DEMOGRAPHIC VARIABLES AND THEIR RELATION TO SELF-CONCEPT IN
CHILDREN WITH AND WITHOUT ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

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The proposed study examined differences in self-concept between ADHD (*n* = 61) and non-ADHD boys and girls. Participants included 108 children between 6 and 11 years old. Children completed the Self Description Questionnaire-I, and teacher reports of child competence were obtained. Girls reported lower physical ability and mathematics self-concept than boys. The results also indicated that ADHD girls may be more susceptible to low physical ability and mathematics self-concept than control children or ADHD boys. Teachers also rated ADHD girls as having lower scholastic competence than the other three groups. Teachers reported significant differences in level of competence based on ADHD status. The implications of the current study and directions for future research will be presented.
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CHAPTER 1
INTRODUCTION

Definition and a Model of Self-concept

Self-concept is the combination of a person’s perceptions, thoughts, and feelings regarding themselves (Marsh & Shavelson, 1985; Shavelson, Hubner, & Stanton, 1976). Similar terms such as self-esteem, self-perception, and self-worth are often used interchangeably with global self-concept in the literature (Harter, 1999; Shavelson et al., 1976). As a result of the different terms used, confusion and comparisons have been difficult in this area of study. Shavelson et al. were the first to call for a more unified definition of self-concept. Up until that time, there was little agreement on its structure or components and the definition varied widely by study. Shavelson et al. did a meta-analysis including studies based on the five most commonly used self-concept measures at that time in order to develop a cohesive definition of self-concept. They used common elements of the pre-existing definitions to form one model of self-concept that could then be validated. Based on this work, self-concept was narrowed to the individual’s evaluation of their worth rather than including outside observers’ evaluations.

Shavelson et al. (1976) proposed seven key features that defined self-concept. Self-concept was defined as both descriptive and evaluative in nature. In addition to self-concept being a description of the self, it also inherently includes an evaluation (i.e., positive or negative value) of those descriptions. They believed that self-concept was multidimensional rather than unidimensional in nature. That is, in addition to a global self-concept (e.g., “I like myself”), they proposed that there were specific domains of self-concept (e.g., “I am good at math”) that could be measured. These subcomponents or domains were determined and organized by the individual, their environment, and their society. The basic organization was proposed to be a
hierarchy with global self-concept at the apex that could be broken down into an academic and non-academic self-concept. Shavelson et al. further conjectured that academic and non-academic self-concept could be further broken down into more specific domains (e.g., school subjects and physical appearance). Specific domains were delineated in subsequent work by Shavelson and colleagues and will be discussed later.

Shavelson et al. (1976) thought global self-concept was a stable construct. That is, from day to day, global self-concept remains consistent; however, at the domain specific level, self-concept is more vulnerable to situational events and is, therefore, less stable than global self-concept. Change in global self-concept, however, may occur when consistent contradictory feedback is received over a period of time about a specific self-concept domain or general self-worth.

In analyzing the studies, Shavelson et al. (1976) noted that higher agreement was achieved between self-reported self-concept and inferred self-concept (i.e., a parent or teacher reporting on the self-concept of a child), when reporting on global self-concept than when reporting on domain specific self-concept. That is, a student report and a teacher report about the same student are more likely to be similar at the level of global self-concept than at academic self-concept. Shavelson et al. also believed that self-concept had a developmental component that began as soon as children are able to differentiate themselves from their environment and others. Finally, according to Shavelson et al., self-concept is separate and distinguishable from other constructs.

Since Shavelson et al. ’s model was introduced in 1976 a number of researchers have sought to validate and improve upon their model. It is currently accepted that self-concept is a multidimensional construct that is arranged in a hierarchy of subcomponents that combine to
create global self-concept (Bracken, 1992; Byrne & Shavelson, 1996; Harter, 1999; Marsh & Shavelson, 1985). Although when measured, global self-concept is typically reported through separate questions rather than being a total of the specific domains (Harter). In several studies, Shavelson, Marsh, and their colleagues (Byrne & Shavelson; Marsh, 1990a; Marsh, Craven & Debus, 1991; Marsh & Shavelson; Yeung et al., 2000) further elaborated and tested the hierarchical model. Specifically, expansion was needed in further breaking down academic and non-academic self-concept. For preadolescent children, seven specific domains were identified including Mathematics, Reading, General School, Physical Ability, Physical Appearance, Peer Relations, and Parent Relationships (Marsh & Shavelson, See Appendix A). Once a factor structure for self-concept was established, it was then assessed across age groups to see if the same factor structure applied throughout the lifespan (Marsh et al., 1991). Marsh et al. found that the same factor structure was present in children as young as age 5 through adulthood.

Further, it is believed that self-concept becomes increasingly differentiated with age and experience (Boivin, Vitaro, & Gagnon, 1992; Byrne & Shavelson; Harter, 1999; Marsh et al., 1991). For example, academic self-concept is likely to differentiate during the early school years (Byrne & Gavin, 1996; Marsh & Yeung, 1997); whereas, job competence does not develop until late adolescence or young adulthood (Harter).

Although self-concept has become a more unified construct, the measures currently used in self-concept research continue to have shortcomings. Specifically, the measures do not account for individual, family, or cultural differences (Harter, 1999). That is, abilities that are seen as more important in a given context are likely to influence a person’s view of themselves more than abilities that are seen as unimportant (Harter). For example, a child who grew up in a family or a culture where athletic ability was praised and put in a place of importance may have
physical abilities affect their global self-concept more than a child who grew up in a household where sports were not considered important. Current self-concept measures are unable to account for these differences and may not even tap into abilities that are seen as contextually important.

Purpose of Self-concept

Self-concept across the life span serves three functional roles 1) organizational, 2) motivational, and 3) protective (Harter, 1999). First, self-concept provides a basis for organizing experiences that a person faces (Harter). It provides a structure for classifying and understanding events and allows predictions to be made about the environment. Interpretations and meaning may also be derived from experiences based on a person’s self-concept. For example, a student with a positive self-concept in writing is likely to use negative feedback about a term paper to improve their writing; however, a person with a negative self-concept in regard to writing is likely to take negative feedback as an indication that they are indeed a poor writer and are likely to feel more discouraged in future endeavors. Self-concept also aids in self-regulation and determining appropriate social behavior. Based on a person’s understanding and ability to make predictions about their environment, they pick behaviors from their repertoire that are appropriate for the situation. Second, self-concept helps motivate by providing goals and encouraging self-improvement (Harter). Self-concept allows a person to identify domains they would like to improve and provides a standard in achieving their goals. Finally, a positive self-concept helps maintain a favorable impression of the self and serves to minimize pain and maximize pleasure. A positive self-concept serves as a protective factor and encourages growth towards happiness; however, when a negative self-concept is present the purpose is not fulfilled (Harter).
Development of Self-concept

Formation of one’s self-concept is a social-emotional developmental task that begins at the time a child is able to differentiate between themselves and others and continues through adulthood (Crain & Bracken, 1994; Shavelson et al., 1976). This development includes both cognitive and social components because while children are active agents in their environment, they are also often at the mercy of those with whom they interact (Harter, 1999). Self-concept is primarily a social construct that is created through interactions with others (Harter; Rogers, 1951). Typically, children’s first social interactions are with their parents. During interactions, parents share opinions and appraisals, which become the basis of the child’s opinions and appraisals about herself and others. Parents who are nurturing, affectionate, supportive, and approving of their children have children who have positive views of themselves (Lord, Eccles, & McCarthy, 1994; Rogers; Scott, Scott, & McCabe, 1991). The approval of the parent is accepted and internalized by the child, and the child then approves of herself. However, if a parent is neglectful and rejecting, the child will internalize these messages and view themselves negatively (Harter; Kohut, 1977). As a child receives feedback from alternative, social interactions their view of themselves may be altered (Harter). For example, a child who was rejected by a parent but is taken under the wing of a teacher may have improved self-concept. The cognitive development of self-concept occurs over time as the child’s cognitive abilities increase. Two of the primary cognitive tasks that affect the development of self-concept are increased abilities to differentiate and integrate information (Harter). As a child gains the ability to differentiate, they are able to evaluate themselves in more specific domains and each domain is evaluated increasingly more independently from the others (Boivin et al., 1992). In addition, the ability to differentiate allows a child to have both real and ideal self-concepts (Harter).
Integration is the ability to combine specific behaviors into a generalization about the self that then forms the self-concept. For example, a child who demonstrates a high level of skills in basketball and football may then generalize that to physical ability self-concept (e.g., “I am a good athlete”).

At each stage of development, self-concept serves a purpose and possible roadblocks to maintaining a positive self-concept are encountered (Harter, 1999). As a toddler, mastery produces feelings of self-efficacy and positive self-concept. However, as a toddler’s cognitive abilities develop they also realize they are separate from others and therefore do not control their environment. This realization can decrease self-concept. In addition, at this age children are unable to differentiate much further than good or bad so a child of this age may characterize themselves as “all good” or “all bad”. Typically, preschool children view themselves as competent, and it is at this age that the highest level of self-concept is reported (Harter & Pike, 1984).

In middle childhood, children begin to differentiate between various components of their self-concept and a hierarchy of self-concept domains appears (Boivin et al., 1992; Bryne & Gavin, 1992; Marsh & Yeung, 1997). Around age 7 or 8 a child cannot only report on general self-concept and general academic self-concept, but can now report on separate domains of school (Harter, 1999). For example, a child might consider themselves good at English, bad in math, and good in science. These evaluations of competency along with evaluations of other classes generalize into the child’s general academic self-concept, which is a component of their overall self-concept. The child who reports being good in two subjects and bad in one is likely to report good general academic self-concept. As children gain the abilities to differentiate and integrate, their evaluations of themselves become increasingly more accurate in nature (Harter).
During middle childhood, children gain the ability to compare themselves to others and interpersonal relationships become increasingly important (Damon & Hart, 1988; Ruble, Boggiano, Feldman, & Loebl, 1980). Children spend more time away from their parents and receive more feedback from peers and teachers than when they were younger. Thus, social comparisons become increasingly more important in forming self-concept (Butler, 1992). In both children and adolescents, self-concept can be high in comparison to some peers and low in comparison to others (Harter, 1999; Hoge, Smit, & Hanson, 1990). While preschool aged children generally report positive self-concept, 25% of 9 and 10 year olds reported negative self-concept on three Self-Perception Profile for Children (SPPC; Harter, 1985) scales (i.e., academic, social and global; Cole, 1991).

Finally, in middle childhood, children gain the ability to take the perspective of others and to compare their own ideal self with their real self (Harter, 1999). The ability to perspective-take allows the child to realize the expectations and opinions of others. By comparing themselves to expectations of others, as well as expectations of themselves (i.e., ideal self), children are able to identify domains where they exceed or fall short in their abilities. These appraisals are incorporated into the child’s self-concept.

Children’s global self-concept becomes more resistant to change during middle childhood (Harter, 1999). Whereas preschool children’s self-concept is highly influenced by situational and domain-specific events, children in middle childhood require feedback that is consistently contradictory in order to change their self-concept.

During adolescence, abstract thinking, introspection, and self-reflection allow for further differentiation of self-concept. Adolescents begin looking for one identity that includes all the different and sometimes conflicting elements of the self (Marcia, 1991). This attempt at full
integration causes problems for adolescents. As they are often unable cognitively to complete the
task, they may develop several views of the self and confusion as to which is the “real” self
(Harter, 1999).

Gender and Age Differences in Self-concept

Although most studies of age, gender, and self-concept report gender and age differences
on measures of global and/or domain specific self-concept (Crain & Bracken, 1994; Marsh,
1984; Marsh, 1989; Marsh et al., 1991; Piers, 1984), effect sizes are small. Such little variance is
accounted for (e.g., .66% to 2%) by these two demographics that neither appears meaningful in
accounting for the clinical differences in self-concept. In addition, although most studies found
differences between genders in some area of self-concept, which domains differed was not
consistent across studies.

The first meta-analysis looking at the effects of gender and age on self-concept was done
by Wylie (1979) and found no differences in global self-concept based on either demographic.
However, most studies included in Wylie’s analysis measured self-concept as a unidimensional
rather than multidimensional construct. As a result, further work was needed to assess if viewing
self-concept as a multidimensional construct would affect possible age and gender differences.

Wilgenbusch and Merrell (1999) did a meta-analysis that included only studies that
conceptualized self-concept as a multidimensional construct. In contrast to Wylie’s (1979) meta-
analysis, several gender differences were found. In elementary school children (1st to 6th grade),
boys reported significantly higher levels of self-concept than girls on 5 of 10 domains. These
were global, academic/scholastic, mathematics, family/relations with parents, and psychomotor
coordination. However, girls reported higher levels of verbal self-concept than did boys.
In Marsh’s (1984) study of second to fifth graders using the Self-Description Questionnaire (SDQ-I), boys reported higher math, general self, physical appearance, and physical ability self-concept than girls. Girls reported higher reading and general school self-concept than boys (Marsh). However, the variance accounted for by gender was less than 2% for all domains.

In a similar study looking at younger children (i.e., ages 5 to 8), boys reported higher physical ability self-concept than girls; while girls reported higher physical appearance and reading self-concept than boys (Marsh et al., 1991). Furthermore, there was an interaction between gender and age, such that as the children got older the difference between reported physical ability self-concept increased between the genders.

Using the Multidimensional Self-Concept Scale (MSCS; Bracken, 1992) as a measure of self-concept, Crain and Bracken (1994) studied 2,188 children and adolescents between the ages of 10 and 18 years of age. No gender difference was found in global self-concept. However, boys did report higher physical self-concept, which includes both appearance and ability, than girls.

Piers (1984) found that boys had lower reported anxiety and higher behavior problems on the Piers-Harris Self-Concept Scale than girls. However, Piers found that boys and girls did not significantly differ in terms of global self-concept.

In a study looking at gender differences in self-concept across age groups, Marsh (1989) found that global self-concept was higher for boys at all ages, but only accounted for 1% of the variance in self-concept. Also, at all ages boys reported higher self-concept than girls in physical ability, physical appearance, and math. Girls reported higher verbal, reading, and school self-concept than did boys. For the preadolescent portion of the sample, boys also rated themselves higher than girls rated themselves in peer relations self-concept.
Research has consistently supported a slight but measurable decline in self-concept between the ages of 7 and 10 (Bracken, 1996; Marsh, 1988, 1989; Marsh et al., 1991). Marsh et al. also found a decrease in appearance, peer relations, and general school self-concept between the ages of 5 and 8. In addition to the decline in self-concept that appears to occur with age during preadolescence, an increase in differentiation has also been supported (Byrne & Shavelson, 1996; Crain & Bracken, 1994; Marsh, 1984, 1989). However, the age at which increased differentiation occurs is unclear.

Outcomes of Low Self-concept

Children with low self-concept have been shown to have more peer difficulties (Hymel, Rubin, Rowden, & LeMare, 1990), higher occurrence of psychological disorders (Button, Songua-Burke, Davis, & Thompson, 1996; Garber, Robinson, & Valentiner, 1997), more antisocial behavior (Dubow, Edwards, & Ippolito, 1997; Pisecco, Wristers, Swank, Silva, & Baker, 2001), and poorer academic performance (Marsh & Yeung, 1997) when compared to children with high-self concept. In addition, individuals with poor self-concept have been found to have poorer outcomes in adolescence and young adulthood (Slomkowski, Klien, & Mannuzza, 1995). Moreover, Slomkowski et al. (1995) asserted that self-concept in adolescence was positively correlated with eventual outcomes in educational and occupational achievement. It appeared this relationship was mediated by problems in psychosocial adjustment and academic performance.

ADHD and Self-concept

One group that is likely to experience significant trouble with low self-concept is children diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD). Children with ADHD have poorer peer relationships (Henker & Whalen, 1999; Whalen & Henker, 1985) and
poorer parent-child relationships (Danforth, Barkley, & Strokes, 1991) when compared to non-
ADHD children. These negative relationships are likely to result in negative interactions and
increased sense of failure. This negative feedback is internalized by the child and forms the basis
of their self-concept (Harter, 1999; Kohut, 1977; Lord et al., 1994; Rogers, 1951; Scott et al.,
1991). In addition to relational difficulties, studies have shown difficulties in school
performance, sports, and high rates of comorbid psychological disorders, which may also
contribute to negative self-concept formation (Greene, Biederman, Faraone, Sienna, & Garcia-

Overview of ADHD Diagnosis

ADHD affects between 3% and 7% of school-aged children (Diagnostic and Statistical
Children with ADHD are typically seen and treated in outpatient mental health clinics, and
ADHD symptoms are the basis of over half of all childhood referrals (Cantwell, 1996; Hinshaw,
1994). These children were once thought to grow out of the symptoms associated with ADHD,
but more recent research has changed the prognosis for children with ADHD. According to
Weiss and Hechtman (1993), adolescents and adults who were diagnosed with ADHD as
children continue to have substantial problems with attention and impulsivity even when they no
longer met criteria for any disorder. In addition, ADHD has been shown to be associated with
negative short- and long-term outcomes, such as disruptive, mood, and anxiety disorders;
substance abuse; family and peer relational difficulties; and educational and vocational
difficulties (Greene et al., 1997; Weiss & Hechtman; Weiss, Hechtman, & Perlman, 1978;
ADHD is currently listed in the section for Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence in the DSM-IV-TR (APA, 2000). In order to receive a diagnosis of ADHD, symptoms of clinical significance must be present for 9 months, appear in multiple settings before 7 years of age, and may not be the result of another psychiatric or medical disorder. The DSM-IV-TR divides the symptoms of ADHD into two essential symptom clusters: inattention and hyperactivity-impulsivity. The DSM-IV-TR divides ADHD into three subtypes, Predominately Inattentive Type (ADHD/I), Predominantly Hyperactive-Impulsive Type (ADHD/HI), and Combined Type (ADHD/C). Children with ADHD/I are characterized by problems in sustaining attention during activities and, therefore, tend to avoid activities where sustained attention is required. These children may also have trouble listening, organizing, and following directions. When completing tasks children with ADHD/I often fail to pay attention to details, make careless mistakes, or do not finish. They are easily distracted and tend to be forgetful. Children with ADHD/I also tend to be less aggressive and less rejected by peers than children with ADHD/HI (Barkley, 1998; Hinshaw, 1994). Furthermore, rather than being rejected by their peers, these children are more likely to be socially passive and neglected (APA, 2000).

Children with ADHD/HI are characterized by excessive motor movement and impulsivity. These children fidget or leave their seats during class. They tend to talk excessively, blurt out answers, interrupt others, and have trouble playing quietly. Often children with this subtype seem as though they are “driven by a motor” and have trouble waiting for their turn (APA, 2000, p. 92). The final subtype is ADHD/C. These children display a combination of attention, hyperactivity, and impulsivity difficulties (for full criteria, see Table 1 in Appendix B).
As many as two-thirds of children with ADHD are also diagnosed with another psychiatric disorder (Cantwell, 1996). In addition to other Disruptive Behavior Disorders (i.e., Conduct Disorder [CD] and Oppositional Defiant Disorder [ODD]), children with ADHD are also more likely to have concurrent Mood Disorders, Anxiety Disorders, Learning Disorders, and Communication Disorders (Barkley, 1998; Cantwell; Hinshaw, 1994). It is estimated that 10% to 30% of children with ADHD have a comorbid learning disability (Hinshaw; Frick et al., 1991).

Gender differences in ADHD

The prevalence rates of ADHD indicate a higher frequency in males than females. According to the DSM-IV-TR, the male to female ratios range from 2:1 to 9:1 depending on subtype and referral source (APA, 2000). Within a clinically referred sample, ratios ranged between 2:1 to 10:1, \((M = 6:1)\), whereas epidemiological studies reported ranges between 2.5:1 and 5.5:1 \((M = 3.4:1; Barkley, 1998)\).

In two meta-analyses of gender differences in ADHD, girls with ADHD showed lower intellectual functioning, less hyperactivity, and fewer externalizing behaviors than boys with ADHD (Gaub & Carlson, 1997; Gershon, 2002). No gender differences were found in impulsivity, academic performance, social functioning, or motor control (Gaub & Carlson). In addition, Gaub and Carlson found that community-referred females with ADHD showed lower levels of aggression, inattention, and internalizing behaviors than community-referred boys with ADHD; no gender differences were found for these variables in the clinically referred sample.

In contrast to Gaub and Carlson’s (1997) findings, Gershon (2002) found girls with ADHD showed more internalizing behaviors than boys with ADHD. Gershon also found that girls with ADHD displayed fewer inattentive and impulsive behaviors than boys with ADHD.
regardless of referral source. The inclusion of unpublished and more recent studies in the Gershon analysis may account for the difference between the two meta-analyses.

Research on Self-concept and ADHD

The effect of ADHD on self-concept is unclear. Several studies found children with ADHD have lower global self-concept and lower specific domain self-concept than children without ADHD (Bussing, Zima, & Perwin, 2000; Ialongo, Lopez, Horn, Pascoe, & Greenberg, 1994). Although Dumas and Pelletier (1999) did not find global self-concept to be significantly different, they found several specific domains to be lower in children with ADHD. However, Hoza, Pelham, Dobbs, Owens, and Pillow (2002) and Hoza, Pelham, Milich, and McBride (1993) did not find differences in global self-concept between ADHD and non-ADHD boys and reported that only the behavioral conduct subscale was significantly different between the two groups. Further, when internalizing disorders were used as a covariate, there were no significant differences in self-concept between ADHD and non-ADHD boys (Hoza et al., 1993). In Hoza et al. (2002), when boys with internalizing behaviors and ADHD were compared with non-ADHD boys, they reported significantly lower global self-concept.

Bussing et al. (2000) used a sample of 102 boys and girls from special education classrooms who met criteria for ADHD. Forty-one non-ADHD children from special education classrooms were included as controls. Over half of the ADHD children in the sample were diagnosed with more than one psychiatric disorder. ADHD children reported significantly lower global self-concept on the Piers-Harris Self-Concept Scale than children without ADHD. However, both groups were within the normal range for self-concept. Children with internalizing behaviors and ADHD reported significantly lower self-concept than ADHD only children and non-ADHD children.
Ialongo et al. (1994) conducted a double blind study on the effects of psychostimulant medication on 48 children with ADHD. Regardless of medication status, ADHD children reported significantly lower scholastic competence, behavioral conduct and global self-worth on the SPPC than non-ADHD children. In addition, non-medicated ADHD children reported lower social acceptance than non-ADHD children.

Similar to Ialongo et al. (1994), Dumas and Pelletier (1999) found that ADHD children at an outpatient treatment clinic scored significantly lower on the scholastic competence, social acceptance, and behavioral conduct subscales of the SPPC. However, unlike Ialongo et al., Dumas and Pelletier did not find a significant difference on the global self-worth subscale.

The main difference between studies that found either global or specific domain self-concept differences between ADHD and non-ADHD children and studies that found no difference in self-concept was the inclusion or exclusion of girls. Studies that did not include girls (e.g., Hoza et al., 1993, 2002) also did not find differences in self-concept. In addition, it appears that controlling for internalizing behaviors may alter whether self-concept differences are present.

Although research with children has not resulted in consistent findings, research has consistently found that adolescents and young adults diagnosed with ADHD as children report lower self-concept than adolescents and young adults who had not been diagnosed with ADHD (Dooling-Litfin & Rosén, 1997; Hetchman & Weiss, 1983; Hechtman, Weiss, & Perlman, 1980; Slomkowski et al., 1995; Waddell, 1994). This finding remained even when the participants no longer met criteria for any psychiatric disorder.
Illusory Bias

Researchers have begun investigating possible explanations why children with more social and academic difficulties (i.e., ADHD) may not report lower self-concept than children without these difficulties (i.e., control children) (Button et al., 1996; Dubow et al., 1997; Garber et al., 1997; Hymel et al., 1990; Marsh & Yeung, 1997; Pisecco et al., 2001). One possible explanation that has received attention is the illusory or self-protective bias (Diener & Milich, 1997; Hoza et al., 2002; Hoza, Waschbusch, Pelham, Molina, & Milich, 2000; Ohan & Johnston, 2002). The illusory bias is a tendency to report more positive self-concept than actual ability would warrant (Hoza et al., 2002). Although it is like that the illusory bias helps children function despite difficulties in multiple areas, it is unclear whether the overly positive reports are conscious inflation by the child or if the child actually perceives himself functioning at the level reported (Hoza et al., 2002).

Thus far, studies in this area have focused exclusively on boys. Diener and Milich (1997) and Ohan and Johnston (2002) found that ADHD boys reported lower and more realistic social self-concept after they received positive feedback. In non-ADHD boys, predictions of how much a peer would like them increased after receiving positive feedback. However, after receiving positive feedback, ADHD boys’ second predictions were significantly lower than their first predictions. During the first prediction (i.e., before receiving feedback), ADHD boys reported overly positive views of how much they would be liked by their peer or teacher. The authors proposed that after the ADHD boys received positive feedback they were able to relax their defensive over-reporting and report social self-concept (i.e., predictions) that aligned more closely with their actual social abilities (Diener & Milich; Ohan & Johnston). In both studies, a social interaction task was used. For example, boys were instructed to give a prediction of how
much they would be liked by a confederate peer or a teacher with whom they were about to play or work. In the peer task, after the two boys played, they were each asked to give the administrator feedback about how much they liked playing with the other boy. Then based on random assignment, the participant boys were given either positive (i.e., the peer liked playing with them) or neutral (i.e., they appreciated the boys participation) feedback. Finally, the boys were told they would be playing with another peer and were asked to give another prediction about how much they would be liked by that peer. Hoza et al. (2002) conducted a similar study but gave the boys negative feedback. ADHD boys increased their estimates of how much a peer would like them after receiving negative feedback. Boys without ADHD, however, decreased their social appraisals after receiving negative feedback. Thus, it was hypothesized that the negative feedback increased the need for defensive reporting in ADHD boys. It is important to note that, in all three studies, independent observers rated ADHD boys as less socially effective than non-ADHD boys (Diener & Milich; Hoza et al.; Ohan & Johnston).

In addition to looking at social self-concept, Ohan and Johnston (2002) looked for an illusory bias in reporting academic self-concept. In this study, ADHD and non-ADHD boys were told they would be given a series of mazes to complete and were asked to give a prediction about how well they would do. After completing the mazes, they were given positive (i.e., the teacher said they did really well) or neutral feedback and were asked to give an estimate for how they would do on a second set of mazes. Both ADHD and non-ADHD boys increased their estimates of performance after receiving positive feedback. That is, their predictions of how well they thought they would do increased after receiving positive feedback. The researchers, therefore, concluded that there was not illusory bias present when reporting academic self-concept. Due to the lack of research on illusory bias and academic self-concept and the weak academic task (i.e.,
mazes) used by Ohan and Johnston’s study, few conclusions can be drawn about whether an illusory bias is present in the reporting of academic self-concept in boys with ADHD.

Hoza et al. (2002) investigated the existence of an illusory bias by comparing the difference between the boys’ reported self-concept on the SPPC and the teacher reported actual behavior from the SPPC teacher version. ADHD boys were found to report significantly higher overestimates of their abilities, relative to teacher report, in scholastic, social, and behavioral self-concept than non-ADHD boys. In further analyzing the data, it was determined that ADHD boys tended to overestimate the most in areas where their functioning was the worst.

Effects of Stimulant Medication on Self-concept

Taking a stimulant medication for ADHD may affect a child’s burgeoning self-concept. Many researchers feared that medication would decrease self-concept in children with ADHD because they would attribute changes in their environment to the medication rather than something they were doing (Barkley, 1998). However, stimulant medication either has no effect (Bussing et al., 2000; Ialongo et al., 1994) or increases self-concept in children with ADHD (Alston & Romney, 1992; DuPaul, Anastopoulos, Kwasnik, Barkley, & McMurry, 1996; Frankel, Cantwell, Myatt, & Feinberg, 1999; Pelham et al., 1992).

Medication has consistently been shown to improve behavior in children with ADHD (Forness, Swanson, Cantwell, Guthrie, & Sena, 1992; Hechtman, Weiss, & Perlman, 1984; Pelham et al., 1992; Spencer et al., 1996). The short term effects of medication include increased compliance, attention, persistence, responsivity to interactions with others, vigilance, fine-motor coordination, and reaction time and decreased motor activity, aggression, impulsivity, and restlessness (Forness et al., 1992; Hechtman et al., 1984; Pelham et al., 1992; Spencer et al., 1996). With a reduction in negative behavior, both parents and teachers increased the amount of
praise and positive feedback to both ADHD girls and boys (Barkley, 1990; Pelham, Walker, Sturges, & Hoza, 1989). For example, Whalen, Henker, and Dotemoto (1980, 1981) found a positive relationship between medication use and teacher-child interactions. When children with ADHD were on medication, teacher-child interactions were rated as more positive by independent observers. In peer relations, a decrease in negative and aggressive behaviors is shown with medication (Barkley, 1998). Given more positive feedback from significant others and more positive peer relations, an increase in the child’s self-concept may occur.

Various studies found that in response to low doses (.15 mg/kg - .40 mg/kg) of methylphenidate (MPH) ADHD children reported higher global self-concept (Pelham et al., 1992), higher behavioral self-concept (DuPaul et al., 1996), and higher academic self-concept (Alston & Romney, 1992) than ADHD children who were not medicated or ADHD children who were on high doses (.42 mg/kg – .80 mg/kg) of MPH. In contrast to the other studies, Frankel et al. (1999) found a positive correlation between medication dose and level of reported self-concept, such that higher doses of medication were associated with higher self-concept. Frankel et al. found this relationship with global, behavioral, social acceptance, and academic self-concept.

Statement of Problem

Low self-concept has been associated with increased difficulties in children and poorer outcomes as adults (Button et al., 1996; Dubow et al., 1997; Garber et al., 1997; Hymel et al., 1990; Marsh & Yeung, 1997; Pisecco et al., 2001; Slomkowski et al., 1995) when compared to children and adults with high-self concept. One group that may be especially likely to have low self-concept is children with ADHD. These children often have academic and social difficulties (Greene et al., 1997; Weiss & Hechtman; Weiss et al., 1978; Wilson & Marcotte, 1996) and are,
therefore, at an increased risk for negative interactions and feedback (Barkley, 1990; Pelham et al., 1989; Whalen et al., 1980, 1981). The increased negative feedback is likely to be internalized by the children and result in a negative self-concept (Harter, 1999; Kohut, 1977).

Previous research looking at differences in self-concept based on ADHD status have yielded inconsistent findings. The proposed study will examine the differences in self-concept between ADHD and non-ADHD boys and girls while controlling for internalizing symptoms. This study will expand the literature in several ways. First, no studies were found that used the Shavelson et al. (1976) model of self-concept, as measured by the SDQ-I, to assess self-concept differences between ADHD and control children. In addition, previous research has either not included girls or did not test for gender effects. Finally, few studies have looked at what effects internalizing disorders have on reports of self-concept in children with and without ADHD. This study is also unique in that it utilizes a community-based sample rather than a clinical-referred sample as a majority of the previous studies used.

In addition, the proposed study will investigate the illusory bias. Previous studies exploring illusory bias have exclusively looked at boys. Using a research design similar to Hoza et al. (2002), the present study will broaden and improve upon the literature in this area by looking at academic, social, and physical ability self-concept while including girls and boys.

Primary Hypotheses

_Hypothesis 1._ When internalizing symptoms are statistically controlled, there will be no interaction between gender and ADHD, no main effect for ADHD, but there will be a main effect for gender. The direction of the main effect for gender will vary by domain.

a. Regardless of ADHD status, boys will report higher levels of Physical Appearance, Physical Ability, and Mathematics self-concept than will girls.
b. Regardless of ADHD status, girls will report higher levels of General School and Reading self-concept than will boys.

Hypothesis 2. Regardless of ADHD status, boys will report significantly higher global self-concept, as measure by General Self scores on the SDQ-I, than will girls.

Hypothesis 3. Based on the illusory bias, teacher report of low competency in a domain, as measured by the TRS, will be negatively correlated with corresponding domain-specific self-concept scores on the SDQ-I in boys with ADHD. The TRS includes four subscales that correspond with the SDQ-I. The Social Acceptance subscale on the TRS will be negatively correlated with the Peer Relations subscale of the SDQ-I. The Scholastic Competence subscale of the TRS will be negatively correlated with the General School subscale on the SDQ-I. The Physical Appearance scales on the TRS and the SDQ-I will be negatively correlated. The Athletic Competence scale on the TRS will be negatively correlated with the Physical Ability subscale of the SDQ-I. It is expected that this negative correlation will only be present in domains where the teacher report is in the negative direction.

Hypothesis 4. Given that previous research that includes girls found differences between ADHD and non-ADHD children, it is hypothesized that girls do not use the same self-protective bias as boys. Reported self-concept in ADHD girls will be positively correlated with teacher reports of competency. The same subscale matchings will be used in this hypothesis as in hypothesis 3.

Hypothesis 5. There will be a significant negative correlation between age and global self-concept. Older children will have lower General Self scores on the SDQ-I than will younger children.
**Hypothesis 6.** ADHD children with one or more diagnosed comorbid psychological disorder(s) will have lower global self-concept, as measured by the General Self score on the SDQ-I, than children with ADHD only and non-ADHD children.

Secondary Hypotheses

**Hypothesis 7.** It is hypothesized that higher levels of internalizing symptoms and higher levels of ADHD symptoms will predict lower a) social, b) academic, and c) global self-concept.

**Hypothesis 8.** ADHD children who are currently taking medication will report higher General School, Peer Relations and General Self score than non-medicated ADHD children.
CHAPTER 2

METHOD

Participants

Participants included 108 girls and boys and one of their parents/guardians. The children’s ages ranged from 6.25 years to 11.5 years old ($M = 8.64$, $SD = 1.18$) (see age statistics in Appendix B, Table 2). As seen in Appendix B, Tables 3 and 4, the overall sample was primarily Caucasian (80.0% of children; 83.2% of parents) and the median family income was $60-$70,000.

Sixty-one children (39 boys, 22 girls) in the study were previously diagnosed with Attention-Deficit/Hyperactivity Disorder, Combined Type (ADHD/C), Attention-Deficit/Hyperactivity Disorder, Primarily Hyperactive/Impulsive Type (ADHD/HI), or Primarily Inattentive Type (ADHD/I). Forty-five of the children diagnosed with ADHD (74 %) were prescribed some form of stimulant medication (e.g., Adderall, Concerta, Dexedrine, Methylphenidate). In addition, two children were taking a new non-stimulant medication for ADHD (i.e., Straterra). It is also important to note that 22 of the children diagnosed with ADHD (36 %) were also diagnosed with at least one other psychiatric disorder (see Appendix B, Table 5). This is lower than the estimate that as many as two-thirds of children with ADHD are diagnosed with some other psychiatric diagnosis (Cantwell, 1996).

Forty-seven children (25 boys, 22 girls) without ADHD and one of their parents/guardians served as the comparison group. Only one child in the comparison group carried a psychiatric diagnosis. A complete listing of psychiatric diagnoses in the ADHD and the comparison group can be seen in Appendix B, Table 5.
Statistical comparisons were made between the ADHD group and the comparison group on all relevant demographic information (i.e., parent and child gender, age, education level, ethnicity, and family income level) and no significant differences were found. Descriptive statistics, as well as results of \( t \)-tests and Chi Squares, can be seen in Appendix B, Tables 2, 3, and 4.

Participants were recruited from the community through advertisements as part of a larger research study. Children in the ADHD group were previously diagnosed with ADHD by a physician (i.e., pediatrician, psychiatrist, neurologist, or ADHD specialist) or a psychologist. In addition, symptoms of ADHD were confirmed through the use of parent and teacher report measures described in the following section. It is important to note that 22 parent-child dyads were eliminated from the sample either due to a diagnosis of ADHD that failed to be confirmed or because of undiagnosed high symptoms of ADHD. Statistical comparisons were made between the group of children who were excluded and the ADHD group and the comparison group on all relevant demographic information (i.e., parent and child gender, age, education level, ethnicity, and family income level). There was a significant difference between the excluded group and the ADHD group in the grade level of the child, \( \chi^2 = 9.73, p = .02 \).

Further exclusion criteria for the study included the presence of pervasive developmental disorders, mental retardation, or traumatic brain injuries (based on parent report). In addition to the participation of the parent-child dyads, parents were asked to solicit the participation of their child’s primary teacher. Sixty-seven teachers responded to the requests for information regarding the child participants (62% response rate).
Measures

Demographics Questionnaire

The “Demographic Information and History Form” (see Appendix C) was completed by the child’s participating guardian. Basic demographic information was collected with this form, such as parent and child gender, age, ethnicity, estimated income, and education level. Information regarding diagnostic information (i.e., ADHD) and medical information, including current medications, was also be obtained from this questionnaire.

Measures to Confirm Diagnoses of ADHD

Three measures were used to confirm diagnoses of ADHD: the ADHD Rating Scale-IV: Home Version (ADHD-RS-IV: HV; DuPaul, Power, Anastopoulos, & Reid, 1998), the ADHD Rating Scale-IV: School Version (ADHD-RS-IV: SV) (DuPaul et al., 1998) and the Child Behavior Checklist (CBCL/4-18; Achenbach, 1991). The ADHD-RS-IV: HV was completed by the child’s guardian. The ADHD-RS-IV: HV consists of 18 items that were empirically derived from the ADHD diagnostic criteria in the DSM-IV (APA, 1994). For each item, the frequency of the child’s behavior at home within the last 6 months is rated on a 4-point Likert scale (“0 = never or rarely,” “1 = sometimes,” “2 = often,” “3 = very often”). Subscales of the ADHD-RS-IV: HV include a 9-item Inattention subscale and a 9-item Hyperactivity-Impulsivity subscale (ranging from 0 to 27). A Total Scale score (ranging from 0 to 54) can also be obtained by summing the raw scores of the two subscales. Raw scores from the Total Scale and the two subscales can then be converted to percentiles. Norms for the scale were derived separately for boys and girls from an ethnically and regionally representative sample of 2000 children (ages 4 to 19) (DuPaul et al., 1998).
The overall reliability and validity of the ADHD-RS-IV: HV is adequate. Internal consistency coefficients for the three scales ranged from $\alpha = .86$ to .92 (DuPaul et al., 1998). Similarly, in the present study, internal consistency coefficients for the three scales ranged from $\alpha = .96$ to .98. In addition, four-week test-retest reliability statistics ranged from $r = .78$ to .86 (DuPaul et al.). DuPaul and his colleagues confirmed the validity of the ADHD-RS-IV: HV by comparing it to other measures used to assess ADHD symptoms. High correlations were found between the Hyperactivity-Impulsivity subscale of the ADHD-RS-IV: HV and the Conners Parenting Rating Scale – Revised (CPRS; Conners, 1989) Hyperactivity Index, the CPRS Impulsivity-Hyperactivity subscale, and the CPRS Conduct Problems subscale, ranging from $r = .65$ to .81. The Inattention subscale had a high correlation with the CPRS Learning Problems subscale ($r = .66$). As would be expected, lower correlations were found between the ADHD-RS-IV: HV and the CPRS subscales that are unrelated to ADHD (e.g., Psychosomatic, Anxious) (DuPaul et al.).

Parent ratings on the ADHD-RS-IV: HV discriminated between the different subtypes of ADHD in the DSM-IV (American Psychiatric Association (APA), 1994). In addition, parent ratings on the ADHD-RS-IV: HV distinguished between children with ADHD and clinic-referred children without ADHD. Specifically, parent ratings on the Hyperactivity-Impulsivity subscale were highest for children with ADHD Combined Type ($M = 16.4; SD = 5.9$) compared to children with ADHD Predominantly Inattentive Type ($M = 10.7; SD = 5.7$) and children without ADHD ($M = 11.6; SD = 8.0$). Parent ratings on the Inattention subscale were highest for children who had ADHD, regardless of subtype ($M = 19.3; SD = 4.3$ for both ADHD groups) when compared to children without ADHD ($M = 14.2; SD = 7.9$) (DuPaul et al., 1998).
The ADHD-RS-IV: SV (DuPaul et al., 1998) was completed by the child’s teacher. The 18 items on the School Version are identical to the items on the Home Version and utilize the same 4-point Likert scale. In addition, the same scales (Inattention Subscale, Hyperactivity-Impulsivity Subscale, and the Total Score) are derived from the teachers’ responses on this measure (DuPaul et al.).

The overall reliability and validity of the ADHD-RS-IV: SV is very good. Internal consistency coefficients for the three scales ranged from $\alpha = .88$ to .96. Similarly, in the present study, internal consistency coefficients for the three scales ranged from $\alpha = .93$ to .96. In addition, four-week test-retest reliability statistics on the scales ranged from $r = .88$ to .90 (DuPaul et al., 1998). To assess validity of the ADHD-RS-IV: SV, comparisons were made between this measure and other measures historically used to assess ADHD. Strong correlations were found between the Hyperactivity-Impulsivity subscale of the ADHD-RS-IV: SV and the Conners Teacher Rating Scale – Revised (CTRS; Conners, 1989) Hyperactivity Index, the CTRS Impulsivity-Hyperactivity subscale, and the CTRS Conduct Problems subscale, ranging from $r = .55$ to .79. The ADHD-RS-IV: HV Inattention subscale showed strong correlations with the CTRS Hyperactivity subscale ($r = .73$) and the CTRS Hyperactivity Index ($r = .76$). In addition, as would be expected, the Inattention subscale had the highest correlation with the CTRS Daydream-Attention scale ($r = .85$) (DuPaul et al.).

Similar to parent ratings, teacher ratings on the ADHD-RS-IV: SV differentiated the different subtypes of ADHD in the DSM-IV (APA, 1994). In addition, teacher ratings on the ADHD-RS-IV: SV distinguished between children with ADHD and clinic-referred children without ADHD. Specifically, teacher ratings on the Inattention subscale were highest for children who have ADHD, regardless of subtype: $M = 21.6$ ($SD = 4.3$) for children with ADHD.
Combined Type and $M = 19.3$ ($SD = 4.7$) for children who have ADHD Predominantly Inattentive Type, compared to children without ADHD ($M = 13.3$; $SD = 5.9$). Teacher ratings on the Hyperactivity-Impulsivity subscale were highest for children with ADHD Combined Type ($M = 18.6$; $SD = 5.7$) compared to children with ADHD Predominantly Inattentive Type ($M = 6.9$; $SD = 4.5$) and children without ADHD ($M = 10.5$; $SD = 8.0$) (DuPaul et al., 1998).

The third measure used to assess symptoms of ADHD was the CBCL (Achenbach, 1991). Specifically, the Attention Problems Scale and the Internalizing Scale of the CBCL were utilized in this study. The CBCL is a behavior checklist completed by parents and consists of 118 items. Each item is rated on a 3-point scale (0 = “not true”; 1 = “somewhat or sometimes true”; 3 = “very true or often true”). This checklist yields nine “Problem Behavior Scales” and three “Competence Scales,” which are derived from multivariate statistical procedures conducted and reported separately for boys and girls in different age groups (Achenbach). Results from the CBCL scales are reported in T scores ($M = 50$; $SD = 10$) to indicate how a child’s scale scores compare to the gender specific normative sample. T-scores in the range of 60-69 are considered to be at-risk scores, while scores above 70 (above the 98th percentile) are in the clinically significant range. The “Problem Behavior Scales” on the CBCL include: Attention Problems, Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Delinquent Behavior, Aggressive Behavior, and Sex Problems. The Competence Scales include: Activities, Social, and School. Factor analytic procedures were used to derive an Internalizing Scale (composed of Withdrawn, Somatic Complaints, and Anxious/Depressed) and an Externalizing Scale (composed of Delinquent Behavior and Aggressive Behavior).

Research with the CBCL has demonstrated the CBCL has sound psychometric properties. Specifically, Achenbach (1991) found the test-retest reliability of the Problem subscales on the
CBCL to be good \( (r = .89) \) over a seven-day period. Inter-parent reliabilities for the Problem scales were also found to be adequate \( (r = .65 \) to \( .75) \). The construct validity of the CBCL was assessed by comparing scores on the CBCL scales to the Conners Parent Questionnaire (CPQ; Conners, 1973) and the Quay-Peterson Revised Behavior Problem Checklist (RBPC; Quay & Peterson, 1983); analogous scales were correlated. Regarding the Attention Problems scale, moderately high correlations were found between the Attention Problems Scale and the Impulsivity/Hyperactivity and the Attention Problems scales of the CPQ and the Motor Excess Scale of the Quay-Peterson RBPC, with correlations ranging from \( r = .59 \) to \( .77 \) (Achenbach).

The Attention Problems Scale of the CBCL has shown good convergent validity with an ADHD diagnosis resulting from a structured interview (Biederman et al., 1993). Specifically, Biederman et al. administered the Schedule for Affects Disorders and Schizophrenia for School Age Children - Epidemiologic Version (Kiddie SADS-E) to parents of children with and without ADHD and DSM-III-R diagnoses were determined. “Excellent convergence” (p. 1247) was found between ADHD diagnoses derived from a structured interview and the Attention Problems Scale on the CBCL, using both total predictive power and odds ratios. Specifically, elevations on the Attention Problems Scale correctly diagnosed children with ADHD 86% of the time (Biederman, Faraone, Doyle, et al.). Similarly, Biederman, Faraone, Mick and colleagues (1996) found the Attention Problems scale of the CBCL differentiated children with ADHD from those without that diagnosis. In addition, internal consistency reliability statistics were computed on the Attention Problems Scale with the current sample and were found to be adequate \( (\alpha = .88) \).

In summary, the CBCL demonstrates sound psychometric properties, making it a useful tool that is widely used in clinical, community, and research settings.
For the present study, diagnoses of ADHD/I, ADHD/HI, and ADHD/C, as reported by parent/guardian, were confirmed with elevations above the 80th percentile on the Inattentive subscale, Hyperactivity-Impulsivity subscale, or Total Score of the ADHD-RS-IV: HV or the ADHD-RS-IV: SV or a T score above 60 on the Attention Problems scale of the CBCL. Further, children were not reported to have ADHD by their parent/guardian will be eliminated from the control group if they receive elevations above the 90th percentile on any of the three scales of the ADHD-RS-IV: HV or the ADHD-RS-IV: SV or and a T score above 61 on the Attention Problems scale CBCL.

Measure of Internalizing Problems

The Internalizing Scale from the CBCL was used to measure internalizing symptoms. The Internalizing Scales is composed of three of the “Problem Behavior Scales (i.e., Withdrawn, Somatic Complaints, and Anxious/Depressed). Achenbach (1991) found the test-retest reliability of the Internalizing Scale on the CBCL to be good ($r = .89$) over a seven-day period. Inter-parent reliabilities for the Internalizing Scale was also found to be adequate ($r = .66$). Regarding construct validity, moderately high correlations were found between the Internalizing Scale and the Psychosomatic and Anxiety scales of the CPQ and the Anxiety-Withdrawn Scale of the Quay-Peterson RBPC, with correlations ranging from $r = .56$ to .72 (Achenbach). In addition, internal consistency reliability statistics were computed on the Internalizing Scale with the current sample and were found to be adequate ($\alpha = .91$).

Measures of Self-concept

An adapted version of the Self-Description Questionnaire I (SDQ-I; Marsh, 1990b) was used to assess the child’s self-concept. The SDQ-I (Marsh) is a 76-item multidimensional self-report measure of children’s self-concept and was developed with strong adherence to theory.
Items on the SDQ-I were developed based on the Shavelson model of self-concept and were supported by factor analyses, providing evidence for content and construct validity (See Appendix A). In the standard SDQ-I, children are asked to respond to simple declarative sentences (e.g., “I’m good at mathematics,” “I make friends easily”) on a 5-point Likert scale (“False,” “Mostly False,” “Sometimes False/Sometimes True,” “Mostly True,” or “True”). In addition to 64 positively worded items, the standard SDQ-I includes 12 negatively worded items to avoid positive response bias. Because previous research has shown that children have trouble responding appropriately to negatively worded items, these items are not included in the scores derived from the SDQ-I (Marsh).

The SDQ-I assesses three areas of academic self-concept (Reading, Mathematics, and General School self-concept scales) and four areas of nonacademic self-concept (Physical Ability, Physical Appearance, Peer Relations, and Parent Relationships self-concept scales). Also, a General-Self self-concept scale assesses “general or overall positive self-perspective that is not specific to any particular facet of self-concept but could be applied to each specific facet of the self” (Marsh, 1990b, p. 23). In addition to these eight scales that produce scores, three total scores can be computed. The Total Nonacademic score is an average of the four nonacademic scales, and the Total Academic score is an average of the three academic scales. The average of these two scores result in the Total Self score (Marsh).

The SDQ-I raw scores can be converted to percentile ranks and standard scores (mean of 50 and a standard deviation of 10). Normative comparisons are reported separately for males and females in grades 2 through 4, and combined norms based on responses by both males and females in grades 2 through 6 may be useful for making group comparisons. Control scores may be computed to assess response consistency and positive/negative biases (Marsh, 1990b).
The SDQ-I possesses good internal consistency, with estimates ranging from $\alpha = .80$ to .92 and a median alpha coefficient of .88 for the eight scale scores. Alphas for the three total scores are .91 for the Total Nonacademic score, .92 for the Total Academic score, and .94 for the Total Self score (Marsh, 1990b). Internal consistencies for the current study can be seen in Appendix B, Table 6.

The SDQ-I was originally intended for use in grades 4 through 6 (ages 8 through 12). However, Marsh, Craven, and Debus (1991) provided empirical support for the use of an adapted SDQ-I with children 5 to 8 years of age. On the adapted SDQ-I, the response format was altered so that the interviewer initially asked the child to respond “Yes” or “No” to the declarative sentence to indicate whether the sentence was true or false as a description of the child. If the child initially responded “Yes,” the interviewer then asked the child whether he/she meant “Yes, always” or “Yes, sometimes.” If the child initially responded “No,” the interviewer then asked the child whether he/she meant “No, always” or “No, sometimes” (Marsh et al., 1991). In addition, on the adapted SDQ-I the negatively worded items were excluded altogether to avoid confusion (Marsh et al.).

In a study to evaluate the reliability of the adapted SDQ-I with young children, 501 students in kindergarten, first grade, and second grade completed the questionnaire (Marsh et al., 1991). In addition to the altered response format, procedures for standard SDQ-I administration were adjusted so that the adapted SDQ-I was administered as an individual interview, whereby the examiner read each item aloud. Marsh and his colleagues found that each of the eight SDQ-I factors that have been identified in responses by older children (ages 8 to 12) was identified for younger children (ages 5 to 8), though the average correlation among the SDQ-I factors was smaller with increasing age. The adapted SDQ-I possessed good internal consistency, with
estimates ranging from $\alpha = .72$ to .86, except for the Parent Relationships and Physical Ability scales, with estimates of $\alpha = .69$ and .51 respectively, for kindergarten respondents only. The internal consistencies of the General Self scale were moderate, ranging from $\alpha = .73$ to .78. In general, these reliability estimates increased with age. Correlations among the adapted SDQ-I scores for children in kindergarten through second grade were compared with those in the normative archive of SDQ-I scores for students in grades 2 through 6. Results suggested that the adapted SDQ-I procedures may facilitate the differentiation of self-concept facets by five to eight-year-old children. Although the adapted SDQ-I contains more items than most measures developed for younger children, there was no deterioration in responses near the end of the questionnaire. Overall, Marsh and his colleagues suggested that the psychometric properties of the adapted SDQ-I provide reasonable support for assessing self-concept in children ages 5 to 8.

The Teacher Rating Scale (TRS; Harter, 1985) is a 15-item measure developed to parallel the Self-Perception Profile for Children (SPPC; Harter). The SPPC was designed to assess children’s judgment of their competence in five different domains, as well as assess their global self-worth. These domains include: (1) Scholastic Competence (academic performance); (2) Social Acceptance; (3) Athletic Competence (sports and outdoor games); (4) Physical Appearance; (5) Behavioral Conduct; and (6) Global Self-Worth. On the TRS, the teacher rates the child’s “actual behavior” on each item. Responses are given in a double “structured alternative format.” For example, the teacher is first asked to decide between two statements as to which fits the child best (e.g., “This kid often forgets what he or she learns, or this kid remembers things easily.”) Once the teacher makes a statement choice, the teacher then rates the statement as “Sort of True for this Child” or “Really True for this Child.” Items are scored with 4, 3, 2, or 1, with 4 representing the most positive rating and 1 representing the most negative
rating. The TRS shows excellent internal consistency reliability, reported at $\alpha = .93$ to .96 (Harter, 1982). In the present study, internal consistency coefficients for the five scales ranged from $\alpha = .84$ to .93, and the total score has an $\alpha = .91$. Good factorial validity was also demonstrated with item loadings on each factor ranging from .60 to .67 (i.e., Scholastic Competence, Social Acceptance, Physical Appearance, and Global Self-Worth).

**Procedure**

Parent-child dyad participants were recruited in several ways. Non-ADHD parent-child dyads were recruited from the community through posters, flyers, windshield flyers, and newspaper advertisements. Families with ADHD children were referred through ADHD support groups (e.g., CHADD, ADDA), family therapy clinics, school counselors, parent education groups and flyers posted in physician’s offices and pharmacies. Participants who were interested contacted the researchers by phone and were told about the study and its procedures. Parents of ADHD children were made aware that participation required that their child delay or skip 1 dose of their stimulant medication (as is standard in observational studies of ADHD children). Parents were also told that participation includes a thirty minute videotaped play interaction with him/her and his/her child. Parents also spent approximately two hours completing questionnaires. Each child also spent approximately 45 minutes to an hour completing the 3 child report questionnaires with the help of a trained graduate student. Then the child was allowed to play with the examiner for the remainder of the time. Persons who wished to participate were scheduled for a 3-hour appointment.

Upon arrival at the testing site (University of North Texas Psychology Building – Terrill Hall or Great Lakes Academy in Plano), participants were greeted and informed consent was obtained (see Appendix D). Assent was also solicited and obtained from all child participants if
their parent chooses to sign the Informed Consent, as seen on the last page of the Informed Consent Form. After providing written informed consent, the parent and child were left alone for a few minutes. Parents of ADHD children were discretely reminded by one researcher that these few minutes of privacy are intended to allow the child time to take their medication. The other researcher(s) who were collecting data from the child were blind to the child’s ADHD status.

Once consent was obtained, parents and their son or daughter participated in the PCIA (Holigrocki, Frieswyk, Kaminski, & Hough, 1999). The PCIA was administered according to the protocol described in the PCIA Manual (Holigrocki et al., 1999). The PCIA was videotaped and all materials and toys were set up in a standardized manner. The researcher remained in the room except during the “Free Play” and “Clear Up” scenarios. During each scenario, the researcher remained quiet unless spoken to directly. Whenever necessary, a non-directive and warm response was given (Holigrocki et al.).

Following the administration of the PCIA (not included in the present study), parents were given one of 4 counterbalanced questionnaire packets (which included 10 measures – 3 from the present study) to complete while the child was administered 3 measures (1 from the present study) by a trained graduate student (for child administration procedures see Appendix E). The child was administered one of four counterbalanced packets of measures. The graduate student read directions and items aloud and recorded the child’s responses in order to prevent any difficulties the child may have with reading the measures. In addition, at least every 20 minutes, a 5-minute break was taken to prevent fatigue in the child. However, more frequent breaks were taken as is necessary to maintain good rapport and optimize the validity of the child’s responses. Following the completion of the child questionnaires, the child was allowed access to a number of age appropriate toys and was supervised by the researcher. After
completion of all measures, the parent could choose to complete a letter (see Appendix F) addressed to the child’s teacher asking them to complete two questionnaires, the ADHD-RS-IV: SV and the TRS. Procedures for explaining the teacher letter the parent can be seen in Appendix G. To ensure confidentiality, the child’s name was only on the letter to the teacher and the child’s number (not name) was on the actual measures that the teacher completed and sent back. A self-addressed envelope was attached so the teachers would be able to return the measures to the researcher. Each teacher was sent $5 compensation after returning the completed questionnaires.

Problems with attendance and attrition in research with families have been historically evident. Thus, it is standard procedure to offer participants in family studies the types of support they may need to make participation possible. Examples of such support include transportation, childcare, and snacks. In addition, financial incentives are needed to make it worthwhile for families to relinquish a few hours of their Saturday to come in for testing. Therefore, participants were offered childcare and snacks. Further, dyads were paid $10 per hour for their time (usually about 3 hours). Following completion of the study, parents received a debriefing form (see Appendix H).
CHAPTER 3

RESULTS

Data Preparation

Prior to conducting statistical analyses, all dependent and independent variables were examined for both the Attention-Deficit/Hyperactivity Disorder (ADHD) sample and the whole sample (ADHD group and Control group combined) to determine if normality was met, which is an assumption for both the Multivariate Analysis of Covariance (MANCOVA) and multiple regression. All variables met the normality assumption and no transformations were required.

The other assumptions of the multiple regression—non-collinearity between predictors, linearity between the independent and dependent variables, and homoscedasticity—were met. The assumption of non-collinearity between predictors was met as the correlation between the predictors did not exceed a correlation of .90 (Tabachinck & Fidell, 2001). The assumptions of linearity and homoscedasticity were investigated utilizing scatterplots, which plotted predicted values on the X-axis and standardized residuals on the Y-axis. Based on this examination, it was determined that there were no violations of these assumptions.

The other assumption of the MANCOVA, the assumption of homogeneity of covariance, was met on all analyses based on Box’s Test of Equality of Covariances. One univariate follow-up test did not meet the assumption of homogeneity of variance, and this limitation will be discussed below.

Primary Hypotheses Results

Hypothesis 1 Results

The first hypothesis tested stated that when internalizing symptoms were statistically controlled, there would be no interaction between gender and ADHD and no main effect for
ADHD. However, it was hypothesized that there would be a main effect for gender such that the direction of the main effect would vary by domain. Specifically, it was hypothesized that regardless of ADHD status, boys would report higher levels of Physical Appearance, Physical Ability, and Mathematics self-concept than would girls, and girls would report higher levels of General School and Reading self-concept than would boys. A MANCOVA was conducted to determine if there were differences in self-concept as measured by the Self Description Questionnaire (SDQ-I; Harter, 1990b) subscales (except Parent Relations) based on gender and ADHD status while controlling for internalizing symptoms as measured by the Internalizing Scale of the Child Behavior Checklist (CBCL, Achenbach, 1991). The omnibus results indicated no significant differences between ADHD and non-ADHD children, and no interaction was indicated between gender and ADHD status. While the omnibus test for the ADHD status was not significant, one univariate trend was notable. That is, there was a trend towards significance for ADHD status and Physical Abilities, $F (1, 99) = 3.61, p = .06, \eta^2 = .04$. Specifically, non-ADHD children ($M = 33.32, SD = .94$) reported higher Physical Ability Subscale scores than did ADHD children ($M = 30.85, SD = .80$). The omnibus results indicated a significant difference between boys and girls, $F (1, 99) = 2.81, p < .02, \eta^2 = .15$. In examining the univariate results, there was a trend towards significance for gender on the SDQ-I Mathematics subscale, $F (1, 99) = 3.76, p = .06, \eta^2 = .01$. Specifically, boys ($M = 31.90, SD = 1.12$) reported higher Mathematics subscale scores than reported by girls ($M = 28.60, SD = 1.28$). In addition, there was a significant difference in gender on the SDQ-I Physical Abilities subscale, $F (1, 99) = 15.44, p < .001, \eta^2 = .14$. Specifically, boys ($M = 34.35, SD = .76$) reported higher Physical Ability Subscale scores than reported by girls ($M = 29.83, SD = .88$). Although this analysis was the one with inequality of variance, further exploratory analyses lends credence to the significant finding.
In an exploratory analysis, the same hypothesis and statistics were run with more strict criteria for inclusion in the ADHD group. To be included as ADHD, children had to have their diagnosis confirmed by one of the parent reports of ADHD (i.e., CBCL Attention Scale or ADHD-RS-IV: HV) and on the ADHD-RS-IV: SV filled out by the teacher. Thirty-six children were excluded from the sample when the stricter criteria were used. Statistical comparisons were made between the strict ADHD group and the children who were excluded on all relevant demographics (i.e., parent and child gender, age, education level, ethnicity, and family income level) and no significant differences were found. The omnibus results indicated a significant difference between boys and girls, $F(1, 64) = 2.55, p < .03, \eta^2 = .21$. In examining univariate results, there was a significant difference in gender on the SDQ-I Physical Abilities subscale, $F(1, 64) = 14.46, p < .001, \eta^2 = .18$. Specifically, boys ($M = 33.53, SD = .91$) reported higher Physical Ability Subscale scores than reported by girls ($M = 28.22, SD = 1.05$). In addition, there was a significant difference for gender on the SDQ-I Mathematics subscale, $F(1, 65) = 5.73, p = .02, \eta^2 = .08$. Specifically, boys ($M = 33.00, SD = 1.21$) reported higher Mathematics subscale scores than reported by girls ($M = 28.57, SD = 1.40$). In addition, there was a trend towards significance for gender on the SDQ-I Peer Relations subscale $F(1, 64) = 3.21, p = .08, \eta^2 = .05$. Boys ($M = 30.46, SD = .99$) reported higher Peer Relations subscale scores than reported by girls ($M = 27.75, SD = 1.42$).

The omnibus test for the ADHD status indicated a trend towards significance, $F(1, 65) = 1.98, p = .08, \eta^2 = .17$. Although the omnibus test was not significant, two univariate findings were notable. Specifically, there was a significant difference between ADHD and non-ADHD children on the SDQ-I Physical Abilities subscale, $F(1, 65) = 6.85, p = .01, \eta^2 = .10$. Specifically, non-ADHD children ($M = 32.89, SD = .88$) reported higher Physical Ability
Subscale scores than reported by ADHD children ($M = 28.87, SD = 1.17$). There was also a significant difference between ADHD and non-ADHD children on the SDQ-I Peer Relations subscale, $F (1, 65) = 6.19, p = .02, \eta^2 = .09$. Specifically, non-ADHD children ($M = 31.18, SD = .95$) reported higher Peer Relations subscale scores than reported by ADHD children ($M = 27.03, SD = 1.27$).

Although the omnibus test for the interaction between gender and ADHD status was not significant, $F (1, 65) = 1.14, p = .35, \eta^2 = .10$, two univariate trends were notable. There was a trend towards significance for gender and ADHD status for the SDQ-I Physical Ability subscale, $F (1, 65) = 3.56, p = .06, \eta^2 = .05$. Specifically, ADHD girls ($M = 24.89, SD = 1.75$) reported lower Physical Ability subscale scores than non-ADHD girls ($M = 31.56, SD = 1.22$), ADHD boys ($M = 32.85, SD = 1.49$) and non-ADHD boys ($M = 34.22, SD = 1.21$). There was also a trend towards significances for gender and ADHD status on the SDQ-I Mathematics subscale $F (1,65) = 2.00, p = .09, \eta^2 = .04$. Specifically, ADHD girls ($M = 25.45, SD = 2.32$) reported lower Mathematics subscale scores than non-ADHD girls ($M = 31.68, SD = 1.62$), ADHD boys ($M = 33.12, SD = 1.98$) and non-ADHD boys ($M = 32.89, SD = 1.60$).

Hypothesis 2 Results

The second hypothesis tested stated that regardless of ADHD status, boys would report significantly higher global self-concept than would girls. An Analysis of Covariance (ANCOVA) was utilized to compare the means of global self-concept (dependent variable) as assessed by the SDQ-I General Self subscale while statistically controlling for internalizing symptoms as assessed by the CBCL Internalizing Scale. Gender (Boy and Girl) and ADHD status (ADHD and Non-ADHD) served at the independent variables. The omnibus results indicated no difference between boys and girls on self-reported global self-concept, $F (1,100) =$
2.082, $p = .15$, $\eta^2 = .02$. There was also no significant difference between children with and without ADHD, $F (1, 100) = .64, p = .43$, $\eta^2 = .01$. Finally, there was no significant interaction between gender and ADHD status, $F (1, 100) = .89, p = .35$, $\eta^2 = .01$.

When the same analysis was run with the stricter ADHD group, the omnibus results indicated a trend towards significances for ADHD status, $F (1, 65) = 3.44, p = .07$, $\eta^2 = .05$. Specifically, ADHD children ($M = 31.15$, $SD = 1.00$) reported lower General Self Scores than non-ADHD children ($M = 33.56$, $SD = .74$). The omnibus results indicated no significant main effect for gender, $F (1, 65) = 2.68, p = .11$, $\eta^2 = .04$. There was no significant interaction between gender and ADHD status, $F (1, 65) = 1.43, p = .24$, $\eta^2 = .02$.

Hypothesis 3 Results

The third hypothesis tested stated that negative teacher reports of competency in a given domain would be negatively correlated with corresponding domains of self-reported self-concept in ADHD boys. This negative correlation was only hypothesized when the teacher report was in the negative direction. Specifically, four Teacher Rating Scale (TRS; Harter, 1985) subscales correspond with the SDQ-I. It was hypothesized that the TRS Social Acceptance subscale would be negatively correlated with the SDQ-I Peer Relations subscale; The TRS Scholastic Competence subscale would be negatively correlated with the SDQ-I General Academic subscale; The Physical Appearance subscales on the TRS and the SDQ-I would be negatively correlated. Finally, it was hypothesized that the TRS Athletic Competence subscale would be negatively correlated with the SDQ-I Physical Ability subscale. Separate Pearson Product Moment Correlations were conducted to determine the relationship between the child’s reported self-concept and teacher reports of competency. The correlation between Physical Appearance on the TRS and SDQ-I was unable to be analyzed due to a lack of variance in the
TRS. The omnibus results indicated a significant positive correlation between the SDQ-I General School and the TRS Scholastic Competency for boys, $r = .95$, $p < .01$. There were no other significant correlations between the child and teacher reports for ADHD boys. The correlation matrix between the corresponding SDQ-I and TRS subscales can be seen in Appendix B, Table 7.

Hypothesis 4 Results

The fourth hypothesis tested stated that self-reported self-concept of ADHD girls would show a positive correlation with teacher reports of competency on corresponding domains of the SDQ-I and the TRS. The same subscale matchings were used in this hypothesis as in hypothesis 3. Separate Pearson Product Moment Correlations were conducted to determine the relationship between the child’s reported self-concept and teacher reports of competency. The correlation between Physical Appearance on the TRS and SDQ-I was unable to be analyzed due to a lack of variance in the TRS. There were no significant correlations between the child and teacher reports in ADHD girls. The correlation matrix between the corresponding SDQ-I and TRS subscales can be seen in Appendix B, Table 8.

Hypothesis 5 Results

The fifth hypothesis tested stated that there would be a significant negative correlation between age and global self-concept (SDQ-I General Self), such that older children would have lower global self-concept than would younger children. A Pearson Product Moment Correlation was conducted to determine the relationship between the reported global self-concept and age. There was no significant correlation between global self-concept and age. In addition, exploratory analyses examining the correlation between each SDQ-I subscale and age were not
significant although general school and physical appearance showed a trend towards significance (see Appendix B, Table 9).

**Hypothesis 6 Results**

The sixth hypothesis tested stated that ADHD children with one or more diagnosed comorbid psychological disorder(s) would have lower global self-concept than children with ADHD only and non-ADHD children. An ANOVA was utilized to compare the means of global self-concept (dependent variable) as assessed by the SDQ-I General Self score. Group status served as the independent variable with three levels (ADHD only, ADHD with comorbid psychological disorder, and Control). The results indicated no difference between groups on self-reported level of global self-concept, $F(2, 96) = .75, p = .48, \eta^2 = .02$. In addition, exploratory analyses examining group differences on each SDQ-I subscale were not significant.

**Secondary Hypotheses**

**Hypothesis 7 Results**

The seventh hypothesis tested stated that higher levels of internalizing symptoms and higher levels of ADHD symptoms would predict lower a) social, b) academic, and c) global self-concept. Three hierarchical multiple regressions were conducted to determine the predictive relationship between the level of internalizing and ADHD symptoms and the separate domains of self-concept. Neither internalizing symptoms nor the combination of internalizing and ADHD symptoms significantly predicted social, academic or global self-concept. The intercorrelations and regression analysis summaries can be seen in Appendix B, Tables 10, 11, 12, 13, 14, 15.

**Hypothesis 8 Results**

The eighth hypothesis tested stated that ADHD children who are currently taking medication would report higher academic, social and global self-concept than would non-
medicated ADHD children. A MANOVA was utilized to compare the means of ADHD children who were and were not medicated (independent variable) on the SDQ-I General Academic subscale, the SDQ-I Peer Relations subscale, and the SDQ-I General Self scale (dependent variables). The omnibus results indicated no difference between the medicated and non-medicated ADHD children, $F (1, 53) = 1.22, p = .31, \eta^2 = .08$.

Exploratory Analyses with the Teacher Rating Scale

A MANCOVA was run using teacher reports of child competence as measured by the TRS to determine if there were differences by gender or ADHD status. The omnibus results indicated no difference by gender of the child on teacher reports of competence, $F (5, 47) = .21, p = .96, \eta^2 = .02$. The omnibus results indicated a significant difference between ADHD and non-ADHD children on teacher reports of competence, $F (5, 47) = 13.92, p < .001, \eta^2 = .62$. In examining univariate results, non-ADHD children were rated as having more scholastic, athletic, behavior, and social competence by their teachers than ADHD children. The means and standard deviations and the results of the MANCOVA can be seen in Appendix B, Tables 16 and 17. Although there was no significant interaction between gender of the child and ADHD status, one univariate finding was notable. Specifically, there was a significant interaction between gender and ADHD status on teacher reports of scholastic competence. For scholastic competence, ADHD girls were rated as less competent ($M = 6.69, SD = .81$) while non-ADHD girls were rated as more competent ($M = 11.25, SD = .78$) than ADHD boys ($M = 8.36, SD = .57$) and non-ADHD boys ($M = 9.97, SD = .66$).

A MANCOVA was run using the five domains of teacher reported child competence (dependent variables) to determine if there were differences by medication status in children with ADHD. The omnibus results indicated no significant difference between medicated ADHD
children and non-medicated ADHD children, $F(5, 19) = 1.19, p = .35, \eta^2 = .24$. Although there was no significant main effect for medication status, one univariate finding was notable. There was a significant difference in behavioral competence between ADHD children who were and were not medicated, $F(1, 23) = 6.49, p < .02, \eta^2 = .22$. Specifically, medicated ADHD children ($M = 7.68, SD = .50$) were rated as more behaviorally competent than non-medicated ADHD children ($M = 4.00, SD = 1.36$).

A MANOVA was run using the five domains of teacher reported child competence (dependent variables) to determine if there were differences by comorbid status. Group status served as the independent variable with three levels (ADHD only, ADHD with comorbid psychological disorder, and Control). The results indicated a significant difference between groups, $F(4, 44) = 5.03, p < .001, \eta^2 = .36$. In examining the univariate results, there was a significant difference between groups on social competence, $F(2, 48) = 13.73, p < .001, \eta^2 = .36$. Specifically, control children ($M = 9.92, SD = 2.47$) were rated as significantly more socially competent than children with ADHD only ($M = 6.67, SD = 2.81$) and ADHD with comorbid psychological disorder ($M = 5.50, SD = 1.85$). There was also a significant difference between groups on athletic competence, $F(2, 48) = 6.78, p < .01, \eta^2 = .22$. Specifically, control children ($M = 8.64, SD = 2.04$) were rated as significantly more athletically competent than children with ADHD only ($M = 6.89, SD = 2.30$) and child with ADHD and a comorbid psychological disorder ($M = 5.88, SD = 1.81$). Finally, there was a significant difference between groups on behavioral competence, $F(2, 48) = 20.50, p < .001, \eta^2 = .46$. Specifically, ADHD only children ($M = 6.17, SD = 2.41$) were rated as significantly less behaviorally competent than ADHD with comorbid psychological disorder children ($M = 9.00, SD = 2.20$) and control children ($M = 10.68, SD = 2.21$).
CHAPTER 4

DISCUSSION

The purpose of the present study was to investigate self-concept differences between males and females and children with and without Attention-Deficit/Hyperactivity Disorder (ADHD). Research has shown the importance of self-concept in a child’s development; children with poor self-concept show increased difficulty during childhood and poorer outcomes in adolescence and early adulthood when compared to children, adolescents and adults with high-self concept (Button, Songua-Burke, Davis, & Thompson, 1996; Dubow, Edwards, & Ippolito, 1997; Garber, Robinson, & Valentiner, 1997; Hymel, Rubin, Rowden, & LeMare, 1990; Marsh & Yeung, 1997; Pisecco, Wristers, Swank, Silva, & Baker, 2001; Slomkowski, Klien, & Mannuzza, 1995). Given the academic and social difficulties often associated with ADHD, children who have been diagnosed with ADHD may be more prone to having low self-concept than children who have not been diagnosed with ADHD (Greene, Biederman, Faraone, Sienna, & Garcia-Jetton, 1997; Weiss & Hechtman; Weiss, Hechtman, & Perlman, 1978; Wilson & Marcotte, 1996). Previous research looking at differences in self-concept based on ADHD status have yielded inconsistent findings. The present study examined differences in self-concept between ADHD and non-ADHD boys and girls while controlling for internalizing symptoms. In addition, the current study investigated academic, social, and physical ability illusory biases in girls and boys using a research design similar to Hoza, Pelham, Dobbs, Owens, and Pillow (2002).

As suggested by Shavelson, Hubner, and Stanton (1976), this discussion will only use “self-concept” when referring to the child’s self-reported self-concept as measured by the Self Description Questionnaire (SDQ-I; Marsh, 1990b). Teacher reports from the Teacher Rating
Scale (TRS; Harter, 1985) will be referred to as competence. Also, when discussing the different samples used during the analyses, the sample including ADHD children who were confirmed on at least one of the three rating scales will be referred to as the less strict ADHD sample. The sample with ADHD children who were confirmed on one of the home rating scales and the school rating scale will be referred to as the stricter ADHD sample.

When interpreting findings it is important to note that 1) most of the effect sizes for self-concept analyses were small and therefore not practically meaningful and 2) that all self-concept scores reported were within the normal range even when significant differences between groups were present.

Summary of Findings

Self-concept Differences Based on ADHD Status

As hypothesized, there was no main effect for ADHD status on global self-concept when using the less strict ADHD sample. This is consistent with previous findings that found no difference in global self-concept based on ADHD status (Dumas & Pelletier, 1999; Hoza et al., 2002; Hoza, Pelham, Milich, McBride, 1993), but inconsistent with the findings of Bussing, Zima, and Perwien (2000) and Ialongo, Lopez, Horn, Pascoe, and Greenberg (1994), who found global self-concept differences between children with and without ADHD. However, when the stricter ADHD sample was used a trend towards significance was indicated. ADHD children reported lower global self-concept than non-ADHD children.

Although no significant global self-concept differences were found in the current study, there were two domains that ADHD children reported lower self-concept than non-ADHD children. First, when the less strict ADHD group was used, ADHD children showed a trend towards reporting lower physical ability self-concept than non-ADHD children. When the
stricter ADHD criterion was used, ADHD children reported significantly lower physical ability self-concept than non-ADHD children. This supports previous research that showed children with ADHD often show motor coordination deficits when compared to non-ADHD children (Barkley, 1998). ADHD children also reported lower peer relations self-concept than non-ADHD children when the stricter criteria was used. This is similar to previous findings that indicated lower peer acceptance self-concept in ADHD children than non-ADHD children (Dumas & Pelletier, 1999). Dumas and Pelletier used a clinically referred sample, which may more closely resemble the stricter ADHD criteria used in exploratory analyses than the more lenient ADHD sample. It also supports previous findings that have consistently reported that ADHD children have poorer peer relationship than non-ADHD children (e.g., Henker & Whalen, 1999; Whalen & Henker, 1985).

By using a stricter criterion for inclusion in the ADHD group, children whose teachers did not report a significant level of ADHD symptoms at school were excluded from the sample. When using the stricter sample, several significant differences between ADHD and non-ADHD children were present that were not present when using the more lenient sample. One hypothesis for the difference between findings is that children with mild or misdiagnosed ADHD may have been excluded from the stricter sample. This would likely make the discrepancy between ADHD and control children more apparent; however, by restricting the sample, results may be artificially extreme. An alternative explanation may be that children who were excluded are behaviorally more similar to control children at school through medication or the more structured environment. For example, if an ADHD child is performing more similarly to a non-ADHD child at school, they may receive less negative and more positive feedback from their teachers and peers that could provide the basis for a more positive self-concept than children
who are receiving negative feedback at home and at school. A final alternative explanation is that the ADHD-like behaviors are only displayed at home as part of problematic parent-child interactions and are not actually indicative of ADHD but rather conflict in that relationship (Conger, Patterson, & Ge, 1995; Goodman, Emery, & Haugaard, 1998; Trickett & McBride-Chang, 1995).

In previous literature, one alternative hypothesis for self-concept differences based on ADHD status was the presence or absence of comorbid internalizing symptoms or disorders. Previous research reported no global self-concept differences between ADHD and non-ADHD children when internalizing disorders were statistically controlled (Bussing et al., 2000; Hoza et al., 1993). Contrary to what was hypothesized and previous research, the current study found that running statistical analyses with and without internalizing symptoms as a covariate did not change significant statistical results. Neither internalizing nor ADHD symptoms significantly predicted self-reported social, academic, or global self-concept.

There are several explanations as to why using internalizing symptoms, as a covariate did not change the results in the current study. First, it is possible that children with high levels of internalizing symptoms may have quit or refused to continue before child measures could be administered. It is also important to note that previous studies used clinically referred samples, which are more likely to have comorbid disorders such as depression and anxiety than the community sample used in this study. Finally, this finding could also be a result of a measurement issue. First, parent reports were used to determine internalizing symptoms, and second the Child Behavior Checklist (CBCL; Achenbach, 1991) relies on behavioral symptoms of internalizing disorders (i.e., anxiety, depression). One of the previous studies used the Children’s Depression Index and the Child Manifest Anxiety Scale-Revised to get child reports...
of internalizing symptoms (Bussing et al., 2000). These internalization ratings are more likely to be correlated to reported self-concept because the child is responding to all the measures. Whereas, using a parent report of internalizing symptoms introduces informant information that may or may not reflect the internalizing symptoms that the child is actually experiencing. The restriction of the CBCL to Diagnostic and Statistical Manual-IV: Text Revision (DSM-IV-TR; American Psychiatric Association [APA], 2000), behavioral criterion prevents alternative presentations of depression and anxiety from being included as internalizing symptoms. Therefore, children with alternative presentations would not be included and would result in an under representation of internalizing symptoms.

In contrast to the child reports of self-concept, teachers reported significantly lower levels of athletic, school, social, and behavioral competence in ADHD children than non-ADHD children. In examining the illusory bias as hypothesized by this study, neither girls nor boys reported positive self-concept when teacher reports of competence were in the negative direction. In fact, there was only one significant correlation between teacher reports of competence and child reported self-concept in corresponding domains. In direct contrast to what was hypothesized, when teachers reported negative school competence, ADHD boys also reported low general academic self-concept. However, extreme caution must be used in interpreting these findings. Due to the limited number of teacher reports in the negative direction, sample sizes used in these analyses were small. In the most extreme case, the correlation between teacher ratings of physical appearance competence and girl ratings of physical appearance self-concept could not be run because no teachers reported negative physical appearance competence.
Although the findings of this study are limited in regard to the illusory bias, it does not appear to support the “self-protective” bias as it was measured in previous studies (Hoza et al., 1993; Hoza, Waschabusch, Pelham, Molina, & Milich, 2000; Hoza et al., 2002; Ohan & Johnston, 2002). However, the illusory bias cannot be dismissed as a hypothesis for why self-concept reports do not differ between ADHD and non-ADHD children or as a hypothesis for the discrepancy between reports of self-concept and teacher reported competence in ADHD children. As defined by Hoza et al. (2002), illusory bias is the tendency to report more positive self-concept than would be warranted. Although the ADHD children self-reports in this study did not display a negative correlation with the teacher reports of competence, it does appear that they are presenting themselves in a more positive light than would be warranted based on the teacher reports.

A second hypothesis to attempt to reconcile the lack of agreement between most child reports of self-concept and teacher reports of competence in children with ADHD is the possibility that teachers are biased in their reports in children with ADHD. If teachers are already making negative attributions to children with ADHD because of their disruptive behavior in the classroom, it is likely these attributions may extend to the teachers’ estimates of competence. However, it is important to note that overall the results from the teacher reports indicated that they rated all children as competent and therefore any reporting “bias” is subtle. This may be the result of self-selection among the teachers. Teachers who are more involved and invested in their students are also more likely to be the ones who returned the TRS. This may have caused a systematic difference in reporting the competence of their students.

A third possibility to explain the difference in child and teacher reports of self-concept is that perhaps children with ADHD are accurately reporting their perception of their world, while
teachers simply have another perception. However, both viewpoints are equally valid. Perhaps children with ADHD are not reporting significantly different estimates of self-concept than non-ADHD children because they do not feel they are different from comparison children. In contrast to the child’s perception, a teacher may view a child as different from the other children. This would cause a discrepancy between teacher and child reports.

Shavelson et al. (1976) emphasized that self-concept is a separate construct than inferred self-concepts (i.e., self-concept inferred by external observers). Thus, when comparing teacher and child reports of self-concept, two separate constructs are being compared rather than two reports of the same construct. Further, the teacher report used in the study asked teachers to report on the child’s level of competence, a construct that may be further removed from self-report self-concept than inferred self-concept. This leads to difficulty in comparing teacher and child reports and in assigning more value to one of the reports.

Self-concept Differences Based on Gender

For both the lenient and stricter ADHD criterion groups, there was a main effect for gender on self-concept. In analyzing the univariate analyses for the more lenient ADHD group, boys reported significantly higher physical ability self-concept than girls. There was also a trend towards significance for mathematics self-concept with boys reporting higher mathematics self-concept than girls.

When only those children whose ADHD diagnosis was confirmed in more than one setting (i.e., home and school) were included, boys still reported significantly higher physical ability than girls did. Boys now also reported significantly higher mathematics self-concept than girls. In addition, there was a trend towards significance for peer relations self-concept. That is, boys reported higher self-concept than girls did. These findings are consistent with previous
research that found boys reported higher math and physical ability self-concept than girls (Bracken, 1992; Marsh, 1984, 1989; Marsh, Craven, & Debus, 1991). Previous research typically showed that boys rated themselves higher in physical appearance self-concept than girls; however, in the current study there was no gender difference found for this domain of self-concept (Bracken; Marsh, 1984, 1989; Marsh et al., 1991).

Contrary to what was hypothesized, no gender differences were found in global self-concept in the current study. This is in contrast to previous studies using the SDQ-I to measure self-concept (Marsh, 1984, 1989). However, these findings are similar to previous findings using other measures of self-concept (Bracken, 1992; Piers, 1984). In the current study, girls did not report higher self-concept than boys in any of the self-concept domains. This is in contrast to previous findings that indicated girls report higher general school and reading self-concept than boys (Marsh, 1984, 1989; Marsh et al., 1991). As with the previous studies, effect sizes of gender differences in self-concept are small indicating that there is little practical significance.

As hypothesized, there was no interaction between ADHD and gender. However, when the stricter ADHD criteria were used there was a trend towards significance for physical ability and mathematics self-concept. In further looking at the data, it was noted that while control group girls were similar to ADHD and non-ADHD boys in both physical ability and math self-concept, ADHD girls were lower. Similarly, teacher reports indicated no significant main effect for gender and no significant interactions between gender and ADHD status. There was, however, one notable trend. While teachers rated non-ADHD girls as similar to ADHD and non-ADHD boys on scholastic competencies, ADHD girls were rated lower. This is similar to trends found in child reported self-concept.
Previous research has suggested that girls with ADHD tended to show lower intellectual functioning than boys diagnosed with ADHD (Gershon, 2002; Guab & Carlson, 1997). This may account for the lower mathematic self-concept only present in ADHD girls. It is also important to remember that this trend was only present when girls who were rated as ADHD at home and school were included in the sample. Girls who are medicated or who are diagnosed with ADHD, Inattentive Type may be less likely to act out in the classroom and would therefore not be rated as displaying behaviors associated with ADHD by their teachers. The stricter sample of ADHD girls likely includes children with more extreme difficulties than the sample with ADHD only being confirmed at home.

A few hypotheses are considered as to why physical ability and mathematics self-concept is lower in girls, specifically girls with ADHD, than boys. First, socialization is likely playing a role. Girls with ADHD may be more susceptible to the effects of socialization than girls without ADHD. Girls with ADHD may be perceived as less competent and receive more negative feedback because they are further from the social norms of girls than ADHD boys are from the social norms for a boy. Previous research has also shown that boys are more likely to receive positive feedback from teachers during academic tasks than girls even when performing at the same level (Block, 1983). ADHD girls may be even more likely to internalize the negative messages because they are receiving fewer positive messages in other domains of their life.

An alternative hypothesis is that the items on the SDQ-I may be bias towards boys. For example in the physical ability questions, children are asked to respond to this item, “I am good at throwing a ball.” This item may be biased towards boys. If children were asked to respond to a physical activity such as jumping rope, girls may report higher physical ability self-concept because this is an activity that engage in more frequently.
Self-concept and Medication

Similar to the findings of Bussing et al. (2000) and Ialongo et al. (1994), there were no significant differences between global, social, or academic self-concept based on medication status of ADHD children. On teacher reports of competence, behavioral competence was significantly higher in ADHD children who were medicated than ADHD who were not medicated. This supports previous findings that taking stimulant medication improved behavior in children with ADHD (Forness, Swanson, Cantwell, Guthrie, & Sena, 1992; Hechtman, Weiss, & Perlman, 1984, Pelham et al., 1992; Spencer et al., 1996). There were no other differences in competence based on medication status of ADHD children.

Self-concept and Age

There was no significant relationship between age and global self-concept on the SDQ-I. This is in contrast to previous research, which supported a slight but measurable decline in self-concept as children aged (Bracken, 1996; Marsh, 1988, 1989). Although not significant, general school and physical appearance self-concept showed a trend towards a significant decrease in reported self-concept between the ages of 7 and 10. This is similar to findings by Marsh et al. (1991) that showed a decrease in physical appearance, peer relations, and general school self-concept between the ages of 5 and 8. A decline in general school self-concept is likely to occur during middle childhood because children begin school and are given increasingly more difficult work during these years (Bryne & Gavin, 1996; Marsh & Yeung, 1997). In addition, during middle childhood, children gain the ability to compare themselves to their peers (Butler, 1992). This may affect both their physical appearance and general school self-concepts. As with previous research, the effect sizes of these findings were small and practically insignificant.
Self-concept and Comorbidity

In regards to comorbid disorder, no global or domain specific self-concept differences were found between children with ADHD and a comorbid disorder, children with only ADHD, and control children. This is inconsistent with previous findings that suggested children with ADHD and an internalizing disorder (i.e., depression or anxiety) reported lower self-concept (Bussing et al., 2000; Hoza et al., 2002). There are several reason why the findings of this study may differ from previous findings. First, previous studies used clinically referred samples that are more likely to have comorbid disorders than a community-referred sample as used in the current study. Second, comorbid disorders in the current study were based off of parent report and were not confirmed.

Teacher reported control children had significantly higher athletic and social competence than children with either ADHD only or ADHD with a comorbid psychological disorder. There were no significant differences between either of the ADHD groups. The presence of a comorbid disorder did not further decrease teacher reports of competence in children with ADHD. With regard to behavioral competence, children with ADHD only reported significantly lower self-concept than children with ADHD with a comorbid disorder and control children. There was no significant difference between the children with ADHD and a comorbid disorder and control children. Children with a comorbid psychological disorder, particularly an internalizing disorder, may have less energy. Thus, they would be less active and less likely to display behavior problems than children with ADHD only. An alternative explanation is that these children may be on different or more medications than ADHD only children, and this may affect their behavior as well. Finally, children with comorbid psychological disorder in addition to ADHD may receive more understanding and patience from teachers and parents.
Implications of Findings

Theoretical Implications

As discussed previously, illusory bias is the tendency to report more positive self-concept than would be warranted (Hoza et al., 2002). While this study was unable to adequately measure illusory bias due to small sample sizes, several theoretical implications may still be discussed in light of discrepancies between TRS and SDQ-I findings. Although the ADHD children’s self-reported self-concept in this study did not display a negative correlation with the teacher reports of competence, it does appear that they are presenting themselves in a more positive light than would be warranted based on the teacher reports. However, it is unclear whether teacher or parent reports of competence or inferred self-concept are useful in determining adolescent or adult outcomes in children. The assumption that children are displaying a positive illusory bias also assumes that teacher reports are more reflective of reality than the children’s report of self-concept. However, whether or not a positive illusory bias is present for the child, their perceptions of the world and their self-concept are the basis for their behavior, interpretations and predictions of the world, and ultimately how they approach life. The illusory bias may, in fact, be a highly adaptive strategy used by a majority of individuals (Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000). Previous research done with terminally ill individuals suggests that the positive illusory bias protects against negative psychological effects (Taylor & Brown, 1988). Specifically, Taylor and Brown found that the positive illusions were particularly helpful when receiving negative feedback. Children with ADHD who employ a positive illusory bias may be using an appropriate adaptive tool that may protect themselves from negative feedback and further psychological difficulties.
Clinical Implications

There are several clinical implications that can be drawn from the study. First, although there are often low correlations between teacher, parent, and child report measures, all three reports are important sources of information. There are many advantages to using child self-report data in assessment and therapy, including the ability to gather information about the perceptions of the child. Knowledge of the child’s perception is helpful in treatment since a child’s self-concept affects their understanding of themselves and their world (Harter, 1999). Gathering information from multiple informants allows the clinician to gain more information. It is important to consider the possibility that each person may be contributing different accurate information to the clinical picture.

If a child is not seen as ADHD at school, they are likely to receive more positive feedback from their teacher. This positive feedback from the teacher may reduce effects of any negative feedback that is coming from the parents at home. One way to decrease negative feedback at school is to improve the child’s behavior through medication and/or increased structure. However, it is important to note that medication status did not affect reported self-concept.

Results of this study indicated that specific attention should be given to girls who are diagnosed with ADHD. They reported significantly lower mathematic and physical ability self-concept than control girls and ADHD and non-ADHD boys. Although self-concept is relatively stable overtime and becomes increasingly resistant to change as a child ages, primary interventions with ADHD girls may lessen the negative effects of the disorder.
Methodological Limitations

External Validity and Generalizability

Two major limitations become apparent when the issues of external validity and generalizability are considered. First, although efforts were made to recruit families from all ethnic backgrounds, the sample was predominantly Caucasian (approximately 80%). Thus, the generalizability of the current results is limited to self-concept in a Caucasian population. No definitive conclusions can be drawn regarding possible differences in self-concept based on gender or ADHD status that may be present in different ethnic and cultural groups. In addition to poor limited ethnic diversity, the current sample had a lack of diversity in the socioeconomic class. Specifically, approximately half of the entire sample’s income fell in the greater than $60,000 range. Consequently, broad generalizations to lower socioeconomic classes can only be made tentatively.

In addition, it is important to acknowledge the rate of comorbidity among children in the ADHD sample. Thirty-six percent of the children in the ADHD sample were children diagnosed with at least one other psychiatric diagnosis. Although the prevalence of comorbid disorders in the current ADHD sample is lower than other samples (e.g., Bussing et al., 2000), ADHD-specific conclusions must be drawn tentatively. Future research should focus on recruitment of children without other psychiatric disorders or learning difficulties. An alternative route to remedy this issue would be to statistically control for comorbid disorders with parent reports of various psychiatric symptoms.

Statistical Power

An obvious limitation in the present study is the lack of power that diminished the chances of finding significant effects when true effects may exist. Future studies should strive to
achieve adequate levels of power to assess self-concept in children with and without ADHD, especially by improving the response rate among teachers. One method that may improve teacher responses includes making follow-up phone calls reminding teachers to complete and return the information packet. In addition, recruiting more research participants could increase power.

Measurement Limitations

There were several measurement limitations present in this study. First, the TRS was limited by teachers not reporting poor competence for their students. This seemed especially problematic with the physical appearance domain where very few children were rated in the negative direction. In reviewing the items on the TRS, it was noted that several were adversely worded (e.g., “This child would be better if s/he acted differently”). It is likely that teachers were not willing to negatively endorse these items.

In terms of the SDQ-I, children were read the items and were then asked to respond with their answer. Given the high face validity of the measure, this likely introduced a higher degree of social desirability than if the children were able to answer the questionnaires without help. In addition, all of the questions are worded in the positive direction. This increases the likelihood of a response bias either negative or positive. Finally, the SDQ-I does not specify what reference point (e.g., their ideal self, their peers, the expectations of teachers or parents) the child is to use when reporting their self-concept. This may be problematic because previous research has shown that children rate their self-concept based on their context or reference point (Harter, Waters, & Whitesell, 1998). For example, a child may rate himself as having high self-concept in comparison to peers, but low in comparison to the perceived expectations of his teachers.
Future Directions

The results of the present study indicate a further need to assess self-concept in children. First, examining variables that may account for more of the variance in self-concept may prove helpful in determining what factors are most likely to affect a child’s self-concept. If such variables can be identified, they may then be points of intervention in helping children with poor self-concept. Given the importance of external feedback in the formation of self-concept, examining the relationship between parent/parenting variables and child self-concept may help shed light on self-concept formation. Specific parent/parenting variables that may be included in future studies include the number of positive or negative comments made to their child in a structure play task, completion of a parent training class, marital status, history of psychological disorder, and having attended counseling.

The results of the present study also indicated that more research is needed to determine the presence of an illusory bias in the self-reports of ADHD boys. Future studies may include the TRS and its parallel measure of child self-concept, the Self-Perception Profile for Children. These measures have five corresponding scales and are likely to measure domains more similarly than the TRS and the SDQ-I. Future studies may also incorporate both a social interaction task and comparisons of teacher and child reports to measure illusory bias.

Next, future studies should also make efforts to recruit a sample that is inclusive of more fathers and greater ethnic, cultural and socioeconomic diversity that would lend itself to increased generalizability and validity. Fourth, researchers should consider the addition of several measures. First, the use of a social desirability measure for both children and teachers to assess the degree to which they are attempting to present themselves or their students in a positive light. This becomes increasingly important if child measures are to be read aloud by the
examiner. Including a structured interview would allow the diagnosis of ADHD by the researchers as well as the identification of any comorbid psychological disorders that may be present. Finally, future studies could make use of the control criteria laid about for the SDQ-I to identify and exclude invalid protocols (see Marsh, 1990b for criteria).
Appendix A

Figure 1
Figure 1. Shavelson et al. (1976) Self-concept Model Adapted
Appendix B

Tables
Table 1

Diagnostic Criteria for Attention-Deficit/Hyperactivity Disorder

A. Either (1) or (2)
   (1) six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:
      Inattention
      a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
      b) often has difficult sustaining attention in tasks or play activities
      c) often does not seem to listen when spoken to directly
      d) 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 directions)
      e) often has difficulty organizing tasks and activities
      f) often avoids, dislikes, or is reluctant to engage in tasks, that require sustained mental effort (such as schoolwork, or homework)
      g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
      h) is often easily distracted by extraneous stimuli
      i) is often forgetful in daily activities
   (2) Six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level
      Hyperactivity
      a) often fidgets with hands or feet or squirms in seat
      b) often leaves seat in classroom or in other situations in which remaining seated is expected
      c) 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)
      d) often has difficulty playing or engaging in leisure activities quietly
      e) is often “on the go” or often acts as if “driven by a motor”
      f) often talks excessively
      Impulsivity
      g) often blurts out answers before questions have been completed
      h) often has difficulty awaiting turn
      i) often interrupts or intrudes on others (e.g., butts into conversations or games)

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.
C. Some impairment from the symptoms is present in two or more settings (e.g., at school or work and at home)
D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning
E. 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).

Table 2

*Descriptive Statistics on the Age of the Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADHD Group</th>
<th>Control Group</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 61)</td>
<td>(n = 47)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Children’s Age</td>
<td>8.96</td>
<td>1.20</td>
<td>8.38</td>
</tr>
<tr>
<td>in years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents’ Age</td>
<td>38.05</td>
<td>6.92</td>
<td>38.62</td>
</tr>
<tr>
<td>in years</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .01.
Table 3

Descriptive Statistics for Children in the ADHD and Comparison Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADHD Group (n = 61)</th>
<th>Control Group (n = 47)</th>
<th>$\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Child Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>39</td>
<td>63.9</td>
<td>25</td>
</tr>
<tr>
<td>Female</td>
<td>22</td>
<td>36.1</td>
<td>22</td>
</tr>
<tr>
<td>Child’s Grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st grade</td>
<td>7</td>
<td>11.5</td>
<td>8</td>
</tr>
<tr>
<td>2nd grade</td>
<td>12</td>
<td>19.7</td>
<td>13</td>
</tr>
<tr>
<td>3rd grade</td>
<td>20</td>
<td>32.8</td>
<td>14</td>
</tr>
<tr>
<td>4th grade</td>
<td>13</td>
<td>21.3</td>
<td>8</td>
</tr>
<tr>
<td>5th grade</td>
<td>7</td>
<td>11.5</td>
<td>1</td>
</tr>
<tr>
<td>Unspecified</td>
<td>2</td>
<td>3.3</td>
<td>1</td>
</tr>
<tr>
<td>Children’s Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian American</td>
<td>1</td>
<td>1.6</td>
<td>1</td>
</tr>
<tr>
<td>African American</td>
<td>2</td>
<td>3.3</td>
<td>1</td>
</tr>
<tr>
<td>Caucasian</td>
<td>49</td>
<td>80.3</td>
<td>36</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2</td>
<td>3.3</td>
<td>4</td>
</tr>
<tr>
<td>Biracial</td>
<td>5</td>
<td>8.2</td>
<td>3</td>
</tr>
<tr>
<td>Unspecified</td>
<td>1</td>
<td>1.6</td>
<td>2</td>
</tr>
</tbody>
</table>

Note. $\chi^2$ = Pearson Chi Square.

*a Chi Square run with 4th and 5th grade combined and without participants that were unspecified due to low $n$.

*b Chi Square run with two groups, Minority vs. Caucasian due to low $n$. 
Table 4

Descriptive Statistics for Parents in the ADHD and Comparison Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADHD Group (n = 61)</th>
<th>Control Group (n = 47)</th>
<th>χ²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Parent Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>53</td>
<td>86.9</td>
<td>38</td>
</tr>
<tr>
<td>Father a</td>
<td>8</td>
<td>13.1</td>
<td>8</td>
</tr>
<tr>
<td>Parent Education level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10th–12th grade</td>
<td>16</td>
<td>27.8</td>
<td>9</td>
</tr>
<tr>
<td>Technical School/Community College</td>
<td>10</td>
<td>16.4</td>
<td>9</td>
</tr>
<tr>
<td>University degree</td>
<td>20</td>
<td>32.8</td>
<td>20</td>
</tr>
<tr>
<td>Advanced degree</td>
<td>8</td>
<td>13.1</td>
<td>6</td>
</tr>
<tr>
<td>Unspecified</td>
<td>6</td>
<td>9.8</td>
<td>1</td>
</tr>
<tr>
<td>Parent’s Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>1</td>
<td>1.6</td>
<td>1</td>
</tr>
<tr>
<td>Asian American</td>
<td>2</td>
<td>3.3</td>
<td>1</td>
</tr>
<tr>
<td>Caucasian</td>
<td>52</td>
<td>85.2</td>
<td>38</td>
</tr>
<tr>
<td>Hispanic</td>
<td>5</td>
<td>8.2</td>
<td>4</td>
</tr>
<tr>
<td>Biracial</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1.6</td>
<td>1</td>
</tr>
<tr>
<td>Parent Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;$30,000</td>
<td>13</td>
<td>21.4</td>
<td>9</td>
</tr>
<tr>
<td>$30-60,000</td>
<td>17</td>
<td>27.9</td>
<td>9</td>
</tr>
<tr>
<td>&gt;$60,000</td>
<td>31</td>
<td>50.9</td>
<td>27</td>
</tr>
</tbody>
</table>

Note. χ² = Pearson Chi Square.

a Includes one stepfather.

b Participants who did not specify an education level were not included in the analysis.

c Chi Square run with two groups, Minority vs. Caucasian due to low n.
Table 4 (continued)

*Descriptive Statistics for Parents in the ADHD and Comparison Groups*

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADHD Group $(n = 61)$</th>
<th>Control Group $(n = 47)$</th>
<th>$\chi^2$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n$</td>
<td>%</td>
<td>$n$</td>
<td>%</td>
</tr>
<tr>
<td>Parent Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never married</td>
<td>4</td>
<td>6.6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Married</td>
<td>39</td>
<td>63.9</td>
<td>36</td>
<td>76.6</td>
</tr>
<tr>
<td>Separated</td>
<td>1</td>
<td>1.6</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>Divorced</td>
<td>14</td>
<td>23.0</td>
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<td>14.9</td>
</tr>
<tr>
<td>Widowed</td>
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<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>Engaged</td>
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<td>1.6</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* $\chi^2$ = Pearson Chi Square.

*aChi Square run with two groups, currently married vs. not currently married or separated.*
Table 5

*Other Psychiatric Diagnoses for Children in the ADHD and Comparison Groups*

<table>
<thead>
<tr>
<th>Psychiatric Diagnoses(^a)</th>
<th>ADHD Group ((n = 61))</th>
<th>Control Group ((n = 47))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n)</td>
<td>%</td>
</tr>
<tr>
<td>Bipolar Disorder</td>
<td>3</td>
<td>4.92</td>
</tr>
<tr>
<td>Generalized Anxiety Disorder</td>
<td>8</td>
<td>13.11</td>
</tr>
<tr>
<td>Learning Disorder</td>
<td>4</td>
<td>6.56</td>
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<tr>
<td>Major Depressive Disorder</td>
<td>7</td>
<td>11.48</td>
</tr>
<tr>
<td>Obsessive-Compulsive Disorder</td>
<td>3</td>
<td>4.92</td>
</tr>
<tr>
<td>Oppositional Defiant Disorder</td>
<td>8</td>
<td>13.11</td>
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<tr>
<td>Post Traumatic Stress Disorder</td>
<td>1</td>
<td>1.64</td>
</tr>
<tr>
<td>Separation Anxiety Disorder</td>
<td>2</td>
<td>3.28</td>
</tr>
</tbody>
</table>

\(^a\)Psychiatric diagnoses are not mutually exclusive.
### Table 6

*Internal Consistencies for Self Description Questionnaire-I (SDQ-I) Scales and Subscales*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>α</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Ability</td>
<td>.77</td>
<td>129</td>
</tr>
<tr>
<td>Physical Appearance</td>
<td>.84</td>
<td>130</td>
</tr>
<tr>
<td>Peer Relations</td>
<td>.80</td>
<td>130</td>
</tr>
<tr>
<td>Parent Relationship</td>
<td>.75</td>
<td>130</td>
</tr>
<tr>
<td>Mathematic</td>
<td>.89</td>
<td>130</td>
</tr>
<tr>
<td>Reading</td>
<td>.90</td>
<td>129</td>
</tr>
<tr>
<td>General School</td>
<td>.86</td>
<td>129</td>
</tr>
<tr>
<td>General Self</td>
<td>.72</td>
<td>129</td>
</tr>
<tr>
<td>Total Non-Academic</td>
<td>.88</td>
<td>129</td>
</tr>
<tr>
<td>Total Academic</td>
<td>.89</td>
<td>128</td>
</tr>
<tr>
<td>Total Self score</td>
<td>.93</td>
<td>128</td>
</tr>
</tbody>
</table>
Table 7

*Correlations Matrix for Self Description Questionnaire-I (SDQ-I) and Teacher Report Scale (TRS) Subscales for ADHD Boys*

<table>
<thead>
<tr>
<th>Variable</th>
<th>SDQ-I Physical Ability</th>
<th>SDQ-I Physical Appearance</th>
<th>SDQ-I Peer Relations</th>
<th>SDQ-I General School</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRS Athletic</td>
<td>$r = -0.04$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$(n = 11)$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRS Physical Appearance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$(n = 2)^a$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRS Social Acceptance</td>
<td></td>
<td></td>
<td>$r = 0.26$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$(n = 25)$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRS Scholastic Competency</td>
<td></td>
<td></td>
<td></td>
<td>$r = 0.95^{**}$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$(n = 5)$</td>
</tr>
</tbody>
</table>

*^aPearson Product Moment Correlation as not able to be calculated due to no variance in the TRS Physical Appearance subscale

**$p < .01$.**
Table 8

*Correlations Matrix for Self Description Questionnaire-I (SDQ-I) and Teacher Report Scale (TRS) Subscales for ADHD Girls*

<table>
<thead>
<tr>
<th>Variable</th>
<th>SDQ-I Physical Ability</th>
<th>SDQ-I Physical Appearance</th>
<th>SDQ-I Peer Relations</th>
<th>SDQ-I General School</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRS Athletic</td>
<td>( r = .42 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>((n = 7))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRS Physical Appearance</td>
<td>(-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>((n = 0)^a)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRS Social Acceptance</td>
<td>(-)</td>
<td></td>
<td>(r = .06)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>((n = 8))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRS Scholastic Competency</td>
<td>(-)</td>
<td></td>
<td>(-)</td>
<td>(r = .01)</td>
</tr>
<tr>
<td></td>
<td>(-)</td>
<td></td>
<td></td>
<td>((n = 5))</td>
</tr>
</tbody>
</table>

\(^{a}\)Pearson Product Moment Correlation as not able to be calculated due to no variance in the TRS Physical Appearance subscale
Table 9

*Correlations for SDQ-I Subscales and Age*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Age</th>
<th>r</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Self</td>
<td></td>
<td>-.08</td>
<td>130</td>
</tr>
<tr>
<td>Physical Ability</td>
<td></td>
<td>.03</td>
<td>128</td>
</tr>
<tr>
<td>Physical Appearance</td>
<td></td>
<td>-.13††</td>
<td>129</td>
</tr>
<tr>
<td>Parent Relationship</td>
<td></td>
<td>.04</td>
<td>130</td>
</tr>
<tr>
<td>Peer Relations</td>
<td></td>
<td>.01</td>
<td>130</td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td>-.07</td>
<td>130</td>
</tr>
<tr>
<td>Reading</td>
<td></td>
<td>-.11</td>
<td>130</td>
</tr>
<tr>
<td>General School</td>
<td></td>
<td>-.13††</td>
<td>130</td>
</tr>
</tbody>
</table>

††p < .10.
Table 10

*Intercorrelations for Children’s Social Self-concept as Measured by the Self Description Questionnaire-I (SDQ-I) Peer Relations Self Scale and Internalizing and ADHD Symptoms Predictor Variables (n = 128)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDQ-I Peer Relations Scale</td>
<td>-.08</td>
<td>-.15*</td>
</tr>
<tr>
<td>Predictor Variable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. CBCL Internalizing Scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. ADHD-RS-IV: HV Total Score</td>
<td>.46**</td>
<td>-</td>
</tr>
</tbody>
</table>

*p < .05, **p < .001.*
Table 11

Regression Analysis Summary for Internalizing and ADHD Symptoms Predicting Social Self-concept as Measured by the Self Description Questionnaire-I (SDQ-I) (n = 128)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>(\beta)</th>
<th>(sr^2)</th>
<th>Adj (R^2)</th>
<th>(\Delta R^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 Internalizing Symptoms</td>
<td>- .002</td>
<td>.006</td>
<td>-.08</td>
<td>.006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2 Internalizing Symptoms</td>
<td>.006</td>
<td>.0002</td>
<td>-.02</td>
<td>.0002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD Symptoms</td>
<td>.00</td>
<td>.04</td>
<td>-.14</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. \(sr^2\) = squared semipartial correlation.*
Table 12

*Intercorrelations for Children’s Academic Self-concept as Measured by the Self Description Questionnaire-I (SDQ-I) General School Scale and Internalizing and ADHD Symptoms Predictor Variables (n = 128)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDQ-I Academic Scale</td>
<td>-.16*</td>
<td>-.13</td>
</tr>
<tr>
<td>Predictor Variable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. CBCL Internalizing Scale</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>1. ADHD-RS-IV: HV Total Score</td>
<td>.46**</td>
<td>-</td>
</tr>
</tbody>
</table>

*p < .05, **p < .001.*
Table 13

Regression Analysis Summary for Internalizing and ADHD Symptoms Predicting Academic Self-concept as Measured by the Self Description Questionnaire-I (SDQ-I) (n = 128)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>sr²</th>
<th>Adj R²</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.02†</td>
<td>.03</td>
</tr>
<tr>
<td>Internalizing Symptoms</td>
<td>-.15</td>
<td>.08</td>
<td>-.16</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.01</td>
<td>.004</td>
</tr>
<tr>
<td>Internalizing Symptoms</td>
<td>-.12</td>
<td>.10</td>
<td>-.12</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD Symptoms</td>
<td>.00</td>
<td>.05</td>
<td>-.07</td>
<td>.004</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. sr² = squared semipartial correlation.

†p < .10.
Table 14

*Intercorrelations for Children’s Global Self-concept as measure by the Self Description Questionnaire-I (SDQ-I) General Self Scale and Internalizing and ADHD Symptoms Predictor Variables (n = 128)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDQ-I General Self Scale</td>
<td>-.11</td>
<td>-.08</td>
</tr>
<tr>
<td>Predictor Variable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. CBCL Internalizing Scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. ADHD-RS-IV: HV Total Score</td>
<td>.46**</td>
<td>-</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01.*
Table 15

Regression Analysis Summary for Internalizing and ADHD Symptoms Predicting Global Self-concept as Measured by the Self Description Questionnaire-I (SDQ-I) \((n = 128)\)

<table>
<thead>
<tr>
<th>Variable</th>
<th>(B)</th>
<th>(SEB)</th>
<th>(\beta)</th>
<th>(sr^2)</th>
<th>Adj (R^2)</th>
<th>(\Delta R^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing Symptoms</td>
<td>.00</td>
<td>.05</td>
<td>-.11</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td>-.002</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>Internalizing Symptoms</td>
<td>.00</td>
<td>.06</td>
<td>-.01</td>
<td>.005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD Symptoms</td>
<td>.00</td>
<td>.03</td>
<td>-.03</td>
<td>.0009</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. \(sr^2\) = squared semipartial correlation.*
Table 16

*Mean Scores and Standard Deviations for Teacher Rating Scale (TRS) in Children With and Without ADHD (n = 52)*

<table>
<thead>
<tr>
<th></th>
<th>Scholastic</th>
<th></th>
<th>Athletic</th>
<th></th>
<th>Social</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>ADHD Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD</td>
<td>8.07</td>
<td>2.62</td>
<td>6.64</td>
<td>2.15</td>
<td>6.25</td>
<td>2.49</td>
</tr>
<tr>
<td>Control</td>
<td>10.21</td>
<td>2.38</td>
<td>8.58</td>
<td>2.06</td>
<td>10.08</td>
<td>2.38</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>9.10</td>
<td>2.70</td>
<td>7.42</td>
<td>2.14</td>
<td>7.85</td>
<td>2.76</td>
</tr>
<tr>
<td>Female</td>
<td>9.00</td>
<td>2.81</td>
<td>7.74</td>
<td>2.62</td>
<td>8.33</td>
<td>3.65</td>
</tr>
</tbody>
</table>
Table 16 (continued)

Mean Scores and Standard Deviations for Teacher Rating Scale (TRS) in Children With and Without ADHD (n = 52)

<table>
<thead>
<tr>
<th>Domains of Competence as Measured by the TRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>ADHD Status</td>
</tr>
<tr>
<td>ADHD</td>
</tr>
<tr>
<td>Control</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
</tbody>
</table>
Table 17

*Multivariate and Univariate Analyses of Variance F Ratios for ADHD Status X Gender for Teacher Rating Scale (TRS) with Internalizing Symptoms Statistically Controlled (n = 52)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>MANOVA</th>
<th>Scholastic</th>
<th>Athletic</th>
<th>Social</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD Status</td>
<td>F (5, 47)</td>
<td>F (1, 47)</td>
<td>F (1, 47)</td>
<td>F (1, 47)</td>
<td>F (1, 47)</td>
</tr>
<tr>
<td>13.92***</td>
<td>16.96***</td>
<td>8.17**</td>
<td>22.79***</td>
<td>51.77***</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.21</td>
<td>.08</td>
<td>.03</td>
<td>.009</td>
<td>.10</td>
</tr>
<tr>
<td>ADHD Status X Gender</td>
<td>1.54</td>
<td>4.56*</td>
<td>2.05</td>
<td>.03</td>
<td>1.88</td>
</tr>
</tbody>
</table>

Note. F ratios were generated from Wilk’s Lambda statistic. MANOVA = multivariate analysis of variance; ANOVA = analysis of variance

***p < .001. **p < .01. *p < .05.
Appendix C

Demographic Information and History Form
DYAD # __________

Today’s Date __________

DEMOGRAPHIC INFORMATION AND HISTORY FORM

1. The parent (or guardian) who is filling out this questionnaire and participating with a child is the child’s (please check one box):
   
   (1) □ mother (2) □ father (3) □ stepmother (4) □ stepfather
   (5) □ foster mother (6) □ foster father (7) □ grandmother
   (8) □ grandfather (9) □ other please specify: ________________________

2. Other guardians who live with you and this child are (check “yes” or “no” for each person or “N/A” (does not apply; there is no such person)):

   (1)Yes (2)No (3)N/A (1)Yes (2)No (3)N/A
   a. mother □ □ □ b. father □ □ □
   c. stepmother □ □ □ d. stepfather □ □ □
   e. foster mother □ □ □ f. foster father □ □ □
   g. grandmother □ □ □ h. grandfather □ □ □
   i. other (please specify): ________________________

3. Other parents who see this child every month or more but DO NOT live with you are (check “yes” or “no” for each person or “N/A” (does not apply; there is no such person)):

   (1)Yes (2)No (3)N/A (1)Yes (2)No (3)N/A
   a. mother □ □ □ b. father □ □ □
   c. stepmother □ □ □ d. stepfather □ □ □
   e. foster mother □ □ □ f. foster father □ □ □
   g. grandmother □ □ □ h. grandfather □ □ □
   e. other (please specify): ________________________

4. How many other children live in your household? (circle one)
   0 1 2 3 4 5 6 7 8 9 10 or more

5. How many adults besides yourself regularly help you care for the child(ren)? [Do not include paid baby-sitters or daycare workers]
   (circle one) 0 1 2 3 4 or more
6. The participating child is a:  (1) ☐ girl    (2) ☐ boy

7. Have there been any months in this child’s life when you did not live in the same house?  
   (1) ☐ Yes    (2) ☐ No

If yes, please list age of child at separation from you, length of separation, amount of contact you did have with the child (if any) and the reason for separation:
Age of Child    Length of Separation    Contact?    Reason for Separation

8. Currently, about how many hours per day do you spend with this child (do not count time when child is asleep at night, but do count child’s naptime if you are home with them). If it changes from day to day, figure an average:
   (1) ☐ 1- 2 hours    (2) ☐ 3 – 4 hours    (3) ☐ 5 – 6 hours    (4) ☐ 7 – 8 hours
   (5) ☐ 9- 10 hours    (6) ☐ 11 or more hours

9. Your date of birth: ________________  10. Your child’s date of birth:____________

11. Your age today: ________  12. Your child’s age today: ________

13. Your child’s grade in school (if completing during the summer, choose the grade that your child will enter next Fall):
   (1) ☐ Not in school    (2) ☐ pre-school    (3) ☐ kindergarten
   (4) ☐ 1st grade    (5) ☐ 2nd grade    (6) ☐ 3rd grade    (7) ☐ 4th grade    (8) ☐ 5th grade
   (9) ☐ Other (please explain)________________________________________________

14. How would you describe your ethnic-racial background?
   (1) ☐ Asian-American    (2) ☐ Black (African-American)    (3) ☐ White (Caucasian)
   (4) ☐ Hispanic    (5) ☐ Middle Eastern (Arab)    (6) ☐ Native American Indian
   (7) ☐ Biracial (please specify________________________________________________)
   (8) ☐ Other (please specify ________________________________________)

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15. Is English your first language? (1) ☐ Yes (2) ☐ No (please specify ____________)

16. How would you describe your child’s ethnic-racial background?
(1) ☐ Asian-American (2) ☐ Black (African-American) (3) ☐ Caucasian (White)
(4) ☐ Hispanic (5) ☐ Middle Eastern (Arab) (6) ☐ Native American Indian
(7) ☐ Biracial (please specify _____________________________)
(8) ☐ Other (please specify _____________________________)

17. Is English your child’s first language? (1) ☐ Yes (2) ☐ No (specify ____________)

18. List the country in which the following people were born. (If they have moved from their birth country to the US, how many years have they lived in this country?)

<table>
<thead>
<tr>
<th>Country of Birth</th>
<th>Number of Years in USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Child</td>
<td>_______________________</td>
</tr>
<tr>
<td>b. Child’s Mother</td>
<td>_______________________</td>
</tr>
<tr>
<td>c. Child’s Father</td>
<td>_______________________</td>
</tr>
<tr>
<td>d. Child’s Maternal Grandmother (Mother’s Mother)</td>
<td>_______________________</td>
</tr>
<tr>
<td>e. Child’s Maternal Grandfather (Mother’s Father)</td>
<td>_______________________</td>
</tr>
<tr>
<td>f. Child’s Paternal Grandmother (Father’s Mother)</td>
<td>_______________________</td>
</tr>
<tr>
<td>g. Child’s Paternal Grandfather (Father’s Father)</td>
<td>_______________________</td>
</tr>
</tbody>
</table>

19. Which category best describes your current marital status?
1 (1) ☐ never married (2) ☐ married (3) ☐ separated (4) ☐ divorced
2 (5) ☐ widowed (6) ☐ separated (7) ☐ other(explain ____________)

20. Which category best describes your current relationship status?
3 (1) ☐ single, not dating (2) ☐ single, but dating casually
4 (3) ☐ single, but dating seriously (4) ☐ living together/engaged
5 (5) ☐ married (6) ☐ separated
6 (7) ☐ other (please explain _____________________________)

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21. How long have you been in your current relationship?
   (1) [ ] I’m not in a relationship  (2) [ ] 3 months or less  (3) [ ] 3-9 months
   (4) [ ] about 1 year  (5) [ ] about 2 years  (6) [ ] 3-4 years
   (7) [ ] 5 years of more

22. What is the highest degree you’ve earned or the last grade in school you completed?
   (1) [ ] 8th grade  (2) [ ] 9th grade  (3) [ ] 10th grade  (4) [ ] 11th grade
   (5) [ ] 12th grade (H.S. diploma or GED)  (6) [ ] technical/trade school diploma
   (7) [ ] community college degree  (8) [ ] university degree, specify ____________________________
   (9) [ ] advanced degree, specify ____________________________
   (10) [ ] other, please specify ____________________________

23. Are you currently a student? (1) [ ] Yes, part-time  (2) [ ] Yes, full-time  (3) [ ] No

24. Are you currently employed? (1) [ ] Yes, part-time  (2) [ ] Yes, full-time  (3) [ ] No

25. If yes, what is your job? _______________________________________________________

_____________________________________________________

---

IN THIS SECTION, PLEASE ANSWER FOR THE CHILD’S OTHER PRIMARY PARENT (OR GUARDIAN), IF THEY HAVE ONE. Choose the person with whom the child lives at least some of the time (for example, your significant other or, if you are divorced, the child’s other biological parent). [If there is more than one person in this category, choose the one with whom the child spends the most time.] If there is no other parent/guardian, skip to #30.

26. What is the highest degree this parent/guardian has earned or the last grade in school they completed?
   (1) [ ] 8th grade  (2) [ ] 9th grade  (3) [ ] 10th grade  (4) [ ] 11th grade
   (5) [ ] 12th grade (H.S. diploma or GED)  (6) [ ] technical/trade school diploma
   (7) [ ] community college degree  (8) [ ] university degree, specify________________________
   (9) [ ] advanced degree, specify__________________________
27. Are they currently a student? (1) Yes, part-time  (2) Yes, full-time  (3) No

28. Are they currently employed? (1) Yes, part-time  (2) Yes, full-time  (3) No

29. If yes, what is their job? _______________________________________________________

29a. The guardian you had in mind for Questions #26-29 is the child’s:
(1) mother  (2) father  (3) stepmother  (4) stepfather

(5) foster mother  (6) foster father  (7) grandmother

(8) grandfather  (9) other please specify: ________________________

30. What is your approximate yearly household income before taxes (include child support received, if that applies to you; do not include public assistance [e.g., welfare or food stamps])?
(1) less than $10,000  (2) $10,000 – $20,000  (3) $20,000 – $30,000

(4) $30,000 – $40,000  (5) $40,000 – $50,000  (6) $50,000 – $60,000

(7) $60,000 – $70,000  (8) $70,000 – $100,000  (9) over $100,000

31. Have you ever taken parenting classes? (1) Yes  (2) No

If yes, please describe the type of classes you had and for how long:

<table>
<thead>
<tr>
<th>Description of Parenting Classes</th>
<th>Number of Classes (or time span)</th>
</tr>
</thead>
</table>

32. Have you ever attended counseling? (1) Yes  (2) No

If yes, please describe the type of counseling you had and for how long:

<table>
<thead>
<tr>
<th>Description of Counseling</th>
<th>Number of Sessions (or time span)</th>
</tr>
</thead>
</table>
33. Has the child who is participating in this study ever attended counseling?  
(1) ☐ Yes  (2) ☐ No

If yes, please describe the type of counseling he or she had and for how long:

<table>
<thead>
<tr>
<th>Description of Counseling</th>
<th>Number of Sessions (or time span)</th>
</tr>
</thead>
</table>

34. Has this child ever repeated a grade?  (1) ☐ Yes  (2) ☐ No
35. If yes, which grade? ___________________

36. Has this child ever skipped a grade?  (1) ☐ Yes  (2) ☐ No
37. If yes, which grade? ___________________

38. Does your child receive special education services at school?  (1) ☐ Yes  (2) ☐ No
39. If yes, what is your child’s eligibility? (Check all that apply)  
(1) ☐ Yes  (2) ☐ No

- b. Orthopedically Impaired
- c. Other Health Impaired
- d. Auditorially Impaired
- e. Visually Impaired
- f. Deaf-Blind
- g. Mentally Retarded
- h. Emotionally Disturbed
- i. Learning Disabled
- j. Speech Impaired
- k. Autistic
- l. Traumatic Brain Injury

39. If yes, grade your child began receiving special education services _______

40. Is this child currently taking any medication?  (1) ☐ Yes  (2) ☐ No
41. If yes, please list the name of the medication(s) and dosage(s).  

__________________________  
__________________________
42. Has your child ever been diagnosed with any of the following: (Check all that apply)

(1) Yes (2) No (3) Never diagnosed, but I suspect this child has this disorder

a. Attention-Deficit/Hyperactivity Disorder (ADHD) □ □ □
b. Oppositional Defiant Disorder □ □ □
c. Conduct Disorder □ □ □
d. Tourette’s Disorder □ □ □
e. Separation Anxiety Disorder □ □ □
f. Generalized Anxiety Disorder □ □ □
g. Major Depressive Disorder □ □ □
h. Dysthymic Disorder □ □ □
i. Bipolar Disorder □ □ □
j. Other (please specify ________________)

43. If you answered “yes” to any disorder listed in Question #42, how old was your child when first diagnosed? _______________________

44. If you answered “yes” to any disorder listed in Question #42, who was your child first diagnosed by?

School counselor/psychologist (LSSP, Ph.D.) (1) □
Other counselor/psychologist (M.S., Ph.D., Psy.D.) (2) □
Psychiatrist (M.D.) (3) □
Family physician/general practitioner (M.D.) (4) □
Other (please specify ________________ ) (5) □

45. Is your child currently receiving counseling for the disorder(s) checked in #42?

(1) □ Yes (2) □ No, never (3) □ In the past only (4) □ Does not apply (no disorder)

46. Which category best describes your religious preference?

Agnostic (1) □
Atheist (2) □
Buddhism (3) □
Catholicism (4) □
Hindu (5) □
Judaism (6) □
Muslim (7) □
Protestant (8) □ Specify Denomination ________________
Other (9) □ Specify ________________
47. How often do you attend religious services?

- More than once per week (1)
- About once per week (2)
- About once per month (3)
- About once or twice per year (4)
- Seldom (less than once per year) (5)
- Never (6)

48. Have you ever been diagnosed with any of the following: (Check all that apply)

(1) Yes  (2) No  (3) Never

diagnosed, but I suspect I have this disorder

- a. Attention-Deficit/Hyperactivity Disorder (ADHD)
- b. Personality Disorder
- c. Substance Abuse or Dependence
- d. Generalized Anxiety Disorder
- e. Major Depressive Disorder
- f. Dysthymic Disorder
- g. Bipolar Disorder
- h. Other (please specify ______________________)

49. If you answered “yes” to any disorder listed in Question #48, are you currently taking mediation(s) for the disorders?

(1) ☐ Yes (specify__________________) (2) ☐ No (3) ☐ Does not apply (no disorder)
50. Has the participating child’s other biological parent ever been diagnosed with any of the following: (Check all that apply)

<table>
<thead>
<tr>
<th>(1)Yes</th>
<th>(2)No</th>
<th>(3)Never diagnosed</th>
<th>(4)I don’t know if child has this disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ADHD</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. Personality Disorder</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Substance Abuse or Dependence</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d. Generalized Anxiety Disorder</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e. Major Depressive Disorder</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f. Dysthymic Disorder</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g. Bipolar Disorder</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>h. Other (please specify ________)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
Appendix D

Consent Form
Subject Name: _______________________________  Date: _____________________

Title of Study: Parent-Child Relationships and Social Functioning in Children with and without ADHD

Principal Investigator: Patricia Kaminski, Ph.D.
Co-Investigators: Sarah L. Durrant, M.S., Shelly Warren, M.S., & Corinne Smith, M.S.

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the proposed procedures. It describes the procedures, benefits, risks, and discomforts of the study. It also describes the alternative treatments that are available to you and your right to withdraw from the study at any time. It is important for you to understand that no guarantees or assurances can be made as to the results of the study.

PURPOSE OF THE STUDY AND HOW LONG IT WILL LAST:
The purpose of this study is to observe parent-child interactions and how children function socially. Each parent’s involvement will consist of 3 hours. Each child’s involvement will be about 2 hours.

DESCRIPTION OF THE STUDY INCLUDING THE PROCEDURES TO BE USED:
Parents and children will come to the UNT campus for the study. Each parent-child pair will be videotaped while they play together with a specific set of toys. A research assistant will interrupt the play frequently and suggest a new storyline. After 30 minutes of play, each person will watch a few minutes of the videotape and be asked some questions about it. Then, each parent will answer a set of written questionnaires related to parenting behaviors, attitudes, stressors, parent’s and child’s psychological symptoms (for example: worrying, hyperactivity, depression, etc.), and the demographics and brief medical history of their family [for example, level of education, marital status, number of children, and current medications (child only)]. While the parent is completing the questionnaires, the child will go to a separate room with a graduate student to complete 3 questionnaires that ask about parent behaviors (for example: “[My mother] tries to help me when I am scared or upset.”), and how they feel about themselves in relation to their physical, academic, and social functioning (for example: “Do you have lots of friends at school?”). The graduate student will read each question to the child, and the child will mark his/her responses on the questionnaires. The child will be given play and snack breaks as needed. If the child finishes his/her questionnaires before their parent is done, a research assistant will be available to supervise (and play with) the child. In addition, each parent may choose to complete a letter addressed to the child’s teacher asking their help in completing two measures regarding the child’s social behavior at…
Title of Study: Parent-Child Relationships and Social Functioning in Children with and without ADHD
Principal Investigator: Patricia Kaminski, Ph.D.
Co-Investigators: Sarah L. Durrant, M.S., Shelly Warren, M.S., & Corinne Smith, M.S.

...school (we will have the 2 surveys available for the parent to review before deciding whether or not to have the child’s teacher involved).

Because a primary purpose of this study is the comparison of children with and without attention deficits, children who have ADHD cannot be on their stimulant medication during the videotaped play. During the phone contact that set up the appointment, parents were asked to make sure that their child has not taken their latest dose of stimulant medication (e.g., Ritalin, Adderall). Furthermore, parents were asked to bring their child’s stimulant medication with them so that the child can take the medication immediately before the videotaped play. Since the medication is not effective for about 30 minutes, we can get the data we need and minimize the time the child needs to be off his/her medication.

Researchers will study the videotapes of over 100 different parent-child pairs. The long-term goal is to better understand the relationship between parents and children and how it relates to children’s functioning in school, family, and peer relationships.

DESCRIPTION OF PROCEDURES/ELEMENTS THAT MAY RESULT IN DISCOMFORT OR INCONVENIENCE:
There is a chance that some parent-child pairs will feel uncomfortable during the play exercise when the research assistant suggests a storyline that presents a problem that needs to be solved. An example of this would be: “{Child’s Name} wants to look at the tigers and {Mom} wants to look at the hippos. Play out what happens together.” Although certain tasks may suggest a disagreement, a researcher will be present at all times to minimize any discomfort that arises. Additionally, at the end of the play exercise, you and your child will have time to talk about your experiences. Any questions that might arise during the play exercise or questionnaire section of the study will be answered by the researcher.

DESCRIPTION OF THE PROCEDURES/ELEMENTS THAT ARE ASSOCIATED WITH FORESEEABLE RISKS:
Only minimal risk of psychological discomfort is associated with participation in this study.
Title of Study: Parent-Child Relationships and Social Functioning in Children with and without ADHD
Principal Investigator: Patricia Kaminski, Ph.D.
Co-Investigators: Sarah L. Durrant, M.S., Shelly Warren, M.S., & Corinne Smith, M.S.

BENEFITS TO THE SUBJECTS OR OTHERS:
By participating in this study, you and your child can benefit by learning more about one another. Also, you will be indirectly benefiting other parents and children because the information gathered by the researchers will help us learn about what makes parents and children get along the best or what can lead to difficulties in the relationship. Further, the results of this study will contribute to the understanding of how parent-child relationships are related to children’s functioning at home and school, especially for children with attention deficits. Once we understand these issues, professionals can provide more appropriate services to children with ADHD and those experiencing relationship problems with their parents and their friends. In addition, we will pay you a small amount as a way of thanking you for your time. That amount is $10 per hour (approximately $30 total). Finally, we also offer referral information to you when you complete the study in case you or your child would like to speak to a mental health professional about your relationship (or other matters).

CONFIDENTIALITY OF RESEARCH RECORDS:
Your identity and all of your information will be kept private (confidential). Researchers will not mention your last name while the videocamera is recording. All records (questionnaires, videotapes, and our copy of this form) will be kept in a securely locked file cabinet in a locked room in Terrill Hall at UNT. Once all of the measures are completed, your name will not be associated with the videotape or any information you provide. We will assign a random number to all of your records, and that number will be the only identifier. There will only be one list that matches the name and number, and only the primary researchers will have access to that confidential list, which will be kept in a locked file cabinet in a locked room.

REVIEW FOR PROTECTION OF PARTICIPANTS:
This research study has been reviewed and approved by the UNT Committee for the Protection of Human Subjects (940) 565-3940.
UNIVERSITY OF NORTH TEXAS
COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS
RESEARCH CONSENT FORM
Page 4 of 6

Subject Name: ___________________________ Date: ______________

Title of Study: Parent-Child Relationships and Social Functioning in Children with and without ADHD
Principal Investigator: Patricia Kaminski, Ph.D.
Co-Investigators: Sarah L. Durrant, M.S., Shelly Warren, M.S., & Corinne Smith, M.S.

RESEARCH SUBJECTS' RIGHTS:
I have read or have had read to me all of the above.

This study has been explained to me via this form and/or via other communication with the investigators. I have been told the risks or discomforts and possible benefits of the study. I have been told of other choices of treatment available to me.

I understand that I do not have to take part in this study, and my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw at any time without penalty or loss of benefits to which I am entitled. The study personnel can stop my participation at any time if it appears to be harmful to me, if I fail to follow directions for participation in the study, if it is discovered that I do not meet the study requirements, or if the study is canceled.

In case there are problems or questions, I have been told I can call Patricia Kaminski, Ph.D., Sarah L. Durrant, M.S., Shelly Warren, M.S., or Corinne Smith, M.S. at telephone number (940) 565-2671.

I understand my rights as a research subject, and I voluntarily consent to participate in this study. I understand what the study is about and how and why it is being done. I will receive a signed copy of this consent form.

__________________________________________ Date
Subject’s Signature

__________________________________________ Date
Signature of Witness
Subject Name:_________________________________  Date: _________________

Title of Study: Parent-Child Relationships and Social Functioning in Children with and without ADHD
Principal Investigator: Patricia Kaminski, Ph.D.
Co-Investigators:  Sarah L. Durrant, M.S., Shelly Warren, M.S., & Corinne Smith, M.S.

**Informed Consent for Videotaping (Choose & initial one statement below):**

_____I give my permission for my child and I to be videotaped and for that videotape to be shown in professional settings.

_____I give my permission for my child and I to be videotaped, but I do not agree to have that videotape shown to anyone who is not directly involved with Dr. Kaminski’s research.

**For the Investigator or Designee:**

I certify that I have reviewed the contents of this form with the person signing above, who, in my opinion, understood the explanation. I have explained the known benefits and risks of the research.

Principal Investigator’s or Designee’s Signature   Date

**CHILD ASSENT:**
If the parent chooses to sign the Informed Consent, they may read the following to their child or have the researcher do so, “[I/Your Mom/Dad] [have/has] just agreed to help today, but [they/we] need your help, too. You can decide whether or not you want to help. What [they/we] need you to do is play with certain toys with [me/your mom/dad] while [they/we] make a movie of [us/you]. [Researcher’s name/I] will play with [us/you and your Mom/Dad] and give ideas about what is happening. When we’re done making the movie [Researcher’s Name/I] will show you some of it and ask you some questions about it. [Researcher’s name/I] will help you answer some questions on paper. Would you like to do that?”

Wait for the child response.
UNIVERSITY OF NORTH TEXAS
COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS
RESEARCH CONSENT FORM
Page 6 of 6

Subject Name:_______________________________ Date: __________________

Title of Study: Parent-Child Relationships and Social Functioning in Children with and without ADHD
Principal Investigator: Patricia Kaminski, Ph.D.
Co-Investigators: Sarah L. Durrant, M.S., Shelly Warren, M.S., & Corinne Smith, M.S.

If the child verbalizes assent or signals assent by nodding their head, point to the appropriate spot below and say, “OK, thank you. To show that you said ‘yes’ I need you to write your first name or put an ‘X’ in this space here.”

YES________________________________________

If the child does no verbalize or signal assent or communicates dissent, point to the appropriate spot on below and say, “OK, thank you. To show that you said ‘no’ I need you to write your first name or put an ‘X’ here.”

NO________________________________________

For the Investigator or Designee:
I have read or observed the reading of the appropriate passages above to the child participant and interpreted his/her wishes to the best of my ability.

___________________________________________ __________________
Investigator’s or Designee’s Signature   Date
Appendix E

Child Administration Procedures
Procedures for Administration of Child Packet Questionnaires

1. During PCIA set-up, the Child Packet should be placed in Room #127, including the following materials:
   ♦ Adapted Child-Parental Acceptance Rejection/Control Questionnaire (Adapted Child-PARQ/Control) – Be sure the appropriate version is included to match the participating parent (Mother/Father)
   ♦ Administrator Version of the Adapted Child-Parental Acceptance Rejection/Control Questionnaire (Administrator Version - Adapted Child-PARQ/Control)
   ♦ Loneliness and Social Dissatisfaction Questionnaires (LSDQ)
   ♦ Self Description Questionnaires (SDQ-I)
   ♦ 1 “Child Administration Data” sheet
   ♦ 2 Markers/Pens/Crayons
   ♦ 1 Egg Timer (Kitchen Timer)
   ♦ 1 Stopwatch
   ♦ 1 Laminated Sheet of Blue Paper

2. The number on the outside of the Child Packet is the dyad’s assigned number, which should match the numbers on one of each questionnaire and the “Child Administration Data” sheet in the packet and the numbers on the Parent Packet and videotapes. The researcher assigned to complete PCIA set-up should verify that these numbers match.

3. Following completion of the child inquiry phase of the PCIA, the researcher administering the PCIA will bring the child to Room #181, where the snacks and drinks are set up.

4. If the researcher administering the PCIA is a graduate student, she will complete the parent inquiry phase of the PCIA and then return to Room #181. If the researcher administering the PCIA is an undergraduate student, the graduate researcher (GRA) will be waiting in Room #181 for the child to arrive.

5. The researcher who greets the child in Room #181 will offer him/her a snack and restroom break. The break should last no more than 10 minutes, or the amount of time for the parent inquiry phase of the PCIA. If the child has not finished his/her snack during that time, the child will be reassured that he/she will have time to finish the snack later.

6. Following the break, the GRA will then say to the child, “Now it’s time for me to help you answer some questions on paper. We’re going to another room down the hall.”

7. The GRA will escort the child to Room #127 and leave the door open at all times.
8. The GRA will direct the child to sit next to her at the table. Then, the GRA will say to the child, “I’m going to read you some questions on three different forms. I will help you mark your answers on the forms. There are no ‘right’ or ‘wrong’ answers to these questions; you should just try to tell me which answer is most like you or your [mom/dad]. I am going to read each question two times. Some questions might be confusing, so it’s okay to ask questions.”

9. The GRA will write the current time in the first space next to “Admin Time” on the “Child Administration Data” sheet.

10. The GRA will administer the Adapted Child-PARQ/Control, LSDQ, and SDQ-I in the order specified on the “Child Administration Data” sheet.

11. For each questionnaire administration, the GRA will give one copy of the questionnaire to the child and keep one copy for himself/herself.

12. The GRA will begin each questionnaire administration by reading aloud the directions on the questionnaire and making sure the child understands them before moving on to the questions. If the child does not understand the directions, the GRA will explain them further and ascertain whether the child understood.

13. During the administration of the LSDQ and the SDQ-I, the GRA will read the questions aloud twice, and the child may read along with his/her copy of the questionnaire. On the Adapted Child-PARQ/Control, some items have standard wordings and will be noted on the Administrator Version of the Adapted Child-PARQ/Control. If a standard rewording was developed, then the GRA will first read the original item. Then they will make a statement that says, “This means…” and will read the standard rewording. For the items that require no rewording, each item will be read twice for emphasis. For all questionnaires, the GRA will make sure to have the child’s attention before reading the questions.

14. The GRA will help the child follow along with the questions by using the blue laminated sheet of paper to cover up unanswered questions and moving the paper down to reveal each new question as it is read aloud. If the child says he/she can complete the questionnaire without the blue paper to help them follow along, the GRA will say, “The paper helps me to know where we are.”

15. During each questionnaire administration, on the first four questions, the GRA will ask, “Do you understand what that means?” before obtaining a response. During the remainder of the administration, the GRA will periodically ask the child if he/she understood the questions.

16. The GRA will request an answer from the child as specified by the directions on the particular questionnaire.
17. On the Adapted Child-PARQ/Control, the child may mark his/her response on the questionnaire, or the GRA may mark the child’s verbal responses, depending on the child’s preference. On the SDQ-I and the LSDQ, the GRA will mark the child’s responses on the questionnaire according to the rating scale at the top of the page. The GRA will make sure the responses are written clearly and recorded on the questionnaire with the dyad’s number on it.

18. If the child chooses to mark his/her responses, the GRA will make sure the child marks the answer space that corresponds with the question.

19. If the child does not understand the question, the GRA will explain the question further, ascertain whether the child understands the question, reread the question, and request a response. Explanations should help define the items in a neutral way, without implying that any particular answer is more right or “better.” If the child appears anxious or is looking for approval for a particular answer, remind him/her that there are no “right” answers.

20. The GRA will record the number of the question(s) that the child does not understand and child’s verbalizations about his/her difficulty understanding the particular question(s) on the “Child Administration Data” sheet.

21. If the child does not respond to a question following further explanation, the GRA will circle the item and reread the question after the administration of remaining items. If the child still does not respond appropriately, the GRA will ask whether he/she understands the question. If the child does not understand the question, the GRA will further clarify the question and request a response. Make sure such difficulty with an item is recorded on the “Child Administration Data” sheet.

22. The GRA will make sure not to reinforce or make evaluative comments on any responses verbally or nonverbally. However, the GRA will provide encouragement for the child’s hard work and attentiveness.

23. If the child comments on the similarity between questions on the various questionnaires (e.g., “I already answered that question.”), the GRA will state, “Some questions ask about the same kinds of things. Just answer the best you can.”

24. If at any time during administration the child requests a restroom break, the GRA will stop administration and escort him/her to the restroom.

25. If at any time during administration, the child becomes fidgety or requests a break, the GRA will allow the child to take a break for no more than 5 minutes. The GRA will write the time in the space next to “Break Time” on the “Child Administration Data” sheet for each time the child takes a break. The GRA will set the egg timer for five minutes so that the child can see the time limit.
Twenty minutes after the first “Admin Time” or the end of the last break (whichever is later), the GRA will say to the child, “**Now it’s time to take a break for 5 minutes. When this timer goes off, it will be time to finish the questions.**” The GRA will write the time in the space next to “Break Time” on the “Child Administration Data” sheet, and set the egg timer for five minutes so that the child can see the time limit.

During the break, the GRA will offer the child a restroom break and then offer the child 2 play options: Tic Tac Toe or a velcro lacrosse game. When the timer rings after 5 minutes, the GRA will say to the child, “**Now it’s time to finish the questions. We can play more later.**”

Administration will resume according to directions specified above. The break sequence will be repeated every 20 minutes, until the questionnaires are completed. All break times should be noted on the “Child Administration Data” sheet. Children requesting more frequent breaks should be encouraged to stay on task longer, and the GRA can use the egg timer so the child will know when it is time for their next break.

Once all questionnaires are completed, the GRA will write the time in the last space next to “Admin Time” on the “Child Administration Data” sheet, and place all materials in the Child Packet.

The GRA will say to the child, “**Thank you for working so hard today. Your answers will help us to help kids who are having different kinds of problems.**” The GRA will give the child the option of having 5 more minutes of play in Room #127 or going directly to the playroom in Room #180.

The GRA will escort the child to Room #180, where the toys are set up. The GRA or another researcher will play with the child until his/her mother completes the Parent Packet. The GRA should be sure to have at least 5 more minutes of play with the child, since that was promised.

After the debriefing form has been reviewed and the dyad has been escorted to the exit, the GRA will place the Child Packet with the Parent Packet in the “PCIA-Day Data to be Entered” file in the 2nd file drawer in Room #252.
Child Administration Data

<table>
<thead>
<tr>
<th>Order of Administration</th>
<th>Administration Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>__________ SDQ-I</td>
<td>Admin Time __________ to __________</td>
</tr>
<tr>
<td>__________ LSDQ</td>
<td>Break 1 Time __________ to __________</td>
</tr>
<tr>
<td>__________ Child-PARQ</td>
<td>Admin Time __________ to __________</td>
</tr>
</tbody>
</table>

The child should take a 5-minute break every 20 minutes. Other breaks should be noted in the spaces as necessary.

| Admin Time __________ to __________ |
| Break 2 Time __________ to __________ |
| Admin Time __________ to __________ |
| Break 3 Time __________ to __________ |

Child Comments/Questions:

Please write all of the child’s comments and questions. Be sure to include the name of the questionnaire and numbers of the questions on which the child experiences difficulty. (E.g., SDQ-I; Question #51: Child: “What does popular mean?” GRA: “Liked by kids.”)
Appendix F

Letter to Teacher
Dear Mr./Ms. _____________________,

(Teacher’s Name)

My son/daughter, __________________________, and I, _____________________________, have participated in a research project at the University of North Texas looking at parent-child relationships and social functioning. * Your help is greatly needed. Please complete the following two forms (ADHD-IV-Rating Scale: School Version and the Teacher Rating Scale) with regard to my child. It will only take 10 to 20 minutes of your time. As you’ll see on the top of each form, my child’s anonymity is protected in that a code number has been assigned; please do not write his/her name on the forms.

Please return the forms to the researcher as soon as possible, using the enclosed stamped envelope. Upon receipt of the forms, the researchers will send you $5 as compensation for your time and effort.

Thank you so much for your help.

Sincerely,

__________________________________________
Parent’s signature   Date

* This study has been reviewed and approved by the UNT Committee for the Protection of Human Subjects 940-565-3940.
Appendix G

Procedure for Teacher Letter
Procedure for Teacher Letter

1. Explain to the parent about the teacher letter, saying something like: “We would like to have [child’s] teacher fill out two forms to help us better understand her/him and what he/she is like at school.”

2. Show the parent the two questionnaires (Teacher-Rating Scale & ADHD Rating Scale-IV: School Version). Tell them: “These are the two forms we would like [child’s] teacher to complete. You may look over the forms if you like. Each form asks questions about [child’s] behavior at school.”

3. Say: “Do we have your permission to send these forms to [child’s] teacher?”

4. If parent says yes: Show them the form letter that begins Dear Mr./Mrs. ______. Say something like, “O.K., please read this letter and sign it at the bottom.”

5. If parent says no: Say something like, “Thank you, please let us know if you change your mind later.”

Contents of envelope to teacher (make sure letter to teacher is “on top”):

1. Letter to teacher, with parent’s signature.
2. SASE (self addressed stamped envelope) – with Trish’s UNT address on it
3. Teacher’s request for payment slip.
4. Teacher-Rating Scale with child’s Dyad ID number on it.
5. ADHD Rating Scale-IV: School Version with child’s Dyad ID number on it.
Appendix H

Debriefing Statement
Debriefing Statement

Dear Research Participant:

Thank you for your participation in our study! Our aim is to learn more about how different parents and children interact, especially when they are in situations with the potential for disagreement. Your participation today will be very beneficial in many research projects. Our results should have uses in many areas, including parenting programs and studying behavior disorders of childhood (such as ADHD).

We hope that making the zoo and solving the “conflicts” was not too stressful for you or your child. Sometimes, however, a certain play story might bring out tension or confusion in real life. You may want to talk with your child about their experiences today. If you or your child have any concerns or would like to talk to someone about today’s activities, your parenting stress, or your child’s behavior, please let the researcher know right now. We can help you get an appointment with a mental health professional. If you have questions after you leave today or would like help with a referral at a later date, call Dr. Trish Kaminski at (940-565-2671).

There are many other places for parents, children, and families to get help in the Metroplex that you can contact on your own. In addition to talking to your child’s school counselor or physician, you can check your local Yellow Pages under “Psychotherapists” or “Psychologists.” For your convenience, the following is a list of the names and phone numbers of several agencies that offer counseling and other services to families. (These agencies are all listed in the Denton County Community Services Directory; for additional information about these or other agencies, call the United Way’s Information & Referral Helpline at 940-566-2688).

Child & Family Resource Clinic (UNT, Denton) - offers play therapy and family therapy with fees set according to income level [940-565-2066].

Family Guidance Center (Dallas & Lewisville) - offers couples counseling and family therapy with fees set according to income level [214-351-3490].

Family Resource Center (Denton) - offers a resource library, parenting classes, & support groups [940-566-1800].

Friends of the Family (Denton) - provides shelter and counseling following family violence [800-572-4031].

Marriage & Family Clinic (TWU, Denton) - individual, marital & family counseling for all ages with fees set according to income level, but no one is refused service if unable to pay [940-898-2600].

Psychology Clinic (UNT, Denton) - individual, marital, group & child assessment & therapy for all ages with fees set according to income level [940-565-2631].
Youth & Family Counseling (Flower Mound) - offers counseling programs for youth and their parents with fees set according to income level [972-724-2005].

The results of our study will be available to you in the future. If you would like a copy of our results, please give us your address now or contact us at a later date. You may keep this sheet for your records.

Sincerely,
Dr. Trish Kaminski
REFERENCES


