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# Adult Perceptions of Their Relationships with Siblings Diagnosed with Attention Deficit Hyperactivity Disorder

Paula K. Aguilar

*Eastern Illinois University*

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**Adult Perceptions of Their Relationships with Siblings  
Diagnosed with Attention Deficit Hyperactivity Disorder**

BY

**Paula Aguilar**

1977-

**THESIS**

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
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Thesis Director

12 July 2001  
Date

  
Department/School Head

Adult Perceptions of Their Relationships with Siblings Diagnosed with Attention  
Deficit Hyperactivity Disorder

Paula K. Aguilar

Eastern Illinois University

### Abstract

How young adults' perceptions of their relationships with their siblings with Attention Deficit Hyperactivity Disorder differ from the perceptions of other young adults having non-disordered siblings were examined. Participants' perceptions of warmth, conflict, and rivalry with their siblings were measured using the Adult Sibling Relationship Questionnaire. The results indicated that perceptions of warmth, conflict, and rivalry were not significantly different for these two groups. An inverse relationship between warmth and rivalry was found for participants having siblings with ADHD. As feelings of warmth increased, feelings of rivalry decreased. Findings suggest future research in this area is needed for results that are more conclusive.

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## Adult Perceptions of Their Relationships with Siblings Diagnosed with Attention Deficit Hyperactivity Disorder

In recent years, more and more parents are hearing the same four-word diagnosis given to their children: attention deficit hyperactivity disorder (ADHD). This diagnosis can come after a varied presentation of hyperactive and inattentive symptoms, such as, the child not seeming to listen, daydreaming, frequent change in activities, impatience, difficulty terminating an ongoing behavior, and more recurrent movement, running, and climbing than other children (Mash & Terdal, 1997). The Diagnostic and Statistical Manual of Mental Disorders, 4<sup>th</sup> edition, text revision (DSM-IV-TR) reports estimated prevalence rates of ADHD at 3-7% for school age children (American Psychiatric Association, 2000). It has been proposed that ADHD may account for up to half of child psychiatry clinic populations (Cantwell, 1996). A significant number of adults may now qualify for a diagnosis of ADHD, and Wender (1995), based on careful scrutiny of prevalence research, estimates an ADHD prevalence of 2-7% in the adult population.

The DSM-IV-TR lists three main subtypes of ADHD: a Predominantly Inattentive type, a Predominantly Hyperactive-Impulsive type, and a Combined type. Symptoms are divided into two different sets of criteria, nine symptoms for inattention and nine hyperactivity/impulsivity symptoms. These symptoms manifest inattentive/hyperactive behavior that is beyond what is within typical age-appropriate activity levels.

The criterion for ADHD is met if six of nine symptoms are present. The criteria for a diagnosis of ADHD, Predominantly Inattentive Type, include having at least six of the nine inattention symptoms present, but no more than five of the hyperactivity-

impulsivity symptoms. The criteria for a diagnosis of ADHD, Predominantly Hyperactive-Impulsive Type, include having at least six of the nine hyperactivity-impulsivity symptoms, but not more than five of the inattention symptoms. If six of nine symptoms are found for both sets of criteria, then a diagnosis of combined type may be appropriate.

The symptoms associated with ADHD can manifest as early as three or four years of age (Kendall, 1997). These symptoms vary in intensity and may include difficulty remaining attentive, distractibility, forgetfulness, excess talking, difficulty awaiting turn, impulsivity, disorganization, labile mood, and excessive motor activity such as frequent fidgeting (American Psychiatric Association, 2000; Wender, 1995). The DSM-IV criteria for diagnosis also require a presence of some ADHD symptoms before the age of seven, current significant impairment in social, academic, or occupational functioning, and that symptoms be present in at least two settings. Beyond diagnostic symptoms, problems secondary to ADHD such as family disruption, feelings of inadequacy, and depression may also exist (Kendall, 1997).

Family history and home environment appear to be related to ADHD. Research on risk factors associated with ADHD has supported both genetic and environmental theories. Family studies have found that genetics do influence hyperactivity, and ADHD has been associated with psychopathology in family members (Biederman et al., 1995; Wender, 1995). Faraone, Biederman, Mennin, Gershon, and Tsuang (1996) found that not only were siblings of ADHD children at high risk for ADHD, but they also were at an increased risk of psychopathology and psychosocial dysfunction. Biederman et al. (1995) linked adversity indicators such as high familial conflict, lower social class, and

foster care placement with ADHD and, "its associated psychiatric, cognitive, and psychosocial impairments" (p. 464).

Because ADHD affects social and interpersonal behavior, there has been a need to examine how ADHD affects relationships with those closest to the diagnosed. For instance, ADHD's influences on family functioning have been examined more closely in relatively recent years (Kendall, 1998; Kendall, 1999; Lewis, 1992; Lewis-Abney, 1993; Smith; 1999). Parents of ADHD children have described them as, "bossy, domineering, stubborn, and bullying" (Wender, 1995, p. 25). Research has found that parents and siblings (Kendall, 1998 & 1999) felt that living in a family with an ADHD child was marked by chaos, conflict, and exhaustion.

Kendall (1999) discussed how families with children with ADHD differ from families where there is a chronic disability or illness. She theorized that society has not accepted ADHD as a purely biological condition, "and as a result, ADHD children and their families suffer social consequences and stigma" (p. 120). She also discussed research on how families with chronically ill or disabled children are able to adjust and cope through normalization, where children are raised as though they did not have a disability. However, Kendall (1998) found that exhausted and frustrated parents of children with ADHD eventually reach a point where they recognize that, due to the extreme and chronic nature of disruptive symptoms, normalization is an unrealistic hope.

In Kendall's (1998) study, results were based on the constant comparative method of analysis of transcribed interviews, where data were coded to detect common themes of life with ADHD or life with an ADHD family member. Initial data led



researchers to more focused areas of data collection in subsequent interviews and refinement of coding categories. This study detected evidence that because of the lack of biological markers to confirm diagnosis and the variety of ways that ADHD manifests, parents of children with ADHD go through a pattern of “making sense” of the disorder. This pattern is comprised of four subprocesses: sinking in, believing, wearing out, and transferring responsibility.

For the families interviewed, sinking in involves parents recognizing that something is wrong and seeking more information about their concerns. Kendall noted that once diagnosis is made, parents report relief, as they link the diagnosis and the idea of successful treatment together.

However, during the believing subprocess, parents begin to recognize the chronic nature of ADHD. Nevertheless, they hold onto the hopes that if they are educated about the disorder and work hard, their children will meet typical developmental milestones.

Wearing out is a period where family life becomes increasingly difficult. It is described as, “a circular pattern of getting stuck, giving up, recharging, burning out, and getting stuck again” (Kendall, 1998, p. 846). Here earlier approaches to behavior management work less for families.

Eventually parents come to a phase where they let go of hopes of normalization and “transfer responsibility” of the child’s life from themselves to the child. At this time, parents conclude that they can not ensure their child’s success if the child does not also work for it.

Kendall (1998) also found that parents go through a period where they struggle to understand how ADHD has impacted their own lives. When their children are teenagers, they begin letting go of the idea that their children are like others with smooth successful lives and eventually come to terms with the disorder and reinvest in realistic expectations for their children.

Sibling relationships play an important role in the development of children. Irish (1964) found that the emotional ties between siblings were typically second only to those between parents and children. Because of the nature of the potentially lifelong relationship between siblings, it is important to examine how a disorder such as ADHD, which has been reported to result in much stress and conflict in families, influences the sibling relationship.

When a child has a sibling with any disability, the experiences of that child may differ from those without a disabled sibling. Previous research has identified both positive and negative effects on children with siblings with chronic disabilities (Faux, 1993; Gallo, Breitmayer, Knafl, & Zoeller, 1993; Lindsey & Stewart, 1989; Summers, White, & Summers, 1994). Positive effects included less teasing and sibling conflicts, increased tolerance, maturity, and responsibility (Faux, 1993; Summers et al., 1994). Negative effects involved nonexceptional siblings having higher levels of anxiety, withdrawal, depression, aggression, feeling left out or forgotten, and inattentiveness (Gallo et al., 1993; Lindsey & Stewart, 1989; Summers et al., 1994). However, the literature is contradictory and unclear in areas such as the nature of the siblings' relationships and the non-disabled child's self-confidence and behavior (Faux, 1993; Summers et al., 1994).

Faux (1993), in a review of 20 years of research, reported on seven studies which found no significant effects on the self concept of non-disabled children with siblings who were chronically cognitively and/or physically disabled. However, the same review also discussed four studies that found self esteem scores of similar children to be lowered in groups of school age siblings.

Summers et al. (1994) reviewed the literature on siblings of children with a disability and separated the research into different categories based on quality. They rated studies from 1 (high validity) to 3 (low validity). Overall, they found that the majority of the research indicated that children with disabled siblings typically interact more negatively with their siblings than do children with non-disabled siblings. When examining the quality of these studies, however, 77% of the highest quality research findings did not report differences in the behaviors of siblings of children with disabilities versus siblings of children without disabilities. When looking at only the higher quality studies, they found 15% of the findings suggested that siblings of children with disabilities behave more negatively, and 8% of the findings found the opposite.

To date, few researchers have directly examined the relationship between ADHD and siblings, but some characteristics associated with ADHD have been investigated. For instance, the literature has linked temperament and sibling relationship quality (Brody, 1998; Brody, Stoneman, & Gauger, 1996; Stocker, Dunn & Plomin, 1989). Brody et al. (1996) noted that children termed difficult have highly active and emotionally intense temperaments that are associated with conflict and negative activity, characteristics also associated with ADHD. They found that sibling relationship quality was higher when the temperament rating for an older sibling was easy than

when it was difficult. This study also found that the older-child's relationships with the parents was positively correlated with the sibling relationship. Stocker et al. (1989) found that shyness in older children was associated with a less controlling and competitive sibling relationship, and younger siblings' anger and intensity of emotion were linked to more competitive sibling relationships. Mothers described older children who became emotionally upset frequently as more likely to have a negative sibling relationship.

Studies on how parent-child relationships affect sibling relationship quality have found that discrepancies in parents' treatment of their children have led to feelings of rivalry and anger (see Brody, 1998). Kendall (1999) hypothesized that, "in the light of the likelihood that ADHD children are more temperamentally difficult than their non-ADHD siblings... they may be treated preferentially in the family because of their behavioral problems" (p. 121). If children with ADHD do receive preferential treatment from parents, this could lead to feelings of rivalry and anger in their siblings.

Although there are studies that have looked at problem behavior and siblings (Mekos, 1993; McGuire, 1993/1994), very few studies have examined the effects of ADHD on siblings in particular (Kendall, 1999; Smith, 1999). Kendall (1999) examined how non-disordered siblings of children with ADHD experienced and lived with their brothers and sisters. Kendall's research relied primarily on individual and family interviews. Eight to 12 weeks following initial interviews, participants were interviewed a second time, and common themes that described what life was like living with a child with ADHD were identified. This study found that siblings named disruption, caused by ADHD's associated symptoms and behavioral expressions, as the most significant



problem related to living with a child with ADHD. Siblings described their family expectations as outlasting seven types of disruptive behavior associated with ADHD: aggression, severe hyperactivity, emotional and social immaturity, academic underachievement and learning problems, family conflicts, negative peer interactions, and isolation and rejection from extended family. Although, Kendall's research paints a descriptive and informative picture of life with an ADHD child, it lends little psychometric information.

Instruments have been developed that provide psychometric data related to sibling relationships. The Sibling Relationship Questionnaire (SRQ) (Furman and Buhrmester, 1985) is one example. Initially, Furman and Buhrmester (1985) sought to develop a list of the primary qualities of sibling relationships, using a non-clinical sample of fifth and sixth grade children. In 20 minute interviews, each child was asked five basic questions about their relationship with a specific sibling:

(a) "Tell me about your relationship with [name]; (b) "What is it like having a brother [sister]?" (c) "Tell me as many good things as you can about your relationship with [name]"; (d) "How about some of the not so good things?" and (e) "How important is the relationship to you? What makes it so important?" (p. 450)

From these interviews, 16 primary qualities were identified: intimacy, prosocial behavior, companionship, similarity, nurturance by sibling, nurturance of sibling, admiration by sibling, admiration of sibling, affection, dominance by sibling, dominance over sibling, quarreling, antagonism, competition, parental partiality, and general relationship evaluation. Based on their findings, Furman and Buhrmester then developed a structured self-report questionnaire to assess children's perceptions of the



qualities of their siblings, using a larger, similar sample of fifth and sixth grade children. The Sibling Relationship Questionnaire (SRQ) resulted, measuring 15 of the 16 qualities and including a "general relationship evaluation". Four underlying dimensions of sibling relationships for warmth/closeness, relative status/power, conflict, and rivalry were identified.

Based on the SRQ, the Adult Sibling Relationship Questionnaire (ASRQ) was developed to assess sibling relationships in young older adults (Stocker, Lanthier, & Furman, 1995). The ASRQ was developed using a sample of 30 young adults who were given a 100 item pilot version (Stocker et al., 1997). Changes were made based on psychometric analyses, participants' verbal descriptions of their sibling relationships, and verbal feedback from the participants. The final result was an 81 item questionnaire (see Appendix A), which looked at sibling relationships on 14 scales, including acceptance, admiration, affection, antagonism, competition, dominance, emotional support, intimacy, instrumental support, knowledge, maternal rivalry, paternal rivalry, quarreling, and similarity. Using an undergraduate population from Colorado and Indiana, they found that sibling relationships in early adulthood are comprised of three core factors: warmth, conflict, and rivalry. Warmth included evidence of intimacy, admiration, affection, acceptance, similarity, knowledge of the sibling, and support. Conflict described quarreling, dominance, antagonism, and competition between siblings. Rivalry summarized perceptions of maternal and paternal rivalry. Because relative status/power was not identified as a core factor (as it was for the SRQ for children), these findings suggest that sibling relationships change over time and that

adult sibling relationships should be examined separately from childhood sibling relationships.

Stocker et al. (1997) studied a young adult population and found perceptions of conflict and rivalry were minimally associated with perceptions of warmth. They also found that differences in warmth, conflict, and rivalry corresponded to the mental health of individual siblings. Adults with higher psychological functioning scores on a symptom inventory perceived lower levels of conflict with their siblings than adults who had subordinate scores. Stocker et al. (1997) accounted for this by suggesting that adults with poor psychological functioning may, “behave in a manner that leads to conflicts between them and their siblings” (p. 218).

Although ADHD is a disorder usually first diagnosed before adulthood, more and more literature has focused on adults with ADHD (Cantwell, 1985, Drehmer & LaVan, 1999; Hansen, Weiss, & Last, 1999; Heiligenstein, Conyers, & Berns, 1998; Heiligenstein, Guenther, & Levy, 1999; Wender, 1995). Wender (1995) suggested the possibility that more than one third of children with ADHD grow into adults who display symptoms of ADHD. Symptoms associated with ADHD, therefore, may affect sibling relationships at all ages.

Based on previous research, it is logical that young adults who have siblings with ADHD would experience different levels of conflict with their sibling than those with non-disordered siblings. Although Stocker et al. (1997) found that perceptions by adults of warmth did exist alongside perceptions of conflict and rivalry with their siblings, previous research suggests that the experience of having a sibling with ADHD may change these perceptions. As previously mentioned, Kendall (1999) found that the main experience

of siblings of children with ADHD was outlasting disruptive behavior such as aggression, severe hyperactivity, emotional and social immaturity, and family conflicts. It is likely that growing up with such experiences could negatively affect one's perceptions about the warmth of the sibling relationship.

Because adults who have siblings with ADHD have rarely been studied empirically, the purpose of this study was to examine how young adults' perceptions of their relationships with their siblings with ADHD differ from the perceptions of other young adults who have non-disordered siblings. Specifically, this study evaluated young adults' perceptions of warmth, conflict, and rivalry with their siblings using the Adult Sibling Relationship Questionnaire (Stocker et al., 1995).

Based on previous research mentioned earlier, the first prediction was that young adults who have siblings with ADHD will perceive significantly higher levels of conflict and rivalry with their siblings than will young adults who have non-disordered siblings. The second prediction was that young adults who have siblings with ADHD will perceive significantly less warmth in their sibling relationships than will young adults who have non-disordered siblings. Finally, it was predicted for young adults who have siblings with ADHD, conflict and rivalry will be negatively correlated with feelings of warmth.

## Method

### Participants

Research participants were 53 university students. They were recruited primarily from introductory psychology courses for course credit. All participants with siblings were welcome. There were 43 participants (17 men, 26 women) in the non-disordered condition, and 10 participants (5 men, 5 women) in the ADHD condition. Seven



participants in the ADHD condition reported about a relationship with a brother, and three reported about a relationship with a sister. Twenty participants in the non-disordered condition reported about a relationship with a brother, 20 reported about a relationship with a sister, and three did not specify the gender of their sibling. The average age of participants overall was 19.09 (SD = 1.04); 19.3 (SD = 1.16) for the ADHD condition, and 19.04 (SD = 1.02) for the non-disordered condition. The average age of siblings overall was 20.27 (SD = 6.00); 18.33 (SD = 4.82) for the ADHD condition, and 20.69 (SD = 6.19) for the non-disordered condition. The average age difference between siblings for the sample as a whole was 4.76 (SD = 4.13); 4.33 (SD = 3.08) for the ADHD condition, and 4.86 (SD = 4.12) for the non-disordered condition. Table 1 presents a description of the participants.

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Insert Table 1 about here.

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### Materials

The Adult Sibling Relationship Questionnaire (ASRQ) (Stocker, Lanthier, & Furman, 1995) was used to assess participants' perceptions of warmth, conflict, and rivalry with their siblings (see Appendix A for ASRQ questions). The ASRQ is an 81 question self-report inventory. Subscales pertaining to warmth and conflict use a Likert scale, with "1" being *hardly at all* and "5" being *extremely much*. Questions to assess maternal and paternal rivalry are answered on Likert scales, with "1" indicating that the participant is usually favored, "2" indicating that the participant is sometimes favored, "3" indicating that neither participant nor sibling is favored, "4" indicating that the sibling is

sometimes favored, and “5” indicating that the sibling is usually favored. The rivalry items are then recoded into absolute discrepancy scores where “0” = neither child is favored, “1” = parents sometimes favor one child over another, and “2” = parents usually favor one child over another. Examples of items from the ASRQ include: “How much does this sibling irritate you?”, “Do you think your mother supports you or this sibling more?”, “How much does this sibling know about your ideas?”

The ASRQ has been shown to have good reliability with a retest  $r = .95$  for warmth,  $r = .89$  for conflict, and  $r = .87$  for rivalry (all  $ps < .01$ ). Internal consistency has been demonstrated for warmth, conflict, and rivalry, with alphas of .97, .93, and .88, respectively. Convergent validity was obtained by comparing participant’s data to reports of their sibling. Convergent correlations averaged .49 (Stocker, Lanthier, & Furman, 1997).

Based on the *Instructions and Basic Information* sheet used by Stocker, Lanthier, and Furman (1995), a similar sheet, modified to account for sibling ADHD status, was used to assess demographics and provide instructions (see Appendix B). Participant’s were asked whether or not they have a sibling with ADHD. If they had a sibling with ADHD, they were asked to report certain information about that sibling. In the case that they had more than one sibling with ADHD, half were asked to report about the sibling who was born earliest in the year, and half were asked to report about the sibling who was born closest to the end of the year. Participants who had multiple siblings without ADHD were instructed to choose one to respond about in the same manner.

Informed consent and debriefing forms were also provided (see Appendix C and Appendix D).

## Procedure

Participants were assessed in group settings. Multiple sessions were necessary in order to recruit as many participants as possible. Each session lasted approximately 30-40 minutes. Once students arrived at the classroom testing site, they were given written information summary forms. These forms included information about the purpose of the study and directions on how to fill out the demographics sheet and ASRQ. Participants were told that they participating in a study about sibling relationships. Informed consent forms were handed out to inform participants that they were free to leave the study at any time without penalty and that all information gathered would be confidential.

After all of the participants filled out the informed consent form, the demographics sheet, and the ASRQ, forms were collected and participants were thanked and handed debriefing forms, which were read aloud. The debriefing form gave further information about the purpose of the study, how to obtain results, and information about the Counseling Center should completing the study evoke any painful emotions.

## Results

The three main dependent variables were the average raw score ratings for warmth and conflict and the mean absolute discrepancy scores for rivalry reported by each participant. Because this research was concerned with identifying differences between young adults who have siblings with ADHD and those who do not, t-tests for independent means were used to investigate group differences.

Mean scores reported on the ASRQ are presented in Table 2. Although the scores presented in Table 2 indicate that participants with a sibling with ADHD reported both lower feelings of warmth and higher conflict with their sibling, than did participants with non-disordered siblings, t-test results indicated that perceptions of warmth,  $t(51) = -88, p > .05$ , and conflict,  $t(51) = 1.30, p > .05$ , were not significantly different for these two groups. As evident in Table 2, ratings of rivalry also did not differ significantly,  $t(51) = -.007, p > .05$ .

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Insert Table 2 about here.

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In order to investigate the relationships among perceptions of warmth, conflict, and rivalry for each group, Pearson Product Moment Correlations were calculated. As predicted, an inverse relationship between warmth and rivalry was found for participants who have siblings with ADHD,  $r(51) = -.581, p < .05$ . A similar correlation was not found for participants without siblings with ADHD. There were no other significant correlational results.

### Discussion

In general, the university students sampled tended to view their parents as not favoring their sibling, and reported more warmth than conflict when describing their relationship with their sisters and brothers. The main hypotheses for this study were that young adults who have siblings with ADHD would report more conflict and rivalry and less warmth when describing their relationship with their siblings than would participants with non-disordered siblings. Although mean scores were in the predicted



direction for warmth and conflict, no significant differences were discovered between the two groups for warmth, conflict, or rivalry.

The prediction that feelings of warmth would be negatively correlated with rivalry for the group with ADHD siblings was confirmed. As feelings of warmth by participants reporting on siblings with ADHD increased, accounts of rivalry decreased. A similar relationship between warmth and conflict, however, was not found.

One likely explanation of the lack of expected results in the present study is the limited sample size, especially for participants with siblings with ADHD. Data was collected at the end of the semester, and fewer than anticipated students from introductory psychology courses signed up to participate. A larger sample of participants with siblings with ADHD may have resulted in additional significant findings. This may be especially true for perceptions of warmth and conflict, as participants reported both lower feelings of warmth and higher conflict, as predicted, although t-test results did not indicate significant findings. Further research is needed to confirm this.

Another explanation for a lack of significant findings is the age of participants. The hypotheses for the present study were based mainly on previous research with adults. Stocker et al. (1997) reported that adults with poor psychological functioning reported more conflict with siblings, but other researchers sampling younger populations have found less conflicts among siblings when one sibling has a disability (Faux, 1993; Summers et al., 1994). Summers et al. (1994) indicated that the highest quality research reports did not find significant differences in the relationships of siblings of children with disabilities versus siblings of children without disabilities. The average age of the university students responding in the present sample was 19 years; it may be that



their perceptions of their relations with their brothers and sisters were not yet on an adult level.

The gender of the participants may also have influenced the results. Stocker et al. (1997) found less conflict reported when siblings were of different genders. When siblings' genders differed, 40 percent were in the ADHD group; however, only 35 percent of the sibling pairs were in the non-disordered group (with the gender of three siblings unreported). It is unknown how much concordance for gender among the sibling pairs influenced the present results. Based on previous research with non-disordered populations, it is possible that conflict ratings were lower than average for the group with a ADHD sibling because of a lack of concordance, and higher than average for the non-ADHD group because more sibling pairs were of the same gender, thus resulting in no significant differences between the groups in reports of conflict.

Additionally, Stocker et al. (1997) found that reports of rivalry increased when the participant was female. For the sibling with ADHD condition, half of the participants were women. However, for the non-disordered condition, 60 percent of the participants were women, and 40 percent were men. This may account in part for the almost identical rivalry scores between the groups. Having more women participants may have increased the rivalry scores in the non-disordered sibling condition.

Stocker et al. (1997) found less reports of conflict for siblings whose ages were further apart. Similarly, Furman and Buhrmester (1985) found higher levels of conflict reported by children who were close in age with their siblings. This may have partly accounted for lowered conflict scores in the non-disordered condition in this study. The

average age difference between siblings for the non-disordered condition was 4.86 (SD= 4.12), slightly higher than in ADHD condition, 4.33 (SD = 3.08).

Another concern is that any effects ADHD may have on sibling relationships may be influenced by the subtype of ADHD. An adult with a sibling diagnosed with ADHD, Predominantly Inattentive, may experience the sibling relationship quite differently from and adult with a sibling diagnosed with ADHD, Predominantly Hyperactive or Combined.

It is also quite possible that young adults having siblings with ADHD do not differ from adults with siblings without ADHD in their perceptions of the warmth, conflict, and rivalry experienced in their relationships. Over the years, adults with siblings having ADHD may have learned to tolerate, "make sense", or understand how ADHD has impacted their relationship with their sibling (Kendall, 1998). They also were likely to have had interactions and experiences with their sibling apart from symptoms of ADHD that have influenced their perceptions of their sibling relations. Because ADHD is a common diagnosis today, they may not perceive their sibling relationship as any different from others. It is also conceivable that some participants in the present study may have a sibling with ADHD that has not been diagnosed. This possibility makes it especially difficult to compare groups reliably.

If this study were replicated, the researcher should consider taking steps to ensure a larger participant population, particularly focusing on increasing the number of participants having siblings with ADHD. Additionally, one should control for gender of the participants, siblings, and sibling pairs. Age was another potential factor, and controlling for the age of participant, siblings, and difference in ages between the pairs may lead to additional information about how ADHD affects sibling relationships.

## References

- American Psychiatric Association (2000). Diagnostic and statistical manual of mental disorders (4<sup>th</sup> ed. TR). Washington, DC: Author.
- Biederman, J., Milberger, S., Faraone, S. V., Kiely, K., Guite, J., Mick, E., Ablon, S., Warburton, R., Reed, E. (1995). Family-environment risk factors for attention-deficit hyperactivity disorder: A test of Rutter's indicators of adversity. Archives of General Psychiatry, *52*, 464-470.
- Brody, G. (1998). Sibling relationship quality: Its causes and consequences. Annual Review of Psychology, *49*, 1-24.
- Brody, G., Stoneman, Z., & Gauger, K. (1996). Parent-child relationships, family problem solving behavior, and sibling relationship quality: The moderating role of sibling temperaments. Child Development, *67*, 1289-1300.
- Cantwell, D. P. (1985). Hyperactive children have grown up. Archives of General Psychiatry, *42*, 1026-1028.
- Cantwell, D. P. (1996). Attention deficit disorder: A review of the past 10 years. Journal of the American Academy of Child and Adolescent Psychiatry, *35*(8), 978-988.
- Drehmer, D. E., & LaVan, H. (1999). Diagnosing and making reasonable accommodation under ADA for attention-deficit hyperactivity disorder in adults. Advanced Management Journal, *64*, 28-34.
- Faraone, S. V., Biederman, J., Mennin, D., Gershon, J., & Tsuang, M. T. (1996). A prospective four-year follow-up study of children at risk for ADHD: Psychiatric, neuropsychological, and psychosocial outcome. Journal of the American Academy of Child and Adolescent Psychiatry, *35*, 1449-1460.



Faux., S. A. (1993). Siblings of children with chronic physical and cognitive disabilities. Journal of Pediatric Nursing, 8, 305-317.

Furman, W., & Buhrmester, D. (1985). Children's perceptions of the qualities of sibling relationships. Child Development, 56, 448-461.

Gallo, A. M., Breitmayer, B. J., Knafel, K. A., & Zoeller, L. H. (1993). Mothers' perceptions of sibling adjustment and family life in childhood chronic illness. Journal of Pediatric Nursing, 8(5), 318-324.

Hansen, C., Weiss, D., & Last, C. G. (1999). ADHD boys in young adulthood: Psychosocial adjustment. Journal of the American Academy of Child and Adolescent Psychiatry, 38, 165-171.

Heiligenstein, E., Conyers, L. M., & Berns, A. R. (1998). Preliminary normative data on DSM-IV attention deficit hyperactivity disorder in college students. Journal of American College Health, 46, 185-188.

Heiligenstein, E., Guenther, G., & Levy, A. (1999). Psychological and academic functioning in college students with attention deficit hyperactivity disorder. Journal of American College Health, 47, 181-185.

Irish, D. P. (1964). Sibling interaction: A neglected aspect of family life research. Social Forces, 42, 279-288.

Kendall, J. (1997). The use of qualitative methods in the study of wellness with attention deficit hyperactivity disorder. Journal of Child and Adolescent Psychiatric Nursing, 10, 27-39.

Kendall, J. (1998). Outlasting disruption: The process of reinvestment in families with ADHD children. Qualitative Health Research, 8, 839-858.

Kendall, J. (1999). Sibling accounts of attention deficit hyperactivity disorder (ADHD). Family Process, 38(1), 117-136.

Lewis, K. (1992). Family functioning as perceived by parents of boys with attention deficit disorder. Issues in Mental Health Nursing, 13, 369-386.

Lewis-Abney, K. (1993). Correlates of family functioning when a child has attention deficit disorder. Issues in Comprehensive Pediatric Nursing, 16, 175-190.

Lindsey, J. D., & Stewart, D. A. (1989). The guardian minority: Siblings of children with mental retardation. Education & Training in Mental Retardation, 24(4), 291-296.

Mash, E. J., & Terdal, L. G. (Eds.) (1997). Assessment of childhood disorders. New York: Guilford Press.

McGuire, S. A. (1994). A longitudinal analysis of sibling differential experiences and children's social competence and behavior problems during childhood (Doctoral dissertation, Pennsylvania State University, 1993). Disseration Abstracts International, 54(12-A), 4600.

Mekos, D. J. (1993). As different as day and night: Understanding sibling differences in problem behavior (Doctoral dissertation, University of Virginia, 1993). Disseration Abstracts International, 54(6-B), 3362.

Smith, A. D. (1999). The influence of family relationships on the psychological adjustment and peer competence of siblings of children with attention-deficit hyperactivity disorder (Doctoral dissertaion, University of Georgia, 1998). ). Disseration Abstracts International, 60(2-B), 0843.

Stocker, C., Dunn, J., & Plomin, R. (1989). Sibling relationships: Links with child temperament, maternal behavior, and family structure. Child Development, 60, 715-727.

Stocker, C., Lanthier, R., & Furman, W. (1995) The Adult Sibling Relationship Questionnaire. Denver, Co: University of Denver.

Stocker, C. M., Lanthier, R. P., Furman, W. (1997). Sibling relationships in early adulthood. Journal of Family Psychology, 11, 210-221.

Summers, C. R., White, K. R., & Summers, M. (1994). Siblings of children with a disability. Psychosocial Perspectives on Disability, 9, 169-184.

Wender, P. H. (1995). Attention-Deficit Hyperactivity Disorder in Adults. New York, NY: Oxford University Press.

Table 1

<u>Description of Participants</u>			
	<u>Nondisordered Group</u>	<u>ADHD Group</u>	<u>Overall</u>
<u>Number</u>	43	10	53
Women	26	5	31
Men	17	5	22
<u>Average Age (in years)</u>	19.04 (1.02)	19.3 (1.16)	19.09(1.04)
<u>Average Age of Sibling</u>	20.69 (6.19)	18.33 (4.82)	20.27 (6)
<u>Average Age Difference     Between Siblings</u>	4.86 (4.12)	4.33 (3.08)	4.76 (4.13)
<u>Number Reporting on</u>			
Sister	20	3	23
Brother	20	7	27
<u>Percentage Same     Gender as Self</u>	59%	40%	51%
<u>Percentage Younger     Than Sibling</u>	59%	3%	51%
Women	73%	2%	77%
Men	29%	4%	32%

Note. Standard deviations are in parentheses.

Table 2

Mean Scores for ADHD Sibling Group and Non-Disordered Group

Subscale	Sibling Group		Overall
	ADHD	Non-Disordered	
Warmth *	3.10 (.80)	3.34 (.77)	3.29 (.77)
Conflict *	2.59 (.62)	2.30 (.63)	2.36 (.63)
Rivalry **	.867 (.76)	.868 (.60)	.868 (.62)

Note. Standard deviations are in parentheses.

\* Scores could range from 1 to 5

\*\* Scores could range from 0 to 2



## Appendix A

## Adult Sibling Relationship Questionnaire

- 1) How much do you and this sibling have in common?
- 2) How much do you talk to this sibling about things that are important to you?
- 3) How much does this sibling talk to you about things that are important to him or her?
- 4) How much do you and this sibling argue with each other?
- 5) How much does this sibling think of you as a good friend?
- 6) How much do you think of this sibling as a good friend?
- 7) How much do you irritate this sibling?
- 8) How much does this sibling irritate you?
- 9) How much does this sibling admire you?
- 10) How much do you admire this sibling?
- 11) Do you think your mother favors you or this sibling more?
- 12) Does this sibling think your mother favors him/her or you more?
- 13) How much does this sibling try to cheer you up when you are feeling down?
- 14) How much do you try to cheer this sibling up when he or she is feeling down?
- 15) How competitive are you with this sibling?
- 16) How competitive is this sibling with you?
- 17) How much does this sibling go to you for help with non-personal problems?
- 18) How much do you go to this sibling for help with non-personal problems?
- 19) How much do you dominate this sibling?
- 20) How much does this sibling dominate you?

- 21) How much does this sibling accept your personality?
- 22) How much do you accept this sibling's personality?
- 23) Do you think your father favors you or this sibling more?
- 24) Does this sibling think your father favors him/her or you more?
- 25) How much does this sibling know about you?
- 26) How much do you know about this sibling?
- 27) How much do you and this sibling have similar personalities?
- 28) How much do you discuss your feelings or personal issues with this sibling?
- 29) How much does this sibling discuss his or her feelings or personal issues with you?
- 30) How often does this sibling criticize you?
- 31) How often do you criticize this sibling?
- 32) How close do you feel to this sibling?
- 33) How close does this sibling feel to you?
- 34) How often does this sibling do things to make you mad?
- 35) How often do you do things to make this sibling mad?
- 36) How much do you think that this sibling has accomplished a great deal in life?
- 37) How much does this sibling think that you have accomplished a great deal in life?
- 38) Does this sibling think your mother supports him/her or you more?
- 39) Do you think your mother supports you or this sibling more?
- 40) How much can you count on this sibling to be supportive when you are feeling stressed?

- 41) How much can this sibling count on you to be supportive when he or she is feeling stressed?
- 42) How much does this sibling feel jealous of you?
- 43) How much do you feel jealous of this sibling?
- 44) How much do you give this sibling practical advice? (e.g. household or car advice)
- 45) How much does this sibling give you practical advice?
- 46) How much is this sibling bossy with you?
- 47) How much are you bossy with this sibling?
- 48) How much do you accept this sibling's lifestyle?
- 49) How much does this sibling accept your lifestyle?
- 50) Does this sibling think your father supports him/her or you more?
- 51) Do you think your father supports you or this sibling more?
- 52) How much do you know about this sibling's relationships?
- 53) How much does this sibling know about your relationships?
- 54) How much do you and this sibling think alike?
- 55) How much do you really understand this sibling?
- 56) How much does this sibling really understand you?
- 57) How much does this sibling disagree with you about things?
- 58) How much do you disagree with this sibling about things?
- 59) How much do you let this sibling know you care about him or her?
- 60) How much does this sibling let you know he or she cares about you?
- 61) How much does this sibling put you down?

- 62) How much do you put this sibling down?
- 63) How much do you feel proud of this sibling?
- 64) How much does this sibling feel proud of you?
- 65) Does this sibling think your mother is closer to him/her or you?
- 66) Do you think your mother is closer to you or this sibling?
- 67) How much do you discuss important personal decisions with this sibling?
- 68) How much does this sibling discuss important personal decisions with you?
- 69) How much does this sibling try to perform better than you?
- 70) How much do you try to perform better than this sibling?
- 71) How likely is it you would go to this sibling if you needed financial assistance?
- 72) How likely is it this sibling would go to you if he or she needed financial assistance?
- 73) How much does this sibling act in superior ways to you?
- 74) How much do you act in superior ways to this sibling?
- 75) How much do you accept this sibling's ideas?
- 76) How much does this sibling accept your ideas?
- 77) Does this sibling think your father is closer to him/her or you?
- 78) Do you think your father is closer to you or this sibling?
- 79) How much do you know about this sibling's ideas?
- 80) How much does this sibling know about your ideas?
- 81) How much do you and this sibling lead similar lifestyles?

\* Permission to use the ASRQ was granted by the author.





*Now we would like some information about your other siblings*

**DO NOT INCLUDE THIS SIBLING HERE**

	Age	Gender		Relationship (bio, step, twin)	ADHD Diagnosis	
Sib #1	_____	M	F	_____	yes	no
Sib #2	_____	M	F	_____	yes	no
Sib #3	_____	M	F	_____	yes	no
Sib #4	_____	M	F	_____	yes	no
Sib #5	_____	M	F	_____	yes	no
Sib #6	_____	M	F	_____	yes	no
Sib #7	_____	M	F	_____	yes	no
Sib #8	_____	M	F	_____	yes	no

Turn the page and begin the Adult Sibling Relationship Questionnaire

Appendix C

Certification of Participant Consent

Investigator: Paula Aguilar

I, \_\_\_\_\_ hereby certify that I have been informed by Paula Aguilar about the research on sibling relationships. I have been told about the procedures, what my part in them will be, and the time involvement for the experiment. I understand that there are no anticipated risks involved in this research. I understand that any records that can identify me will be kept confidential.

I understand that I have the right to ask questions at any time and that I should contact Dr. Linda Leal at 581-2158 for answers about the research.

I understand that my participation is voluntary and that I may refuse to participate or withdraw my consent and stop taking part in the research at any time without penalty or prejudice.

I hereby freely consent to take part in this research project.

\_\_\_\_\_  
Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Experimenter

## Appendix D

## Debriefing Statement

Project Title: Adult Perceptions of Their Relationships with Siblings Diagnosed with Attention Deficit Hyperactivity Disorder

Investigator: Paula Aguilar

There has been considerable speculation about Attention Deficit Hyperactivity Disorder (ADHD), which affects social and interpersonal behavior, and how it affects relationships with those closest to the diagnosed. In previous studies it has been found that families, and siblings in particular, have reported significant impacts on sibling relationships when one sibling exhibits behaviors associated with ADHD. The purpose of this study is to examine how young adults' perceptions of their relationships with their siblings with ADHD differ from the perceptions of other young adults who have siblings without ADHD.

Using the Adult Sibling Relationship Questionnaire (Stocker, Lanthier, and Furman, 1995), this study examined perceptions of adult sibling relationships across the two conditions. Variables examined were perceptions of warmth, conflict and rivalry.

For results and additional information, you may Dr. Linda Leal, Department of Psychology, Eastern Illinois University, Charleston, IL 61920, 217-581-2158.

Should participating in this study evoke any painful or difficult emotions or feelings, we encourage you to seek support and counsel at the Counseling Center, 581-3413. Counseling Center hours are Monday – Friday, 8 AM –12 PM and 1 PM– 4:30 PM.

Please do not comment about this study with friends or classmates until testing of all participants has concluded.

Thank you for your participation.