GENDER DIFFERENCES IN CHILD, PARENT, AND TEACHER PERCEPTION
OF SOCIAL FUNCTIONING AMONG CHILDREN WITH ADHD

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Children with Attention Deficit Hyperactivity Disorder (ADHD) tend to experience social functioning problems, with girls more likely to encounter peer rejection than boys. The present study investigated gender differences in child, parent, and teacher perceptions of social functioning among ADHD and control children. Participants included 119 children (ages 6-11) and their parents. Sixty-one children were previously diagnosed with ADHD. Parents, teachers, and children completed measures assessing the child’s social functioning. The results indicate that the relationship between ADHD status and social functioning differs as a function of rater. Teachers and parents reported that ADHD children had lower social functioning than controls, while ADHD and control children reported similar levels of social functioning. Gender differences were found on the child self-report, with girls reporting lower social functioning than boys. In ADHD children the relationship between social functioning and comorbid depression differed as a function of rater. Specifically, among ADHD children with depression, parents rated children as having lower social functioning than did children or teachers. In ADHD children without comorbid depression, however, there were no rater differences. Additionally, no rater differences in social functioning were found between ADHD children with and without a comorbid psychiatric condition. Overall, the results of the current study lend support to the idea that parents, teachers, and children have different perceptions of social functioning. Clinically, these results suggest that interventions could focus on identifying those ADHD children most at-risk for social functioning problems and developing interventions that fit with their perceptions. The limitations of the current study and directions for future research are presented.
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CHAPTER 1
INTRODUCTION

One of the most important developmental tasks in childhood is socialization with peers (Cohn, Patterson, & Christopoulos, 1991). Children who are rejected by their peers often have poor outcomes in adolescence and early adulthood, including being at greater risk for criminality, psychopathology, and dropping out of school (see Kupersmidt, Coie, & Dodge, 1990; Parker & Asher, 1987, for a review). One group of children that tends to experience considerable problems with social functioning (Biederman, Faraone, & Chen, 1993; Carlson, Lahey, Frame, Walker, & Hynd, 1987; Wheeler & Carlson, 1994) is children with Attention-Deficit/Hyperactivity Disorder (ADHD). Among children with ADHD, girls are more likely to experience peer rejection than boys (Berry, Shaywitz, & Shaywitz, 1985; Carlson, Tamm, & Gaub, 1997), and ADHD children with comorbid psychiatric conditions are more likely to have problems with social functioning than ADHD children without comorbidity (Biederman et al., 1993, Carlson et al., 1997; Greene et al., 1996). Boys with ADHD tend to provide more optimistic reports of their social functioning than their parents or teachers, possibly due to a positive illusory bias (Diener & Milich, 1997, Hoza, Pelham, Dobbs, Owens, & Pillow, 2002; Hoza, Waschbusch, Pelham, Molina, & Milich, 2000). The tendency to provide unrealistically optimistic self-reports is less evident in ADHD boys with comorbid depression (Hoza et al., 2002) and has not been tested in ADHD girls. Given that peer relationship problems in children with ADHD are of significant concern and are predictive of negative long-term outcomes, and that only limited information is available about gender differences in perceptions of social functioning, the current study attempted to determine if there is a significant gender difference in child, parent, and teacher perceptions of social functioning in an ADHD population.
Attention-Deficit Hyperactivity Disorder

Attention-Deficit/Hyperactivity Disorder (ADHD) is defined in the Diagnostic and Statistical Manual of Mental Disorders (4th Ed.) Text Revision (DSM-IV-TR; American Psychiatric Association, 2000) as “a persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequently displayed and more severe than is typically observed in individuals at a comparable level of development” (p. 85). The full criteria for ADHD are listed in Appendix C. Lahey and Carlson (1991) examined the literature on ADHD and determined that factor analytic studies consistently found that the symptoms of ADHD indicate two essentially independent components. The first type is characterized by hyperactivity and impulsivity, and the second type includes symptoms of inattention, disorganization, and problems completing tasks. In addition, clinical differences were found between children with and without hyperactivity and impulsivity. Specifically, children with hyperactivity and impulsivity were more often described as aggressive and rejected by their peers, whereas children with inattention were described as “shy, unhappy, anxious, and socially withdrawn” (Lahey & Carlson, 1991, p. 115).

The most recent edition of the diagnostic manual, the DSM-IV-TR (APA, 2000), recognizes this distinction by including two types of attention deficit disorders. They are Attention-Deficit/Hyperactivity Disorder, Predominately Hyperactive-Impulsive Type (ADHD/Hi) and Attention-Deficit/Hyperactivity Disorder, Predominately Inattentive Type (ADHD/I). In addition, there is a third category labeled ADHD: Combined Type (ADHD/C), which describes people who exhibit hyperactivity, impulsivity, and inattention. In order for a child to be diagnosed with ADHD according to the DSM-IV-TR criteria, his/her symptoms must
be developmentally inappropriate and begin prior to age seven. In addition, the symptoms must persist for greater than 6 months and be displayed in more than one setting (APA, 2000).

The prevalence of Attention-Deficit/Hyperactivity Disorder is between three and seven percent in school-age children (APA, 2000). However, the prevalence rates vary according to the population sampled and the method used. There is evidence that genetic factors may play a role in this disorder, but the extent of the impairment is determined by family, school, and peer influences (APA). The strong role of genetics in ADHD has been demonstrated in twin studies (Levy, et al., 1997; Sherman, Iacono, & McGue, 1997). When at least one twin met the criteria for ADHD, the heritability was 0.91 (± 0.12) (Levy et al., 1997).

Wolraich, Hannah, Baumgaerel, and Feurer (1998) examined teacher-reported prevalence rates for ADHD. They found a prevalence rate of 16.1% for all types of ADHD. When broken down by type, the prevalence rates were as follows: 8.8% for ADHD-inattentive type, 2.6% for ADHD-hyperactive/impulsive type, and 4.7% for ADHD-combined type. This study replicated an earlier study in the same county in Tennessee and was able to confirm the stability of the prevalence rates. However, the prevalence rates found in this study may be high since they were based solely on information from a teacher rating scale and diagnosis requires that symptoms be present in more than one setting. More recent research using teacher rating scales found similar levels of prevalence (Nolan, Gadow, & Sprafkin, 2001). Research using both parent and teacher reports found lower levels of prevalence – 9.9% for all types of ADHD (Gomez, Harvey, Quick, Scharer, & Harris, 1999). Additionally, prevalence increases with age throughout early childhood (Bhatia, Nigam, Bohra, & Malik, 1991).

Robison, Sclar, Skaer, and Galin (1999) looked at the trends in prevalence of a diagnosis of ADHD resulting from patients visiting physicians between 1990 and 1995. They found an
increase in the diagnosis of ADHD (232%) and in the rate of patients diagnosed with ADHD and prescribed stimulant medication (292%). The authors suggested that the change in criteria in the DSM-IV to focus on attention problems as well as hyperactivity and impulsivity also may have led to an increase in girls being diagnosed with ADHD.

Gender and ADHD

ADHD occurs more frequently in males than in females, with a male-female ratio ranging from 2:1 to 9:1 depending on the type and setting (Berry, Shaywitz, & Shaywitz, 1985; Cuffe et al., 2001; Gomez et al., 1999; Williams, Wright, & Partridge, 1999). Settings that include clinic-referred children are more apt to be male than community settings (APA, 2000).

The finding that ADHD is diagnosed primarily in males indicates that males are referred more often for attention problems. However, the low referral rates for females may not indicate fewer attention problems, but rather a tendency by teachers and mental health professionals to focus on the more disruptive behaviors associated with ADHD, which are expressed more often by boys, in making referrals (Breen & Altepeter, 1990). Girls tend to display symptoms of inattention more often than symptoms of hyperactivity/impulsivity (Biederman et al., 1999). Berry and colleagues (1985) looked at the differences between boys and girls with ADHD with and without hyperactivity. They found that in both girls and boys hyperactivity was correlated with management problems and antisocial behaviors. The girls and boys with ADHD who did not have hyperactivity were similar to the control group with regard to unruly behavior, loss of control, and fighting.

Girls and boys with ADHD may exhibit behaviors indicative of this disorder in different ways. Such a difference has been found in the area of aggression. Crick and Grotpeter (1995) discovered that although both girls and boys are aggressive, they tend to display their aggression
with different behaviors, such as overt aggression in boys compared to relational aggression in girls. Similarly, boys may show their attentional difficulties in a more external way such as hyperactivity, and girls may demonstrate their attention deficits in a more internal manner such as inattention. In fact, Biederman et al. (1999) determined that girls with ADHD had significantly more symptoms of inattention than symptoms of hyperactivity-impulsivity. Moreover, girls were significantly more likely to have mood and anxiety disorders than disruptive behavior disorders. The authors concluded that there is most likely a referral bias for girls with ADHD because they are less disruptive than boys with ADHD (Biederman et al., 1999; Breen & Altepeter, 1990).

Gaub and Carlson (1997) performed a meta-analysis to examine the gender differences in ADHD. They found significant gender differences in that girls demonstrated less hyperactivity, received fewer conduct disorder diagnoses, exhibited lower rates of other externalizing behavior, and had greater intellectual impairment than ADHD boys. In addition, when examining the clinic-referred participants for the variable of inattention, a trend was found for greater severity among girls. Gaub and Carlson also suggested that since more boys are referred to clinics than girls, the girls who are referred to clinics might be the most severely affected girls. This view was supported by the evidence they found showing that in the general population girls with ADHD are less impaired than boys with ADHD, but in a clinic population girls and boys with ADHD are equally impaired. Thus, studying girls who are clinic-referred may lead to incorrect conclusions about the characteristics of ADHD in girls.

A more recent meta-analysis by Gershon (2002) attempted to overcome some of the methodological limitations encountered by Gaub and Carlson. Gershon was able to examine a greater number of studies by using less strict inclusion criteria. The criteria used by Gaub and
Carlson that were not used by Gershon included a minimum sample size of 10 participants per group, using participants aged 13 and younger, and requiring an IQ greater than 80. Gershon was able to allow less stringent criteria by correcting for effect size by using a weighting factor for sample size and treating the age of the participant and whether or not IQ was assessed as possible moderator variables. Most of Gershon’s results agreed with those of Gaub and Carlson. Girls with ADHD tended to have lower levels of hyperactivity, inattention, impulsivity, and externalizing problems. The most important difference in the meta-analyses was that Gershon found that girls had more internalizing problems than males. Both studies agreed that more research is needed on girls with ADHD.

Nolan, Volpe, Gadow, and Sprafkin (1999), however, suggest that among clinic-referred children with ADHD/C, girls may be more severe than boys. Specifically, girls with the combined subtype of ADHD displayed significantly higher Total ADHD and Hyperactive/Impulsive Symptoms Severity scores and somewhat higher Inattentive Symptoms Severity scores than boys. The authors conclude that girls with ADHD may be “underreferred, underdiagnosed, and undertreated” (p. 18, Nolan et al.). If girls with ADHD are not recognized, serious consequences could result since girls with ADHD are more at-risk for substance use disorders than boys with ADHD (Biederman et al., 2002).

*Physiological Gender Differences*

The lack of research on gender differences in children with ADHD is especially evident in the area of physiology. The few studies that have been conducted indicate that although girls and boys with ADHD have differences in brain metabolism and brain activity, they demonstrate similar neurophysiology and behavioral symptoms.
When brain metabolism was assessed in adolescents and adults with and without ADHD, lower metabolism was found in females with ADHD than controls (Ernst et al., 1994). No differences were found in boys with and without ADHD. Additionally, the areas of the brain that had lower glucose metabolism differed according to gender. The left anterior frontal region was different between ADHD males and controls but not females. The five regions that had lower metabolism in girls and women were in the right frontal premotor cortex, the right temporal cortex, right and left posterior putamen and middle cingulate. These findings may indicate that ADHD is more severe in girls than boys.

Although they did find gender differences in brain metabolism, there were very few differences in symptoms (Ernst et al., 1994). Boys with ADHD displayed more oppositional behavior than controls, but girls with ADHD did not differ from controls. Also, all the girls were less hyperactive than the boys. However, the authors stated that their results are only tentative since the research was exploratory and their sample size was limited (19 controls with 6 females and 20 ADHD adolescents with 5 females). Other studies have confirmed that there are only a few differences in symptoms between boys and girls with ADHD (Berry et al., 1985; Silverthorn, Frick, Kuper, & Ott, 1996).

Gender differences have also been found in brain activity (Baving, Laucht, & Schmidt, 1999). Boys with ADHD had significantly less right frontal brain activity than control boys. However, girls with ADHD had less activity in their left frontal brain than controls. Although there were gender differences in the area of reduced brain activity, no differences were found in symptom severity. Symptoms of ADHD (inattention, hyperactivity, and impulsivity) as well as oppositional and aggressive behaviors were analyzed. In contrast, Baving et al. discussed unpublished research that examined children without psychiatric diagnoses and found reduced
right frontal brain activity in girls and reduced left frontal activity in boys (Baving et al., unpublished data, 1998). Therefore, the authors hypothesized that boys and girls both experience a single process for ADHD that expresses itself differently in each gender.

ADHD has been found to be neuropsychologically the same disorder in girls and boys (Arcia & Conners, 1998; Castellanos et al., 2000). Girls and boys with ADHD showed similar levels of performance on measures of neuropsychological performance, such as the Rey-Osterrieth Complex Figure Task and the Conners Continuous Performance Task (Arcia & Conners, 1998). Girls and boys also were equally impaired on tasks requiring executive function as measured by eye movement tasks (Castellanos et al., 2000).

Although girls and boys seem to have different impairments in brain metabolism and activity, they demonstrate similar difficulties with executive function tasks and behavioral symptoms. Additionally, boys and girls have been found to react similarly to two types of stimulant medication (Sharp et al., 1999). Specifically, both girls and boys showed similar favorable responses to both methylphenidate and dextroamphetamine.

Social Functioning of Children

Social functioning is the “performance of skills or specific behaviors associated with social competence” (Nixon, 2001, p. 173). When children enter elementary school, they interact more with their peers, and their ability to function socially becomes more important. Many factors determine how children relate to their peers, including: the child’s temperament, the child’s previous experiences with peers, the familiarity of the peer, the situation in which the interaction occurs, the role of peer interaction in the child’s culture, and the developmental stage of the child (Schaffer, 1996).
Children in elementary school tend to be in a developmental stage in which they are less egocentric than they were at an earlier age (Schaffer, 1996). During this stage children find it easier to understand the feelings and intentions of others and to work with a peer toward a common goal. Elementary school-aged children tend to interact in exclusively same-sex peer groups and are more selective of their friends than younger children.

Boys and girls tend to engage in different types of social play (Landy, 2002). The play of boys is distinguished by more competitiveness and dominance. The play of girls tends to be more cooperative and less aggressive. Although girls and boys play in different ways, very little difference has been found in social competence among girls and boys.

During elementary school, children’s ability to function socially contributes to acceptance by their peers. The children who have more problems with social functioning tend to be either rejected or neglected by their peers (Schaffer, 1996). Peers actively dislike rejected children, whereas neglected children are not liked or disliked. Popular children usually are more outgoing and friendly and demonstrate good social skills. Rejected children tend to be disruptive, very active, talkative, and aggressive. Neglected children are characterized as shy and solitary (Schaffer, 1996).

Social Functioning of ADHD Children

Children with ADHD tend to have more problems with social functioning than children without ADHD (Biederman et al., 1993; Carlson et al., 1987; Wheeler & Carlson, 1994). Many of the characteristics of ADHD are qualities of the rejected children described by Schaffer (1996). Boys and girls with ADHD often experience difficulty in peer relations and are rejected by peers (Berry et al., 1985; Carlson et al., 1997; Greene et al., 2001). Individuals who are diagnosed with ADHD as children are at-risk for psychosocial, educational, and adaptive
problems during adolescence, even if they no longer meet the criteria for the disorder (Wilson & Marcotte, 1996). In addition, children with ADHD have a higher risk of developing psychiatric/psychological problems during adolescence than children who are diagnosed with other neurodevelopmental disorders.

It is important to recognize which subgroups of children are most at-risk for difficulties in social functioning, especially since recent research has found social impairment to be the one significant predictor of alcohol and substance abuse and smoking (Greene et al., 1999). Moreover, among children with ADHD, those who also have difficulty with social functioning are more likely to be diagnosed with Conduct Disorder and most Substance Use Disorders (Greene et al., 1997). Since most of the research on social functioning has focused on boys with ADHD, there is only limited information about gender differences in this area (Greene et al., 2001).

Many factors play a role in the social impairment and peer rejection experienced by children with ADHD. Children with ADHD tend to engage in more disruptive behaviors, to lack effective communication skills, and to be aggressive (Frederick & Olmi, 1994). In addition, children with ADHD often are inattentive to the social cues of others and therefore are unaware of their impact on others (Gentschel & McLaughlin, 2000). This lack of awareness can result in ADHD children becoming confused when someone is upset with them.

The problems that children with ADHD experience in social functioning have been found to be long-term. This social impairment often is pervasive, recurrent, and escalating (Whalen & Henker, 1985). At a four-year follow-up, children with ADHD continued to experience difficulty in social functioning in both global and specific domains (Biederman et al., 1996). These difficulties persisted despite continued interventions such as counseling and pharmacotherapy.
However, this study was limited in that it included a sample of clinic-referred boys. Therefore, these results may not apply to girls or less severe cases of ADHD.

**Gender Differences in Social Functioning**

When Carlson, Tamm, and Gaub (1997) looked at the broader category of disruptive behavior disorders (DBD), in which ADHD often is included, they found that girls with DBDs have poorer social functioning than boys with DBDs. Furthermore, peers tended to dislike DBD girls more than DBD boys. The authors suggested that girls who demonstrated externalizing behaviors were acting in a manner that contrasted with social expectations and, therefore, they were more likely to be rejected by their peers. This idea is congruent with Eagly’s (1987) social-role theory of sex differences in social behavior. This theory states that people tend to behave in ways that are consistent with their culturally defined gender roles. Our society often pressures people to adopt behaviors consistent with their gender role. Eagly hypothesized that people may internalize these societal pressures and expectations and as a result become motivated intrinsically to act in a gender role congruent manner. Therefore, when girls with DBDs such as ADHD behave in ways that are considered masculine, such as excessive running and climbing or interrupting, they are likely to be rejected by their peers for not conforming to their gender role.

Other research confirmed that ADHD girls with and without hyperactivity were more likely to experience peer rejection than ADHD boys with and without hyperactivity (Berry et al., 1985). Unlike girls with Oppositional Defiant Disorder (ODD), girls with ADHD did not differ from boys with ADHD in their levels of happiness (Carlson et al., 1997). The authors suggested that despite the negative peer interactions they experience, girls with ADHD continue to seek relationships with other children. The results of this study, however, are limited by the use of
symptom checklists completed only by teachers and the sample was composed mostly of a low SES Hispanic participants. In addition, the study included only 11 ADHD girls (46 boys).

When ADHD is examined in children without other diagnoses, no differences in social deficits are found between ADHD children with and without hyperactivity (Carlson et al., 1987). All children with ADHD were more likely to be labeled “liked least” and less likely to be labeled “liked most” by their peers. Although all children with ADHD experience social impairment, children with hyperactive symptoms have more deficits in the performance of social skills, whereas ADHD children with more inattentive symptoms have a lack of social skills (Wheeler & Carlson, 1994). Children who are more hyperactive/impulsive tend to engage in more disruptive behaviors. Since they interact with others the same amount as their peers, and they do sometimes engage in prosocial behaviors, these children have the ability to engage appropriately with others but have difficulty actually performing the skills. Children with more inattentive symptoms tend to be more withdrawn than either children with hyperactivity/impulsivity or non-ADHD children (Gadow et al., 2000). Wheeler and Carlson suggested that this tendency might lead inattentive ADHD children to have a skills deficit, rather than a performance deficit. When gender and ADHD subtype differences were examined in social functioning there was a main effect for subtype but not for gender. Specifically, both boys and girls with hyperactivity tended to provoke and disrupt the activities of other children, and consequently they experienced impaired relationships with peers as compared to children with ADHD/I (Berry et al., 1985).

Parents and Teachers

The difficulties that children with ADHD experience in social functioning affect not only their relationships with their peers, but also their relationships with their family members and teachers (Biederman et al., 1996, 1999; Greene et al., 2001, 2002). Girls with ADHD had more
dysfunction in their families, as shown by greater impairment on the Conflict and Cohesion scales of the Family Environment Scale, than girls without ADHD (Biederman et al., 1999). Children with ADHD were reported to have more impairment than children without ADHD on many subscales of a measurement of social functioning (Social Adjustment Inventory for Children and Adolescents), including Spare Time Problems, Activity with Peer, Problems with Peers, Problems with Siblings, and Problems with Parents (Greene et al., 2001). Gender differences were found on the Spare Time Activities subscale and the School Behavior subscale. Specifically, girls were rated as having more problems with Spare Time Activities and boys were rated as more impaired in School Behavior. Although boys and girls with ADHD did not differ on the Child Behavior Checklist (CBCL; Achenbach, 1991) clinical scales, girls with ADHD did have significantly worse ratings on the three social competence scales of the CBCL than girls without ADHD.

The disruptive behaviors typical of this disorder may disrupt the classroom (Greene et al., 2002). Teachers reported that children with ADHD were significantly more stressful to teach than children without ADHD. In addition, the teachers indicated that the children with ADHD who engaged in oppositional/aggressive behaviors or had impairments in social functioning were more stressful to teach than children with ADHD who did not have these difficulties.

Breen and Altepeter (1990) looked at differences in the behavior of children with ADHD depending on the situation they are in (home or school) using reports from parents and teachers. With regard to social functioning, they found that situations in which the social interactions have an ambiguous structure and in which the child experiences autonomy (during recess, during lunch, and while in the hallways), boys with ADHD have more behavior problems than girls with ADHD.
Social Functioning and Comorbidity

Another factor highly associated with social dysfunction in children with ADHD is the presence of comorbid conditions (Biederman et al., 1993; Carlson et al., 1997; Greene et al., 1996). Greene and his colleagues (1996) created the term “social disability” to refer to children with a significant discrepancy between intellectual ability and interpersonal functioning. They found that children with ADHD are more likely to have a social disability, which puts them at increased risk for severe social impairment. The children with ADHD who were labeled socially disabled were significantly more likely to have a comorbid psychiatric disorder. In fact, only 10% of the ADHD children without comorbidity met the criteria for social disability.

When gender differences were examined with respect to comorbidity and social functioning, a correlation was found between comorbidity and social impairment in both boys and girls (Greene et al., 2001). Both boys and girls with ADHD had more difficulty with social functioning than children without ADHD. When comorbidity was controlled for, behaviors associated with ADHD were still associated with social dysfunction. Specific comorbid diagnoses were associated with different problem behaviors. Oppositional behavior was associated with problems on the Social Adjustment Inventory for Children and Adolescents (SAICA, John et al., 1987) including social problems at school, problems during spare time, and difficulty with parents and peers. Anxiety was related to the following SAICA subscales: Spare-Time Activities, Spare-Time Problems, Activities with Peers, and Problems with Peers. Greene and his colleagues felt that their study may have been limited because they used a clinic-referred sample and only got information about social functioning from the children’s mothers.
**Child Self-Report**

The information from self-report measures “represent an individual’s perceptions of behavior that may have occurred during a different time or under different environmental conditions” (Eckert, Dunn, Guiney, & Codding, 2000, p. 289) than at the time of measurement, and thus can provide valuable information. There are many advantages to using child self-report data, 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-perception is thought to affect their emotions and behavior.

Gathering information from multiple informants allows the researcher to gain more information. Often when there is a low correlation between informants, researchers may assume one or more of the informants are incorrect. However, it is important to consider the possibility that each person may be contributing different accurate information (Achenbach, McConaughy, & Howell, 1987).

**Child Self-Report of ADHD Children**

Boys with ADHD tend to give unrealistically optimistic self-reports in many domains, a phenomenon that many researchers refer to as a positive illusory bias (Diener & Milich, 1997; Hoza et al., 2000, 2002; Milich, 1994; Ohan & Johnston, 2002). These self-reports are contradictory to those of teachers, peers, and objective coders (Diener & Milich, 1997; Hoza et al., 2000, 2002). The available research in this area has been conducted on boys with ADHD, so it is unknown whether or not these results generalize to girls with ADHD.

It is thought that the positive illusory bias demonstrated by boys with ADHD serves a self-protective function by helping them to manage their daily experiences of failure (Diener & Milich, 1997; Hoza et al., 2000; Ohan & Johnston, 2002). However, the positive illusory bias is
self-protective in the area of social performance but not academic performance (Ohan & Johnston, 2002). For example, in one study boys with ADHD tended to overestimate how much their teacher liked them (a social situation). However, after being told the teacher liked them, ADHD boys lowered their estimate of how much their teacher liked them compared to boys with ADHD who did not get feedback (Ohan & Johnston, 2002). This was consistent with previous results in which receiving positive feedback about an interaction with a peer led boys with ADHD to lower their evaluation of the interaction compared to ADHD boys who did not receive feedback (Diener & Milich, 1997).

In contrast, the self-protective hypothesis was unable to explain estimates given by boys with ADHD on academic tasks. Boys with ADHD estimated that they would perform better on a maze task than they actually did. However, after being given positive feedback about their performance, they increased their rating of their performance in a manner similar to control boys, which suggests that the self-protective hypothesis does not apply to academic tasks (Ohan & Johnston, 2002). The researchers speculated that ADHD boys may care more about social relationships than academic issues, and thus are more invested in social tasks.

When comorbidity with ADHD was taken into account, results indicated that ADHD boys overrated themselves more in areas in which they were weakest (Hoza et al., 2002), which is consistent with the self-protective hypothesis. For example, ADHD boys with comorbid aggression tended to overestimate their abilities in the social and behavioral areas compared to controls and ADHD boys without aggression. ADHD boys who were low achieving tended to overrate their academic competence compared to controls and ADHD boys who were normal achievers. ADHD boys with comorbid depressive symptoms were less likely to overrate themselves than ADHD boys without depression in the areas of academic competence and
physical appearance. ADHD boys with and without depression overestimated their behavioral conduct, an area in which boys with ADHD often struggle. However, in the area of social functioning ADHD boys with depression rated themselves the same as control boys, but ADHD boys without depression reported significantly increased social competence. The researchers suggested that although the presence of depressive symptoms reduced the overestimated self-perceptions of ADHD boys in some areas, it did not abolish it (Hoza et al., 2002).

In conclusion, the results of previous research lead to the conclusion that children with ADHD report different symptoms from their parents and teachers. Most likely children with ADHD overestimate their competence in many domains. However, ADHD children with comorbid depressive symptoms may report a level of competency that more closely matches that reported by their teachers and parents.

Hypotheses

Hypothesis 1. Previous research reported that children with ADHD have greater difficulty with social functioning than children without ADHD (Biederman et al., 1993; Carlson et al., 1987; Wheeler & Carlson, 1994). Although very little difference has been found in social competence among control girls and boys (Landy, 2002), girls with ADHD are more likely to be rejected by their peers than boys with ADHD (Berry et al., 1985; Carlson et al., 1997), possibly because they demonstrated externalizing behaviors that contrasted with social expectations (Carlson et al., 1997). It was hypothesized that problems in social functioning for ADHD children would vary as a function of gender such that, while there would be no gender differences in social functioning for control children, ADHD girls would have greater difficulty than ADHD boys. In addition, there would be a main effect for ADHD status but not for gender, regardless of reporter.
Hypothesis 2a. Boys with ADHD tend to give unrealistically optimistic self-reports in many domains compared to teachers and parents (Diener & Milich, 1997; Hoza et al., 2000, 2002; Milich, 1994; Ohan & Johnston, 2002). This phenomenon has not been explored in girls. It was hypothesized that both boys and girls with ADHD would give more optimistic self-reports of social functioning than the reports of their teacher or parent.

Hypothesis 2b. Although there is no available research on self-report in girls with ADHD, there is evidence that females in general offer less optimistic self-reports than do males (e.g., Ireson, Hallam, & Plewis, 2001; Jackson, Hodge, & Ingram, 1994). Additionally, adolescent boys tend to have self-concepts that differ from the opinions of others more than girls (Tyagi & Kaur, 2001). Thus, it was hypothesized that ADHD boys would be more optimistic in their self-reports of social functioning than ADHD girls.

Hypothesis 3. In the area of social functioning, ADHD boys with depression rated themselves the same as control boys, but ADHD boys without depression reported significantly increased social competence (Hoza et al., 2002). Therefore, it was hypothesized that children with ADHD and comorbid depressive symptoms would self-report a similar low level of social functioning as their parent and teacher.

Hypothesis 4. A factor highly associated with social dysfunction in children with ADHD is the presence of comorbid psychiatric conditions (Biederman et al., 1993; Carlson et al., 1997; Greene et al., 1996). Therefore, it was hypothesized that children with ADHD and another psychiatric diagnosis would have greater difficulty with social functioning than children with ADHD without comorbidity.
CHAPTER 2

METHOD

Participants

Participants included 119 girls and boys and their parent/guardian. The children’s’ ages ranged from 6 years to 11 years old, with a mean age of 8.21 (SD = 1.09 years) (see age statistics in Appendix B, Table 1). As seen in Appendix B, Tables 2 and 3, the overall sample was primarily Caucasian (77% of children; 83% of parents) and 60.7% of the families had a yearly income greater than or equal to $50,000. In addition, although recruitment was equally focused on all parents, regardless of gender, 85% of the primary guardians that participated were mothers.

Sixty-one children (21 girls, 40 boys) were previously diagnosed with Attention-Deficit/Hyperactivity Disorder, Combined Type (ADHD/C) or Attention-Deficit/Hyperactivity Disorder, Primarily Hyperactive/Impulsive Type (ADHD/HI).1 Of the children diagnosed with ADHD, 19 (33%) were also diagnosed with at least one other psychiatric disorder (see Appendix B, Table 4). The current sample is typical since high rates of psychiatric comorbidity are common in ADHD samples (for a review see Pliszka, 1998).

Fifty-eight children (30 girls, 28 boys) and their parent/guardian served as the comparison group. Only three children (5%) in the comparison group carried a psychiatric

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1 Children diagnosed with Attention-Deficit/Hyperactivity Disorder, Primarily Inattentive Type (ADHD/I), were not included in the current study due to the qualitative differences in their peer interactions and symptom presentation (Henker & Whalen, 1999). Children with ADHD/I tend not to be actively rejected by peers. In contrast, children with ADHD/I tend to be socially ignored or neglected. Children with ADHD/C or ADHD/HI have intrusive, overactive behaviors that contribute to peer rejection and tend to be actively rejected. Research has shown that children who are socially neglected do not report lower feelings of peer acceptance compared to higher status peers (Asher & Wheeler, 1985). Furthermore, it is less likely teachers would recognize the social neglect of children with ADHD/I. From the viewpoint of teachers, children with ADHD/I may appear as if they have no peer interaction problems.
diagnosis. A complete listing of psychiatric diagnoses in the ADHD and the comparison group can be seen in Appendix B, Table 7.

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 and 3.

Seventeen of the ADHD children (7 girls, 10 boys) did not take medication, while 44 of the ADHD children did take medication (14 girls, 30 boys). Statistical comparisons were made between the medicated and unmedicated ADHD children on all relevant demographic information (i.e., parent and child gender, age, education level, ethnicity, and family income level). No significant differences were found except for child grade. A majority of the unmedicated ADHD children were in 2nd grade (52.9%), while a majority of the medicated ADHD children were in 3rd grade (40.9%). However, there were no significant differences in age. Descriptive statistics, as well as results of t tests and Chi Squares, can be seen in Appendix B, Tables 4, 5, and 6.

Participants were recruited with advertisements in the community as part of a larger research study and through referrals from psychologists, psychiatrists, or other mental health professionals who work with these children. 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 the parent report measures described in the following section. 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. Seventy-seven teachers responded to the requests for information regarding the child participants (65% response rate).

Measures

All of the measures chosen for the current study are used routinely with diverse populations and are appropriate for Hispanic and African-American populations in addition to Caucasian populations.

Demographic Questionnaire. The child’s participating parent or guardian completed the “Demographic Information and History Form” (DIHF; see Appendix D). This form obtained basic demographic information, such as parent and child gender, age, ethnicity, estimated income, and education level. In addition, the DIHF also asked for information regarding diagnostic information (i.e., ADHD) and medical information, including current medications.

Measures to Confirm Diagnoses of ADHD. Three measures were used to confirm a previous 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 child’s parent or guardian completed the ADHD-RS-IV: HV. 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 (with scores ranging from 0 to 27). A Total Scale score 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 based on gender and aged-based norms. 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.).

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. In addition, four-week test-retest reliability statistics ranged from $r = .78$ to .86 (DuPaul et al., 1998). 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 (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 child’s teacher completed the ADHD-RS-IV: SV (DuPaul et al., 1998). 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. 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 CPRS 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 is the Child Behavior Checklist (CBCL; Achenbach, 1991). This measure does not appear in an Appendix due to copyright restrictions. Specifically, the Attention Problems Scale of the CBCL was utilized to confirm ADHD diagnosis for this study. Sample items from the Attention Problems Scale include: “can’t concentrate, can’t pay attention for long” and “impulsive or acts without thinking.”

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 were derived from multivariate statistical procedures (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 and age 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. Achenbach (1991) found the average 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 sufficiently 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, Faraone, Doyle, et al., 1993). Specifically, Biederman, Faraone, Doyle, and colleagues (1993) 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. 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 summary, the
CBCL demonstrates sound psychometric properties, making it a useful tool that is widely used in clinical, community, and research settings.

**Measures of Child Social Functioning.** Three measures evaluated the child’s social functioning: the Loneliness and Social Dissatisfaction Questionnaire (LSDQ; Asher, Hymel, & Renshaw, 1984; Cassidy & Asher, 1992), the Teacher Rating Scale, Social Acceptance Scale (TRS-SA; Harter, 1985), and the CBCL, Social Problems Scale (CBCL-SPS; Achenbach, 1991). The child completed one of these measures, the parent completed one measure, and the teacher completed one measure.

The Loneliness and Social Dissatisfaction Questionnaire (LSDQ; Asher et al., 1984; Cassidy & Asher, 1992) is a 24-item measure completed by a child to assess perceived peer acceptance and feelings of loneliness (see Appendix E). Sixteen of the items focus on children’s feeling of loneliness, while eight items act as distracters and focus on children’s hobbies or preferred activities. Cassidy and Asher transformed the original LSDQ designed by Asher and colleagues from a statement-response format to a question-response format. In the adapted version, the child is asked to respond to the questions with “3 = yes,” “2 = sometimes” or “1 = no.” Scores on the LSDQ range from 16 to 45, with higher scores representing higher peer acceptance. This adapted version has good reliability with internal consistency reported at $\alpha = .79$ (Cassidy & Asher). In addition, the 1984 version revealed a Guttman split-half reliability of .91 (Asher et al.). Asher and colleagues report that scores on the LSDQ have been found to be significantly associated with peer ratings and child-reported number of friends.

The Teacher Rating Scale (TRS; Harter, 1985) is a 15-item measure developed to parallel the Self-Perception Profile for Children (Harter). The Self-Perception Profile for Children 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 child has a lot of friends, or this child doesn’t have many friends.”) 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 $\alpha = .93-.96$ (Harter, 1982). 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). The Social Acceptance domain is the domain of interest for the present study and was used in statistical analyses. The TRS can be seen in Appendix F.

Social functioning is often assessed through self-report measures (e.g., Barth & Parke, 1993; Eisenberg et al., 1996; Patterson et al., 1990), teacher report measures (e.g., Carson & Parke, 1996; Eisenberg et al., 1996; Isley et al., 1996; MacDonald & Parke, 1984), observation (e.g., Harrist et al., 1994; Isley et al., 1996; MacDonald & Parke, 1984), and sociometric ratings by peers in the classroom (e.g., Armentrout, 1972; Boyum & Parke, 1995; Puttalaz, 1987). Due to the necessity of referrals of children already diagnosed with ADHD to the present study, social functioning was assessed through teacher, parent, and self-report only. Although sociometric data would certainly add valuable information regarding peer functioning, the possibility of visiting each child participants’ classroom and obtaining parental permission from the child’s
peers to participate in the study was not feasible. In addition, Boyum and Parke (1995) found significant correlations between teacher ratings of social functioning and peer sociometric ratings, ranging from \( r = .37 - .60 \). Similarly, Isley and colleagues (1996) found significant correlations between peer and teacher measures of social functioning, ranging from \( r = .41 - .53 \).

The CBCL-SPS was used to assess parents’ view of their child’s social functioning. The psychometric properties of the CBCL as a whole are given above. Achenbach et al. (1991) found that CBCL-SPS was correlated with the ACQ Behavior Checklist but did not report exact figures. Examples of the Social Problems Scale include: “Doesn’t get along with other kids” and “Gets teased a lot.”

*Measure of Child Depression.* The CBCL Anxious/Depressed Scale was used to measure parents’ perceptions of their children’s depression. The Anxious/Depressed Scale has good construct validity. Achenbach et al. (1991) found it to correlate \( r = .78 \) with the Anxiety-Withdrawn Scale on the Quay-Peterson Revised Behavior Problem Checklist (RBPC; Quay & Peterson, 1983) and to correlate \( r = .67 \) with the Anxiety Scale of the Conners Parent Questionnaire (CPQ; Conners, 1973).

The Anxious/Depressed Scale includes items that are indicative of both anxiety and depression. Examples from this scale include: “Cries a lot” and “unhappy, sad or depressed.” The scale measures both anxiety and depression because “although it is possible to discriminate between feelings of anxiety and feelings of depression, analyses indicate that these kinds of problems are closely intertwined in children” (pp. 154-156, Achenbach et al., 1991). The CBCL Anxious/Depressed Scale has been found to distinguish depressed from nondepressed children regardless of comorbid ADHD (Biederman, Faraone, Mick et al., 1996). In the current study a t-score of 70 was used as a cut-off to distinguish depressed from non-depressed ADHD children.
Procedure

Parent-child dyad participants were recruited in several ways. 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 on medication 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 included a thirty minute videotaped play interaction with him/her and his/her child and approximately two hours of completing questionnaires. Additionally, parents were told that their child would spend about one hour completing a questionnaire packet with the help of a trained graduate student, then the child would play with graduate and undergraduate research assistants for the remainder of the time. Parents 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 - Plano), participants were greeted and informed consent was obtained (see Appendix G). If the parent chose to sign the Informed Consent and participate in the study, assent was also solicited and obtained from all child participants, 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. One researcher discretely reminded parents of ADHD children on medication that these few minutes of privacy were intended to allow the child time to take their medication. Stimulant medication usually takes about 30 minutes to take effect, which is the length of the videotaped segment. Therefore, the child was medicated during the
completion of the questionnaires. The other researcher(s) who were collecting data from the child were blind to the child’s ADHD status.

Once consent was obtained and medication taken if necessary, parents and their son or daughter participated in the Parent-Child Interaction Assessment (PCIA; Holigrocki, Frieswyk, Kaminski, & Hough, 1999; Holigrocki, Kaminski, & Frieswyk, 1999;) an analogue observation technique designed to evaluate aspects of the parent-child relationship. The PCIA was administered according to the protocol described in the PCIA Manual in Appendix H (Holigrocki, Frieswyk, Kaminski, & Hough, 1999). The PCIA was administered as part of a larger study and was not used for the current study.

Following the administration of the PCIA, parents were given one of four counterbalanced questionnaire packets (which included 10 measures – 3 for the present study) to complete, while the child was administered three measures (one for the present study - the LSDQ) by a trained graduate student (for child administration procedures see Appendix I). 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, a 5-minute break was taken at least every 20 minutes to prevent fatigue in the child. However, more frequent breaks were taken as 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 a researcher. After completion of all measures, the parent was asked to complete a letter (see Appendix J) 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 to the parent can be seen in Appendix K. To ensure confidentiality, the child’s name was only on the letter to the teacher. The child’s number (not
name) was on the actual measures that the teacher completed and sent back. A self-addressed stamped envelope was attached for the teachers 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 evident historically. 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 necessary 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. Following completion of the study, parents received a debriefing form (see Appendix L), which explained the study and provided a list of resources for counseling in the community.
CHAPTER 3

RESULTS

Data Preparation

Prior to conducting statistical analyses, the data was examined to ensure that the assumptions of both the Analysis of Variance (ANOVA) and the Multivariate Analysis of Variance (MANOVA) were met. The assumptions of the ANOVA were met, including normality (the dependent variables were normally distributed) and homogeneity of variance (variances were equal for all treatment groups according to Levene’s Test for Equality of Variances). The assumption of homogeneity of covariance of the MANOVA was met on all analyses based on Box’s Test of Equality of Covariances. In addition, the multiple dependent variables used in the MANOVA were both empirically and theoretically correlated.

In order to compare the three measures of social functioning, scores were converted to z-scores. A z-score is a standardized score with a mean of zero and a standard deviation of one.

To determine whether medication affects the reports of social functioning of ADHD children, analyses were run with and without the ADHD children who were not on medication. ADHD children on and off medication were compared on the three measures of social functioning and no significant differences were found. Furthermore, all analyses were run with and without the ADHD children not on medication. There were no differences in the results of the analyses with and without the ADHD children not on medication with the exception of one result (interaction between rater and presence of depression – explained further below). Therefore, the results of the whole sample were used.
Hypotheses 1, 2a, and 2b

Hypothesis 1 stated that social functioning for ADHD children varies as a function of gender such that, while there are no gender differences in social functioning for control children, ADHD girls have greater difficulty than ADHD boys. In addition, it was hypothesized that there would be a main effect for ADHD status but not for gender. Hypothesis 2a stated that children with ADHD give more optimistic self-reports of social functioning than the reports of their teacher or parent. Hypotheses 1 and 2a were analyzed using a 2 X 2 X 3 mixed design Analysis of Variance (ANOVA) with gender and ADHD status as the between subjects factors and three ratings of social functioning (self, parent, and teacher) as the within subjects factor.

A significant difference in social functioning was found between children with and without ADHD, $F(3,72) = 10.07, p < .001$, with 30% of the variance in social functioning accounted for by ADHD status. Children with ADHD had significantly lower social functioning ($M = -.29, SD = .11$) than children without ADHD ($M = .30, SD = .13$). The means and standard deviations for this ANOVA can be seen in Appendix B, Table 8, and the results for this ANOVA can be seen in Table 9.

The findings for ADHD, however, are somewhat misleading and must be considered in light of a significant rater by ADHD status interaction. The interaction between rater and ADHD status, $F(2,71) = 5.50, p < .01$, accounted for 13% of the variance in social functioning. Parents and teachers rate ADHD children as having lower social functioning than control children, but ADHD and control children do not report themselves as having different levels of social functioning. Among the ADHD participants, children reported themselves as having significantly higher social functioning than their parents. Among the control participants, children reported
themselves as having significantly lower social functioning than their parents or teachers (see Appendix A, Figure 1).

Hypothesis 2b stated that ADHD boys would be more optimistic in their self-reports of social functioning than ADHD girls. A MANOVA was run to examine gender differences in social functioning. Since not all of the children had teachers who returned surveys, when teacher reports were included in the MANOVA, the number of participants used in the analysis was reduced (e.g., the analysis only ran the 77 children who had teacher reports). When the teacher reports were left out of the analysis, more participants were available (112 children), and therefore the MANOVA had more statistical power. A significant difference in social functioning was found between boys (M = -.06, SD = .10) and girls (M = -.15, SD = .11), $F (2,109) = 3.48, p < .05$, with 6% of the variance in social functioning accounted for by gender. The univariate results indicated no significant gender difference in social functioning on the parent report. However, the child self-report did have significant gender differences, $F (1,110) = 4.77, p < .05$, with 4% of the variance in social functioning accounted for by gender. The means and standard deviations for this MANOVA can be seen in Table 10, and the results for this MANOVA can be seen in Table 11.

Exploratory ANCOVAs with ADHD symptom severity as the covariate were run to determine whether gender differences in social functioning remained when ADHD symptoms were statistically controlled. For the child self-report, gender differences in social functioning remained, $F (1,110) = 5.75, p < .05$, with 5% of the variance in social functioning accounted for by gender. Girls ($M = -.29, SD = 1.12$) reported significantly lower social functioning than boys ($M = .11, SD = .90$). The results for this ANCOVA can be seen in Table 12. For the parent report
no significant gender differences in social functioning were found when ADHD symptoms were statistically controlled. The results for this ANCOVA can be seen in Table 13.

**Hypothesis 3**

Hypothesis 3 stated that children with ADHD and comorbid depressive symptoms would rate their social functioning similar to the ratings by their parent and teacher. This hypothesis was analyzed with a 2 X 2 X 3 mixed design ANOVA with gender and comorbid depression as the between subjects factors and three ratings of social functioning (self, parent, teacher) as the within subjects factor. Gender was included as a quasi-independent factor in order to conduct exploratory analyses on this variable. Results of this analysis are tentative, however, due to low cell sizes for the depressed group.

A significant difference in social functioning was found by rater, $F(2,84) = 5.50, p < .01$, with 12% of the variance in social functioning accounted for by rater. Also, among children with ADHD, there was a significant difference in social functioning between children with and without comorbid depression, $F(1,40) = 7.02, p < .05$. ADHD children with comorbid depression ($M = -0.70, SD = 0.19$) had significantly lower social functioning than ADHD children without comorbid depression ($M = -0.08, SD = 0.13$). However, these main effects are superceded by a 2-way interaction between rater and the presence of depression.

Among children with ADHD, the relationship between comorbid depression and social functioning differed as a function of rater, $F(2,80) = 4.40, p < .05$, with the interaction accounting for 10% of the variance in social functioning (see Figure 2). Within the group of children with ADHD and depression, parents rated their children as significantly lower on social functioning than children rated themselves. Parents also rated their children significantly lower on social functioning than did the children’s teacher. There were no significant differences
between the child and teacher reports. In the group of children with ADHD who did not have comorbid depression, however, there were no significant differences according to rater. The means and standard deviations for this ANOVA can be seen in Table 14, and the results for this ANOVA can be seen in Table 15.

When the 16 ADHD children who were not on medication were removed from the sample, the interaction between rater and the presence of comorbid depression on social functioning was not significant. However, removing these 16 children created very small cell sizes (11 depressed, 22 not depressed), which most likely affected the results. Therefore, this result is very tentative.

No main effect was found for gender among ADHD children with and without comorbid depression. In addition, when gender was added as a quasi-independent factor in analyzing the interaction between rater and comorbid depression, there were no significant differences.

**Hypothesis 4**

Hypothesis 4 stated that children with ADHD and a comorbid condition would have greater difficulty with social functioning than children with ADHD without psychiatric comorbidity. This hypothesis was tested using a 2 X 2 Multivariate Analysis of Variance (MANOVA). The dependent variables were social functioning (LSDQ, CBCL-SPS, and TRS-SA) and the quasi-independent variables were comorbidity (yes, no) and gender (male, female). No significant interaction or main effects were found (see Tables 16 and 17). These findings are only tentative due to the low cell sizes among the group of children with ADHD and a comorbid condition.
CHAPTER 4
DISCUSSION

The purpose of the present study was to investigate the gender differences in child, parent, and teacher perceptions of social functioning in an ADHD population. Children who are rejected by their peers often have poor outcomes in adolescence and early adulthood, including being at greater risk for criminality, psychopathology, and dropping out of school (see Kupersmidt, Coie, & Dodge, 1990; for a review). Children with ADHD tend to experience more problems with social functioning (Biederman, Faraone, & Chen, 1993; Carlson, Lahey, Frame, Walker, & Hynd, 1987; Wheeler & Carlson, 1994), with ADHD girls more likely to experience peer rejection than ADHD boys (Berry, Shaywitz, & Shaywitz, 1985; Carlson, Tamm, & Gaub, 1997), and ADHD children with comorbid psychiatric conditions are more likely to have problems with social functioning than ADHD children without comorbidity (Biederman et al., 1993, Carlson et al., 1997; Greene et al., 1996). Boys with ADHD tend to provide more optimistic reports of their social functioning than their parents or teachers, possibly due to a positive illusory bias (Diener & Milich, 1997, Hoza, Pelham, Dobbs, Owens, & Pillow, 2002; Hoza, Waschbusch, Pelham, Molina, & Milich, 2000). The tendency to provide unrealistically optimistic self-reports is less evident in ADHD boys with comorbid depression (Hoza et al., 2002) and has not been tested in the ADHD girls.

Summary of Findings

ADHD Status. Consistent with previous research (Biederman et al., 1993; Carlson et al., 1987; Wheeler & Carlson, 1994), children with ADHD had lower social functioning than children without ADHD. However, the relationship between ADHD status and social functioning differed as a function of rater. On the self-report measure, ADHD children and control children
reported similar levels of social functioning. Differences in social functioning were only found in teacher and parent reports, with both reporting children with ADHD as having lower social functioning than control children.

Many factors may contribute to the increased social impairment and peer rejection that parents and teachers perceive in children with ADHD. Children with ADHD tend to engage in more disruptive behaviors, to lack effective communication skills, and to be aggressive (Frederick & Olmi, 1994). From an adult perspective, these behaviors most likely impair the social functioning of the child. However, children may perceive the situation differently. Previous research found that children with ADHD often are inattentive to the social cues of others and therefore are unaware of their impact on others (Gentschel & McLaughlin, 2000). This lack of awareness and attention could contribute to ADHD children perceiving their social functioning as similar to that of control children. For example, “Zac” is diagnosed with ADHD and interacting with other children is challenging for him. However, he has one good friend, who is a younger child. Now imagine that “Zac” is completing a survey about how much other children like him. Maybe that one positive social relationship is enough for “Zac” to make a positive global attribution regarding his social relationships with peers. He may rate himself as having high social functioning due to that one good friend. In contrast, a parent or teacher may view a child with only one friend as having a low level of social functioning. This would lead to a discrepancy between teacher/parent and child reports.

Within the group of ADHD children, the child tended to report a higher level of social functioning than their parent. The tendency of children with ADHD to be unaware of social cues may lead them to believe that they have better social functioning than is evident to their parents, as in the example of “Zac” above. The tendency of children with ADHD to give unrealistically
optimistic self-reports may also indicate the presence of a positive illusory bias, as suggested in previous research (Diener & Milich, 1997; Hoza et al., 2000, 2002; Milich, 1994; Ohan & Johnston, 2002). This positive illusory bias is thought to serve as a self-protective function by helping children with ADHD manage their daily experiences of failure (Diener & Milich, 1997; Hoza et al., 2000; Ohan & Johnston, 2002). Although previous research has not examined this bias in girls, the current study found that girls as well as boys reported a higher level of social functioning than did their parents.

There is also the possibility that teachers and parents are biased when reporting the behaviors of children with ADHD. Teachers reported that children with ADHD were significantly more stressful to teach than children without ADHD (Greene et al., 2002). Children with ADHD tend to have more difficult family relationships (Biederman et al., 1996, 1999; Greene et al., 2001, 2002). These stressful relationships between parents/teachers and ADHD children could lead the parents/teachers to assume that the children also have difficulty interacting with their peers. A self-fulfilling prophecy also may be contributing to bias on the part of parents and teachers. The knowledge that these children have been labeled ADHD may lead parents and teachers to attribute negative characteristics to the child that may or may not actually exist.

Among control children, children reported a lower level of social functioning than teachers or parents. One possible reason for this outcome is that parents and teachers are thinking about control children in comparison to children with ADHD or other behavior problems and therefore rating them as having higher social functioning. Another possibility is that the children are appearing to socially function quite well, but are experiencing internal feelings of loneliness. Since loneliness is a private internal feeling, it would be difficult for a parent or teacher to
accurately report the child’s experience of loneliness. Perhaps control children are experiencing more loneliness than they express to adults.

Another hypothesis for these results relates to the study by Qualter and Munn (2002) that examined the relationship between social isolation and emotional loneliness. They grouped children into three groups: socially rejected but not lonely, lonely but not socially isolated, and lonely and socially rejected. It is possible that the ADHD children in this sample fit into the category of socially rejected but not lonely and the control children fit into the category lonely but not socially isolated. This would explain why the parent and teacher are reporting the presence or absence of social isolation and the children are reporting more about their internal sense of loneliness.

**Gender.** Gender differences in social functioning were found on the child self-report but not on the parent report of social functioning. Girls reported themselves to have lower social functioning than boys, even when ADHD symptom severity was statistically controlled. The gender differences found in the self-report of the child is congruent with previous research that found evidence that females in general offer less optimistic self-reports than do males (e.g., Ireson, Hallam, & Plewis, 2001; Jackson, Hodge, & Ingram, 1994). Girls typically interact with their peers in a more relational fashion, as demonstrated by their use of relational aggression as opposed to physical aggression (Crick and Grotpeter, 1995). Perhaps girls reported lower social functioning because they have higher standards for those people they consider their friends. For example, a girl may spend time with peers but not consider them “friends” because she does not feel close to them. Whereas a boy may consider anyone he spends time with to be his friend. Just as “Zac” in the earlier example may be happy with his one friend, maybe girls are not content with their many friends unless they feel the quality of the relationship is good.
**Comorbid Depression.** Among children with ADHD, the relationship between social functioning and comorbid depression differed as a function of rater. Overall, ADHD children with comorbid depression had lower social functioning than ADHD children without comorbid depression. Within the group of children with ADHD and depression, parents rated their children as having lower social functioning than did the children or teachers. Previous research found that in the area of social functioning ADHD boys with depression rated themselves the same as control boys, but ADHD boys without depression reported significantly increased social competence (Hoza et al., 2002), which suggests that ADHD children with comorbid depressive symptoms may report a level of competency that more closely matches that reported by their teachers and parents. However, in the current study among ADHD children with depression, both the children and teachers were more optimistic than the parents. Perhaps these children have better social functioning at school than they do at home. It may be easier for a depressed child to interact with other children in a structured environment that facilitates social interaction and more difficult in the home environment where the child must initiate social interactions on his/her own. Or perhaps children have better social functioning at school because they are likely to be on medication when they are at school. Teachers may only see ADHD children when they are medicated, but parents see their children both with and without medication. In fact, the parent may rarely see their child medicated if that child only takes medication when attending school, and not on weekends or holidays.

Another possible reason for the discrepancy between the results of the current study and that of Hoza is the manner in which depression was rated. Hoza used the Children’s Depression Inventory (CDI), which is a self-report measure, and the current study used the Anxious/Depressed Scale of the Child Behavior Checklist, which is completed by the child’s
parent. Possibly the parents are over reporting depression in their children. Or, just as ADHD children often perceive their social functioning differently than their parents, maybe they also perceive their depression differently. Elementary school aged children have more limited self-awareness and may not recognize their own sadness, leading to possible underreporting of depression. Perhaps the children who have been classified as depressed in the current study would not be classified as such if the CDI were used to measure depression.

When the ADHD children who were not on medication were removed from the sample, the relationship between social functioning and comorbid depression did not differ as a function of rater. However, due to the low cell sizes created by the removal of these children, the validity of these results is uncertain. If this result is valid, then the differences found may be related to whether or not the ADHD child is medicated. Possibly parents only give low social functioning ratings to those children who are not medicated. These children would be more likely to display more ADHD symptoms more often, which may lead them to have more social functioning difficulties.

In the group of ADHD children without comorbid depression, there were no rater differences, which is contrary to previous findings that ADHD children who are not depressed tend to report higher social functioning than their parents (Hoza et al., 2002). One hypothesis for this result is that the ADHD children without depression have higher levels of social functioning and thus possibly higher levels of self-esteem, which may lead them to have less need for a positive illusory bias. Therefore, they tend to report levels of social functioning congruent with the reports of their teachers and parents than the ADHD children with depression.

Gender was examined in exploratory analyses, but no differences were found. Previous research included only boys and although no gender differences were found in ratings of social
functioning, maybe the presence of girls in the current study somehow influenced the findings related to comorbid depression. The low number of ADHD girls compared to ADHD boys also may have affected the result.

**Comorbidity.** No differences in parent, teacher, or child reports of social functioning were found between ADHD children with a comorbid psychiatric condition and the ADHD children without comorbidity. Also, no gender differences were found. This result is contrary to previous research that found comorbid conditions in children with ADHD to be highly associated with social dysfunction (Biederman et al., 1993; Carlson et al., 1997; Greene et al., 1996). Perhaps no differences were found in the current study because the differences in social functioning are related to characteristics of ADHD rather than comorbid conditions. For example, the inattentiveness and disruptiveness of ADHD may contribute to the child’s social functioning difficulties more than the behaviors associated with their comorbid condition.

The comorbid conditions most associated with social problems in ADHD children were anxiety problems and oppositional behavior (Greene et al., 2001). One possible reason for the lack of significance in the current study is that the ADHD children included only 13.1% with Oppositional Defiant Disorder and 11.5% with Generalized Anxiety Disorder. Furthermore, the current sample had lower rates of comorbidity than have been found by previous researchers. In this sample only 33% of the children diagnosed with ADHD were also diagnosed with at least one other psychiatric disorder (see Appendix B, Table 7). Past researchers have estimated that as many as two-thirds of children with ADHD are diagnosed with some other psychiatric diagnosis (for a review see Pliszka, 1998). The low incidence of comorbidity in the current sample led to very sample cell sizes (3 girls, 9 boys), which would contribute to the lack of significant results.
Clinical Implications

The present study has definite clinical applications in working with children with ADHD. The current results suggest that ADHD children have difficulty in social functioning according to parents and teachers. Knowing that children with ADHD are more likely to have problems with social functioning allows clinicians to use primary prevention measures. For example, ADHD children could be targeted as at-risk for social problems and receive training and support in this area before problems arise. Perhaps as soon as a child is diagnosed with ADHD, they would be evaluated for social skills training.

However, when implementing these interventions it is important to keep in mind the finding that ADHD children do not see themselves as having social functioning difficulties. So the intervention may need to be explained in a manner that is more acceptable to the child. It would be interesting to ask these children in what areas they feel they need improvement.

This study brought to light two characteristics of ADHD children that should be taken into account: gender and comorbid depression. Since ADHD girls rated themselves lower in social functioning that ADHD boys, possibly conducting social skills groups that are same-sex would be most beneficial. Then each group could be structured to best help the group members. For example, since ADHD girls say they have problems making friends, they would probably be more open to a group for children who want to learn how to make friends than would boys. The boys group would need to be described in a different way.

Clinical interventions to improve social functioning would be especially useful for ADHD children with comorbid depression since the current study found that this group overall had lower social functioning than ADHD children without comorbid depression. In fact, primary
prevention efforts may want to focus specifically on the subset of ADHD children who also are depressed. Since the parents reported lower social functioning than the child or teacher, an intervention might be most helpful if it targets situations that are more common in a home environment than a school environment. For example, possibly family therapy sessions working with the child and his/her siblings or groups made up of children from the child’s neighborhood. Further exploration of the differences between the home and school environment would be necessary to develop the most appropriate intervention.

Methodological Limitations

External validity and generalizability. Some limitations become apparent when the issues of external validity and generalizability were considered. The characteristics of this sample are the first major limitation when considering external validity and generalizability. Although efforts were made to recruit families from all ethnic backgrounds, the sample was predominantly Caucasian (approximately 80%). The ethnicity of our sample was very close to demographic makeup of the Texas town in which the data was collected (75.6% Caucasian – 2000 Census). So although the generalizability is limited to a Caucasian sample, it is a representative sample of this area. However, no definitive conclusions can be drawn regarding possible social functioning differences that may be present in different ethnic and cultural groups.

The current sample is also limited in terms of socioeconomic class and education. Approximately 60% of the entire sample’s income fell in the greater than $50,000 range, and about 50% of the sample had at least a bachelor’s degree. Consequently, making broad generalizations to lower socioeconomic classes and levels of education may be inappropriate.

An additional limitation is that primarily mothers completed the parent ratings (approximately 87%). Definitive conclusions on how mothers’ and fathers’ rate the social
functioning of their child cannot be reached. Future research could focus on examining differences between the ratings of mothers and fathers.

_Low Cell Size_. Some analyses were very tentative and only exploratory due to low cell sizes. The chances of finding significant effects when true effects exist were diminished due to this limitation. Future studies could improve this by attempting to recruit more children to fill those cells. For example, advertising for children with ADHD and another psychiatric diagnosis would help fill the comorbidity cells.

_Behavior Reports_. Although behavior reports are reliable and valid ways to find out information about a child, sometimes each rater reports different levels of behaviors. The current study examined these rater differences. In the instances where rater differences were found, several things could be occurring. There may be bias on the part of one or more reporters, or each reporter may simply have a different perception of the situation. Future studies may be able to better determine the reasons for rater differences by using direct observation of the child’s social functioning both at home and at school, in addition to behavior reports.

_Future Research_

The results of the present study indicate a need to assess further social functioning in children with ADHD. To better understand the discrepancy between child self-report and parent and teacher reports as well as the gender differences in self-report, future research might focus on the quality of friendships of ADHD children in addition to global measures of social functioning. Also, interviewing ADHD children about their views about friendships and their satisfaction level with different types (quality) and numbers (quantity) of friends would help researchers to better understand the results from the current study.
Among the subset of ADHD children who have comorbid depression, there is a need to better understand the role this comorbid depression plays in their social functioning. Future research may want to examine different levels of depression to determine whether ADHD children with more severe depression have self-reports of social functioning that more closely match that of their parents than ADHD children with less severe depressive symptoms. Additionally, since current findings may differ from previous research due to the manner in which the presence of comorbid depression was attained, future research might examine differences in child and parent report of depression.

Further assessment of the effect of medication on the social functioning of ADHD children with comorbid depression is needed. If medication did have an effect, it would be interesting to look at whether the type of medication had an effect (for example, short vs. long acting, stimulants vs. antidepressants, etc.). Obtaining more equal numbers of ADHD children on and off of medication would allow for a better comparison.

Replicating this study with a greater number of girls and ADHD children with comorbidity would enable larger cell sizes and additional significant results. Advertising for ADHD boys with a comorbid psychiatric disorder may help fill in that gap. The difficulty in recruiting ADHD girls is a common challenge. Future research would benefit from using new creative ideas to recruit these girls.

The examination of rater and gender differences in the social functioning of children with ADHD and the role of comorbidity is indeed a worthwhile endeavor, as evident by the present study. Shedding more light on how parents, teachers, and children perceive social functioning will contribute to the better understanding of ADHD and will help guide individual, group, and family interventions.
APPENDIX A

FIGURES
Figure 1. Interaction between ADHD Status and Rater on Social Functioning $[F(2,71) = 5.50, p < .01]$
Figure 2. Interaction between Comorbid Depression and Rater on Social Functioning Among ADHD Children \[ F (2,80) = 4.40, p < .05 \]
APPENDIX B

TABLES
Table 1

Descriptive Statistics on the Age of the Children in the ADHD and Comparison Groups

<table>
<thead>
<tr>
<th>Variable</th>
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<th>t</th>
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<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Children’s Age in years</td>
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<td>8.11</td>
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<td>Parents’ Age in years</td>
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Table 2

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

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<th>χ²</th>
<th>p</th>
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<td>(n = 61)</td>
<td>(n = 58)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
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<td>Female</td>
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</tr>
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<td>3rd grade</td>
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</tr>
<tr>
<td>4th grade</td>
<td>10</td>
<td>16.4</td>
</tr>
<tr>
<td>5th grade</td>
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</tr>
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</table>

<table>
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<th>Children’s Ethnicity</th>
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<td>African American</td>
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<td>Asian American</td>
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<td>Caucasian</td>
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<td>Hispanic</td>
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<td>Unspecified</td>
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<td>1.6</td>
</tr>
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</table>

*Note.* χ² = Pearson Chi Square.

*a Chi Square run with 4th and 5th grade combined and without the other child due to low n.

*b Chi Square run with two groups, Minority vs. Caucasian due to low n.*
Table 3

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

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADHD Group (n = 61)</th>
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<th>$\chi^2$</th>
<th>p</th>
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<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td><strong>Parent Gender</strong></td>
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<td></td>
</tr>
<tr>
<td>Mother</td>
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<td>86.9</td>
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</tr>
<tr>
<td>Father</td>
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<td>11.5</td>
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<td>Stepmother</td>
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<td><strong>Parent Education level</strong></td>
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<td>12th grade</td>
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<td>29.5</td>
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<td>Community College</td>
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<tr>
<td><strong>Parent’s Ethnicity</strong></td>
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<td>African American</td>
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<td>Asian American</td>
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<td>1.7</td>
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</table>

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

*a Chi Square run with two groups, mother vs. non-mother due to low n.

*b Chi Square run with three groups, 12th grade and below, community college and technical/trade school, and university/advanced degree due to low n.

*c Chi Square run with two groups, Minority vs. Caucasian due to low n.
### Table 3 (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 = 58))</th>
<th>(\chi^2)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under $30,000</td>
<td>13 (21.3)</td>
<td>14 (24.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$30,000-50,000</td>
<td>8 (13.1)</td>
<td>10 (17.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$50,000-70,000</td>
<td>16 (26.2)</td>
<td>10 (17.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$70,000-100,000</td>
<td>14 (23.0)</td>
<td>13 (22.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over $100,000</td>
<td>10 (16.4)</td>
<td>10 (17.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Marital Status</td>
<td></td>
<td></td>
<td>(0.38^a)</td>
<td>NS</td>
</tr>
<tr>
<td>Never married</td>
<td>3 (4.9)</td>
<td>3 (5.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>41 (67.2)</td>
<td>42 (72.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>1 (1.6)</td>
<td>2 (3.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>12 (19.7)</td>
<td>8 (13.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>2 (3.3)</td>
<td>1 (1.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2 (3.3)</td>
<td>2 (3.4)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* \(\chi^2 =\) Pearson Chi Square.

\(^a\)Chi Square run with two groups, currently married vs. not currently married due to low \(n\).
Table 4

*Descriptive Statistics on the Age of the ADHD Children in the Medicated and Unmedicated Groups*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Medicated Group</th>
<th>Unmedicated Group</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 44)</td>
<td>(n = 17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children’s Age in years</td>
<td>M 8.45  SD 1.10</td>
<td>M 7.91  SD 1.15</td>
<td>1.75</td>
<td>NS</td>
</tr>
<tr>
<td>Parents’ Age in years</td>
<td>M 39.11  SD 7.01</td>
<td>M 40.18  SD 6.32</td>
<td>-.55</td>
<td>NS</td>
</tr>
</tbody>
</table>
Table 5

*Descriptive Statistics for ADHD Children in the Medicated and Unmedicated Groups*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Medicated (n = 44)</th>
<th>Unmedicated (n = 17)</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>Child Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>30</td>
<td>68.2</td>
<td>10</td>
<td>58.8</td>
</tr>
<tr>
<td>Female</td>
<td>14</td>
<td>31.8</td>
<td>7</td>
<td>41.2</td>
</tr>
<tr>
<td>Child’s Grade</td>
<td></td>
<td></td>
<td>8.16$^a$</td>
<td>.00</td>
</tr>
<tr>
<td>1st grade</td>
<td>5</td>
<td>11.4</td>
<td>3</td>
<td>17.6</td>
</tr>
<tr>
<td>2nd grade</td>
<td>8</td>
<td>18.2</td>
<td>9</td>
<td>52.9</td>
</tr>
<tr>
<td>3rd grade</td>
<td>18</td>
<td>40.9</td>
<td>1</td>
<td>5.9</td>
</tr>
<tr>
<td>4th grade</td>
<td>8</td>
<td>18.2</td>
<td>2</td>
<td>11.8</td>
</tr>
<tr>
<td>5th grade</td>
<td>4</td>
<td>9.1</td>
<td>2</td>
<td>11.8</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children’s Ethnicity</td>
<td></td>
<td></td>
<td>.65$^b$</td>
<td>NS</td>
</tr>
<tr>
<td>African American</td>
<td>2</td>
<td>4.5</td>
<td>1</td>
<td>5.9</td>
</tr>
<tr>
<td>Asian American</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>37</td>
<td>84.1</td>
<td>12</td>
<td>70.6</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biracial</td>
<td>4</td>
<td>9.1</td>
<td>2</td>
<td>11.8</td>
</tr>
<tr>
<td>Unspecified</td>
<td>2</td>
<td>11.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

*a*Chi Square run with 1st and 2nd grades combined and with 3rd, 4th and 5th grades combined and without the other child due to low n.

*b*Chi Square run with two groups, Minority vs. Caucasian due to low n.
Table 6

Descriptive Statistics for Parents of ADHD Children in the Medicated and Unmedicated Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Medicated (n = 44)</th>
<th>Unmedicated (n = 17)</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 Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>39</td>
<td>88.6</td>
<td>14</td>
<td>82.4</td>
</tr>
<tr>
<td>Father(^a)</td>
<td>5</td>
<td>11.4</td>
<td>2</td>
<td>11.8</td>
</tr>
<tr>
<td>Stepmother</td>
<td>1</td>
<td>5.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Education level</td>
<td></td>
<td></td>
<td>2.95(^a)</td>
<td>NS</td>
</tr>
<tr>
<td>9(^{th}) grade</td>
<td>1</td>
<td>5.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10(^{th}) grade</td>
<td>1</td>
<td>2.3</td>
<td>4</td>
<td>23.5</td>
</tr>
<tr>
<td>12(^{th}) grade</td>
<td>14</td>
<td>31.8</td>
<td>4</td>
<td>23.5</td>
</tr>
<tr>
<td>Technical/Trade School</td>
<td>3</td>
<td>6.8</td>
<td>1</td>
<td>5.9</td>
</tr>
<tr>
<td>Community College</td>
<td>5</td>
<td>11.4</td>
<td>1</td>
<td>5.9</td>
</tr>
<tr>
<td>University degree</td>
<td>16</td>
<td>36.4</td>
<td>5</td>
<td>29.4</td>
</tr>
<tr>
<td>Advanced degree</td>
<td>5</td>
<td>11.4</td>
<td>5</td>
<td>29.4</td>
</tr>
<tr>
<td>Parent’s Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>2</td>
<td>4.5</td>
<td>1</td>
<td>5.9</td>
</tr>
<tr>
<td>Asian American</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>40</td>
<td>90.9</td>
<td>12</td>
<td>70.6</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2</td>
<td>4.5</td>
<td>1</td>
<td>5.9</td>
</tr>
<tr>
<td>Biracial</td>
<td>1</td>
<td>5.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>11.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. \(\chi^2\) = Pearson Chi Square. NA = Chi Square was unable to be run due to small cell size.

\(^a\)Chi Square run with three groups, 12\(^{th}\) grade and below, community college, technical/trade school, and university degree, and advanced degree due to low \(n\).
Table 6 (continued)

Descriptive Statistics for Parents of ADHD Children in the Medicated and Unmedicated Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Medicated (n = 44)</th>
<th>Unmedicated (n = 17)</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 Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under $30,000</td>
<td>8</td>
<td>18.2</td>
<td>5</td>
<td>29.4</td>
</tr>
<tr>
<td>$30,000-50,000</td>
<td>7</td>
<td>15.9</td>
<td>1</td>
<td>5.9</td>
</tr>
<tr>
<td>$50,000-70,000</td>
<td>12</td>
<td>27.3</td>
<td>4</td>
<td>23.5</td>
</tr>
<tr>
<td>$70,000-100,000</td>
<td>9</td>
<td>20.5</td>
<td>5</td>
<td>29.4</td>
</tr>
<tr>
<td>Over $100,000</td>
<td>8</td>
<td>18.2</td>
<td>2</td>
<td>11.8</td>
</tr>
<tr>
<td>Parent Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never married</td>
<td>2</td>
<td>4.5</td>
<td>1</td>
<td>5.9</td>
</tr>
<tr>
<td>Married</td>
<td>29</td>
<td>65.9</td>
<td>12</td>
<td>70.6</td>
</tr>
<tr>
<td>Separated</td>
<td>1</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>11</td>
<td>25.0</td>
<td>1</td>
<td>5.9</td>
</tr>
<tr>
<td>Widowed</td>
<td></td>
<td></td>
<td>2</td>
<td>11.8</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>2.3</td>
<td>1</td>
<td>5.9</td>
</tr>
</tbody>
</table>

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

\(a\) Chi Square run with three groups, under $30,000, $30,000-70,000, and $70,000 and over due to low n.

\(b\) Chi Square run with two groups, currently married vs. not currently married due to low n.
Table 7

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

<table>
<thead>
<tr>
<th>Psychiatric Diagnoses</th>
<th>ADHD Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 61)</td>
<td>(n = 58)</td>
</tr>
<tr>
<td>Bipolar Disorder</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Generalized Anxiety Disorder</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Learning Disorder</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Major Depressive Disorder</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Obsessive-Compulsive Disorder</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Oppositional Defiant Disorder</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Posttraumatic Stress Disorder</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Separation Anxiety Disorder</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Note. Psychiatric diagnoses are not mutually exclusive.
Table 8

*Mean Scores and Standard Deviations for Measures of Social Functioning as a Function of ADHD Status (n = 76)*

<table>
<thead>
<tr>
<th></th>
<th>ADHD</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Child Report</td>
<td>-.14</td>
<td>.92</td>
</tr>
<tr>
<td>Parent Report</td>
<td>-.53</td>
<td>1.03</td>
</tr>
<tr>
<td>Teacher Report</td>
<td>-.34</td>
<td>.93</td>
</tr>
</tbody>
</table>

*Note.* Means are presented as z-scores to allow for cross-measure comparison. Z-scores are a standardized score with a mean of zero and a standard deviation of one. Child report was measured by the Loneliness and Social Dissatisfaction Questionnaire (LSDQ); parent report was measured by the Child Behavior Checklist – Social Problems Scale (CBCL – SPS); teacher report was measured by the Teacher Rating Scale – Social Acceptance Scale (TRS – SA).
Table 9

Analysis of Variance Results for ADHD Status and Gender (n = 76)

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
<td>.15</td>
<td>.15</td>
<td>.10</td>
</tr>
<tr>
<td>ADHD Status</td>
<td>1</td>
<td>18.46</td>
<td>18.46</td>
<td>12.36*</td>
</tr>
<tr>
<td>Gender X ADHD Status</td>
<td>1</td>
<td>4.25</td>
<td>4.25</td>
<td>2.84</td>
</tr>
<tr>
<td>Error</td>
<td>72</td>
<td>107.51</td>
<td>1.49</td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rater</td>
<td>2</td>
<td>1.58</td>
<td>.79</td>
<td>1.39</td>
</tr>
<tr>
<td>Rater X ADHD Status</td>
<td>2</td>
<td>7.79</td>
<td>3.89</td>
<td>6.86**</td>
</tr>
<tr>
<td>Error</td>
<td>144</td>
<td>81.78</td>
<td>.57</td>
<td></td>
</tr>
</tbody>
</table>

* *p < .05.

** *p < .01.
Table 10

Mean Scores and Standard Deviations for Measures of Social Functioning as a Function of Gender \((n = 112)\)

<table>
<thead>
<tr>
<th>Social Functioning Measures</th>
<th>Child Report</th>
<th>Parent Report</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(M)</td>
<td>(SD)</td>
</tr>
<tr>
<td>Girls</td>
<td>-.30</td>
<td>1.13</td>
</tr>
<tr>
<td>Boys</td>
<td>.11</td>
<td>.90</td>
</tr>
</tbody>
</table>

*Note.* Means are presented as \(z\)-scores to allow for cross-measure comparison. \(z\)-scores are a standardized score with a mean of zero and a standard deviation of one. Child report was measured by the Loneliness and Social Dissatisfaction Questionnaire (LSDQ); parent report was measured by the Child Behavior Checklist – Social Problems Scale (CBCL – SPS).
Table 11

*Multivariate and Univariate Analyses of Variance F Ratios for Gender for Social Functioning Measures (n=112)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>MANOVA F (2, 109)</th>
<th>Child Report F (1, 110)</th>
<th>Parent Report F (1, 110)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>3.48*</td>
<td>4.77*</td>
<td>1.44</td>
</tr>
</tbody>
</table>

*Note. F ratios were generated from Pillai’s statistic. MANOVA = multivariate analysis of variance; ANOVA = univariate analysis of variance. Child report was measured by the Loneliness and Social Dissatisfaction Questionnaire (LSDQ); parent report was measured by the Child Behavior Checklist – Social Problems Scale (CBCL – SPS).*

* p < .05.
Table 12

*Analysis of Covariance (ANCOVA) of Social Functioning (Child Report) as a Function of Gender, with ADHD symptoms as Covariate (n=113)*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD-HV (covariate)</td>
<td>1</td>
<td>1.70</td>
<td>1.70</td>
<td>1.70</td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
<td>5.74</td>
<td>5.74</td>
<td>5.75*</td>
</tr>
<tr>
<td>Error</td>
<td>110</td>
<td>109.78</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>113</td>
<td>116.55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. Child report was measured by the Loneliness and Social Dissatisfaction Questionnaire (LSDQ).*

*p < .05.*
Table 13

Analysis of Covariance (ANCOVA) of Social Functioning (Parent Report) as a Function of Gender, with ADHD symptoms as Covariate (n=118)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD-HV (covariate)</td>
<td>1</td>
<td>51.58</td>
<td>51.58</td>
<td>76.93*</td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
<td>.15</td>
<td>.15</td>
<td>.23</td>
</tr>
<tr>
<td>Error</td>
<td>115</td>
<td>77.11</td>
<td>.67</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>118</td>
<td>131.86</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. Parent report was measured by the Child Behavior Checklist – Social Problems Scale (CBCL – SPS).

*p < .001.
Table 14

*Mean Scores and Standard Deviations for Measures of Social Functioning as a Function of Comorbid Depression Status Among ADHD Children (n = 44)*

<table>
<thead>
<tr>
<th></th>
<th>Comorbid Depression (n = 13)</th>
<th>No Comorbid Depression (n = 31)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Child Report</td>
<td>-.23</td>
<td>.96</td>
</tr>
<tr>
<td>Parent Report</td>
<td>-1.28</td>
<td>.93</td>
</tr>
<tr>
<td>Teacher Report</td>
<td>-.53</td>
<td>.92</td>
</tr>
</tbody>
</table>

*Note.* Means are presented as z-scores to allow for cross-measure comparison. Z-scores are a standardized score with a mean of zero and a standard deviation of one. Child report was measured by the Loneliness and Social Dissatisfaction Questionnaire (LSDQ); parent report was measured by the Child Behavior Checklist – Social Problems Scale (CBCL – SPS); teacher report was measured by the Teacher Rating Scale – Social Acceptance Scale (TRS – SA).
Table 15

Analysis of Variance Results for Comorbid Depression and Gender Among ADHD Children

(n = 44)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
<td>.59</td>
<td>.59</td>
<td>.43</td>
</tr>
<tr>
<td>Depression Status</td>
<td>1</td>
<td>9.50</td>
<td>9.50</td>
<td>7.02*</td>
</tr>
<tr>
<td>Gender X Depression Status</td>
<td>1</td>
<td>3.20</td>
<td>3.20</td>
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</tr>
<tr>
<td>Error</td>
<td>40</td>
<td>54.14</td>
<td>1.35</td>
<td></td>
</tr>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Rater</td>
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<td>5.50</td>
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<td>4.70*</td>
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<tr>
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<td>5.15</td>
<td>2.58</td>
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<tr>
<td>Error</td>
<td>80</td>
<td>46.87</td>
<td>.59</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05.
Table 16

*Mean Scores and Standard Deviations for Measures of Social Functioning as a Function of Comorbidity and Gender Among ADHD Children (n = 41)*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td><strong>Comorbidity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls (n = 3)</td>
<td>-.09</td>
<td>.87</td>
<td>-.32</td>
</tr>
<tr>
<td>Boys (n = 9)</td>
<td>-.38</td>
<td>.94</td>
<td>-.90</td>
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<tr>
<td><strong>No Comorbidity</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Girls (n = 11)</td>
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<td>.88</td>
<td>-.44</td>
</tr>
<tr>
<td>Boys (n = 18)</td>
<td>-.16</td>
<td>1.00</td>
<td>-.37</td>
</tr>
</tbody>
</table>

*Note.* Means are presented as z-scores to allow for cross-measure comparison. Z-scores are a standardized score with a mean of zero and a standard deviation of one. Child report was measured by the Loneliness and Social Dissatisfaction Questionnaire (LSDQ); parent report was measured by the Child Behavior Checklist – Social Problems Scale (CBCL – SPS); teacher report was measured by the Teacher Rating Scale – Social Acceptance Scale (TRS – SA).
Table 17

Multivariate and Univariate Analyses of Variance F Ratios for Comorbidity X Gender for Social Functioning Measures Among ADHD Children (n=41)

<table>
<thead>
<tr>
<th>Variables</th>
<th>MANOVA</th>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F (3, 37)</td>
<td>F (1, 37)</td>
</tr>
<tr>
<td>Comorbidity</td>
<td>.40</td>
<td>.15</td>
</tr>
<tr>
<td>Gender</td>
<td>.32</td>
<td>.35</td>
</tr>
<tr>
<td>Comorbidity X Gender</td>
<td>.21</td>
<td>.04</td>
</tr>
</tbody>
</table>

Note. F ratios were generated from Pillai’s statistic. MANOVA = multivariate analysis of variance; ANOVA = univariate analysis of variance. Child report was measured by the Loneliness and Social Dissatisfaction Questionnaire (LSDQ); parent report was measured by the Child Behavior Checklist – Social Problems Scale (CBCL – SPS); teacher report was measured by the Teacher Rating Scale – Social Acceptance Scale (TRS – SA).
APPENDIX C

DIAGNOSTIC CRITERIA FOR

ATTENTION-DEFICIT/HYPERACTIVITY DISORDER
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 difficulty 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).

APPENDIX D

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) [ ] grandfather
   (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. 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 babysitters 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:

<table>
<thead>
<tr>
<th>Age of Child</th>
<th>Length of Separation</th>
<th>Contact?</th>
<th>Reason for Separation</th>
</tr>
</thead>
</table>

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 ______________________________________________________________________)
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>Child</td>
<td>____________________________</td>
</tr>
<tr>
<td>Child’s Mother</td>
<td>____________________________</td>
</tr>
<tr>
<td>Child’s Father</td>
<td>____________________________</td>
</tr>
<tr>
<td>Child’s Maternal Grandmother (Mother’s Mother)</td>
<td>____________________________</td>
</tr>
<tr>
<td>Child’s Paternal Grandfather (Father’s Mother)</td>
<td>____________________________</td>
</tr>
<tr>
<td>Child’s Maternal Grandfather (Mother’s Father)</td>
<td>____________________________</td>
</tr>
<tr>
<td>Child’s Paternal Grandfather (Father’s Father)</td>
<td>____________________________</td>
</tr>
</tbody>
</table>

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

20. Which category best describes your current relationship status?
(1) ☑ single, not dating  (2) ☑ single, but dating casually
(3) ☑ single, but dating seriously  (4) ☑ living together/engaged
(5) ☑ married  (6) ☑ separated
(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 ______________________________________________________
   (10) □ other, please 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:
Description of Parenting Classes  Number of Classes (or time span)

32. Have you ever attended counseling?  (1) ☐ Yes  (2) ☐ No
If yes, please describe the type of counseling you had and for how long:
Description of Counseling  Number of Sessions (or time span)
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?  
35. If yes, which grade? ___________________

36. Has this child ever skipped a grade?  
37. If yes, which grade? ___________________

38. Does your child receive special education services at school?  
(1) ☐ Yes (2) ☐ No

If yes, what is your child’s eligibility?  
(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)
<table>
<thead>
<tr>
<th>Disorder</th>
<th>Diagnostic Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ADHD</td>
<td>(1)Yes  (2)No  (3)Never diagnosed, but I suspect I have this disorder</td>
</tr>
<tr>
<td>b. Personality Disorder</td>
<td></td>
</tr>
<tr>
<td>c. Substance Abuse or Dependence</td>
<td></td>
</tr>
<tr>
<td>d. Generalized Anxiety Disorder</td>
<td></td>
</tr>
<tr>
<td>e. Major Depressive Disorder</td>
<td></td>
</tr>
<tr>
<td>f. Dysthmic Disorder</td>
<td></td>
</tr>
<tr>
<td>g. Bipolar Disorder</td>
<td></td>
</tr>
<tr>
<td>h. Other (please specify _____________________)</td>
<td></td>
</tr>
</tbody>
</table>

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)

(1)Yes  (2) No  (3) He/she has never diagnosed, but I suspect they have this disorder  (4) I don’t know

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Diagnostic Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ADHD</td>
<td></td>
</tr>
<tr>
<td>b. Personality Disorder</td>
<td></td>
</tr>
<tr>
<td>c. Substance Abuse or Dependence</td>
<td></td>
</tr>
<tr>
<td>d. Generalized Anxiety Disorder</td>
<td></td>
</tr>
<tr>
<td>e. Major Depressive Disorder</td>
<td></td>
</tr>
<tr>
<td>f. Dysthmic Disorder</td>
<td></td>
</tr>
<tr>
<td>g. Bipolar Disorder</td>
<td></td>
</tr>
<tr>
<td>h. Other (please specify _____________________)</td>
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</tr>
</tbody>
</table>
APPENDIX E

LONELINESS AND SOCIAL DISSATISFACTION QUESTIONNAIRE
LONELINESS AND SOCIAL DISSATISFACTION IN YOUNG CHILDREN (CASSIDY & ASHER, 1992)

ADMINISTRATION INSTRUCTIONS

Administrator: **Now I’m going to ask you some questions about you. You can answer these questions by saying either “YES,” “NO,” or “SOMETIMES.” OK?**

Like for instance, I might say, “Do you like to eat ice cream?” and what would you say?

[child says yes]

I see. So you like to eat ice cream. Mmm. I do too.

**OK. What if I said, “Do you like to sleep at night?”**

[child says no]

**OK. So you don’t like to go to sleep at night.**

And what if I said, “Do you eat toast for breakfast?”

[child says sometimes]

**Sometimes. OK. So sometimes you do eat toast for breakfast and sometimes you don’t.**

**Good. I think you’ve got the idea of how these questions work. You answer either “YES,” “NO,” or “SOMETIMES.” OK? Do you have any questions?**

**Here we go.**

[The child in this example was very cooperative, saying yes, no, and sometimes, just when we wanted him to. Occasionally, you’ll get a child who doesn’t like ice cream, who likes to go to bed at night, and who has toast every morning. If this happens, just keep going until you find examples which illustrate all three possible responses.]

“Do you like to eat spinach?” is a good question for “NO.”

“Do you like to play with your friends?” is a good example for “YES.”

“Do you win when you play sports or games?” is a good question for “SOMETIMES.”
The Loneliness and Social Dissatisfaction Questionnaire

1. Is it easy for you to make new friends at school?
2. Do you like to read?
3. Do you have other kids to talk to at school?
4. Are you good at working with other kids at school?
5. Do you watch TV a lot?
6. Is it hard for you to make friends at school?
7. Do you like school?
8. Do you have lots of friends at school?
9. Do you feel alone at school?
10. Can you find a friend when you need one?
11. Do you play sports a lot?
12. Is it hard to get kids in school to like you?
13. Do you like science?
14. Do you have kids to play with at school?
15. Do you like music?
16. Do you get along with other kids at school?
17. Do you feel left out of things at school?
18. Are there kids you can go to when you need help in school?
19. Do you like to paint and draw?
20. Is it hard for you to get along with kids at school?
21. Are you lonely at school?
22. Do the kids at school like you?
23. Do you like playing card games?
24. Do you have friends at school?
<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>Sometimes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is it easy for you to make new friends at school?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Do you like to read?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Do you have other kids to talk to at school?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Are you good at working with other kids at school?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Do you watch TV a lot?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Is it hard for you to make friends at school?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Do you like school?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Do you have lots of friends at school?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Do you feel alone at school?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Can you find a friend when you need one?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Do you play sports a lot?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Is it hard to get kids in school to like you?</td>
<td></td>
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<tr>
<td>13. Do you like science?</td>
<td></td>
<td></td>
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<tr>
<td>14. Do you have kids to play with at school?</td>
<td></td>
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<tr>
<td>15. Do you like music?</td>
<td></td>
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<tr>
<td>16. Do you get along with other kids at school?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>17. Do you feel left out of things at school?</td>
<td></td>
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<tr>
<td>18. Are there kids you can go to when you need help in school?</td>
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<tr>
<td>19. Do you like to paint and draw?</td>
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<tr>
<td>20. Is it hard for you to get along with kids at school?</td>
<td></td>
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<td></td>
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<tr>
<td>21. Are you lonely at school?</td>
<td></td>
<td></td>
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<tr>
<td>22. Do the kids at school like you?</td>
<td></td>
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<tr>
<td>23. Do you like playing card games?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Do you have friends at school?</td>
<td></td>
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</tbody>
</table>
APPENDIX F

TEACHER RATING SCALE
TEACHER’S RATING SCALE OF CHILD’S ACTUAL BEHAVIOR
(Parallels the self-perception profile for children)

For this child, please indicate what you feel to be his/her actual competence on each question, in your opinion. First decide what kind of child he or she is like, the one described on the left or right, and then indicate whether this is just sort of true or really true for that individual. Thus, for each item, check one of four boxes.

<table>
<thead>
<tr>
<th>Really True</th>
<th>Sort of True</th>
<th>OR</th>
<th>Really True</th>
<th>Sort of True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This child is really good at his/her school work</td>
<td>This child can’t do the school work assigned</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
<td></td>
<td>OR</td>
<td></td>
<td></td>
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<tr>
<td>The child finds it hard to make friends</td>
<td>For this child it’s pretty easy</td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This child does really well at all kinds of sports</td>
<td>This child isn’t very good when it comes to sports</td>
<td></td>
<td></td>
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<tr>
<td>4.</td>
<td></td>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This child is good-looking</td>
<td>This child is not very good-looking</td>
<td></td>
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<tr>
<td>5.</td>
<td></td>
<td>OR</td>
<td></td>
<td></td>
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<tr>
<td>This child is usually well-behaved</td>
<td>This child is often not well-behaved</td>
<td></td>
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<tr>
<td>6.</td>
<td></td>
<td>OR</td>
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<td></td>
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<tr>
<td>This child often forgets what s/he learns</td>
<td>This child can remember things easily</td>
<td></td>
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<tr>
<td>7.</td>
<td></td>
<td>OR</td>
<td></td>
<td></td>
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<tr>
<td>This child has a lot of friends</td>
<td>This child doesn’t have many friends</td>
<td></td>
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<tr>
<td>8.</td>
<td></td>
<td>OR</td>
<td></td>
<td></td>
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<tr>
<td>This child is better than others his/her age at sports</td>
<td>This child can’t play as well</td>
<td></td>
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<tr>
<td>9.</td>
<td></td>
<td>OR</td>
<td></td>
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<tr>
<td>This child has a nice physical appearance</td>
<td>This child doesn’t have such a nice physical appearance</td>
<td></td>
<td></td>
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<tr>
<td>10.</td>
<td></td>
<td>OR</td>
<td></td>
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<tr>
<td>This child usually acts appropriately</td>
<td>This child would be better if s/he acted differently</td>
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<tr>
<td>11.</td>
<td></td>
<td>OR</td>
<td></td>
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<tr>
<td>This child has trouble figuring out the answers in school</td>
<td>This child almost always can figure out the answers</td>
<td></td>
<td></td>
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<tr>
<td>12.</td>
<td></td>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This child is popular with others his/her age</td>
<td>This child is not very popular</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>13.</td>
<td></td>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This child doesn’t do well at new outdoor games</td>
<td>This child is good at new games right away</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>14.</td>
<td></td>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This child isn’t very good looking</td>
<td>This child is pretty good-looking</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>15.</td>
<td></td>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This child often gets in trouble because of things he/she does</td>
<td>This child usually doesn’t do things that get him/her in trouble</td>
<td></td>
<td></td>
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</tbody>
</table>

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APPENDIX G

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 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.

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.
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.

Subject’s Signature Date

Signature of Witness Date

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.
UNIVERSITY OF NORTH TEXAS
COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS
RESEARCH CONSENT FORM
Page 4 of 4

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.

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.

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 H

PCIA ADMINISTRATION INSTRUCTION MANUAL
Parent-Child Interaction Assessment (PCIA): Directions for Administration

Richard J. Holigrocki, Ph.D.
Siebolt H. Frieswyk, Ph.D.
Patricia L. Kaminski, Ph.D.
George Hough, Ph.D.

Child and Family Center
The Menninger Clinic
Topeka, KS

Revised April 23, 2001

Dr. Holigrocki, former staff psychologist, The Menninger Clinic, is an assistant professor, Department of Psychology, University of Indianapolis. Dr. Frieswyk is the director of psychotherapy training at the Karl Menninger School of Psychiatry and Mental Health Sciences, The Menninger Clinic. Dr. Kaminski is an assistant professor, Department of Psychology, University of North Texas. Dr. Hough is in private practice in Topeka. Correspondence may be sent to Dr. Holigrocki, Department of Psychology, University of Indianapolis, Indianapolis, IN 46227; e-mail: rholigrocki@uindy.edu.
PCIA Directions for Administration
Parent-Child Interaction Assessment

Richard Holigrocki, Siebolt Frieswyk, Patricia Kaminski, and George Hough

MATERIALS

For detailed instructions regarding the preparation and assembly of materials, please contact Dr. Richard Holigrocki or Dr. Patricia Kaminski.

1 zoo board (28” x 22” matte board with markings indicating toy placement)
1 spiral bound booklet with 17 cards labeled FP, BZ, 1 – 15 (2 ½” x 3”)
2 figures that match the sex of the parent and child (height: 2 ¾” – 3”)
5 pairs of plastic giraffes, gorillas, hippos, tigers and zebras (height: 1 ¼” – 5 ¼”)
2 plastic trees (height: 3”)
10 wooden, interlocking logs of various sizes (4 ½” – 7 ½”)
10 plastic interlocking building blocks (2 ½” x 1 ¼” x 1”)
1 camcorder on tripod
3 lapel microphones
1 stopwatch
1 table and three chairs

Removed from view of parent and child:
4 figures (height: 2 ¾” – 3”)
2 pens for the tigers and hippos, each constructed from 4 logs (4 ½” x 4 ½”)
1 3” plastic tree with Velcro on the bottom
1 giraffe pen constructed from 4 logs (4 ½” x 7 ½”)
1 tunnel constructed from 7 blocks
1 (2 ½” x 1 ¼” x 1”) block for the race starting-gate, lunch table, and gift shop.
1 seesaw constructed from 2 logs (base: 1”, fulcrum: 7 ½”)
1 empty toy bucket & lid

For Inquiry:
1 television
1 videocassette recorder (4-head)
INTRODUCTION TO THE TASK

Welcome participants, make introductions, and complete consent forms.
Begin the video recording. Direct the parent to the middle chair and say,

[Mom or Dad], you’re going to sit here…

Direct the child to the chair on the parent’s left and say,

and [child’s name], you’ll sit here.

Attach lapel microphones.

If conducting the Inquiry say,

Today we’re going to do [two or three] things. First, we’re going to make a movie as you two play together, then we’ll have each of you watch some of the movie while we ask you questions about it.

If appropriate, say,

Then the last thing we need is for [Mom or Dad or both of you] to fill out some questionnaires.

If not conducting the Inquiry say,

Today we’re going to make a movie as you two play together.

If appropriate, say,

Then we’ll have [Mom or Dad or both of you] fill out some questionnaires.

1. FREE PLAY
TIME: 90 SECONDS

DIRECTIONS
FREE PLAY — Turn booklet to page marked “FP” and say,

We’re almost ready to start; I just need to check on a few things. Make yourselves comfortable.

If they are not playing with the toys, say,

You can both play with the toys while you’re waiting.

Start timing. Leave the room for 90 seconds. Return to the room, sit in the chair to the parent’s left, attach lapel microphone, and say,

Okay, pass me the two figures.

Proceed to the next task.

2. CO-CONSTRUCTION TASKS
TIME: APPROXIMATELY 25 MINUTES

DIRECTIONS
BUILD A ZOO — Turn booklet to “BZ.” Hold all six figures (3 male and 3 female) in your hands (in a random order). To parent and child say,

Are you ready? Okay, let’s get started.

Hold figures within child’s reach and say,

Now what I want you to do is to choose one of these figures to be you.
To the parent display the remaining five figures and say,

   You get to choose, as well. Which figure will be you?

To parent and child say,

   What I would like you to do is to start building a zoo together.

Start timing. Allow 90 seconds for the story to begin to take shape.

   Okay, pass me the two figures.

Pick up the two figures. Proceed to the next task.

1. ARRIVAL — Turn booklet to “1A.” Place tiger and hippo pens on the zoo board as indicated. 

   Put animals in pens. Place parent and child figures between the pens, facing each other, and say,

   [Mom or Dad] and [child's name] have just arrived at the zoo. [Child’s name] wants to look at the tigers and [Mom or Dad] wants to look at the hippos. Play out what happens together.

Start timing. If either of the participants end the play prior to 90 seconds, say

   Play out what happens next.

After 90 seconds say,

   Let’s continue with our trip through the zoo. Pass me the two figures.

Proceed to the next task.

2. RACE — Turn booklet to “2R.” Put block on zoo board to mark the starting point of the race. 

   Attach the tree to the Velcro on the zoo board and say,

   There is a contest to see who can run the fastest. This (point to starting block) is where [Mom or Dad] and [child’s name] start. The two of you are to race to the tree and back.

As you hand each participant their respective figure (simultaneously) say,

   Play out what happens together.

Start timing. If either of the participants end the play prior to 90 seconds, say

   Play out what happens next.

After 90 seconds say,

   Okay, pass me the figures and we’ll continue with our trip to the zoo.

The preceding transition instructions can be omitted or shortened when the parent and child understand that they are to pass the figures at the end of each scenario. Proceed to the next task.

3. TUNNEL — Turn booklet to “3T.” Place tunnel on zoo board as indicated. Place parent and child figures on their marks near the entrance to the tunnel and say,

   This is the entrance to a scary tunnel. You are both entering the tunnel. Play out what happens together.

Start timing. If either of the participants end the play prior to 90 seconds, say

   Play out what happens next.

After 90 seconds say,

   Okay, [pass me the figures . . .].

Proceed to the next task.
4. FEEDING THE GIRAFFES — Turn booklet to “4FG.” Place giraffe pen on zoo board as indicated; put giraffes in the pen. Hand each participant his or her figure, as you recite the part of the instruction that pertains to him/her.

[Child’s name] is feeding the giraffes. What is [Mom or Dad] doing? Play out what happens together.
Start timing. If either of the participants end the play prior to 90 seconds, say

Play out what happens next.
After 90 seconds say,
Okay, [pass me the figures . . .].
Proceed to the next task.

5. HURT ARM — Turn booklet to “5HA.” Place parent figure on the zoo board as indicated. Put the child figure facedown on the zoo board next to the parent figure and say,

[Child’s name] has fallen and hurt [his or her] arm. Play out what happens together.
Start timing. If either of the participants end the play prior to 90 seconds, say

Play out what happens next.
After 90 seconds say,

Okay, [pass me the figures . . .].
Proceed to the next task.

6. LUNCH — Turn booklet to “6L.” Put block on the zoo board for the lunch table (as indicated) and say,

This is a table.
Place child and parent figures on opposite sides of the table and say,

[Mom or Dad] and [child’s name] are eating their lunch at the zoo. Play out what happens together.
Start timing. If either of the participants end the play prior to 90 seconds, say

Play out what happens next.
After 90 seconds say,

Okay, [pass me the figures . . .].
Proceed to the next task.

7. WAITING — Turn booklet to “7W.” Place the parent figure and child figure side by side as indicated on the zoo board. Place a figure that is the same sex as the parent on the zoo board as indicated and say,

[Mom or Dad] sees a friend and wants [child’s name] to wait while [he or she] talks with their friend. [Child’s name] wants to go and play. Play out what happens together.
Start timing. If either of the participants end the play prior to 90 seconds, say

Play out what happens next.
After 90 seconds say,

Okay, [pass me the figures . . .].
Put the “friend” figure back with the toys you have hidden from view. Proceed to the next task.
8. HIGH ROCK — Turn booklet to “8HR.” Remove the “Scary Tunnel” from the zoo board and change the arrangement of its blocks to transform it into a “High Rock”. Put the High Rock on the zoo board as indicated. Place the child figure on top of the rock. Place the parent in front of the rock (as indicated on the zoo board), but facing away from the rock and say,

    When [Mom’s or Dad’s] back was turned, [child’s name] climbed on top of a high rock. Play out what happens together.

Start timing. If either of the participants end the play prior to 90 seconds, say

    Play out what happens next.

After 90 seconds say,

    Okay, [pass me the figures . . .].

Proceed to the next task.

9. LOST CHILD — Turn booklet to “9LC.” Put parent and child figures on opposite sides of the zoo board (as indicated) and say,

    [Mom or Dad] and [child’s name] are on opposite sides of the zoo. [Child’s name] is lost. Play out what happens together.

Start timing. If either of the participants end the play prior to 90 seconds, say

    Play out what happens next.

After 90 seconds say,

    Okay, [pass me the figures . . .].

Proceed to the next task.

10. STRANGER — Turn booklet to “10S.” Place the parent figure and child figure side by side as indicated on the zoo board. Place a figure that is the opposite sex of the parent on the zoo board as indicated and say,

    A stranger walks up to [Mom or Dad] and [child’s name]. Play out what happens together.

Start timing. If either of the participants end the play prior to 90 seconds, say

    Play out what happens next.

After 90 seconds say,

    Okay, [pass me the figures . . .].

Put the “stranger” figure back with the toys you have hidden from view. Proceed to the next task.

11. SEESAW — Turn booklet to “11SS.” Place the seesaw on the zoo board as indicated and demonstrate its movement as you say,

    This is a seesaw.

Hand each participant his or her figure, as you recite the part of the instruction that pertains to him/her.

    [Mom or Dad] promised [child’s name] that [he or she] could play on the seesaw but [child’s name] can’t play on it because it’s time to leave the zoo. Play out what happens together.

Start timing. If either of the participants end the play prior to 90 seconds, say

    Play out what happens next.

After 90 seconds say,

    Okay, [pass me the figures . . .].

Proceed to the next task.
12. ANIMAL NAMES — Turn booklet to “12AN.” Place child figure at the center of the zoo as indicated, give the parent his/her figure and say,

[Mom or Dad] and [child’s name] have been seeing many animals. [Child’s name] says that [he or she] has learned the names of three new animals. What does [Mom or Dad] think of that? **Play out what happens together.**

Start timing. If either of the participants end the play prior to 90 seconds, say

**Play out what happens next.**

After 90 seconds say,

*Okay, [pass me the figures . . .].*

Proceed to the next task.

13. GIFT SHOP — Turn booklet to “13GS.” Move the “lunch table” block from its position to the area on the zoo board marked “gift shop” and say,

**This is a gift shop.**

Place child and parent figures near the gift shop (as indicated on the zoo board) as you say,

[Child’s name] wants to buy a toy in the gift shop. [Mom or Dad] does not want to spend money on the toy. **Play out what happens together.**

Start timing. If either of the participants end the play prior to 90 seconds, say

**Play out what happens next.**

After 90 seconds say,

*Okay, [pass me the figures . . .].*

Proceed to the next task.

14. LEAVING THE ZOO — Turn booklet to “14LZ.” Hand each participant his or her figure, as you recite the part of the instruction that pertains to him/her.

[Child’s name] wants to stay at the zoo. [Mom or Dad] wants to leave. **Play out what happens together.**

Start timing. If either of the participants end the play prior to 90 seconds, say

**Play out what happens next.**

After 90 seconds say,

*Okay, [pass me the figures . . .].*

Proceed to the next task.

15. LOST TOY — Turn booklet to “15LT.” Place parent and child figures on the table, just off of the zoo board (at the corner nearest High Rock) and say,

You have both left the zoo. [Child’s name] lost a toy at the zoo and wants to go back for it. **Play out what happens together.**

Start timing. If either of the participants end the play prior to 90 seconds, say

**Play out what happens next.**

After 90 seconds say,

*Okay, [pass me the figures . . .].*

Put booklet and stopwatch away. Proceed to the next task.

3. CLEAR-UP TASK

**TIME:** 90 SECONDS.
INSTRUCTIONS IF CONDUCTING INQUIRY
Place the empty toy bucket & lid on the zoo board; put the two figures in it as you say,

We’re done making the movie of your pretend trip to the zoo. Next, we’re going to watch the movie. Would you mind putting the toys away while I get the next part ready? I’ll be back in a minute.

Start timing. Interrupt dyad after 90 seconds.

Turn to the next page for further instructions.

INSTRUCTIONS IF NOT CONDUCTING INQUIRY
Place the empty toy bucket & lid on the zoo board; put the two figures in it as you say,

We’re done making the movie of your pretend trip to the zoo. Would you mind putting the toys away while I check on something? I’ll be back in a minute.

Start timing. Interrupt dyad after 90 seconds.
4. INQUIRY
TIME: APPROXIMATELY 30 MINUTES

DIRECTIONS
Say to child,

[Child’s name], I’d like to show you some of the movie and ask you some questions. We’re going to show you the movie while your [Mom or Dad] fills out some forms in the next room. Later, we’ll ask your [Mom or Dad] to watch the movie, and ask [her or him] some questions too.

After the parent leaves the room, rewind the videotape to the beginning of the chosen scenario. (The “beginning” is defined as the first word that the Examiner says to set up the scene.) Record the VCR’s index number on your Inquiry Log as #1. Make sure you & child wear microphones. Say to the child,

I’m going to play part of the movie for you now. When I stop it, I’ll ask you some questions about that part.

Play the tape. Start the stopwatch when you normally would if it were a real administration of that scene (after the Examiner completes the instruction). Remain near the VCR, but be as unobtrusive as possible. Pause (freeze) the videotape after 45” have elapsed, unless the parent or child is in the middle of a sentence. In that case, pause the tape as soon as the sentence is completed. Record the index number on your Inquiry Log as #2. Return to your seat. Ask,

1. What was happening during that one?

Pause briefly to look at and point to the picture on the TV monitor as you ask,

2. What were you doing right then?

3. What were you thinking right then?

4. What were you feeling right then?

5. What did you want from your [Mom or Dad] right then?

Pause briefly to look at and point to the picture on the TV monitor as you ask,

6. OK, now look at your [Mom or Dad], what was [she or he] doing right then?

7. What was your [Mom or Dad] thinking right then?

8. What was your [Mom or Dad] feeling right then?

9. What did your [Mom or Dad] want from you right then?

After the child has answered the questions say,

I’m going to show you one more part of your movie. And, just like last time, when I stop it, I’ll ask you questions about that part of the movie.

Cue the videotape to the beginning of the other chosen scenario in the manner described above. Make sure to record the beginning index number on your Inquiry Log as #3. Play at least 45” of tape, pause at the end of the sentence, and record the new index number as #4. Take your seat.

Continue with the Child Inquiry by repeating all 9 questions in the manner described above.
After completing the Child Inquiry, remove microphones and say
   **Good job! Let’s go get your [Mom or Dad].**

Let the parent and child greet one another.

Say to parent,
   I’d like to ask [child’s name] if [he’d or she’d] like to play with [assistant’s name] in the
   other room for a few minutes. While they’re playing, we’ll look at the videotape and
   I’ll ask you a few questions.

Return to the examining room with the parent. Make sure you & parent are wearing
   microphones. Refer to your Inquiry Log. Rewind the videotape to Index #1 as you say,
   I’m going to play part of the movie for you now. When I stop it, I’ll ask you some
   questions about that part.

Play the tape. Remain near the VCR, but be as unobtrusive as possible. Pause (freeze) the
   videotape when it reaches Index #2. Return to your seat. Ask,
   1. **What was happening during that one?**

Pause briefly to look at and point to the picture on the TV monitor as you ask,
   2. **What were you doing right then?**

   3. **What were you thinking right then?**

   4. **What were you feeling right then?**

   5. **What did you want from [child’s name] right then?**

Pause briefly to look at and point to the picture on the TV monitor as you ask,
   6. **OK, now look at [child’s name], what was [she or he] doing right then?**

   7. **What was [child’s name] thinking right then?**

   8. **What was [child’s name] feeling right then?**

   9. **What did [child’s name] want from you right then?**

After the parent has answered the questions say,
   I’m going to show you one more part of the video. Again, when I
   stop it, I’ll ask you questions about it.

Cue the videotape to Index #3. Play the tape. Pause (freeze) the videotape at Index #4. Return to
   your seat.

Continue with the Parent Inquiry by repeating all 9 questions in the manner described above.

After completing the Parent Inquiry, say
   **OK, that’s all the questions I have. Let’s go see how [child’s name] is doing.**

(VER 1.07)
APPENDIX I

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, \textit{“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 rewordings 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, \textit{“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, \textit{“The paper helps me to know where we are.”}  

15. During each questionnaire administration, on the first four questions, the GRA will ask, \textit{“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.
26. 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.

27. 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.**”

28. 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.

29. 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.

30. 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.

31. 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.

32. 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

**Order of Administration:**

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Administration Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDQ-I</td>
<td>Admin Time</td>
</tr>
<tr>
<td>LSDQ</td>
<td>Break 1 Time</td>
</tr>
<tr>
<td>Child-PARQ</td>
<td>Admin Time</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.*

**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.

APPENDIX J

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 K

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 L

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
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