VICTIMIZATION AND EXPRESSIONS OF RELATIONAL AND OVERT AGGRESSION

AMONG BOYS AND GIRLS WITH ADHD

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This study investigated if girls and boys high in ADHD symptomology exhibited and experienced relational and overt aggression differently than boys and girls without ADHD symptoms using peer, parent and teacher ratings. A measurement of social behavior for parent ratings was also validated. Using archival data, 371 3rd- 6th graders from a north Texas school district participated in the study, along with a parent or guardian and teachers. Results supported that ADHD subtype predicted more overt aggression according to parents and teachers but not peers. ADHD subtype did not predict more relational aggression but ADHD symptomology did. Contrary to past research, gender did not moderate relational aggression or internalizing symptoms from relational victimization. Furthermore, a parent version of the Child Social Behavior Scale was found to effectively measure relational, overt and prosocial behavior. Limitations, future directions and implications are discussed.
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CHAPTER 1

INTRODUCTION

Review of Attention-Deficit/Hyperactive Disorder

Paul Gresham stated (1997)—in a review article based upon his keynote address presented at the Twentieth Annual Conference on Severe Behavior Disorders of Children and Youth in 1996—“There is perhaps no other class of behavior that is more critical for adaptive functioning in society for children and youth with emotional and behavioral disorders (EBDs) than social competence” (p. 233). Gresham was referring to social skill deficits in children diagnosed with attention-deficit/hyperactivity disorder (ADHD) specifically. In addition to the academic and cognitive difficulties children with ADHD experience, they also experience significant difficulty with social relationships (Barkley, 2000). Inherent in the symptoms of ADHD are behaviors that can have a negative impact on interpersonal relationships. Aggression is one behavior that negatively affects relationships and has been found be more common in children diagnosed with ADHD than in children without an ADHD diagnosis (Gaub & Carlson, 1997a, 1997b). What is unclear is if children with ADHD are also more vulnerable to be victims of aggression. To understand the experiences and expression of aggression in children diagnosed with ADHD, a review of diagnostic criteria and research findings about social functioning of children with ADHD are reviewed here. Then, a review of trends in aggression and victimization research follows. Using archival data, the purpose of this study is to investigate if girls and boys with high ADHD symptoms exhibit and experience relational and overt aggression differently than boys and girls low in ADHD symptoms. In addition, a measurement of social behavior as rated by parents is validated.
ADHD Criteria and Subtypes

ADHD is a disorder marked by developmentally inappropriate and persistent overactivity, impulsivity, and/or inattention. It is listed in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth edition, Text Revision (DSM-IV-TR)* in the section for Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence (American Psychiatric Association [APA], 2000). ADHD affects about 3% - 7% of the school-age population, although its prevalence may vary according to method of assessment and the sampled population (APA, 2000). To be diagnosed with ADHD, a child must present chronic symptoms of inattention, hyperactivity and/or impulsivity (before age 7) that persist for at least 6 months and cannot be explained by any other psychiatric disorder (APA, 2000). Please see Table 1 for full *DSM-IV-TR* diagnostic criteria. There are three subtypes of ADHD: predominantly inattentive (ADHD-I), predominantly hyperactive and impulsive (ADHD-HI) and a combination of these two categories (ADHD-C).

Subtypes. ADHD-I subtype is characterized by difficulty sustaining attention and concentration during play or work tasks that often leads to avoidance of tasks requiring sustained mental effort. Poor attention to detail, forgetfulness, and losing necessary items for work are also diagnostic elements of children with ADHD-I. These children may ‘tune out’ during a conversation or lecture. Gaub and Carlson (1997a) identified distinctive behavioral patterns for each subtype of ADHD which were based upon teacher ratings on the Child-Behavior Checklist (CBCL; Achenbach, 1991). In their epidemiological study from a large, ethnically diverse sample of children ranging in age from kindergarten to fifth grade, they found that similar to the other ADHD subgroups, children diagnosed with ADHD–I had significantly more impairments of behavioral, academic and social functioning in comparison to non-
diagnosed controls. In addition, children with ADHD-I exhibited more internalizing problems (withdrawal, somatic complaints, depression, and anxiety) than children without an ADHD diagnosis (Carlson & Mann, 2002; Gaub & Carlson, 1997a). Furthermore, children with ADHD-I have been generally found to be socially passive and neglected (as opposed to rejected) by their peers (APA, 2000; Maedgen & Carlson, 2000). Gaub and Carlson noted advantages about children with ADHD-I. In addition to being perceived by teachers as having fewer symptoms of oppositional defiant disorder (ODD) than other ADHD subtypes, children with ADHD-I have received higher ratings of appropriate behavior and lower ratings on externalizing problems (aggression, delinquency) than children diagnosed with ADHD-HI and ADHD-C (Barkley, 1998; Gaub & Carlson, 1997a; Hinshaw, 1994). Thus, overall, children diagnosed with ADHD-I exhibit fewer behavioral and externalizing problems, but also experience more internalizing problems and are more neglected by their peers when compared to children without an ADHD diagnosis and other ADHD subtypes.

In contrast to children diagnosed with ADHD-I, those diagnosed with ADHD-HI are characterized with frequent fidgeting, difficulty staying seated, acting as if “driven by a motor,” and/or excessive talking (APA, 2000, p. 86). ADHD-HI children may often blurt out answers before questions have been completed, have difficulty waiting turn, and/or interrupt or intrude upon others (APA, 2000). Gaub & Carlson (1997a) observed that children diagnosed with ADHD-HI displayed more difficulty than children without an ADHD diagnosis in social functioning, appropriate behavior, and externalizing behavior including delinquency and aggression. The authors found that children diagnosed with ADHD-HI displayed fewer problems with academic functioning than the Inattentive subtype and control group children. For example, they did not
differ from children without ADHD symptoms on the Learning difficulties, Withdrawn, Somatic Complaints, and Internalizing scales of the CBCL. Moreover, children with ADHD-HI scored higher in measures of Happiness than did children diagnosed with ADHD-C and higher on Hardworking ratings than the children in the ADHD-C and ADHD-I subgroups (Gaub & Carlson, 1997a). Thus despite the behavioral problems and excessively energetic behavior, children with ADHD-HI have fewer problems academically and are described as happier than children diagnosed with ADHD-I and ADHD-C.

Children who are classified in the ADHD-C subtype exhibit the traits from both ADHD-I and ADHD-HI subtypes. For children diagnosed with ADHD-C, hyperactivity, impulsivity and difficulty with sustaining attention are the major areas of impairment (APA, 2000). Gaub and Carlson (1997a) found that in comparison to other subtypes, teacher ratings indicated children diagnosed with ADHD-C exhibited the most difficulty in social functioning, behavioral functioning, and academic functioning. Additionally, children diagnosed with ADHD-C received the highest ratings on measures such as Aggression, Anxious/Depressed, Social Problems, Attention Problems and Total Problem Behavior as measured by the CBCL (Gaub & Carlson, 1997a). In summary, although all three ADHD subtypes are associated with social deficits and peer rejection or neglect, children diagnosed with ADHD-I are associated with less externalizing symptoms and more internalizing symptoms. Externalizing symptoms such as aggression and delinquent behavior are associated with children diagnosed with ADHD-HI at a level more severe than the ADHD-I subtype but less severe than children diagnosed with ADHD-C. ADHD-C subtype is associated with the most pervasive pattern of difficulties. Combined together, the literature has supported the validity of three distinct subtypes of ADHD. Understanding clinical
distinctions among children with these different subtypes is important when examining their social experiences.

Gender Differences in ADHD

In addition to the subtype differences of ADHD, gender differences among ADHD children have also been examined. Mixed findings are found regarding gender differences in ADHD symptoms, but there is ubiquitous support that more males than females were diagnosed with ADHD (APA, 2000; Bauermeister et al., 2007; Biederman et al., 2005; Nolan, Volpe, Gadow & Sprafkin, 1999). The male-to-female ratio among children with ADHD ranges from 2:1 to 9:1 depending on the subtype, sample, and diagnostic procedures (APA, 2000). A meta-analysis by Gershon (2002) found that girls diagnosed with ADHD have lower ratings than boys with ADHD in hyperactivity, impulsivity, inattention and externalizing problems. Girls with ADHD were also reported to have more intellectual impairments and internalizing problems. Some researchers explain that the sex differences found among girls and boys with ADHD are related to low referral rates of girls with ADHD symptoms (Berry, Shaywitz & Shaywitz, 1985; Gaub and Carlson, 1997b; Gershon, 2002). Gaub and Carlson’s meta-analysis of gender differences in ADHD suggested that because boys display more disruptive behaviors within structured settings than girls, boys are more likely than girls to receive referrals for an ADHD diagnosis; boys are also more likely than girls to receive treatment for ADHD. Gaub and Carlson suggested that girls with ADHD seem to experience more intellectual impairment, lower levels of hyperactivity, fewer diagnoses of Conduct Disorder, and lower levels of aggression and defiance than boys. These behaviors (or lack of behaviors) typically do not receive as much
attention from parents and teachers for referral services. Consequently, referral source has a large impact upon the prevalence of girl and boys diagnosed with ADHD.

Another finding Gaub and Carlson (1997b) discussed was that referral source mediated gender differences in symptomology and behavior. Specifically, girls with ADHD from non-referred populations exhibited less inattention, internalizing behavior, aggression toward peers, and “peer disliking” than non-referred boys with ADHD. Given these symptoms are also descriptive of children diagnosed ADHD-I subtype, it is not surprising that girls are more commonly diagnosed with ADHD-I than other ADHD subtypes (Carlson & Mann, 2000). However, gender differences in inattention, internalizing behavior, aggression, and peer status are not evident between boys and girls in a clinic-referred sample of ADHD children. The absence of gender differences in clinical samples suggested that girls diagnosed with ADHD from the general population were less impaired than boys with ADHD. Consequently, the authors implied that information gathered from girls who were clinic-referred could lead to misleading information about the characteristics of girls with ADHD in general (Gaub & Carlson, 1997b). Important to note was the low number of studies ($n = 18$) that were analyzed in Gaub and Carlson’s meta-analysis that may have reduced the ability to detect statistical differences between groups. In an effort to update the work of Gaub and Carlson (1997b), Gershon (2002) conducted a meta-analysis that supported Gaub and Carlson’s findings that females with ADHD exhibited fewer externalizing problems and more problems in intellectual functioning than their male counterparts. In contrast, however, females were also rated as exhibiting more internalizing problems than males suggesting that comorbid conditions (like depression and anxiety) affected females with ADHD more frequently than they did males.
More recent literature has suggested minimal gender differences among non-referred samples, but usually when ADHD symptoms are used as a continuous variable, rather than a categorical variable (Bauermeister et al., 2007; Biederman et al., 2005; Graetz, Sawyer & Baghurst, 2005; Levy, Hay, Bennett & McStephen, 2005). For example, Biederman et al. (2005) studied gender effects in a non-referred sample of siblings of probands with ADHD and non-ADHD controls and found that males and females did not differ in having of DSM – IV subtypes of ADHD, psychiatric comorbidity, or treatment history. Results supported that girls and boys with ADHD displayed similar levels of cognitive, psychosocial, school, and family functioning. Important to note were two limitations of their study. First, their number of female participants \( n = 25 \) with ADHD was low relative to their male comparison group \( n = 73 \) which may have reduced the ability to detect small effect sizes. Second, the analyses on sex differences was collapsed across all ADHD subtypes when studying cognitive, psychosocial and family functioning and therefore ADHD subtypes were not taken into account. On the contrary, gender effects are more apparent between ADHD subtypes. For instance, girls diagnosed with ADHD-I have been noted as more likely to present with comorbid anxiety problems than boys diagnosed with ADHD-I (Graetz et al., 2007; Levey et al., 1996). A similar gender effect was also displayed in children diagnosed with ADHD-C. Boys diagnosed with ADHD-C were more likely to have comorbid mood disorders than girls diagnosed with ADHD-C (Bauermeister et al., 2007). Furthermore, when Graetz et al. (2007) collapsed their analyses across all subtypes many gender differences in ADHD symptoms were no longer evident. Whether the varying degrees of gender difference presented in the ADHD literature was influenced by referral source or
methodology—it is important in future research to consider influence of gender and subtypes in ADHD populations.

Social Functioning and ADHD

Social difficulty is frequently cited in studies distinguishing the interpersonal experiences of children with ADHD from the experiences of undiagnosed control groups (Gaub & Carlson, 1997a; 1997b; Greene et al., 2001). Wheeler and Carlson (1994) suggested that social skills and peer status are relevant to understanding the salience of how ADHD symptoms influence social functioning. First, they noted having generally poor social functioning, which is common for children diagnosed with ADHD, has negative effects on psychological wellness. Children with ADHD are frequently rejected or neglected by their peers (Gaub & Carlson 1997a). Furthermore, Lahey et al. found that boys rated as unpopular by peers scored significantly higher on depression and poor self-concept measures (1984). Thus, being rejected or unpopular among peers can exacerbate negative self-concept and feelings of depression in children with ADHD, which further can inhibit their efficacy in having positive social interactions. Second, Wheeler and Carlson highlighted the effect that the behaviors of children with ADHD can have on others. Henker and Whalen reported that “behavior of children with ADHD can have negative catalytic effects on the social environment” (1999, p. 163). They found that children without ADHD exhibited higher rates of disruptive behavior when working or playing with children diagnosed with ADHD than when interacting with another child without ADHD. Also of note was that teachers and parents tended to be more negative and controlling when they were around or interacting with children with ADHD.
Henker and Whalen also pointed out that unfortunately for children diagnosed with ADHD, even after medication was utilized to improve their difficulties with concentration or emotion regulation, their peer relationships did not adjust with the medication to help them repair the negative patterns of peer relationships. Lastly, effects on future outcomes are an important consideration for ADHD children. Poor social functioning in children diagnosed with ADHD predicts long term risk factors including substance abuse and delinquency (Greene, Biederman, Faraone, Sienna & Garcia-Jetton, 1997; Greene, Biederman, Farone, Wilens, Mick & Blier; 1999; Whalen, Jamner, Henker, Delfino & Lozano, 2002).

Heneker and Whalen (1999) described three basic profiles (or response styles) of social dysfunction in children with ADHD. While these styles have not been empirically validated, the authors suggested using these terms as a heuristic to understand the heterogeneity of social patterns with ADHD children. The three major categories are (1) aggressive/assertive, (2) active/maladroit and (3) reluctant/avoidant. Children who are aggressive/assertive were described as oppositional with adults and disruptive with peers. Their behavior was described as motivated by satisfying their own desires as opposed to doing what was asked by others or doing what was called for in the social context. An aggressive/assertive child could be seen as ‘in his/her own world,’ and giving no attention to what social norms might dictate. They are also more likely to receive a dual diagnosis of ADHD and ODD or CD. The active/maladroit pattern is marked by social preoccupation and enthusiastic personal interactions. Active/maladroit children appear to be motivated by positive, mutual, personal interactions. However, their enthusiasm inadvertently interrupts ongoing activities or frustrates the goals of others causing a negative social experience for the child. Poor timing and inappropriate
intensity of emotional expression are examples of the social mistakes an active/maladroit could make. Such faux pas could lead to conflict, confrontation, eventual peer rejection and exclusion. The third subgroup, reluctant/avoidant, exhibits a rarer behavior pattern. In contrast to children described as active/maladroit, the children described as reluctant/avoidant were characterized as not seeming to enjoy or desire social interaction with peers (Henker & Whalen, 1999). They are more likely to present as a child with ADHD-I and have comorbid internalizing problems such as social anxiety, withdrawal or shyness. Reluctant/avoidant children tend to be neglected by peers as opposed to rejected like active/maladroit and aggressive/assertive types (Henker & Whalen).

In addition to behavioral observation research that examines the interactions between ADHD children and their peers, recent neurological evidence using magnetic resonance imaging (MRI) supports that children with ADHD (as reported by parents) have social comprehension deficits that are related to brain functioning (Miller, Miller, Bloom, Hynd & Craggs, 2006). Miller et al. (2006) studied children (ages 6-12)—with and without a diagnosis of ADHD—and grouped them into having or not having atypical right hemisphere brain morphology. Children diagnosed with ADHD-C scored significantly lower on social comprehension measures than did the ADHD-I comparison group. Furthermore, an interaction was found between ADHD and right hemisphere morphology. Specifically, with all ADHD subtypes combined, children diagnosed with ADHD that simultaneously had atypical right hemisphere brain morphology scored significantly lower on social comprehension than all other comparison groups (ADHD children without brain morphology, non-ADHD children without brain morphology, and non-ADHD children with brain morphology). The authors noted that the highest social comprehension
scores were seen in controls with atypical morphology in the right hemisphere, which strongly suggests that morphology alone is not a risk factor for social problems. However, the authors noted that unknown underlying mechanisms of ADHD might work in concert with atypical right-hemisphere morphology to significantly impair social functioning in children with ADHD (Miller et al.). Thus, the social deficits related to ADHD may be embedded in neurological functioning.

Greene et al. (1996) explained that some social difficulties displayed by children with ADHD are socially inappropriate and directly related to the core features of ADHD (inattention, hyperactivity, impulsivity). This could include behaviors such as blurring out answers to questions, interrupting a conversation, failing to attend to important cues, or failing to handle frustration appropriately. Other social deficits exhibited by children with ADHD, however, seem to reflect additional deficiencies in neurologically based social skills and social information processing. For example, children with ADHD might be oblivious to the impact of their own actions on others, misinterpret social cues, use a very limited set of social responses, or have difficulty monitoring and reacting to an ongoing stream of social interactions.

_Barkley’s model of executive functioning and ADHD._ Barkley’s (1997) theoretical model of executive function can be used to explain the academic, behavioral, and interpersonal functioning deficits common to many children with ADHD (Baker, 2002). Executive function, as explained by Barkley (2000), incorporates tasks such as planning, purposeful action, inhibition, resistance to distraction, problem solving, flexible shifting of actions, maintenance of persistence, and self-awareness across time. Barkley posits that the self-regulation functions guide the construction, execution and control of behavior with internally represented information that allows behavior to be controlled internally as opposed to being controlled by
environmental context. Barkley explained that ADHD disrupts this process making one’s behavior more reactive to the environment, and he identified which parts of the brain are associated with each executive function. These executive functions include: nonverbal working memory, the internalization of speech, the self-regulation of affect, motivation, and arousal, and reconstitution. Barkley’s model of executive functioning is a helpful tool for understanding the possible processes underlying the behaviors and social interactions of children with ADHD; it provides insight into how and why aggressive behavior might be more common in children with ADHD.

Barkley’s (1997) model explains how the executive function of behavioral inhibition is related to—and necessary for—the effective use of the four other executive functions for self-regulation. Response/behavioral inhibition (likely located in the orbital-prefrontal cortex) involves the ability to delay a response to a current stimulus, to protect that delay from outside distractions, and to help stop inappropriate reactions or behaviors that may have already started. The capacity to delay a response is a prerequisite for one’s ability to develop executive functioning and self regulation. Delayed response provides for the internalization or privatization of executive functioning by suppressing the physical movements associated with self-directed behavior that makes up each executive function. Over time, response inhibition allows actions occurring during an executive function to be unobservable by others. Deficits in inhibition prevent and/or interrupt thoughtful responses or actions. (e.g., possibly refraining from hitting another student because they cut in line). Difficulties in response inhibition is one process that could contribute to increased aggressive behavior for children with ADHD.
Nonverbal working memory (right portion of the dorsolateral prefrontal cortex) refers to the executive function of holding a mental representation in mind in order to guide behavior. The awareness of time, timing, and timeliness of behavior is in part regulated by working memory, and helps people to remember that they intend/need to finish a task, to remember what the task requires as well as prompting them to get back on task after an interruption (Baker, 2002; Barkley, 2000). In his study of mother-son interactions, Winsler (1998) videotaped mothers and sons who were diagnosed with ADHD completing a selective Lego® building task and a selective attention task. After transcription of the verbal and behavioral interactions, Winsler found that boys diagnosed with ADHD performed more off-task and noncompliant behavior when compared with a matched control group. Children diagnosed with ADHD also made more verbalizations that were off task (1998). Disruption in working memory, therefore can interrupt the flow social conversation or disrupt group work for those working with someone with ADHD and make social connection more challenging.

Verbal working memory or internalization of speech (left portion of the dorsolaeral prefrontal cortex) is silent receptive and expressive language. It is the self-talk used to evaluate and direct behavior of the self. Verbal working memory allows for reflection before action and selection of behavior that will help one reach one’s goal. This could include a child that reminds himself or herself to follow the rules rather than yelling at a peer during class (Baker, 2002; Barkley, 2000). Winsler’s mother-son investigation also discovered boys diagnosed with ADHD exhibited less internalization of private speech. Children with ADHD used more words aloud when commenting to themselves than did children in the non-ADHD control group. This finding supports that children diagnosed with ADHD could have more difficulty privatizing their
thoughts or keeping their thoughts internal, which seems to also relate to difficulties they have with staying on task (1998).

Self-regulation of affect and motivation (ventromedial prefrontal cortex) is the ability to regulate private emotions and the motivation to act. It is the source of intrinsic motivation needed for carrying out future-directed behavior. Self-regulation of affect and motivation allows individuals to examine emotional responses before responding to and modifying inappropriate responses. It promotes self-motivation and so allows individuals to complete boring or monotonous tasks that have no other motivating factors or inherent interest. This particular executive function additionally helps an individual to be more objective and realistic in his/her self-evaluation (Barkley, 2000). A child with ADHD who experiences impairment in self-regulation of affect and motivation may respond quickly and without thought to external threats or stimuli and without thinking of the consequences, resulting in inappropriate social behavior (i.e. hitting another child for cutting in line as opposed to talking to the teacher about it).

With the exception of those categorized with ADHD inattentive type only, Barkley hypothesized that a deficiency in self-regulation is found in children with ADHD. However, there has not been consistent evidence to support that emotional dysregulation is uniquely caused by ADHD symptoms (Saunders & Chambers, 1996; Hinshaw & Melnick, 2000). While studying 6-12 year old boys with ADHD and (verbal and physical) and aggression, Hinshaw and Melnick examined children’s emotion regulation strategies during a family task along with the parenting responses that elicited frustration. They found that children diagnosed with ADHD (and rated as having aggressive behaviors) displayed the most difficulty with emotion regulation, but they
also found that overall, aggression was a greater predictor of deficits in emotional self-regulation than ADHD symptoms alone. The authors further discovered that difficulty with emotional self-regulation (being unable to self-soothe because of focusing on negative emotionally stimulating conditions) was more predictive of social deficits than having a tendency to experience emotions more intensely. These studies suggest that although not unique to ADHD, emotional regulation difficulties are predictive of aggression.

Reconstitution (anterior prefrontal poles) involves analyzing, creating, or recombining previous experiences to create novel responses. Reconstitution allows an individual to examine and use information to create different responses such as reciprocal speech during a conversation; it also allows for effective and flexible problem solving when alternative solutions to a problem are necessary. For example, reconstitution could allow a child to think of ways to get even with another student if his/her feelings were hurt. In their review of ADHD literature, Saunders and Chambers (1988) describe that ADHD children have more difficulty with social communication and with collaborative learning tasks; that when dyads of children (who are not diagnosed with ADHD) interact with each other, they exhibit more effective reciprocal verbal interactions than when ADHD and non-ADHD dyads communicate. The authors further explained that children without ADHD may modify their behavior by becoming more controlling and less appropriate when engaging in conversations with children who are diagnosed with ADHD. Thus, difficulties with reciprocal speech not only can lead to ineffective communication or behavior, it can also exacerbate negative emotional reactions. The authors speculated that children with ADHD experience frustration from their verbal difficulties that can lead to more frequent aggressive encounters (Saunders & Chambers, 1988).
Social Information Processing

Researchers also have theorized that social information processing (SIP) mechanisms could contribute to the development and maintenance of social deficits seen in children with ADHD (Crick & Dodge, 1994; Dodge 1986). This model, revised by Crick and Dodge (1994) from its original form (Dodge, 1986), describes how children cognitively use social cues when they respond to social events. The SIP model asserted that social behavior was the consequence of six sequential information processing steps: (1) encoding social cues; (2) interpreting social cues; (3) clarifying goals; (4) accessing or constructing responses; (5) deciding on responses; and (6) enacting behaviors. Each step had been tested by various attribution, memory, and goal orientation tasks. Much of the research with SIP had focused on hyperactive boys—leaving information about how SIP works with ADHD girls and ADHD-I subtypes relatively unstudied (e.g. Hoza, Pelham, Milich, Pillow and McBride, 1993; Milich & Dodge, 1984; Moore, Hughes & Robinson, 1992; Murphy, Pelham & Lang, 1992).

The first step, encoding of social cues (both internal and external), involves attending to or taking in particular situational and internal cues. It is hypothesized that children selectively attend to particular cues that may be determined by various factors (environmental, biological, psychological, genetic, cultural, and social). Because children with ADHD in particular have attention problems, they could have more difficulty than other children with attending to social and internal cues. The second step, interpretation of social cues, involves one or more process including: (a) storage of information into long-term memory (b) analysis of how or why the situation occurred (c) making inferences about how others might view the situations (including attributions of the intent of people involved) (d) assessment of whether any previous social
exchanges have resulted in success (e) evaluation of past performance (f) evaluations of self and others (e.g., a child in a busy lunch line might interpret someone bumping into him/her as an intentional threat). During Step 3, the child selects or clarifies his/her goal (e.g., Do I ignore what happened or fight back?). Crick and Dodge (1994) proposed that goals are focused arousal states that function as orientations toward producing particular outcomes. Thus, it is during this step that emotion influences an individual’s goal directed behavior or vice versa (e.g., anxiety → avoidance or avoidance → reduced anxiety). In Step 4, children access previous possible responses for use in a task or to construct new behaviors to respond to social cues (e.g., What happened last time I fought back?). During Step 5, children evaluate the response they chose that involved outcome expectancy, self-efficacy evaluation, and response selection (e.g. I got in trouble last time, and then I got beat up). Step 6, the final step, is when children enact their behavioral response (e.g., I’m walking away from this person.). Nelson and Crick (1999) suggested that better skills at each step lead to more successful social abilities and outcomes while deficits in these areas lead to social maladjustment.

Research with SIP has typically involved understanding aggression in children which will be discussed later. Among children with ADHD, some general cognitive patterns have been discovered such as deficits in encoding, cue utilization, interpretation of social cues (Steps 1 & 2), response decision, and behavior enactment (Steps 5 & 6) (Dodge & Coie, 1987; Milich & Dodge, 1984). In Step 1, encoding information had been studied among children diagnosed with ADHD to examine if their ability to attend to social cues is impaired. For example, in their study of hyperactive boys (with or without aggression), Milich and Dodge examined SIP skills of encoding and cue utilization. Participants were presented with up to four hypothetical,
ambiguous stories in which a peer engaged in an act that may or may not be interpreted as hostile (e.g., knocking over his bike). Hyperactive boys with aggression listened to fewer testimonials than did all other comparison groups (hyperactive boys without aggression, non-hyperactive with aggression, psychiatric controls, normal controls) before they made a decision about the peer’s guilt or innocence. Hyperactive boys with aggression remembered fewer neutral cues than did the control group when asked to recall behaviors (that a peer read aloud about his behaviors) with another friend suggesting failure to attend to the information. The difficulty in encoding social cues was also found by Moore et al. (1992). Specifically, Moore et al. found that when studying hyperactive children—who were either rejected or accepted by peers—hyperactive children who were also rejected had the most difficulty attending to and encoding relevant social information. Another method of examining Step 1 of SIP has been to have participants retell a story they were presented with before answering questions about it. Although no significant differences between hyperactive and non-hyperactive children were found, the hyperactive group was more likely to give unrelated or tangential answers in trying to identify the problem of the story (Zentall, Cassady, & Javorsky, 2001). Studying the early steps in SIP is an important area to study because any mistakes made at the beginning of the SIP affects effective processing in later stages. Consequently, because attending to information is a deficit found among children diagnosed with ADHD, their subsequent social attributions may be inaccurate and lead to inappropriate social behavior (Milich & Dodge, 1994).

When testing the second step of the SIP model, interpretation of social cues, Milich and Dodge (1984) asked participants to explain the behavior of a peer in an ambiguous situation that may or may not be interpreted as negative. Results indicated that hyperactive boys with
aggression were more likely than the control group to attribute hostile intent to the peer and were also more likely expect future hostile behavior from that peer when compared to all other groups in the study. These results support that the cognitive patterns of children with ADHD could certainly lead to misinterpretation of social responses.

Step 5, response decision, was also examined by Milich and Dodge (1984). Hyperactive boys (with or without aggression), aggressive only, hyperactive only, or other psychiatrically referred boys were asked what their behavioral response would be to an aggressive peer’s ambiguous provocation (e.g., peer spilled milk all over your back) and then compared to those responses of a control group. Results showed that hyperactive boys with aggression were more likely than all other groups to respond against the peer aggressively. These results supported that ADHD could increase a child’s tendency to choose aggressive behaviors in response to ambiguous social interactions.

The final stage of Crick and Dodge’s (1994) SIP model is behavioral enactment. In their discussion of ADHD and social functioning, Whalen and Henker (1998) suggested that children with ADHD were aware of the steps necessary for a successful interpersonal encounter, but they were less able to perform the tasks whenever emotional regulation or difficulty with timing their actions interfered. For example, when excited, children with ADHD may blurt out an answer in the middle of class before the teacher finishes the question (Whalen and Henker). Wheeler and Carlson (1994) suggested that the defects an individual has might differ depending on the subtype. For ADHD-HI or ADHD-C subtypes, impulsivity may prevent a child from utilizing his/her social knowledge appropriately (a social skill deficit). On the other hand, for the ADHD-I subtype, anxiety and withdrawal might prevent a child from engaging socially altogether, and
that would prevent the child from ever learning knowledge about social interactions (social knowledge deficit).

Crick and Dodge’s SIP has also been used to understand aggressive behavior in children. For example, similar results were found studying children with ADHD and a control group. Children who were overtly aggressive had more difficulty than children who were non-aggressive in generating non-violent responses to explain an ambiguous event (Dodge, Petit, McClaskey & Brown, 1986). Children who were described as overtly aggressive were also more likely to evaluate aggressive behavior favorably and anticipate successful outcomes from aggressive behavior (Asarnow & Callan, 1985; Crick & Dodge, 1999; Perry, Perry & Rasmussen, 1986). Overall, one of the most robust findings in the SIP and aggression literature was that physically aggressive children were more likely to use a hostile attribution bias. That is, they tended to interpret ambiguous interactions as hostile and negative (Dodge, 1980; Nasby, Hayden & DePaulo, 1980; Quiggle, Garber, Panak & Dodge, 1992). However, the majority of literature on aggression has been conducted with males and limited to physical and verbal forms.

Overview of Aggression

From Freud’s instinctual theory about thanatos (death instinct) as a motivator for aggressive behavior, to Bandura’s (1973) social learning theory about modeling and aggression, human aggression has long been a topic of interest for scientists. Dodge, Coie and Lynam (2006) reviewed the history of aggressive behavior definitions and endorsed using a combination of definitions for aggressive behavior then defined as an intentional act with the potential to hurt, harm or injure another person. By including intention in its definition, a cognitive component of
aggression is emphasized—that acts are excluded when harm or pain to another person is accidental or is a side effect of one’s behavior (e.g., rough play, or giving a vaccine via injection). Highlighting an act’s potential to harm allows for behavior to be included in the definition even if the actual harm is not realized (e.g., throwing a rock at someone but missing). Aggression researchers have further distinguished between the form of aggressive behavior (physical, verbal, overt, direct, relational, social, indirect), and the function of aggressive behavior (offensive/proactive/instrumental vs. defensive/reactive). Little, Jones, Henrich & Hawley (2003) refer to these distinctions as the “whys” and “whats” of aggressive behavior.

Forms

Early researchers focused upon physical and verbal forms of aggression (Bandura, 1973; Buss, 1961). These forms of aggression are often synonymously referred to in the current literature as “direct aggression,” or “overt aggression” (Bjorkvist et al., 1992, Coie & Dodge, 1998). Overt aggression includes behavior such as pushing, kicking, hitting, verbal threats, insulting, etc. Threatening to hit someone and actually hitting someone are both considered to be overtly aggressive behaviors. One important limitation of early research on aggression is that it was typically focused on males. Previous studies have demonstrated that in general boys exhibited significantly more aggressive behavior than did girls, and therefore, ultimately indicated that females as a group were less aggressive than males (see Block, 1983; Dodge et al., 2006).

More recently, studies in aggression expanded to include non-physical, indirect, social and relational types of aggression. While some researchers suggest that these types of aggression were essentially the same (Little et al., 2003), for the purposes of this study, the
differences between these terms are reviewed here. Björkqvist, Lagerspetz and Kauikainen (1992) use the term indirect aggression to describe covert or non-confrontational, hostile behaviors, “[i]ndirect aggression implies that the target is attacked not directly, but circuitously through social manipulation, whereby the aggressor attempts to remain unidentified and thus avoid counterattack” (Björkqvist, Osterman, & Kaukiainen, 1992, p.52). Examples could include scheming behind another’s back to turn others against an individual or secretly spreading a rumor. On the other hand, social aggression is directed toward damaging another's self-esteem, and/or social status (Galen & Underwood, 1997). Examples of social aggression range from spreading rumors, playing practical jokes or name calling. Given the definition Björkqvist et al. provides of indirect aggression, name calling may not be considered an indirect form of aggression if the name calling were directly aimed at the target, and the target was clearly aware of were being verbally teased.

Crick (1995) points out that relational aggression overlaps with indirect aggression and social aggression. Relational aggression is different from indirect aggression in that relational aggression also includes direct forms of social manipulation rather than only indirect forms of aggression. For example, the statement, “If you don’t share your lunch with me, I won’t be your friend,” is an overt statement that threatens one’s social relationships (Moretti, Odgers, & Jackson, 2004, p.29). Moreover, the term, “indirect aggression” is not exclusive to social relationships. Secretly putting bananas in the tailpipe of a car would be under the definition of indirect aggression but not relational aggression if this behavior does not impact or intend to impact one’s relationship status. Social aggression also overlaps with relational aggression in that it can target one’s relationship with others. However, social aggression differs when it
includes acts such as name calling, and would not be considered relational aggression if the name calling functions to target self esteem and not the relationship (Moretti, et al.). Many researchers have interchangeably used the terms indirect, social, and relational aggression due to the overlap in conceptualization (Archer, 2005, Underwood, 2003). The present study uses the term and concept, “relational aggression” by Crick (1995) as the instruments to measure aggression are based upon this concept in the literature. Further discussion of the findings of Crick’s literature is reviewed below and incorporates some findings of all three indirect, relational, and social aggressions.

Gender Trends

Many researchers have argued that boys participate more often in overt aggression than girls and girls engage in more relational aggression than boys (Archer, 2004; Archer, 2005; Björkqvist et al., 1992; Crick & Grotpeter, 1995; Crick, 1995, Crick, 1997). Crick and Grotpeter compared relational and overt forms aggression among girls and boys (1995). Their findings suggested that boys (15.6%) were categorized as overtly aggressive significantly more than girls (0.4 %), and that girls (17.4%) were categorized as relationally aggressive more than boys (0.2%). In addition, relationally aggressive children appeared to experience more psycho-social difficulties including being rated as significantly more disliked by peers, and exhibiting significantly higher symptoms of depression than their non-relationally aggressive counterparts (Crick & Grotpeter, 1995).

In his review of sex differences in aggression, Archer (2004) presented two main explanations to explain the sex differences found in aggression. Social Role Theory (Eagly, 1987) was one common conceptualization. Social Role Theory states that males and females are
expected to act in ways consistent with their gender roles and it is considered socially desirable to act in ways consistent with one’s gender role. Consequently, people often comply with social norms of gender appropriate behavior because of social pressures. That society discourages more overtly aggressive behavior in girls might lead females to pursue other, more covert ways of expressing their aggression (Underwood, 2003). Crick and Grotpeter (1995) proposed that when children attempt to inflict harm on peers (i.e., aggressing), they use methods that best damage the goals that are valued by their respective gender peer groups. That is, boys tend to harm others through physical and verbal aggression (e.g., hitting or pushing, threatening to beat up others). These acts of physical and verbal aggression are consistent with the themes of instrumentality and physical dominance past research has supported as important to males (see Björkqvist & Niemela, 1992).

Sexual selection theory is another explanation; it suggests differential, evolutionarily investments in offspring could explain more overtly aggressive behavior from males and more relationally aggressive behavior in females (Archer, 2004; Björkqvist, 1994). Biological explanations have suggested that females have lower physical strength than males, and therefore must rely on indirect means of aggression (Björkqvist, 1994). For instance, girls might utilize social attacks to deter future sexual partners from their competition by tarnishing another girl’s sexual reputation (through gossip) and social reputation (through social rejection) to promote her own evolutionary success (Buss & Schmitt, 1993). This trend has been further supported by findings among girls’ peer groups that are characterized by fewer and closer relationships whereas boys’ friendships are more numerous and casual (Maccoby, 1990, 1998). Girls are more likely to focus on relational issues during social interaction (e.g., establishing
close, intimate connections with others) than boys, and thus makes relational aggression a more salient form aggression for females than for males (Crick & Grotpeter, 1995). Research supports that relationally aggressive acts are particularly hurtful among girls because it targets relationships (Crick, Bigbee & Howes, 1996; Galen & Underwood, 1997). Physical dominance and instrumentality has been found to be less salient for most girls than for boys (Crick, Bigbee & Howes, 1996; Galen & Underwood, 1997). Thus boys may more often turn to overtly aggressive ways to meet their needs.

Another facet of gender differences in aggression is addressed by Crick and Grotpeter (1995) who suggest that relationally aggressive girls experience stronger or more pervasive psycho-social difficulties than boys. That is, girls labeled as relationally aggressive reported significantly more loneliness, isolation, and feeling like they were less liked when their male counterparts did not (Crick & Grotpeter). Thus, not only might there be more motivation for females than for males to behave in relationally aggressive ways, the females that choose to use relationally aggressive behavior might be more distressed than those who did not choose this behavior. If females indeed react more negatively than males to relational aggression, this provides support for Social Role Theory and evolutionary theory that females use aggression in forms that are more salient to their needs and in ways that are most socially accepted. Replication of the finding that females are more negatively impacted by relational aggression will be important in supporting sexual selection theory and social role theory.

Assessment of Relational Aggression

Crick and Grotpeter (1995) were the first to discuss the term relational aggression. In their 1995 study, they examined relational aggression and social-psychological adjustment in
491 girls and boys ranging from third to sixth grade. Crick and Grotpeter discerned that a peer nomination format was most appropriate for measuring relational aggression behaviors. They suggested that relational aggressive behavior was relatively indirect in nature and focused on peer relationships that would be difficult for a third party to observe naturally and reliably. Consequently, multiple peers were thought to be the best informants of relationally aggressive behavior. They constructed a peer nomination scale to assess relational aggression, overt aggression, prosocial behavior, and peer acceptance. The peer-nomination form of behavior assessment has been the most commonly used instrument in subsequent research regarding relational aggression. The present study used the peer nomination procedure as described by Crick and Grotpeter (1995).

When the same information was assessed in a longitudinal study, the need for a multi-informant method became apparent. In Crick’s 1996 study which assessed the role of overt aggression, relational aggression, and prosocial behavior as predictive of future psychosocial adjustment, a teacher form was created to assess aggression and behavior (Child Social Behavior Scale – Teacher Form; CSBS-T, Crick, 1996). Crick found that the teacher and peer nomination measure significantly correlated with each other on measures for overt aggression, relational aggression, prosocial behavior, and peer acceptance for boys and girls. Many other studies also used peer and teacher reports (Brown, Arnold, Dobbs & Doctoroff, 2007; Crick, Ostrov, Burr, Cullerton-Sen, Jansen-Yeh, Ralston, 2006; Close, Ostrov & Crick, 2007). An observational measure was later developed by Ostrov and Keaton (2004) for preschool children and correlated with the PSBS-T on overt, relational, and prosocial behavior as well. Overall, partial correlations revealed agreement between teacher ratings and observations of behavior.
Teacher ratings of children’s relational aggression and observed relational aggression correlated for boys and girls. However, correlations for overt aggression were not significant for girls or boys. The researchers concluded that, overall, teacher ratings of aggression on the PSBS-TF were generally predictive of children’s observed behavior (Ostrov & Keating, 2004).

To date, with some exceptions, little research has used parents as a source of information (Casas, Weigel, Crick, Ostrov, Woods, Yeh, & Huddleston-Casas, 2006[parent/teacher only], Zalecki & Hinshaw, 2004[peer/teacher, parent]). The present study adapted the CSBS-T for parents in order to observe how parents rated their own child’s aggressive and social behavior. One of the aims of this study was examine the validity of parent adapted measure.

Victims

Another important topic in the aggression literature is the affect aggression has on its victims. Juvonen and Graham (2001) defined peer victimization as “face-to-face confrontation” (e.g., physical aggression, verbal abuse, nonverbal gesturing) or social manipulation through a third party (e.g. social ostracism, spreading rumors). Dan Olweus, one of the first to systematically study peer victimization, synonymously used the terms peer victimization and bullying. He stated that a person is victimized when, “he/she is exposed, repeatedly and over time, to negative actions on the part of one or more other students” (1993, p.54). He distinguished that victimization does not include teasing done in a friendly and joking way (1996). Also implied in bullying is the imbalance in strength; Olweus’s (1996) definition clarifies that, “it is not bullying when two students of about the same strength or power argue or fight,” and the student who is exposed to the negative actions has difficulty defending himself/herself.
and is somewhat helpless against the student or students who harass” (1993, p.54). Crick and Grotpeter (1996) have broken down victimization into two types: physical and relational. They noted that physical victimization is when one is hurt or controlled through physical harm or the threat of physical harm (e.g., being hit or pushed); whereas relational victimization is defined as harm through peer’s attempts to damage or control their relationships (e.g., being purposely excluded from one’s peer group for not complying with a friend’s request).

In his critical analysis of peer victimization over history, Olweus (2001) noted that North American trends in victimization research have been to study peer rejection or acceptance through peer nomination procedures starting in the 1980s. He emphasized that this research was not directly related to peer victimization, but it focused on related topics and inferred that aggressive behavior was the main determinant of peer rejection. Thus, peer rejection relates to peer victimization but was a distinct phenomenon itself. The present study focused more specifically on children’s experience of victimization as opposed to peer rejection.

One robust finding in Olweus’s research (1978) with only male children that were bullied or repeatedly victimized was that they were categorized as either passive victims (who did not provoke or stimulate aggressive behaviors from others) or proactive victims (who irritated peers with attention-seeking, disruptive, restless behaviors). Passive victims are more likely to exhibit internalizing symptoms overall and have been shown to be more highly passive with repeated victimization over time (Perry, Hodges & Egan, 2001). Proactive victims tend to exhibit more externalizing symptoms and exhibit aggression that was, “unskilled, disorganized and accompanied by debilitating emotional arousal” and therefore were also called, “ineffectual aggressors” (Perry et al., p. 76). Thus, proactive victims might also be viewed as aggressive.
Moreover, Olweus found that externalizing symptoms were also associated with repeated victimization experiences over time (1978, 2001). Olweus suggested that these two groups of victims exhibited reactions to aggression that brought on additional attacks (2001). For example, the passive victim might display submissive behavior that in the short run would end an attack, but in the long run could cause a child to be increasingly victimized by providing a passive response that is reinforcing to the aggressor. The behaviors of the passive victim described by Olweus are similar to the reluctant/avoidant social behavioral pattern described by Henker and Whalen, which was a behavior type that thought most likely to be present in child with diagnosed with ADHD-I (1999). On the other hand, a proactive victim may retaliate with futile attempts and exhibit anger but become involved with extended conflicts to the extent that they are so emotionally disregulated that they end up losing their battles with others (Perry et al.). This behavioral pattern resembles the aggressive/assertive behavioral pattern of ADHD children described by Henker and Whalen and similar to behavioral descriptions of children with ADHD-C. Both of these types of victims described the social interaction styles often seen in children diagnosed with ADHD and described earlier. Exposure to victimization from peers could be one contributing factor to the negative outcomes associated with children diagnosed with ADHD and given the patterns described by Olweus, it is possible that children diagnosed with ADHD are more susceptible to experiencing peer victimization than other children as well.

The research specific to relational victimization is relatively scarce, but overall, studies demonstrated that relational victimization is related to significant psychosocial difficulties during the preschool, middle childhood, and adolescent years (Crick et al. 2001; Crick, Casas, &
The difficulties associated with relational victimization have been shown to include poor peer relationships, peer rejection and internalizing problems (e.g., depressive and/or anxious symptoms; Crick & Bigbee, 1998); relational victimization also is associated with externalizing difficulties (e.g., delinquent behavior; see Crick et al., 2001; Crick et al., 2002). In their study of 383 fourth and fifth graders, Crick and Bigbee (1998) found that relational victimization uniquely contributed to the variance of psychosocial problems even above the variance that was explained by overt aggression, overt victimization, and relational aggression. They found that relational victimization contributed uniquely to increased peer rejection, submissive behavior, feelings of loneliness, social avoidance, and emotional distress in boys. For girls, relational victimization contributed to less peer acceptance, more peer rejection and less self restraint (Crick & Bigbee). The authors further noted that self restraint difficulties (e.g., difficulty inhibiting anger, impulsivity) was also a significant aversive consequence more frequently experienced by relationally victimized children than children who were not victimized or overtly victimized. The authors suggested that repeated aversive negative interactions faced by relational victims could contribute to restraint difficulties by overwhelming victimized children with intense, hostile, or retaliatory feelings. Crick and Bigbee concluded that the relation between maltreatment and internalizing tendencies is likely a reciprocal one for many children who suffer these types of social problems (e.g., being victimized leads to feeling anxious, which then makes one more vulnerable to further victimization). This information combined with Olweus’s findings that victims may behave in ways that lead to more victimization suggests that restraint difficulties may exacerbate victimization problems. That is, aggressive peers might repeatedly provoke victims because the
victims’ lack of restraint is rewarding to and reinforcing for the aggressors.

Crick et al. (2002) noted that the manifestation of relational victimization (and aggression) changes depending on the social, cognitive, and emotional maturity. For example, preschool children have been documented as being more likely to use direct, face-to-face behaviors, (e.g., “You can’t come to my birthday party unless you let me play in your group” or signal ignoring by holding one’s hands over one’s ears). During middle childhood, both indirect and direct relationally aggressive acts might be used. For example, a peer may spread rumors (an indirect act) or may refuse to choose someone as a team member during gym class as retaliation for a past grievance (a direct act). Crick et al. (2002) noted that the types of victimizing behaviors continue to increase in complexity and subtlety as one moves into adolescence (e.g., stealing one’s boyfriend or the silent treatment) especially as opposite-sex friendships and romantic relationships form during this developmental period. The present study focused on aggression and victimization in middle childhood and thus assessed aggressive behavior utilizing a mixture of more direct and subtle forms of aggression and victimization.

Research on gender differences in overt and relational victimization is equivocal. Crick and Bigsbee (1998) found sex differences in the type of victimization; males received more overt aggression and females received more relational aggression. This result for females was not evident in Crick and Grotpeter’s (1996) study, but has been seen in others (Ostrov et al., 2004). However, Crick et al. (2002) pointed out that the salience of relational victimization for increased understanding of maltreated girls cannot be judged solely on the basis of gender differences in exposure to aggression. It is important to note that in the same way including relational aggression identified an even larger subgroup of children who are aggressive (namely
females); relational victimization adds unique information to our understanding of children's social difficulties (Crick & Bigbee, 1998; Crick, Casas & Hu, 1999). Crick and Bigsbee noted that, “every rejected child identified through the assessment of relational aggression and victimization (but not through the assessment of overt forms) was a girl” (p.346). More importantly, there has been evidence to suggest that females were more likely than males to become distressed by negative interpersonal events (Leadbeater, Blatt, & Quinlan, 1995). The consequences of relational victimization may be more serious for girls than for boys. Thus, the study of relational victimization significantly contributes to enhancing the knowledge base of social development of females (Crick, 2002). Given the equivocal findings, and implications that females may be more relationally victimized, it is relevant to examine if gender differences do exist between boys and girls and their experiences of victimization.

ADHD and Relational Aggression

“Relationally aggressive acts deprive children of opportunities to satisfy their social needs for closeness, acceptance, and friendship in peer relationships; social psychological experiences that have been shown to be critical for children’s development and well-being” (Crick et al., 2002, p. 98). As reviewed earlier, children diagnosed with ADHD were reported to exhibit more aggressive behavior than children who were not diagnosed with ADHD. Furthermore, ADHD symptoms, aggression and victimization all increased the risk for future maladjustment. If a subset of children diagnosed with ADHD both exhibit and experience aggression, then the additive effect of negative consequences associated with each of these experiences could be very detrimental. The importance of understanding how ADHD children were affected by these variables is self evident. To date, there has been very limited research
about the presence of relational aggression and victimization in boys and girls diagnosed with ADHD. ADHD has predicted aggressive behavior in studies that examined aggression styles in girls with attention problems (Blachman & Hinshaw 2002; Zalecki & Hinshaw, 2004). For example, Blachman and Hinshaw, studied 6-12-year-olds at a girl’s summer camp to examine patterns of friendships among girls with and without ADHD. They reported that girls diagnosed with ADHD had fewer friends, were more likely to have no friends, and were more likely to have unstable relationships. Out of all the negative friendship features measured (conflict, exclusivity, overt aggression and relational aggression), relational aggression contributed the most to lower quality relationships among girls with ADHD. Furthermore, Zalecki and Hinshaw (2004) examined differences in aggression identified by teacher, parent, and observational ratings of girls with and without ADHD using the same summer camp girls. They concluded that girls with ADHD-C exhibited higher rates of overt and relational aggression than girls diagnosed with ADHD-I who in turn exhibited higher rates of overt and relational aggression than did the control group. Additionally, relational aggression contributed to variance in peer regard more significantly than the influence of overt aggression (though overt aggression made a stronger contribution). These studies, however did not include boys and therefore the relational aggression experiences in boys with ADHD are relatively unexplored.

Long’s study (2003) assessed relational aggression both in boys and girls with attention difficulties and examined overt and relational aggression in an ethnically diverse sample. She found that children diagnosed with ADHD did not display more aggression than children without attention problems regardless of aggression type, and gender did not moderate this finding. However, exploratory, correlational, continuous scale analyses between parent and
teacher ratings of hyperactive impulsive behavior revealed a positive relationship between teacher ratings and relational aggression. However, parent ratings of attention and hyperactive symptoms were not predictive of relational aggression. Long noted a low number of ADHD children ($n = 14$) that may have reduced the statistical power of the analysis and the ability to detect differences between groups. She also speculated that ADHD children may not have developed the social skills required to employ aggression that threatens a social relationship (Long, 2003). It is possible that with a large enough comparison group of boys and girls with attention problems, gender could moderate the relationship between children diagnosed with ADHD and aggression.

**ADHD and Relational Victimization**

Within the scope of this research project, two studies were found that examined the relationship between ADHD and relational victimization were found. One study examined male adolescents (ages 13-18) with comorbid LD/ADHD compared to adolescents with only LD or no diagnosis (McNamara, Willoughby, Chalmers & YLC-CURA, 2005). Teenagers with comorbid LD and ADHD reported experiencing more direct victimization than teens with LD only (who reported more direct victimization than controls with no diagnosis). That is, the comorbid group reported they were most often pushed or shoved, sworn at and called names, and teased and ridiculed. A similar pattern was found when measuring indirect or relational aggression (receiving hurtful and unsigned notes, being excluded from joining an activity, having rumors spread about them, and having another student dare someone to hurt them). However, gender differences were not assessed with this all male sample.

The second study was not designed specifically for relational victimization but was an
exploratory dissertation that examined predictors of ADHD in boys and girls (Rielly, 2004).

Group and gender differences were studied across a broad range of correlates including relational aggression and victimization. One hundred fifty-five boys and girls with and without subclinical attention problems participated. Multivariate analyses revealed that children with threshold-range attention problems (i.e., those at or above a subclinical cutoff) reported higher levels of depressive symptoms, overt and relational aggression, bullying, victimization, relational victimization, negative peer nominations, conflict and betrayal in friendships, and negative parenting characteristics than the comparison children (Rielly, 2004). These studies combined supported that children with attention problems were more likely to experience both types of victimization than children without attention problems particularly if the attention problem was comorbid with another disorder.

In summary, two main types of victims were identified—passive and proactive, both which embody many of the social cognitive patterns of children diagnosed with ADHD (ADHD-I = internalizing, ADHD-C and ADHD-HI = externalizing). In addition, peer victimization was divided into two types—overt and relational victimization. The paucity of research on ADHD and victimization support that children diagnosed with ADHD are more likely to experience both styles of victimization than children who were not diagnosed with ADHD but additional studies are need to test the generalizability of this pattern.

Statement of Purpose

In addition to the difficulties in cognitive processing patterns, past research has clearly established that children with ADHD have considerable problems with social interaction and peer acceptance (Gaub & Carlson, 1997a; Henker & Whalen, 1999). Additionally, children with
ADHD appear to be rejected by peers, and experience more internalizing and externalizing symptoms than children without ADHD (Gaub & Carlson 1997a). In general, children diagnosed with ADHD are more likely than children without ADHD to exhibit aggressive behavior, which may contribute to more rejection and negative emotional reactions (Gaub & Carlson, 1997a; Henker & Whalen, 1999). Research on aggression and children with ADHD has focused mostly upon males and overt forms of aggression. Research on relational aggression and relational victimization goes beyond earlier trends of social competence literature which focused mainly on physical or verbal forms of aggression in males (Bjorkvist, 1992; Crick, 1995). With some exceptions, literature in this area suggests that there are sex differences in relational and overt aggression and victimization—such that relational aggression and victimization are typically exhibited and experienced by more females than males while overt aggression and victimization are typically exhibited and experienced by more males than females.

Furthermore, the literature on victims of repeated aggression suggests characteristics of victims that resemble the type of behavior exhibited by children diagnosed with ADHD. The main purpose of this study is to investigate if girls and boys with inattention and hyperactivity problems exhibit and experience relational and overt aggression differently than girls and boys without attention or hyperactivity problems. Archival data gathered from a school district in the Southwest is used to examine if children ADHD predicts differences in aggression and victimization (after adjustment for gender) Another aim of this study is to investigate the validity of the parent report of the Child Social Behavior Scale: Parent Version.

Hypotheses

Hypothesis 1: Children diagnosed with ADHD-C have been characterized as exhibiting
more aggressive behavior than children without ADHD symptoms, and were also more likely to misread the social actions of their peers and attach negative intentions to ambivalent social situations. Children with ADHD-C exhibit more externalizing symptoms (e.g., acting out, physical aggression) much in the same way Olweus (2001) described proactive victims of aggression. Therefore, it is hypothesized that while controlling for gender, boys and girls diagnosed with ADHD-C would be rated as exhibiting (a) more relational aggression, (b) more overt aggression and (c) more overt victimization than children diagnosed with ADHD-I, ADHD-HI and children with no attention or inhibition problems, respectively.¹

Hypothesis 2: The literature suggests boys are more often diagnosed with ADHD than girls and ADHD is also positively associated with relational aggression. In addition, females are more likely than males to exhibit relational aggression. It is hypothesized that gender would moderate the relationship between ADHD symptoms and relationally aggressive behavior such that being a girl with high ADHD symptoms would be associated with more relationally aggressive behavior than would be reported for boys with similarly high symptoms of ADHD.²

Hypothesis 3: Children diagnosed with ADHD-I have been characterized as exhibiting more internalizing symptoms (e.g. anxiety, depression) than children diagnosed with other ADHD subtypes or children without a diagnosis of ADHD. These attributes were more similar to the passive style of victim described by Olweus (2001) and are a subtype that more common in

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¹ Initially, the hypotheses were tested using the RA and OA variables derived from the peer nomination procedure to measure of relational aggression. Secondary analyses were repeated using parent ratings and teacher ratings of aggression separately. Only the first analysis included victimization as there was only one version of that variable (i.e., self-report).

² Initially, the hypothesis was tested using the peer nomination procedure to measure relational aggression, while ADHD traits were measured by parent and teacher ratings on the ADHD Rating Scale for all analyses. Secondary analyses were repeated using parent ratings and teacher ratings of relational aggression separately.
women. Trends in relational victimization literature suggest that females were more likely to experience relational victimization. It was hypothesized that while controlling for gender, children with ADHD-I would rate themselves as experiencing more relational victimization compared to children diagnosed with ADHD-C, ADHD-HI, and children with no attention or inhibition problems.

Hypothesis 4: The finding that relational victimization was more psychologically damaging to girls than boys (Crick, 2002; Leadbeater et al., 1995) suggests that females who experience relational aggression are more likely to be emotionally affected by relational aggression. Thus, it is also hypothesized that gender would moderate the relationship between relational victimization and internalizing problems so that being a girl and experiencing relational victimization would be associated with more internalizing symptoms what would be reported for boys with similar experiences of relational victimization.

Hypothesis 5: Given that multi-informant assessment is the preferred way to assess child behavior and a parent rating scale for relational aggression was not examined in previous literature, the current study adapted the CSBS-T to be utilized by parents. It is hypothesized that (a) the parent version of the Child Social Behavior Scale would distinguish between overt aggression, relational aggression and prosocial behavior and that; (b) the CSBS-PV subscales (i.e., overt aggression, relational aggression and prosocial behavior) will correlate positively with peer and teacher reports on the corresponding subscales.
CHAPTER 2

METHOD

Participants

The archival data set included third, fourth, fifth, and sixth graders from the White Settlement Independent School District (WSISD), a school in the Southwestern United States, and ranged in age from 8-13 years old ($M = 10.11$, $SD = 1.22$). Based upon a personal communication the school district, one of the original researchers reported that the WSISD ethnic make-up was 67% Caucasian, 21% Hispanic, 10% African American and 2% Asian; and that 42% of the families were described as “economically disadvantaged” by the school district (Barton, 2007).

Of the 1,201 students in the school, 32% ($N = 384$) of the parents provided permission for their child to participate in the original study. Of those, 371 parents returned completed questionnaires. One hundred fifty-seven boys and 214 girls, one of their guardians, and their home room teachers each participated in the study. The ethnic make-up of the original participants were 71% Caucasian, 19% Mexican or Spanish descent, 4.7% bi-racial, 1.4% Asian American, and 0.5% African American. The remaining 3.6% were identified as “other,” Native American, Arab, or Pacific Islander. A bi-modal distribution of family income was found such that 17.5% of the families’ total income ranged from $70,000 – $100,000 and 14.7% ranged from $20,000 - $30,000. It was from this population that a subsample of children diagnosed with ADHD was obtained and a gender matched comparison group was obtained.

Selection of Attention-Deficit/Hyperactivity Disorder (ADHD) Sample

A t-score above 69 is the cutoff score on the Child Behavior Checklist/6-18 (CBCL/6-18)
to indicate clinical levels of impairment on any problem subscale (Achenbach et al., 2001). This was the cutoff score used to help select the ADHD subsample. Cutoff scores for diagnosing and ruling out ADHD inattentive type (ADHD-I), ADHD combined type (ADHD-C) in school-based samples using the Attention Deficit Hyperactive Disorder Rating Scale, fourth edition (ADHD-RS-IV) range from ratings greater than or equal to the 80th percentile to 90th percentile on both the Inattention and Hyperactive-Impulsivity scales for parent and teacher ratings (DuPaul, Power, Anastopoulos & Reid, 1998). Percentiles less than the 80th percentile from parent and teacher on both the Hyperactive-impulsivity subscale and Inattention subscale are the optimal cutoff percentiles for ruling out an ADHD diagnosis using the home version (HV) and school versions (SV) of the ADHD-RS-IV. The 80th percentile was the cutoff percentile used in this study to include children in the ADHD sample. No cutoff percentiles are provided in the ADHD-RS-IV Manual for ruling out or diagnosing or ruling out ADHD-HI subtype (DuPaul et al. 1998).

Only children who were reported by their parents to have an ADHD diagnosis were considered for the ADHD sample. Children were included in the ADHD sample if they received a t-score above 69 on the Attention Problems scale of the CBCL/6-18 (Achenbach et al., 2001) as rated by the parent or elevations above the 80th percentile on the Inattentive subscale, Hyperactivity-Impulsivity subscale, or Total Score of the ADHD-RS-IV: HV (parent report), and elevations above the 80th percentile of the ADHD-RS-IV: SV (teacher report). Additionally, children who were not reported to have ADHD by their parent/guardian were eliminated from the possibility of being in the comparison group if they received elevations above the 90th percentile on any of the three scales of the ADHD-RS-IV: HV, the ADHD-RS-IV: SV, or a T-score above 69 on the Attention Syndrome scale of the CBCL (n = 73). ADHD subtypes were selected
by parental report of ADHD diagnosis and corroborated by elevations on the corresponding subscales (e.g. inattentive symptoms, hyperactive/impulsive symptoms or both) on the ADHD-RS-IV:HV, ADHD-RS-IV: SV or CBCL/6-18. Selection of the ADHD sample yielded a total of 37 children diagnosed with ADHD: Twelve Inattentive (6-female, 6-male), 4 Hyperactive-Impulsive (1-female, 3 male), and 21 combined type (7-female, 14-male). In addition, a randomly selected control group was matched by gender (13 female and 20 male) after the 4 children diagnosed with ADHD-H were dropped from the sample due to small cell size. A total of 26 girls and 40 boys made up the sample of children diagnosed with ADHD and their matched comparison group counterparts. Parent reports of a psychiatric diagnosis or learning disorder other than, or in addition to an ADHD diagnosis showed that 67% of children diagnosed with ADHD (8 ADHD-I, 14 ADHD-C) had a comorbid diagnosis, and 9% of the matched comparison group had a diagnosis other than ADHD (3 Comparison). Mean age of the selected sample was 10.01 $SD = 1.25$. The ethnic make-up was 78.1% Caucasian, 7.8% Mexican or Spanish descent, 7.8% bi-racial, 3.1% African American and 1.6% Asian American. The remaining 1.5% (6% was identified as “other”) were Native American, Arab, or Pacific Islander. Similar to the larger data set, there was a bimodal distribution for yearly income, with 18.2% of the children coming from families earning between $70,000 – $100,000 yearly and 14.8% from families earning between $30,000 – $40,000 yearly. A summary of demographic variables for children and parents in the study can be found in Tables 3 and 4
Measures

Demographic Information

In order to adequately describe the sample, additional information was gathered from parents and teachers using a demographic form. Parents completed demographic information for their child using the “Background Information Form” (see Appendix A). This form requested information such as sex, age, ethnicity, family income, and parent education. Information regarding diagnostic information, medical information, and prescribed medications was also included.

Teachers also provided information about themselves on a Teacher Background Information Form (see Appendix B). In addition to age, gender, and ethnicity their number of years teaching was also provided. Teachers also completed a Child Background Information Form (see Appendix C) for an extra source of student information in case consenting parents did not return questionnaires. The Child Background Information provided by teachers included gender, ethnicity, overall academic achievement, and eligibility for free lunch program information. For information about the teacher demographics, please see Table 5.

Measures to Isolate ADHD Subtypes

In addition to using parent reports of ADHD diagnoses of the participants, three measures were used to corroborate information gathered about ADHD diagnosis: (1) DuPaul, Power, Anastopoulos and Reid’s (1998) ADHD Rating Scale – IV: Home Version, (2) DuPaul et al.’s (1998) ADHD Rating Scale-IV: School Version (ADHD-RS-IV: SV), and Achenbach’s (2001)

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3 The following description of measures has been previously described by Barton (2004) for her dissertation. Consent to use and or adapt her description of measures and procedures in future research projects with the same data set was obtained by her and her committee chair Patricia L. Kaminski, Ph.D. associate professor, department of psychology, University of North Texas.
Child Behavior Checklist (CBCL/6-18). The ADHD-RS-IV: HV was completed by the child’s guardian and was used to assess symptoms of ADHD. The ADHD-RS-IV: HV is comprised of 18 items that were empirically derived from the ADHD diagnostic criteria in the Diagnostic and Statistical Manual –IV (DSM-IV; APA, 1994). For each item, the frequency of the child’s behavior at home, within the last 6 months, was 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 (subscale scores ranging from 0 to 27). A Total Scale score (ranging of 0 to 54) can also be obtained by summing the raw scores of the two subscales. Raw scores from the Total Scale and the two subscales can then be converted to percentiles. Norms for the scale were derived separately for girls and boys from an ethnically and regionally representative sample of 2000 children (ages 4 to 19) (DuPaul et al., 1998).

The overall reliability and validity of the ADHD-RS-IV: HV is considered good: internal consistency alpha coefficients are .86 for the Inattention subscale, .88 for the Hyperactivity-Impulsivity subscale, and .92 for the Total scale (DuPaul, Power, Anastopoulos, & Reid, 1998). In addition, four-week test-retest reliability statistics are $r = .78$ for the Inattention scale, $r = .86$ for the Hyperactivity-Impulsivity subscale and $r = .85$ for the Total scale (DuPaul et al). In the current study, internal consistency alpha coefficients for the three scales were $\alpha = .94$ for the Inattention subscale, $\alpha = .91$ for the Hyperactivity-Impulsivity subscale, and $\alpha = .96$ for the Total scale. 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 were unrelated (e.g., psychosomatic, anxious) to ADHD (DuPaul et al.).

Parent ratings on the ADHD-RS-IV: HV discriminated between the different subtypes of ADHD in the *DSM-IV-TR* (APA, 1994). Additionally, these 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). Thus, the ADHD-RS: HV has good discriminant validity based on an ethnically diverse sample including 93 Hispanic children. No children in the sample had were diagnosed with ADHD-H and therefore statistics related to this subtype are not available (DuPaul et al., 1998).

The ADHD-RS-IV: SV (DuPaul et al., 1998) was completed by the child’s teacher. The 18 items on the School Version were identical to the items on the Home Version and utilized the same 4-point Likert scale. In addition, the same scales (Inattention Subscale, Hyperactivity-Impulsivity Subscale, and the Total Score) were derived from the teachers’ responses on this measure (DuPaul et al.).
Normed on an ethnically diverse sample including 106 Hispanic children, the overall reliability and validity of the ADHD-RS-IV: SV was very good. Four-week test-retest reliability statistics on the scales ranged from \( r = .88 \) to .90 (DuPaul et al., 1998). In the current study, internal consistency alpha coefficients for the three scales were \( \alpha = .96 \) for the Inattention subscale, \( \alpha = .94 \) for the Hyperactivity-Impulsivity subscale, and \( \alpha = .96 \) for the Total scale. To assess validity of the ADHD-RS-IV: SV, comparisons were made between this measure and other measures historically used to assess ADHD. Strong correlations were found between the Hyperactivity-Impulsivity subscale of the ADHD-RS-IV: SV and the Conners Teacher Rating Scale – Revised (CTRS; Conners, 1989) Hyperactivity Index, the CTRS Impulsivity-Hyperactivity subscale, and the CTRS Conduct Problems subscale ranging from \( r = .55 \) to .79. The ADHD-RS-IV: HV Inattention subscale showed strong correlations with the CTRS Hyperactivity subscale \( (r = .73) \) and the CTRS Hyperactivity Index \( (r = .76) \). In addition, as would be expected, the Inattention subscale had the highest correlation with the CTRS Daydream-Attention scale \( (r = .85) \) (DuPaul et al.).

Similar to parent ratings, teacher ratings on the ADHD-RS-IV: SV differentiated the different subtypes of ADHD in the DSM-IV (APA, 1994). 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 ADHD Rating Scale – IV: School Version (ADHD-RS-IV: SV; DuPaul, Power, Anastopolous & Reid, 1998) is a similar scale to the ADHD –RS-IV: HV, except it was adapted in wording for teachers’ responses. It also contains 18 items answered on 4-point Likert scale. Just like the Home Version, subscales of the ADHD-RS-IV:SV includes a 9-item Inattention subscale and a 9-item Hyperactivity-Impulsivity subscale (subscale scores ranging from 0 to 27). A Total Scale Score (ranging of 0 to 54) can also be obtained by summing the raw scores of the two subscales. Raw scores from the Total Scale and the two subscales are then be converted to percentiles. Norms for the scale were derived separately for girls and boys from an ethnically and regionally representative sample of 2000 children aged 4 to 19 (DuPaul et al., 1998).

The Child Behavior Checklist/6-18 (CBCL; Achenbach & Rescorla, 2001) was used to assess behavior and personality of youth. The first 20 items of the Competence Scale were not utilized in this study. The CBCL problem scales used in this study consists of 113 items to be completed by the participants’ guardians. Guardians rate to what extent each item describes the child’s behavior in the past 6 months. Each item is rated on a three point scale (e.g., 2 = “mostly true,” 1 = “sometimes true,” 0 = “not true” of their child). The CBCL/6-18 yields 20 subscales categorized as Adaptive, Syndrome and DSM-Oriented Syndrome scales included Withdrawn/Depressed, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Rule-Breaking Behavior, and Aggressive Behavior.

Factor analyses indicate that three subscales (e.g. Withdrawn/Depressed, Somatic Complaints, and Anxious/Depressed) form an Internalizing Scale and two scales (e.g., Rule-
Breaking Behavior and Aggressive Behavior) combined to form an Externalizing scale. Results from the scales on the CBCL are reported in t scores (M = 50, SD = 10) to compare how a participant’s scaled score compared with the normative sample of children.

Normative data for the scales on the CBCL were derived from various Factor Analytic procedures separately for boys and girls in different age groups (Achenbach & Rescorla, 2001). 1,753 boys and girls aged 6 to 18, from 40 contiguous states and Washington D.C., and from clinical and nonclinical samples were represented and stratified by socioeconomic status, ethnicity, region, and urban-suburban-rural residence. Separate norms were provided for boys and girls aged 6 to 11 and 12 to 18. T-scores ranging from 65-69 are considered to be in the Borderline range, while scores above 70 are considered to be in the Clinically Significant range. Psychometric properties are generally strong with internal consistency reliability coefficient alphas ranging from .78 -.97. Test-retest reliability is excellent with an overall intraclass correlation coefficient of 1.00 for all 20 competence items over 1 week. Mean stability is fair (r=.65) at 12 months, and the inter-rater reliability is also excellent ranging from 0.93 to 0.96. In summary, the CBCL demonstrates sound psychometric properties and makes it a useful tool in clinical, community, and research settings. Internal consistency of the CBCL/6-18 for the present sample was good with a Cronbach’s alpha coefficient of .88 for the Attention Problems scale, .87 for Internalizing scale, and .97 for the Total composite.

Research dating back to 1978 on earlier versions of the CBCL has documented the content validity of the CBCL to its current form (Achenbach et al., 2001). First, items for problem scales were included largely because of each item’s ability to discriminate between clinical and non-clinical samples. All items were shown to discriminate significantly between
demographically similar referred and non-referred children \((p < .01)\) matched on ethnicity, socioeconomic status, and age (Achenbach et al, 2001, Achenbach & Resclora, 1991).

Pearson Correlations between CBCL Problem Scales and Conners Parent Rating Scale (CPRS) were calculated to examine construct validity of the CBCL. The CBCL and CPRS Total Problem scores correlated \(r = .82\). CPRS scales that corresponded to CBCL syndromes belonging to either the externalizing or internalizing scale ranged from \(r = .56\) to \(r = .86\). Additionally, Quay-Peterson Revised Behavior Problem Checklist (QPRBPC) correlations ranged from \(r = .59\) between CBCL Delinquent Behavior with QPRBPC Socialized Aggressive to \(.88\) for CBCL Aggressive Behavior with QPRBPC Conduct Disorder. The Total Problem scores correlated \(.81\) while the correlations of CBCL Internalizing and externalizing scores with corresponding QPRBPC scales ranged from \(.52\) to \(.88\) (Achenbach, 1991). Children diagnosed with a DSM-IV Checklist at University of Vermont’s Center for Children, Youth and Families \((N=65)\) were found to have scores that correlated with CBCL Attention Problems scale \(r = .80, p<.001\) (Achenbach et al., 2001). When correlated with the Behavior Assessment System for Children, another popular child behavior assessment (BASC, Reynolds & Kamphaus, 1992), correlation coefficients for externalizing and internalizing scales and the BASC range from \(.73-.84\), and \(.65-.75\), respectively. Overall, the adequate reliability and validity of the CBCL/6-18 has made it a commonly used tool in clinical, community, and research settings.

Aggression Measures: Peer-Assessment of Social Behavior

The latest version of the peer nomination instrument (Crick & Grotpeter, 1995) was used to measure three aspects of social behavior among students: overt aggression, relational aggression, and prosocial behavior. During a group administration in the classroom, a class
roster was provided to the students so that they could nominate up to three classmates who best fit the behavioral descriptions of each item. The version used in this study consisted of 15 items. Five items were used to measure physical and verbal aggression (overt aggression). Five items were used to assess relational aggression, and four items were used to measure prosocial behavior. It did not include four items to measure isolation that were used in the original version and omitted in its later uses (Crick, 1997; Crick & Werner, 1998).

To provide support for the construct validity of the peer nomination instrument, Crick (1997) presented a factor analysis of all the items. Three distinct factors yielded from the analysis: Overt Aggression, Relational Aggression, and Prosocial Behavior. Factor loadings ranged between .70 and .90 and cross-loadings were below .43. Thus, these findings provided evidence that overt aggression and relational aggression were distinct constructs.

Evidence of reliability and validity for the peer nomination instrument was reported in several studies. The internal consistency of the subscales had been shown to exceed $\alpha = .80$ in numerous samples. For example, Crick and Grotpeter (1995) reported Cronbach’s alpha coefficients of .94, .83, and .91 for overt aggression, relational aggression, and prosocial behavior, respectively. In the current study, internal consistency alpha coefficients for the three scales were $= \alpha = .91$ for relational, $\alpha = .94$ for overt aggression, and $\alpha = .96$ for the prosocial behavior.

Crick (1996) demonstrated the stability over time of overt and relational aggression among a sample of third to sixth grade students. Ratings were obtained over a 1-month and 6-month period to assess both short and long-term stability. Among boys, the short-term test-retest reliability was $r = .93$ for overt aggression and $r = .86$ for relational aggression. Among
Among girls, the short-term test-retest reliability was $r = .81$ for overt aggression and $r = .80$ for relational aggression. Among boys, the long-term test-retest reliability was $r = .78$ for overt aggression and $r = .56$ for relational aggression. Among girls, the long-term test-retest reliability was $r = .68$ for overt aggression and $r = .68$ for relational aggression. In sum, peer ratings of overt and relational aggression were relatively stable across time although stronger correlations were obtained over a four-week interval.

To further establish the construct validity of relational aggression, correlational analyses were conducted by Crick and her colleagues to determine the relationship between relational and overt aggression (Crick & Grotpeter, 1995; Crick, 1997). Results yielded a moderate correlation (ranging from $r = .54$ to $.63$) that indicated relational and overt aggression are separate yet related constructs. As Crick and Grotpeter noted (1995), this moderate association was expected since the two constructs are hypothesized to be “different forms of the same general behavior” (p. 715). Further support for the distinctiveness of overt and relational aggression was evident in the percentage of aggressive youth who demonstrated these two types of behaviors. Specifically, research has shown that the majority of aggressive children exhibited either relational or overt aggression—but not both forms (Crick & Grotpeter).

Children’s Social Behavior Scale – Teacher Form (CSBS-T; Crick, 1996) – The CSBS-T consisted of 15 items: seven that assessed relational aggression (spreads rumors, excludes others from being in peer group, threatens to stop being a peer’s friend in order to hurt peer), four that assessed overt aggression (hits, shoves, pushes, initiates, gets into physical fights, tries to dominate or bully peers), and four that assessed prosocial behavior (says positive things to peers; helps others; tries to cheer up peers when they are sad or upset). These scales were
designed to parallel those contained in the peer nomination measure (with the exception of peer acceptance). Questions were answered on a 5-point Likert scale ranging from never true to almost always true.

Similar to the peer nomination instrument, a factor analysis on the PSBS-T yielded three separate factors: relational aggression, overt aggression, and prosocial behavior (Crick, 1996). Factor loadings ranged from .63-.89 while cross-loadings were below .50. Internal consistency for this measure was good with alphas equal to .94, .94, and .93 for relational aggression, overt aggression, and prosocial scales, respectively. Correlations among the scales were $r = .77$ between overt and relational aggression, $r = .65$ between overt aggression and prosocial behavior, and $r = .55$ between relational aggression and prosocial behavior (Crick, 1996). Similar to Crick’s findings, the alphas for internal consistency for the present sample were .94 for relational aggression, .91 for overt aggression, and .91 for prosocial behavior.

Crick (1996) also compared the relationship between the peer nomination instrument and the CSBS-T for concurrent assessments. Correlation coefficients between peer and teacher ratings for relational aggression were $r = .57$ for boys and $r = .63$ for girls. For overt aggression, correlation coefficients were $r = .69$ for boys and $r = .74$ for girls and for prosocial behavior they were $r = .40$ for boys and $r = .48$ for girls. These findings supported that the CSBS-T measures were fair to adequate in measuring relational aggression, overt aggression, and prosocial behavior.

Children’s Social Behavior Scale – Parent Version (CSBS-PV) The CSBS-PV was adapted from the CSBS-T for this study and addressed parent perceptions of their child’s aggressive and prosocial behavior. This measure contained the same items found in the CSBS-PV with slight
wording adjustments for parents completing the items (e.g. “My child says supportive things to children.” vs. “This child says supportive things to children”). Reliability data for this instrument has not been published and is part of the purpose of this study. The alphas for internal consistency for the present sample were good: .81 for relational aggression, .85 for overt aggression, and .85 for prosocial behavior.

The Peer Victimization Scale (Kaminski, 2004) was created for this project to assess a child’s experience of overt victimization (e.g., A kid or group of kids made you afraid that they were going to hit, pinch, punch, push or kick you.) or relational victimization (e.g., A friend at school got mad at you and stopped talking to you for a while). This instrument contained seven items scored on a five point Likert scale. Children were asked, “How many times each of these things happened to you this school year?” Choices ranged from: “never this school year; 1 or 2 times this school year; 3, 4, or 5 times this school year; 6, 7, 8, 9 or 10 times this school year; or 11 or more times this school year.” Internal consistency of the Peer Victimization scale for the present sample was acceptable (given the few number of items for each subscale) with a Cronbach’s alpha coefficient of .68 for the Relational Victimization Scale, .74 for the Overt Victimization scale, and .79 for the Total Victimization. Pallant (2007) suggested that in smaller scales (with fewer than 10 items) the inter-item correlation for items could better provide an idea of the reliability of a scale. Briggs and Cheek (1986) recommended an optimal range for the inter item correlation for scales with fewer than 10 items to range between .2 and .4. The mean inter-item correlation for items in the overt victimization was .44, relational victimization scale was .41, and total victimization was .35 suggesting adequate internal consistency among items.
Psychosocial Symptoms

The Internalizing Scale from the CBCL/6-18 was used to measure parent reports of child internalizing symptoms (Achenbach et al., 2001). The Internalizing Scale is composed of three of the Problem Behavior Scales (Withdrawn/Depressed, Somatic Complaints, and Anxious/Depressed). Achenbach (1991) found the test-retest reliability of the Internalizing Scale on the CBCL was good \( r = .89 \) over a seven-day period. Inter-parent reliabilities for the Internalizing Scale were also found adequate \( r = .66 \). In addition, the current version of the CBCL correlated between .97 and .99 with its previous 1991 version (Achenbach & Rescorla, 2001). Regarding construct validity, moderately high correlations were found between the Internalizing Scale and the Psychosomatic and Anxiety scales of the CPQ and the Anxiety-Withdrawn Scale of the Quay-Peterson RBPC with correlations ranging from \( r = .56 \) to .72 (Achenbach, 1999). In addition, internal consistency reliability statistics were computed on the Internalizing Scale with the current sample and were found to be good \( (\alpha = .89) \). For the present sample, internal reliability was .87 for the Internalizing scale. (Please see Table 1 for a list of all measures used in this study.) The CDI was administered as part of a larger research study, but was not used for the present study.

Procedure

A letter was sent to the superintendent of the White Settlement school district who was in favor of allowing the study. The principal of each school was allowed to decide whether or not her or his school would participate in the study. All of the principals (5 of 5) agreed to participate. Two copies of informed consent forms were provided to each teacher, so that one copy could be kept by the participating teachers and one could be kept by the investigators (see
Appendix E). Only teachers that completed an informed consent form were included in this study. A 100% response rate was obtained from the 64 participating teachers.

After principal and teacher consent and cooperation were obtained, flyers announcing the study were distributed to the homes of the third through sixth grade students in the participating elementary schools. Flyers were bought home by students one week before a packet of consent forms and measures was brought home to parents to be completed in their homes. The packet contents included an introductory letter (see Appendix F) that described the study and two copies of the consent (see Appendix G) and assent (see Appendix H) forms. The only students included in this study were those whose parents signed the parental consent forms. Assent was also solicited from each student by their participating parent.

Data collection occurred in May so that teachers and students had ample time to develop relationships with one another. This also allowed time for teachers to observe students’ classroom behavior accurately enough to provide informed ratings of children’s behavior.

After completing consent, parents were instructed to complete several questionnaires in the order in which they were stapled together in their packet. Only four of those instruments were used in the current study. The counterbalanced measures in this study included a Background Information Form (BIF), ADHD RS-IV, Children’s Social Behavior Scale - Parent Version, and CBCL. Parents were instructed not to write their child’s name on any of the completed forms. The forms were coded with a participant ID number assigned to each student in advance by the researcher. A written reminder was sent home approximately one week after the materials were distributed to encourage parents to return the materials to their child’s
teacher. Materials were returned by the parents in a sealed envelope to the teachers within two weeks after receiving the materials.

To administer the Children’s Social Behavior Scale (peer-nomination task), a class roster for each class was used with the first names of the students in alphabetical order (unless there was more than one child with the same first name). Initials of the students’ last names were provided for those classrooms where students had the same first names. Each name was accompanied by an identification number that was to be used by students rather than their name during the nomination procedure.

A single, in-class group administration was conducted to obtain the data collected from the children in each class. This administration was scheduled during a time designated by teachers and school officials as the “least disruptive” period of the school day. One graduate level and one undergraduate level research assistant (URA) entered each classroom to administer the peer nomination measure. The graduate level researcher orally administered the Peer Nomination Procedure (see Appendix D) and read instructions of the SPPC, the CDI and the Peer Victimization Questionnaire. Meanwhile, the URA assisted with passing out materials and monitoring the children.

Students who did not receive parental consent for the study were given an activity packet (e.g., word search, crossword puzzle) to complete while their classmates completed the study. For those students who did have parental consent, but were absent, attempts were made to collect questionnaire data, but the Children’s Social Behavior Scale data was not obtained.

During the classroom administration, students were informed that they were able to
withdraw from the study at any time, that their responses were confidential, and that there were no right or wrong answers. Next, the class roll was read and data collection packets were distributed. The numbered class rosters and response sheets were also distributed to each student. Students were provided with a colored “coversheet” so that others could not see their answers. The students were instructed to cross through their own names and not to record their own number as an answer for any of the items. Students were encouraged to ask questions regarding the instructions and then practice items were used to ensure that each student understood the task. Next, the administrator read each item aloud twice while the participants wrote their answers on the response sheet. The children were asked to nominate up to three classmates for each of the questions. Students were instructed not to discuss their responses with other classmates, but they were encouraged to discuss the activity with their parents at home.

After the CSBS peer nomination task was complete, the Self-Perception Profile for Children (SPPC; Harter, 1995, not used in this study) and CDI (also not used in this study) were administered orally by the graduate researcher. Instructions and practice items were administered orally, and children were encouraged to ask questions. Afterwards, the participants were instructed to read the instructions for the Peer Victimization scale and complete the 7 items individually. Finally, all the materials were collected by the administrators, while pencils and stickers were distributed to all students in the classroom (regardless of participation).

While the in-class administration was being conducted with the children, teachers completed a Teacher Background Information form. In addition, they completed an ADHD RS-
IV: SV, Children’s Social Behavior Scale-Teacher Form, Social Competence Scale of the TRS and a Child Background Information Form for each participating student. Teachers used Student Identification Numbers instead of names to identify each student on their forms.

The class with the highest percentage of students who participated on each campus was given a pizza party as a benefit for the school’s participation. All parents who completed the entry form were entered into a drawing for dinner for two at a local restaurant in appreciation of their participation in the study. Participating parents were also given a Debriefing Statement (see Appendix I) which explained the study and provided a list of local mental health resources. To thank teachers for their participation, each participating teacher was entered into a drawing for their choice of either a $25 gift certificate to a local educational store or to a local restaurant. Furthermore, the participating schools were provided with social skills curriculum designed to enhance students’ relationships with their peers and their conflict resolution skills. A parent meeting with an expert panel was also held to address bullying and relational aggression that their children might experience. Finally, a teacher in-service (including topics such as childhood depression and aggression) was held before the next school year began. Parents, teachers, and school personnel were also given access to a summary of group results related to the study.
CHAPTER 3

RESULTS

Data Preparation

Statistical assumptions of normality were examined prior to conducting analyses for multivariate analysis of covariance (MANCOVA), ANCOVA and hierarchical multiple regression. Histogram plots revealed positively skewed distributions for relational aggression, overt aggression, overt victimization, relational victimization, and internalizing symptoms. Logarithmic transformations were conducted on parent and peer nominations of aggression that improved the positively skewed distributions as recommended by Tabachnick and Fidell (2001). Square root transformations were used for the positively skewed teacher ratings of relational and overt aggression and relational and overt victimization scales. These transformations improved distributions and were used in subsequent regression analyses. See Table 12 for the normality statistics of the transformed variables. When Box’s test of equality of covariance and Levene’s test of equality of error variances revealed violations for the assumptions of equality of equal covariances and equality of error variances for the hierarchical regression, adjustments were made as specified by Tabachnick and Fidell (2001). A more robust statistic, Pillai’s trace, was used instead of Wilk’s lambda and an alpha of .025 was used to determine significance. A table of means and standard deviations, skewness and kurtosis of all dependent variables can be found in Table 6.

Hypothesis 1: Attention-Deficit/Hyperactivity Disorder (ADHD) Subtype and Overt Aggression, Overt Victimization, and Relational Aggression

In order to examine the relationships between ADHD subtype and relational aggression, overt aggression and overt victimization while controlling for the effect of gender, MANCOVA
was used. ADHD status (ADHD-I, ADHD-C or no ADHD diagnosis) served as the independent variable; levels of aggression and victimization were the dependent variables; and gender was entered as a covariate. The assumptions of MANCOVA were tested by checking for normality, adequate cell sizes, linearity, univariate and multivariate outliers, homogeneity of variance, covariance matrices, and multicollinearity. As indicated in Table 12, a few variables did not meet the assumption of normality even after they were transformed. Given MANCOVA is reasonably robust to violations of normality, the data was analyzed without further adjustments. With regard to the need for adequate cell sizes, there was a problem with the smallness of the ADHD-HI sample (i.e., \( n = 4 \)). Thus, the data of the four children classified as ADHD-HI was removed from all analyses that required a comparison of ADHD subtypes.

It was hypothesized that when controlling for gender, children diagnosed with ADHD-C would exhibit more relational aggression, overt aggression, and report experiencing more overt victimization than children with ADHD-I and comparison group children. Results of the omnibus test revealed no significant differences in relational aggression, overt aggression, or overt victimization between children diagnosed with ADHD-C, ADHD-I or the control group, \( F(6, 118) = 1.27, p = .275 \), Pillai’s Trace = .12, partial eta squared = .06. The covariate, gender, significantly impacted levels of aggression and victimization on linear combination of the dependent variables, \( F(3, 60) = 3.37, p = .024 \); Pillai’s Trace = .15, partial eta squared = .15. Thus, 15% of all three of the dependent variables was explained by gender. Observed power was .73. (see Tables 7 and 8)

Despite the lack of a significant omnibus test, univariate tests were explored to investigate patterns that could explain the 6% of variance accounted for by ADHD status.
Further evaluation using K matrix contrasts, using a Bonferroni adjusted alpha level of .017 to control for family-wise error, revealed that children diagnosed with ADHD-C did not differ from the non-ADHD comparison group, \((p = .053)\), or children diagnosed with ADHD-I on overt aggression, \((p = .162)\), with eta squared = .07. Investigation of the means showed that children diagnosed with ADHD-C \((M = .36, SD = .46)\) were rated as more overtly aggressive by their peers than were matched controls \((M = .15, SD = .31)\), but did not reach statistical significance. The difference between these two groups, however was the largest among the K Matrix contrasts and likely the most influence on the 6% of variance accounted for by ADHD status. There were no significant differences among groups on the dependent variables.

Secondary separate analyses were conducted with aggression scores rated by parents and teachers. Essentially, the first analysis was re-run twice with parent- and teacher-reported dependent variables, respectively, substituting for the peer variables used in the first MANCOVA. Peer Victimization scores were left out of the secondary analyses because there were no parent or teacher ratings of that variable. Box’s test of equality of covariance and Levene’s test of equality of error variances revealed violations for the assumptions of equality of equal covariances and equality of error variances. To adjust for these violations, a more robust statistic, Pillai’s trace, was examined instead of Wilk’s lambda and an alpha of .025 was used to determine significance (Tabachnick and Fidell, 1999).

A MANCOVA was used to assess ADHD status as the independent variable and relational and overt aggression as rated by parents as the dependent variables. A significant overall main effect was found on the combined dependent variables, using an adjusted alpha of .025, \(F (4, 126) = 3.94, p = .004\), Pillai’s Trace = .23, partial eta squared = .11. ADHD diagnosis accounted
for 11% of the variance in aggression scores as rated by parents. Observed power was .90. K
Matrix contrasts revealed that children diagnosed ADHD-C (M = 8.19, SD = 4.79) were rated as
significantly more overtly aggressive than were controls (M = 4.61, SD = 1.48), p < .001, eta
squared = .33, but did not differ from children diagnosed with ADHD-I (M = 6.83, SD = 3.81), p
>.025, eta squared = .02 (see Tables 9 and 10).

A third MANCOVA was used to assess ADHD group as the independent variable and
relational and overt aggression as rated by teachers as the dependent variables. Levene’s test
of equality of error variances revealed a violation for the equality of error variances, and
therefore a more stringent alpha, .025 was used to evaluate significant results (Tabachnick and
Fidell, 1999). A significant overall main effect was found on the combined dependent variables,
\( F(4, 126) = 4.18, p = .003 \), Pillai’s Trace = .24, partial eta squared = .12. ADHD diagnosis
accounted for 12% of the variance in relational and overt aggression rated by teachers.
Observed power was .91. Similar to results with parent ratings, using an adjusted alpha level of
.025, a K matrix contrast revealed that children diagnosed with ADHD-C (M = 8.95, SD = 3.85)
were rated as significantly more overtly aggressive than were the comparison group (M =4.88,
SD = 2.80), p = .001, eta squared = .32. And, in contrast to peer nominations and parent ratings,
however, teachers rated children diagnosed with ADHD-C as more overtly aggressive than
children diagnosed with ADHD-I (M = 6.17, SD = 3.12) , p = .04, eta squared = .13. Furthermore,
teachers rated children diagnosed with ADHD-C (M =16.55, SD = 6.51) as significantly more
relationally aggressive than matched controls (M =11.28, SD = 4.77), p = .002, partial eta
squared = .16, but not more relationally aggressive than children diagnosed with ADHD-I (M
=13.83, SD = 5.84), p >.025 .170, partial eta squared = .05 (see Tables 11 and 12).
Hypothesis 2: Gender Differences, ADHD Symptoms and Relational Aggression

A hierarchical multiple regression was used to test the relationships between ADHD symptoms, gender, and relational aggression. Specifically, it was proposed that gender would moderate the relationship between ADHD symptoms and relational aggression such that being a girl with high ADHD symptoms would be associated with more relationally aggressive behavior than would be reported for boys with similarly high symptoms of ADHD. Total ADHD symptoms rated by parents and teachers on the ADHD Index were averaged. Effects re-coding was used to recode gender (Males = -1, Females = 1). As recommended by Frazier (2004), predictor and moderator variables were standardized using z-scores. Then, an interaction term was created with gender and ADHD symptoms to reduce multicollinearity between the main effects and interaction terms.

Evaluation of assumptions and positively skewed distributions led to transformations of variables to reduce skewness, improve kurtosis, normality, linearity and homoscedasticity of residuals. After assessing distributions of various transformations (logarithmic, square root and inverse), a logarithmic transformation was used for the measures of peer nomination relational aggression. For secondary analyses, a logarithmic transformation was used for parent relational aggression ratings and a square root transformation was used for teacher relational aggression ratings. These transformations improved the positively skewed distributions. With the use of a $p < .001$ criterion for Mahalanobis distance, further evaluation of the variables revealed no outliers among the cases. See Table 13 for a correlation matrix of all variables used in initial and secondary analyses.

ADHD symptoms and gender were the independent variables entered in the first step of
the regression and explained 4.9% of the variance in relational aggression as measured by peer nomination. In the second step of the regression analysis, the interaction term (i.e., gender x ADHD symptoms) was regressed onto relational aggression and the total variance explained by the model was 5.0%, $F (3, 248) = 4.39, p < .01$. The interaction between gender and ADHD symptoms was not significant and resulted in an $R^2$ change = .002, $F$ change (1, 248) = .490, $p > .025$. In the final model, ADHD Symptoms were the only variable that predicted a statistically significant amount of variance in relational aggression $\beta = .205, p = .001$ (see Table 14).

Secondary analyses with parent and teacher ratings were conducted. The first hierarchical, multiple regression was run once with transformed parent ratings and then again with transformed teacher ratings substituting for the peer nomination variables used in the first analysis. ADHD symptoms and gender were the independent variables entered in the first step of the regression; and explained 12.1% of the variance in parent-rated relational aggression. In the second step of the regression analysis, the interaction term (i.e., Gender x ADHD Symptoms) was regressed onto relational aggression, and the total variance explained by the model was 12.4%, $F (3, 354) = 16.66, p < .01$. The same interaction between gender and ADHD symptoms was not significant and resulted in an $R^2$ change = .002, $F$ change (1, 354) = .318, $p > .025$. In the final model, ADHD Symptoms was the only variable that predicted a statistically significant amount of variance in relational aggression, $\beta = .351, p < .01$ (see Table 15).

Identical to the previous multiple regressions, ADHD symptoms and gender were the independent variables entered in the first step of the regression for the analysis with teacher
ratings of relational aggression, and they explained 19.3% of the variance in parent-rated relational aggression. In the second step of the regression analysis, the same interaction term (i.e., Gender x ADHD Symptoms) was regressed onto relational aggression as rated by teachers and the total variance explained by the model did not change, 19.3%, $F (3, 357) = 28.48, p < .01$. The same interaction used in the initial analysis (gender by ADHD symptoms) was not significant and resulted in an R square change = .001, $F$ change $(1, 357) = .626, p > .025$. Similar to peer and parent ratings, in the final model, ADHD Symptoms was the only variable that predicted a statistically significant amount of variance in relational aggression, beta = .013, $p < .001$ (see Table 16).

Hypothesis 3: ADHD Subtype and Relational Victimization

To examine the relationship between ADHD subtype and relational victimization while controlling for the effect of gender, a one way between-groups analysis of covariance (ANCOVA) was used. ADHD subtype served as the independent variable, relational victimization was the dependent variable, and gender was entered as a covariate. The assumptions of ANCOVA were tested by checking for normality, adequate cell sizes, linearity, univariate and multivariate outliers, homogeneity of regression slopes, covariance matrices and multicollinearity. As indicated in Table 6, several variables did not meet the assumption of normality even after they were transformed. Given ANCOVA is reasonably robust to violations of normality however, the data was analyzed without further adjustments. It was hypothesized that when controlling for gender, children diagnosed with ADHD-I would rate themselves as experiencing more relational victimization than children with ADHD-C and comparison group children. Results revealed no significant differences in relational victimization between children
diagnosed with ADHD-C, ADHD-I or the control group, $F(2, 61) = 1.61, p = .21$, partial eta squared $= .05$. Surprisingly, the covariate, gender, did not significantly impact levels of relational victimization as indicated by a partial eta squared value of .013, $F(1, 61) = .80, p = .375$ (see Tables 17 and 18).

Hypothesis 4: Gender Differences, Relational Victimization and Internalizing Symptoms

A hierarchical multiple regression was used to examine the relationship between relational victimization, gender, and internalizing problems. It was hypothesized that gender would moderate the relationship between relational victimization and internalizing symptoms such that being a girl and experiencing relational victimization would be associated with more internalizing symptoms than would be reported for boys with similar experiences of relational victimization. A correlation matrix for all variables can be found in Table 19.

Evaluation of assumptions led to transformations of variables to reduce skewness, improve kurtosis, normality, linearity and homoscedasticity of residuals (see Table 12). To improve skewness, kurtosis and normality, a logarithmic transformation was used for the measure of internalizing symptoms from the CBCL. With the use of a $p<.001$ criterion for Mahalanobis distance, further evaluation of the variables revealed nine outliers among the cases. Cook’s distance statistic revealed that these values placed no undue harm on the model as a whole and so none were removed.

Relational victimization self-report scores were standardized using z-scores and effects coding was used to recode gender (Males = -1, Females = 1). Then, an interaction term was created with gender and relational victimization. Relational victimization scores and gender were the independent variables entered in the first step of the regression with internalizing
symptoms as the dependent variable. The second step in the regression analysis examined if relational victimization and gender interact to predict internalizing symptoms. In the second step of the regression analysis, the interaction term (i.e., gender x relational victimization) was regressed onto internalizing symptoms.

Relational victimization and gender were the independent variables entered in the first step of the regression, and explained 7.3% of the variance in internalizing symptoms as reported by parents on the CBCL. In the second step of the regression analysis, the interaction term (i.e., gender x internalizing symptoms) was regressed onto relational victimization and the total variance explained by the model remained 7.3%, $F (3, 300) = 7.87, p < .01$. The interaction between gender and ADHD symptoms was not significant and resulted in an R square change = .00, $F$ change (1, 300) = .085, $p > .025$. In the final model, relational victimization was the only variable that predicted a statistically significant amount of variance in internalizing symptoms $beta = .270, p < .001$ (see Table19).

Hypothesis 5: Parent Report of Social Behavior CSBS-PV

The parent version of the Child Social Behavior Scale was expected to distinguish between overt aggression, relational aggression, and prosocial behavior. A principal components factor analysis was used to determine if the CSBS-PV distinguished between different types of social behavior among children. The suitability of data for factor analysis was assessed prior to performing PCA. Inspection of the correlation matrix resulted in the presence of many correlations of $r = 0.30$ and Bartlett’s test of Sphericity was statistically significant at $p < .001$. Principal components analysis based upon Kaiser’s criterion revealed the presence of three eigenvalues greater than 1 (5.79, 2.37, 1.17) which explained 38.57%, 15.77%, and 7.80%
of the variance respectively (See Table 14). Inspection of the scree plot revealed a clear break after the third component. Using Catell’s (1966) scree test, retaining three components was further supported (see Figure 1). These first three components explained a total of 62.14% of the variance. Oblimin rotation was performed and revealed a simple structure (Thurstone, 1947) with Components 1 and 2 showing several strong loadings (see Table 20). Examination of items suggested that overt aggression loaded on Component 1, prosocial behavior on Component 2, and relational aggression on Component 3 (See Table 21). Items on Component 3 (relational aggression scale) had many negative factor loadings and loaded higher on Component 1 (overt aggression). The exception was the item “tells lies about peers to others,” which loaded positively on Component 3 (.122) and higher on Component 1 (.721). Thus, this item does not seem to tap into relationally aggressive behavior for parents. However, given the alphas of this construct are relatively good (.81 for relational aggression, .85 for overt aggression and .85 for prosocial behavior), and theory supports these as different constructs, support for a three component instrument can be made.

There was a moderate correlation between Component 1 (relational aggression) and Component 3 (overt aggression) and a weak, negative correlation between Component 2 (Prosocial behavior) and the other two components (.17 with Component 1 and -.32 with Component 3). Overall, the analysis supported the distinction between relational aggression, overt aggression, and prosocial behavior.

Hypothesis 5 (b) To further validate the use of the CSBS-PV, it was hypothesized that the CSBS-PV subscales (i.e., overt aggression, relational aggression and prosocial behavior) would correlate positively with peer and teacher reports on the corresponding subscales. Pearson’s R
correlations were used to examine the relationship between parent, teacher and peer ratings of relational and overt aggression and prosocial behavior. Significant correlations were found between parent and teacher ratings of relational aggression ($r = .243, p < .001$), overt aggression ($r = .235, p < .001$), and prosocial behavior ($r = .221, p < .001$). A correlation matrix can be found in Table 22. Significant correlations were also found between parent and peer nomination ratings of relational aggression ($r = .128, p < .05$), overt aggression ($r = .319, p < .001$) and prosocial behavior ($r = .262, p < .001$).
CHAPTER 4

DISCUSSION

In addition to their difficulties with attention and/or impulse control, most children with attention-deficit/hyperactivity disorder (ADHD) have considerable difficulty with social interaction and peer acceptance (Barkley, 1998; Brown, 2005; Gaub & Carlson 1997a). Children diagnosed with ADHD tend to be known to exhibit more aggression than their peers who do not have ADHD (Gaub & Carlson 1997a; Henker & Whalen, 1999). While most research focusing on overt aggression supports that aggression can have negative effects on psychosocial well being (Asarnow & Callan, 1985; Coie & Dodge 1998), relational aggression and victimization has also been noted to have significant deleterious effects on psychological well being (Crick, Bigbee & Howes, 1996; Galen & Underwood, 1997), but has not been well examined in children with ADHD. The main purpose of this study is to investigate if girls and boys with higher levels of inattention and hyperactivity exhibit and experience relational and overt aggression differently than girls and boys with no or lower levels of inattention or hyperactivity. A secondary aim of this study was to investigate the validity of the parent report of the Child Social Behavior Scale.

ADHD and Aggression

ADHD Subtype and Relational Aggression

Although it was hypothesized that when controlled for gender, children diagnosed with ADHD-C would be described by peers as more relationally aggressive than children diagnosed with ADHD-I and children with no ADHD diagnosis, this finding was not supported by peer nomination measures. Furthermore, parent ratings also revealed no differences in relational aggression across the comparison groups. Contrary to what was predicted, our findings are
consistent with previous findings from Long (2003), who found ADHD did not predict relational aggression. Long suggested that children diagnosed with ADHD may not have developed the social “skills” necessary to manipulate relationships in a relationally aggressive manner. For example, a child diagnosed with ADHD who might also exhibit social withdrawal and/or anxiety might have limited exposure to social interactions and therefore not have the opportunity to learn how to execute the steps involved in communicating a relationship threat such as “un-inviting” someone to a birthday party for personal gain. Additionally, it is possible that deficits in social knowledge and social skills found in children with ADHD (Maedgen & Carlson, 2000) would make them less likely to use relationally aggressive behavior. Relational aggression can involve subtle and complex elements. Intentionally affecting one’s relationship status requires the ability to pick up on verbal & nonverbal cues and remember previous social conversation. In their study of executive functioning and children with ADHD analyzing computer chat room behavior, Huang-pollock et al. (2009) found that children diagnosed with ADHD-I picked up on fewer subtle verbal cues and had poorer memory for conversation than did children with ADHD-C and non-ADHD controls. Without the same abilities to pick up and respond to subtle social cues as their peers, children with ADHD might be less inclined to use relationally aggressive behaviors and lean more on overtly aggressive behaviors.

Long also postulated that the lack of significance could have been attributed to poor statistical power of her study. Lack of statistical power due to low and unequal cell sizes may also explain the nonsignificant findings between children diagnosed with ADHD-C and comparison children in this study (see Tables 7 and 8). The possibility that non-significant findings between ADHD subtype and relational aggression was due to inadequate statistical
power is supported by significant findings that emerged in another analysis. Specifically, ADHD symptoms as a continuous variable and relational aggression significantly predicted relational aggression such that higher ratings on ADHD symptoms were associated with more relational aggression. ADHD subtypes might have moderated variance in relational aggression. ADHD symptoms did significantly predict relational aggression such that higher ratings on ADHD symptoms were associated with more relational aggression. This finding supports other studies that suggest that children diagnosed with ADHD exhibit more relational aggression than children without ADHD symptoms (Blachman & Hinshaw, 2002; Zalecki & Hinshaw, 2004) and that the earlier, nonsignificant finding among ADHD subtypes and relational aggression was due to lack of statistical power.

ADHD Symptoms, Gender and Relational Aggression

Contrary to reports that there are significant gender differences in relational aggression (Crick, 1995, Crick & Grotpeter, 1996), gender did not significantly moderate the effect of ADHD symptoms as a continuous variable on relational aggression. The hypothesis that gender moderates the effect of ADHD symptoms on relational aggression was not supported no matter if relational aggression was measured with peer nomination or parent or teacher report. This lack of gender effect may be related to the fact that ADHD symptoms on a continuous scale rather than ADHD subtypes was used in the analysis. In fact, gender was a significant covariate in the present study comparing ADHD subtypes and relational aggression. Graetz et al. (2007) found no gender differences in ADHD symptoms, and Biederman et al. (2005) found no gender differences comorbid psychiatric disorders, cognitive functioning or psychosocial functioning when ADHD subtype was not accounted for. When considering ADHD subtype, Graetz et al.
found that, girls scored higher than boys in social problems only when looking at children diagnosed with ADHD-I, but not compared to males diagnosed with ADHD-C and ADHD-HI. Thus, When ADHD symptomology (and not ADHD subtypes) are used to predict relational aggression perhaps the effect of gender cannot be detected.

However, the similar findings from three sources (peer nominations, parent and teacher) that gender did not predict relational aggression lends more convincing support for the idea that relational aggression is not a uniquely female form aggression. While girls may engage in relational aggression more than boys, perhaps the difference between them is smaller than once thought. Card, Stucky, Swalani and Little (2008) conducted a meta-analysis of direct and indirect aggression in childhood and adolescence. They combined studies about indirect, social and relational aggression into a single construct. There was a statistically significant gender difference, with girls exhibiting more indirect aggression than boys; however, the effect size was very small \( r = -.03, d = -.06 \). While this study is not focused solely on relational aggression, it still provides helpful information about trends in the aggression literature.

**ADHD Subtype and Overt Aggression**

Contrary to what was predicted, after controlling for gender, children diagnosed with ADHD-C were not nominated by peers as more overtly aggressive than children in the matched comparison group. This finding was inconsistent with previous research (Blachman & Hinshaw 2002; Gaub & Carlson, 1997a; Zalecki & Hinshaw, 2004) that found children diagnosed with ADHD exhibited more overtly aggressive behavior. Secondary analyses with parent and teacher ratings of overt aggression differed from peer nominations of overt aggression such that
children diagnosed with ADHD-C were rated as more overtly aggressive than the non-ADHD comparison group. Eleven percent of variance in parent ratings and 12% of variance in teacher ratings of overt aggression was explained by having an ADHD diagnosis.

The discrepant findings between peers and adults could be explained by social bias against children with an ADHD diagnosis. Children with an ADHD diagnosis are often viewed more harshly by parents and teachers than are children without ADHD. A study at a Southwest university presented of 259 teachers with vignettes describing an elementary school aged child displaying disruptive behavior and/or a video of a child displaying disruptive behavior in school. Participants were either told the child had ADHD or given no label. The researchers found that participants who thought the child had an ADHD diagnosis reported more negative scores on attention for those labeled with ADHD than the non-labeled group (Cruce, Aldridge, Langford, Sporer & Stinnett, 2004). Parents and teachers in this sample were more likely than peers to know if the child they were rating had an ADHD diagnosis and thus may have been more likely than peers to rate them negatively on aggression.

There are several additional reasons why children with ADHD-C tend to be viewed as more overtly aggressive by their parents and teachers. Children who have more symptoms of hyperactivity, impulsivity and inattentiveness may have such trouble inhibiting their behavior and regulating their emotional experiences that they react to their peers with overt aggression. Barkley’s (2000) model, explains how disinhibition, a core feature of ADHD-C and ADHD-HI interferes with the executive functions (nonverbal working memory, verbal working memory, the self-regulation of affect, motivation, and arousal, and reconstitution). Disinhibition is the inability to suppress initial responses such as physical movements or reactive thoughts in a
social situation. Deficits in inhibition prevent and/or interrupt thoughtful responses or actions. (e.g., stopping oneself from hitting another student because they cut in line) (Barkley, 2000). Overt aggression includes name calling, physical threats or actual physical aggression. It is not surprising that a child with problems inhibiting his/ her behavior would be more likely than other children to express his or her thoughts physically or verbally without considering the negative consequences. In addition, delays in learning how to regulate affect can leave a child with ADHD more vulnerable to feeling frustrated and dysphoric. One result is likely to be a higher number of interactions that overwhelm a child with ADHD and have the potential for impulsive reactions like overt aggression. By being less able to regulate his or her emotional, verbal, and physical reactions, and create effective responses to others, children diagnosed with ADHD are at greater risk for behaving in an overtly aggressive manner.

However, contrary to prediction, when compared to children diagnosed with ADHD-I subtype, children with ADHD-C were not rated by peers or parents as significantly more overtly aggressive. When considering the primary features for ADHD-I involve lack of attention to details, difficulty sustaining attention, distractibility, failure to listen, forgetting things, problems with organization and failure to complete activities, overt aggression is not typically associated with children diagnosed with ADHD-I (APA, 2000, Gaub & Carlson, 1997a). Moreover, Barkley (2000) suggests that children diagnosed with ADHD-I are very distinct from those diagnosed with ADHD-C, who tend to have more difficulty controlling self-regulation due to disinhibition problems. However, some research also suggests that deficits in executive functions appear to co-occur more with ADHD-I than they do with ADHD-HI (Huang-pollock, Mikami, Pfiffner & McBurnett, 2009). Furthermore, Brown’s (2005) conception of ADHD does not limit the idea of
inhibition and self-regulation troubles to only ADHD-C and ADHD-HI subtypes. He suggests that problems with executive functioning, including activation, focus, effort, emotion regulation, memory and action are present in ADHD-I subtypes as well.

Thus, it is possible that the children diagnosed with ADHD-I in this sample also have trouble with inhibition such that their level of overt aggression is not significantly lower than children diagnosed with ADHD-C. It is also possible that these children exhibit some traits of impulsivity, but do not meet the full diagnostic criteria to be diagnosed with ADHD-C and therefore still engage in overtly aggressive behaviors. Yet another explanation may be attributed to the unequal cell sizes in the analysis, which reduced statistical power and made it more difficult to find statistical significance between children with ADHD-C and ADHD-I. Perhaps if more children diagnosed with ADHD-I were added to the analyses, there would have been a significant difference between these groups.

Parent and Teacher Ratings of Aggression

Contrary to peer and parent ratings, teachers rated children with ADHD-C as more relationally aggressive than children without ADHD, though not more relationally aggressive than children diagnosed with ADHD-I. Teachers also rated children diagnosed with ADHD-C as more overtly aggressive than children with ADHD-I. As with many assessments with multiple raters, there may be significant differences in the ways teachers, parents and peers rate others’ behavior (Rosenberger, 2001). Part of a teacher’s role is to teach children socially acceptable roles within the confines of the relatively structured school setting. Teachers may be more attuned to differences in aggressive behavior than parents and peers because of this role. Depending on presence of siblings, parents may spend less time observing their child around
other children for extended periods of time. Both parent and peer ratings may also be impacted by a social bias. That is, despite being told that their answers are anonymous, peers may consider how their responses reflect others’ perceptions of them. Parents may also have a vested interest in reporting overly positive or overly negative behaviors (depending on their desire for feedback or services). Still another possible explanation for the differences is that the child may actually behave differently in different settings and/or with different people. A child may exhibit more or less aggressive behavior depending upon the context. For example, an only child might have no peers to interact with at home and thus have few chances to exhibit aggressive behaviors compared when he or she is at school and must interact, share and comply with the other social rules at school.

ADHD and Victimization

ADHD Subtype and Overt Victimization

The two main patterns of victimized children identified by Olweus (1978, 2001) were described to have many similar traits as children diagnosed with ADHD. Proactive victims were described as “unskilled, disorganized and accompanied by debilitating emotional arousal, “who may irritate peers with attention seeking and disruptive behaviors (like children with ADHD-C). Passive victims were characterized as withdrawn and exhibiting more internalizing symptoms (like children with ADHD-I). Contrary to what was predicted, while controlling for gender, children with ADHD-C did not report experiencing more overt victimization than children diagnosed with ADHD-I or the comparison group. Despite being more vulnerable to exhibiting overt aggression, children diagnosed with ADHD-C, did not necessarily experience the same treatment in return. Perhaps this is because for children diagnosed with ADHD-C; their overtly
aggressive behavior is intimidating enough to protect them from the others being overtly aggressive toward them. Results support the idea that those who act in overtly aggressive ways most often are not recipients of overt aggression among their peers. The overtly aggressive behavior may function for these children (who perhaps feel threatened) as a way to effectively prevent others from aggregating against them first. These findings are consistent with Crick and Bigbee (1998) who found that 70% of their third and fourth grade sample was either aggressive or victimized, but not both; only 18% who were overtly aggressive were also victimized.

ADHD Subtype and Relational Victimization

Passive victims are characterized to be withdrawn and exhibit more internalizing symptoms (like children with ADHD-I) and thus promote bullies to re-target them as victims (Olweus, 1978). It was hypothesized that when controlling for gender, children diagnosed with ADHD-I would rate themselves as experiencing more relational victimization than children with ADHD-C and comparison group children. Despite having traits similar to passive victims, children with ADHD-I did not rate themselves as being more relationally victimized than children with ADHD-C or the non-ADHD comparison group. In fact, they had slightly (though not significantly) lower means on relational victimization than children diagnosed with ADHD-C. One explanation for this is that children diagnosed with ADHD-I may be more neglected by peers as opposed rejected by peers (APA, 2000; Maedgen & Carlson, 2000). Henker and Whalen (1999) describe a behavioral pattern called reluctant/avoidant, characterized as not seeming to enjoy or desire social interaction with peers and suggest that this pattern was likely to present as a child with ADHD-I. Thus, the children surrounding the ADHD-I child may choose to remove attention altogether such that an ADHD-I child does not experience aggression, but neglect.
In addition, the Peer Victimization Scale (Kaminski, 2004), employed in the current study, is a self-report measure that asks children to think back how many times in that school year he or she experienced a particular behavior from peers. Perhaps for children diagnosed with ADHD, an accurate report and interpretation of other children’s’ behavior could be difficult for him or her to give. Given impairments commonly seen in the beginning stages of social information processing by children with ADHD, they may not be able to accurately interpret or even recall over time on a questionnaire how often he/she was victimized (Dodge & Coie, 1987). It is possible that children diagnosed with ADHD do in fact experience relatively higher levels of victimization than other children, but do not accurately report it. Another potential explanation is related possible existence of a “Positive Illusory Bias” among children diagnosed with ADHD (Owens, Goldfine, Evangelista, Hoza, & Kaiser, 2007). It is hypothesized that because of cognitive immaturity, neuropsychological deficits and/or ignorance about their own strengths and weaknesses, children with ADHD rate themselves in a more positive or socially desirable direction than is realistic. Research on Positive Illusory Bias and children with ADHD suggests that many children with ADHD tend to overestimate their abilities or competence in comparison to other information that would suggest otherwise (e.g., teacher and parent ratings of social competence). For example, despite being identified by peers as a child who is picked upon by others, when asked how often he or she is picked on at school, a child with ADHD may minimize his/her conflicts with peers and report that it has happened only a few times. Children with ADHD may then be acting to defend against negative self views by reporting less overt and relational victimization than what actually occurs.
Gender, Relational Victimization and Internalizing Symptoms

In contrast to what was hypothesized and contrary to findings by Leadbeater et al. (1995), being a girl and experiencing relational victimization was not associated with more internalizing symptoms than being a boy with similar experiences of relational victimization. However, relational victimization predicted a statistically significant amount of the variance (i.e., 7.3%) in internalizing symptoms. This latter finding is consistent with previous research that also concluded that experiences of relational victimization are predictive of internalizing symptoms such as depression and anxiety (e.g., Crick & Bigbee, 1998). The lack of a gender effect is also consistent with the work of Crick and Grotpeter, 1996. Taken together, these findings suggest that relational victimization can have a significant deleterious effect on the psychological well being of children who experience it, no matter if they are female or male.

Validation of CSBS-Parent Version

Parent Ratings of Social Behavior: Hypothesis 5

Results of the principal components analysis demonstrated that the parent version of the CSBS taps three distinct constructs—relational aggression, overt aggression and prosocial behavior. Factor loadings showed that items on the relational aggression scale had higher loadings on the overtly aggressive scale, which might also be interpreted by some as a supporting a two factor model. However, the relationally aggressive items had mostly negative loadings on the overt aggression scale. In addition, the alphas for the CSBS-PV were relatively good (.81 for relational aggression, .85 for overt aggression and .85 for prosocial behavior), supporting that theoretically, relational aggression is a separate construct. One item on the relational aggression scale loaded positively on the overt aggression scale, “tells lies about
peers to others” and minimally on the relational aggression scale. This item will likely need to be removed from the instrument in the future and suggests that “tell lies about peers to others” does not tap into the relational aggression concept.

Pearson’s r correlations revealed that each of these subscales was significantly and positively correlated with corresponding scales on both the CSBS-T and the Peer Nomination. The correlations were small but significant (ranging from $r = .13 - .26$). The finding of low correlations is common among ratings of the same behavior from different raters (Kahana, Younstrom, Findling & Calabrese, 2003; Rosenberger, 2001) and likely reflective of different perspectives of the raters as well as different behaviors being exhibited by the observed person in various settings. The reasons that a parent might differ in aggression ratings from a teacher might be because the child truly exhibits different behavior at home than at school.

These results provide additional evidence of the validity of relational, overt and prosocial behavior as separate constructs. The significant yet small correlations between Parent Version, Teacher version and Peer Nomination support the validity of CSBS-Parent Version. This scale assesses social behavior in children and appears to capture some aspects of child behavior that are uniquely observed by parents while still measuring the same types of constructs tapped by the teacher and peer measures previously constructed Crick and Grotpeter (1996) and Crick (1995). There are, however some important limitations to this study with respect to measurement error, statistical power and external validity.

Methodological Limitations and Future Directions

Measurement

Perhaps one of the most relevant limitations of the study was that despite a large school
sample of over 1200 students, relatively few children had parental permission to participate in all aspects of the study. Only 32% of the children in the school had parents who agreed to let them participate. Although all students could potentially receive votes on the peer nomination measure, less than 1/3 of the children in the class rooms had parental consent to cast votes. Peer nomination data from this sample provided us with only a partial view of how children were viewed by their peers and subsequently limits the conclusions that can be drawn from analyses incorporating the peer nomination procedure.

Ideally, the researchers would have conducted their own individual evaluations of the community sample of children included in the ADHD subgroups to ensure that their diagnoses were accurate. The researchers tried to offset possible errors made with ADHD misdiagnosis by using the ADHD Rating Scales (DuPaul et al., 1998) and CBCL/6-18 (Achenbach et al., 2001) to confirm ADHD diagnoses that were reported by parents. Conclusions related to ADHD status, especially those made about specific ADHD subgroups, should be made with caution.

Statistical Limitations

The small parental consent rate reduced the number of children in the ADHD sample for this study. Only children diagnosed with ADHD-I subtype and ADHD-C subtypes were compared because the ADHD-HI subgroup only had 4 participants. Moreover, the analyses that were conducted comparing subtypes remain tentative because of the statistical problems associated with small and unequal cell sizes. The cell size for the inattentive subtype (n = 12) is below what would be recommended for ANCOVA and thus the chances of finding no statistical significance difference when it exists (type II error) was increased. To help mitigate these limitations, a more robust statistic, Pillai’s Trace, was used instead of Wilk’s Lambda and an alpha of .025 was
used to determine significance (Tabachnick & Fidell, 1999). Furthermore, replication of these findings will be important to confirm if they are representative of the population.

Additionally, all ratings of aggression and victimization had positively skewed distributions for peers, parents and teachers. This resulted in transformation of these dependent variables in the regression analyses. The positively skewed distributions suggest that there is a relatively low base rate of behavior from which conclusions can be drawn. That is, because most raters reported few problems with aggression and victimization, a limited amount of aggressive behavior and victimization was reported at all, limiting the inferences made about the effects of aggressive behavior and victimization.

External Validity and Generalization

As is common with studies using archival data, many variables of related to aggression and victimization were not included in the original principal investigator’s design. Specifically, group dynamics in the classroom, family dynamics and previous experiences of and exposure to aggression outside of school or in the media are important factors that can contribute to aggressive behavior and victimization, but were not measured in the current study (Bandura, 1973; Juvonen & Graham, 2001). The importance of group and family dynamics such as attachment and child rearing practices or other experiences or exposure aggression outside of school (media, siblings) cannot be ignored. They are areas beyond the scope of this study.

The ethnic makeup of this sample overrepresented the Caucasian (over 70%) group, and underrepresented other ethnic groups; less than 3% of the sample were African American, and fewer than 2% were Asian. Therefore, the findings here are most applicable to Caucasian children. There may also be geographical differences in patterns of aggression and victimization.
as the sample was gathered from a single school district in the South. Thus, applying these findings to other ethnic groups or cultural backgrounds should be done with caution.

Selection bias is also an important consideration with regard to the external validity of the current study. Parents who gave permission to participate and submitted questionnaires may have some distinct qualities that parents who chose not to participate do not have. Rothmier, Lasley and Shapiro (2003) found that the single most important motivator for parents consent to clinical research was to learn more about their child’s illness. Parents who consented in this study may have had more interest in their child’s mental health and social functioning than parents who did not agree participate. Furthermore, Andersen et al. (1995) found that students with parental written consent to participate in their clinical study were more likely to be Caucasian, had higher GPAs, were involved in more student activities, and were more likely to live in 2 parent households than students without parental consent. The sample here may be representative of a more socially advantaged population.

The comorbidity rate of children with ADHD should also be addressed. Sixty-seven percent of children in the sample diagnosed with ADHD were reported by their parents to have an additional learning, behavioral or other mood disorder. This is similar to other samples reports of comorbidity for children diagnosed with ADHD (Barkley, 1998; Brown, 2009) but still suggests that the findings with this study may also be influenced by the comorbid diagnoses that commonly accompany ADHD symptoms. Conclusions made specifically about ADHD should be made with caution. It would likely be difficult to find large enough samples with pure diagnosis of only ADHD since comorbidity rates for children diagnosed with ADHD have been reported to be as high as 80% (Austin, Reiss, & Burdorff, 2007). Controlling for comorbid
diagnoses statistically could help to isolate the influence of ADHD diagnosis on aggression and victimization in future studies.

In addition, the findings here are specific to middle childhood, as the sample included children in third through fifth grades, aged 8-13 years old. The cognitive, emotional and social changes that accompany maturity have a significant impact on the way children exhibit and experience relationally aggressive behavior (Crick, 2002). It can vary from being more directly aggressive in early childhood, to more indirect and complex middle childhood and adolescence (Crick). The findings in this study are applicable only to those in the middle childhood range. Application of these findings to other age groups should be made with caution.

Theoretical and Clinical Implications

The current study provides evidence to support the of using multiple raters when assessing aggression and victimization. There were some disagreements between teacher, parent and peer nomination ratings of relational aggression. In addition, peer victimization was measured by self-report, but may be vulnerable to Positive Illusory Bias. Because having differing perspectives is inevitable, findings support that rater should be an important moderator to consider when understanding aggressive behavior, especially when gender is also a variable of interest (Card et al., 2008). The use of the CSBS –PV as a parent measure of social behavior was validated as an accurate measure of child behavior. Given that raters provide such unique and sometimes discrepant reports, the CSBS-PV can be used as a tool in future research to provide a more well-rounded understanding of children’s social behavior. This study provides relevant evidence that rater has a significant impact upon

Contrary to what was hypothesized, gender did not help to predict variance in relational
aggression or relational victimization. Gender may be playing a less important role in relational aggression and victimization than once thought. It may be that as society’s gender roles become less inhibiting for males and females, the behaviors that boys and girls exhibit when interacting with their peers are less confined to the masculine or feminine stereotypes. Geographical location and culture may also play an important role in understanding how and why girls and boys exhibit and experience relational aggression similarly or differently.

Agreement among parent and teacher ratings help confirm that children with ADHD-C exhibit more overt aggression than children with ADHD-I and comparison children without ADHD. When it comes to relational aggression and ADHD subtype, the findings are even less consistent as ADHD subtype predicted teachers’ ratings, but not peer and parent ratings of relational aggression. Compared to overt aggression, relational aggression appears to be much more difficult to accurately measure and find rater agreement. Intent to hurt someone is culturally and socially embedded, not easily defined, and difficult to concretely measure; therefore, the discrepancy among raters with regard to relational aggression is not surprising. Nonetheless, overall, ADHD symptomology (as measured by total ADHD symptoms endorsed on the ADHD-IV Rating Scale) accounted for a significant amount of variance for all raters and suggests that problems with executive functioning lead to increased vulnerability to engage in relational aggression.

Although statistical error limits the strength of our findings, what is most robust is that children with ADHD symptoms appear to be at greater risk for exhibiting overt aggression according to parents and teachers and relational aggression according to teachers only. Children who are aggressive also tend to have increased problems with social relations, peer
rejection and overall maladjustment (Coie & Dodge, 1998; Crick, 1996; Crick & Grotpeter, 1995). By identifying who is most affected by aggression, strategies to prevent and intervene can be more effective. As these at-risk populations are identified, clinicians can develop a better understanding of the cognitive and emotional processes (or deficiencies) that increase the likelihood of aggressive behavior and victimization. Increased understanding can lead to the development of policies, concepts and intervention programs to minimize the occurrence of the negative consequences associated with aggression for children. For example, emotional self regulation is a key difficulty for children with ADHD that can lead to aggression. Prevention and intervention tools can be created to show these children how emotional reactions can either positively or negatively impact their reactions from others. Additionally, they can be given strategies about how to repair relationships with others if they receive feedback about their behavior.
Table 1

**DSM-IV Criteria for ADHD**

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:

   a) Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities.
   b) Often has trouble sustaining attention on tasks or play activities.
   c) Often does not seem to listen when spoken to directly.
   d) Often does not follow instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions).
   e) Often has difficulty organizing activities.
   f) Often avoids, dislikes, or is reluctant to do things that take a lot of mental effort for a long period of time (such as schoolwork or homework).
   g) Often loses things necessary for tasks and 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 an extent that is disruptive and inappropriate for developmental level:

   a) Often fidgets with hands or feet or squirms in seat.
   b) Often leaves seat in classroom or 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 trouble 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 significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).
Table 2

Measures Used in the Current Study

Demographic Questionnaire

- Background Information Form- completed by parent
- Teacher Background Information Form– completed by teacher about themselves
- Child Background Information Form- completed by teacher about the child

Measures to Confirm Diagnoses of ADHD

- Attention Deficit Hyperactivity Disorder-Rating Scale-IV: School Version (ADHD-RS-IV: SV; DuPaul et al., 1998)
- Child Behavior Checklist- Attention Problems Scale (CBCL; Achenbach et al., 2001)

Assessment of Aggression

- Peer Nomination Procedure (Crick and Grotpeter, 1995)
- Child Social Behavior Scale – Teacher (Crick, 1996)
- Child Social Behavior Scale – Parent (Adapted from Crick, 1996)

Assessment of Victimization

- Peer Victimization Scale (Kaminski, 2004)

Measures of Internalizing Symptoms

→ Child Behavior Checklist- Internalizing Composite (CBCL/6-18; Achenbach et al., 2001)
Table 3

*Descriptive Statistics for Overall Sample and for ADHD plus Comparison Group subsample as Reported by Parents*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Inattentive</th>
<th>Combined</th>
<th>Comparison</th>
<th>Total</th>
<th>Overall Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>n = 12</em></td>
<td><em>n = 21</em></td>
<td><em>n = 33</em></td>
<td><em>n = 66</em></td>
<td><em>N = 371</em></td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>39%</td>
<td>39%</td>
<td>58%</td>
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<td>61%</td>
<td>61%</td>
<td>42%</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>38%</td>
<td>24%</td>
<td>26%</td>
<td>26%</td>
</tr>
<tr>
<td>4th grade</td>
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<td>33%</td>
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<tr>
<td>5th grade</td>
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<td>15%</td>
<td>15%</td>
<td>22%</td>
</tr>
<tr>
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<td>21%</td>
<td>19%</td>
</tr>
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<td></td>
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<td></td>
<td></td>
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<tr>
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<td>4%</td>
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</tr>
<tr>
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<td>5%</td>
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<tr>
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<tr>
<td>On medication</td>
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<td>90%</td>
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</tr>
<tr>
<td>In counseling</td>
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<td>0%</td>
<td>11%</td>
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</tr>
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<td>0%</td>
<td>15%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Note: Diagnoses are not mutually exclusive  *totals do not add up because of missing data
Table 4

*Descriptive Statistics for Parents in Overall Sample and in ADHD plus Comparison Subsample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Inattentive n = 12</th>
<th>Combined n = 21</th>
<th>Comparison n = 33</th>
<th>Total n = 66</th>
<th>Overall Sample N = 371</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent/Guardian</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>83%</td>
<td>76%</td>
<td>79%</td>
<td>79%</td>
<td>84%</td>
</tr>
<tr>
<td>Father</td>
<td>0%</td>
<td>0%</td>
<td>15%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>Stepmother</td>
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<td>0%</td>
<td>0%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Stepfather</td>
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<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Grandmother</td>
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<td>19%</td>
<td>6%</td>
<td>9%</td>
<td>4%</td>
</tr>
<tr>
<td>Grandfather</td>
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<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
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<td>0%</td>
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<tr>
<td>Parent Education level</td>
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<td>Below 12th grade</td>
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<td>9%</td>
<td>12%</td>
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</tr>
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<td>9%</td>
<td>9%</td>
<td>7%</td>
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<td>Parent’s ethnicity*</td>
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<tr>
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<td>90%</td>
<td>73%</td>
<td>83%</td>
<td>76%</td>
</tr>
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<td>1%</td>
</tr>
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<td>12%</td>
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</tr>
<tr>
<td>Asian</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Biracial</td>
<td>0%</td>
<td>5%</td>
<td>6%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
<td>5%</td>
<td>0%</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Parent Income/Yearly*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $30,000</td>
<td>25%</td>
<td>48%</td>
<td>18%</td>
<td>29%</td>
<td>33%</td>
</tr>
<tr>
<td>$30 - $70,000</td>
<td>33%</td>
<td>33%</td>
<td>42%</td>
<td>38%</td>
<td>38%</td>
</tr>
<tr>
<td>More than $70,000</td>
<td>33%</td>
<td>14%</td>
<td>30%</td>
<td>26%</td>
<td>22%</td>
</tr>
</tbody>
</table>

*totals to not add up because of missing data
Table 4 (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Inattentive</th>
<th>Combined</th>
<th>Comparison</th>
<th>Total</th>
<th>Overall Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( n = 12 )</td>
<td>( n = 21 )</td>
<td>( n = 33 )</td>
<td>( n = 66 )</td>
<td>( N = 371 )</td>
</tr>
<tr>
<td>Parent Marital Status*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never married</td>
<td>25%</td>
<td>24%</td>
<td>21%</td>
<td>23%</td>
<td>14%</td>
</tr>
<tr>
<td>Married</td>
<td>42%</td>
<td>29%</td>
<td>61%</td>
<td>47%</td>
<td>52%</td>
</tr>
<tr>
<td>Separated</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>Divorced</td>
<td>33%</td>
<td>43%</td>
<td>9%</td>
<td>24%</td>
<td>25%</td>
</tr>
<tr>
<td>Widowed</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Living together or engaged</td>
<td>17%</td>
<td>19%</td>
<td>6%</td>
<td>12%</td>
<td>10%</td>
</tr>
<tr>
<td>Part Time employed</td>
<td>17%</td>
<td>5%</td>
<td>9%</td>
<td>9%</td>
<td>15%</td>
</tr>
<tr>
<td>Full time employed</td>
<td>75%</td>
<td>57%</td>
<td>73%</td>
<td>68%</td>
<td>61%</td>
</tr>
<tr>
<td>Not employed</td>
<td>8%</td>
<td>38%</td>
<td>15%</td>
<td>21%</td>
<td>24%</td>
</tr>
</tbody>
</table>

*totals to not add up because of missing data
Table 5

Descriptive Statistics for Teachers in Overall Sample and in ADHD plus Comparison Subsample

<table>
<thead>
<tr>
<th>Variable</th>
<th>Inattentive</th>
<th>Combined</th>
<th>Comparison</th>
<th>Total</th>
<th>Overall Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 12</td>
<td>n = 21</td>
<td>n = 33</td>
<td>n = 66</td>
<td>N = 371</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>75%</td>
<td>100%</td>
<td>100%</td>
<td>95%</td>
<td>97%</td>
</tr>
<tr>
<td>Male</td>
<td>8%</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Grade taught</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd grade</td>
<td>8%</td>
<td>33%</td>
<td>24%</td>
<td>24%</td>
<td>24%</td>
</tr>
<tr>
<td>4th grade</td>
<td>58%</td>
<td>24%</td>
<td>36%</td>
<td>36%</td>
<td>33%</td>
</tr>
<tr>
<td>5th grade</td>
<td>8%</td>
<td>24%</td>
<td>15%</td>
<td>17%</td>
<td>24%</td>
</tr>
<tr>
<td>6th grade</td>
<td>25%</td>
<td>19%</td>
<td>24%</td>
<td>23%</td>
<td>19%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>83%</td>
<td>95%</td>
<td>100%</td>
<td>95%</td>
<td>100%</td>
</tr>
<tr>
<td>Native American</td>
<td>0%</td>
<td>5%</td>
<td>0%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>No. of years teaching</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>33%</td>
<td>14%</td>
<td>21%</td>
<td>21%</td>
<td>13%</td>
</tr>
<tr>
<td>1-2 years</td>
<td>33%</td>
<td>10%</td>
<td>12%</td>
<td>15%</td>
<td>13%</td>
</tr>
<tr>
<td>2-5 years</td>
<td>0%</td>
<td>33%</td>
<td>12%</td>
<td>17%</td>
<td>24%</td>
</tr>
<tr>
<td>5-10</td>
<td>0%</td>
<td>10%</td>
<td>24%</td>
<td>15%</td>
<td>13%</td>
</tr>
<tr>
<td>10-20 years</td>
<td>8%</td>
<td>19%</td>
<td>27%</td>
<td>21%</td>
<td>20%</td>
</tr>
<tr>
<td>20 +</td>
<td>8%</td>
<td>14%</td>
<td>3%</td>
<td>8%</td>
<td>15%</td>
</tr>
</tbody>
</table>
Table 6

Overall Means, Standard Deviations, Alphas and Skewness and Kurtosis for Aggression,
Victimization, Internalizing Symptoms and ADHD Symptoms

<table>
<thead>
<tr>
<th>Variable</th>
<th>Range (n)</th>
<th>M</th>
<th>SD</th>
<th>α</th>
<th>Skewness Before/after transformation*</th>
<th>Kurtosis Before/after transformation*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Nom RA (n = 341)</td>
<td>1.05</td>
<td>.196</td>
<td>.218</td>
<td>.91</td>
<td>1.43/-0.29a</td>
<td>1.76/-0.95a</td>
</tr>
<tr>
<td>Parent RA (n = 360)</td>
<td>31.50</td>
<td>11.38</td>
<td>4.24</td>
<td>.81</td>
<td>1.63/-0.51a</td>
<td>4.19/0.19a</td>
</tr>
<tr>
<td>Teacher RA (n = 362)</td>
<td>28.00</td>
<td>12.90</td>
<td>6.33</td>
<td>.94</td>
<td>1.18/0.82b</td>
<td>0.78/-0.24b</td>
</tr>
<tr>
<td>Peer Nom OA (n = 341)</td>
<td>1.53</td>
<td>.156</td>
<td>.267</td>
<td>.93</td>
<td>2.47/-0.03a</td>
<td>6.53/-0.95a</td>
</tr>
<tr>
<td>Parent OA (n = 360)</td>
<td>18.00</td>
<td>5.18</td>
<td>2.35</td>
<td>.85</td>
<td>3.18/0.51a</td>
<td>12.6/0.19a</td>
</tr>
<tr>
<td>Teacher OA (n = 362)</td>
<td>16.00</td>
<td>6.57</td>
<td>3.34</td>
<td>.91</td>
<td>2.45/1.74a</td>
<td>5.57/2.01a</td>
</tr>
<tr>
<td>Relational Victimization (n = 348)</td>
<td>12.00</td>
<td>6.59</td>
<td>2.66</td>
<td>.68</td>
<td>0.80/0.80c</td>
<td>0.23/0.23c</td>
</tr>
<tr>
<td>Overt Victimization (n = 348)</td>
<td>16.00</td>
<td>7.33</td>
<td>3.31</td>
<td>.74</td>
<td>1.43/na</td>
<td>2.11/na</td>
</tr>
<tr>
<td>ADHD Symptoms (n = 369)</td>
<td>97.28</td>
<td>46.13</td>
<td>27.25</td>
<td>.97</td>
<td>0.30/0.30c</td>
<td>-1.05/-1.05c</td>
</tr>
<tr>
<td>CBCL Internalizing Symptoms (n = 371)</td>
<td>35</td>
<td>7.09</td>
<td>6.57</td>
<td>.87</td>
<td>1.33/-0.37a</td>
<td>1.67/-0.39a</td>
</tr>
</tbody>
</table>

a = logarithmic transformation  b = square root transformation;  c = z-score transformation

*Transformed variables were used for analyses using Hierarchical Regression
Table 7

Means and Standard Deviations for Peer Nomination Relational Aggression, Peer Nomination Overt Aggression and Self-report Overt Victimization by ADHD-C, ADHD-I and Comparison Group

<table>
<thead>
<tr>
<th></th>
<th>Peer Nomination Relational Aggression</th>
<th>Peer Nomination Overt Aggression</th>
<th>Overt Victimization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
</tr>
<tr>
<td>ADHD-C ($n = 19$)</td>
<td>.23</td>
<td>.26</td>
<td>.36</td>
</tr>
<tr>
<td>ADHD-I ($n = 12$)</td>
<td>.21</td>
<td>.27</td>
<td>.15</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>.18</td>
<td>.16</td>
<td>.15</td>
</tr>
<tr>
<td>($n = 33$)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total ($n = 66$)</td>
<td>.20</td>
<td>.22</td>
<td>.21</td>
</tr>
</tbody>
</table>
Table 8

*Hypothesis 1: Multivariate Analysis of Covariance for Aggression and Victimization using Peer Nomination Ratings of Aggression*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Partial $\eta^2$</th>
<th>$p$</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of child</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer Nom RA</td>
<td>1</td>
<td>.097</td>
<td>.002</td>
<td>.756</td>
<td>.061</td>
</tr>
<tr>
<td>Peer Nom OA</td>
<td>1</td>
<td>3.426</td>
<td>.054</td>
<td>.069</td>
<td>.445</td>
</tr>
<tr>
<td>Overt Victimization</td>
<td>1</td>
<td>.444</td>
<td>.007</td>
<td>.508</td>
<td>.101</td>
</tr>
<tr>
<td>ADHD subtype</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer Nom RA</td>
<td>2</td>
<td>.408</td>
<td>.013</td>
<td>.667</td>
<td>.113</td>
</tr>
<tr>
<td>Peer Nom OA</td>
<td>2</td>
<td>2.075</td>
<td>.065</td>
<td>.134</td>
<td>.411</td>
</tr>
<tr>
<td>Overt Victimization</td>
<td>2</td>
<td>1.261</td>
<td>.040</td>
<td>.291</td>
<td>.264</td>
</tr>
<tr>
<td>Error</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>(.048)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>(.118)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>(11.10)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Values enclosed in parentheses represent mean square errors.
Table 9

Hypothesis 1 Secondary Analysis: Means and Standard Deviations for Parent Ratings of Relational Aggression and Overt Aggression by ADHD-C, ADHD-I and Comparison Group

<table>
<thead>
<tr>
<th></th>
<th>Parent Ratings Relational Aggression</th>
<th>Parent Ratings Overt Aggression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>M</strong></td>
<td><strong>SD</strong></td>
</tr>
<tr>
<td>ADHD-C (n = 21)</td>
<td>13.95</td>
<td>7.10</td>
</tr>
<tr>
<td>ADHD-I (n = 12)</td>
<td>12.83</td>
<td>6.78</td>
</tr>
<tr>
<td>Comparison Group (n = 33)</td>
<td>11.27</td>
<td>4.06</td>
</tr>
<tr>
<td>Total (n = 66)</td>
<td>12.41</td>
<td>5.73</td>
</tr>
</tbody>
</table>
Table 10

*Hypothesis 1 Secondary Analysis: Multivariate Analysis of Covariance for Aggression using Parent Ratings of Aggression*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Partial $\eta^2$</th>
<th>p</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of child</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent RA</td>
<td>1</td>
<td>.228</td>
<td>.004</td>
<td>.635</td>
<td>.076</td>
</tr>
<tr>
<td>Parent OA</td>
<td>1</td>
<td>.015</td>
<td>.000</td>
<td>.903</td>
<td>.052</td>
</tr>
<tr>
<td>ADHD subtype</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent RA</td>
<td>2</td>
<td>1.47</td>
<td>.045</td>
<td>.237</td>
<td>.303</td>
</tr>
<tr>
<td>Parent OA</td>
<td>2</td>
<td>7.55</td>
<td>.196</td>
<td>.001</td>
<td>.934</td>
</tr>
<tr>
<td>Error</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent RA</td>
<td>62</td>
<td>(32.83)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent OA</td>
<td>62</td>
<td>(11.14)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Values enclosed in parentheses represent mean square errors.
Hypothesis 1 Secondary Analysis: Means and Standard Deviations for Teacher Ratings of Relational Aggression and Overt Aggression by ADHD-C, ADHD-I and Comparison Group

<table>
<thead>
<tr>
<th></th>
<th>Teacher Ratings Relational Aggression</th>
<th>Teacher Ratings Overt Aggression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( M )</td>
<td>( SD )</td>
</tr>
<tr>
<td>ADHD-C (( n = 21 ))</td>
<td>16.19</td>
<td>6.55</td>
</tr>
<tr>
<td>ADHD-I (( n = 12 ))</td>
<td>13.83</td>
<td>5.84</td>
</tr>
<tr>
<td>Comparison Group (( n = 33 ))</td>
<td>11.34</td>
<td>4.83</td>
</tr>
<tr>
<td>Total (( n = 66 ))</td>
<td>13.34</td>
<td>5.93</td>
</tr>
</tbody>
</table>
Table 12

*Hypothesis 1 Secondary Analysis: Multivariate Analysis of Covariance for Aggression using Teacher Ratings of Aggression*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Partial $\eta^2$</th>
<th>$p$</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of child</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher RA</td>
<td>1</td>
<td>3.07</td>
<td>.047</td>
<td>.085</td>
<td>.408</td>
</tr>
<tr>
<td>Teacher OA</td>
<td>1</td>
<td>2.10</td>
<td>.033</td>
<td>.153</td>
<td>.297</td>
</tr>
<tr>
<td>ADHD subtype</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher RA</td>
<td>2</td>
<td>5.25</td>
<td>.145</td>
<td>.008</td>
<td>.815</td>
</tr>
<tr>
<td>Teacher OA</td>
<td>2</td>
<td>8.72</td>
<td>.220</td>
<td>.000</td>
<td>.963</td>
</tr>
<tr>
<td>Error</td>
<td>62</td>
<td>(30.45)</td>
<td>(11.90)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Values enclosed in parentheses represent mean square errors.
Table 13

Hypothesis 2: Correlation Matrix Relational Aggression, ADHD Symptoms, Gender and Interaction term (Gender by ADHD Symptoms) with Transformed variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>PN Relational Aggression</th>
<th>Parent Relational Aggression</th>
<th>Teacher Relational Aggression</th>
<th>ADHD Symptoms</th>
<th>Sex of Child</th>
<th>Sex by ADHD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson’s r (n)</td>
<td>Pearson’s r (n)</td>
<td>Pearson’s r (n)</td>
<td>Pearson’s r (n)</td>
<td>Pearson’s r (n)</td>
<td>Pearson’s r (n)</td>
</tr>
<tr>
<td>Peer Nom RA</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Parent RA</td>
<td>.123 (244)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Teacher RA</td>
<td>.434** (248)</td>
<td>.267** (351)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>ADHD Symptoms</td>
<td>.200** (252)</td>
<td>.346** (358)</td>
<td>.436** (361)</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Sex of Child</td>
<td>.090 (252)</td>
<td>.039 (358)</td>
<td>.050 (361)</td>
<td>.016 (369)</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Sex by ADHD</td>
<td>-.014 (252)</td>
<td>-.017 (358)</td>
<td>.064 (361)</td>
<td>.026 (369)</td>
<td>.947** (369)</td>
<td>--</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
Table 14

Hypothesis 2: Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Relational Aggression as Rated by Peer Nomination \((n = 252)\)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD Symptoms</td>
<td>.073</td>
<td>.022</td>
<td>.201**</td>
</tr>
<tr>
<td>Sex of Child</td>
<td>.033</td>
<td>.022</td>
<td>.092</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD Symptoms</td>
<td>.074</td>
<td>.023</td>
<td>.205**</td>
</tr>
<tr>
<td>Sex of Child</td>
<td>.035</td>
<td>.023</td>
<td>.098</td>
</tr>
<tr>
<td>Sex x ADHD Sx</td>
<td>-.016</td>
<td>.023</td>
<td>-.043</td>
</tr>
</tbody>
</table>

*Note: \(R^2 = .049\) for Step 1; \(\Delta R^2 = .002\) for Step 2 \((p > .025)\).*

**\(p < .01\).
### Table 15

**Hypothesis 2 Secondary Analyses: Summary of Hierarchical Regression Analysis for Variables Predicting Relational Aggression as Rated by Parents (n = 358)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$SE B$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD Symptoms</td>
<td>.050</td>
<td>.007</td>
<td>.346**</td>
</tr>
<tr>
<td>Sex of Child</td>
<td>.006</td>
<td>.007</td>
<td>.043</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD Symptoms</td>
<td>.051</td>
<td>.007</td>
<td>.351**</td>
</tr>
<tr>
<td>Sex of Child</td>
<td>.006</td>
<td>.007</td>
<td>.043</td>
</tr>
<tr>
<td>Sex x ADHD Sx</td>
<td>-.007</td>
<td>.007</td>
<td>-.050</td>
</tr>
</tbody>
</table>

*Note: $R^2 = .121$ for Step 1; $\Delta R^2 = .002$ for Step 2 ($p > .025$).*

**$p < .01$.**
Table 16

Hypothesis 2 Secondary Analysis: Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Relational Aggression as Rated by Teachers (n = 361)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$SE_B$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD Symptoms</td>
<td>.359</td>
<td>.039</td>
<td>.436**</td>
</tr>
<tr>
<td>Sex of Child</td>
<td>.042</td>
<td>.039</td>
<td>.050</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD Symptoms</td>
<td>.357</td>
<td>.039</td>
<td>.434**</td>
</tr>
<tr>
<td>Sex of Child</td>
<td>.042</td>
<td>.040</td>
<td>.051</td>
</tr>
<tr>
<td>Sex x ADHD Sx</td>
<td>.019</td>
<td>.039</td>
<td>.023</td>
</tr>
</tbody>
</table>

*Note: $R^2 = .193$ for Step 1; $\Delta R^2 = .001$ for Step 2 ($p > .025$).*

**$p < .01$.**
Table 17

*Hypothesis 3: Means and Standard Deviations for Relational Victimization by ADHD-C, ADHD-I and Control Group*

<table>
<thead>
<tr>
<th></th>
<th>Relational Victimization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( M )</td>
</tr>
<tr>
<td>ADHD-C (n = 20)</td>
<td>2.73</td>
</tr>
<tr>
<td>ADHD-I (n = 12)</td>
<td>2.55</td>
</tr>
<tr>
<td>Control Group (n = 33)</td>
<td>2.46</td>
</tr>
<tr>
<td>Total (n = 65)</td>
<td>2.56</td>
</tr>
</tbody>
</table>
### Table 18

*Hypothesis 3: Analysis of Covariance for Relational Victimization as a function of gender and ADHD Subtype*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>$F$</th>
<th>Partial $\eta^2$</th>
<th>$p$</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Between subjects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of child</td>
<td>1</td>
<td>1.18</td>
<td>.019</td>
<td>.281</td>
<td>.188</td>
</tr>
<tr>
<td>ADHD subtype</td>
<td>2</td>
<td>1.82</td>
<td>.056</td>
<td>.171</td>
<td>.365</td>
</tr>
<tr>
<td>Error</td>
<td>61</td>
<td>(.292)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Values enclosed in parentheses represent mean square errors.
Table 19

Hypothesis 4: Correlation Matrix for Internalizing Symptoms for Relational Victimization, Gender and Interaction term (Gender by Relational Victimization) with Transformed variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>CBCL Internalizing</th>
<th>Relational Victimization</th>
<th>Sex of Child</th>
<th>Sex by Relational Victimization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson’s r (n)</td>
<td>Pearson’s r (n)</td>
<td>Pearson’s r (n)</td>
<td>Pearson’s r (n)</td>
</tr>
<tr>
<td>CBCL Internalizing</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relational Victimization</td>
<td>.268** (323)</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of Child</td>
<td>-.013 (252)</td>
<td>.055 (348)</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Sex by Relational Victimization</td>
<td>.037 (252)</td>
<td>.078 (348)</td>
<td>-.009 (348)</td>
<td>--</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
Table 20

*Hypothesis 4: Summary of Hierarchical Regression Analysis for Variables Predicting Internalizing Symptoms as Predicted by Gender and Relational Victimization (n = 323)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relational Vict.</td>
<td>.100</td>
<td>.021</td>
<td>.270**</td>
</tr>
<tr>
<td>Sex of Child</td>
<td>-.010</td>
<td>.021</td>
<td>-.028</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relational Vict</td>
<td>.099</td>
<td>.021</td>
<td>.268**</td>
</tr>
<tr>
<td>Sex of Child</td>
<td>-.010</td>
<td>.021</td>
<td>-.027</td>
</tr>
<tr>
<td>Sex x Rel Vict</td>
<td>.006</td>
<td>.021</td>
<td>.016</td>
</tr>
</tbody>
</table>

*Note: R^2 = .073 for Step 1; ΔR^2 = .000 for Step 2 (p = .77).*

**p < .01.
<table>
<thead>
<tr>
<th>Item</th>
<th>Component 1</th>
<th></th>
<th>Component 2</th>
<th></th>
<th>Component 3</th>
<th></th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pattern Coefficient</td>
<td>Structure Coefficient</td>
<td>Pattern Coefficient</td>
<td>Structure Coefficient</td>
<td>Pattern Coefficient</td>
<td>Structure Coefficient</td>
<td></td>
</tr>
<tr>
<td>1 says supportive things</td>
<td>-.055</td>
<td>-.137</td>
<td>.822</td>
<td>.794</td>
<td>.117</td>
<td>-.172</td>
<td>.640</td>
</tr>
<tr>
<td>2 excludes peer when mad</td>
<td>.712</td>
<td>.748</td>
<td>.107</td>
<td>-.049</td>
<td>.111</td>
<td>.418</td>
<td>.574</td>
</tr>
<tr>
<td>3 hits, shoves or pushes</td>
<td>-.002</td>
<td>.394</td>
<td>-.041</td>
<td>-.301</td>
<td>.812</td>
<td>.825</td>
<td>.681</td>
</tr>
<tr>
<td>4 tries to cheer up peers dominate</td>
<td>.182</td>
<td>.007</td>
<td>.815</td>
<td>.810</td>
<td>-.079</td>
<td>-.253</td>
<td>.682</td>
</tr>
<tr>
<td>5 spreads rumors or gossips</td>
<td>.632</td>
<td>.684</td>
<td>.028</td>
<td>-.116</td>
<td>.118</td>
<td>.412</td>
<td>.478</td>
</tr>
<tr>
<td>6 gets into physical fights</td>
<td>-.006</td>
<td>.400</td>
<td>.040</td>
<td>-.235</td>
<td>.863</td>
<td>.848</td>
<td>.720</td>
</tr>
<tr>
<td>7 gets children to stop playing/liking when mad</td>
<td>.711</td>
<td>.788</td>
<td>-.102</td>
<td>-.261</td>
<td>.125</td>
<td>.498</td>
<td>649</td>
</tr>
<tr>
<td>8 helpful to peers</td>
<td>-.009</td>
<td>-.163</td>
<td>.866</td>
<td>.873</td>
<td>-.016</td>
<td>-.298</td>
<td>.762</td>
</tr>
<tr>
<td>9 threatens to hit/beat up</td>
<td>.029</td>
<td>.452</td>
<td>-.034</td>
<td>-.318</td>
<td>.872</td>
<td>.897</td>
<td>.806</td>
</tr>
<tr>
<td>10 tells lies about peers to others</td>
<td>.346</td>
<td>.591</td>
<td>-.039</td>
<td>-.257</td>
<td>.499</td>
<td>.677</td>
<td>.553</td>
</tr>
<tr>
<td>11 ignores peers when mad</td>
<td>.824</td>
<td>.701</td>
<td>.048</td>
<td>-.014</td>
<td>-.240</td>
<td>.139</td>
<td>.544</td>
</tr>
<tr>
<td>12 dominate or bully peers</td>
<td>.435</td>
<td>.657</td>
<td>-.069</td>
<td>-.284</td>
<td>.441</td>
<td>.671</td>
<td>.601</td>
</tr>
<tr>
<td>13 threatens to stop being friend</td>
<td>.610</td>
<td>.693</td>
<td>-.145</td>
<td>-.287</td>
<td>.124</td>
<td>.462</td>
<td>.521</td>
</tr>
<tr>
<td>14 kind to peers</td>
<td>-.117</td>
<td>-.259</td>
<td>.793</td>
<td>.819</td>
<td>-.019</td>
<td>-.329</td>
<td>.686</td>
</tr>
<tr>
<td>15 exclude from group activities</td>
<td>.555</td>
<td>.631</td>
<td>-.094</td>
<td>-.227</td>
<td>.124</td>
<td>.420</td>
<td>.424</td>
</tr>
</tbody>
</table>
Table 22

**Hypothesis 5: CSBS Parent Version Factor Loadings: Oblimin Rotation**

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor Loadings</th>
<th>Factor correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 says supportive things</td>
<td>-.389</td>
<td>.479</td>
</tr>
<tr>
<td>2 excludes peer when mad</td>
<td>.616</td>
<td>-.168</td>
</tr>
<tr>
<td>3 hits, shoves or pushes</td>
<td>.700</td>
<td></td>
</tr>
<tr>
<td>4 tries to cheer up peers dominate</td>
<td>-.357</td>
<td></td>
</tr>
<tr>
<td>5 spreads rumors or gossips</td>
<td>.599</td>
<td>.458</td>
</tr>
<tr>
<td>6 gets into physical fights</td>
<td>.696</td>
<td></td>
</tr>
<tr>
<td>7 gets children to stop playing/liking when mad</td>
<td>.739</td>
<td>.678</td>
</tr>
<tr>
<td>8 helpful to peers</td>
<td>-.488</td>
<td></td>
</tr>
<tr>
<td>9 threatens to hit/beat up</td>
<td>.772</td>
<td></td>
</tr>
<tr>
<td>10 tells lies about peers to others</td>
<td>.721</td>
<td></td>
</tr>
<tr>
<td>11 ignores peers when mad</td>
<td>.445</td>
<td>-.208</td>
</tr>
<tr>
<td>12 dominate or bully peers</td>
<td>.761</td>
<td></td>
</tr>
<tr>
<td>13 threatens to stop being friend</td>
<td>.678</td>
<td></td>
</tr>
<tr>
<td>14 kind to peers</td>
<td>-.538</td>
<td></td>
</tr>
<tr>
<td>15 exclude from group activities</td>
<td>.607</td>
<td></td>
</tr>
</tbody>
</table>

Factor Loadings

1 (OA) 2 (PS) 3 (RA)
Table 23 *Hypothesis 5: Correlation Matrix Parent, Teacher and Peer Nomination Ratings of Social Behavior*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson’s r</td>
<td>Pearson’s r</td>
<td>Pearson’s r</td>
<td>Pearson’s r</td>
<td>Pearson’s r</td>
<td>Pearson’s r</td>
<td>Pearson’s r</td>
<td>Pearson’s r</td>
<td>Pearson’s r</td>
</tr>
<tr>
<td>1. Parent RA</td>
<td>--</td>
<td>.637**</td>
<td>-.210**</td>
<td>.243**</td>
<td>.176**</td>
<td>-.131*</td>
<td>.128*</td>
<td>.127*</td>
<td>-.103</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(360)</td>
<td>(360)</td>
<td>(351)</td>
<td>(351)</td>
<td>(351)</td>
<td>(330)</td>
<td>(330)</td>
<td>(330)</td>
</tr>
<tr>
<td>2. Parent OA</td>
<td>--</td>
<td>-.345**</td>
<td>.235**</td>
<td>.403**</td>
<td>-.234**</td>
<td>.182**</td>
<td>.319**</td>
<td>-.217**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(360)</td>
<td>(360)</td>
<td>(351)</td>
<td>(351)</td>
<td>(351)</td>
<td>(330)</td>
<td>(330)</td>
<td>(330)</td>
</tr>
<tr>
<td>3. Parent PS</td>
<td>--</td>
<td>-.199**</td>
<td>-.196**</td>
<td>.221**</td>
<td>-.096</td>
<td>-.176**</td>
<td>.262**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(360)</td>
<td>(360)</td>
<td>(351)</td>
<td>(351)</td>
<td>(351)</td>
<td>(330)</td>
<td>(330)</td>
<td>(330)</td>
</tr>
<tr>
<td>4. Teacher RA</td>
<td>--</td>
<td>.566**</td>
<td>-.307**</td>
<td>.469**</td>
<td>.354**</td>
<td>-.235**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(362)</td>
<td>(362)</td>
<td>(333)</td>
<td>(333)</td>
<td>(333)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Teacher OA</td>
<td>.</td>
<td>--</td>
<td>-.449**</td>
<td>.271**</td>
<td>.555**</td>
<td>-.288**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(362)</td>
<td>(333)</td>
<td>(333)</td>
<td>(333)</td>
<td>(333)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Teacher PS</td>
<td>\</td>
<td>--</td>
<td>-.130*</td>
<td>-.308**</td>
<td>.393**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(333)</td>
<td>(333)</td>
<td>(333)</td>
<td>(333)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. PN RA</td>
<td></td>
<td>--</td>
<td>.535**</td>
<td>-.242**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(341)</td>
<td>(341)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. PN OA</td>
<td></td>
<td>--</td>
<td>-.349**(*)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(341)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PN PS</td>
<td></td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* *Correlation is significant at the 0.05 level (2-tailed),
**Correlation is significant at the 0.01 level (2-tailed).
Figure 1. Scree plot from principal components analysis of CSBS-PV.
APPENDIX A

BACKGROUND INFORMATION FORM
1. The parent (or guardian) completing this questionnaire is the child’s (please check one):
   (1) mother  (2) father  (3) stepmother  (4) stepfather
   (5) foster mother  (6) foster father  (7) grandmother  (8) grandfather
   (9) other (who?): __________________________

2. Other guardians who live with you and this child are (please check “yes” or “no” for each person):
   (1)Yes  (2)No  (1)Yes  (2)No
   a. mother  b. father  c. stepmother  d. stepfather
   e. foster mother  f. foster father  g. grandmother  h. grandfather
   i. other (who?): __________________________

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

4. The participating child is a:  (1) girl  (2) boy

5. Your child’s date of birth: ____________  6. Your child’s age today: ____________

7. Your child’s grade in school:  (1) 3rd  (2) 4th  (3) 5th  (4) 6th
   8a. Has your child ever repeated a grade? (1) Yes (2) No  8b. If yes, which grade? ______
   9a. Has your child ever skipped a grade? (1) Yes (2) No  9b. If yes, which grade? ______

10a. Does your child receive special education services at school? (1) Yes (2) No
    If yes, what is your child’s eligibility? ____________  10b. Grade services began ______

11a. Is your child currently taking any medication? (1) Yes (2) No
    11b. If yes, please list the name of the medication(s).
          ____________________________________________

12. Has your child ever been diagnosed with any of the following: (Please check all that apply)
    (1)Yes  (2)No
   12a. Attention-Deficit/Hyperactivity Disorder (ADHD)
       Type of ADHD?  (1) Inattentive  (2) Hyperactive-Impulsive  (3) Combined  (4) Don’t know
       12b. Conduct Disorder (CD)
       12c. Oppositional Defiant Disorder (ODD)
       12d. Separation Anxiety Disorder
       12e. Generalized Anxiety Disorder (GAD)
       12f. Major Depressive Disorder (depression)
       12g. Dysthymic Disorder
       12h. Bipolar Disorder
   12i. Learning Disorder (Learning Disability)
       What type of Learning Disability? ____________________________
12n. Communication Disorder
   What type of Communication Disorder? _______________________________

If you checked “Yes” for any disorder above,
12u. How old was your child when diagnosed? ______________________
   and
12v. If yes, what type of professional diagnosed him/her? ________________

13. Is your child currently receiving psychological treatment/therapy or counseling?
   (1) Yes (2) No, never (3) In the past only

15. Is English your first language? (1) Yes (2) No (if no, what is?) ________________

16a. How would you describe your ethnic-racial background?
   (1) Asian-American (2) Black (African-American) (3) Caucasian (White)
   If Spanish/Hispanic/Latino then please specify below:
   (4) Mexican, Mexican American, Chicano (5) Puerto Rican (6) Cuban (7) other________
   (8) Arab (please specify country)_______________
   (9) Native American _________________________
   (10) Biracial (please specify) _________________________
   (11) Pacific Islander (please specify) __________________________
   (12) Unknown or Other (please specify) ________________________________

16b. How would you describe your child’s other biological parent’s ethnic-racial background?
   (1) Asian-American (2) Black (African-American) (3) Caucasian (White)
   If Spanish/Hispanic/Latino then please specify below:
   (4) Mexican, Mexican American, Chicano (5) Puerto Rican (6) Cuban (7) other________
   (8) Arab (please specify country)_______________
   (9) Native American _________________________
   (10) Biracial (please specify) _________________________
   (11) Pacific Islander (please specify) __________________________
   (12) Unknown or Other (please specify) ________________________________

16c. How would you describe your child’s ethnic-racial background?
   (1) Asian-American (2) Black (African-American) (3) Caucasian (White)
   If Spanish/Hispanic/Latino then please specify below:
   (4) Mexican, Mexican American, Chicano (5) Puerto Rican (6) Cuban (7) other________
   (8) Arab (please specify country)_______________
   (9) Native American _________________________
   (10) Biracial (please specify) _________________________
   (11) Pacific Islander (please specify) __________________________
   (12) Unknown or Other (please specify) ________________________________

17. Is English your child’s first language? (1) Yes (2) No (if no, what is?) ________________

18. Which category best describes the current marital status of your child’s biological parents?
   (1) never married (2) married (3) separated (4) divorced
   (5) widowed (6) unknown
19. 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)_______________________________________________

20. What is the last grade in school you completed or the highest degree you’ve earned?
   (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 or certificate
   (7) 2 yrs of college, community college, or Associate’s degree   (8) 4 yrs of college or Bachelor’s degree
   (9) advanced degree, specify __________________________________________
   (10) other, please specify _____________________________________________

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

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

23. If yes, what is your job?________________________________________________________

24a. What is your approximate yearly household income before taxes?
   (include child support received, if that applies to you)
   (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) $100,000-$125,000   (10) $125,000 – $150,000   (11) $150,000 – $175,000   (12) $175,000 more

24b. Does your child get free lunches at school?
   (1) Yes   (2) No, child not eligible   (3) No, but child is eligible
APPENDIX B

TEACHER BACKGROUND INFORMATION FORM
1. Gender: (1) female (2) male

2. Your age today: ______________

3. Grade currently taught in school: (1) 3rd (2) 4th (3) 5th (4) 6th

4. Total number of years taught:
   (1) Less than 1 year (2) 1-2 years (3) 2-5 years
   (4) 5-10 years (5) 10-20 years (6) 20 years or more

5. How would you describe your ethnic-racial background?
   (1) Asian-American (2) Black (African-American) (3) Caucasian (White)

   If Spanish/Hispanic/Latino then please specify below:

   (4) Mexican, Mexican American, Chicano  (5) Puerto Rican  (6) Cuban  (7) other________
   (8) Arab (please specify country)____________________
   (9) Native American
   (10) Biracial (please specify)___________________________________________
   (11) Pacific Islander (please specify)_____________________________________
   (12) Unknown or Other (please specify)_____________________________________

6. Primary language: (1) English (2) Spanish (3) Both English & Spanish Fluency
   (4) Other:____________________
APPENDIX C

STUDENT BACKGROUND INFORMATION FORM: TEACHER
1. The participating child is a:  
   (1) girl  
   (2) boy

2. In terms of overall academic achievement, how does this child compare to the other students in his or her grade? 
   (1) Bottom third  
   (2) Middle third  
   (3) Top third

3. Does this child receive special education services at school? 
   (1) Yes  
   (2) No  
   (Please specify)_______________________________________

4. How would you describe this child’s ethnic-racial background? 
   (1) Asian-American  
   (2) Black (African-American)  
   (3) Caucasian (White)  
   (4) Mexican, Mexican American, Chicano  
   (5) Puerto Rican  
   (6) Cuban  
   (7) Other (Spanish/Hispanic/Latino) ____________________________________  
   (8) Arab (please specify country) ____________________________  
   (9) Native American  
   (10) Biracial (please specify) ____________________________  
   (11) Pacific Islander (please specify) ____________________________  
   (12) Unknown or Other (please specify) ____________________________

5. Does child participate in a free school lunch program? 
   (1) Yes  
   (2) No, not eligible  
   (3) No, but eligible
APPENDIX D

INSTRUCTIONS FOR PEER NOMINATION MEASURE
Read by administrator:

Today, I am going to ask you about what it’s like to be a ___th grader. So, I will be asking you about who you like to play with and what the other ___th graders in your class are like. I want to know how you really feel. I won’t tell anybody your answers and you will have a piece of ___-colored paper to cover up your answers. This way you can be honest about what you really feel. When we’re done, it’s important that you don’t talk to kids at school about your answers, but if you want to talk to your parents at home about what we did today, that would be good. You also do not have to help if you do not want to, and you can stop being in the project any time you want and no one will get mad at you.

To answer these questions, you will use sheets of paper that list the names of kids in your class. You’ll notice that each name has a number next to it. That number is each person’s special number. Now I want each of you to find your own name on the list. Is there anyone who can’t find their name? (If so, and their name is missing from the list, write their name on the board and assign them an ID number at the bottom of the class list.) When you’ve found your name, look at the number next to it. That is your special number. Now write that number at the top of the page in the space where it says “your special number.” After you are done with that, draw a line through your own name on the list. When you answer the questions on this page, you can’t use your own number and we don’t want you to forget that.

When you answer the questions I’m going to ask you, I want to make sure that you put the person’s number in the blank and not their name. We only answer these questions with people’s special numbers. For each question, you will write down the special number for three different people in your class. (Read slowly and repeat) Remember that you cannot use your own number for any of these questions, but you can use the other kids’ numbers as many times as you want for different questions – but use a person’s number only once for each question. So, for number one, you can’t put down the same person’s number in all three blanks. But, you could put down that kid’s number on question number one and question number two or on however many questions you wanted to.

Reminders:
- Have students clear their desks except for a pen/pencil.
- This is not a test.
- Put the sheets on your desk, side by side.
- Raise your hand if you have any questions.
- Make sure students write their ID number at the top of the answer sheet.
- Make sure that students use their cover sheets to cover up their answers at all times.
- Do not let students work ahead.
Answers to common questions:

- Yes, they can use a peer’s number more than once, as long as it’s not for the same question.
- No, they cannot use their number for any of the questions – that’s why they drew a line through their name on the class list.
- If they cannot think of three peers to put down for a certain question, ask them to think very hard about it. If it is clear that they are doing this and cannot come up with anyone, tell them to write “no” in the blanks for this one question. But, deal with this on an individual basis so students don’t just do this and give no response.
- If they want to put down more than three peers, tell them to put down the three that are most applicable first (kids that do it the most). They can put additional peers in blanks off to the right margin (again, deal with this on an individual basis).

End session with:
Okay, you all did a terrific job with these questions! Please put the sheet with everybody’s name on it (class roster) on top of your answer sheet. Sit quietly for just a few more minutes while we come around and collect them all. Remember, it is important that you don’t talk with other kids about what you wrote down, but you can talk to your parents about what we did in class today when you get home.
APPENDIX E

TEACHER CONSENT FORM
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 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.

Start Date of Study 01/01/2004
End Date of Study 08/01/2005

Purpose of the Study
The quality of children’s relationships with other students affects their mental health and school performance. For example, research has shown that children who are rejected by other kids often experience loneliness, low self-esteem, social anxiety, and they are at later risk for dropping out of school. Therefore, educators and parents need to promote positive social relationships early in childhood. We are conducting a study of social behavior in children and we need your help. Specifically, we are interested in learning more about different types of aggressive behavior and understanding which children are aggressive. Studying children in public schools is an important way of getting this information.

The study will be conducted in Spring 2004. Participation will require about 70 minutes of each teacher’s time. Students will participate in an activity at school that should take about 30 minutes of class time to complete. Parents will also complete three brief surveys and a demographic questionnaire that require about 45 minutes of a parent’s time.

Description of the Study
For each participating student, teachers will complete one brief survey (18 items) measuring attentional abilities, an additional brief survey (17 items) about each
participating student’s social behavior (particularly aggressive behavior), and a brief demographic form about the student. In addition, each teacher will complete one teacher demographic form about their teaching experience and basic information such as gender and age. The estimated total time required for teachers to complete all surveys is approximately 70 minutes; however, the surveys can be completed at the teachers’ convenience and do not have to be completed in one period of time or during class time.

Procedures to be used
Students will participate in the project at school with their classmates and will be asked to describe other children in class by identifying them on a sheet of paper according to how they act. For example, children will be asked to identify classmates who “ignore others,” “do nice things for others,” “hit others,” and “spread rumors about others.” A UNT research team will administer the procedure. The students will also complete a brief measure assessing thoughts, feelings, and behaviors associated with depression, although no items regarding self-hate and/or suicide will be included. In addition, measures will be sent home with students for parents to complete. Specifically, parents will answer a set of written questions to provide background information for the child and complete three short surveys about their child’s behavior.

Description of the foreseeable risks
There are no foreseeable risks associated with participation in this study. Dozens of other researchers have done similar studies using these procedures. There is a chance that some students may feel uncomfortable during the class activity when they are asked to identify their classmates according to several characteristics (for example: “insults others,” “cheers up others,” etc.) However, we have taken several steps to minimize this potential discomfort. Specifically, students will be provided with a piece of colored paper and instructed to use it as a “cover sheet” so that others will not see their answers during the activity. Children will not write the names of other kids - instead, each child will have a code number that will be used. Students will also be instructed not to discuss their responses with other classmates; however, they will be encouraged to discuss the activity with their parents at home. After the activity has been completed, a brief, fun group activity for the entire class will be conducted to distract students.

Benefits to the subjects or others
The information gathered in this research will help us learn more about social and aggressive behavior in children. This information will help counselors and teachers in the future identify children who are at-risk for becoming aggressive and intervene earlier to promote positive peer relationships. To thank you for being in this project, the research team will be working with school officials and will participate in staff development in August of 2004. Group results of the study will be discussed as well as strategies for intervening with targeted behaviors. As a benefit for school participation in the present study, all students will receive pencils and stickers, and a pizza party for the class from each campus with the most participants will be held. Finally, the research team and WS-ISD administrators will organize a “Town Hall” meeting in May 2004 for parents which will include child professionals from various fields to discuss and address issues raised by the study and parenting issues in general.
Procedures for Maintaining Confidentiality of Research Records
Every effort will be made to maintain the confidentiality of the names and survey answers of all participants. All records (surveys and our copy of this form) will be kept in a locked file cabinet in a locked room at UNT. More importantly, parents, students, and teachers will not write their name or the child’s name on any of the forms they complete. We will assign random code numbers to each child, and participants will use a code number, rather than a child’s name, when completing all materials.

Review for the Protection of Participants
This research study has been reviewed and approved by the UNT Committee for the protection of Human Subjects. The Committee can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

Research Subject's Rights
I have read or have had read to me all of the above. In their meeting, the school principal and investigators explained the study to me and answered all of my questions. I have been told the risks and/or discomforts as well as the possible benefits of the study. I understand that I do not have to take part in this study and my refusal to participate or my decision to withdraw will involve no penalty or loss of benefits, rights, or legal recourse to which I am entitled. The study personnel may choose to stop my participation at any time.

In case problems or questions arise, I have been told I can contact Amy Svoboda, (Doctoral Student, Department of Psychology, University of North Texas) at (817) 999-xxxx or Patricia Kaminski, Ph.D., (Assistant Professor, Department of Psychology, University of North Texas) at telephone number (940) 565-xxxx. In addition, I may leave a message for either of them at (817) 267-xxxx, which is a metro number. I can also e-mail Amy Svoboda at asvoboda@xxxx.xxx.

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

__________________________________________  _______________________
Signature of Teacher  Date

__________________________________________  _______________________
Signature of Witness (any other adult)  Date

For the Investigator or Designee:
I certify that I have reviewed the contents of this form with the subject signing above. I have explained the known benefits and risks of the research. It is my opinion that the subject understood the explanation.

__________________________________________  _______________________
Signature of Principal Investigator or Designee  Date
APPENDIX F

INTRODUCTORY LETTER TO PARENTS
Dear Parent(s):

We, UNT and XXXX, are asking you and your child to help us learn more about children’s friendships. We know that problems with friends affect how children feel and how they do in school, and we need your help to figure out ways that teachers and parents can help their children. Studying typical children in public schools is a very important way of getting this information.

This page will help you through the steps of our project. First, you will be asked to decide if you and your child would like to help, and then you will tell you about the other forms. Completing all the forms will take about an hour or less of your time; you can do a little at a time if you prefer.

Step 1- “Your” Consent forms-
□ Stapled to this page are copies of the consent and assent forms marked “Yours.”
   They are for you to keep for your records.

Step 2- “Our” Consent forms- The next set of papers clipped together include the consent and assent forms that we need you to return to us. They are labeled “Ours.”
□ Consent form
   □ Read through the form titled Research Consent Form For Parents.
   □ Decide if you are able to help us with our project.
   □ If you agree to help, sign your name on page 3.
□ Assent form
   □ Read the form title Research Assent Form For Children to your child
   □ If your child agrees to participate, have him or her write their name.
   □ Then please fill in his/her name, sign your name, and date the form.
□ Fold the signed Research Consent Form for Parents and the Research Assent Form for Children labeled “Ours” and place them in the white envelope that was clipped to them.
□ Seal the white envelope and place it into the largest envelope (the envelope that you received the forms in) that will be returned to your child’s classroom.

Step 3- Raffle entry- one form with envelope attached
□ If you wish to enter into the raffle for an Italian dinner for two, please fill out your contact information.
□ If you agree to be contacted again in the future to help us, please check the box. We really need your help later as well as now. And, next time we hope to be able to pay all our parents, kids, and teachers for their time.
□ Please give us a ‘contact person’ that could help us get in touch with you (if you happen to move in the next few years). This could be a relative or a close friend
□ Fold the form and place it into the colored envelope that was clipped to the form.
□ Seal the colored envelope and place it into largest envelope, the one that will be returned to your child’s classroom.

Step 4- Forms about you and your child- Stapled packet
□ Please decide which language you feel most comfortable with read and filling out the forms. Each of the forms on white paper is written in Spanish on one side and English on the other. There are two blue pages only complete the one that is written in the language that you have chosen.
□ Complete each form starting with the form that is stapled on top. It is important that forms are completed in the order they are stapled.
□ After completing the forms, fold them in half and put them into the brown envelope that was clipped to them.
□ Place the sealed brown envelope and place it into the largest envelope, the one that will be returned to your child’s classroom.

Step 5- Returning Forms
□ Please seal the large envelope and have your child return it to the ‘parent forms box’ in his or her classroom.

Thank you for helping with this project. We believe there is important information that can be learned from you and your child. If you have any questions about this project, contact Amy Svoboda at (817) 999-xxxx or e-mail asvoboda@xxxx.xxx or Dr. Patricia Kaminski at (940) 565-xxxx.

Respectfully,

Patricia Kaminski, Ph.D.        Amy Svoboda, M.A.
Assistant Professor            Doctoral Candidate
Department of Psychology
University of North Texas

__________________________        __________________________
Angela Brett, B.A.              Kimberly Barton, M.S.
School Psychology Intern        Doctoral Candidate

******************************************************************************
IF YOU DO NOT WISH TO PARTICIPATE IN THIS STUDY, PLEASE HAVE YOUR CHILD RETURN ALL MATERIALS TO HIS OR HER TEACHER (SO THAT WE CAN REUSE THIS PACKET AT ANOTHER SCHOOL).
APPENDIX G

PARENTAL CONSENT FORM
Parent Name: ________________________________ Date: __________

Title of Study: Social Behavior among 3rd-6th graders

Principal Investigator: Patricia L. Kaminski, Ph.D.

Co-Investigator(s): Amy Svoboda, M.A., Kimberly Barton, M.S., and Angela Brett, B.A.

This study described below has been approved by the White Settlement ISD Superintendent and School Principals:

_______________________ Susan Simpson-Laskoskie, Ph.D. Superintendent
_______________________ Audrey Arnold, Principal, Tannahill Intermediate
_______________________ Ronda Wright, Principal, Blue Haze Elementary
_______________________ Frank Molinar, Principal, Liberty Elementary
_______________________ Paula Hope, Principal, North Elementary
_______________________ Lee Stewart, Ed.D., Principal, West Elementary

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 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.

Start Date of Study 01/01/2004
End Date of Study 08/01/2005

Purpose of the Study
The quality of children’s relationships with other students affects their mental health and school performance. For example, research has shown that children who are rejected by other kids often experience loneliness, low self-esteem, social anxiety, and they are at later risk for dropping out of school. Therefore, parents and educators need to promote positive social relationships early in childhood. We are conducting a study of social behavior in children and we need your help. Specifically, we are interested in learning more about different types of social behavior and understanding which children demonstrate various behaviors. Studying typical children in public schools is an important way of getting this information.

The study will be conducted in Spring 2004. Participation will require about 45 minutes of a parent’s time. The child will participate in an activity at school that should take about 30 minutes of class time to complete.
Description of the Study
Parents will complete three short surveys with questions about their child’s thoughts, feelings, and behaviors. In addition, parents will answer a set of written questions to provide background information for the child (for example: age, grade, gender, ethnicity, and marital status of parents).

Procedures to be used
The child will participate in the project at school with his/her classmates and will be asked to describe other children in class by identifying them by number on a sheet of paper according to how they act. For example, children will be asked to identify classmates who “ignore others,” “do nice things for others,” “hit others,” and “spread rumors about others.” The child will also complete a brief survey about their own thoughts, feelings, and behavior. In addition, your child’s teacher will complete a short survey on your child’s social behaviors and another survey measuring classroom/learning behaviors of your child.

Description of the foreseeable risks
There are no foreseeable risks associated with participation in this study. Dozens of other researchers have done similar studies using these procedures. There is a chance that some students may feel uncomfortable during the class activity when they are asked to identify their classmates according to several characteristics (for example: “insults others,” “cheers up others,” etc.). However, we have taken several steps to minimize this potential discomfort. Specifically, students will be provided with a piece of colored paper and instructed to use it as a “cover sheet” so that others will not see their answers during the activity. Children will not write the names of other kids – instead, each child will have a code number that will be used. Students will also be instructed not to discuss their responses with other classmates; however, they will be encouraged to discuss the activity with their parents at home. After the activity has been completed, a brief, fun group activity will be conducted to distract students.

Benefits to the subjects or others
The information gathered in this research will help us learn more about social behavior in children. This information will help counselors and teachers in the future identify children who are at-risk for social problems and intervene earlier to promote positive peer relationships. To thank you for being in this project, all parents who participate will be entered in a drawing for dinner for two at a local restaurant. Furthermore, a Town Hall meeting will be organized by the researchers and school administrators. You will be invited to listen to and ask questions of a panel of child professionals discussing issues addressed in this study and parenting issues in general. As a benefit for their participation in the present study, all students will receive pencils and stickers. One class from each school will receive a Pizza Party for their class. Additionally, teacher in-service meetings will be held to discuss the study and educate teachers regarding how to prevent and deal with relationship problems among schoolmates.

Procedures for Maintaining Confidentiality of Research Records
Every effort will be made to maintain the confidentiality of the names and survey answers of all participants. All records (surveys and our copy of this form) will be kept in a locked file cabinet in a locked room at UNT. More importantly, parents, students,
and teachers will not write their name or the child’s name on any of the forms they complete. We will assign random code numbers to each child, and participants will use a code number, rather than a child’s name, when completing all materials.

**Review for the Protection of Participants**
This research study has been reviewed and approved by the UNT Committee for the Protection of Human Subjects. The Committee can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

**Research Subject’s Rights**
I have read or have had read to me all of the above.

In their letter and in this consent form, Patricia Kaminski, Amy Svoboda, and Angela Brett have explained the study to me. I have been told the risks and/or discomforts as well as the possible benefits of the study.

I understand that my child and I do not have to take part in this study and our refusal to participate or our decision to withdraw will involve no penalty or loss of rights, benefits, or legal recourse to which we are entitled. The study personnel may choose to stop our participation at any time.

In case problems or questions arise, I have been told I can contact Amy Svoboda at telephone number (817) 999-xxxx or Patricia Kaminski at telephone number (940) 565-xxxx. In addition, I may leave a message for either of them at (817) 267-xxxx, which is a metro number. I can also e-mail Amy Svoboda at asvoboda@xxx.xxx.

I understand my rights and the rights of my child as research subjects, and I voluntarily consent to my child’s and my participation in this study. I understand what the study is about, how the study is conducted, and why it is being performed. I have been told I will keep 1 signed copy of this consent form.

____________________________________  _______________
Signature of Parent                        Date

____________________________________  _______________
Signature of Witness (any other adult)    Date

**For the Investigator or Designee:**
I certify that I have reviewed the contents of this form with the subject signing above. I have explained the known benefits and risks of the research. It is my opinion that the subject understood the explanation.

____________________________________  _______________
Signature of Principal Investigator or Designee  Date
APPENDIX H

CHILD ASSENT FORM
Child Name____________________________________  Date:_________________  

Title of Study: Social Behavior Among 3rd-6th graders  
Principal Investigator: Patricia L. Kaminski, Ph.D.  
Co-Investigator(s): Amy Svoboda, M.A., Kimberly Barton, M.S., and Angela Brett, B.A.  
Superintendent and School Principals:  
_______________________Susan Simpson-Laskoskie, Ph.D. Superintendent  
_______________________Audrey Arnold, Principal, Tannahill Intermediate  
_______________________Ronda Wright, Principal, Blue Haze Elementary  
_______________________Frank Molinar, Principal, Liberty Elementary  
_______________________Paula Hope, Principal, North Elementary  
_______________________Lee Stewart, Ed.D., Principal, West Elementary  

Parents, if you have signed the parental consent form so that your child can participate in this study, but decide to give your child the choice of participating or not, please complete only Part A below. If you chose for your child to participate and decide they could not make a reasonable choice for themselves, please complete only Part B below.  

Part A. Parents, please read the following to your child:  

“You have agreed to be in a project about how children your age act toward other children. You can decide whether or not you want to help, too. All the other kids in your class will have to decide, too. During a class activity at school, you will answer questions about the other students in your class and yourself. You do not have to help if you do not want to, and you can stop being in the project any time you want and no one will get mad at you. Your name will not be used, and the researcher will not tell anyone what you wrote because it is private. You will keep your answers private, too. But, you can ask me or your teacher if you have any questions.”  

Wait for child’s response. If your child says that he/she wants to participate or nods their head in agreement, point to the appropriate spot below and say, “OK. To show that you said ‘yes’ I need you to write your name here.” Point to the bold line below. After child writes his or her name, complete the remainder of the Assent of Child. If your child does not want to participate, you may withdraw your parental consent or, if appropriate, complete Part B below.
Child writes his or her name here

My child, named __________________, but writing his or her name above has agreed to participate in the Social Behavior Among 3rd-6th graders study.

_________________________________________ Date: __________
Signature of Parent or Guardian

**Part B.**

**Waiver of Child Assent**

My child, named __________________, will not be signing an Assent for the following reason(s):

_____ Age

_____ Maturity

_____ Psychological State of the Child

Therefore, as their parent or guardian, I am assenting to their participation on their behalf.

_________________________________________ Date
Signature of Parent or Guardian
APPENDIX I

DEBRIEFING STATEMENT
Dear Research Participant:

Thank you for your participation in our study! Our aim is to learn more about different types of aggressive behavior and understand which children are aggressive. Our results should have uses in many areas, including social skills programs for children and studying behavior disorders of childhood.

We hope that participating in the class activity was not too stressful for your child. Sometimes, however, a child might feel uncomfortable describing his/her classmates. In addition, while completing the questionnaires about your child, you may have identified some behavioral or emotional difficulties your child is experiencing. If you would like to talk to someone about the research project or your child’s behavior, we are available to answer your questions about the research project and we can help you get an appointment with a mental health professional if needed. You may contact us by phone at 940-369-xxxx (metro: 817-267-xxxx) or by e-mail at amy.svoboda@xxx.xxxt.

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. (For additional information about these or other agencies, call the United Way’s Information and Referral Helpline at 1-800-548-1873).

CONTACT Counseling and Crisis Line – offers free 24-hour immediate, confidential telephone counseling, crisis prevention and intervention, and information and referral [972-233-2233]

Child and Family Guidance Centers (Dallas & Lewisville) – offers individual, family, and group psychotherapy and medication therapy for children and adolescents under the age of 18 with emotional problems; fees set according to income level [214-351-3490]

PRIMA Attention Deficit Disorder Center (Dallas) – offers evaluation, diagnosis, and intervention for children and adults with attention difficulties [972-386-8599]

UNT Psychology Clinic (Denton) – offers individual, marital, family assessment and therapy for all ages with fees set according to income level [940-565-2631]

Youth and 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 your school in the future. Thanks again for participating in this important research project.

Sincerely,

Patricia Kaminski, Ph.D.    Amy K. Svoboda, M.A.    Kimberly A. Barton, M.S
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