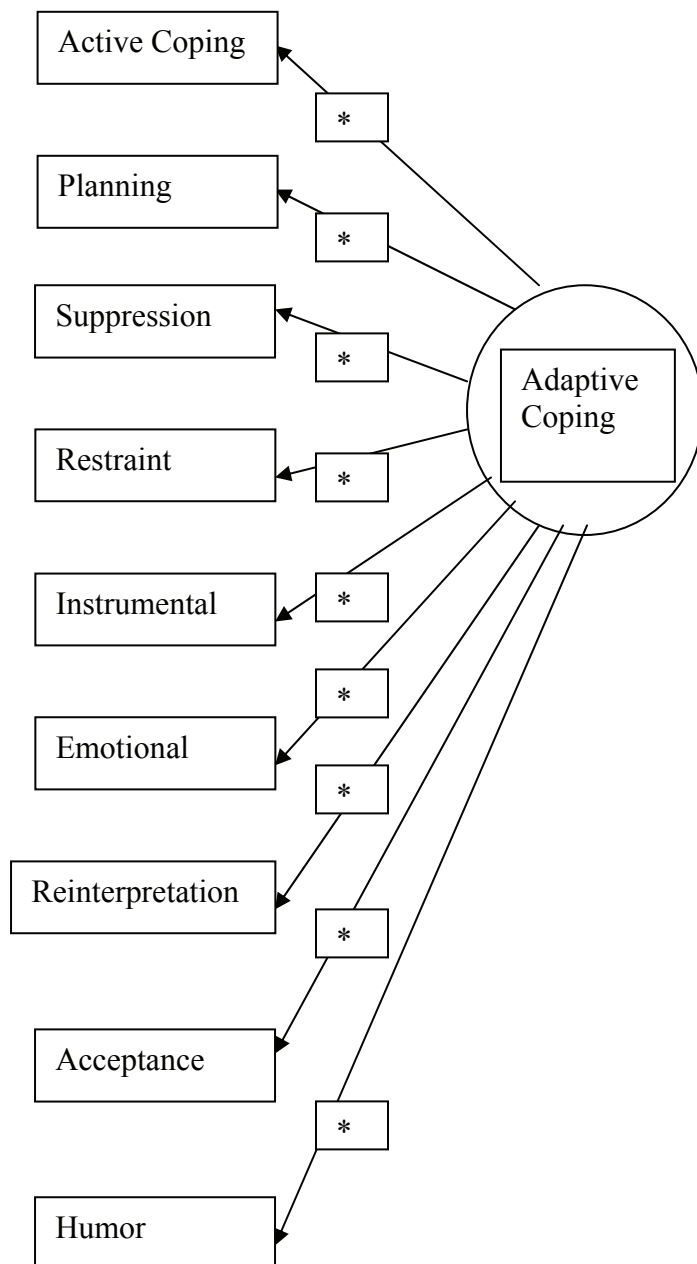
Figure E.4.  Latent variable model for the maladaptive coping factor.  Note that asterisks indicate paths to be estimated.
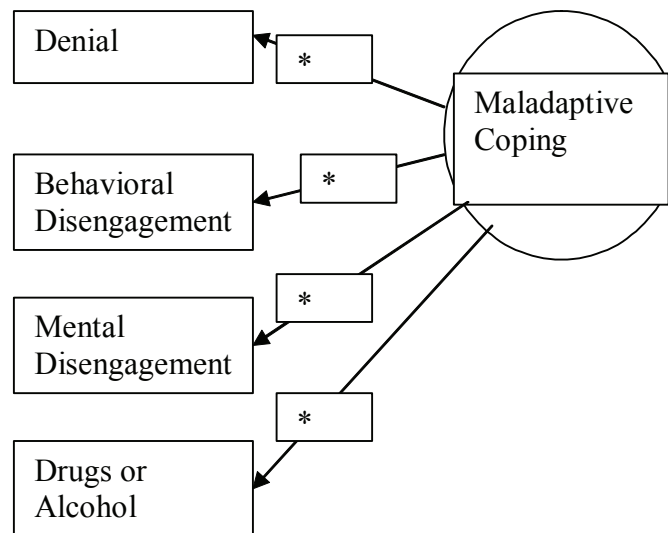
Figure E.5.  Latent variable model for the social support factor.  Note that asterisks indicate paths to be estimated.
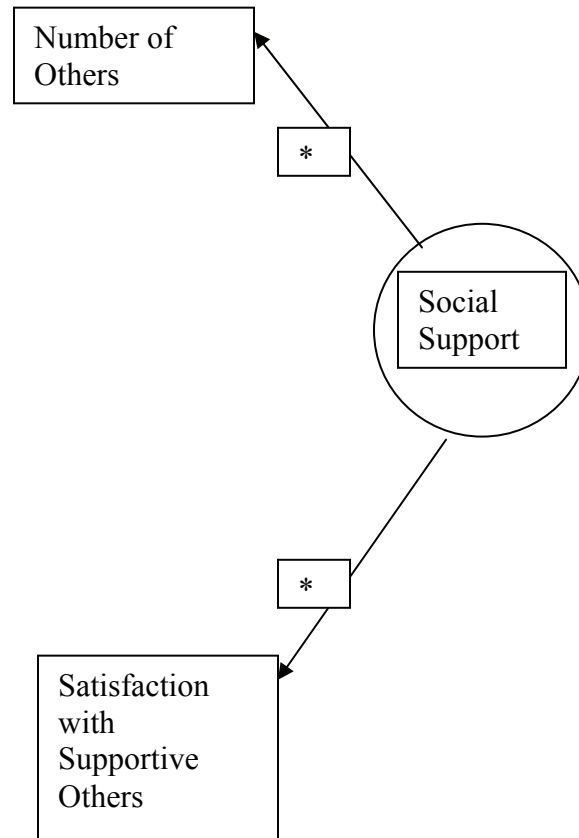
Figure E.6.  Latent variable model for the quality of life factors.  Note that asterisks indicate paths to be estimated.
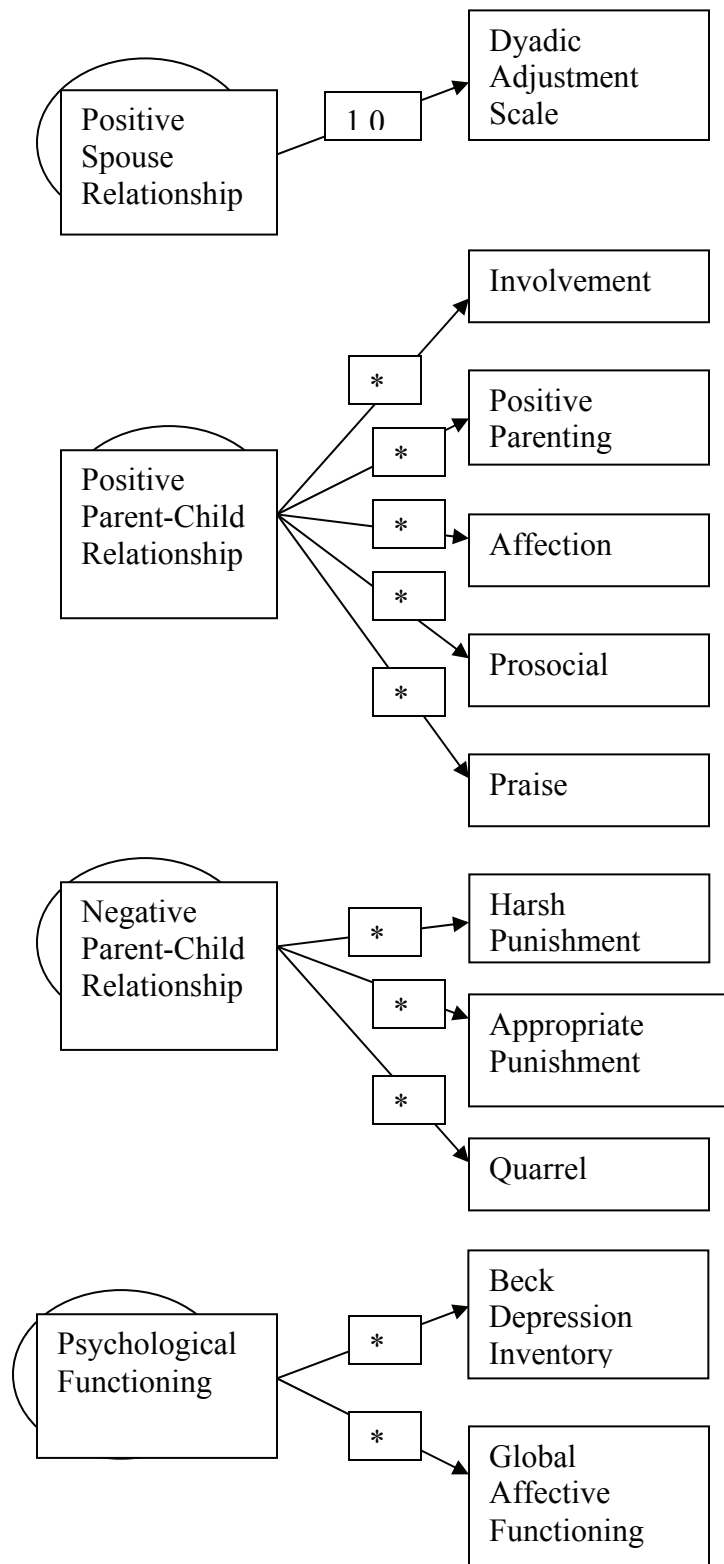
Figure E.7.  Latent variable model for Hypotheses 1 and 1b.
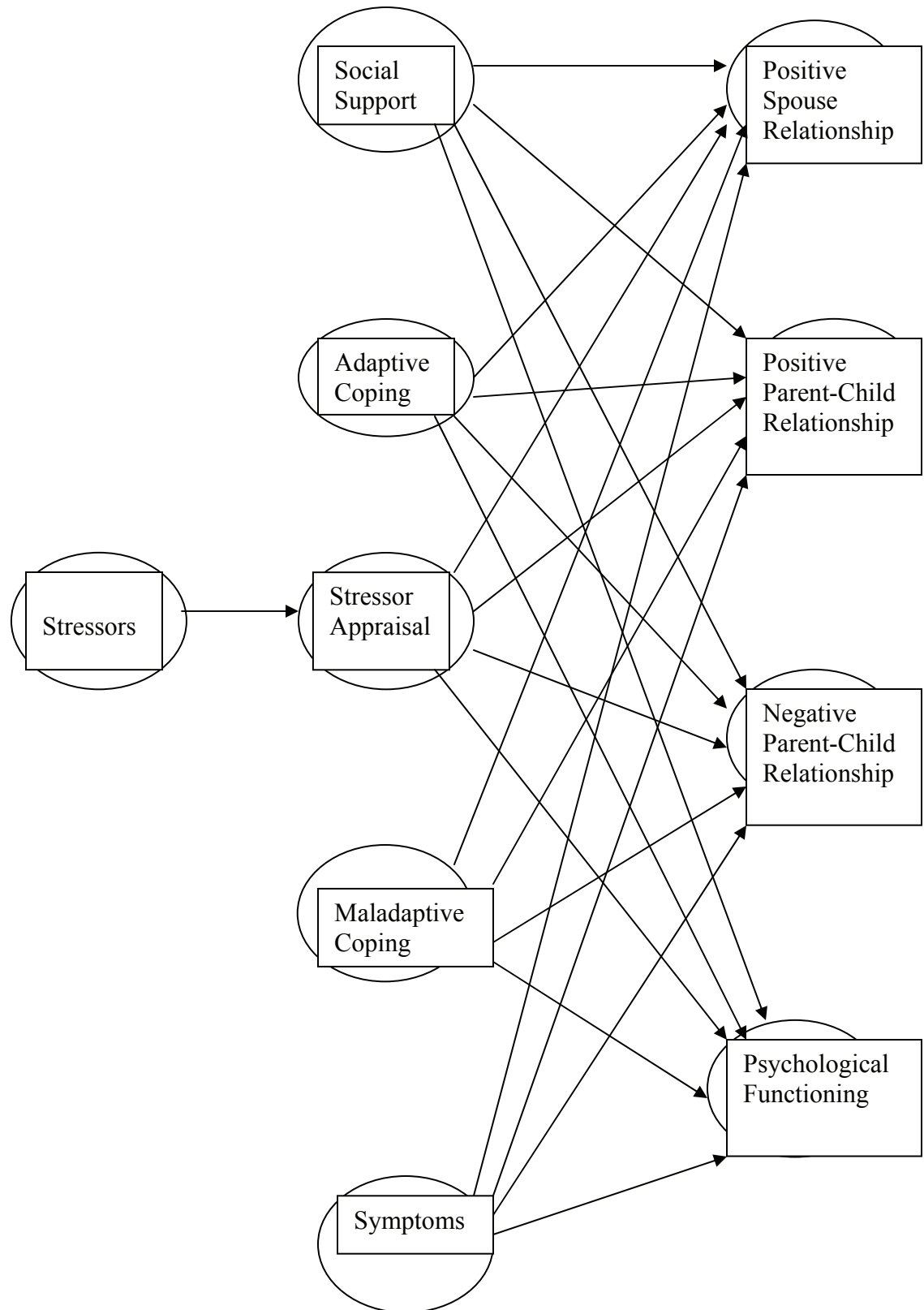
Figure F.1.  Path coefficients for the Stressors latent variable in Hypothesis 1 for mothers.
Note: only estimates significant at the p<.05 level are shown.
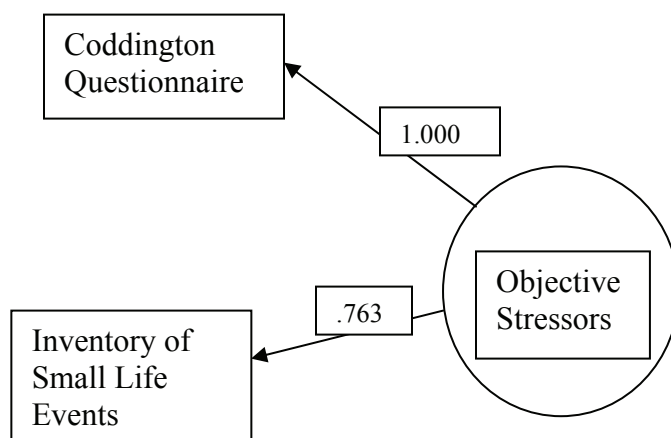
Figure F.2.  Path coefficients for the Stress Appraisal latent variable in Hypothesis 1 for mothers.  Note: only estimates significant at the p<.05 level are shown.
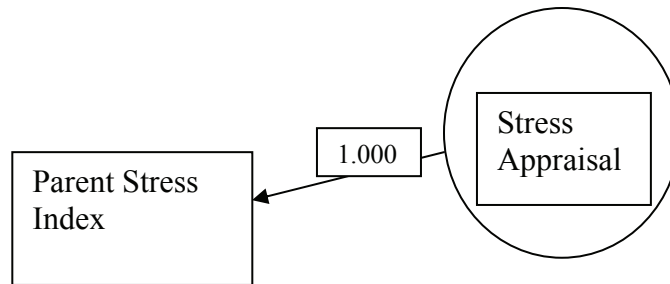
Figure F.3.  Path coefficients for the ADHD Symptom latent variable in Hypothesis 1 for mothers.  Note: only estimates significant at the p<.05 level are shown.
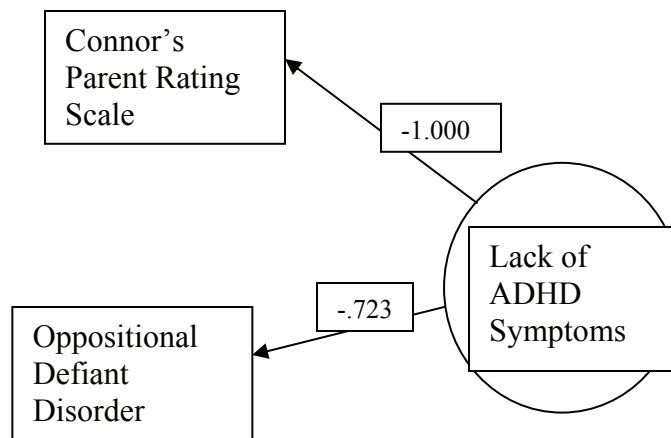
Figure F.4. Path coefficients for the Adaptive Coping latent variable in Hypothesis 1 for mothers. Note: only estimates significant at the p<.05 level are shown.
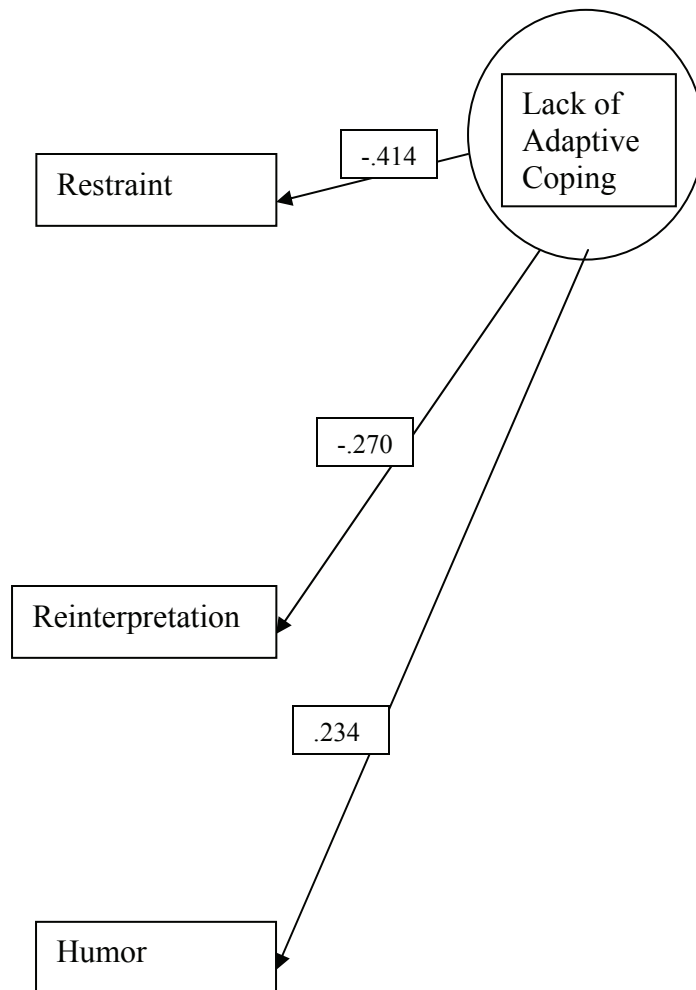
Figure F.5.  Path coefficients for the Maladaptive Coping latent variable in Hypothesis 1 for mothers.  Note: only estimates significant at the p<.05 level are shown.
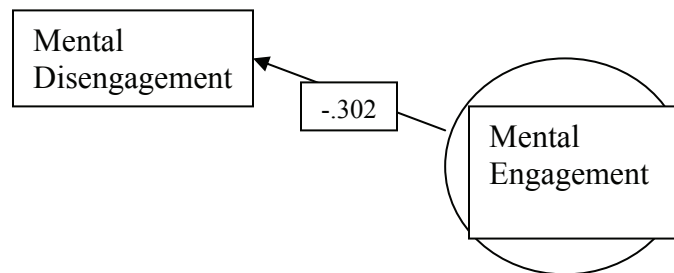
Figure F.6.  Path coefficient for the Social Support latent variable in Hypothesis 1 for mothers.  Note: only estimates significant at the p<.05 level are shown.
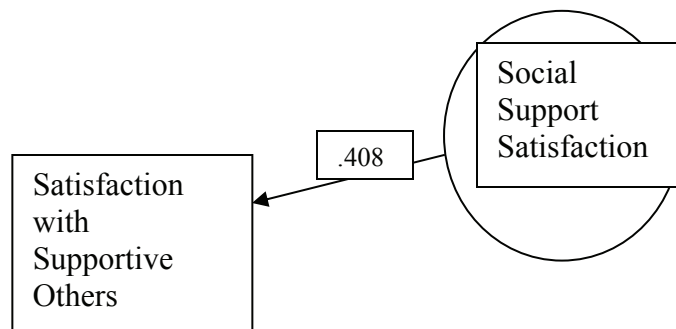
Figure F.7. Path coefficient for the Spouse Relationship latent variable in Hypothesis 1 for mothers. Note: only estimates significant at the p<.05 level are shown.
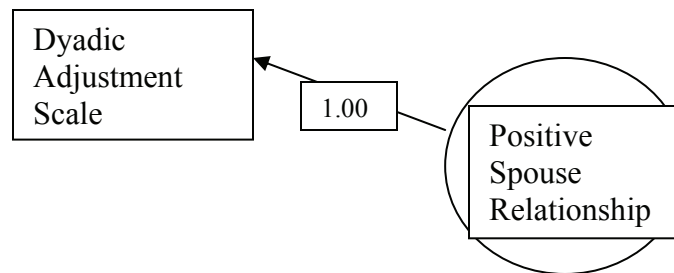
Figure F.8.  Path coefficients for the Positive Parent/Child Relationship latent variable in Hypothesis 1 for mothers.  Note: only estimates significant at the p<.05 level are shown.
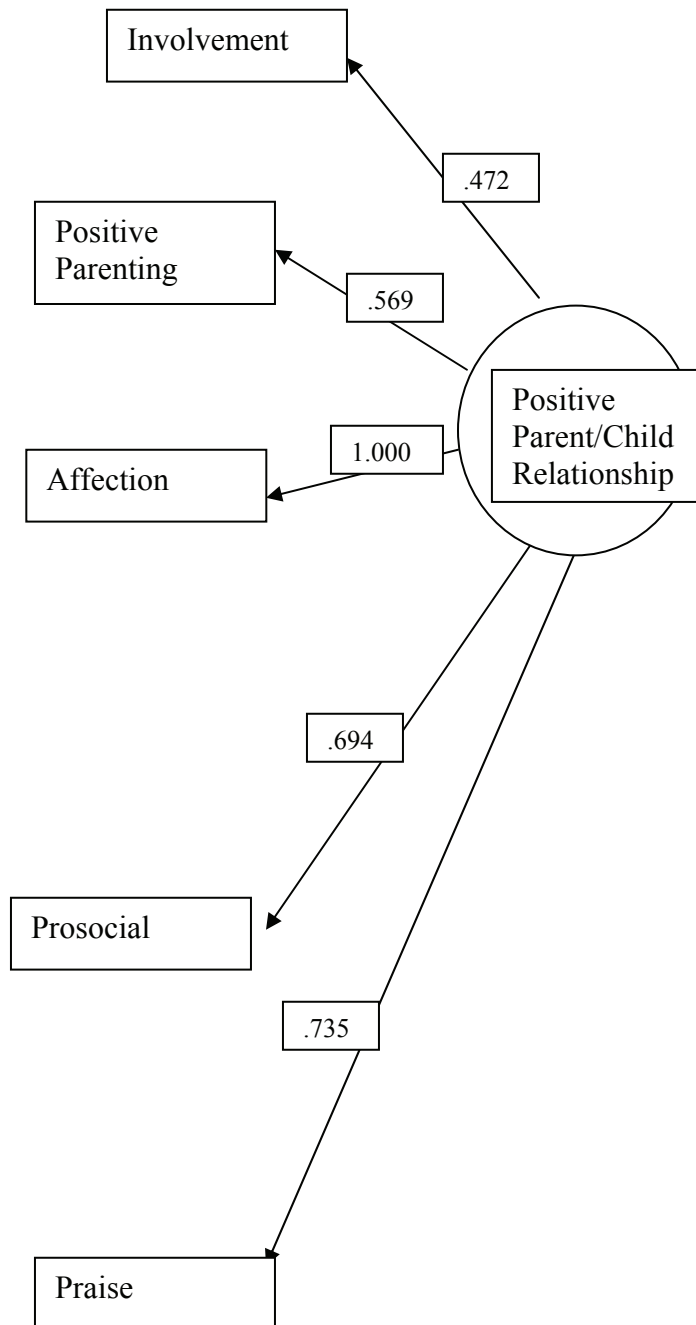
Figure F.9.  Path coefficients for the Negative Parent/Child Relationship latent variable in Hypothesis 1 for mothers.  Note: only estimates significant at the p<.05 level are shown.
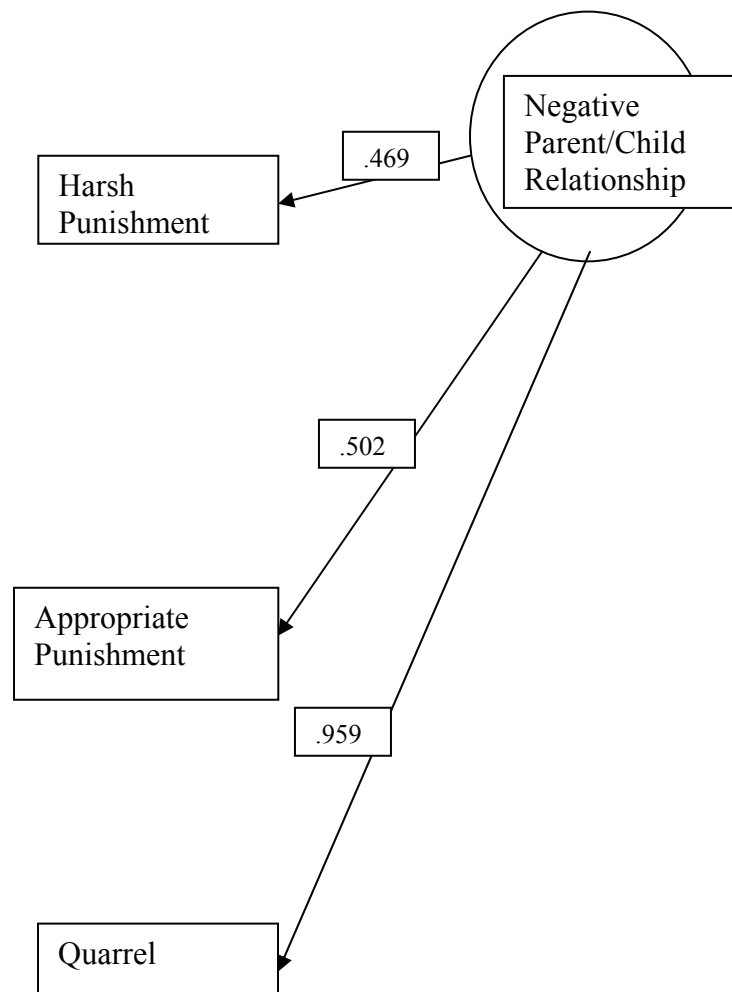
Figure F.10. Path coefficients for the Psychological Functioning latent variable in
Hypothesis 1 for mothers. Note: only estimates significant at the p<.05 level are shown.
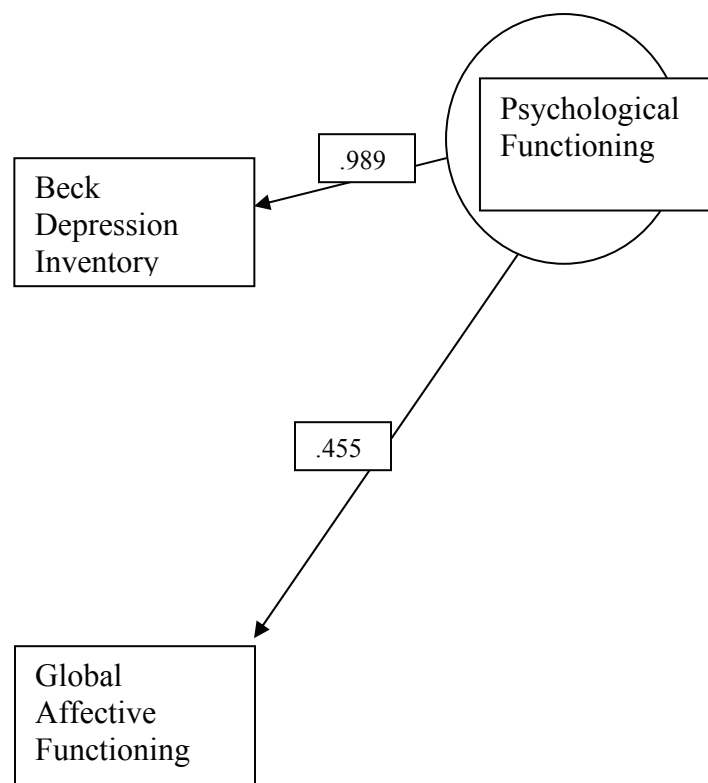
Figure F.11. Path coefficients for the structural equation model testing Hypotheses 1 and 1b for mothers. Note: only estimates significant at the p<.05 level are shown. N = 165.
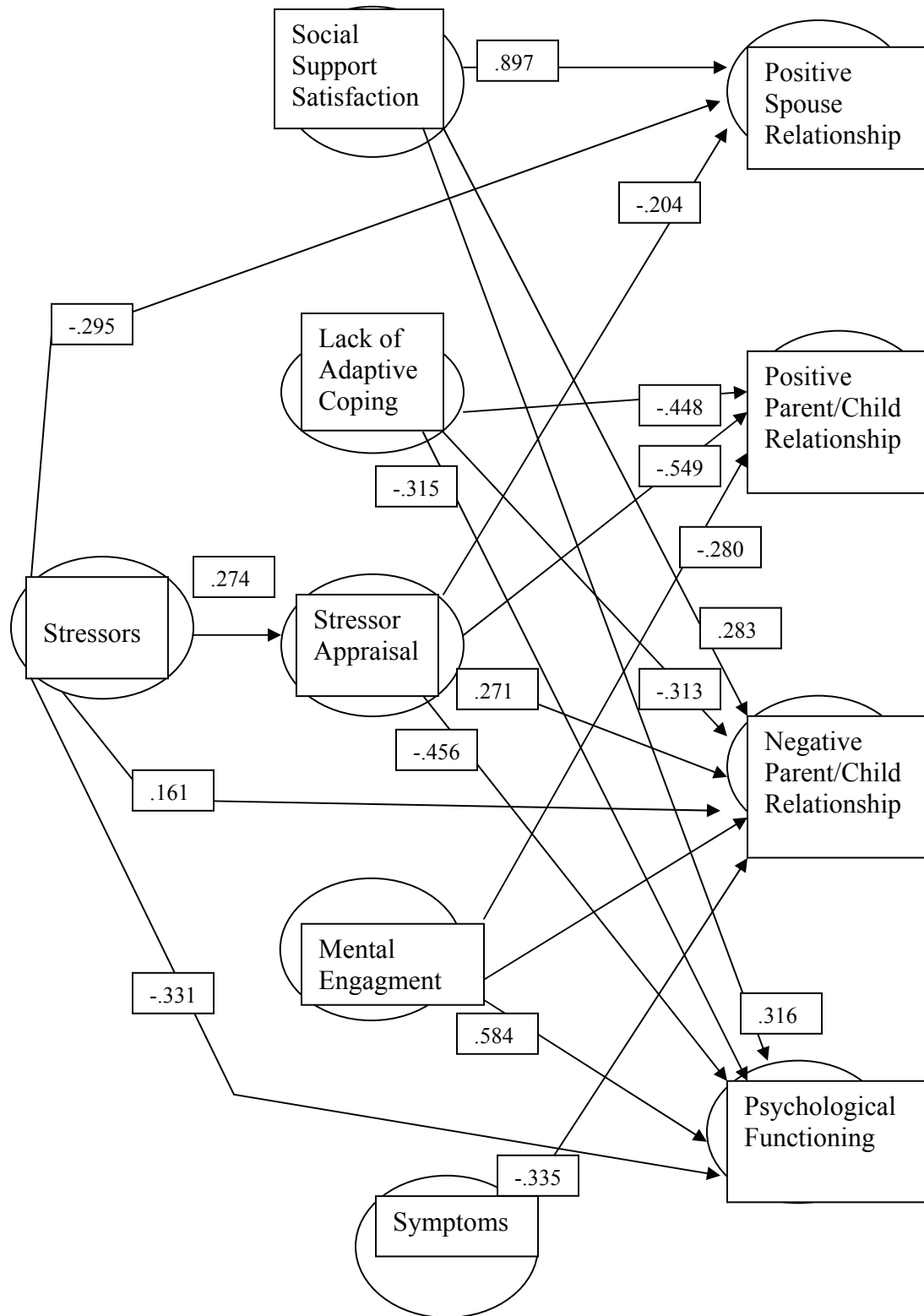
Figure F.12. Path coefficients for the structural equation model testing Hypothesis 1b for fathers. Note: only estimates significant at p<.05 are shown. N = 60.
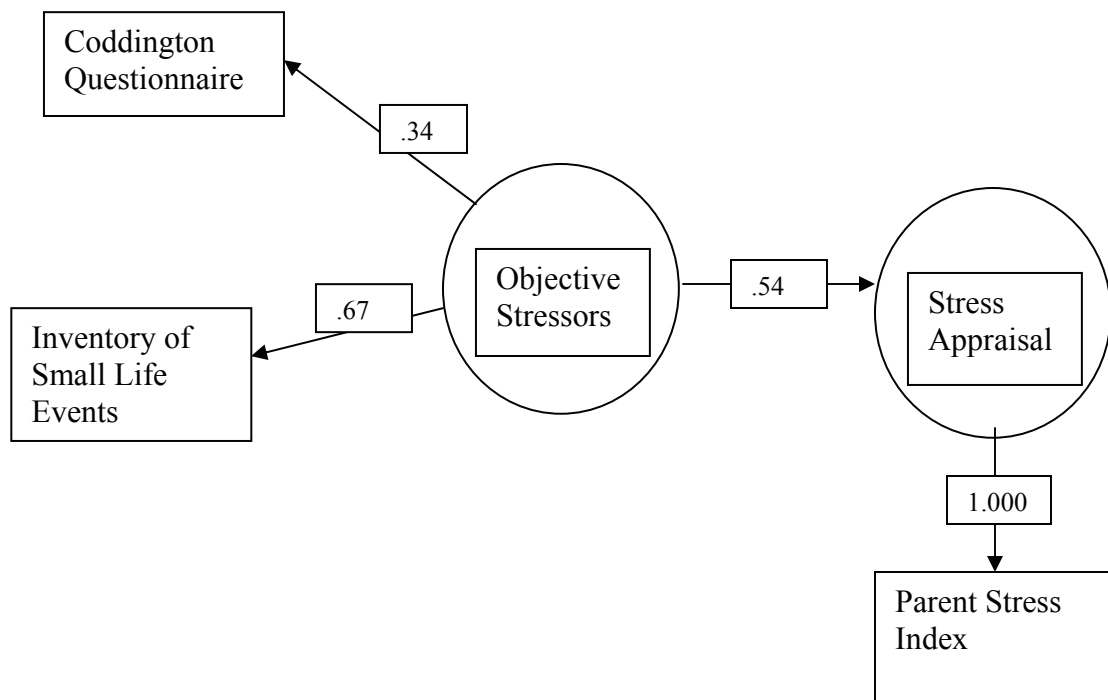
Figure G.1.  Sample histogram of the distribution of residuals compared to a normal probability curve for the dependent variable, involvement, for mothers at baseline.



## Histogram

### Dependent Variable: Involvement--mothers

Mean =-2.78E-15
Std. Dev. =0.982
N =412
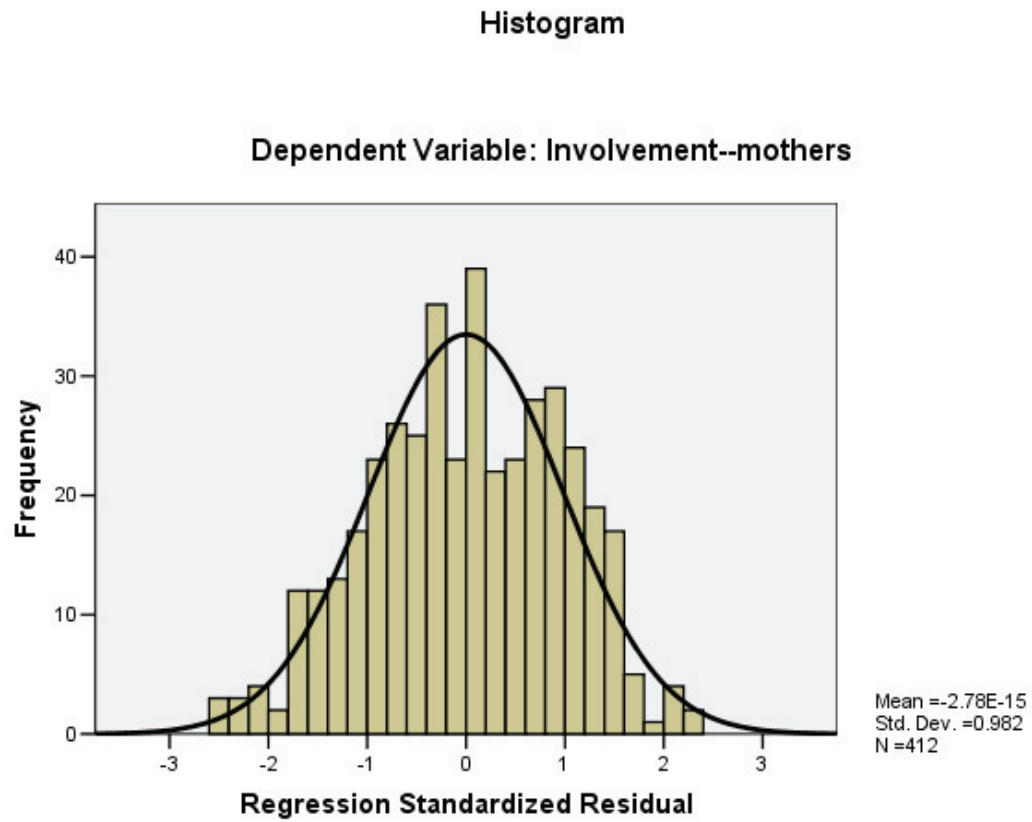
Figure G.2. Sample plot of the standardized residuals indicating a normal distribution for the dependent variable, involvement, for mothers at baseline.



Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Involvement--mothers
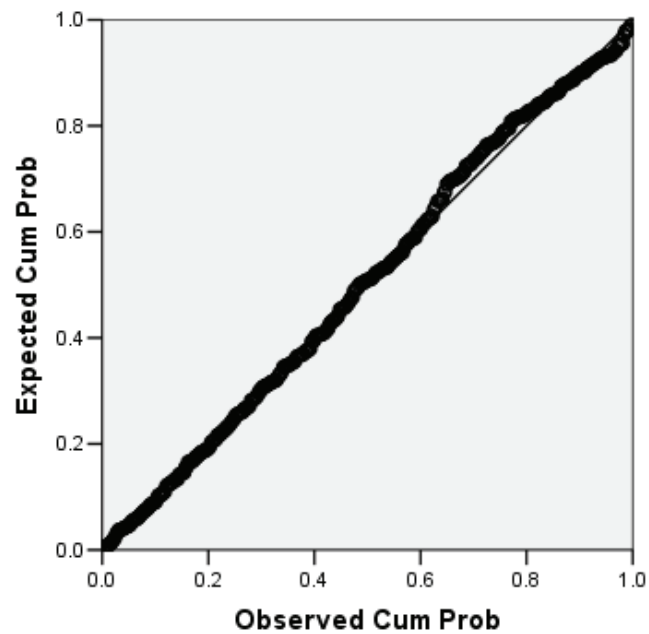
Figure G.3. Sample scatterplot of the residuals against the predicted values for the dependent variable, involvement, for mothers at baseline.



Scatterplot

Dependent Variable: Involvement--mothers
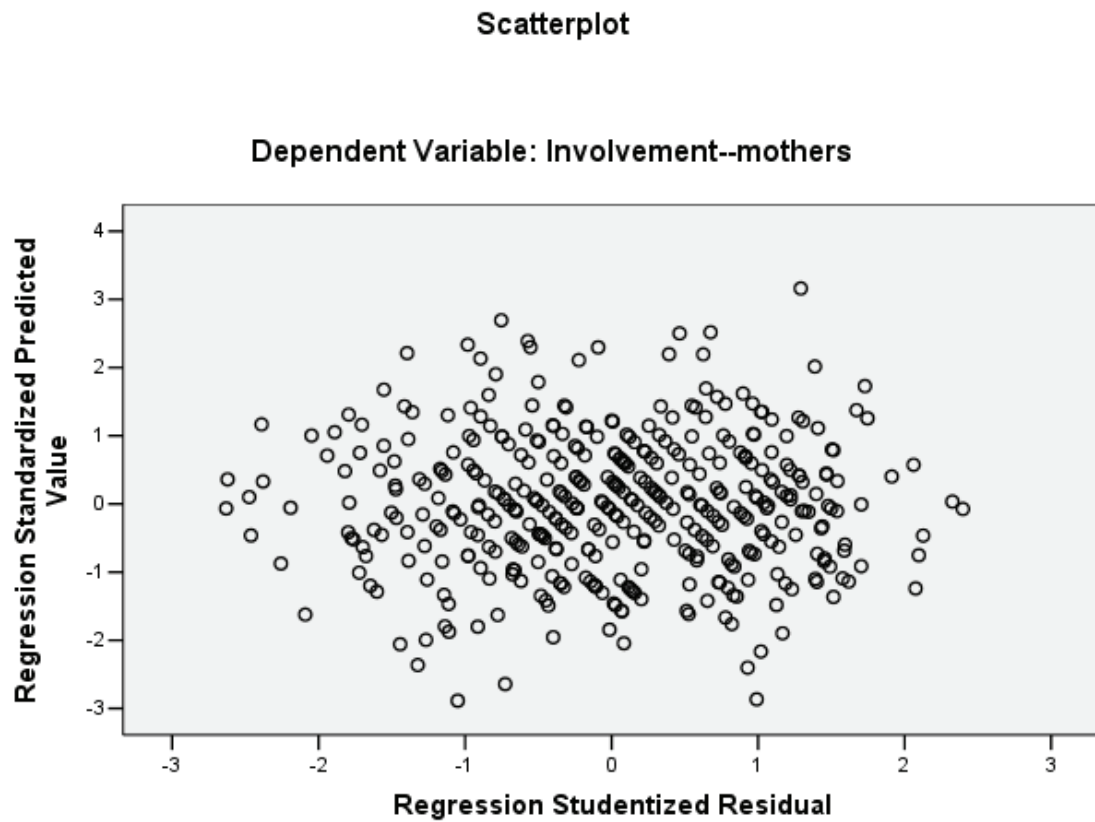
Figure G.4. Partial regression plot of involvement as the dependent variable and CPRS as the independent variable.

**Partial Regression Plot**

**Dependent Variable: Involvement--mothers**
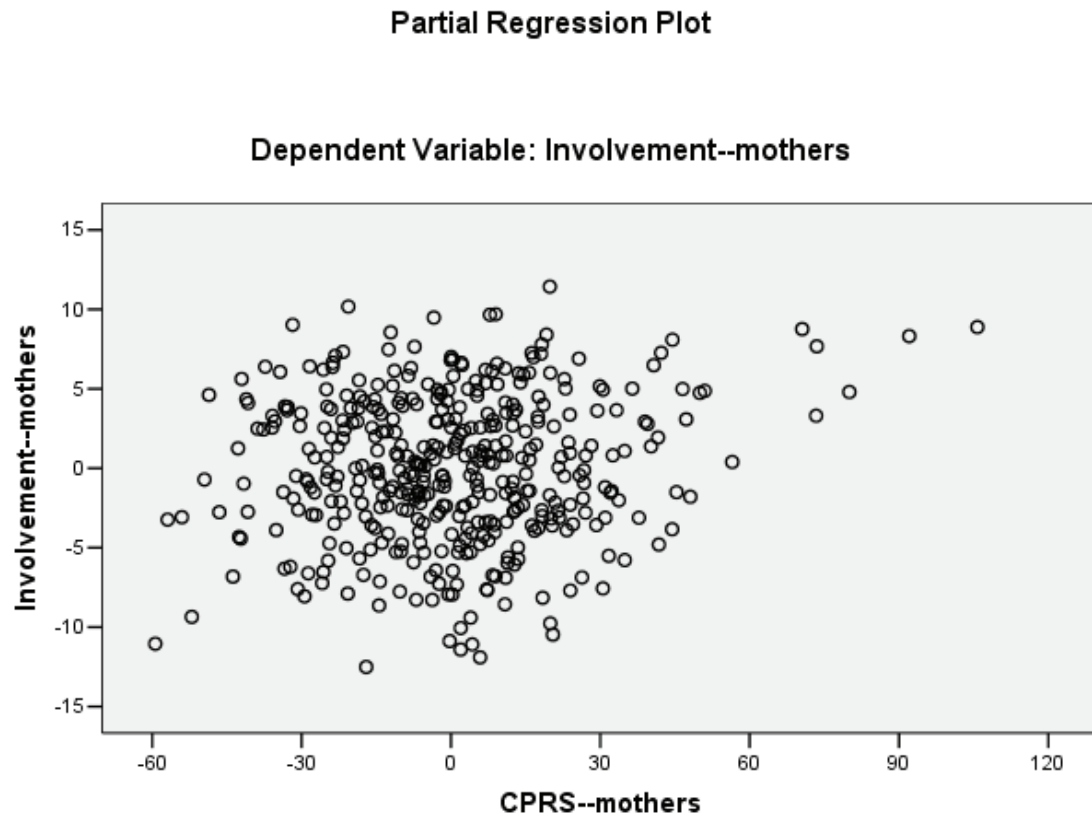
Figure G.5. Sample output of the Model Summary from SPSS for the dependent variable, involvement, for mothers at baseline.

**Model Summary[d]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .280[a] | .078 | .058 | 4.957 | .078 | 3.790 | 9 | 402 | .000 |
| 2 | .441[b] | .194 | .170 | 4.652 | .116 | 19.177 | 3 | 399 | .000 |
| 3 | .442[c] | .196 | .165 | 4.666 | .001 | .206 | 3 | 396 | .892 |

a. Predictors: (Constant), A family member with ADHD?, Sex, ODD, Ethnicity, Hispanic, CPRS--mom, Income, Black, White

b. Predictors: (Constant), A family member with ADHD?, Sex, ODD, Ethnicity, Hispanic, CPRS--mom, Income, Black, White, Soc Sat 3 cat-moms, Soc Supp Num--mom, PSI--mom

c. Predictors: (Constant), A family member with ADHD?, Sex, ODD, Ethnicity, Hispanic, CPRS--mom, Income, Black, White, Soc Sat 3 cat-moms, Soc Supp Num--mom, PSI--mom, SAT x NUM--mothers, PSI x SAT-MOMS, PSI x NUM-MOMS

d. Dependent Variable: Involvement--mothers

Figure G.6.  Sample model coefficients.

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 29.782 | 4.549 | | 6.547 | .000 |
| | CPRS--mom | -.004 | .009 | -.023 | -.459 | .646 |
| | Sex | -.895 | .621 | -.070 | -1.440 | .151 |
| | Ethnicity | 1.490 | .653 | .520 | 2.284 | .023 |
| | Income | -.049 | .104 | -.024 | -.468 | .640 |
| | ODD | -.761 | .513 | -.073 | -1.484 | .139 |
| | White | 9.838 | 3.716 | .909 | 2.647 | .008 |
| | Black | 5.426 | 3.103 | .388 | 1.749 | .081 |
| | Hispanic | 3.077 | 2.621 | .147 | 1.174 | .241 |
| | A family member with ADHD? | -.492 | .527 | -.047 | -.933 | .351 |
| 2 | (Constant) | 32.525 | 4.442 | | 7.322 | .000 |
| | CPRS--mom | .025 | .010 | .134 | 2.524 | .012 |
| | Sex | -1.074 | .589 | -.084 | -1.824 | .069 |
| | Ethnicity | 1.253 | .615 | .438 | 2.039 | .042 |
| | Income | -.073 | .099 | -.036 | -.741 | .459 |
| | ODD | -.445 | .486 | -.043 | -.915 | .361 |
| | White | 8.550 | 3.506 | .790 | 2.438 | .015 |
| | Black | 4.403 | 2.920 | .315 | 1.508 | .132 |
| | Hispanic | 3.170 | 2.468 | .151 | 1.284 | .200 |
| | A family member with ADHD? | -.870 | .497 | -.083 | -1.750 | .081 |
| | Soc Sat 3 cat-moms | .096 | .311 | .015 | .310 | .757 |
| | Soc Supp Num--mom | .074 | .021 | .176 | 3.571 | .000 |
| | PSI--mom | -.079 | .014 | -.306 | -5.482 | .000 |
| 3 | (Constant) | 30.298 | 5.973 | | 5.073 | .000 |
| | CPRS--mom | .025 | .010 | .134 | 2.520 | .012 |
| | Sex | -1.047 | .595 | -.082 | -1.759 | .079 |
| | Ethnicity | 1.231 | .620 | .430 | 1.987 | .048 |
| | Income | -.076 | .099 | -.038 | -.763 | .446 |
| | ODD | -.437 | .488 | -.042 | -.895 | .371 |
| | White | 8.485 | 3.532 | .784 | 2.402 | .017 |
| | Black | 4.392 | 2.936 | .314 | 1.496 | .135 |
| | Hispanic | 3.098 | 2.492 | .148 | 1.243 | .214 |
| | A family member with ADHD? | -.824 | .503 | -.078 | -1.637 | .103 |
| | Soc Sat 3 cat-moms | .411 | 1.582 | .065 | .260 | .795 |
| | Soc Supp Num--mom | .166 | .120 | .395 | 1.376 | .170 |
| | PSI--mom | -.061 | .038 | -.235 | -1.606 | .109 |
| | PSI x SAT-MOMS | .000 | .015 | -.005 | -.023 | .982 |
| | PSI x NUM-MOMS | -.001 | .001 | -.166 | -.719 | .473 |
| | SAT x NUM--mothers | -.012 | .025 | -.086 | -.485 | .628 |

a. Dependent Variable: Involvement--mothers

Table H.1.1. The Influence of Social Support and Stress on Quality of Life Indicator: Dyadic Adjustment Scale.

**Dyadic Adjustment Scale--Logistic Regression for Mothers & Multiple Regression for Fathers**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline B | 14 Months B | Baseline β | 14 Months β |
| ADHD Symptoms | | -.02* | -.14* | |
| Sex | | | | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Dyadic Adjustment Scale (Baseline) | N/A‡ | .21*** | N/A | .74*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | | N/A | |
| Psychosocial Only | N/A | | N/A | |
| $R^{2\dagger}$ | .02 | .54***Ψ | .04 | .62*** |
| **Main Effects** | | | | |
| Stress Appraisal | -.03*** | | -.26*** | |
| Soc Supp Num | | | .18** | |
| Soc Supp Sat | .83*** | | .29*** | |
| $R^{2\dagger}$ | .17 | .55 | .27 | .63 |
| $R^2 \Delta$ | | | .24*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Soc Supp Num | | | | .21* |
| Stress Appraisal x Soc Supp Sat | | | | .95* |
| $R^{2\dagger}$ | .18 | .55 | .29 | .64 |
| $R^2 \Delta$ | | | | |

†Note: Cox & Snell R Square reported for the Logistic Regression Analyses
‡Note: N/A refers to those variables not used in the analyses
Ψ Significant $\chi^2$ at p<.001.

Table H.1.2. The Influence of Social Support and Stress on Quality of Life Indicator: Involvement.

**Involvement**

| Covariates | Mothers Baseline β | Mothers 14 Months β | Fathers Baseline β | Fathers 14 Months β |
|---|---|---|---|---|
| ADHD Symptoms | | | | |
| Sex | | | -.146* | |
| Income | | | | |
| ODD | | | | |
| White | .91** | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Involvement (Baseline) | N/A‡ | .71*** | N/A | .66*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | | N/A | |
| Psychosocial Only | N/A | | N/A | -.16* |
| $R^2$ | .08*** | .50*** | .05 | .53*** |
| **Main Effects** | | | | |
| Stress Appraisal | -.31*** | | -.31*** | |
| Soc Supp Num | .18*** | | .17** | |
| Soc Supp Sat | | | | |
| $R^2$ | .19 | .52 | .15 | .53 |
| $R^2 \Delta$ | .12*** | .01* | .10*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Soc Supp Num | | | | |
| Stress Appraisal x Soc Supp Sat | | | | |
| $R^2$ | .20 | .52 | .16 | .54 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.1.3. The Influence of Social Support and Stress on Quality of Life Indicator: Positive Parenting.

**Positive Parenting**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | | | -.14* | |
| Sex | | | | |
| Income | -.13* | | -.14* | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Positive Parenting (Baseline) | N/A‡ | .62*** | N/A | .58*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | | N/A | |
| Psychosocial Only | N/A | -.13* | N/A | |
| $R^2$ | .02 | .40*** | .07* | .40*** |
| **Main Effects** | | | | |
| Stress Appraisal | -.24*** | | -.24** | |
| Soc Supp Num | | | | |
| Soc Supp Sat | | .09* | | |
| $R^2$ | .09 | .41 | .14 | .41 |
| $R^2 \Delta$ | .06*** | .02* | .07*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Soc Supp Num | | | | |
| Stress Appraisal x Soc Supp Sat | | | | |
| $R^2$ | .09 | .41 | .14 | .43 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.1.4. The Influence of Social Support and Stress on Quality of Life Indicator: Affection.

**Affection**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | -.13** | | -.26*** | |
| Sex | | | | -.12* |
| Income | -.12* | .10* | | |
| ODD | -.10* | | | |
| White | | | .18* | |
| Black | | | .16* | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Affection (Baseline) | N/A‡ | .70*** | N/A | .61*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | | N/A | |
| Psychosocial Only | N/A | | N/A | |
| $R^2$ | .08*** | .48*** | .13*** | .44*** |
| **Main Effects** | | | | |
| Stress Appraisal | -.50*** | -.12* | -.43*** | |
| Soc Supp Num | | | .12** | |
| Soc Supp Sat | | .09* | | |
| $R^2$ | .26 | .51 | .26 | .46 |
| $R^2 \Delta$ | .18*** | .02*** | .13*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Soc Supp Num | | | | |
| Stress Appraisal x Soc Supp Sat | | | | |
| $R^2$ | .26 | .51 | .27 | .47 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.1.5. The Influence of Social Support and Stress on Quality of Life Indicator: Pro-social.

**Pro-social**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | | | -.21*** | -.12* |
| Sex | | | -.14* | -.14** |
| Income | -.11* | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Pro-social (Baseline) | N/A‡ | .76*** | N/A | .65*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | | N/A | |
| Psychosocial Only | N/A | | N/A | |
| $R^2$ | .04 | .58*** | .08** | .51*** |
| **Main Effects** | | | | |
| Stress Appraisal | -.41*** | | -.43*** | |
| Soc Supp Num | .14** | | | |
| Soc Supp Sat | | | | |
| $R^2$ | .20 | .58 | .22 | .53 |
| $R^2 \Delta$ | .16*** | | .14*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Soc Supp Num | | | -.58* | |
| Stress Appraisal x Soc Supp Sat | | | | -.72** |
| $R^2$ | .20 | .59 | .26 | .55 |
| $R^2 \Delta$ | | | | .02* |

‡Note: N/A refers to those variables not used in the analyses

Table H.1.6. The Influence of Social Support and Stress on Quality of Life Indicator: Praise.

**Praise**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | | | | -.16* |
| Sex | | | -.13* | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Praise (Baseline) | N/A‡ | .60*** | N/A | .51*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | | N/A | |
| Psychosocial Only | N/A | | N/A | |
| R² | .03 | .37 | .04 | .32 |
| **Main Effects** | | | | |
| Stress Appraisal | -.35*** | -.13* | -.33*** | |
| Soc Supp Num | | | .15* | |
| Soc Supp Sat | | | | |
| R² | .13 | .39 | .15 | .33 |
| R² Δ | .10*** | | .11*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Soc Supp Num | | | -.60* | |
| Stress Appraisal x Soc Supp Sat | | | | |
| R² | .13 | .39 | .16 | .34 |
| R² Δ | | | | |

‡Note: N/A refers to those variables not used in the analyses

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Table H.1.7. The Influence of Social Support and Stress on Quality of Life Indicator: Harsh Discipline.

**Harsh Discipline**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | .19*** | | .18** | |
| Sex | | | -.17** | |
| Income | | -.09* | -.13* | |
| ODD | | | | |
| White | | -.13* | | |
| Black | | | | |
| Hispanic | | -.10* | | |
| ADHD Family Member | | | | |
| Harsh Discipline (Baseline) | N/A‡ | .55*** | N/A | .51*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | .11* | N/A | |
| Psychosocial Only | N/A | | N/A | |
| $R^2$ | .12*** | .41*** | .11* | .41*** |
| **Main Effects** | | | | |
| Stress Appraisal | .18** | | .16* | |
| Soc Supp Num | | | | |
| Soc Supp Sat | | | | |
| $R^2$ | .15 | .41 | .13 | .42 |
| $R^2 \Delta$ | .03** | | | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Soc Supp Num | | | .68* | |
| Stress Appraisal x Soc Supp Sat | | | | |
| $R^2$ | .15 | .42 | .16 | .44 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.1.8. The Influence of Social Support and Stress on Quality of Life Indicator: Appropriate Discipline.

**Appropriate Discipline**

| Covariates | Mothers | | Fathers | |
| --- | --- | --- | --- | --- |
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | .29*** | .01** | .243*** | |
| Sex | -.15** | | | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | .18** | |
| Appropriate Discipline (Baseline) | N/A‡ | .48*** | N/A | .45*** |
| Combined Treatment | N/A | .75* | N/A | |
| Meds Only | N/A | | N/A | -.24** |
| Psychosocial Only | N/A | -.97** | N/A | -.21** |
| $R^2$ | .12*** | .32*** | .14* | .33*** |
| **Main Effects** | | | | |
| Stress Appraisal | -.17** | | -.15* | |
| Soc Supp Num | | | | |
| Soc Supp Sat | | | | |
| $R^2$ | .15 | .33 | .16 | .33 |
| $R^2 \Delta$ | .03** | | | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Soc Supp Num | | | | |
| Stress Appraisal x Soc Supp Sat | | | | |
| $R^2$ | .15 | .34 | .17 | .34 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.1.9. The Influence of Social Support and Stress on Quality of Life Indicator: Quarrel.

**Quarrel**

| Covariates | Mothers Baseline β | Mothers 14 Months β | Fathers Baseline β | Fathers 14 Months β |
|---|---|---|---|---|
| ADHD Symptoms | .32** | | .46*** | |
| Sex | | | | |
| Income | | | | |
| ODD | .10* | | | |
| White | -.77* | -.16** | | |
| Black | -.44* | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Quarrel (Baseline) | N/A‡ | .62*** | N/A | .62*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | .16*** | N/A | |
| Psychosocial Only | N/A | | N/A | |
| R² | .14*** | .47*** | .24*** | .42*** |
| **Main Effects** | | | | |
| Stress Appraisal | .30*** | | .24*** | |
| Soc Supp Num | | | | -.13* |
| Soc Supp Sat | | -.09* | | |
| R² | .20 | .48 | .29 | .44 |
| R² Δ | .07*** | | .04*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Soc Supp Num | | | | |
| Stress Appraisal x Soc Supp Sat | | | | |
| R² | .21 | .48 | .29 | .45 |
| R² Δ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.1.10. The Influence of Social Support and Stress on Quality of Life Indicator: Beck Depression Inventory (BDI).

**Beck Depression Inventory (BDI) Dichotomized for Logistic Regression**

| | Mothers | | Fathers | |
|---|---|---|---|---|
| **Covariates** | Baseline B | 14 Months B | Baseline B | 14 Months B$^{§}$ |
| ADHD Symptoms | .02*** | .02*** | .02*** | |
| Sex | | | | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | .65* | |
| BDI (Baseline) | N/A$^{‡}$ | .19*** | N/A | |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | | N/A | |
| Psychosocial Only | N/A | | N/A | |
| $R^{2†}$ | .08 | .25***$^{Φ}$ | .09**$^{Ψ}$ | |
| **Main Effects** | | | | |
| Stress Appraisal | .04*** | | .05*** | |
| Soc Supp Num | | | | |
| Soc Supp Sat | -.36* | -.52*** | -.54** | |
| $R^{2†}$ | .19***$^{Φ}$ | .28***$^{Φ}$ | .23***$^{Φ}$ | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Soc Supp Num | | | | |
| Stress Appraisal x Soc Supp Sat | .02* | | | |
| $R^{2†}$ | .20 | .28 | .24 | |

$^{†}$Note: Cox & Snell R Square reported for the Logistic Regression Analyses
$^{‡}$Note: N/A refers to those variables not used in the analyses
$^{Ψ}$ Significant $\chi^2$ increase at p<.001.
$^{Φ}$ Significant $\chi^2$ increase at p<.001.
$^{§}$ SPSS could not find a final solution.

Table H.1.11. The Influence of Social Support and Stress on Quality of Life Indicator: Global Affection Functioning (GAF).

**Global Affective Functioning (GAF) Dichotomized for Logistic Regression**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline B | 14 Months B[Φ] | Baseline B | 14 Months B[Φ] |
| ADHD Symptoms | -.24*** | | | |
| Sex | | | | |
| Income | .22*** | | .15* | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| GAF (Baseline) | N/A[‡] | | N/A | |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | | N/A | |
| Psychosocial Only | N/A | | N/A | |
| $R^{2\dagger}$ | .13*** | | .08 | |
| **Main Effects** | | | | |
| Stress Appraisal | -.28*** | | -.03** | |
| Soc Supp Num | .14* | | | |
| Soc Supp Sat | | | | |
| $R^{2\dagger}$ | .24 | | .17 | |
| $R^2 \Delta$ | .10*** | | .09*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Soc Supp Num | | | | |
| Stress Appraisal x Soc Supp Sat | | | | |
| $R^{2\dagger}$ | .24 | | .17 | |
| $R^2 \Delta$ | | | | |

[†]Note: Cox & Snell R Square reported for the Logistic Regression Analyses

[‡]Note: N/A refers to those variables not used in the analyses

[Φ] The GAF was not collected at 14 months.

Note: R2 Δ indicates the increase in χ2 significant at p<.001.

Table H.2.1. The Influence of Adaptive Coping and Stress on Quality of Life Indicator: Dyadic Adjustment Scale.

**Dyadic Adjustment Scale**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline B[Φ] | 14 Months B | Baseline β | 14 Months β |
| ADHD Symptoms | | | -.15* | |
| Sex | | | | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | .14* |
| ADHD Family Member | | | | |
| Dyadic Adjustment Scale (Baseline) | | .20*** | N/A | .76*** |
| Combined Treatment | | | N/A | |
| Meds Only | | | N/A | |
| Psychosocial Only | | | N/A | |
| $R^2$ | | .53*** | .04 | .62*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | | | -.36*** | |
| Active Coping | | | | |
| Planning | | | | |
| Suppression | | | | |
| Restraint | | .26* | | |
| Instrumental Support | | | | |
| Emotional Support | | | | |
| Reinterpretation | | | | |
| Acceptance | | | | |
| Humor | | | N/A | N/A |
| $R^2$ | | .55 | .17 | .64 |
| $R^2 \Delta$ | | | .12*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Active Coping | | .02* | | |
| Stress Appraisal x Planning | | -.02* | | |
| Stress Appraisal x Suppression | | | | |
| Stress Appraisal x Restraint | | | | |
| Stress Appraisal x Instrumental Support | | | | |
| Stress Appraisal x Emotional Support | | | -.95* | |
| Stress Appraisal x Reinterpretation | | | | |
| Stress Appraisal x Acceptance | | | | |
| Stress Appraisal x Humor | | .02** | N/A | N/A |
| $R^2$ | | .57 | .20 | .66 |
| $R^2 \Delta$ | | | | |

[‡]Note: N/A refers to those variables not used in the analyses
[Φ] SPSS could not find a final solution.

Table H.2.2. The Influence of Adaptive Coping and Stress on Quality of Life Indicator: Involvement.

**Involvement**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | | | -.14* | |
| Sex | | | -.14* | |
| Income | | | | |
| ODD | | | | |
| White | .87** | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Involvement (Baseline) | N/A‡ | .69*** | N/A | .66*** |
| Combined Treatment | N/A | | N/A | -.16* |
| Meds Only | N/A | | N/A | -.13* |
| Psychosocial Only | N/A | | N/A | -.18** |
| $R^2$ | .05** | .49*** | .05 | .53*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | -.27*** | -.10* | -.24*** | |
| Active Coping | | | | |
| Planning | | | | |
| Suppression | .18*** | | | |
| Restraint | | | | .14* |
| Instrumental Support | | | | |
| Emotional Support | | | .17* | |
| Reinterpretation | .18** | | | |
| Acceptance | | | -.22*** | -.14* |
| Humor | | | N/A | N/A |
| $R^2$ | .22 | .52 | .22 | .56 |
| $R^2 \Delta$ | .17*** | .03* | .17*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Active Coping | | | | |
| Stress Appraisal x Planning | | | | |
| Stress Appraisal x Suppression | | | | |
| Stress Appraisal x Restraint | | | | |
| Stress Appraisal x Instrumental Support | | | | |
| Stress Appraisal x Emotional Support | | | | |
| Stress Appraisal x Reinterpretation | | | | |
| Stress Appraisal x Acceptance | | | | |
| Stress Appraisal x Humor | | | N/A | N/A |
| $R^2$ | .25 | .53 | .25 | .58 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.2.3. The Influence of Adaptive Coping and Stress on Quality of Life Indicator: Positive Parenting.

**Positive Parenting**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | | | -.14* | |
| Sex | | | | |
| Income | -.14** | | -.15** | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Positive Parenting (Baseline) | N/A‡ | .63*** | N/A | .57*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | -.10* | N/A | -.15* |
| Psychosocial Only | N/A | -.13** | N/A | -.19** |
| $R^2$ | .03 | .41*** | .07* | .40*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | -.19*** | -.09* | -.19** | |
| Active Coping | | | | |
| Planning | | | | |
| Suppression | | | | |
| Restraint | | | | |
| Instrumental Support | | | | |
| Emotional Support | | | .22** | |
| Reinterpretation | .18** | | | |
| Acceptance | | -.10* | -.18** | |
| Humor | | | N/A | N/A |
| $R^2$ | .13 | .44 | .22 | .43 |
| $R^2 \Delta$ | .11*** | .03* | .15*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Active Coping | | | | |
| Stress Appraisal x Planning | | | | |
| Stress Appraisal x Suppression | | | | |
| Stress Appraisal x Restraint | | | | |
| Stress Appraisal x Instrumental Support | | | | |
| Stress Appraisal x Emotional Support | | | | |
| Stress Appraisal x Reinterpretation | | | | |
| Stress Appraisal x Acceptance | | | | |
| Stress Appraisal x Humor | | | N/A | N/A |
| $R^2$ | .15 | .45 | .25 | .46 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.2.4. The Influence of Adaptive Coping and Stress on Quality of Life Indicator: Affection.

**Affection**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | -.12** | | -.27*** | |
| Sex | | | | |
| Income | -.11* | | | |
| ODD | | | | |
| White | .67* | | .18* | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Affection (Baseline) | N/A‡ | .68*** | N/A | .60*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | -.09* | N/A | |
| Psychosocial Only | N/A | | N/A | |
| $R^2$ | .06*** | .49*** | .13*** | .43*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | -.45*** | -.15** | -.40*** | |
| Active Coping | | | | .19* |
| Planning | | .15* | | |
| Suppression | | | | |
| Restraint | | | | |
| Instrumental Support | -.13* | | -.21* | |
| Emotional Support | .11* | | .24** | |
| Reinterpretation | .19*** | | | |
| Acceptance | | | -.18** | -.13* |
| Humor | -.09* | | N/A | N/A |
| $R^2$ | .30 | .52 | .26 | .48 |
| $R^2 \Delta$ | .24*** | .03** | .14*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Active Coping | | | | |
| Stress Appraisal x Planning | | | | |
| Stress Appraisal x Suppression | | | | -1.14** |
| Stress Appraisal x Restraint | | | | |
| Stress Appraisal x Instrumental Support | | | | |
| Stress Appraisal x Emotional Support | | | | |
| Stress Appraisal x Reinterpretation | | | | |
| Stress Appraisal x Acceptance | | | | |
| Stress Appraisal x Humor | | | N/A | N/A |
| $R^2$ | .32 | .52 | .28 | .51 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.2.5. The Influence of Adaptive Coping and Stress on Quality of Life Indicator: Pro-social.

**Pro-social**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | | | -.22*** | -.11* |
| Sex | | | -.12* | -.13* |
| Income | -.12* | | | |
| ODD | | | | |
| White | | | | |
| Black | | .34* | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Pro-social (Baseline) | N/A‡ | .75*** | N/A | .66*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | | N/A | |
| Psychosocial Only | N/A | | N/A | |
| $R^2$ | .03 | .57*** | .08** | .51*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | -.354*** | -.09* | -.39*** | |
| Active Coping | | | | |
| Planning | | | | |
| Suppression | .13** | | | |
| Restraint | | | | .15* |
| Instrumental Support | | | | |
| Emotional Support | | | .24** | |
| Reinterpretation | .18*** | .09* | | |
| Acceptance | | | | -.17** |
| Humor | | | N/A | N/A |
| $R^2$ | .26 | .59 | .26 | .55 |
| $R^2 \Delta$ | .23*** | | .18*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Active Coping | | | | |
| Stress Appraisal x Planning | | | | |
| Stress Appraisal x Suppression | | | .87* | |
| Stress Appraisal x Restraint | | .47* | | |
| Stress Appraisal x Instrumental Support | | | | |
| Stress Appraisal x Emotional Support | | -.81** | | |
| Stress Appraisal x Reinterpretation | | | | -.93* |
| Stress Appraisal x Acceptance | | -.54* | | |
| Stress Appraisal x Humor | | | N/A | N/A |
| $R^2$ | .28 | .62 | .30 | .58 |
| $R^2 \Delta$ | | .03** | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.2.6. The Influence of Adaptive Coping and Stress on Quality of Life Indicator: Praise.

**Praise**

| | | Mothers | | Fathers | |
|---|---|---|---|---|---|
| **Covariates** | | Baseline β | 14 Months β | Baseline β | 14 Months β |
| | ADHD Symptoms | | | | -.16** |
| | Sex | | | -.12* | |
| | Income | | | | |
| | ODD | | | | |
| | White | | | | |
| | Black | | | | |
| | Hispanic | | | | |
| | ADHD Family Member | | | | |
| | Praise (Baseline) | N/A‡ | .59*** | N/A | .50*** |
| | Combined Treatment | N/A | | N/A | |
| | Meds Only | N/A | | N/A | |
| | Psychosocial Only | N/A | | N/A | |
| | $R^2$ | .02 | .36** | .04 | .32*** |
| **Main Effects** | | | | | |
| | Stress Appraisal (PSI) | -.29*** | -.13** | -.23** | |
| | Active Coping | | | | .26** |
| | Planning | | | .22* | |
| | Suppression | .13* | | | -.23** |
| | Restraint | | | .14* | .19** |
| | Instrumental Support | | | | |
| | Emotional Support | | | .17* | |
| | Reinterpretation | .17** | .13* | | |
| | Acceptance | | | | -.16* |
| | Humor | | | N/A | N/A |
| | $R^2$ | .23 | .40 | .24 | .41 |
| | $R^2 Δ$ | .20*** | .04** | .20*** | .09** |
| **Interaction Effects** | | | | | |
| | Stress Appraisal x Active Coping | | | | 1.36* |
| | Stress Appraisal x Planning | | | | |
| | Stress Appraisal x Suppression | | | | |
| | Stress Appraisal x Restraint | | | | |
| | Stress Appraisal x Instrumental Support | | | | |
| | Stress Appraisal x Emotional Support | | -.71* | -.81* | |
| | Stress Appraisal x Reinterpretation | | | | |
| | Stress Appraisal x Acceptance | | | | |
| | Stress Appraisal x Humor | | | N/A | N/A |
| | $R^2$ | .24 | .41 | .28 | .45 |
| | $R^2 Δ$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.2.7. The Influence of Adaptive Coping and Stress on Quality of Life Indicator: Harsh Discipline.

**Harsh Discipline**

| | Mothers | | Fathers | |
|---|---|---|---|---|
| Covariates | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | .20*** | | .20*** | |
| Sex | | | -.15** | |
| Income | | -.08* | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Harsh Discipline (Baseline) | N/A | .56*** | N/A | .48*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | .12** | N/A | |
| Psychosocial Only | N/A | | N/A | |
| $R^2$ | .13*** | .43*** | .11*** | .37*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | .13** | | | |
| Active Coping | | | -.19* | |
| Planning | | | | |
| Suppression | | | | |
| Restraint | -.10* | | | |
| Instrumental Support | | | | |
| Emotional Support | | | | |
| Reinterpretation | | | | |
| Acceptance | | | | |
| Humor | | .08* | N/A | N/A |
| $R^2$ | .18 | .45 | .17 | .38 |
| $R^2 \Delta$ | .06*** | | | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Active Coping | | | | |
| Stress Appraisal x Planning | | | | |
| Stress Appraisal x Suppression | | | | |
| Stress Appraisal x Restraint | | -.70** | | |
| Stress Appraisal x Instrumental Support | | | | |
| Stress Appraisal x Emotional Support | | | | |
| Stress Appraisal x Reinterpretation | | | | |
| Stress Appraisal x Acceptance | | | | |
| Stress Appraisal x Humor | | | N/A | N/A |
| $R^2$ | .20 | .47 | .20 | .41 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.2.8. The Influence of Adaptive Coping and Stress on Quality of Life Indicator: Appropriate Discipline.

**Appropriate Discipline**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | .26*** | .15*** | .26*** | |
| Sex | -.14** | | -.12* | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | .15** | |
| Appropriate Discipline (Baseline) | N/A‡ | .42*** | N/A | .43*** |
| Combined Treatment | N/A | .11* | N/A | |
| Meds Only | N/A | | N/A | -.22** |
| Psychosocial Only | N/A | -.16** | N/A | -.18* |
| $R^2$ | .10*** | .30*** | .14*** | .31*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | | | | |
| Active Coping | | | | |
| Planning | | | | |
| Suppression | | | | |
| Restraint | | | | |
| Instrumental Support | | | | |
| Emotional Support | | | | |
| Reinterpretation | .13* | | | |
| Acceptance | | | | -.15* |
| Humor | | .10* | N/A | N/A |
| $R^2$ | .15 | .34 | .18 | .34 |
| $R^2 \Delta$ | .05** | .04** | | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Active Coping | | | | |
| Stress Appraisal x Planning | | | | |
| Stress Appraisal x Suppression | | | | |
| Stress Appraisal x Restraint | -.65* | | | |
| Stress Appraisal x Instrumental Support | | | | |
| Stress Appraisal x Emotional Support | | | | |
| Stress Appraisal x Reinterpretation | | | | |
| Stress Appraisal x Acceptance | | | | |
| Stress Appraisal x Humor | | | N/A | N/A |
| $R^2$ | .17 | .36 | .21 | .37 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.2.9. The Influence of Adaptive Coping and Stress on Quality of Life Indicator: Quarrel.

**Quarrel**

| | | Mothers | | Fathers | |
|---|---|---|---|---|---|
| Covariates | | Baseline β | 14 Months β | Baseline β | 14 Months β |
| | ADHD Symptoms | .31*** | | .47*** | |
| | Sex | | | | |
| | Income | | | | |
| | ODD | | | | |
| | White | -.76* | | | |
| | Black | -.46* | | | |
| | Hispanic | | | | |
| | ADHD Family Member | | | | |
| | Quarrel (Baseline) | N/A‡ | .61*** | N/A | .63*** |
| | Combined Treatment | N/A | | N/A | |
| | Meds Only | N/A | .18*** | N/A | |
| | Psychosocial Only | N/A | | N/A | .14* |
| | R² | .12*** | .47*** | .26*** | .47*** |
| Main Effects | | | | | |
| | Stress Appraisal (PSI) | .30*** | | .24*** | |
| | Active Coping | | | -.18* | |
| | Planning | | | | |
| | Suppression | | | | |
| | Restraint | -.11* | | -.14* | |
| | Instrumental Support | .15* | | | -.22** |
| | Emotional Support | | | | |
| | Reinterpretation | | | | |
| | Acceptance | | | .14* | |
| | Humor | .09* | | N/A | N/A |
| | R² | .22 | .48 | .33 | .52 |
| | R² Δ | .10*** | | .08*** | |
| Interaction Effects | | | | | |
| | Stress Appraisal x Active Coping | -.88* | | | |
| | Stress Appraisal x Planning | | | | |
| | Stress Appraisal x Suppression | | | | |
| | Stress Appraisal x Restraint | | | | |
| | Stress Appraisal x Instrumental Support | | | | |
| | Stress Appraisal x Emotional Support | | | | |
| | Stress Appraisal x Reinterpretation | | | | |
| | Stress Appraisal x Acceptance | | | -.66* | |
| | Stress Appraisal x Humor | | | N/A | N/A |
| | R² | .25 | .49 | .36 | .53 |
| | R² Δ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.2.10. The Influence of Adaptive Coping and Stress on Quality of Life Indicator: Beck Depression Inventory (BDI).

**Beck Depression Inventory (BDI) Dichotomized for Logistic Regression**

| | Mothers | | Fathers | |
|---|---|---|---|---|
| **Covariates** | Baseline B$^{\Psi}$ | 14 Months B$^{\Phi}$ | Baseline B$^{\Phi}$ | 14 Months B$^{\Phi}$ |
| ADHD Symptoms | | | | |
| Sex | | | | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| BDI (Baseline) | | | | |
| Combined Treatment | | | | |
| Meds Only | | | | |
| Psychosocial Only | | | | |
| $R^2$ | | | | |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | | | | |
| Active Coping | | | | |
| Planning | | | | |
| Suppression | | | | |
| Restraint | | | | |
| Instrumental Support | | | | |
| Emotional Support | | | | |
| Reinterpretation | | | | |
| Acceptance | | | | |
| Humor | | | | |
| $R^2$ | | | | |
| $R^2 \Delta$ | | | | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Active Coping | | | | |
| Stress Appraisal x Planning | | | | |
| Stress Appraisal x Suppression | | | | |
| Stress Appraisal x Restraint | | | | |
| Stress Appraisal x Instrumental Support | | | | |
| Stress Appraisal x Emotional Support | | | | |
| Stress Appraisal x Reinterpretation | | | | |
| Stress Appraisal x Acceptance | | | | |
| Stress Appraisal x Humor | | | | |
| $R^2$ | | | | |
| $R^2 \Delta$ | | | | |

$^{\Phi}$SPSS could not find a final solution.

$^{\Psi}$ Estimation terminated because parameter estimates changed by < .001.

Table H.2.11. The Influence of Adaptive Coping and Stress on Quality of Life Indicator: Global Affection Functioning (GAF).

**Global Affective Functioning (GAF) Dichotomized for Logistic Regression**

|  | Mothers | | Fathers | |
| --- | --- | --- | --- | --- |
| Covariates | Baseline β | 14 Months β$^{\Phi}$ | Baseline β$^{\Psi}$ | 14 Months β$^{\Phi}$ |
| ADHD Symptoms | -.24*** | | | |
| Sex | | | | |
| Income | .23*** | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| GAF (Baseline) | N/A$^{\ddagger}$ | | | |
| Combined Treatment | N/A | | | |
| Meds Only | N/A | | | |
| Psychosocial Only | N/A | | | |
| $R^{2\dagger}$ | .14*** | | | |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | -.26*** | | | |
| Active Coping | | | | |
| Planning | | | | |
| Suppression | | | | |
| Restraint | | | | |
| Instrumental Support | | | | |
| Emotional Support | | | | |
| Reinterpretation | | | | |
| Acceptance | | | | |
| Humor | | | | |
| $R^2$ | .24 | | | |
| $R^2 \Delta$ | .10*** | | | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Active Coping | -1.02* | | | |
| Stress Appraisal x Planning | | | | |
| Stress Appraisal x Suppression | | | | |
| Stress Appraisal x Restraint | | | | |
| Stress Appraisal x Instrumental Support | | | | |
| Stress Appraisal x Emotional Support | | | | |
| Stress Appraisal x Reinterpretation | | | | |
| Stress Appraisal x Acceptance | | | | |
| Stress Appraisal x Humor | | | | |
| $R^2$ | .26 | | | |
| $R^2 \Delta$ | | | | |

$^{\dagger}$Note: Cox & Snell R Square reported for the Logistic Regression Analyses
$^{\ddagger}$Note: N/A refers to those variables not used in the analyses
$^{\Psi}$ Estimation terminated because parameter estimates changed by < .001.
$^{\Phi}$ The GAF was not collected at 14 months.

Table H.3.1. The Influence of Maladaptive Coping and Stress on Quality of Life Indicator: Dyadic Adjustment Scale.

**Dyadic Adjustment Scale**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline B$^{\Phi}$ | 14 Months B$^{\Phi}$ | Baseline β | 14 Months β |
| ADHD Symptoms | | | -.15* | |
| Sex | | | | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | .14* |
| ADHD Family Member | | | | |
| Dyadic Adjustment Scale (Baseline) | | | N/A | .76*** |
| Combined Treatment | | | N/A | |
| Meds Only | | | N/A | |
| Psychosocial Only | | | N/A | |
| R$^2$ | | | .04 | .62*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | | | -.35*** | |
| Denial | | | | |
| Behavioral Disengagement | | | | |
| Mental Disengagment | | | | |
| Drugs/Alcohol | | | -.13* | |
| Humor | | | | |
| R$^2$ | | | .17 | .63 |
| R$^2$Δ | | | .13** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Denial | | | -1.13** | |
| Stress Appraisal x Behav Disengage | | | | |
| Stress Appraisal x Mental Disengage | | | .98* | |
| Stress Appraisal x Drugs/Alcohol | | | | |
| Stress Appraisal x Humor | | | | |
| R$^2$ | | | .21 | .64 |
| R$^2$Δ | | | .05* | |

$^{\ddagger}$Note: N/A refers to those variables not used in the analyses

$^{\Phi}$SPSS could not find a final solution.

Table H.3.2. The Influence of Maladaptive Coping and Stress on Quality of Life Indicator: Involvement.

**Involvement**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | | | -.14* | |
| Sex | | | -.14* | |
| Income | | | | |
| ODD | | | | |
| White | .87** | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Involvement (Baseline) | N/A‡ | .69*** | N/A | .66*** |
| Combined Treatment | N/A | | N/A | -.16* |
| Meds Only | N/A | | N/A | -.13* |
| Psychosocial Only | N/A | | N/A | -.18* |
| R² | .05** | .49*** | .05 | .53*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | -.30*** | -.12** | -.27*** | |
| Denial | .11* | | .14* | |
| Behavioral Disengagement | | | -.19** | -.13* |
| Mental Disengagment | | | | |
| Drugs/Alcohol | -.14** | | | |
| Humor | N/A | N/A | | .14** |
| R² | .16 | .50 | .16 | .58 |
| R²Δ | .11*** | | .11*** | .04** |
| **Interaction Effects** | | | | |
| Stress Appraisal x Denial | | .65** | | |
| Stress Appraisal x Behav Disengage | | | | |
| Stress Appraisal x Mental Disengage | | | | |
| Stress Appraisal x Drugs/Alcohol | | | | |
| Stress Appraisal x Humor | N/A | N/A | | |
| R² | .17 | .51 | .16 | .58 |
| R²Δ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.3.3. The Influence of Maladaptive Coping and Stress on Quality of Life Indicator: Positive Parenting.

**Positive Parenting**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | | | -.14* | |
| Sex | | | | |
| Income | -.14** | | -.15* | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Positive Parenting (Baseline) | N/A‡ | .63*** | N/A | .57*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | -.10* | N/A | -.15* |
| Psychosocial Only | N/A | -.13** | N/A | -.19* |
| $R^2$ | .03 | .41*** | .07* | .40*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | -.23*** | -.13** | -.25*** | |
| Denial | .11* | | | |
| Behavioral Disengagement | | | -.16* | |
| Mental Disengagment | | | | |
| Drugs/Alcohol | -.10* | | | |
| Humor | N/A | N/A | | .19** |
| $R^2$ | .09 | .43 | .14 | .46 |
| $R^2 \Delta$ | .06*** | .02* | .08*** | .06** |
| **Interaction Effects** | | | | |
| Stress Appraisal x Denial | | .76** | | |
| Stress Appraisal x Behav Disengage | | | | |
| Stress Appraisal x Mental Disengage | | | | |
| Stress Appraisal x Drugs/Alcohol | | .52* | | |
| Stress Appraisal x Humor | N/A | N/A | | |
| $R^2$ | .10 | .46 | .16 | .48 |
| $R^2 \Delta$ | | .04*** | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.3.4. The Influence of Maladaptive Coping and Stress on Quality of Life
Indicator: Affection.

**Affection**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | -.12** | | -.27* | |
| Sex | | | | |
| Income | -.11* | | | |
| ODD | | | | |
| White | .67* | | .18* | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Affection (Baseline) | N/A‡ | .68*** | N/A | .60*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | -.09* | N/A | |
| Psychosocial Only | N/A | | N/A | |
| R² | .06*** | .49*** | .13*** | .43*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | -.51*** | -.15** | -.42*** | |
| Denial | | | .15* | |
| Behavioral Disengagement | | | | |
| Mental Disengagment | | | | |
| Drugs/Alcohol | | | | |
| Humor | | | | .14* |
| R² | .25 | .50 | .25 | .47 |
| R²Δ | .19*** | .02* | .12*** | .04* |
| **Interaction Effects** | | | | |
| Stress Appraisal x Denial | | | | |
| Stress Appraisal x Behav Disengage | | | | |
| Stress Appraisal x Mental Disengage | | | | |
| Stress Appraisal x Drugs/Alcohol | | | | |
| Stress Appraisal x Humor | N/A | N/A | | |
| R² | .25 | .51 | .26 | .49 |
| R²Δ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.3.5. The Influence of Maladaptive Coping and Stress on Quality of Life Indicator: Pro-social.

**Pro-social**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | | | -.22*** | -.12* |
| Sex | | | -.12* | -.13* |
| Income | -.12* | | | |
| ODD | | | | |
| White | | | | |
| Black | | .34* | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Pro-social (Baseline) | N/A‡ | .75*** | N/A | .66*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | | N/A | |
| Psychosocial Only | N/A | | N/A | |
| $R^2$ | .03 | .57*** | .08** | .51*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | -.42*** | | -.45*** | |
| Denial | | | .16** | |
| Behavioral Disengagement | | | -.19** | |
| Mental Disengagment | .10* | -.11** | | |
| Drugs/Alcohol | | | | |
| Humor | | | | .16** |
| $R^2$ | .18 | .59 | .24 | .55 |
| $R^2 \Delta$ | .15*** | .02** | .16*** | .04* |
| **Interaction Effects** | | | | |
| Stress Appraisal x Denial | | | | |
| Stress Appraisal x Behav Disengage | | -.57* | | |
| Stress Appraisal x Mental Disengage | | | | |
| Stress Appraisal x Drugs/Alcohol | | | | |
| Stress Appraisal x Humor | N/A | N/A | | .60* |
| $R^2$ | .18 | .59 | .24 | .56 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.3.6. The Influence of Maladaptive Coping and Stress on Quality of Life Indicator: Praise.

**Praise**

| Covariates | Mothers Baseline β | Mothers 14 Months β | Fathers Baseline β | Fathers 14 Months β |
|---|---|---|---|---|
| ADHD Symptoms | | | | -.16** |
| Sex | | | -.12* | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Praise (Baseline) | N/A‡ | .59*** | N/A | .50*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | | N/A | |
| Psychosocial Only | N/A | | N/A | |
| $R^2$ | .02 | .36*** | .04 | .32 |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | -.34*** | -.15** | -.35*** | |
| Denial | | | | |
| Behavioral Disengagement | | | | |
| Mental Disengagment | | | | |
| Drugs/Alcohol | | | | |
| Humor | N/A | N/A | | .16** |
| $R^2$ | .13 | .38 | .14 | .37 |
| $R^2 \Delta$ | .11*** | .03** | .10*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Denial | | | | |
| Stress Appraisal x Behav Disengage | | | | |
| Stress Appraisal x Mental Disengage | | | | |
| Stress Appraisal x Drugs/Alcohol | | | | |
| Stress Appraisal x Humor | N/A | N/A | | |
| $R^2$ | .14 | .39 | .14 | .37 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.3.7. The Influence of Maladaptive Coping and Stress on Quality of Life Indicator: Harsh Discipline.

**Harsh Discipline**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | .20*** | | .20*** | |
| Sex | | | -.15** | |
| Income | | -.08* | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Harsh Discipline (Baseline) | N/A‡ | .56*** | N/A | .51*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | .12** | N/A | |
| Psychosocial Only | N/A | | N/A | |
| R² | .13*** | .43*** | .11*** | .34*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | .15** | | | |
| Denial | .11* | | .20** | .19* |
| Behavioral Disengagement | | | | |
| Mental Disengagment | | | | |
| Drugs/Alcohol | | | | |
| Humor | N/A | N/A | | |
| R² | .17 | .43 | .18 | .37 |
| R² Δ | .04*** | | .07** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Denial | | | | |
| Stress Appraisal x Behav Disengage | | | | -.95* |
| Stress Appraisal x Mental Disengage | | | | 1.51*** |
| Stress Appraisal x Drugs/Alcohol | | | | |
| Stress Appraisal x Humor | N/A | N/A | | |
| R² | .17 | .43 | .18 | .43 |
| R² Δ | | | | .06** |

‡Note: N/A refers to those variables not used in the analyses

Table H.3.8. The Influence of Maladaptive Coping and Stress on Quality of Life
Indicator: Appropriate Discipline.

**Appropriate Discipline**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | .26*** | .15*** | .26*** | |
| Sex | -.14** | | -.12* | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | .15** | |
| Appropriate Discipline (Baseline) | N/A‡ | .42*** | N/A | .43*** |
| Combined Treatment | N/A | .11* | N/A | |
| Meds Only | N/A | | N/A | -.22** |
| Psychosocial Only | N/A | -.16** | N/A | -.18* |
| $R^2$ | .10*** | .30*** | .14*** | .31*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | -.16** | -.11* | | |
| Denial | | | | |
| Behavioral Disengagement | | | | |
| Mental Disengagment | | | | |
| Drugs/Alcohol | | | | |
| Humor | | | .17** | |
| $R^2$ | .12 | .31 | .19 | .33 |
| $R^2 Δ$ | | | .05** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Denial | | | | |
| Stress Appraisal x Behav Disengage | | | | |
| Stress Appraisal x Mental Disengage | | | | |
| Stress Appraisal x Drugs/Alcohol | | | | |
| Stress Appraisal x Humor | | | | |
| $R^2$ | .13 | .31 | .19 | .35 |
| $R^2 Δ$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.3.9. The Influence of Maladaptive Coping and Stress on Quality of Life
Indicator: Quarrel.

**Quarrel**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | .31*** | | .47*** | |
| Sex | | | | |
| Income | | | | |
| ODD | | | | |
| White | -.76* | | | |
| Black | -.46* | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Quarrel (Baseline) | N/A‡ | .61*** | N/A | .63*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | .18*** | N/A | |
| Psychosocial Only | N/A | | N/A | .14* |
| $R^2$ | .12*** | .47*** | .26*** | .47*** |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | .28*** | | .23*** | |
| Denial | | | .13* | |
| Behavioral Disengagement | | | | |
| Mental Disengagment | | .09* | | |
| Drugs/Alcohol | | | | |
| Humor | N/A | N/A | | |
| $R^2$ | .20 | .49 | .32 | .48 |
| $R^2 \Delta$ | .07*** | .02* | .06*** | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Denial | | | | |
| Stress Appraisal x Behav Disengage | | | | |
| Stress Appraisal x Mental Disengage | | | | .87* |
| Stress Appraisal x Drugs/Alcohol | | | | |
| Stress Appraisal x Humor | N/A | N/A | | |
| $R^2$ | .20 | .49 | .33 | .52 |
| $R^2 \Delta$ | | | | .04* |

‡Note: N/A refers to those variables not used in the analyses

Table H.3.10. The Influence of Maladaptive Coping and Stress on Quality of Life
Indicator: Beck Depression Inventory (BDI).

**Beck Depression Inventory (BDI) Dichotomized for Logistic Regression**

| | | Mothers | | Fathers | |
|---|---|---|---|---|---|
| **Covariates** | | Baseline B$^\Psi$ | 14 Months B$^\Phi$ | Baseline B$^\Phi$ | 14 Months B$^\Phi$ |
| | ADHD Symptoms | | | | |
| | Sex | | | | |
| | Income | | | | |
| | ODD | | | | |
| | White | | | | |
| | Black | | | | |
| | Hispanic | | | | |
| | ADHD Family Member | | | | |
| | BDI (Baseline) | | | | |
| | Combined Treatment | | | | |
| | Meds Only | | | | |
| | Psychosocial Only | | | | |
| | $R^{2\dagger}$ | | | | |
| **Main Effects** | | | | | |
| | Stress Appraisal (PSI) | | | | |
| | Denial | | | | |
| | Behavioral Disengagement | | | | |
| | Mental Disengagment | | | | |
| | Drugs/Alcohol | | | | |
| | Humor | | | | |
| | $R^2$ | | | | |
| | $R^2\Delta$ | | | | |
| **Interaction Effects** | | | | | |
| | Stress Appraisal x Denial | | | | |
| | Stress Appraisal x Behav Disengage | | | | |
| | Stress Appraisal x Mental Disengage | | | | |
| | Stress Appraisal x Drugs/Alcohol | | | | |
| | Stress Appraisal x Humor | | | | |
| | $R^2$ | | | | |
| | $R^2\Delta$ | | | | |

$\dagger$Note: Cox & Snell R Square reported for the Logistic Regression Analyses

$\Psi$ Estimation terminated because parameter estimates changed by < .001.

$\Phi$ SPSS could not find a final solution.

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Table H.3.11. The Influence of Maladaptive Coping and Stress on Quality of Life Indicator: Global Affection Functioning (GAF).

**Global Affective Functioning (GAF) Dichotomized for Logistic Regression**

| | Mothers | | Fathers | |
|---|---|---|---|---|
| **Covariates** | Baseline β | 14 Months β[Ψ] | Baseline B[Φ] | 14 Months β[Ψ] |
| ADHD Symptoms | -.24*** | | | |
| Sex | | | | |
| Income | .23*** | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| GAF (Baseline) | N/A[‡] | | | |
| Combined Treatment | N/A | | | |
| Meds Only | N/A | | | |
| Psychosocial Only | N/A | | | |
| $R^{2†}$ | .14*** | | | |
| **Main Effects** | | | | |
| Stress Appraisal (PSI) | -.27*** | | | |
| Denial | | | | |
| Behavioral Disengagement | | | | |
| Mental Disengagment | -.13** | | | |
| Drugs/Alcohol | | | | |
| Humor | N/A | | N/A | |
| $R^{2†}$ | .23 | | | |
| $R^2 Δ$ | .09*** | | | |
| **Interaction Effects** | | | | |
| Stress Appraisal x Denial | | | | |
| Stress Appraisal x Behav Disengage | | | | |
| Stress Appraisal x Mental Disengage | | | | |
| Stress Appraisal x Drugs/Alcohol | | | | |
| Stress Appraisal x Humor | N/A | | N/A | |
| $R^{2†}$ | .23 | | | |
| $R^2 Δ$ | | | | |

[†]Note: Cox & Snell R Square reported for the Logistic Regression Analyses

[‡]Note: N/A refers to those variables not used in the analyses.

[Φ]SPSS could not find a final solution.

[Ψ]The GAF was not collected at 14 months.

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Table H.4.1. The Influence of Stressors on Quality of Life Indicator: Dyadic Adjustment Scale.

**Dyadic Adjustment Scale**

| | Mothers | | Fathers | |
|---|---|---|---|---|
| **Covariates** | Baseline B[Φ] | 14 Months B[Φ] | Baseline β | 14 Months β |
| ADHD Symptoms | | | -.16* | |
| Sex | | | | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| yadic Adjustment Scale (Baseline) | | | | .76*** |
| Combined Treatment | | | | |
| Meds Only | | | | |
| Psychosocial Only | | | | |
| $R^2$ | | | .06 | .61*** |
| **Main Effects** | | | | |
| Stressor (ISLE) | | | -.25*** | |
| $R^2$ | | | .12 | .61 |
| $R^2 \Delta$ | | | .06*** | |

[‡]Note: N/A refers to those variables not used in the analyses
[Φ]SPSS could not find a final solution

Table H.4.2. The Influence of Stressors on Quality of Life Indicator: Involvement.

**Involvement**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | | | -.18** | |
| Sex | | | -.15* | |
| Income | | | | |
| ODD | | | | |
| White | .96** | | | |
| Black | .43* | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Involvement (Baseline) | | .67*** | | .69*** |
| Combined Treatment | | | | -.19** |
| Meds Only | | | | -.18** |
| Psychosocial Only | | | | -.18** |
| $R^2$ | .07** | .46*** | .06 | .55*** |
| **Main Effects** | | | | |
| Stressor (ISLE) | | | | -.11* |
| $R^2$ | .08 | .47 | .06 | .57 |
| $R^2 \Delta$ | | | | .01* |

‡Note: N/A refers to those variables not used in the analyses

Table H.4.3. The Influence of Stressors on Quality of Life Indicator: Positive Parenting.

**Positive Parenting**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | | | | |
| Sex | | | | |
| Income | -.16** | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Positive Parenting (Baseline) | | .61*** | | .61*** |
| Combined Treatment | | | | |
| Meds Only | | | | -.147* |
| Psychosocial Only | | | | |
| $R^2$ | .03 | .39*** | .06 | .46*** |
| **Main Effects** | | | | |
| Stressor (ISLE) | -.13* | | | |
| $R^2$ | .05 | .40 | .06 | .46 |
| $R^2 \Delta$ | .02* | | | |

[‡]Note: N/A refers to those variables not used in the analyses

Table H.4.4. The Influence of Stressors on Quality of Life Indicator: Affection.

**Affection**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | -.13* | | -.28*** | |
| Sex | | | | |
| Income | -.14* | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Affection (Baseline) | | .67*** | | .54*** |
| Combined Treatment | | | | |
| Meds Only | | -.13** | | |
| Psychosocial Only | | | | |
| $R^2$ | .08*** | .48*** | .13*** | .37*** |
| **Main Effects** | | | | |
| Stressor (ISLE) | | | | |
| $R^2$ | .08 | .49 | .13 | .37 |
| $R^2 \Delta$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.4.5. The Influence of Stressors on Quality of Life Indicator: Pro-social.

**Pro-social**

|  | Mothers | | Fathers | |
|---|---|---|---|---|
| **Covariates** | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms |  |  | -.25*** |  |
| Sex |  |  |  |  |
| Income |  |  |  |  |
| ODD |  |  |  |  |
| White |  |  |  |  |
| Black |  | .12** |  |  |
| Hispanic |  |  |  |  |
| ADHD Family Member |  |  |  |  |
| Pro-social (Baseline) |  | .77*** |  | .65*** |
| Combined Treatment |  |  |  |  |
| Meds Only |  |  |  |  |
| Psychosocial Only |  |  |  |  |
| $R^2$ | .05 | .60*** | .10* | .71*** |
| **Main Effects** |  |  |  |  |
| Stressor (ISLE) |  |  |  |  |
| $R^2$ | .06 | .60 | .01 | .71 |
| $R^2 \Delta$ |  |  |  |  |

[‡]Note: N/A refers to those variables not used in the analyses

Table H.4.6. The Influence of Stressors on Quality of Life Indicator: Praise.

**Praise**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | | | | |
| Sex | | | -.18** | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Praise (Baseline) | N/A‡ | .59*** | N/A | .55*** |
| Combined Treatment | N/A | | N/A | |
| Meds Only | N/A | | N/A | |
| Psychosocial Only | N/A | | N/A | |
| $R^2$ | .04 | .37*** | .26 | .60*** |
| **Main Effects** | | | | |
| Stressor (ISLE) | | | | |
| $R^2$ | .04 | .37 | .27 | .60 |
| $R^2 Δ$ | | | | |

‡Note: N/A refers to those variables not used in the analyses

Table H.4.7. The Influence of Stressors on Quality of Life Indicator: Harsh Discipline.

**Harsh Discipline**

| | Mothers | | Fathers | |
|---|---|---|---|---|
| **Covariates** | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | .17** | .19*** | .21** | |
| Sex | | | | |
| Income | | | | |
| ODD | | | | |
| White | -.74* | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Harsh Discipline (Baseline) | | | | .46*** |
| Combined Treatment | | | | |
| Meds Only | | .13* | | .18* |
| Psychosocial Only | | | | .17* |
| $R^2$ | .30*** | .14*** | .07 | .35*** |
| | | | | |
| **Main Effects** | | | | |
| Stressor (ISLE) | | .14** | | .05** |
| $R^2$ | .31 | .16 | .07 | .38 |
| $R^2 \Delta$ | | .02** | | .04** |

[‡]Note: N/A refers to those variables not used in the analyses

Table H.4.8. The Influence of Stressors on Quality of Life Indicator: Appropriate Discipline.

**Appropriate Discipline**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | .27*** | .13** | .27*** | |
| Sex | -.15** | | -.14* | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | .15* | |
| Appropriate Discipline (Baseline) | | .44*** | | -.27** |
| Combined Treatment | | .14** | | |
| Meds Only | | | | -.27** |
| Psychosocial Only | | -.14* | | -.18* |
| $R^2$ | .11*** | .32*** | .15*** | .31*** |
| **Main Effects** | | | | |
| Stressor (ISLE) | | | | |
| $R^2$ | .11 | .32 | .15 | .31 |
| $R^2 \Delta$ | | | | |

[‡]Note: N/A refers to those variables not used in the analyses

Table H.4.9. The Influence of Stressors on Quality of Life Indicator: Quarrel.

**Quarrel**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline β | 14 Months β | Baseline β | 14 Months β |
| ADHD Symptoms | .32*** | | .48*** | |
| Sex | | | | |
| Income | | | | |
| ODD | .10* | | | |
| White | -.81* | -.17** | | |
| Black | -.513* | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| Quarrel (Baseline) | | | | .64*** |
| Combined Treatment | | .11* | | |
| Meds Only | | .23*** | | |
| Psychosocial Only | | | | |
| $R^2$ | .14*** | .48*** | .28*** | .47*** |
| **Main Effects** | | | | |
| Stressor (ISLE) | .18*** | .09* | .18** | .14* |
| $R^2$ | .17 | .49 | .31 | .49 |
| $R^2 \Delta$ | .03*** | | .03** | .02* |

‡Note: N/A refers to those variables not used in the analyses

Table H.4.10. The Influence of Stressors on Quality of Life Indicator: Beck Depression Inventory (BDI).

**Beck Depression Inventory (BDI) Dichotomized for Logistic Regression**

| Covariates | Mothers | | Fathers | |
|---|---|---|---|---|
| | Baseline B$^\Phi$ | 14 Months B$^\Phi$ | Baseline B$^\Phi$ | 14 Months B$^\Phi$ |
| ADHD Symptoms | | | | |
| Sex | | | | |
| Income | | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| BDI (Baseline) | | | | |
| Combined Treatment | | | | |
| Meds Only | | | | |
| Psychosocial Only | | | | |
| $R^{2\dagger}$ | | | | |
| **Main Effects** | | | | |
| Stressor (ISLE) | | | | |
| $R^2$ | | | | |
| $R^2\Delta$ | | | | |

$^\dagger$Note: Cox & Snell R Square reported for the Logistic Regression Analyses
$^\ddagger$Note: N/A refers to those variables not used in the analyses
$^\Phi$SPSS could not find a final solution

Table H.4.11. The Influence of Stressors on Quality of Life Indicator: Global Affection Functioning (GAF).


**Global Affective Functioning (GAF) Dichotomized for Logistic Regression**

| | Mothers | | Fathers | |
|---|---|---|---|---|
| **Covariates** | Baseline β | 14 Months β$^{\Psi}$ | Baseline B$^{\Phi}$ | 14 Months B$^{\Phi}$ |
| ADHD Symptoms | -.22*** | | | |
| Sex | | | | |
| Income | .22*** | | | |
| ODD | | | | |
| White | | | | |
| Black | | | | |
| Hispanic | | | | |
| ADHD Family Member | | | | |
| GAF (Baseline) | N/A$^{\ddagger}$ | | | |
| Combined Treatment | N/A | | | |
| Meds Only | N/A | | | |
| Psychosocial Only | N/A | | | |
| R$^{2\dagger}$ | .35*** | | | |
| **Main Effects** | | | | |
| Stressor (ISLE) | -.16** | | | |
| R$^{2\dagger}$ | .38 | | | |
| R$^{2}$ Δ | .02** | | | |

$^{\dagger}$Note: Cox & Snell R Square reported for the Logistic Regression Analyses
$^{\ddagger}$Note: N/A refers to those variables not used in the analyses
$^{\Psi}$GAF not collected at 14 Months
$^{\Phi}$SPSS could not find a final solution

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APPENDIX I

IRB Application Approval Letter

**UNIVERSITY OF MARYLAND**
INSTITUTIONAL REVIEW BOARD

2100 Lee Building
College Park, Maryland 20742-5121
301.405.4212 TEL 301.314.1475 FAX

To:        Dr. Kenneth H. Beck
           Mary L. Moser
           Department of Public and Community Health

From:      Roslyn Edson, M.S., CIP
           IRB Manager
           University of Maryland, College Park

Re:        IRB Application # 05-0301
           Title: Secondary Analysis of NIMH Data on Parents and Children
           Coping With ADHD

Approval Date:        June 17, 2005

Expiration Date:      June 17, 2008

Type of Application:  Initial

Type of Research:     Exempt

Type of Review:       Exempt

The University of Maryland, College Park Institutional Review Board (IRB) Office
approved your IRB application. The research was approved in accordance with the
University's IRB policies and procedures and 45 CFR 46, the Federal Policy for the
Protection of Human Subjects. Please reference the above-cited IRB application number
in any future communications with our office regarding this research.

**Recruitment/Consent:** For research requiring written informed consent, the
IRB-approved and stamped informed consent document is enclosed. The IRB approval
expiration date has been stamped on the informed consent document. Please keep copies
of the consent forms used for this research for three years after the completion of the
research.

**Continuing Review:** If you want to continue to collect data from human subjects or
analyze data from human subjects after the expiration date for this approval, you must
submit a renewal application to the IRB Office at least 30 days before the approval
expiration date.

**Modifications:** Any changes to the approved protocol must be approved by the IRB before the change is implemented except when a change is necessary to eliminate apparent immediate hazards to the subjects. If you want to modify the approved protocol, please submit an IRB addendum application to the IRB Office.

**Unanticipated Problems Involving Risks:** You must promptly report any unanticipated problems involving risks to subjects or others to the IRB Manager at 301-405-0678 or redson@umresearch.umd.edu.

**Student Researchers:** Unless otherwise requested, this IRB approval document was sent to the Principal Investigator (PI). The PI should pass on the approval document or a copy to the student researchers. This IRB approval document may be a requirement for student researchers applying for graduation. The IRB may not be able to provide copies of the approval documents if several years have passed since the date of the original approval.

**Additional Information:** Please contact the IRB Office at 301-405-4212 if you have any IRB-related questions or concerns.

# Dyadic Adjustment Scale

Graham B. Spanier, Ph.D.

field 1 = **Participant Identification (ID)**

NOTE: This variable is not the original study ID number. It has been recoded for public release.

field 2 = **Days from Baseline (DAYDAS)**

field 3 = **Assessment Point (ASSDAS)** (number of subjects/number of records)
D = MTA Baseline Assessment (407/734)
14 = MTA 14 Month Assessment (348/600)
E = MTA Early Termination Assessment (16/26)
24 = MTA 24 Month Assessment (328/574)
LB = LNCG Baseline Assessment (229/385)
36 = MTA & LNCG 36 Month Assessment (508/861)

NOTE: Assessment Points indicated by strike-out are not yet being distributed.

field 4 = **Relationship to Child (RELDAS)**

field 5 = **Active Status (ACTDAS)**
0 = INACTIVE, collected after end of 14 Month treatment phase OR after Early Termination.
1 = ACTIVE, collected while subject received originally assigned 14 Month treatment (regardless of compliance).
2 = ACTIVE, denotes last active assessment for subjects who were about to violate treatment arm by receiving alternate treatment.
3 = ACTIVE, denotes last active assessment for subjects who were about to move away.

field 6 = **Site Identification (SITENUM)**
Number series range 1 – 6

field 7 = **Subject Type (SJTYP)**
1 = MTA Randomized Trial Subject
2 = Local Normative Comparison Group (LNCG) Subject

**Codes for DAS Items 1 to 15 (DAS1 to DAS15)**
0 = Always Disagree
1 = Almost Always Disagree
2 = Frequently Disagree
3 = Occasionally Disagree
4 = Almost Always Agree
5 = Always Agree
. = missing

field 8 = **Item 1**: Handling family finances **(DAS1)**
field 9 = **Item 2**: Matters of recreation **(DAS2)**
field 10 = **Item 3**: Religious matters **(DAS3)**
field 11 = **Item 4**: Demonstrations of affection **(DAS4)**
field 12 = **Item 5**: Friends **(DAS5)**
field 13 = **Item 6**: Sex relations **(DAS6)**
field 14 = **Item 7**: Conventionality (correct or proper behavior) **(DAS7)**
field 15 = **Item 8**: Philosophy of life **(DAS8)**
field 16 = **Item 9**: Ways of dealing with parents or in-laws **(DAS9)**
field 17 = **Item 10**: Aims, goals, and things believed important **(DAS10)**
field 18 = **Item 11**: Amount of time spent together **(DAS11)**

field 19 = **Item 12**: Making major decisions  **(DAS12)**
field 20 = **Item 13**: Household tasks  **(DAS13)**
field 21 = **Item 14**: Leisure time interests and activities  **(DAS14)**
field 22 = **Item 15**: Career decisions  **(DAS15)**

**Codes for DAS Items 16 to 17 (DAS16 to DAS17)**
        0 = All the Time
        1 = Most of the Time
        2 = More Often Than Not
        3 = Occasionally
        4 = Rarely
        5 = Never
        . = missing

field 23 = **Item 16**: How often do you discuss or have you considered divorce, separation, or termination of your
               relationship?  **(DAS16)**
field 24 = **Item 17**: How often do you or your mate leave the house after a fight?  **(DAS17)**

**Codes for DAS Items 18 to 19 (DAS18 to DAS19)**
        0 = Never
        1 = Rarely
        2 = Occasionally
        3 = More Often Than Not
        4 = Most of the Time
        5 = All the Time
        . = missing

field 25 = **Item 18**: In general, how often do you think that things between you and your partner are going well?
               **(DAS18)**
field 26 = **Item 19**: Do you confide in your mate?  **(DAS19)**

**Codes for DAS Items 20 to 22 (DAS20 to DAS22)**
        0 = All the Time
        1 = Most of the Time
        2 = More Often Than Not
        3 = Occasionally
        4 = Rarely
        5 = Never
        . = missing

field 27 = **Item 20**: Do you ever regret that you married (or lived together)?  **(DAS20)**
field 28 = **Item 21**: How often do you and your partner quarrel?  **(DAS21)**
field 29 = **Item 22**: How often do you and your mate get on each others' nerves?  **(DAS22)**

field 30 = **Item 23**: Do you kiss your mate?  **(DAS23)**
        0 = Never
        1 = Rarely
        2 = Occasionally
        3 = Almost Every Day
        4 = Every Day
        . = missing

field 31 = **Item 24**: Do you and your mate engage in outside interests together?  **(DAS24)**
        0 = None of Them

1 = Very Few of Them
2 = Some of Them
3 = Most of Them
4 = All of Them
. = missing

**Codes for DAS Items 25 to 28 (DAS25 to DAS28)**
0 = Never
1 = Less than Once a Month
2 = Once or Twice a Month
3 = Once or Twice a Week
4 = Once a Day
5 = More Often
. = missing

field 32 = **Item 25**: How often do you and your mate have a stimulating exchange of ideas **(DAS25)**
field 33 = **Item 26**: How often do you and your mate laugh together **(DAS26)**
field 34 = **Item 27**: How often do you and your mate calmly discuss something **(DAS27)**
field 35 = **Item 28**: How often do you and your mate work together on a project **(DAS28)**

**Codes for DAS Items 29 to 30 (DAS29 to DAS30)**
0 = Yes
1 = No
. = missing

field 36 = **Item 29**: Has agreement or disagreement about being too tired for sex caused differences of opinions or

been a problem in the past few weeks?  **(DAS29)**

field 37 = **Item 30**: Has agreement or disagreement about not showing love caused differences of opinions or been a

problem in the past few weeks?  **(DAS30)**

field 38 = **Item 31**:  What is the degree of happiness, all things considered, of your relationship? **(DAS31)**
0 = Extremely Unhappy
1 = Fairly Unhappy
2 = A Little Unhappy
3 = Happy
4 = Very Happy
5 = Extremely Unhappy
6 = Perfect
. = missing

field 39 = **Item 32**: Which is the best description of how you feel about the future of your relationship? **(DAS32)**
0 = My relationship can never succeed, and there is no more that I can do to keep the relationship
going.
1 = It would be nice if it succeeded, but I refuse to do any more than I am doing now to keep the
relationship going.
2 = It would be nice if my relationship succeeded, but I can't do much more than I am doing now
to keep
the relationship going.
3 = I want very much for my relationship to succeed, and will do my fair share to see that it does.
4 = I want very much for my relationship to succeed, and will do all I can to see that it does.
5 = I want desperately for my relationship to succeed, and would go to almost any length to see that it does.
. = missing

**SUMMARY MEASURES**

field 40 = **Factor I: Dyadic Consensus (total score) (DAS1CONT)**
        Includes Items: 1, 2, 3, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15.

field 41: **Factor II: Dyadic Satisfaction (total score) (DAS2SATT)**
        Includes Items: 16, 17, 18, 19, 20, 21, 22, 23, 31, 32.

field 42: **Factor III: Affectional Expression (total score) (DAS3AFFT)**
        Includes Items: 4, 6, 29, 30.

   **NOTE:** If any Item of this Factor is missing, Factor is not scored because Items have different ranges.

field 43: **Factor IV: Dyadic Cohesion (total score) (DAS4COHT)**
        Includes Items: 24, 25, 26, 27, 28.

field 44: **Total Dyadic Adjustment (total score) (DASTOTT)**
        Includes All Items 1 to 32.

# Alabama Parenting Questionnaire - Parent Version

Used by permission of Paul J. Frick, Ph.D.

field  1 = **Participant Identification (ID)**

field  2 = **Days from Baseline (DAYALAP)**

field  3 = **Assessment Point (ASSALAP)** (number of subjects/number of records)
       D = MTA Baseline Assessment (562/918)
       03 = MTA 3 Month Assessment (437/688)
       09 = MTA 9 Month Assessment (504/785)
       14 = MTA 14 Month Assessment (521/801)
       E = MTA Early Termination Assessment (18/25)
       ~~24 = MTA 24 Month Assessment (503/767)~~
       ~~LB = LNCG Baseline Assessment (285/442)~~

**NOTE:** Assessment Points indicated by strike-out are not yet being distributed.

field  4 = **Relationship to Child (RELALAP)**

field  5 = **Active Status (ACTALAP)**
       0 = INACTIVE.  Data collected after the 14-Month treatment phase; or after Early Termination from treatment phase; or prior to treatment phase.
       1 = ACTIVE.  Data collected during the 14-Month treatment phase while subject received originally assignment treatment (regardless of degree of compliance).
       2 = ACTIVE.  This is the last ACTIVE assessment for subjects who were about to violate treatment arm by receiving alternate treatment.
       3 = ACTIVE.  This is the last ACTIVE assessment for subjects who were about to leave the study by moving away.

field  6 = **Site Identification (SITENUM)**
       Number series range 1 – 6

field  7 = **Subject Type (SJTYP)**
       1 = MTA Randomized Trial Subject
       2 = Local Normative Comparison Group (LNCG) Subject

**Codes for ALAP Items 1 - 42 (AP1 - AP42)**
       1 = Never
       2 = Almost Never
       3 = Sometimes
       4 = Often
       5 = Always
       . = missing

field  8 = **Item 1**: You have a friendly talk with your child  **(AP1)**
field  9 = **Item 2**: You let your child know when he/she is doing a good job with something **(AP2)**
field 10 = **Item 3**: You threaten to punish your child and then do not actually punish him/her **(AP3)**
field 11 = **Item 4**: You volunteer to help with special activities that your child is involved in **(AP4)**
field 12 = **Item 5**: You reward or give something extra to your child for obeying you or behaving well **(AP5)**
field 13 = **Item 6**: Your child fails to leave a note or to let you know where he/she is going **(AP6)**
field 14 = **Item 7**: You play games or do other fun things with your child **(AP7)**
field 15 = **Item   8**: Your child talks you out of being punished after he/she has done something wrong **(AP8)**
field 16 = **Item   9**: You ask your child about his/her day in school **(AP9)**
field 17 = **Item 10**: Your child stays out in the evening past the time he/she is supposed to be home **(AP10)**

field 18 = **Item 11**: You help your child with his/her homework **(AP11)**
field 19 = **Item 12**: You feel that getting your child to obey you is more trouble than it is worth **(AP12)**
field 20 = **Item 13**: You compliment your child when he/she does something well **(AP13)**
field 21 = **Item 14**: You ask your child what his/her plans are for the coming day **(AP14)**
field 22 = **Item 15**: You drive your child to a special activity **(AP15)**
field 23 = **Item 16**: You praise your child if he/she behaves well **(AP16)**
field 24 = **Item 17**: Your child is out with friends you do not know **(AP17)**
field 25 = **Item 18**: You hug or kiss your child when he/she has done something well **(AP18)**
field 26 = **Item 19**: Your child goes out without a set time to be home **(AP19)**
field 27 = **Item 20**: You talk to your child about his/her friends **(AP20)**
field 28 = **Item 21**: Your child is out after dark without an adult with him/her **(AP21)**
field 29 = **Item 22**: You let your child out of a punishment early **(AP22)**
field 30 = **Item 23**: Your child helps plan family activities **(AP23)**
field 31 = **Item 24**: You get so busy that you forget where your child is and what he/she is doing **(AP24)**
field 32 = **Item 25**: Your child is not punished when he/she has done something wrong **(AP25)**
field 33 = **Item 26**: You attend PTA meetings, parent/teacher conferences, or other meetings at your child's school
    **(AP26)**
field 34 = **Item 27**: You tell your child that you like it when he/she helps out around the house **(AP27)**
field 35 = **Item 28**: You don't check that your child comes home at the time he/she was supposed to
**(AP28)**
field 36 = **Item 29**: You don't tell your child where you are going **(AP29)**
field 37 = **Item 30**: Your child comes home from school more than an hour past the time you expect him/her
    **(AP30)**
field 38 = **Item 31**: The punishment you give your child depends on your mood **(AP31)**
field 39 = **Item 32**: Your child is at home without adult supervision **(AP32)**
field 40 = **Item 33**: You spank your child with your hand when he/she has done something wrong **(AP33)**
field 41 = **Item 34**: You ignore your child when he/she is misbehaving **(AP34)**
field 42 = **Item 35**: You slap your child when he/she has done something wrong **(AP35)**
field 43 = **Item 36**: You take away privileges or money from your child as a punishment **(AP36)**
field 44 = **Item 37**: You send your child to his/her room as a punishment **(AP37)**
field 45 = **Item 38**: You hit your child with a belt, switch, or other object when he/she has done something wrong
    **(AP38)**
field 46 = **Item 39**: You yell or scream at your child when he/she has done something wrong **(AP39)**
field 47 = **Item 40**: You calmly explain to your child why his/her behavior was wrong when he/she misbehaves
    **(AP40)**
field 48 = **Item 41**: You use time out as a punishment **(AP41)**
field 49 = **Item 42**: You give your child extra chores as a punishment **(AP42)**

**SUMMARY MEASURES**

**Note**:     Some of the summary measures may be considered as positive parenting behavior (Involvement, Positive
        Parenting, Appropriate Discipline) whereas some summary measures may be considered as negative
        parenting behavior (Inconsistent Discipline, Low Monitoring/Supervision, Harsh Discipline).  For each
        summary measure, higher scores reflect having more of that measure, e.g., higher scores of Involvement
        reflect <u>more</u> Involvement and higher scores in Harsh Discipline reflect <u>more</u> Harsh Discipline.

field 50 = **Involvement (mean score) (ALAPINVX)**
field 51 = **Involvement (total score)  (ALAPINVT)**
                Includes Items 1, 4, 7, 9, 11, 14, 15, 20, 23, 26.

field 52 = **Positive Parenting (mean score) (ALAPPOSX)**
field 53 = **Positive Parenting (total score)  (ALAPPOST)**

Includes Items 2, 5, 13, 16, 18, 27.

field 54 = **Inconsistent Discipline (mean score) (ALAPINCX)**
field 55 = **Inconsistent Discipline (total score)  (ALAPINCT)**
Includes Items 3, 8, 12, 22, 25, 31.

field 56 = **Low Monitoring/Supervision (mean score) (ALAPMONX)**
field 57 = **Low Monitoring/Supervision (total score)  (ALAPMONT)**
Includes Items 6, 10, 17, 19, 21, 24, 28, 29, 30, 32.

field 58 = **Harsh Discipline (mean score) (ALAPHARX)**
field 59 = **Harsh Discipline (total score)  (ALAPHART)**
Includes Items 33, 35, 38, 39.

field 60 = **Appropriate Discipline (mean score) (ALAPAPPX)**
field 61 = **Appropriate Discipline (total score)  (ALAPAPPT)**
Includes Items 34, 36, 37, 40, 41, 42.

# Parent/Child Relationship Questionnaire - Parent Version

Used by permission of Wyndol Furman, M.D.

field   1 = **Participant Identification (ID)**

field   2 = **Days from Baseline (DAYPCRP)**

field   3 = **Assessment Point (ASSPCRP)** (number of subjects/number of records)
D = MTA Baseline Assessment (566/926)
03 = MTA 3 Month Assessment (435/685)
09 = MTA 9 Month Assessment (503/783)
14 = MTA 14 Month Assessment (519/799)
E = MTA Early Termination Assessment (18/25)
~~24 = MTA 24 Month Assessment (500/758)~~
~~LB = LNCG Baseline Assessment (285/442)~~

**NOTE:** Assessment Points indicated by strike-out are not yet being distributed.

field   4 = **Relationship to Child (RELPCRP)**

field   5 = **Active Status (ACTPCRP)**
0 = INACTIVE.  Data collected after the 14-Month treatment phase; or after Early Termination from treatment phase; or prior to treatment phase.
1 = ACTIVE.  Data collected during the 14-Month treatment phase while subject received originally assignment treatment (regardless of degree of compliance).
2 = ACTIVE.  This is the last ACTIVE assessment for subjects who were about to violate treatment arm by receiving alternate treatment.
3 = ACTIVE.  This is the last ACTIVE assessment for subjects who were about to leave the study by moving away.

field   6 = **Site Identification (SITENUM)**
Number series range 1 – 6

field   7 = **Subject Type (SJTYP)**
1 = MTA Randomized Trial Subject
2 = Local Normative Comparison Group (LNCG) Subject

**Codes for PCRP Items 1 to 40 (PCP1 to PCP40)**
1 = Hardly At All
2 = Not Too Much
3 = Somewhat
4 = Very Much
5 = Extremely Much
.  = missing

field   8 = **Item   1:** Some parents want their children to spend most of their time with them, while other parents
want their children to spend just some of their time with them.  How much do you want this
child to spend most of his/her time with you? **(PCP1)**

field   9 = **Item   2:** How much do you not let this child go places because you are afraid something will happen to
him or her? **(PCP2)**

field 10 = **Item   3:** How much do you and this child care about each other? **(PCP3)**

field 11 = **Item   4:** How much do you and this child disagree and quarrel with each other? **(PCP4)**

field 12 = **Item   5:** How much do you and this child do nice things for each other? **(PCP5)**

field 13 = **Item   6:** How much do you and this child like the same things? **(PCP6)**

field 14 = **Item   7:** Some parents praise and compliment their children a lot, while other parents hardly ever praise

and compliment their children.  How much do you praise and compliment this child? **(PCP7)**

field 15 = **Item   8:** How much do you order this child around? **(PCP8)**

field 16 = **Item   9:** How much do you and this child tell each other everything? **(PCP9)**

field 17 = **Item 10:** How much do you spank this child when he or she misbehaves? **(PCP10)**

field 18 = **Item 11:** How much do you admire and respect this child? **(PCP11)**

field 19 = **Item 12:** How much does this child admire and respect you? **(PCP12)**

field 20 = **Item 13:** Some parents take away privileges a lot when their children misbehave, while other parents

hardly ever take away privileges.  How much do you take away this child's privileges when

he/she misbehaves? **(PCP13)**

field 21 = **Item 14:** How much do you show this child how to do things that he or she doesn't know how to do?

**(PCP14)**

field 22 = **Item 15:** How much do you yell at this child for being bad? **(PCP15)**

field 23 = **Item 16:** How much do you ask this child for his or her opinion on things? **(PCP16)**

field 24 = **Item 17:** How much do you and this child go places and do things together? **(PCP17)**

field 25 = **Item 18:** How much do you make this child feel ashamed or guilty for not doing what he or she is

supposed to do? **(PCP18)**

field 26 = **Item 19:** Some parents talk to their children a lot about why they're being punished, while other parents

do this a little.  How much do you talk to this child about why he or she is being punished or not

allowed to do something? **(PCP19)**

field 27 = **Item 20:** How much do you want this child to do things with you rather than with other people? **(PCP20)**

field 28 = **Item 21:** How much do you not let this child do something he or she wants to do because you are afraid

he or she might get hurt? **(PCP21)**

field 29 = **Item 22:** How much do you and this child love each other? **(PCP22)**

field 30 = **Item 23:** How much do you and this child get mad at and get in arguments with each other? **(PCP23)**

field 31 = **Item 24:** How much do you and this child give each other a hand with things? **(PCP24)**

field 32 = **Item 25:** Some parents and children have a lot of things in common, while other parents and children

have a little in common.  How much do you and this child have things in common? **(PCP25)**

field 33 = **Item 26:** How much do you tell this child that he or she did a good job? **(PCP26)**

field 34 = **Item 27:** How much do you tell this child what to do? **(PCP27)**

field 35 = **Item 28:** How much do you and this child share secrets and private feelings with each other? **(PCP28)**

field 36 = **Item 29:** How much do you hit this child when he or she has been bad? **(PCP29)**

field 37 = **Item 30:** How much do you feel proud of this child? **(PCP30)**

field 38 = **Item 31:** Some children feel really proud of their parents, while other children don't feel very proud of

their parents.  How much does this child feel proud of you? **(PCP31)**

field 39 = **Item 32:** How much do you forbid this child to do something he or she really likes to do when he or she

has been bad? **(PCP32)**

field 40 = **Item 33:** How much do you help this child with things he or she can't do by himself or herself? **(PCP33)**

field 41 = **Item 34:** How much do you nag or bug this child to do things? **(PCP34)**

field 42 = **Item 35:** How much do you listen to this child's ideas before making a decision? **(PCP35)**

field 43 = **Item 36:** How much do you play around and have fun with this child? **(PCP36)**

field 44 = **Item 37:** Some parents make their children feel bad about themselves a lot when they misbehave, while

other parents do this a little. How much do you make this child feel bad about him or herself

when he or she misbehaves? **(PCP37)**

field 45 = **Item 38:** How much do you give this child reasons for rules you make for him or her to follow? **(PCP38)**

field 46 = **Item 39:** How much do you want this child to be around you all of the time? **(PCP39)**

field 47 = **Item 40:** How much do you worry about this child when he or she is not at home? **(PCP40)**

**SUMMARY MEASURES - 19 Individual Scales as follows:**

field 48 = **Possessiveness (mean score) (PCRPPOSX)**
               Includes Items: 1, 20, 39.

field 49 = **Protectiveness (mean score) (PCRPPROX)**
               Includes Items: 2, 21, 40.

field 50 = **Affection (mean score) (PCRPAFFX)**
               Includes Items: 3, 22.

field 51 = **Quarreling (mean score) (PCRPQURX)**
               Includes Items: 4, 23.

field 52 = **Pro-social (mean score) (PCRPSOCX)**
               Includes Items:5, 24.

field 53 = **Similarity (mean score) (PCRPSIMX)**
               Includes Items: 6, 25.

field 54 = **Praise (mean score) (PCRPPRAX)**
               Includes Items: 7, 26.

field 55 = **Dominance (mean score) (PCRPDOMX)**
               Includes Items: 8, 27.

field 56 = **Intimacy (mean score) (PCRPINTX)**
               Includes Items: 9, 28.

field 57 = **Physical Punishment (mean score) (PCRPPPNX)**
               Includes Items: 10, 29.

field 58 = **Admiration of Parent (mean score) (PCRPADPX)**
               Includes Items: 11, 30.

field 59 = **Admiration by Parent (mean score) (PCRPADCX)**
               Includes Items: 12, 31.

field 60 = **Deprivation of Privileges (mean score) (PCRPPRIX)**
               Includes Items: 13, 32.

field 61 = **Nurturance (mean score) (PCRPNURX)**
               Includes Items: 14, 33.

field 62 = **Verbal Punishment (mean score) (PCRPVPNX)**
               Includes Items: 15, 34.

field 63 = **Shared Decision Making (mean score) (PCRPDECX)**
               Includes Items: 16, 35.

field 64 = **Companionship (mean score) (PCRPCOMX)**
        Includes Items: 17, 36.

field 65 = **Guilt Induction (mean score) (PCRPGLTX)**
        Includes Items: 18, 37.

field 66 = **Rationale (mean score) (PCRPRATX)**
        Includes Items: 19, 38.


**SUMMARY MEASURES - 5 Factors as follows:**

field 67 = **Possessiveness & Protectiveness (mean score) (PCRPPOX)**
        Includes Items:1, 2, 20, 21, 39, 40.

field 68 = **Affection, Admiration of Parent & Admiration by Parent (mean score) (PCRPWX)**
        Includes Items: 3, 11, 12, 22, 30, 31.

field 69 = **Quarreling, Dominance, Physical Punishment, Deprivation of Privileges, Verbal Punishment &**
        **Guilt Induction (mean score) (PCRPPAX)**
        Includes Items: 4, 8, 10, 13, 15, 18, 23, 27, 29, 32, 34, 37.

field 70 = **Pro-social, Similarity, Intimacy, Nurturance & Companionship (mean score) (PCRPPRX)**
        Includes Items: 5, 6, 9, 14, 17, 24, 25, 28, 33, 36.

field 71 = **Praise, Shared Decision Making & Rationale (mean score) (PCRPDWX)**
        Includes Items: 7, 16, 19, 26, 35, 38.

# Beck Depression Inventory

Aaron T. Beck, M.D.

field 1 = **Participant Identification (ID)**

field 2 = **Days from Baseline (DAYBDIP)**

field 3 = **Assessment Point (ASSBDIP)** (number of subjects/number of records)
    D = MTA Baseline Assessment (573/929)
    14 = MTA 14 Month Assessment (521/788)
    ~~24 = MTA 24 Month Assessment (504/764)~~
    ~~LB = LNCG Baseline Assessment (287/443)~~
    ~~36 = MTA & LNCG 36 Month Assessment (742/1110)~~

**NOTE:** Assessment Points indicated by strike-out are not yet being distributed.

field 4 = **Relationship to Child (RELBDIP)**

field 5 = **Active Status (ACTBDIP)**
    0 = INACTIVE. Data collected after the 14-Month treatment phase; or after Early
        Termination from treatment phase; or prior to treatment phase.
    1 = ACTIVE. Data collected during the 14-Month treatment phase while subject
        received originally assignment treatment (regardless of degree of compliance).
    2 = ACTIVE. This is the last ACTIVE assessment for subjects who were about to violate
        treatment arm by receiving alternate treatment.
    3 = ACTIVE. This is the last ACTIVE assessment for subjects who were about to leave
        the study by moving away.

field 6 = **Site Identification (SITENUM)**
    Number series range 1 – 6

field 7 = **Subject Type (SJTYP)**
    1 = MTA Randomized Trial Subject
    2 = Local Normative Comparison Group (LNCG) Subject

**Codes for BDIP Items 1 to 21 (BP1 to BP21)**
    0 = represents having little to none of the item
    1 = represents have some of the item
    2 = represents having much of the item
    3 = represents having a lot of the item
    . = missing

field 8 = **Item 1:** Feel sad **(BP1)**
field 9 = **Item 2:** Discouraged about the future **(BP2)**
field 10 = **Item 3:** Feel like a failure **(BP3)**
field 11 = **Item 4:** No satisfaction out of things **(BP4)**
field 12 = **Item 5:** Feel guilty **(BP5)**
field 13 = **Item 6:** Feel being punished **(BP6)**
field 14 = **Item 7:** Feel disappointed in myself **(BP7)**
field 15 = **Item 8:** Blame of self **(BP8)**
field 16 = **Item 9:** Thoughts of killing myself **(BP9)**
field 17 = **Item 10:** How often cry **(BP10)**
field 18 = **Item 11:** How often feel irritated **(BP11)**
field 19 = **Item 12:** Loss of interest in other people **(BP12)**
field 20 = **Item 13:** Trouble making decisions **(BP13)**

field 21 = **Item 14:** Feel bad about my looks  **(BP14)**
field 22 = **Item 15:** Trouble getting started on work  **(BP15)**
field 23 = **Item 16:** Trouble sleeping  **(BP16)**
field 24 = **Item 17:** Tired  **(BP17)**
field 25 = **Item 18:** Poor appetite  **(BP18)**
field 26 = **Item 19:** Loss of weight  **(BP19)**
field 27 = **Item 20:** Worried about my health  **(BP20)**
field 28 = **Item 21:** Loss of interest in sex  **(BP21)**


**SUMMARY MEASURES**

field 29 = **Beck Depression Inventory Total Score (mean score) (BDIPTOTX)**
field 30 = **Beck Depression Inventory Total Score (total score)   (BDIPTOTT)**
                    Includes All Items 1 to 21.

# Parenting Stress Index

Richard R. Abidin, Ed.D.

field   1 = **Participant Identification (ID)**

**NOTE:** This variable is not the original study ID number. It has been recoded for public release.

field   2 = **Days from Baseline (DAYPSI)**

field   3 = **Assessment Point (ASSPSI)** (number of subjects/number of records)
      D = MTA Baseline Assessment (574/929)
      03 = MTA 3 Month Assessment (445/694)
      09 = MTA 9 Month Assessment (496/770)
      14 = MTA 14 Month Assessment (517/778)
      E = MTA Early Termination Assessment (17/24)
      ~~24 = MTA 24 Month Assessment (502/759)~~
      ~~LB = LNCG Baseline Assessment (284/441)~~
      ~~36 = MTA & LNCG 36 Month Assessment (737/1102)~~

**NOTE:** Assessment Points indicated by strike-out are not yet being distributed.

field   4 = **Relationship to Child (RELPSI)**

field   5 = **Active Status (ACTPSI)**
      0 = INACTIVE.  Data collected after the 14-Month treatment phase; or after Early Termination from treatment phase; or prior to treatment phase.
      1 = ACTIVE.  Data collected during the 14-Month treatment phase while subject received originally assignment treatment (regardless of degree of compliance).
      2 = ACTIVE.  This is the last ACTIVE assessment for subjects who were about to violate treatment arm by receiving alternate treatment.
      3 = ACTIVE.  This is the last ACTIVE assessment for subjects who were about to leave the study by moving away.

field   6 = **Site Identification (SITENUM)**
      Number series range 1 – 6

field   7 = **Subject Type (SJTYP)**
      1 = MTA Randomized Trial Subject
      2 = Local Normative Comparison Group (LNCG) Subject

**Codes for PSI Items 1 - 21, 23 - 31, and 34 - 36**
      1 = Strongly Disagree
      2 = Disagree
      3 = Not Sure
      4 = Agree
      5 = Strongly Agree

field   8 = **Item 1**: I often have the feeling that I cannot handle things very well **(PSI1)**
field   9 = **Item 2**: I find myself giving up more of my life to meet my children's needs than I ever expected **(PSI2)**
field 10 = **Item 3**: I feel trapped by my responsibilities as a parent **(PSI3)**
field 11 = **Item 4**: Since having this child, I have been unable to do new and different things **(PSI4)**
field 12 = **Item 5**: Since having a child, I feel that I am almost never able to do things that I like to do **(PSI5)**
field 13 = **Item 6**: I am unhappy with the last purchase of clothing I made for myself **(PSI6)**
field 14 = **Item 7**: There are quite a few things that bother me about my life **(PSI7)**

field 15 = **Item 8**: Having a child has caused more problems than I expected in my relationship with my spouse

(male/female friend) **(PSI8)**

field 16 = **Item 9**: I feel alone and without friends **(PSI9)**

field 17 = **Item 10**: When I go to a party, I usually expect not to enjoy myself **(PSI10)**

field 18 = **Item 11**: I am not as interested in people as I used to be **(PSI11)**

field 19 = **Item 12**: I don't enjoy things as I used to **(PSI12)**

field 20 = **Item 13**: My child rarely does things for me that make me feel good **(PSI13)**

field 21 = **Item 14**: Most times I feel that my child does not like me and does not want to be close to me **(PSI14)**

field 22 = **Item 15**: My child smiles at me much less than I expected **(PSI15)**

field 23 = **Item 16**: When I do things for my child, I get the feeling that my efforts are not appreciated very much

**(PSI16)**

field 24 = **Item 17**: When playing, my child doesn't often giggle or laugh **(PSI17)**

field 25 = **Item 18**: My child doesn't seem to learn as quickly as most children **(PSI18)**

field 26 = **Item 19**: My child doesn't seem to smile as much as most children **(PSI19)**

field 27 = **Item 20**: My child is not able to do as much as I expected **(PSI20)**

field 28 = **Item 21**: It takes a long time and it is very hard for my child to get used to new things **(PSI21)**

field 29 = **Item 22**: I feel that I am: **(PSI22)**
      1 = A very good parent
      2 = A better than average parent
      3 = An average parent
      4 = A person who has some trouble being a parent
      5 = Not very good at being a parent

field 30 = **Item 23**: I expected to have closer and warmer feelings for my child than I do and this bothers me

**(PSI23)**

field 31 = **Item 24**: Sometimes my child does things that bother me just to be mean **(PSI24)**

field 32 = **Item 25**: My child seems to cry or fuss more often than most children **(PSI25)**

field 33 = **Item 26**: My child generally wakes up in a bad mood **(PSI26)**

field 34 = **Item 27**: I feel that my child is very moody and easily upset **(PSI27)**

field 35 = **Item 28**: My child does a few things which bother me a great deal **(PSI28)**

field 36 = **Item 29**: My child reacts very strongly when something happens that my child doesn't like **(PSI29)**

field 37 = **Item 30**: My child gets upset easily over the smallest thing **(PSI30)**

field 38 = **Item 31**: My child's sleeping or eating schedule was much harder to establish than I expected **(PSI31)**

field 39 = **Item 32**: I have found that getting my child to do something or stop doing something is: **(PSI32)**
      1 = Much easier than I expected
      2 = Somewhat easier than I expected
      3 = About as hard as I expected
      4 = Somewhat harder than I expected
      5 = Much harder than I expected

field 40 = **Item 33**: Think carefully and count the number of things which your child does that bother you
      (e.g., dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc.)

**(PSI33)**
      1 = 1 to 3
      2 = 4 to 5
      3 = 6 to 7
      4 = 8 to 9
      5 = 10+

field 41 = **Item 34**: There are some things my child does that really bother me a lot **(PSI34)**
field 42 = **Item 35**: My child turned out to be more of a problem than I had expected **(PSI35)**
field 43 = **Item 36**: My child makes more demands on me than most children **(PSI36)**


**SUMMARY MEASURES**

field 44 = **Defensive Responding (mean score) (PSIDRX)**
field 45 = **Defensive Responding (total score)  (PSIDRT)**
        Includes Items 1, 2, 3, 7, 8, 9, 11.

field 46 = **Parental Distress (mean score) (PSIPDX)**
field 47 = **Parental Distress (total score)  (PSIPDT)**
        Includes Items 1 thru 12.

field 48 = **Parent-Child Dysfunctional Interaction (mean score) (PSIPCDIX)**
field 49 = **Parent-Child Dysfunctional Interaction (total score)  (PSIPCDIT)**
        Includes Items 13 thru 24.

field 50 = **Difficult Child (mean score) (PSIDCX)**
field 51 = **Difficult Child (total score)  (PSIDCT)**
        Includes Items 25 thru 36.

field 52 = **Total Score: Total Stress (mean score) (PSITOTLX)**
field 53 = **Total Score: Total Stress (total score)  (PSITOTLT)**
        Includes All Items 1 to 36.

# Inventory of Small Life Events

Used by permission of Alex J. Zautra, Ph.D.

field 1 = **Participant Identification (ID)**

field 2 = **Days from Baseline (DAYISLE)**

field 3 = **Assessment Point (ASSISLE)** (number of subjects/number of records)
      03 = MTA 3 Month Assessment (433/680)
      09 = MTA 9 Month Assessment (503/777)
      14 = MTA 14 Month Assessment (515/793)
      E = MTA Early Termination Assessment (21/29)
      ~~24 = MTA 24 Month Assessment (494/748)~~
      ~~LB = LNCG Baseline Assessment (285/441)~~

**NOTE:** Assessment Points indicated by strike-out are not yet being distributed.

field 4 = **Relationship to Child (RELISLE)**

field 5 = **Active Status (ACTISLE)**
      0 = INACTIVE. Data collected after the 14-Month treatment phase; or after Early Termination from treatment phase; or prior to treatment phase.
      1 = ACTIVE. Data collected during the 14-Month treatment phase while subject received originally assignment treatment (regardless of degree of compliance).
      2 = ACTIVE. This is the last ACTIVE assessment for subjects who were about to violate treatment arm by receiving alternate treatment.
      3 = ACTIVE. This is the last ACTIVE assessment for subjects who were about to leave the study by moving away.

field 6 = **Site Identification (SITENUM)**
      Number series range 1 – 6

field 7 = **Subject Type (SJTYP)**
      1 = MTA Randomized Trial Subject
      2 = Local Normative Comparison Group (LNCG) Subject

**NOTE:** The subject is asked about 100 "Small Life Events" that may have happened in the past four weeks. Each "event" has
      **two fields**: the first field is "Did it happen?" and the second field is "How often,?" which is only scored IF the "Did it happen?" field is YES. (The following example concerning Item 1, "Were late in registering for a class," will illustrate how to use the variables in this file. Field 10 is "Did it happen?" for Item 1. Field 11 is "How often?" Item 1 happened during the past four weeks. If field 10 is "No," then field 11 is missing (code="."). If field 10 is "Yes," then field 11 is 1 to 60 or 99 (for more than 60 times). It is possible that either of the fields may be missing if subject neglected to complete them.)

**Codes for ISLE "Did it happen?" Items (ISLE1 - ISLE100)**
      1 = No
      2 = Yes (in "past four weeks")
      99 = The item is Not Applicable (e.g., if not in school, all school items are N/A)
      . = Missing

**Codes for ISLE "How often?" Items  (ISLE1F - ISLE100F)**

       1 to 60 = Number of times (frequency)(1 to 60) that it happened (in "past four weeks")
         99 = More than 60 times
          . = Missing

fields 8 - 20 = **A:  SCHOOL SECTION**
field 8 = **Item A (a):**  Are you currently in school? **(ASCHOOL)**
      1 = Yes
      2 = No

fields   9-10 = **Item 1**:  Were late in registering for a class **(ISLE1) (ISLE1F)**
fields 11-12 = **Item 2**:  Homework assignments became heavy **(ISLE2) (ISLE2F)**
fields 13-14 = **Item 3**:  Excluded from participation in a valuable course **(ISLE3) (ISLE3F)**
fields 15-16 = **Item 4**:  Did poorly on important test **(ISLE4) (ISLE4F)**
fields 17-18 = **Item 5**:  Could not pay school tuition when due **(ISLE5) (ISLE5F)**
fields 19-20 = **Item   6**:   Had to miss class(es) because of family or work demands **(ISLE6) (ISLE6F)**

fields 21 - 28 = **B:  RECREATION SECTION**
fields 21-22 = **Item   7**: Stopped participation in a hobby, sport or other recreational activity  **(ISLE7) (ISLE7F)**
fields 23-24 = **Item   8**: Called off planned weekend (or longer) vacation **(ISLE8**) **(ISLE8F)**
fields 25-26 = **Item   9**: Your pet very sick, and needed extra attention **(ISLE9) (ISLE9F)**
fields 27-28 = **Item 10**: Your pet died **(ISLE10) (ISLE10F)**

fields 29 - 34 = **C:  RELIGION SECTION**
fields 29-30 = **Item 11**: Broke an important rule or commandment or your religion **(ISLE11) (ISLE11F)**
fields 31-32 = **Item 12**: Priest/Rabbi/Minister could not see you when you asked **(ISLE12) (ISLE12F)**
fields 33-34 = **Item 13**: Had to attend a funeral service **(ISLE13) (ISLE13F)**

fields 35 - 48 = **D: MONEY AND FINANCIAL MATTERS SECTION**
fields 35-36 = **Item 14**: Had an unexpected expense over $50 but under $500 **(ISLE14)  (ISLE14F)**
fields 37-38 = **Item 15**: Ran out of money and could not cover living expenses this month  **(ISLE15) (ISLE15F)**
fields 39-40 = **Item 16**: Ran out of money & could not give child(ren) pocket money (allowance) **(ISLE16) (ISLE16F)**
fields 41-42 = **Item 17**: Did not get unemployment compensation on time **(ISLE17) (ISLE17F)**
fields 43-44 = **Item 18**: Found a large unfavorable error in your checkbook balance **(ISLE18) (ISLE18F)**
fields 45-46 = **Item 19**: Your rent or mortgage payment increased **(ISLE19) (ISLE19F)**
fields 47-48 = **Item 20**: Did not get pension, social security (other government) check on time **(ISLE20) (ISLE20F)**

fields 49 - 58 = **E:  TRANSPORTATION SECTION**
fields 49-50 = **Item 21**: Car/bike broke down **(ISLE21) (ISLE21F)**
fields 51-52 = **Item 22**: Got a traffic ticket for a moving violation(speeding, run a light) **(ISLE22) (ISLE22F)**
fields 53-54 = **Item 23**: Got a parking ticket **(ISLE23) (ISLE23F)**
fields 55-56 = **Item 24**: Public transportation you used broke down or stopped running  **(ISLE24) (ISLE24F)**
fields 57-58 = **Item 25**: Involved in a traffic accident **(ISLE25) (ISLE25F)**

fields 59 - 76 = **F: CHILDREN SECTION**
fields      59-60 = **Item 26**: Fought with child **(ISLE26) (ISLE26F)**
fields      61-62 = **Item 27**: Could not find babysitter when you needed one **(ISLE27) (ISLE27F)**
fields      63-64 = **Item 28**: Discovered that child(ren) has problem with teacher **(ISLE28) (ISLE28F)**
fields      65-66 = **Item 29**: Discovered that child(ren) has problem(s) with other children **(ISLE29)**
**(ISLE29F)**
fields      67-68 = **Item 30**: Spend more time watching over child(ren) than usual **(ISLE30) (ISLE30F)**
fields      69-70 = **Item 31**: Child(ren) broke a major rule of the house **(ISLE31) (ISLE31F)**
fields      71-72 = **Item 32**: Had to take child(ren) to doctor/dentist **(ISLE32) (ISLE32F)**
fields      73-74 = **Item 33**: Saw or heard children fight **(ISLE33) (ISLE33F)**
fields      75-76 = **Item 34**: Your usual visit with your child(ren) was cancelled/ postponed **(ISLE34)**
**(ISLE34F)**


fields 77 - 102 = **G: HOUSEHOLD SECTION**
fields      77-78 = **Item 35**: Home appliance broke down or stopped running **(ISLE35) (ISLE35F)**
fields      79-80 = **Item 36**: Your were locked out of your house **(ISLE36) (ISLE36F)**
fields      81-82 = **Item 37**: Repair person/apartment supervisor failed to fix something properly
                     **(ISLE37) (ISLE37F)**
fields      83-84 = **Item 38**: Neighbor noise disrupted your sleep **(ISLE38) (ISLE38F)**
fields      85-86 = **Item 39**: Home has too little heat for a day or more **(ISLE39) (ISLE39F)**
fields      87-88 = **Item 40**: Home has too much heat for a day or more **(ISLE40) (ISLE40F)**
fields      89-90 = **Item 41**: Saw unwanted household pest (roaches, mouse, spider, etc.) **(ISLE41)**
**(ISLE41F)**
fields      91-92 = **Item 42**: Water damage to your home from leaks **(ISLE42) (ISLE42F)**
fields      93-94 = **Item 43**: Household item (glass, dish, etc.) broke **(ISLE43) (ISLE43F)**
fields      95-96 = **Item 44**: Plumbing broke down **(ISLE44) (ISLE44F)**
fields      97-98 = **Item 45**: Elevator broke down **(ISLE45) (ISLE45F)**
fields   99-100 = **Item 46**: Amount of living space in the home was reduced **(ISLE46) (ISLE46F)**
fields 101-102 = **Item 47**: Had to wait a long time for repair person to arrive at your home **(ISLE47)**
**(ISLE47F)**


fields 103-110 = **H: RELATIONS WITH FAMILY SECTION (not spouse/mate or child)**
fields 103-104 = **Item 48**: Had an argument with family member **(ISLE48) (ISLE48F)**
fields 105-106 = **Item 49**: Criticized or blamed for something by family member **(ISLE49) (ISLE49F)**
fields 107-108 = **Item 50**: Forced to visit with family member when you did not want to **(ISLE50)**
**(ISLE50F)**
fields 109-110 = **Item 51**: Saw or heard parents fight **(ISLE51) (ISLE51F)**


fields 111-130 = **I: LOVE AND MARRIAGE SECTION**
fields 111-112 = **Item 52**: Had a sexual problem with spouse/mate **(ISLE52) (ISLE52F)**
fields 113-114 = **Item 53**: Saw spouse/mate flirt with another person **(ISLE53) (ISLE53F)**
fields 115-116 = **Item 54**: Criticized by spouse/mate **(ISLE54) (ISLE54F)**
fields 117-118 = **Item 55**: Were critical of spouse/mate **(ISLE55) (ISLE55F)**
fields 119-120 = **Item 56**: Disagreed with spouse/mate on care of children **(ISLE56) (ISLE56F)**
fields 121-122 = **Item 57**: Argued with spouse/mate on something other than care of children **(ISLE57)**
**(ISLE57F)**
fields 123-124 = **Item 58**: Spouse/mate was away from home overnight unexpectedly **(ISLE58)**
**(ISLE58F)**
fields 125-126 = **Item 59**: Spouse/mate stopped being affectionate for a day or more **(ISLE59) (ISLE59F)**
fields 127-128 = **Item 60**: Were hit by spouse/mate **(ISLE60)  (ISLE60F)**
fields 129-130 = **Item 61**: Hit spouse/mate **(ISLE61) (ISLE61F)**

fields 131-142 = **J: CRIME SECTION**
fields 131-132 = **Item 62**: An unsuccessful attempt was made to steal your property **(ISLE62) (ISLE62F)**
fields 133-134 = **Item 63**: Your personal property was damaged **(ISLE63) (ISLE63F)**
fields 135-136 = **Item 64**: You were suspected of doing something illegal by authorities **(ISLE64) (ISLE64F)**
fields 137-138 = **Item 65**: You were cheated or shortchanged in a store **(ISLE65) (ISLE65F)**
fields 139-140 = **Item 66**: You were sexually harassed **(ISLE66) (ISLE66F)**
fields 141-142 = **Item 67**: You broke a minor law (misdemeanor or lesser crime) **(ISLE67) (ISLE67F)**


fields 143-158 = **K: SOCIAL LIFE SECTION**
fields 143-144 = **Item 68**: Not invited to a party given by friends **(ISLE68) (ISLE68F)**
fields 145-146 = **Item 69**: Met an unfriendly (or rude) person **(ISLE69) (ISLE69F)**
fields 147-148 = **Item 70**: Friend/acquaintance fails to show up for scheduled meeting **(ISLE70) (ISLE70F)**
fields 149-150 = **Item 71**: Criticized by friend/acquaintance **(ISLE71) (ISLE71F)**
fields 151-152 = **Item 72**: Close friend(s) left neighborhood **(ISLE72) (ISLE72F)**
fields 153-154 = **Item 73**: Argued with a friend/acquaintance **(ISLE73) (ISLE73F)**
fields 155-156 = **Item 74**: Spouse/mate had argument with friend/neighbor **(ISLE74) (ISLE74F)**
fields 157-158 = **Item 75**: Friend/acquaintance did not return your call **(ISLE75) (ISLE75F)**


fields 159-180 = **L: HEALTH/ILLNESS SECTION**
fields 159-160 = **Item 76**: Your allergy flared up **(ISLE76) (ISLE76F)**
fields 161-162 = **Item 77**: Air pollution caused you discomfort (diff w/ eyes, nose, breathing, etc.) **(ISLE77) (ISLE77F)**
fields 163-164 = **Item 78**: Tried to improve your diet but were not successful **(ISLE78) (ISLE78F)**
fields 165-166 = **Item 79**: Tried to stop smoking but were not successful **(ISLE79) (ISLE79F)**
fields 167-168 = **Item 80**: Got sick to your stomach from something you ate **(ISLE80) (ISLE80F)**
fields 169-170 = **Item 81**: Began a day with physical pain or discomfort **(ISLE81) (ISLE81F)**
fields 171-172 = **Item 82**: Contracted cold or flu **(ISLE82) (ISLE82F)**
fields 173-174 = **Item 83**: Had to see a doctor **(ISLE83)  (ISLE83F)**
fields 175-176 = **Item 84**: Suffered a minor physical injury (sprain, pulled muscle, cut or bruise) **(ISLE84) (ISLE84F)**
fields 177-178 = **Item 85**: Had menstrual cramps **(ISLE85) (ISLE85F)**
fields 179-180 = **Item 86**: Had trouble sleeping on one (or more) nights **(ISLE86) (ISLE86F)**


fields 181-209 = **M: WORK SECTION**
field 181 = **Item M(a):** Were you employed during the last month? **(MWORK)**
    1 = Yes
    2 = No

fields 182-183 = **Item  87**: Had to move to worse desk/office/work station **(ISLE87) (ISLE87F)**
fields 184-185 = **Item  88**: Criticized by supervisor at work **(ISLE88) (ISLE88F)**
fields 186-187 = **Item  89**: Had to work overtime when you did not want to **(ISLE89) (ISLE89F)**
fields 188-199 = **Item  90**: Received less pay than expected **(ISLE90) (ISLE90F)**
fields 190-191 = **Item  91**: A supervisor threatened to fire you **(ISLE91) (ISLE91F)**
fields 192-193 = **Item  92**: Got a negative job performance review **(ISLE92) (ISLE92F)**
fields 194-195 = **Item  93**: People under your supervision failed to get work done on time **(ISLE93) (ISLE93F)**
fields 196-197 = **Item  94**: Had added pressure to work harder/faster during the month **(ISLE94) (ISLE94F)**
fields 198-109 = **Item  95**: Disagreement with others about job assignments **(ISLE95) (ISLE95F)**

fields 200-201 = **Item  96**: Heard rumors of layoffs that would affect your position **(ISLE96) (ISLE96F)**
fields 202-203 = **Item  97**: Turned down for a job **(ISLE97) (ISLE97F)**
fields 204-205 = **Item  98**: Your authority to make decisions at work was reduced **(ISLE98) (ISLE98F)**
fields 206-207 = **Item  99**: The office ran out of supplies you needed to do your job **(ISLE99) (ISLE99F)**
fields 208-209 = **Item 100**: There was not enough work to keep busy **(ISLE100) (ISLE100F)**


**SUMMARY MEASURES**

**NOTE:**  Items marked as "Yes" were included in the scoring of the items below; therefore, missing items were treated as "No."
        If a section was "N/A," a score of "0" was assigned below.

field 210 = **Number of Items in School Section that happened in past 4 weeks (ISLSCH)**

field 211 = **Number of Items in Recreation Section that happened in past 4 weeks (ISLREC)**

field 212 = **Number of Items in Religion Section that happened in past 4 weeks (ISLRELIG)**

field 213 = **Number of Items in Money Section that happened in past 4 weeks (ISLMONEY)**

field 214 = **Number of Items in Transportation Section that happened in past 4 weeks (ISLTRANS)**

field 215 = **Number of Items in Children Section that happened in past 4 weeks (ISLCHILD)**

field 216 = **Number of Items in Household Section that happened in past 4 weeks (ISLHOUSE)**

field 217 = **Number of Items in Relations w Family Section that happened in past 4 weeks (ISLFAM)**

field 218 = **Number of Items in Love and Marriage Section that happened in past 4 weeks (ISLLOVE)**

field 219 = **Number of Items in Crime Section that happened in past 4 weeks (ISLCRIME)**

field 220 = **Number of Items in Social Life Section that happened in past 4 weeks (ISLSOC)**

field 221 = **Number of Items in Health/Illness Section that happened in past 4 weeks (ISLHLTH)**

field 222 = **Number of Items in Work Section that happened in past 4 weeks (ISLWORK)**

field 223 = **Number of Items in entire scale that happened in past 4 weeks (ISLTOTAL)**

# Coddington Life Events Scale

field   1 = **Participant Identification (ID)**      **NOTE:** This variable is not the original study ID number. It has been recoded for public release.

field   2 = **Days from Baseline (DAYCOD)**

field   3 = **Assessment Point (ASSCOD)** (number of subjects/number of records)
     D  = MTA Baseline Assessment (569/917)

field   4 = **Relationship to Child (RELCOD)**

field   5 = **Active Status (ACTCOD)**
     1 = ACTIVE.  Data collected during the 14-Month treatment phase while subject
         received originally assignment treatment (regardless of degree of compliance).

field   6 = **Site Identification (SITENUM)**
     Number series range 1 – 6

field   7 = **Subject Type (SJTYP)**
     1 = MTA Randomized Trial Subject      **NOTE:**   Only collected on MTA group; not
LNCG.

     **NOTE:**   The Coddington Life Events Scale asks respondents to indicate which season(s) each event occurred.  In the

         MTA database, the season data is unreliable and therefore has been omitted.  Thus, the data in this file

         indicate only whether each life event occurred at all during the 12 months prior to baseline.

**CODES for CODD Items 1 thru 33 (COD1-COD33):**
     0 = No, event did not happen during the past 12 months
     1 = Yes, event happened at least once during the past 12 months
     . = missing

field   8 = **Item   1**: Death of one of the child=s parents  **(COD1)**
field   9 = **Item   2**: Death of the child=s brother or sister  **(COD2)**
field 10 = **Item   3**: Divorce of the child=s parents  **(COD3)**
field 11 = **Item   4**: Marital separation of the child=s parents  **(COD4)**
field 12 = **Item   5**: Death of one of the child=s grandparents  **(COD5)**
field 13 = **Item   6**: Hospitalization of one of the child=s parents  **(COD6)**
field 14 = **Item   7**: Remarriage of the child=s parent to a step parent  **(COD7)**
field 15 = **Item   8**: Birth of the child=s brother or sister  **(COD8)**
field 16 = **Item   9**: Hospitalization of one of the child=s brothers or sisters  **(COD9)**
field 17 = **Item 10**: Loss of a job by the child=s parent  **(COD10)**
field 18 = **Item 11**: Major increase in the child=s parents= income  **(COD11)**
field 19 = **Item 12**: Major decrease in the child=s parents= income  **(COD12)**
field 20 = **Item 13**: Increase in the number of arguments between child=s parents  **(COD13)**
field 21 = **Item 14**: Decrease in the number of arguments between child=s parents  **(COD14)**
field 22 = **Item 15**: Change in father=s job so that he has less time home  **(COD15)**
field 23 = **Item 16**: A new adult moving into the home  **(COD16)**
field 24 = **Item 17**: Child=s mother beginning to work outside the home  **(COD17)**

field 25 = **Item 18**: Beginning the first grade  **(COD18)**
field 26 = **Item 19**: Move to a new school district  **(COD19)**
field 27 = **Item 20**: Failing a grade in school  **(COD20)**
field 28 = **Item 21**: Suspension from school  **(COD21)**
field 29 = **Item 22**: Increase in the number of arguments with child  **(COD22)**
field 30 = **Item 23**: Decrease in the number of arguments with child  **(COD23)**
field 31 = **Item 24**: Recognition for excelling in a sport or other activity  **(COD24)**
field 32 = **Item 25**: Appearance in juvenile court  **(COD25)**
field 33 = **Item 26**: Failing to achieve something child really wanted  **(COD26)**
field 34 = **Item 27**: Being invited to join a social organization  **(COD27)**
field 35 = **Item 28**: Death of a pet  **(COD28)**
field 36 = **Item 29**: Child being hospitalized for illness or injury  **(COD29)**
field 37 = **Item 30**: Death of child=s close friend  **(COD30)**
field 38 = **Item 31**: Child=s becoming involved with drugs or alcohol  **(COD31)**
field 39 = **Item 32**: Child=s stopping the use of drugs or alcohol  **(COD32)**
field 40 = **Item 33**: Outstanding personal achievement (special prize)  **(COD33)**


**SUMMARY MEASURE**

field 41 = **Total number of events 1 to 33 that are coded as having happened at least once during past 12 months (CODNMEV)**
Includes all items 1 to 33.

# Conners Parent Rating Scale
Used by permission of C. Keith Conner, Ph.D.

field 1 = **Participant Identification (ID)**

field 2 = **Days from Baseline (DAYSCPRS)**

field 3 = **Assessment Point (ASSCPRS)** (number of subjects/number of records)
      B = MTA Pre-Baseline Screening Assessment (579/579)
      D = MTA Baseline Assessment (562/918)
      03 = MTA 3 Month Assessment (438/687)
      09 = MTA 9 Month Assessment (504/785)
      14 = MTA 14 Month Assessment (519/800)
      E = MTA Early Termination Assessment (18/25)
      ~~24 = MTA 24 Month Assessment (499/761)~~
      ~~LB = LNCG Baseline Assessment (285/441)~~
      ~~36 = MTA & LNCG 36 Month Assessment (741/1108)~~

**NOTE:** Assessment Points indicated by strike-out are not yet being distributed.

field 4 = **Relationship to Child (RELCPRS)**

field 5 = **Active Status (ACTCPRS)**
      0 = INACTIVE.  Data collected after the 14-Month treatment phase; or after Early
          Termination from treatment phase; or prior to treatment phase.
      1 = ACTIVE.  Data collected during the 14-Month treatment phase while subject
          received originally assignment treatment (regardless of degree of compliance).
      2 = ACTIVE.  This is the last ACTIVE assessment for subjects who were about to violate
          treatment arm by receiving alternate treatment.
      3 = ACTIVE.  This is the last ACTIVE assessment for subjects who were about to leave
          the study by moving away.

field 6 = **Site Identification (SITENUM)**

field 7 = **Subject Type (SJTYP)**
      1 = MTA Randomized Trial Subject
      2 = Local Normative Comparison Group (LNCG) Subject

**Codes for CPRS Items 1 thru 93 (CP1 - CP93)**
      1 = Not at all
      2 = Just a little
      3 = Pretty much
      4 = Very much
      .  =  missing

**Note:** The paper data collection form used codes 0 - 3; however, these codes were converted to 1 - 4 for the database.

field  8 = **Item 1**: Picky and finicky **(CP1)**
field  9 = **Item 2**: Will not eat enough **(CP2)**
field 10 = **Item 3**: Overweight **(CP3)**
field 11 = **Item 4**: Restless **(CP4)**
field 12 = **Item 5**: Nightmares **(CP5)**
field 13 = **Item  6**: Awakens at night **(CP6)**
field 14 = **Item  7**: Cannot fall asleep **(CP7)**

field 15 = **Item   8**: Afraid of new situations **(CP8)**
field 16 = **Item   9**: Afraid of people **(CP9)**
field 17 = **Item 10**: Afraid of being alone **(CP10)**
field 18 = **Item 11**: Worries about illness and death **(CP11)**
field 19 = **Item 12**: Gets stiff and rigid **(CP12)**
field 20 = **Item 13**: Twitches, jerks, etc. **(CP13)**
field 21 = **Item 14**: Shakes **(CP14)**
field 22 = **Item 15**: Stuttering **(CP15)**
field 23 = **Item 16**: Hard to understand **(CP16)**
field 24 = **Item 17**: Bed wetting **(CP17)**
field 25 = **Item 18**: Runs to bathroom constantly **(CP18)**
field 26 = **Item 19**: Soiling self **(CP19)**
field 27 = **Item 20**: Holds back bowel movement **(CP20)**
field 28 = **Item 21**: Headaches **(CP21)**
field 29 = **Item 22**: Stomach aches **(CP22)**
field 30 = **Item 23**: Vomiting **(CP23)**
field 31 = **Item 24**: Aches and pains **(CP24)**
field 32 = **Item 25**: Loose bowels **(CP25)**
field 33 = **Item 26**: Sucks thumb **(CP26)**
field 34 = **Item 27**: Bites or picks nails **(CP27)**
field 35 = **Item 28**: Chews on clothes, blankets, or others **(CP28)**
field 36 = **Item 29**: Picks at things such as hair, clothing, etc. **(CP29)**
field 37 = **Item 30**: Does not act his/her age **(CP30)**
field 38 = **Item 31**: Cries easily **(CP31)**
field 39 = **Item 32**: Wants to help doing things s/he should be doing alone **(CP32)**
field 40 = **Item 33**: Clings to parents or other adults **(CP33)**
field 41 = **Item 34**: Baby talk **(CP34)**
field 42 = **Item 35**: Keeps anger to self **(CP35)**
field 43 = **Item 36**: Lets him/herself get pushed around by other children **(CP36)**
field 44 = **Item 37**: Unhappy **(CP37)**
field 45 = **Item 38**: Carries a chip on his/her shoulder **(CP38)**
field 46 = **Item 39**: Bullying **(CP39)**
field 47 = **Item 40**: Bragging and boasting **(CP40)**
field 48 = **Item 41**: Sassy to grown-ups **(CP41)**
field 49 = **Item 42**: Shy **(CP42)**
field 50 = **Item 43**: Afraid they do not like him/her **(CP43)**
field 51 = **Item 44**: Feelings easily hurt **(CP44)**
field 52 = **Item 45**: Has no friends **(CP45)**
field 53 = **Item 46**: Feels cheated **(CP46) ***
field 54 = **Item 47**: Mean **(CP47) ***
field 55 = **Item 48**: Fights constantly **(CP48) ***
field 56 = **Item 49**: Disturbs other children **(CP49)**
field 57 = **Item 50**: Wants to run things **(CP50)**
field 58 = **Item 51**: Picks on other children **(CP51)**
field 59 = **Item 52**: Restless or overactive **(CP52)**
field 60 = **Item 53**: Excitable, impulsive **(CP53)**
field 61 = **Item 54**: Fails to finish things s/he starts – short attention span **(CP54)**
field 62 = **Item 55**: Temper outbursts, explosive and unpredictable behavior **(CP55)**
field 63 = **Item 56**: Throws him/herself around **(CP56)**
field   64 = **Item 57**: Throws and breaks things **(CP57)**
field   65 = **Item 58**: Pouts and sulks **(CP58)**
field   66 = **Item 59**: Plays with own sex organs **(CP59)**
field   67 = **Item 60**: Involved in sex play with others **(CP60)**

field  68 = **Item 61**: Modest about his/her body **(CP61)**
field  69 = **Item 62**: Is not learning **(CP62)**
field  70 = **Item 63**: Does not like to go to school **(CP63)**
field  71 = **Item 64**: Is afraid to go to school **(CP64)**
field  72 = **Item 65**: Daydreams **(CP65)**
field  73 = **Item 66**: Truancy **(CP66)**
field  74 = **Item 67**: Will not obey school rules **(CP67)**
field  75 = **Item 68**: Denies having done wrong **(CP68)**
field  76 = **Item 69**: Blames others for mistakes **(CP69)**
field  77 = **Item 70**: Tells stories which did not happen **(CP70)**
field  78 = **Item 71**: Stealing form parents **(CP71)**
field  79 = **Item 72**: Stealing at school **(CP72)**
field  80 = **Item 73**: Stealing from stores and other places **(CP73)**
field  81 = **Item 74**: Sets fires **(CP74)**
field  82 = **Item 75**: Gets into trouble with police **(CP75)**
field  83 = **Item 76**: Everything must be just so **(CP76)**
field  84 = **Item 77**: Things must be done same way every time **(CP77)**
field  85 = **Item 78**: Sets goals too high **(CP78)**
field  86 = **Item 79**: Inattentive, easily distracted **(CP79)**
field  87 = **Item 80**: Constantly fidgeting **(CP80)**
field  88 = **Item 81**: Cannot be left alone **(CP81)**
field  89 = **Item 82**: Always climbing **(CP82)**
field  90 = **Item 83**: A very early riser **(CP83)**
field  91 = **Item 84**: Will run around between mouthfuls at meals **(CP84)**
field  92 = **Item 85**: Demands must be met immediately – easily frustrated **(CP85)**
field  93 = **Item 86**: Cannot stand too much excitement **(CP86)**
field  94 = **Item 87**: Laces and zippers are always open **(CP87)**
field  95 = **Item 88**: Cries often and easily **(CP88)**
field  96 = **Item 89**: Unable to stop a repetitive activity **(CP89)**
field  97 = **Item 90**: Acts as if driven by a motor **(CP90)**
field  98 = **Item 91**: Mood changes quickly and drastically **(CP91)**
field  99 = **Item 92**: Poorly aware of surroundings or time of day **(CP92)**
field 100 = **Item 93**: Still cannot tie his/her shoelaces **(CP93)**

**\*Note:** Items 46, 47, and 48 have high numbers of missing data.  They occur across assessment points from all sites. We do not have an explanation for this.


**SUMMARY MEASURES**

field 101 = **Conduct Problem Factor A (mean score) (CPACDX)**
field 102 = **Conduct Problem Factor A (total score)   (CPACDT)**
                            Includes Items:  30, 32, 39, 40, 41, 43, 46 to 58, 67 to 71.

# Child Behavior Checklist

Thomas M. Achenbach, M.D.

field 1 = **Participant Identification (ID)**

**NOTE:** This variable is not the original study ID number. It has been recoded for public release.

field 2 = **Days from Baseline (DAYCBCL)**

field 3 = **Assessment Point (ASSCBCL)** (number of subjects/number of records)
    D = MTA Baseline Assessment (569/927)
    14 = MTA 14 Month Assessment (520/785)
    E = MTA Early Termination Assessment (28/39)
    ~~24 = MTA 24 Month Assessment (502/761)~~
    ~~LB = LNCG Baseline Assessment (287/442)~~
    ~~36 = MTA & LNCG 36 Month Assessment (744/1110)~~

**NOTE:** Assessment Points indicated by strike-out are not yet being distributed.

**Note:** At the 24 Month, LNCG Baseline and 36 Month Assessment Points, only a partial CBCL was completed.

That is, Items CB1 - CB113C (and all associated factors) were NOT completed.)

field 4 = **Relationship to Child (RELCBCL)**

field 5 = **Active Status (ACTCBCL)**
    0 = INACTIVE.  Data collected after the 14-Month treatment phase; or after Early
        Termination from treatment phase; or prior to treatment phase.
    1 = ACTIVE.  Data collected during the 14-Month treatment phase while subject
        received originally assignment treatment (regardless of degree of compliance).
    2 = ACTIVE.  This is the last ACTIVE assessment for subjects who were about to violate
        treatment arm by receiving alternate treatment.
    3 = ACTIVE.  This is the last ACTIVE assessment for subjects who were about to leave
        the study by moving away.

field 6 = **Site Identification**
    Number series range 1 – 6

field 7 = **Subject Type (SJTYP)**
    1 = MTA Randomized Trial Subject
    2 = Local Normative Comparison Group (LNCG) Subject

**Codes for CBCL "how much time spent doing?" Items  (IAT – IICT)**
    0 = Less than average
    1 = Average
    2 = More than Average
    8 = Don't know
    . = Missing (includes all those with a "1" in field 9)

**Codes for CBCL "how well does child do?" Items  (IAW – IICW)**
    0 = Below average
    1 = Average
    2 = Above Average
    8 = Don't know

. = Missing (includes all those with a "1" in field 9)

field 8 = Does child **take part** in **Sports**? **(INS)**
      1 = Does **not** take part in any sports (therefore, ignore fields 10 thru 15)
      . = Takes part in at least one sport (continue)

field 9 = Sport **A** - Compared to others of same age, how much **time** spent doing Sport **A**?**(IAT)**
field 10 = Sport **A** - Compared to others of same age, **how well** does child do Sport **A**? **(IAW)**

field 11 = Sport **B**- Compared to others of same age, how much **time** spent doing Sport **B**? **(IBT)**
field 12 = Sport **B** - Compared to others of same age, **how well** does child do Sport **B**? **(IBW)**

field 13 = Sport **C**- Compared to others of same age, how much **time** spent doing Sport **C**? **(ICT)**
field 14 = Sport **C** - Compared to others of same age, **how well** does child do Sport **C**? **(ICW)**

field 15 = Child's favorite **Hobbies**? **(IINH)**
      1 = Does **not** take part in any hobbies (therefore, ignore fields 17 thru 22)
      . = Takes part in at least one hobby (continue)

field 16 = Hobby **A** - Compared to others of same age, how much **time** spent doing Hobby **A**? **(IIAT)**
field 17 = Hobby **A** - Compared to others of same age, **how well** does child do Hobby **A**? **(IIAW)**

field 18 = Hobby **B** - Compared to others of same age, how much **time** spent doing Hobby **B**? **(IIBT)**
field 19 = Hobby **B** - Compared to others of same age, **how well** does child do Hobby **B**? **(IIBW)**

field 20 = Hobby **C**-Compared to others of same age, how much **time** spent doing Hobby **C**? **(IICT)**
field 21 = Hobby **C**-Compared to others of same age, **how well** does child do Hobby **C**? **(IICW)**

**Codes for CBCL "how active is child in Organization?" Items  (IIIA – IIIC)**
      0 = Less active
      1 = Average
      2 = More Active
      8 = Don't know
      . = Missing (includes all those with a "1" in field 23)

field 22 = Does child belong to **Organizations, Clubs, Teams, Groups**? **(IIINO)**
      1 = Does **not** belong to any organizations (therefore, ignore fields 24 thru 26)
      . = Belongs to at least one organization (continue)

field 23 = Organization **A** - Compared to others of same age, how **active** is child in Organization A?  **(IIIA)**
field 24 = Organization **B** - Compared to others of same age, how **active** is child in Organization B?  **(IIIB)**
field 25 = Organization **C** - Compared to others of same age, how **active** is child in Organization C?  **(IIIC)**

**Codes for CBCL "how well does child do?" Items  (IVA – IVC)**
      0 = Below average
      1 = Average
      2 = Above Average
      8 = Don't know
      . = Missing (includes all those with a "1" in field 9)

field 26 = Does child have any **jobs or chores**? **(IVNC)**
   1 = Does **not** have any jobs or chores (therefore, ignore fields 28 thru 30)
   . = Has at least one job or chore (continue)

field 27 = Job **A** - Compared to others of same age, **how well** does child do Job **A**? **(IVA)**
field 28 = Job **B** - Compared to others of same age, **how well** does child do Job **B**? **(IVB)**
field 29 = Job **C** - Compared to others of same age, **how well** does child do Job **C**? **(IVC)**

field 30 = How many **close friends** does child have? **(V1)**
   0 = None
   1 = One
   2 = Two or Three
   3 = Four or more
   . = Missing

field 31 = How many times a week does child **do things with friends** outside school? **(V2)**
   0 = Less than one
   1 = One or Two
   2 = Three or more
   . = Missing

field 32 = Compared to others of same age, how well does child **get along with siblings**? **(VIA)**
   0 = Worse
   1 = About Average
   2 = Better
   8 = Not Applicable (no siblings)
   . = Missing

**Codes for CBCL "how well does child?" Items (VIB – VID)**
   0 = Worse
   1 = About Average
   2 = Better
   . = Missing

field 33 = Compared to others of same age, how well does child **get along with other kids**? **(VIB)**
field 34 = Compared to others of same age, how well does child **behave with own parents**? **(VIC)**
field 35 = Compared to others of same age, how well does child **play/work alone**? **(VID)**

**Codes for CBCL "Performance?" Items (VII1A – VII1G)**
   0 = Failing
   1 = Below Average
   2 = Average
   3 = Above Average
   . = Missing

field 36 = Performance in Reading, English, or Language Arts? **(VII1A)**
field 37 = Performance in History or Social Studies? **(VII1B)**
field 38 = Performance in Arithmetic or Math? **(VII1C)**
field 39 = Performance in Science? **(VII1D)**
field 40 = Performance in Other Subject **E**? **(VII1E)**
field 41 = Performance in Other Subject **F**? **(VII1F)**
field 42 = Performance in Other Subject **G**? **(VII1G)**

**Codes for CBCL Items  (VII2P – VII4P)**
      0 = No
      1 = Yes


field 43 = Is child in special class or special school? **(VII2P)**
field 44 = Has child repeated a grade? **(VII3P)**
field 45 = Has child had any academic or other problems in school? **(VII4P)**


**Codes for CBCL Items 1 thru 113 (CB1-CB55, CB56A-H, CB57-CB112, CB113A-C)**
      0 = Not True
      1 = Somewhat or Sometimes True
      2 = Very True or Often True
      . = Missing


field 46 = **Item  1:** Acts too young for his/her age **(CB1)**
field 47 = **Item  2:** Allergy **(CB2)**
field 48 = **Item  3:** Argues a lot **(CB3)**
field 49 = **Item  4:** Asthma **(CB4)**
field 50 = **Item  5:** Behaves like opposite sex **(CB5)**
field 51 = **Item  6:** Bowel movements outside toilet **(CB6)**
field 52 = **Item  7:** Bragging, boasting **(CB7)**
field 53 = **Item  8:** Can't concentrate, can't pay attention for long **(CB8)**
field 54 = **Item  9:** Can't get his/her mind off certain thoughts; obsessions **(CB9)**
field 55 = **Item 10:** Can't sit still, restless, or hyperactive **(CB10)**
field 56 = **Item 11:** Clings to adults or too dependent **(CB11)**
field 57 = **Item 12:** Complains of loneliness **(CB12)**
field 58 = **Item 13:** Confused or seems to be in a fog **(CB13)**
field 59 = **Item 14:** Cries a lot **(CB14)**
field 60 = **Item 15:** Cruel to animals **(CB15)**
field 61 = **Item 16:** Cruelty, bullying, or meanness to others **(CB16)**
field 62 = **Item 17:** Daydreams or gets lost in his/her thoughts **(CB17)**
field 63 = **Item 18:** Deliberately harms self or attempts suicide **(CB18)**
field 64 = **Item 19:** Demands a lot of attention **(CB19)**
field 65 = **Item 20:** Destroys his/her own things **(CB20)**
field 66 = **Item 21:** Destroys things belonging to his/her family or others **(CB21)**
field 67 = **Item 22:** Disobedient at home **(CB22)**
field 68 = **Item 23:** Disobedient at school **(CB23)**
field 69 = **Item 24:** Doesn't eat well **(CB24)**
field 70 = **Item 25:** Doesn't get along with other kids **(CB25)**
field 71 = **Item 26:** Doesn't seem to feel guilty after misbehaving **(CB26)**
field 72 = **Item 27:** Easily jealous **(CB27)**
field 73 = **Item 28:** Eats or drinks things that are not food (don't include sweets) **(CB28)**
field 74 = **Item 29:** Fears certain animals, situations, or places other than school **(CB29)**
field 75 = **Item 30:** Fears going to school **(CB30)**
field 76 = **Item 31:** Fears he/she might think or do something bad **(CB31)**
field 77 = **Item 32:** Feels he/she has to be perfect **(CB32)**
field 78 = **Item 33:** Feels or complains that no one loves him/her **(CB33)**
field 79 = **Item 34:** Feels others are out to get him/her **(CB34)**
field 80 = **Item 35:** Feels worthless or inferior **(CB35)**
field  81 = **Item 36:** Gets hurt a lot, accident-prone **(CB36)**
field  82 = **Item 37:** Gets in many fights **(CB37)**
field  83 = **Item 38:** Gets teased a lot **(CB38)**
field  84 = **Item 39:** Hangs around with others who get in trouble **(CB39)**

field  85 = **Item 40:** Hears sounds or voices that aren't there **(CB40)**
field  86 = **Item 41:** Impulsive or acts without thinking **(CB41)**
field  87 = **Item 42:** Would rather be alone than with others **(CB42)**
field  88 = **Item 43:** Lying or cheating **(CB43)**
field  89 = **Item 44:** Bites fingernails **(CB44)**
field  90 = **Item 45:** Nervous, high-strung, or tense **(CB45)**
field  91 = **Item 46:** Nervous movements or twitching **(CB46)**
field  92 = **Item 47:** Nightmares **(CB47)**
field  93 = **Item 48:** Not liked by other kids **(CB48)**
field  94 = **Item 49:** Constipated, doesn't move bowels **(CB49)**
field  95 = **Item 50:** Too fearful or anxious **(CB50)**
field  96 = **Item 51:** Feels dizzy **(CB51)**
field  97 = **Item 52:** Feels too guilty **(CB52)**
field  98 = **Item 53:** Overeating **(CB53)**
field  99 = **Item 54:** Overtired **(CB54)**
field 100 = **Item 55:** Overweight **(CB55)**
field 101 = **Item 56a:** Aches or pains (not headaches) without known medical cause **(CB56A)**
field 102 = **Item 56b:** Headaches without known medical cause **(CB56B)**
field 103 = **Item 56c:** Nausea, feels sick without known medical cause **(CB56C)**
field 104 = **Item 56d:** Problems with eyes without known medical cause **(CB56D)**
field 105 = **Item 56e:** Rashes or other skin problems without known medical cause **(CB56E)**
field 106 = **Item 56f:** Stomachaches or cramps without known medical cause **(CB56F)**
field 107 = **Item 56g:** Vomiting, throwing up without known medical cause **(CB56G)**
field 108 = **Item 56h:** Other physical problems without known medical cause **(CB56H)**
field 109 = **Item 57:** Physically attacks people **(CB57)**
field 110 = **Item 58:** Picks nose, skin, or other parts of body **(CB58)**
field 111 = **Item 59:** Plays with own sex parts in public **(CB59)**
field 112 = **Item 60:** Plays with own sex parts too much **(CB60)**
field 113 = **Item 61:** Poor school works **(CB61)**
field 114 = **Item 62:** Poorly coordinated or clumsy **(CB62)**
field 115 = **Item 63:** Prefers being with older kids **(CB63)**
field 116 = **Item 64:** Prefers being with younger kids **(CB64)**
field 117 = **Item 65:** Refuses to talk **(CB65)**
field 118 = **Item 66:** Repeats certain acts over and over; compulsions **(CB66)**
field 119 = **Item 67:** Runs away from home **(CB67)**
field 120 = **Item 68:** Screams a lot **(CB68)**
field 121 = **Item 69:** Secretive, keeps things to self **(CB69)**
field 122 = **Item 70:** Sees things that aren't there **(CB70)**
field 123 = **Item 71:** Self-conscious or easily embarrassed **(CB71)**
field 124 = **Item 72:** Sets fires **(CB72)**
field 125 = **Item 73:** Sexual problems **(CB73)**
field 126 = **Item 74:** Showing off or clowning **(CB74)**
field 127 = **Item 75:** Shy or timid **(CB75)**
field 128 = **Item 76:** Sleeps less than most kids **(CB76)**
field 129 = **Item 77:** Sleeps more than most kids during day and/or night **(CB77)**
field 130 = **Item 78:** Smears or plays with bowel movements **(CB78)**
field 131 = **Item 79:** Speech problem **(CB79)**
field 132 = **Item  80:** Stares blankly **(CB80)**
field 133 = **Item  81:** Steals at home **(CB81)**
field 134 = **Item  82:** Steals outside the home **(CB82)**
field 135 = **Item  83:** Stores up things he/she doesn't need **(CB83)**
field 136 = **Item  84:** Strange behavior **(CB84)**
field 137 = **Item  85:** Strange ideas **(CB85)**

field 138 = **Item   86:** Stubborn, sullen, or irritable **(CB86)**
field 139 = **Item   87:** Sudden changes in mood or feelings **(CB87)**
field 140 = **Item   88:** Sulks a lot **(CB88)**
field 141 = **Item   89:** Suspicious **(CB89)**
field 142 = **Item   90:** Swearing or obscene language **(CB90)**
field 143 = **Item   91:** Talks about killing self **(CB91)**
field 144 = **Item   92:** Talks or walks in sleep **(CB92)**
field 145 = **Item   93:** Talks too much **(CB93)**
field 146 = **Item   94:** Teases a lot **(CB94)**
field 147 = **Item   95:** Temper tantrums or hot temper **(CB95)**
field 148 = **Item   96:** Thinks about sex too much **(CB96)**
field 149 = **Item   97:** Threatens people **(CB97)**
field 150 = **Item   98:** Thumb-sucking **(CB98)**
field 151 = **Item   99:** Too concerned with neatness or cleanliness **(CB99)**
field 152 = **Item 100:** Trouble sleeping **(CB100)**
field 153 = **Item 101:** Truancy, skips school **(CB101)**
field 154 = **Item 102:** Under-active, slow moving, or lacks energy **(CB102)**
field 155 = **Item 103:** Unhappy, sad, or depressed **(CB103)**
field 156 = **Item 104:** Unusually loud **(CB104)**
field 157 = **Item 105:** Uses alcohol or drugs for non-medical purposes **(CB105)**
field 158 = **Item 106:** Vandalism **(CB106)**
field 159 = **Item 107:** Wets self during the day **(CB107)**
field 160 = **Item 108:** Wets the bed **(CB108)**
field 161 = **Item 109:** Whining **(CB109)**
field 162 = **Item 110:** Wishes to be of opposite sex **(CB110)**
field 163 = **Item 111:** Withdrawn, doesn't get involved with others **(CB111)**
field 164 = **Item 112:** Worries **(CB112)**
field 165 = **Item 113a:** Problems your child has that were not listed above **(CB113A)**
field 166 = **Item 113b:** Problems your child has that were not listed above **(CB113B)**
field 167 = **Item 113c:** Problems your child has that were not listed above **(CB113C)**


**SUMMARY MEASURES**

field 168 = **Withdrawn (mean score) (CB1WTHX)**
field 169 = **Withdrawn (total score)  (CB1WTHT)**
                    Includes Items 42, 65, 69, 75, 80, 88, 102, 103, 111.

field 170 = **Somatic Complaints (mean score) (CB2SOMX)**
field 171 = **Somatic Complaints (total score) (CB2SOMT)**
                    Includes Items 51, 54, 56A, 56B, 56C, 56D, 56E, 56F, 56G.

field 172 = **Anxious/Depressed (mean score) (CB3ANXX)**
field 173 = **Anxious/Depressed (total score)  (CB3ANXT)**
                    Includes Items 12, 14, 31 to 35, 45, 50, 52, 71, 89, 103, 112.

field 174 = **Social Problems (mean score) (CB4SOCX)**
field 175 = **Social Problems(total score) (CB4SOCT)**
                    Includes Items 1, 11, 25, 38, 48, 55, 62, 64.

field 176 = **Thought Problems (mean score) (CB5THTX)**
field 177 = **Thought Problems (total score)  (CB5THTT)**

Includes Items 9, 40, 66, 70, 80, 84, 85.

field 178 = **Attention Problems (mean score) (CB6ATTX)**
field 179 = **Attention Problems (total score) (CB6ATTT)**
Includes Items 1, 8, 10, 13, 17, 41, 45, 46, 61, 62, 80.

field 180 = **Delinquent Behavior (mean score) (CB7DLQX)**
field 181 = **Delinquent Behavior (total score)  (CB7DLQT)**
Includes Items 26, 39, 43, 63, 67, 72, 81, 82, 90, 96, 101, 105, 106.

field 182 = **Aggressive Behavior (mean score) (CB8AGGX)**
field 183 = **Aggressive Behavior (total score) (CB8AGGT)**
Includes Items 3, 7, 16, 19 to 23, 27, 37, 57, 68, 74, 86, 87, 93, 94, 95, 97, 104.

field 184 = **Sex Problems (mean score) (CB9SEXX)**
field 185 = **Sex Problems (total score)  (CB9SEXT)**
Includes Items 5, 59, 60, 73, 96, 110.

field 186 = **Internalizing Scale (mean score) (CBINTX)**
field 187 = **Internalizing Scale (total score) (CBINTT)**
Sum of  Withdrawn, Somatic Complaints, and Anxious/Depressed (subtract Item 103 once because it is present in both Withdrawn and Anxious/Depressed).

field 188 = **Externalizing (mean score) (CBEXTX)**
field 189 = **Externalizing (total score) (CBEXTT)**
Sum of Delinquent Behavior and Aggressive Behavior.

field 190 = **Total Score (mean score) (CBTOTX)**
field 191 = **Total Score (total score) (CBTOTT)**
Includes All Items 1 to 113C except Items 2 and 4.

field 103 = **Anxious-Shy Factor B (mean score) (CPBANXX)**
field 104 = **Anxious-Shy Factor B (total score)   (CPBANXT)**
    Includes Items:  8 to 12, 31, 33, 42, 43, 44, 46, 63, 64.


field 105 = **Restless-Disorganized Factor C (mean score) (CPCHYFX)**
field 106 = **Restless-Disorganized Factor C (total score)   (CPCHYFT)**
    Includes Items:  52, 53, 80, 82, 83, 85, 86, 90.


field 107 = **Learning Problem Factor D (mean score) (CPDLRNX)**
field 108 = **Learning Problem Factor D (total score)   (CPDLRNT)**
    Includes Items: 30, 45, 60, 62, 63, 67.


field 109 = **Psychosomatic Factor E (mean score) (CPEPSX)**
field 110 = **Psychosomatic Factor E (total score)   (CPEPST)**
    Includes Items: 4, 5, 6, 21 to 25.


field 111 = **Obsessive Compulsive Factor F (mean score) (CPFOCX)**
field 112 = **Obsessive Compulsive Factor F (total score)   (CPFOCT)**
    Includes Items: 76, 77, 78.


field 113 = **Antisocial Factor G (mean score) (CPGANTIX)**
field 114 = **Antisocial Factor G (total score)   (CPGANTIT)**
    Includes Items: 68, 71 to 74.


field 115 = **Hyperactive-Immature Factor H (mean score) (CPHYPIMX)**
field 116 = **Hyperactive-Immature Factor H (total score)   (CPHYPIMT)**
    Includes Items: 1, 4, 12, 13, 14, 18, 27, 28, 29, 31, 32, 33, 36, 44, 52, 53, 54.


field 117 = **Hyperactivity Index (10 items) (mean score) (CPIHYIXX)**
field 118 = **Hyperactivity Index (10 items) (total score)   (CPIHYIXT)**
    Includes Items: 49, 52 to 55, 79, 80, 85, 88, 91.


field 119 = **CPRS Total Score (mean score) (CPTOTALX)**
field 120 = **CPRS Total Score (total score)   (CPTOTALT)**
    Includes All Items 1 to 93.

# SNAP-IV – Parent Version

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field 1 = **Participant Identification (ID)**

field 2 = **Days from Baseline (DAYSSNAP)**

field 3 = **Assessment Point (ASSSNAP)** (number of subjects/number of records)
  B = MTA Pre-Baseline Screening Assessment (578/578)
  D = MTA Baseline Assessment (562/918)
  03 = MTA 3 Month Assessment (438/687)
  09 = MTA 9 Month Assessment (505/786)
  14 = MTA 14 Month Assessment (519/798)
  E = MTA Early Termination Assessment (18/25)
  ~~24 = MTA 24 Month Assessment (500/761)~~
  ~~LB = LNCG Baseline Assessment (285/443)~~
  ~~36 = MTA & LNCG 36 Month Assessment (743/1116)~~

**NOTE:** Assessment Points indicated by strike-out are not yet being distributed.

field 4 = **Relationship to Child (RELSNAP)**

field 5 = **Active Status (ACTSNAP)**
  0 = INACTIVE. Data collected after the 14-Month treatment phase; or after Early
      Termination from treatment phase; or prior to treatment phase.
  1 = ACTIVE. Data collected during the 14-Month treatment phase while subject
      received originally assignment treatment (regardless of degree of compliance).
  2 = ACTIVE. This is the last ACTIVE assessment for subjects who were about to violate
      treatment arm by receiving alternate treatment.
  3 = ACTIVE. This is the last ACTIVE assessment for subjects who were about to leave
      the study by moving away.

field 6 = **Site Identification (SITENUM)**
  Number series range 1 – 6

field 7 = **Subject Type (SJTYP)**
  1 = MTA Randomized Trial Subject
  2 = Local Normative Comparison Group (LNCG) Subject

**Codes for SNAPPAR Items 1 thru 39 (SN1 - SN39)**
  0 = Not at all
  1 = Just a little
  2 = Pretty much
  3 = Very much
  . = missing

field 8 = **Item 1:** Fails to give close attention to details or makes careless mistakes in schoolwork, work, or other
                activities **(SN1)**
field 9 = **Item 2:** Has difficulty sustaining attention in tasks or play activities **(SN2)**
field 10 = **Item 3:** Does not seem to listen to what is being said to him or her **(SN3)**
field 11 = **Item 4:** Does not follow through on instructions and fails to finish schoolwork, chores, or duties in the
                workplace (not due to oppositional behavior or failure to understand instructions) **(SN4)**

field 12 = **Item 5:** Has difficulty organizing tasks and activities **(SN5)**
field 13 = **Item 6:** Avoids, expresses reluctance about, or has difficulties engaging in tasks that require sustained

　　　　mental effort (such as schoolwork or homework) **(SN6)**
field 14 = **Item 7:** Loses things necessary for tasks or activities (e.g., school assignments, pencils, books, tools, or

　　　　toys) **(SN7)**
field 15 = **Item 8:** Is easily distracted by extraneous stimuli **(SN8)**
field 16 = **Item 9:** Is forgetful in daily activities **(SN9)**
field 17 = **Item 10:** Fidgets with hands or feet or squirms in seat **(SN10)**
field 18 = **Item 11:** Leaves seat in classroom or in other situations in which remaining seated is expected **(SN11)**
field 19 = **Item 12:** Runs about or climbs excessively in situations where it is inappropriate (in adolescents or adults,

　　　　may be limited to subjective feelings of restlessness) **(SN12)**
field 20 = **Item 13:** Has difficulty playing or engaging in leisure activities quietly **(SN13)**
field 21 = **Item 14:** Is always "on the go" or acts as if "driven by a motor" **(SN14)**
field 22 = **Item 15:** Talks excessively **(SN15)**
field 23 = **Item 16:** Blurts out answers to questions before the questions have been completed **(SN16)**
field 24 = **Item 17:** Has difficulty waiting in lines or awaiting turn in games or group situations **(SN17)**
field 25 = **Item 18:** Interrupts or intrudes on others (e.g., butts into other's conversations or games) **(SN18)**
field 26 = **Item 19:** Stares into space and reports daydreaming **(SN19)**
field 27 = **Item 20:** Appears to be low in energy level, sluggish, or drowsy **(SN20)**
field 28 = **Item 21:** Appears to be apathetic or unmotivated to engage in goal directed activities **(SN21)**
field 29 = **Item 22:** Engages in physically dangerous activities without considering possible consequences **(SN22)**
field 30 = **Item 23:** Shifts from one uncompleted activity to another **(SN23)**
field 31 = **Item 24:** Fails to finish things he or she starts **(SN24)**
field 32 = **Item 25:** Has difficulty concentrating on school work or other tasks requiring sustained attention **(SN25)**
field 33 = **Item 26:** Has difficulty sticking to a play activity **(SN26)**
field 34 = **Item 27:** Calls out in class or in other situations when silence is expected **(SN27)**
field 35 = **Item 28:** Needs a lot of supervision **(SN28)**
field 36 = **Item 29:** Moves about excessively (e.g., even during sleep at home or during quiet time at school) **(SN29)**
field 37 = **Item 30:** Acts before thinking **(SN30)**
field 38 = **Item 31:** Loses temper **(SN31)**
field 39 = **Item 32:** Argues with adults **(SN32)**
field 40 = **Item 33:** Actively defies or refuses adult requests or rules **(SN33)**
field 41 = **Item 34:** Does things deliberately that annoy other people **(SN34)**
field 42 = **Item 35:** Blames others for his or her mistakes or misbehavior **(SN35)**
field 43 = **Item 36:** Is touchy or easily annoyed by others **(SN36)**
field 44 = **Item 37:** Is angry and resentful **(SN37)**
field 45 = **Item 38:** Is spiteful or vindictive **(SN38)**
field 46 = **Item 39:** Swears or uses obscene language **(SN39)**


**SUMMARY MEASURES**

field 47 = **Inattention (mean score) (SNINATTX)**
field 48 = **Inattention (total score)　(SNINATTT)**
　　　　　　Includes Items: 1 to 9.

field 49 = **Hyperactivity (mean score) (SNHYPACX)**
field 50 = **Hyperactivity (total score)   (SNHYPACT)**
            Includes Items: 10 to 15.

field 51 = **Impulsivity (mean score) (SNIMPULX)**
field 52 = **Impulsivity (total score)   (SNIMPULT)**
            Includes Items: 16, 17, 18.

field 53 = **ADD/WO (mean score) (SNADDWOX)**
field 54 = **ADD/WO (total score)   (SNADDWOT)**
            Includes Items: 1 to 5, 7, 9, 19, 20, 21.

field 55 = **ODD (mean score) (SNODDX)**
field 56 = **ODD (total score)   (SNODDT)**
            Includes Items: 31 to 38.

field 57 = **SNAP-Parent Total Score (mean score) (SNTOTALX)**
field 58 = **SNAP-Parent Total Score (total score)   (SNTOTALT)**
            Includes All Items 1 to 39.

field 59 = **SNAP-Parent Hyperactive/Impulsive (mean score) (SNPHYIMX)**
            This is the mean of field 50 **(SNHYPACX)** and field 52 **(SNIMPULX)** <u>weighted
            equally</u>.  (This composite variable was used as a major dependent outcome variable.)

**Note:**    This composite variable is scored even if only one of the above means is present.  See field 62
(SNHIX) below for
            variable using same items, but unit weighted, and with the 80% rule for data present.  It should be
            noted that the two variables (SNPHYIMX and SNHIX) yield different results due to differences in
            weighting of items.

field 60 = **ADHD (mean score) (SNADHDX)**
field 61 = **ADHD (total score)   (SNADHDT)**
            Includes Items: 1 to 18.

field 62 = **Hyperactive/Impulsive (mean score) (SNHIX)**
field 63 = **Hyperactive/Impulsive (total score)   (SNHIT)**
            Includes Items: 10 to 18.

**Note**:    SNAP "<u>Parent</u> Composite DBD Mean" and SNAP "<u>Parent</u> Excellent Responder" Scores are contained in this
            file. Counterpart Teacher items (SNAP "<u>Teacher</u> Composite DBD Mean" and SNAP "<u>Teacher</u> Excellent
            Responder" Scores) are contained in the file SNAPTEA.

            However, the variables used as outcome measures are the <u>combination</u> of both the Parent <u>and</u> Teacher
            ratings.  These variables, SNAP "Parent <u>and</u> Teacher Composite DBD Mean" and SNAP "Parent <u>and</u>
            Teacher Excellent Responder" Scores are found in the file COMPVARS.

field 64 = **SNAP "Parent Composite DBD Mean" Score   (SNDBDX)**
            This score uses the following 26 items:
                9 Parent SNAP ADHD Inattention items (1-9)
                9 Parent SNAP ADHD Hyperactive/Impulsive items (10-18)
                8 Parent SNAP ODD items (31-38)

**Note:**    "<u>D</u>isruptive <u>B</u>ehavior <u>D</u>isorder" used in variable name, although not a DSM-IV term.

**Note:** The mean score is calculated as follows: The separate mean calculated for each component above (SNINATTX,

SNHIX, SNODDX) is based on the items present in that component (80% of the items must be present in order to calculate that component's mean). The mean of the three means is then calculated, weighting the Inattention component by 9, the Hyper/Imp by 9, and the ODD by 8, and then dividing by 26. If the mean of any of the three components cannot be calculated due to missing data, the entire mean is NOT calculated.

field 65 = **SNAP "Parent Excellent Responder" Score  (SNXRSP)**
      1 =  "SNAP Parent Composite DBD Mean Score (SNDBDX)" LE 1.0 = Responder
      0 =  "SNAP Parent Composite DBD Mean Score (SNDBDX)" GT 1.0 = Non-Responder

# COPE - General Version

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field  1 = **Participant Identification (ID)**

field  2 = **Days from Baseline (DAYCOPG)**

field  3 = **Assessment Point (ASSCOPG)** (number of subjects/number of records)
    D = MTA Baseline Assessment (569/920)

field  4 = **Relationship to Child (RELCOPG)**

field  5 = **Active Status (ACTCOPG)**
    1 = ACTIVE.  Data collected during the 14-Month treatment phase while subject
        received originally assignment treatment (regardless of degree of compliance).

field  6 = **Site Identification (SITENUM)**
    Number series range 1 – 6

field  7 = **Subject Type (SJTYP)**
    1 = MTA Randomized Trial Subject                **NOTE:**   Only collected on MTA group; not
LNCG.

**Codes For COPEG Items 1 thru 60 (COG1 - COG60)**
    1 = I usually don't do this at all
    2 = I usually do this a little bit
    3 = I usually do this a medium amount
    4 = I usually do this a lot
    .  = Missing

field  8 = **Item  1**: I try to grow as a result of the experience **(COG1)**
field  9 = **Item  2**: I turn to work or other substitute activities to take my mind off things **(COG2)**
field 10 = **Item  3**: I get upset and let my emotions out **(COG3)**
field 11 = **Item  4**: I try to get advice from someone about what to do **(COG4)**
field 12 = **Item  5**: I concentrate my efforts on doing something about it **(COG5)**
field 13 = **Item  6**: I say to myself "this isn't real" **(COG6)**
field 14 = **Item  7**: I put my trust in God **(COG7)**
field 15 = **Item  8**: I laugh about the situation **(COG8)**
field 16 = **Item  9**: I admit to myself that I can't deal with it, and quit trying **(COG9)**
field 17 = **Item 10**: I restrain myself from doing anything too quickly **(COG10)**
field 18 = **Item 11**: I discuss my feelings with someone **(COG11)**
field 19 = **Item 12**: I use alcohol or drugs to make myself feel better **(COG12)**
field 20 = **Item 13**: I get used to the idea that it happened **(COG13)**
field 21 = **Item 14**: I talk to someone to find out more about the situation **(COG14)**
field 22 = **Item 15**: I keep myself from getting distracted by other thoughts/activities **(COG15)**
field 23 = **Item 16**: I daydream about things other than this **(COG16)**
field 24 = **Item 17**: I get upset, and am really aware of it **(COG17)**
field 25 = **Item 18**: I seek God's help **(COG18)**
field 26 = **Item 19**: I make a plan of action **(COG19)**
field 27 = **Item 20**: I make jokes about it **(COG20)**
field 28 = **Item 21**: I accept that this has happened and that it can't be changed **(COG21)**
field 29 = **Item 22**: I hold off doing anything about it until the situation permits **(COG22)**

field 30 = **Item 23**: I try to get emotional support from friends or relatives **(COG23)**
field 31 = **Item 24**: I just give up trying to reach my goal **(COG24)**
field 32 = **Item 25**: I take additional action to try to get rid of the problem **(COG25)**
field 33 = **Item 26**: I try to lose myself for awhile by drinking alcohol or taking drugs **(COG26)**
field 34 = **Item 27**: I refuse to believe that it has happened **(COG27)**
field 35 = **Item 28**: I let my feeling out **(COG28)**
field 36 = **Item 29**: I try to see it in a different light, to make it seem more positive **(COG29)**
field 37 = **Item 30**: I talk to someone who could do something about the problem **(COG30)**
field 38 = **Item 31**: I sleep more than usual **(COG31)**
field 39 = **Item 32**: I try to come up with a strategy about what to do **(COG32)**
field 40 = **Item 33**: I focus on dealing with this problem, and let other things slide **(COG33)**
field 41 = **Item 34**: I get sympathy and understanding from someone **(COG34)**
field 42 = **Item 35**: I drink alcohol or take drugs, in order to think about it less **(COG35)**
field 43 = **Item 36**: I kid around about it **(COG36)**
field 44 = **Item 37**: I give up the attempt to get what I want **(COG37)**
field 45 = **Item 38**: I look for something good in what is happening **(COG38)**
field 46 = **Item 39**: I think about how I might best handle the problem **(COG39)**
field 47 = **Item 40**: I pretend that it hasn't really happened **(COG40)**
field 48 = **Item 41**: I make sure not to make matters worse by acting too soon **(COG41)**
field 49 = **Item 42**: I try hard to prevent other things from interfering with this **(COG42)**
field 50 = **Item 43**: I go to movies or watch TV, to think about it less **(COG43)**
field 51 = **Item 44**: I accept the reality of the fact that it has happened **(COG44)**
field 52 = **Item 45**: I ask people who have had similar experiences what they did **(COG45)**
field 53 = **Item 46**: I feel a lot of emotional distress and express those feelings a lot **(COG46)**
field 54 = **Item 47**: I take direct action to get around the problem **(COG47)**
field 55 = **Item 48**: I try to find comfort in my religion **(COG48)**
field 56 = **Item 49**: I force myself to wait for the right time to do something **(COG49)**
field 57 = **Item 50**: I make fun of the situation **(COG50)**
field 58 = **Item 51**: I reduce the amount of effort I'm putting into solving the problem **(COG51)**
field 59 = **Item 52**: I talk to someone about how I feel **(COG52)**
field 60 = **Item 53**: I use alcohol or drugs to help me get through it **(COG53)**
field 61 = **Item 54**: I learn to live with it **(COG54)**
field 62 = **Item 55**: I put aside other activities in order to concentrate on this **(COG55)**
field 63 = **Item 56**: I think hard about what steps to take **(COG56)**
field 64 = **Item 57**: I act as though it hasn't even happened **(COG57)**
field 65 = **Item 58**: I do what has to be done, one step at a time **(COG58)**
field 66 = **Item 59**: I learn something from the experience **(COG59)**
field 67 = **Item 60**: I pray more than usual **(COG60)**

## SUMMARY MEASURES

field 68 = **Active coping (mean score) (COPGACTX)**
field 69 = **Active coping (total score)  (COPGACTT)**
                    Includes Items: 5, 25, 47, 58.

field 70 = **Planning (mean score) (COPGPLNX)**
field 71 = **Planning (total score)  (COPGPLNT)**
                    Includes Items: 19, 32, 39, 56.
field 72 = **Suppression of competing activities (mean score) (COPGSUPX)**
field 73 = **Suppression of competing activities (total score) (COPGSUPT)**
                    Includes Items: 15, 33, 42, 55.

field 74 = **Restraint coping (mean score) (COPGRESX)**
field 75 = **Restraint coping (total score) (COPGREST)**
               Includes Items: 10, 22, 41, 49.


field 76 = **Seeking social support for instrumental reasons (mean score) (COPGSINX)**
field 77 = **Seeking social support for instrumental reasons (total score) (COPGSINT)**
               Includes Items: 4, 14, 30, 45.


field 78 = **Seeking social support for emotional reasons (mean score) (COPGSEMX)**
field 79 = **Seeking social support for emotional reasons (total score) (COPGSEMT)**
               Includes Items: 11, 23, 34, 52.


field 80 = **Positive reinterpretation and growth (mean score) (COPGPOSX)**
field 81 = **Positive reinterpretation and growth (total score) (COPGPOST)**
               Includes Items: 1, 29, 38, 59.


field 82 = **Acceptance (mean score) (COPGACCX)**
field 83 = **Acceptance (total score) (COPGACCT)**
               Includes Items: 13, 21, 44, 54.


field 84 = **Turning to religion (mean score) (COPGRELX)**
field 85 = **Turning to religion (total score) (COPGRELT)**
               Includes Items: 7, 18, 48, 60.


field 86 = **Focus on and venting of emotions (mean score) (COPGEMOX)**
field 87 = **Focus on and venting of emotions (total score) (COPGEMOT)**
               Includes Items: 3, 17, 28, 46.


field 88 = **Denial (mean score) (COPGDENX)**
field 89 = **Denial (total score) (COPGDENT)**
               Includes Items: 6, 27, 40, 57.


field 90 = **Behavioral disengagement (mean score) (COPGBEHX)**
field 91 = **Behavioral disengagement (total score) (COPGBEHT)**
               Includes Items: 9, 24, 37, 51.


field 92 = **Mental disengagement (mean score) (COPGMENX)**
field 93 = **Mental disengagement (total score) (COPGMENT)**
               Includes Items: 2, 16, 31, 43.


field 94 = **Alcohol-Drug disengagement (mean score) (COPGDRGX)**
field 95 = **Alcohol-Drug disengagement (total score) (COPGDRGT)**
               Includes Items: 12, 26, 35, 53.


field 96 = **Humor (mean score) (COPGHUMX)**
field 97 = **Humor (total score) (COPGHUMT)**
               Includes Items: 8, 20, 36, 50.

# Social Support Inventory
Used by permission of Irwin G. Sarason, Ph.D.

**NOTE:** The SSI version used in the MTA Study is a six-item scale, not the full 27-item scale.


field 1 = **Participant Identification (ID)**

**NOTE:** This variable is not the original study ID number. It has been recoded for public release.

field 2 = **Days from Baseline (DAYSSI)**

field 3 = **Assessment Point (ASSSSI)** (number of subjects/number of records)
     D  = MTA Baseline Assessment (565/901)
     14 = MTA 14 Month Assessment (508/778)
     E  = MTA Early Termination Assessment (37/49)
     ~~24 = MTA 24 Month Assessment (486/735)~~
     ~~LB = LNCG Baseline Assessment (285/441)~~
     ~~36 = MTA & LNCG 36 Month Assessment (740/1111)~~

**NOTE:** Assessment Points indicated by strike-out are not yet being

field 4 = **Relationship to Child (RELSSI)**

field 5 = **Active Status (ACTSSI)**
     0 = INACTIVE.  Data collected after the 14-Month treatment phase; or after Early
          Termination from treatment phase; or prior to treatment phase.
     1 = ACTIVE.  Data collected during the 14-Month treatment phase while subject
          received originally assignment treatment (regardless of degree of
compliance).
     2 = ACTIVE.  This is the last ACTIVE assessment for subjects who were about to
violate
          treatment arm by receiving alternate treatment.
     3 = ACTIVE.  This is the last ACTIVE assessment for subjects who were about to
leave
          the study by moving away.

field 6 = **Site Identification (SITENUM)**
     Number series range 1 – 6

field 7 = **Subject Type (SJTYP)**
     1 = MTA Randomized Trial Subject
     2 = Local Normative Comparison Group (LNCG) Subject

Each question has two parts.

**Codes for SOCSUP Items 1 to 6 (Number of People)     Codes for SOCSUP Items 1 to 6 (Satisfaction)**

The **number of people**, excluding yourself, on whom you   **How satisfied** are you with the overall support you
can count for help or support in the situation described.   have? If you have no support for a situation (i.e.,
Do not count more than nine persons per question.   Number of People = 0 = No
    One), still rate your level 0 = No One   of satisfaction.

    1 = 1 person                                 1 = Very Dissatisfied
    2 = 2 people                                2 = Fairly Dissatisfied
         :                                    3 = A little Dissatisfied
         :                                    4 = A little Satisfied
    8 = 8 people                                5 = Fairly Satisfied
    9 = 9 people                                6 = Very Satisfied
    . = missing                               . = missing

**Item 1:** Whom can you really count on to be dependable when you need help?
field  8 = Number of people **(SSIN1)**
field  9 = How Satisfied? **(SSIS1)**

**Item 2:** Whom can you really count on to help you feel more relaxed when you are
              under pressure or tense?
field 10 = Number of people **(SSIN2)**
field 11 = How Satisfied? **(SSIS2)**

**Item 3:** Who accepts you totally, including both your worst and your best points?
field 12 = Number of people **(SSIN3)**
field 13 = How Satisfied? **(SSIS3)**

**Item 4:** Whom can you really count on to care about you, regardless of what is
              happening to you?
field 14 = Number of people **(SSIN4)**
field 15 = How Satisfied? **(SSIS4)**

**Item 5:** Whom can you really count on to help you feel better when you are feeling
              generally down-in-the-dumps?
field 16 = Number of people **(SSIN5)**
field 17 = How Satisfied? **(SSIS5)**

**Item 6:** Whom can you count on to console you when you are very upset?
field 18 = Number of people **(SSIN6)**
field 19 = How Satisfied? **(SSIS6)**

REFERENCES

Achenbach, T. M. (1994). Child behavior checklist and related instruments. In M.E. Maruish (Ed.) *The Use of Psychological Testing for Treatment Planning and Outcome Assessment.* Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Allison, P.D. (1999). *Multiple Regression: A Primer.* Thousand Oaks, California: Pine Forge Press.

American Psychiatric Association (1987). *Diagnostic and Statistical Manual of Mental Disorders (3rd Ed. Revised).* Washington, DC: Author.

American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders (4th Ed.).* Washington, DC: Author.

Barkley, R.A. (1998). *Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment.* New York: The Guilford Press.

Beck, A.T., Ward, C.H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4,* 561-571.

Berkman, L.F., & Syme, S.L. (1979). Social networks, host resistance, and mortality: A nine-year follow-up study of alameda county residents. *American Journal of Epidemiology, 109*(2), 186-204.

Biederman, J., Milberger, S., Faraone, S.V., Kiely, K., Guite, J., Mick, E., Ablon, S., Warburton, R., Reed, E., & Davis, S.G. (1995). Impact of adversity on functioning and comorbidity in children with Attention-Deficit Hyperactivity Disorder. *Journal of American Academy of Child Adolescent Psychiatry, 34*(11), 1495-1503.

Biederman, J., Monuteaux, M.C., Greene, R.W., Braaten, E., Doyle, A.E., & Faraone, S.V. (2001). Long-term stability of the Child Behavior Checklist in a clinical sample of youth with Attention Deficit Hyperactivity Disorder. *Journal of Clinical Child Psychology, 30*(4), 492-502.

Billings, A.G., & Moos, R.H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of Behavioral Medicine, 4*(2), 139-157.

Breen, M.J., & Barkley, R.A. (1988). Child psychopathology and parenting stress in girls and boys having attention deficit disorder with hyperactivity. *Journal of Pediatric Psychology, 13*(2), 265-280.

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Carver, C.S. & Scheier, M.F. (1994). Situational coping and coping dispositions in a stressful transaction. *Journal of Personality and Social Psychology, 66*(1), 184-195.

Carver, C.S., Scheier, M.F., & Weintraub, J.K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56*(2), 267-283.

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38*(5), 300-314.

Coddington, R.D. (1972a). The significance of life events as etiologic factors in the diseases of children I: A survey of professional workers. *Journal of Psychosomatic Research, 16,* 7-18.

Coddington, R.D. (1972b). The significance of life events as etiologic factors in the diseases of children II: A study of a normal population. *Journal of Psychosomatic Research, 16,* 205-213.

"Coexisting Conditions: Disruptive Behavior Disorders." What We Know Sheet 5B. May 7, 2006. http://www.help4adhd.org/documents/wwk5b3.pdf.

Conners, C.K. (1994). Conners rating scales. In M.E. Maruish (Ed). *The Use of Psychological Testing for Treatment Planning and Outcome Assessment.* Hillsdale, NJ: Lawrence Erlbaum Associates, Incorporated.

Culbertson, J.L. (1996). Attention deficit hyperactivity disorder and learning disabilities in the pediatrician's office. In R.J. Resnick and R.H. Rozensky (Eds.). *Health Psychology Through the Life Span: Practice and Research Opportunities.* Washington, DC: American Psychological Association.

Cunningham, C.E., Benness, B.B., & Siegel, L.S. (1988). Family functioning, time allocation, and parental depression in the families of normal and ADDH children. *Journal of Clinical Child Psychology, 17*(2), 169-177.

Danforth, J.S., Barkley, R.A., & Stokes, T.F. (1991). Observations of parent-child interactions with hyperactive children: Research and clinical implications. *Clinical Psychology Review, 11,* 703-727.

Deisinger, J.A., Cassisi, J.E., & Whitaker, S.L. (1996). Relationships between coping style and PAI profiles in a community sample. *Journal of Clinical Psychology, 59*(12), 1315-1323.

Delwiche, L.D., & Salughter, S.J. (2003). *The Little SAS Book: A Primer (3rd ed.).* Cary, NC: SAS Institute Incorporated.

Fallowfield, L. (1990). *The Quality of Life: The Missing Measurement in Health Care.* London, England: Souvenir Press.

Faraone, S.V., & Biederman, J. (1994). Is Attention Deficit Hyperactivity Disorder familial? *Harvard Review of Psychiatry, 1,* 271-287.

Fawzy, F.I., Cousins, N., Fawzy, N.W., Kemeny, M.E., Elashoff, R., & Morton, D. (1993). A structured psychiatric intervention for cancer patients: Changes over time in methods of coping and affective disturbance. *Cancer Intervention, 47,* 720-725.

Fischer, M. (1990) Parenting stress and the child with Attention Deficit Hyperactivity Disorder. *Journal of Clinical Child Psychology, 19*(4), 337-346.

Furman, W. & Buhrmester, D. (2001). Parent child relationship questionnaire [PCRQ] parent form. In: Touliatos, J., Perlmutter, B.F., & Straus, M.A (Eds.), *Handbook of Family Measurement Techniques* (pp. 285-289). Thousand Oaks, California: Sage Publications.

Glied, S., Hoven, C.W., Garrett, A.B., Moore, R.E., Leaf, P., Bird, H.R., Goodman, S., Regier, D., & Alegria, M. (1997). Measuring child mental health status for services research. *Journal of Child and Family Studies, 6*(2), 177-190.

Goyette, C.H., Conners, C.K., & Ulrich, R.F. (1978). Normative data on revised Conners Parent and Teacher Rating Scales. *Journal of Abnormal Child Psychology, 6*(2), 221-236.

Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (1998). *Multivariate Data Analysis (5th Ed.).* New Jersey: Prentic-Hall, Incorporated.

Hancock, G. R., & Mueller, R. 0. (2001). Rethinking construct reliability within latent variable systems. In R. Cudeck, S. du Toit, & D. Sörbom (Eds.), *Structural Equation Modeling: Present and Future -- Festschrift in honor of Karl Jöreskog* (pp. 195-216). Lincolnwood, IL: Scientific Software International, Inc.

Henderson, S., Duncan-Jones, P., Byrne, D.G., & Scott, R. (1980). Measuring social relationships: The Interview Schedule for Social Interaction. *Psychological Medicine, 10,* 723-734.

Holmes, T.H., & Rahe, R.H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11*(2), 213-218.

House, J.S., Landis, K.R., & Umberson, D. (2003). Social Relationships and Health. . In P. Salovey & A.J. Rothman (Eds.), *Social Psychology of Health*. NY, NY: Psychology Press.

House, J.S., LaRocco, J.M., French, J.R. (1982). Shoring up the buffer of social support. *Journal of Health and Social Behavior, 23* (1), 98-101.

Johnston, C. (1996). Parent characteristics and parent-child interactions in families of nonproblem children and ADHD children with higher and lower levels of oppositional-defiant behavior. *Journal of Abnormal Child Psychology, 24,* 85-104.

Katz, R. Katz, J., & Shaw, B.F. (1994). Beck depression inventory and hopelessness scale. In M.E. Maruish (Ed.) *The Use of Psychological Testing for Treatment Planning and Outcome Assessment.* Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Kendall, J. (1999). Sibling accounts of attention deficit hyperactivity disorder (ADHD). *Family Process, 38*(1), 117-136.

Kim, J., & Mueller, C.W. (1978). *Factor Analysis: Statistical Methods and Practical Issues.* Beverly Hills, California: Sage Publications.

Kline, R.B. (2004). *Principles and Practice of Structural Equation Modeling* (2$^{nd}$ ed.). New York: The Guilford Press.

Lange, G., Sheerin, D., Carr, A., Dooley, B., Barton, V., Marshall, D., Mulligan, A., Lawlor, M., Belton, M., & Doyle, M. (2005). Family factors associated with attention deficit hyperactivity disorder and emotional disorders in children. *Journal of Family Therapy, 27* (1), 76-96.

Lazarus, R.S. & Folkman, S. (1984). *Stress, Appraisal, and Coping.* New York: Springer Publishing Company.

Loehlin, J.C. (2004). *Latent Variable Models* (4$^{th}$ ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Lovejoy, M.C., Graczyk, P.A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review, 20,* 561-592.

Lutendorf, S., Antoni, M.H., Schneiderman, N., Iroson, G., & Fletcher, M.A. (1995). Psychosocial interventions and quality of life changes across the HIV spectrum. In J.E. Dimsdale & A. Baum (Eds.), *Quality of Life in Behavioral Medicine Research* (pp. 205-239). Hillsdale, NJ: Erlbaum.

Maes, S., & Boersma, S.N. (2004). Applications in health psychology: How effective are interventions? In Sutton, S., Baum, A., & M. Johnston. *The SAGE Handbook of Health Psychology* (pp 299-325). London: SAGE Publications.

Mash, E.J., & Johnston, C. (1983). Parental perceptions of child behavior problems, parenting self-esteem, and mothers' reported stress in younger and older hyperactive and normal children. *Journal of Consulting and Clinical Psychology, 51,* 86-99.

McCrae, R.R., & Costa, P.T. (1986). Personality, coping, and coping effectiveness in an adult sample. *Journal of Personality, 54*(2), 385-405.

McKee, T.E., Harvey, E., Danforth, J.S., Ulaszek, W.R., & Friedman, J.L. (2004). The relation between parental coping styles and parent-child interactions before and after treatment for children with ADHD and Oppositional behavior. *Journal of Clinical Child and Adolescent Psychology, 33*(1), 158-168.

Mitchell, R.E., Cronkite, R.C., & Moos, R.H. (1983). Stress, coping, and depression among married couples. *Journal of Abnormal Psychology, 92*(4), 433-448.

Moos, R.H. (2002). Context and coping: Toward a unifying conceptual framework. In D.F. Marks (Ed.), *The Health Psychology Reader*. London: SAGE Publications.

National Institute of Mental Health. (1996). *Attention Deficit Hyperactivity Disorder.* (NIH Publication Number: NIH 3572). Bethesda, MD: Author.

Nowack, K.M. (1989). Coping style, cognitive hardiness, and health status. *Journal of Behavioral Medicine, 12*(2), 145-158.

O'Connor, B. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, & Computers, 32*(3), 396-402.

Ogden, J. (2000). *Health Psychology: A Textbook.* Buckingham, England: Open University Press.

"Parent Education and Training." What We Know Sheet 7. May 7, 2006. http://www.help4adhd.org/treatment/behavioral/wwk7.pdf.

Pearlin, L.I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior, 19,* 2-21.

Podolski, C.L. & Nigg, J.T. (2001). Parent stress and coping relation to child ADHD severity and associated child disruptive behavior problems. *Journal of Clinical Child Psychology, 30*(4), 503-513.

Power, M., Harper, A., Bullinger, M, & The WHOQOL Group. (1999). The World Health Organization WHOQOL-100: Tests of the universality of quality of life in 15 different cultural groups worldwide. *Health Psychology, 18*(5), 495-505.

Sarafino, E.P. (2002). *Health Psychology: Biopsychosocial Interactions*. NY, NY: John Wiley & Sons, Incorporated.

Sarason, I.G., Johnson, J.H., & Siegel, J.M. (1978). Assessing the Impact of Life Changes: Development of the Life Experiences Survey. *Journal of Consulting and Clinical Psychology, 46*(2), 932-946.

Sarason, I.G., Levine, H.M., Basham, R.B., & Sarason, B.R. (1983). Assessing social support: The social support questionnaire. *Journal of Personality and Social Psychology, 44*(1), 127-139.

Sarason, I.G., Sarason, B.R., Shearin, E.N., & Peirce, G.R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships, 4*, 497-510.

Shelton, K.K., Frick, P.J., & Wootton, J. (1996). Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology, 25*(3), 317-329.

Silver, L.B. (2004). *Attention Deficit/Hyperactivity Disorder: A Clinical Guide to Diagnosis and Treatment for Health and Mental Health Professionals (3^{rd} Ed.)*. Washington, DC: American Psychiatric Publishing, Incorporated.

Smith, C.A., Wallston, K.A., & Dwyer, K.A. (2003). Coping and adjustment to rheumatoid arthritis. In J. Suls & K.A. Wallston (Eds.), *Social Psychological Foundations of Health and Illness*. Malden, MA: Blackwell Publishing.

Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family, 38*(1), 15-28.

Spiegel, D., Bloom, J.R., Kraemer, H.C., & Gottheil, E. (1989). Effect of psychosocial treatment on survival of patients with metastatic breast cancer. *Lancet, 334,* 888-891.

Startup, M., Jackson, M.C., & Bendix, S. (2002). The concurrent validity of the Global Assessment of Functioning (GAF). *British Journal of Clinical Psychology, 41,* 417-422.

Stewart, A.L., Hays, R.D., & Ware, J.E. (1988). The MOS short-form general health survey: Reliability and validity in a patient population. *Medical Care, 26*(7), 724-732.

Swanson, J.M., Kraemer, H.C., Hinshaw, S.P., Arnold, L.E., Conners, C.K., Abikoff, H.B., Clevenger, W., Davies, M., Elliott, G.R., Greenhill, L.L. Hechtman, L., Hoza, B., Jensen, P.S., March, J.S., Newcorn, J.H., Owens, E.B., Pelham, W.E., Schiller, E., Severe, J.B., Simpson, S., Vitiello, B., Wells, K., Wigal, T., & Wu, M. (2001). Clinical relevance of the primary findings of the MTA: Success rates based on severity of ADHD and ODD symptoms at the end of treatment. *Journal of the American Academy of Child Adolescent Psychiatry, 40*(2), 168-179.

Taylor, S.E., Klein, L.C., Gruenewald, T.L., Gurung, R.A.R., Fernances-Taylor, S. (2003). Affiliation, social support, and biobehavioral responses to stress. In J. Suls & K.A. Wallston (Eds.). *Social Psychological Foundations of Health and Illness*. Malden, MA: Blackwell Publishing.

Vollrath, M., Alnaes, R., & Torgersen, S. (1994). Coping and MCM-II symptom scales. *Journal of Clinical Psychology, 50*(5), 727-736.

Wallston, B.S., Alagna, S.W., DeVellis, B.E., & DeVellis, R.F. (1983). Social support and Physical Health. *Health Psychology, 2*(4), 367-391.

WHOQOL Group. Study protocol for the World Health Organization project to develop a Quality of Life assessment instrument (WHOQOL). (1993). *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care, and Rehabilitation, 2*(2), 153-159.

Woodward, L., Taylor, E., Dowdney, L. (1998). The parenting and family functioning of children with hyperactivity. *Journal of Child Psychology and Psychiatry, 39*(2), 161-169.

Zautra, A.J. & Guarnaccia, C.A. (1986). Measuring small life events. *American Journal of Community Psychology, 14*(6), 629-653.