How Gender and ADHD Traits Affect Romantic Relationships

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Abstract

Studies have shown how Attention-Deficit/Hyperactivity Disorder (ADHD) can have negative effects on peer relationships in children and adolescents, but much less is known about romantic relationships. From that scan of literature, we know that those who possess ADHD tend to have trouble with both relationship dissatisfaction and dissolution. Further, some studies report girls with ADHD to have more trouble making friends than boys and women with ADHD to be more negatively affected in their marriage than their male counterparts. This study seeks to examine whether ADHD and biological sex interact to affect the quality of romantic relationships in college students (N = 200, 82.5% female, M age = 19.67 years old). Symptomology and relationship quality were assessed using the Barkley Adult ADHD Rating Scale-IV, IOWA couples conflict scale, infidelity and communication questionnaires, and the Network of Relationships Inventory - Behavior Systems Version. The most salient findings were that participants with high ADHD symptomatology reported more negative relationship qualities than the low ADHD trait group, and females had more positive relationship qualities than males. Interaction effects in 2 (gender: male vs. female) X 2 (ADHD symptomatology: low vs. high) analyses of variance (ANOVAs) were not detected, but pairwise group results sometimes indicated the possibility of sex x ADHD interaction. Overall, the results suggest that both sex and ADHD traits can play an important role in quality of romantic relationships.

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Attention-Deficit/Hyperactivity Disorder (ADHD) is a behavioral disorder consisting of core symptoms of inattention and hyperactivity-impulsivity that interferes with social, academic, and other functioning in life (*Diagnostic and Statistical Manual of Mental Disorders, 5th ed.*, DSM-5; American Psychiatric Association [APA], 2013). ADHD affects 3-7% of school children and often persists into adulthood, though impairment may decrease in adulthood (Barkley, 2015; Hoza, 2007). Girls have a lower prevalence of ADHD than boys, but this could be because of teacher bias in identifying children, or because of girls typically being more inattentive than hyperactive, compared to boys (Hoza, 2007). Diagnosable childhood symptoms can persist into adulthood more than half of the time (APA, 2013). Adults with ADHD tend to be less overtly overactive, but may still exhibit inattention, disorganization, and impulsive behavior (APA, 2013). Research abounds on social impairment due to ADHD in childhood peer and family relationships, but not for older individuals in romantic relationships. There are also relatively few studies that document the distinct outcomes of men and women in this domain. This study will be focusing on romantic relationships and potential differences between those with and without ADHD, including biological sex as an additional independent variable.

Peer Impairment in Children with ADHD

The developmental precursor to romantic relationships is friendships, and therefore,it is important to review the research on peer relationships of children with ADHD. Hoza (2007) notes that children with ADHD tend to struggle in these relationships due to their tendency to interrupt, talk excessively, be noisy, and lack patience in waiting for their turn. They can also be more emotionally intense in interactions, and this may be especially true for those who have the combined presentation of ADHD (i.e., both elevated inattention and hyperactivity-impulsivity;

APA, 2013). Those with the predominantly inattentive presentation tend to be more withdrawn, passive, shy, and unassertive, and yet still experience significant social impairment. Inattention, generally, may limit a child's focus on subtle social cues or hamper their ability to acquire social skills through observational learning, therefore limiting one's ability to adequately choose from a wide range of appropriate responses in social situations (Hoza, 2007).

Evidence suggests that the negative peer relationships of children with ADHD stem from frequent aversive social behaviors, versus a lack of positive behaviors. Teamwork and social interactions with groups of previously-unaffiliated children ages 8-10 shows that increased yelling or overreactions associated with emotional dysregulation in kids with ADHD lead to negative peer ratings and low perceived likeability (Lee et al., 2018). Such social performance difficulties are thought to relate to deficits in social information processing, emotion regulation, and accuracy of perception of social performance (Barkley, 2015). Emotion dysregulation is a key aspect of ADHD, and includes difficulty masking frustration or intense emotional expressiveness (Lee et al., 2018). Hyperactivity and impulsivity also contribute to unrestrained behavior that can be seen as rude to peers (Hoza, 2007). Children with ADHD, especially those who have comorbid oppositional defiant disorder (ODD) or conduct disorder (CD), engage in more aggressive behaviors, which also strongly correlate with peer rejection. Unfortunately, kids with ADHD are both more likely to be bullied and to bully others, though they may not realize the latter. Given all of these socially abrasive behaviors, it is not surprising that peers are likely to socially reject children with ADHD fairly quickly in new settings or groups (Barkley, 2015). Interestingly, social impairment is most predicted by hyperactive/impulsive (HI) symptoms in middle and early childhood, but is predicted more by inattention in adolescence. Interrupting and

intruding (a HI symptom), however, predicted social impairment across all age groups (Zoromski, Owens, Evans, & Brady, 2015).

Generally, it is not uncommon for children who experience peer rejection to cluster together in friendship groups; those with ADHD who experience social maladjustment may also affiliate with other rejected peers, who may in turn be role models for socially unacceptable behavior (Hoza, 2007; Hoza, Murray-Close, Arnold, Hinshaw, & Hechtman, 2010). The social self-evaluations of children with ADHD tend to be inflated when compared to the estimates of peers and teachers, demonstrating a poor social acuity that further complicates any progress toward social competence. These positively biased self-views could result from a combination of cognitive immaturity, neuropsychological deficits, ignorance of incompetence, or self-protection (Hoza, 2007; Hoza, Murray-Close, Arnold, Hinshaw, & Hechtman, 2010). Children with ADHD with **accurate** social perception have been found to be more friendly, responsive, engaged, and less aggressive, as compared to their ADHD peers with less accurate perceptions (Barkley, 2015). While self-reports of social performance may be inaccurate when one has ADHD, one longitudinal study from age 8 to 13 showed that self-evaluation tend to become more accurate with age in those with ADHD (Hoza, Murray-Close, Arnold, Hinshaw, & Hechtman, 2010).

Despite this trend toward more accurate social self-perception, adolescents with ADHD also tend to be rejected by their peers, have few close friends who are more antisocial, and are more involved in maladaptive activities, like substance use, than comparison adolescents (Bagwell, Molina, Pelham, & Hoza, 2001). Poor insight and self-monitoring in ADHD makes these adolescents especially susceptible (Barkey, 2015). Unfortunately, children tend to be negatively biased toward peers with ADHD once they have developed a bad social reputation. Children tend to notice negative behaviors and ignore the positive ones of their unpopular peers

with ADHD (Lee et al., 2018). These reputations do not go away even if the negative behaviors subside (through development or intervention), which feeds a cycle of exclusion and potential victimization (Hoza, 2007). However, Hoza notes that having even one "best friend" serves as a protective factor against peer rejection and victimization. Greater intimacy in the dyadic friendship serves as an additional protective factor against social problems.

Boys vs. Girls with ADHD

Research suggests that both boys and girls with ADHD are likely to exhibit impairment in peer relationships, but it is unclear if one or the other is worse off (Hoza, 2007), and this may partly be due to the relative lack of research on affected girls. In one study, the friendships of girls ages 6-12 who attended a five-week summer camp were examined (Blachman & Hinshaw, 2002). Those with ADHD had higher relational aggression (e.g., gossiping, spreading rumors, intentional exclusion) and conflict in their friendships than non-diagnosed girls, but they also had the same amount of positive features in their relationships (Blachman & Hinshaw, 2002). Research has found general trends that girls with ADHD engage in more overt forms of relational aggression than comparison peers, the latter of whom use relational aggression in covert, planned ways that yield more social power (Barkley, 2015).

Girls with ADHD are likely to have fewer mutual friends or have no friends when compared to non-diagnosed (ND) girls, and to be rated generally as less popular (Blachman & Hinshaw, 2002). However, when verbal IQ score was accounted for, the number of friends one had, and not ADHD status, was the only predictor for popularity and peer regard. This could suggest that difficulty in verbal abilities and expression that may be associated with ADHD play a greater role in the social functioning of females with ADHD than their psychiatric symptoms, per se. Data further suggested that girls with the combined presentation of ADHD (ADHD-C)

had trouble maintaining friendships in their peer group at an earlier age, as compared to those with the predominantly inattentive presentation (ADHD-IA; Blachman & Hinshaw, 2002).

Very few studies have examined both boys and girls at the same time with regards to peer impairment. One study suggested that both were equally impaired in their relationships, less socially preferred, and had fewer dyadic friendships than comparison peers (Hoza et al., 2005). Though they themselves were less liked, their own preferences for liked peers were similar to those of non-diagnosed comparison children (Hoza et al., 2005). On the other hand, Abikoff and colleagues (2002) studied gender and comorbidity differences in children with ADHD, and found that boys and girls behavior differed significantly in most categories. Boys had higher rates of disruption in all classroom behaviors, while the girls' only behavioral difference was asking the teacher more questions than comparison girls. Impulsivity, physical aggression, verbal aggression, rule-breaking, and disruption were consistent across comparison and diagnosed girls, and occurred at much lower rates than boys (Abikoff et al., 2002). It could be possible that higher levels of impulsivity and aggression in boys with ADHD is a catalyst for poorer social outcomes. Boys and girls with ADHD did, however, have similar rates to each other of nondisruptive ADHD behaviors, like minor motor movements or being off-task. It could also be that attention spans play a bigger role for girls in social relationships, and that both boys and girls with ADHD could be equally impaired in relationships due to gender-stereotyped expectations. Comorbidity status did not change on the observed sex differences of the behavior (Abikoff et al., 2002).

Married Couples

Much of the literature on romantic relationships of people with ADHD has focused on married couples. Adults with ADHD report lower marital satisfaction than those without ADHD,

and are more likely to be married multiple times (Murphy & Barkley, 1996). They are also more likely to have children diagnosed with ADHD, which could possibly put a strain on the relationship. Spouses of individuals with ADHD report lower intimacy than spouses of non-diagnosed (ND) individuals, and this was especially true for males; intimacy, in turn, was meaningfully associated with relational satisfaction (Ben-Naim, Marom, Krashin, Gifter, & Arad, 2017).

When married couples with one ADHD partner filled out the Martial Impact Checklist in a study by Robin and Payson (2002), a clear ranking of the least desirable behaviors occurred. Both the ND partner and ADHD partner rated "doesn't remember being told things," "says things without thinking," "zones out in conversations," "has trouble dealing with frustration," "has trouble getting started in a task," "under-estimates time needed to complete a task," "leaves a mess," and "doesn't finish household projects" as significant issues (i.e., making a partner feel unloved, unimportant, ignored), in descending order of impact. The ND partners alone also included "doesn't plan ahead" and "doesn't respond when spoken to" as troublesome, while ADHD partners themselves included their behavioral patterns of "tolerates too much and blows up inconsistently" and "tries to do too much in a short time" as difficult for their partner to bear (Robin & Payson, 2002). Consistently, five of these recurring behaviors deal with time management, while three deal with communication, and one with self-regulation. There were some sex differences in that female partners with ADHD were rated more negatively than male partners with ADHD for the same behaviors, suggesting ADHD may be particularly abrasive to ND men (Robin & Payson, 2002), perhaps because it more directly violates gender-stereotyped expectations.

Other Romantic Relationships in Adolescence and Young Adulthood

Research has more recently focused on the romantic adjustment of unmarried adolescents and young adults. Rokeach and Wiener (2018) investigated romantic involvement, relationship content (e.g., couple's activities and pastimes), relationship quality, partner identity, and cognitive and emotional processes in romantic relationships in adolescents with and without ADHD. They found that adolescents with ADHD had more romantic partners over time than their peers, but age at first romantic relationship was the same. Those with ADHD had twice the lifetime sexual partners than ND peers, which research shows could have negative impacts for mental health (Rokeach & Wiener, 2018). Females with ADHD had shorter romantic relationships than ND peers, and results specifically suggested that poor social information processing and deficits in social skills affect romantic relationships as well as friendships for girls. Regarding negative relational outcomes, two studies found that females who had childhood ADHD experienced more sexual victimization (e.g., rape, harassment) in their life than ND peers, and also engaged in more risky sexual behavior (Guendelman, Ahmad, Meza, Owens, & Hinshaw, 2016; White & Buehler, 2012). It is suggested that symptoms of impulsivity and inattention mediate their incautious interaction with sexually aggressive men (White & Buehler, 2012).

Flory, Molina, and Pelham's (2006) comparison of young adult males with childhood symptoms of ADHD to ND peers by showed that childhood ADHD correlated with earlier initiation of sexual activity, more sexual partners, more casual sex, and more pregnancies. Adolescents with and without ADHD, however, have not been shown to differ on levels of aggression or relationship quality, according to research by Rokeach and Wiener (2018). This runs contrary to evidence from married couples (Ben-Naim et al., 2017; Murphy & Barkley, 1996); it could be that adolescents ages 13-18 have less demanding relationships than adults,

leading to less relational negativity (Rokeach & Wiener, 2018). Another study by Sacchetti and Lefler (2017) also found that college students with ADHD symptomatology experience increased social impairment and higher levels of anger related to romantic partners, but not lower rates of relationship satisfaction (although Sacchetti and Lefler suggest interpreting the latter with caution).

One study looking at coping strategies of university students with ADHD found that the comorbidity of ODD and ADHD has significant impact on stress, relationship satisfaction, and coping strategies in intimate relationships (Overbey, Snell, & Callis, 2011). Research has shown that well over half of children with ADHD also meet diagnosis criteria for ODD, making it the most prevalent comorbid psychiatric disorder (Pliszka, Carlson, & Swanson, 1999). Participants with symptoms of both ODD and ADHD had more stressors and different patterns of coping than those with just ADHD (Overbey et al., 2011). These participants were less likely to connect with others to solve problems than participants with just ADHD symptoms alone, who were relatively more willing to seek out social support and grow from mistakes when confronted (Overbey, Snell, & Callis, 2011). Higher amounts of ADHD symptoms generally correlated with greater stress and maladaptive coping strategies (e.g., disengage by denying the problem, using wishful thinking, and using alcohol), but only the symptoms of inattentiveness correlated with lower relationship satisfaction. Neither the ADHD or ODD+ADHD group endorsed significant use of the effective strategies of humor, problem analysis, or increased affection as a way to cope with romantic relational problems (Overbey, Snell, & Callis, 2011).

Other research in college students has suggested that emotional intelligence (EI) may mediate the relationship between ADHD and low relational satisfaction (Pollock, Khaddouma, Huet-Cox, Fillauer, & Bolden, 2017). Bruner, Kuryluk, and Whitton (2015) examined whether

emotion regulation difficulties, perceived stress, or hostile relationship conflict (e.g., higher verbal aggression and anger) mediated the relationship between ADHD symptomatology and lower relationship satisfaction in young adults. Increased hyperactive-impulsive and inattentive symptoms correlated with lower relationship satisfaction for females only (Bruner, Kurluk, & Whitton, 2015). Only hostile relationship conflict negatively impacted relationship satisfaction for men. Females with ADHD reported heightened conflict with their partners, higher levels of emotional regulation difficulties, higher perceived stress, and hostile relationship conflict (Bruner, Kurluk, & Whitton, 2015).

Individuals with ADHD-C symptomatology in both genders report lower relationship satisfaction than ND peers (Bruner, Kurluk, & Whitton, 2015). When conflict resolution and problem solving behavior were compared in young adult partners with ADHD-C, ADHD-I, or no diagnosis, one study showed that ADHD-C couples had more negative and less positive behavior, as well as reduced relationship satisfaction (Canu, Tabor, Michael, Bazzini, & Elmore, 2014). ADHD-C couples more often used negative nonverbal communication, negative statements, defensiveness, put-downs, and complaints, and in conflict, and described more often failing to disengage from conflict, too. In contrast, ADHD-I couples were found to have similar behaviors to ND couples, as well as a low engagement style that potentially minimizes damaging escalation (Canu, Tabor, Michael, Bazzini, & Elmore, 2014).

The Current Study

This study examined how sex and ADHD traits impact romantic relationships in young adults. Relationship quality and conflicts will be examined in college students with high and low degrees of ADHD traits. Given previous research, sex is thought to possibly be a moderating variable on adjustment in romantic relationships due to the different social roles and expectations

that women and men experience. Females with ADHD in relationships were expected to be more negatively adjusted since they may have more trouble sex-stereotyped behavior in a couple, like "remembering to clean dishes." However, when it comes to the effect of ADHD symptoms themselves, women with ADHD, who more frequently have the inattentive presentation, may also have a better conflict-resolution style and higher relationship satisfaction as compared to their more frequently hyperactive-impulsive male counterparts. Since research also suggests mixed results on whether or not girls have worse general social functioning than boys, there could also be no moderating effect with gender in romantic relationships. Overall, clarification on how gender moderates effects of ADHD in romantic relationships was investigated in this study.

Regarding specific hypotheses, the first hypothesis follows the general literature and is that those with ADHD symptomatology were predicted to have overall lower relationship quality and more relational conflicts than peers with fewer ADHD traits. The second hypothesis is that females with high ADHD symptomatology were predicted to report lower relationship quality and more relational conflicts than males with ADHD symptomatology. Given the unclear nature of existent findings, no specific hypothesis is offered regarding interaction effects of sex and ADHD, but this is also a salient research direction of the study.

Method

Participants

Initially there were 242 total participants but any participant who had never been in a relationship or did not complete the study was excluded, leaving a total of 200 participants that were recruited through SONA from the Psychology Department of Appalachian State University during the spring semester of 2020. Students could participate if they were not currently in a

relationship by reporting on their prior relationship (58% reported on a current relationship). Participants earned course Experiential Learning Credits as compensation for their time; all were enrolled in psychology classes. Out of the 200 participants, 165 (82.5%) were female and 35 (17.5%) were male. Ages ranged from 18 to 28 years old, with a mean of 19.67 years old. The majority were heterosexual (78.5%), followed by bisexual (15.5%), and homosexual (3.5%), with other sexualities totaling 2.5%. The majority were also white (83%), followed by mixed-race (8.5%), then Hispanic or Latino (4.5%), with Asian/Asian Indian and Native American making up the remaining 3%. Tables 1 and 2 present additional descriptive detail regarding the current sample and their romantic relationships.

Participants were divided into high and low symptomatology groups by looking at the mean ADHD current symptoms score for their sex (for females M = 33.18, for males M = 33.89) and designating anyone higher than the mean score (34 and above) as high symptomatology and anyone lower (33 and below) as low symptomatology. This division occurs roughly at a point where one would designate the 18 symptoms as occurring "sometimes."

Measures

Demographics. The demographics questionnaire was created by the current researchers to assess demographic information. This information included biological sex, gender identity, sexual orientation, age, race, and ethnicity.

BAARS-V. The Barkley Adult ADHD Rating Scale–V (BAARS-V) consists of 18 items measuring childhood symptoms of ADHD (inattention, hyperactivity, impulsivity) between the age of 5 and 12 according to the DSM (4th ed., text rev.; DSM-IV-TR; APA, 2000) criteria (Barkley, 2011). Individuals indicate how true an item is (e.g., "Don't listen when spoken to directly") on a 4-point scale ranging from 1 = *never or rarely* to 4 = *very often*. Cronbach's alpha

(*a*) was calculated to be .94 in the current sample. The BAARS-V was used in the current study for descriptive purposes, only.

DSM-5 Checklist: Self-report, Current 18-items. An 18-item questionnaire that directs participants to indicate how frequently they have experienced ADHD-related symptoms over the past six months using a 4-point Likert scale format identical to that of the BAARS-V. The wording of this current self-report copies the ADHD symptoms that have been rewritten in the DSM-5 (APA, 2013) to be more sensitive to the manifestation of ADHD in adulthood. Scores on this questionnaire were used to designate high- and low-ADHD groups (see above). Alpha for this scale was found to be .94 in the current study.

Depression Anxiety Stress Scale -21 item version (DASS-21). The Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995) is a self-report questionnaire that includes 21 items that employ a 4-point Likert format related to perceived stress in addition to depression and anxiety over the preceding week. There are 7 items per subscale. Construct validity and internal consistency for DASS has been found to be excellent (a = .90, Stress scale; Henry & Crawford, 2005). The data is included for descriptive purposes only. The subscale's internal consistency (*a*) herein were .92 (depression subscale), .87 (anxiety), and .85 (stress).

Ten-Item Personality Inventory (TIPI). Participants rated how much 10 adjectives described themselves, with two items for each of the Big-5 traits (Extraversion, Openness, Agreeableness, Conscientiousness, and Emotional Stability; Gosling, Rentfrow, & Swann, 2003). The 10 personality items were rated on a Likert scale ranging from 1 = *disagree strongly* to 7 = *agree strongly.* Examples include "Extraverted, enthusiastic," "Critical, quarrelsome," "Dependable, self-disciplined," "Anxious, easily upset," and "Open to new experiences, complex." Five items are reversed-scored. The TIPI has adequate convergent and discriminant

validity, test-retest reliability, patterns of external correlation that resemble the much-longer Big-5 Personality Inventory, and demonstrates convergence between self- and observer- ratings (Gosling, Rentfrow, & Swann, 2003). The data obtained by this measure is used for descriptive purposes only. Coefficient alphas were calculated, and were as follows: .70 (extraversion subscale), .78 (agreeableness subscale), .49 (conscientiousness subscale), .65 (emotional stability subscale), .38 (openness subscale).

Relationship background questions. Basic relationship questions were created by the researchers of the study to assess whether or not the participant is in a relationship or has ever been in one, level of commitment with their partner, infidelity (both own behavior, 5 items, and worry about partner's behavior, 2 items; see Appendix C), total number of romantic relationships, age at onset of dating, and duration of relationships. The items were scored such that a 1 = having committed an act of infidelity (e.g., for *Have you ever had thought of engaging in physically romantic behavior with someone other than your partner*, answering *yes*), 2 = *maybe*, and 3 = *no*; a composite score was calculated by taking the average across items. One additional item was adapted from Canu and colleagues (2014) to gauge degree of commitment to the relationship (choices: hanging out, starting to date, dating, seriously dating, considering marriage, engaged, married). Internal consistency was marginally adequate, $a = .67$, for self-reported infidelity, and was good, $a = .80$, for reported concern for partner infidelity.

Relationship Problems Inventory IOWA couples questionnaire. The 33-item couples questionnaire version of the IOWA Family Interaction Rating Scales was created to examine topics that couples tend to have disagreements on (Melby, Ge, Conger, & Warner, 1995). The participant assesses each topic and chooses from a 5-point scale ranging from 5 = *all the time* to 0 = *never* for how often they and their partner disagree or get upset with each other for each

topic. The total score for the 33 items was added up to compute couples' conflict with higher scores meaning higher levels of reported conflict. The current study's alpha was calculated to be .92.

Relationship Communication. This four-item conflict-related measure was created for this study to determine conflict-resolution qualities of the relationships reported on by participants (see Appendix D). An example of an item is *how often do you and your partner resolve conflicts,* with answer choices of *always, most of the time, about half the time, sometimes,* or *never.* Another example is "my partner and I have great conflict-resolution skills" with answer choices of *agree, neutral,* or *disagree*. Other items asked about ease of resolution and participants' opinions of their communication skills. 5-point items were recoded into a 3-point scale (i.e., *always* and *most of the time* = 1, *about half the time* = 2, *sometimes* and *never* = 3). These scores were averaged with numbers closer to 1 meaning the more the participant agrees they have good communication/conflict-resolution skills, averages closer to 2 means the more neutral of a stance the participant took, and averages closer to 3 indicating the more the participant did not think they and their partner had good relational communication. The alpha was calculated to be .85.

The Networks of Relationships Inventory- Behavioral Systems Version (NRI-BSV). The Networks of Relationships Inventory–Behavioral Systems Version (NRI-BSV; Furman & Buhrmester, 2009) assesses how relationships fulfill the functions of three central behavioral systems: attachment, caregiving, and affiliation (Furman & Buhrmester, 2009). This study only used questions pertaining to romantic partners, yielding a 24-item survey rated on a 5-point frequency scale from *little or none* to *the most*. It assesses five support features (Provides Secure Base, Seeks Secure Base, Provides Safe Haven, Seeks Safe Haven, Companionship) and three

negative interactions (Conflict, Antagonism, Criticism), with three items per subscale. Two second-order factors are computed by averaging the five support and three negative interaction scales. The NRI-BSV has strong internal consistency relating to romantic partners and all scales have sufficient variability (Furman & Buhrmester, 2009). The current study's alphas were calculated to be .78 (seeks secure base), .89 (conflict), .92 (seeks safe haven), .78 (antagonism), .68 (provides secure base), .83 (criticism), 90 (provides safe haven), and .73 (companionship).

Procedure

All surveys were completed online using the Qualtrics data collection platform. Participants were recruited via Appalachian State University's online psychology department research system, SONA. After finishing the informed consent (see Appendix B), participants completed a basic demographics questionnaire, relationship background questions, childhood and current ADHD symptoms scales, TIPI, DASS, infidelity questionnaire, communication questionnaire, IOWA couples conflict scale, and the NRI-BSV. A debriefing page was included at the end of the survey which included referral information to counseling provided by the university. All surveys were almost always completed in under 30 minutes, and no adverse reactions were reported. All procedures were approved by the university's Institutional Review Board (see Appendix A).

Data Analytic Plan

Planned analyses included 2 (gender: male vs. female) X 2 (ADHD symptomatology: low vs. high) analysis of variance (ANOVAs) with IOWA conflict scores, self-reports of communication and conflict-resolution abilities, one's own infidelity, fear of partner infidelity, and the NRI-BSV relationship quality factors (seeks secure base, conflict, seeks safe haven, antagonism, provides secure base, criticism, provides safe haven, and companionship) as the

dependent variables, Follow-up Tukey pairwise comparisons were also planned to better elucidate interaction effects, and implemented even if the 2 x 2 ANOVA results failed to meet the traditional threshold for statistical significance ($p < .05$). The data analytic plan was fairly liberal given limited males in the sample and time constraints, and did not include adjustments to alpha level for multiple comparisons (e.g., Bonferroni corrections).

Results

As planned, 2 x 2 ANOVAs were used to examine main and interaction effects of ADHD and sex on dependent variables (see Tables 3 and 4 for additional detail regarding group *M* [SD] and group difference effect sizes). No effects were statistically significant (at the $p < .05$ level) for the IOWA conflict measure except for the ADHD symptomatology factor. The interaction effect was not statistically significant, $F(1, 196) = .86$, $p = .36$, nor was the main effect for sex, $F(1, 196) = .21$, $p = .65$ (female $M = 25.07$, $SD = 18.13$; males $M = 27.31$, $SD = 19.55$). In contrast, the main effect for ADHD symptomatology was statistically significant, $F(1, 196) = 7.13$, $p = .01$, with the high symptomatology group ($M = 31.68$, $SD = 20.38$) reporting overall more conflict than low symptomatology peers ($M = 20.86$, $SD = 15.22$). Follow-up Tukey pairwise comparisons of the four groups showed that the only two groups that differed significantly were low-ADHD and high-ADHD females (LowF and HighF), with the former reporting lower conflict than the latter (Cohen's $d = .7$).

Next, another 2 x 2 ANOVA was conducted examining main effects and the interaction of gender and ADHD symptomatology on communication. There were no statistically significant findings in this analysis; main effects: sex $F(1, 195) = .37$, $p = .55$ (females $M = 1.60$, $SD = .54$; males $M = 1.56$, $SD = .52$), ADHD symptomatology $F(1, 195) = 3.12$, $p = 0.08$ (high symptomatology $M = 1.72$, $SD = .60$; low symptomatology $M = 1.50$, $SD = .46$), interaction $F(1,$

195) = .42, p = .52. Follow-up Tukey pairwise comparisons of the four groups showed that only the LowF significantly differed from the HighF, with the former reporting lower communication scores than the latter (d = .46).

A 2 x 2 ANOVA examining participant's own infidelity behaviors was conducted. There were no statistically significant results; main effects for sex (female M = 2.99, SD = .58; male M = 2.77, SD = .66) and ADHD symptomatology (high M = 2.90, SD = .56; low M = 2.98, SD = .56) were F(1, 194) = 3.40, p = .07, and F(1, 194) = .26, p = .61, respectively. The interaction was also not significant, F(1, 194) = .05, p =.83, and neither were the follow-up Tukey comparisons. With regards to fear of partner infidelity, the main effect for sex F(1, 193) = .91, p = .34, (female M = 1.89, SD = .79; male M = 1.73, SD = .81) was not significant, but that of ADHD symptomatology was, F(1, 193) = 6.06, p = .02, (high M = 1.68, SD = .76; low M = 2.00, SD = .81). The interaction effect was not significant, however, F(1, 193) = .28, p =.60, and neither were the follow-up Tukey comparisons.

The 2 x 2 ANOVA for NRI-BSV relational conflict (CON) did not yield significant main effects or an interaction effect; sex F(1, 196) = .20, p = .65 (female M = 2.34, SD = .98; males M = 2.43, SD = 1.02), ADHD symptomatology F(1, 196) = 1.28, p = .26 (high M = 2.47, SD = .1.04; low M = 2.26, SD = .94), interaction F(1, 196) = .00, p =.99. Follow-up Tukey comparisons were conducted, also yielding no significant differences. The effects for relational antagonism (ANT) followed the same pattern, sex F(1, 196) = .02, p = .88 (female M = 2.39, SD = .88; male M = 2.36, SD = .92), ADHD symptomatology F(1, 196) = 3.5, p = .06 (high M = 2.51, SD = .94; low M = 2.29, SD = .83), ineraction F(1, 196) = .68, p = .41, and no significant Tukey comparisons.

The 2 x 2 ANOVA for the relational behavior of seeks secure base (SSB; wanting support and encouragement from their partner) did not yield a statistically significant main effect for ADHD symptomatology $F(1, 196) = .79$, $p = .38$, (high $M = 4.13$, $SD = .95$; low $M = 4.24$, $SD = .81$), but did yield a statistically significant main effect for sex $F(1, 196) = 10.01$, $p = .002$, (female $M = 4.28$, $SD = .81$; male $M = 3.78$, $SD = 1.03$). There was no significant interaction effect $F(1, 196) = .18$, $p = .67$, but follow-up Tukey pairwise comparisons of the four groups showed that only the LowF differed from the HighM, with the former reporting higher scores than the latter ($d = .80$). The remaining variables for the NRI-BSV followed the same pattern for the 2 x 2 ANOVAs, with some differences in the follow-up Tukey tests. Seeks safe haven (SSH; wanting comfort from their partner) had significant effects for sex $F(1, 196) = 17.39$, $p < .01$, (female $M = 4.39$, $SD = .80$; male $M = 3.72$, $SD = 1.06$), but not for symptomatology $F(1, 196) = .59$, $p = .45$, (high $M = 4.32$, $SD = .84$; low $M = 4.24$, $SD = .93$) nor the interaction effect $F(1, 196) = .07$, $p = .80$. Follow-up Tukey pairwise comparisons showed that the HighM and LowM were significantly lower from the HighF ($d = .79$ and 1.02, respectively). LowM also had significantly lower scores than LowF ($d = .79$).

The 2 x 2 ANOVA for provides secure base (PSB; giving their partner encouragement and support) had a significant main effect for sex $F(1, 196) = 11.69$, $p = .001$, (female $M = 4.53$, $SD = .56$; male $M = 4.12$, $SD = .84$) but not a significant main effect for ADHD symptomatology $F(1, 196) = .40$, $p = .47$, (high $M = 4.46$, $SD = .63$; low $M = 4.45$, $SD = .63$) or an interaction, $F(1, 196) = .52$, $p = .47$. Follow-up Tukey pairwise comparisons of the four groups showed that the LowM group estimated they less often provide a secure base in their relationships than HighF ($d = .78$) or LowF ($d = .80$). The effects for provides safe haven (PSH; giving their partner comfort) followed the same pattern with sex $F(1, 196) = 1.40$, $p = .24$ (female $M = 4.15$, $SD =$

.92; male M = 3.95, SD = .89), symptomatology, $F(1, 196) = .41$, $p = .52$ (high M = 4.08, SD = .93; low M = 4.15, SD = .91), and the interaction, $F(1, 196) = .17$, $p = .68$, but here the follow-up Tukey comparisons also yielded no significant differences. The effects for companionship (COM; spending time and having fun with their partner) also followed the same pattern with sex, $F(1, 196) = 8.06$, $p = .01$ (female M = 4.25, SD = .70; male M = 3.86, SD = .93), symptomatology, $F(1, 196) = 2.93$, $p = .09$ (high M = 4.08, SD = .84; low M = 4.25, SD = .69), and the interaction, $F(1, 196) = .66$, $p = .42$; however, follow-up Tukey tests did reveal that the HighM group was significantly lower than LowF peers ($d = .91$) on self-rated companionship behavior.

Discussion

Summary of Findings

Though there were clear differences between the sexes and those with high and low ADHD traits, interactions between these two variables were not clearly demonstrated. Direct tests of possible interaction effects consistently were negative, but planned Tukey tests seemed to suggest that some interaction effects might still exist. Results suggest ADHD traits may only most influential in predicting relational conflict and communication skills for women, as those with high ADHD traits had more problematic scores on these indices than women in the low ADHD group but no similar difference appeared in the male groups, though nil differences for male groups may be related to a small sample size. Further, women with high ADHD symptomatology reported themselves to seek safe haven (SSH) in relationships more than high- and low-ADHD males, and these high-ADHD women also reported seeking a secure base in their relationships more than men with low ADHD traits. Such contrasting findings make it hard

to draw a firm conclusion about interactions; since the sample size for the male groups was small, resulting in a lack of power, perhaps detecting interactions is beyond the current design.

As noted, there were significant differences by ADHD symptomatology for conflict, fear of partner infidelity, and criticism. Higher symptomatology was associated with significantly higher scores on relationship conflict, which include behaviors like fighting or arguments. This was especially true of females with high symptomatology versus females with low symptomatology. People with high ADHD traits also had significant fear of their partner cheating, while those with low symptomatology were not as concerned about possible cheating. Higher symptomatology for males and females was associated with significantly more criticism behavior in the relationships, especially when compared to females with low symptomatology.

There were also differences across sexes for seeks secure base (SSB), seeks safe haven (SSH), provides secure base (PSB), and companionship. Females had significantly higher scores for SSB, SSH, PSB, and companionship, as compared to male peers. Follow-up tests showed females in the low-ADHD group reported significantly higher scores for SSB than those in the high-ADHD group, meaning low symptomatology females seek more support and encouragement than high symptomatology females. Follow-up tests also showed that high symptomatology females had significantly higher scores than high and low symptomatology males for SSH, meaning high ADHD trait females was most likely, among all groups, to seek comfort and support from their partner when upset. Both low and high symptomatology females had significantly higher scores for SSH than low symptomatology males, suggesting low symptomatology males seeking the least support in a relationship. Both high and low symptomatology females reported more PSB than low symptomatology men, where low symptomatology men reported they provided the least encouragement and support in their

relationships out of the four groups. High symptomatology males also had significantly lower scores on companionship than low symptomatology females, with these males reporting the least free time and shared fun activities with their partner.

Though there were no main or interaction effects in initial analyses on communication, planned follow-up tests suggested that low symptomatology females rated themselves significantly lower in communication skills in their relationships than high symptomatology females. Looking at average scores between groups for the communication variable, all groups report having better than neutral communication skills with their partners. Both males and females had similar scores within their level of symptomatology, with higher symptomatology reporting better communication skills than lower, but only females with low and high ADHD traits were significantly different.

In summary, the current study aimed to find how biological sex of the individual and varying levels of ADHD symptomatology affect romantic relationships in college students. The hypothesis that high ADHD symptomatology would have negative impacts on relationship quality and conflict was partially supported, with high ADHD symptomatology participants scoring higher on the IOWA conflict scale and higher in the NRI-BSV criticism scale. The second hypothesis that females with high ADHD symptomatology will have more conflict and lower relationship quality than male counterparts with ADHD was not supported in these findings. Implications of these findings will be discussed further below.

ADHD Traits Affecting Relationships

The findings regarding those with higher ADHD traits struggling more than lower ADHD trait peers in personal relationships are consistent with previous research. Literature shows that children with ADHD struggle in relationships due to a tendency to interrupt, be emotionally

intense in interaction with others, have limited observation of social cues, and have more negative social behaviors (Hoza, 2007). Adults in long-term relationships are more likely to have marital issues, lower relationship satisfaction, and lower communication (Murphy & Barkley, 1996; Robin & Payson, 2002). Literature also suggests that those with ADHD engage in aggressive behaviors more, like difficulty masking intense emotions and fights (Lee et al., 2018; Sacchetti & Lefler, 2017). Herein, those with higher ADHD symptomatology-- a clear step below official diagnosis of the disorder-- report more arguments and fights in conflict scores than lower symptomatology participants.

Adults with ADHD may choose partners who have antisocial traits, and keeping company with these partners could lead them to have fewer friends and increased engagement in maladaptive activities (Bagwell et al. 2001). It would be logical that these factors could also possibly lead to more arguments for high symptomatology participants, since their partners may also have trouble with emotion regulation and be involved in maladaptive activities that strain the relationship. Females with ADHD have also been reported to have more relationships with untrustworthy men (White & Buehler, 2012), which could help explain why those with high symptomatology in this largely female sample may fear their partner cheating significantly more than those with low symptomatology. People with ADHD have been reported to have more sexual partners, which could also explain why they scored higher on fear of partner-committed infidelity (Rokeach & Wiener, 2018).

Regarding how ADHD traits and biological sex interact to predict relational outcomes, the current results are not necessarily inconsistent with prior research given that there have been ambiguous findings in other research. The current finding of females with low symptomatology scoring lower on relational conflict scores than females with high symptomatology is also

consistent with previous literature (e.g., Blachman & Hinshaw, 2002; Bruner, Kurluk, & Whitton, 2015) suggesting that females diagnosed with ADHD use more relational aggression and conflict than their ND peers. Other studies (e.g., Abikoff et al., 2002) show that males with ADHD have more physical and relational aggression than females, which may also fit with the current result of males with high symptomatology being more critical of their partner than participants with fewer ADHD traits reported themselves to be. Unlike past research that has shown those with ADHD engage in more risky sexual than those without ADHD (Guendelman, 2012; Rokeach & Wiener, 2018), the self-reported infidelity measure did not differentiate participants in the high or low ADHD groups.

Sex Differences in Relationships

Regarding differences that emerged between sexes in this study, females self-rated higher on four of the five positive relationship quality measures than males did, and on no measure did males rate significantly higher than females. As such, females reported better overall relationship quality than the males did. These findings are not consistent with prior research that suggests that relationship quality has more to do with other factors, like environmental stress or good communication, than gender, and biological sex per se (Beam, Marcus, Turkeimer, & Emery, 2018; Spencer, Drew, & Walsh, 2018; Spotts, Prescott, & Kendler, 2006). Possibly, the nature of the small male sample in this study (e.g., being psychology students, choosing to take place in a study about romantic adjustment) is different from that in other studies, and might play into why sex differences were found. It is at least possible that male participants in this study may not be fully representative of the broader population of men in college. It is also possible that since about half of the relationships reported on in this study were retrospective (i.e., ones that had

been discontinued) that the ratings of quality may systematically differ from prior research examining only current relationships, potentially in the direction of robust sex differences..

Future Directions and Limitations

One limitation of this study is the low number of male participants, which unfortunately seriously limits power in the main statistical analyses. Looking at Tukey tests and means across groups, some interaction effects might have been found if there were more males. Future studies might want to attain more male participants and apply a Bonferroni or another correction formula to lower the rate of alpha error and conservatively gauge differences. Overall, it would be a good idea to find ways to obtain more male participants in future studies similar to this one. Not only were there a low number of males, but biological sex was investigated rather than gender identity, so I lacked the ability to look at true "gender." Future research might want to try to examine these same questions in relations to gender identity and potentially sexual orientation, as well.

Many of the participants in this sample were White and all were college students. Extending the participant pool to include more than just those taking psychology classes would make it more likely to have male participants, and perhaps would also add diversity in terms of ethnic backgrounds and personality. It would also be interesting to investigate a community sample that includes young adults who are not in college. One way in which a community sample might differ from this college sample is that participants in the current study reported a high degree of relational conflict related to school. It would be expected young adults not in college would report a different pattern of conflict, perhaps one that is related to obtaining jobs and acquiring savings.

Another limitation to the current study is that the perspective on relationships is unidimensional. In other words, only self-report data regarding relationship characteristics was collected. A possible future direction is to include both romantic partners in data collection. This may be particularly important in regard to ADHD, since it has been documented that people with ADHD may inaccurately inflate their self-perceptions of how well they do in social situations (Hoza, 2007; Hoza et al., 2010). Results may not be too different between partners though, since it has also been reported that people become more accurate in their self-views as they get older (Hoza et al., 2010). However, research by Robin and Payson (2002) suggest that partners of those with ADHD are particularly important to consider, since females with ADHD were perceived more negatively than men.

To add another note, a large minority of the participants in this study reported retrospectively on their prior relationship, as opposed to a current one. Given that retrospective reporting has been shown to be problematic in terms of accuracy, this represents a salient limitation. We also do not have data on how long ago these previous relationships were. Another weakness to note is that the findings regarding influence of ADHD are based on fluctuation across the entire range of symptoms and not by actual ADHD diagnosis. Again, actual ADHD diagnosis could enhance differences in scores between the four groups and therefore show more significant main and interaction effects.

Conclusion

The takeaway findings in this study are that those with high ADHD traits did report more negative relationship qualities than those with low traits, and that female participants reported experiencing more positive relationships than males. What college students with ADHD traits and researchers, in general, can learn from this research is that improvement of the quality of

romantic relationships may hinge on monitoring and reducing criticism and arguing between partners. Male college students can improve their relationship quality as well, by focusing on building mutual support and reassurance with their partner. Though it is unclear how both ADHD traits and gender work together to affect relationship quality, these factors are important to consider in future research.

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Table 1

Demographics of the Sample

Measure	***M* (SD) / Percent**
Sex (Female)	165 (82.5)%
Age	19.66 (1.61)
Sexual Orientation (Heterosexual)	157 (78.5%)
Sexual Orientation (Bisexual)	31 (15.5%)
Sexual Orientation (Homosexual)	7 (3.5%)
Sexual Orientation (Other)	5 (2.5%)
White	166 (83%)
African American	2 (1%)
Hispanic or Latino	9 (4.5%)
Native American	1 (.5%)
Asian or Asian Indian	5 (2.5%)
Mixed	17 (8.5%)
Currently in a relationship	116 (58%)
Currently in a relationship (female)	97 (59% of females)
Currently in a relationship (male)	19 (54% of males)
Not currently in a relationship	84 (42%)
Not currently in a relationship (female)	68 (41% of females)
Not currently in a relationship (male)	16 (46% of males)
Age started dating	15.53 (1.90)
Serious relationships they've had	1.77 (1.10)
Longest they've ever been in a relationship	*M* ~ "9-12 months" (categorical)

Table 2

Background Relationship Information (Only Participants Currently in a Romantic Relationship)

Measure	***M* Percent**
Commitment: “Hanging out”	4 (3.45%)
“Starting to date”	10 (8.62%)
“Dating”	16 (13.79%)
“Seriously dating”	67 (57.76%)
“Considering marriage”	15 (12.93%)
Engaged	2 (1.72%)
Married	2 (1.72%)
See Each Other: Everyday	38 (32.76%)
At least 3 times a week	38 (32.76%)
1-2 times a week	12 (10.34%)
Less than once a week	28 (24.14%)

Table 3

Descriptive Statistics

Measure	Female		Male		Total (200)
	High (69)	Low (96)	High (16)	Low (19)	
BAARS-childhood symptoms	44.26 (11.89)	26.53 (6.42)	44.19 (10.05)	28.68 (6.07)	34.27 (12.38)
DASS (Depression)	8.70 (5.99)	4.21 (4.53)	11.13 (5.24)	3.79 (3.41)	6.27 (5.64)
DASS (Anxiety)	9.77 (5.14)	4.22 (4.41)	9.63 (4.66)	2.32 (2.71)	6.39 (5.41)
DASS (Stress)	11.91 (4.28)	5.58 (4.31)	10.13 (4.79)	3.42 (2.76)	7.93 (5.29)
IOWA Conflict	31.97 (20.68)	20.10 (14.21)	30.44 (19.66)	24.68 (19.59)	25.46 (18.35)
Communication	1.74 (.61)	1.50 (.46)	1.62 (.55)	1.51 (.50)	1.60 (.54)
NRI (Seeks Secure Base)	4.24 (.88)	4.32 (.76)	3.67 (1.17)	3.88 (.98)	4.20 (.87)
NRI (Conflict)	2.46 (1.06)	2.25 (.92)	2.54 (1.00)	2.33 (1.05)	2.35 (.99)
NRI (Seeks safe haven)	4.44 (.71)	4.36 (.87)	3.81 (1.15)	3.65 (1.02)	4.28 (.89)
NRI (Antagonism)	2.49 (.94)	2.32 (.83)	2.60 (.99)	2.16 (.83)	2.39 (.89)
NRI (Provides secure base)	4.52 (.55)	4.53 (.56)	4.21 (.89)	4.05 (.81)	4.46 (.63)
NRI (Criticism)	2.03 (.93)	1.65 (.72)	2.48 (.94)	1.77 (.75)	1.86 (.85)
NRI (Provides safe haven)	4.19 (.89)	4.17 (.94)	3.85 (1.06)	4.04 (.74)	4.12 (.92)
NRI (Companionship)	4.174 (.77)	4.30 (.64)	3.67 (1.00)	4.02 (.85)	4.18 (.76)
TIPI (Extraversion)	9.49 (3.53)	8.38 (3.17)	8.19 (3.21)	7.11 (2.96)	8.63 (3.34)
TIPI (Agreeableness)	9.38 (2.60)	10.31 (2.29)	10.56 (2.13)	9.32 (2.03)	9.92 (2.40)
TIPI (Conscientiousness)	9.35 (2.83)	11.87 (1.83)	9.31 (2.36)	10.32 (2.06)	10.65 (2.57)
TIPI (Emotional stability)	6.54 (2.84)	8.00 (3.14)	8.31 (2.47)	9.90 (2.62)	7.70 (3.09)
TIPI (Openness)	11.36 (2.14)	10.69 (2.44)	10.19 (1.91)	9.63 (2.27)	10.78 (2.33)
Infidelity	2.94 (.62)	3.02 (.55)	2.76 (.72)	2.79 (.62)	2.95 (.60)
Partner infidelity	1.72 (.75)	2.01 (.81)	1.50 (.80)	1.94 (.78)	1.86 (.80)

Note. High refers to the high ADHD symptomatology group and Low refers to low symptomatology group. DASS = Depression Anxiety Stress Scale; NRI = Network of Relationships Inventory items; TIPI = Ten-Item Personality Inventory.

Table 4

Select Effect Sizes (Cohen's D)

Measure	HighF vs. LowF	HighF vs. HighM	HighF vs. LowM	LowF vs. HighM	LowF vs. LowM	HighM vs. LowM
Conflict	0.70	0.07	0.36	-0.69	-0.30	0.29
Communication	0.46	0.20	0.39	-0.25	-0.02	0.21
Infidelity	-0.14	0.28	0.24	0.45	0.41	-0.05
Fear of Partner Infidelity	-0.40	0.29	-0.29	0.63	0.09	-0.56
Conflict	0.21	-0.08	0.12	-0.31	-0.08	0.20
Antagonism	0.19	-0.12	0.36	-0.33	0.19	0.49
Criticism	0.47	-0.48	0.29	-1.11	-0.17	0.85
Seeks secure base	-0.10	0.62	0.40	0.80	0.55	-0.20
Seeks safe haven	0.10	0.79	1.02	0.60	0.79	0.15
Provides secure base	-0.02	0.50	0.78	0.53	0.80	0.19
Provides safe haven	-0.04	0.30	0.10	0.33	0.14	-0.21
Companionship	-0.19	0.61	0.19	0.91	0.42	-0.38

Note: Effect size (absolute value) > .20 = small, > .50 = medium, > .80 = large. Negative effect sizes indicate lower values in the first group listed; positive values indicate higher values in the first group listed. HighF means females in the high ADHD trait group, LowF means females in the low ADHD trait group, HighM means males in the high ADHD trait group, and LowM means males in the low ADHD trait group

Appendix A

IRB Letter of Approval

To: Aliesha Knauer
Psychology
CAMPUS EMAIL

From: Dr. Andrew Shanely, IRB Chairperson
Date: 12/12/2019
RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)

STUDY #: 20-0131
STUDY TITLE: Gender Differences in Romantic Relationships Involving Individuals with ADHD
Submission Type: Initial
Expedited Category: (7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.
Approval Date: 12/12/2019

The Institutional Review Board (IRB) approved this study. The IRB found that the research procedures carry no more than minimal risk and meet the expedited category or categories cited above. This approval applies to the life of the study, and you do not need to submit an annual request for renewal. You are required to request approval for any changes you may make to the study in the future, as described below in the section on Modifications and Addendums.

IRB approval is limited to the activities described in the IRB approved materials, and extends to the performance of the described activities in the sites identified in the IRB application. In accordance with this approval, additional IRB findings and approval conditions for the conduct of this research may be listed below.

Study Regulatory and other findings:

The IRB has made the following determinations and waivers:

The IRB determined that this study involves minimal risk to participants.

The IRB determined that the inclusion of children in the research is appropriate because the study is not more than minimal risk (45 CFR 46.404).

The IRB is waiving the requirement of written documentation of consent because the study is not more than minimal risk.

The IRB is waiving the requirement of parental permission because the study is not more than minimal risk.

This review was conducted under the 2018 Requirements of 45 CFR 46 and the IRB determined that Continuing Review is not required in accordance with section 109(f)(1), under one the following criterion:

(i) Research eligible for expedited review in accordance with §46.110.

You may see an "expiration date" in IRBIS which is years in the future--this is to allow for no annual review until the IRBIS system can be updated to remove a date requirement for this field.

All approved documents for this study, including consent forms, can be accessed by logging into IRBIS. Use the following directions to access approved study documents.

1. Log into IRBIS
2. Click "Home" on the top toolbar
3. Click "My Studies" under the heading "All My Studies"
4. Click on the IRB number for the study you wish to access
5. Click on the reference ID for your submission
6. Click "Attachments" on the left-hand side toolbar
7. Click on the appropriate documents you wish to download

Approval Conditions:

Appalachian State University Policies: All individuals engaged in research with human participants are responsible for compliance with the University policies and procedures, and IRB determinations.

Principal Investigator Responsibilities: The PI should review the IRB's list of PI responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records.

Modifications and Addendums: IRB approval must be sought and obtained for any proposed modification or addendum (e.g., a change in procedure, personnel, study location, study instruments) to the IRB approved protocol, and informed consent form before changes may be implemented, unless changes are necessary to eliminate apparent immediate hazards to participants. Changes to eliminate apparent immediate hazards must be reported promptly to the IRB.

Post-Approval Monitoring (PAM): The PI is responsible for providing requested documentation and/or in-person review time of the study by the Office of Research Protections if this study is selected for a Post-Approval Monitoring Review.

Prompt Reporting of Events: Unanticipated Problems involving risks to participants or others; serious or continuing noncompliance with IRB requirements and determinations; and suspension or termination of IRB approval by an external entity, must be promptly reported to the IRB.

Closing a study: When research procedures with human subjects are completed, please log into our system at https://appstate.myresearchonline.org/irb/index_auth.cfm and complete the Request for Closure of IRB review form.

Websites:

1. PI responsibilities: http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/PI%20Responsibilities.pdf

2. IRB forms: http://researchprotections.appstate.edu/human-subjects/irb-forms

Appendix B

Research Participant Informed Consent

Consent to Participate in Research

Information to Consider About this Research

Relationship Quality in Adolescents With and Without ADHD

Principal Investigator: Aliesha Knauer

Department: Psychology

Contact Information: Will Canu, Canuwh@appstate.edu 828-773-6534

You are being invited to take part in a research study about gender differences in romantic relationships involving individuals with ADHD. If you take part in this study, you will be one of about 400 people to do so. By doing this study we hope to learn how relationship quality and content change when the partner with ADHD is either male or female.

The research procedures will be conducted online through a link from SONA. Please note that while we have no intention of trying to match your data back to you, for a brief time you will be listed in Sona as signed up for this research, in order for us to issue the ELC.

If you participate, you'll receive 2 ELCs. There are other research options and non-research options for obtaining extra credit or ELCs. One non-research option to receive 1 ELC is to read an article and write a 1-2 page paper summarizing the article and your reaction to the article. More information about this option can be found at: psych.appstate.edu/research. You may also wish to consult your professor to see if other non-research options are available.

You will be asked to answer questions on your personality traits, relational history, and relationship quality. Questions will include (and are not limited to) commitment to partner, sexual history, risky sexual decisions, disagreements with your partner, communication skills, support for partner, and satisfaction. You will also be asked to answer questions on anxiety, depression, ADHD symptomatology, and personality traits. This is estimated to take 45 minutes or less.

Some examples of more sensitive questions you will be asked are:

"Have you ever had thoughts of engaging in physically romantic behavior with someone other than your partner?"

"Have you ever been afraid of your partner engaging in physically romantic behavior with someone else other than yourself?"

"The topic that causes the most disagreement for you and your partner is:"

You can choose "prefer not to say" on questions we deemed very sensitive and you can choose not to answer any question that makes you too uncomfortable even if "prefer not to say" isn't an

option. To mitigate any feelings of discomfort, we have provided resources you can refer to on the final page of the survey and in the next paragraph.

What are possible harms or discomforts that I might experience during the research?

To the best of our knowledge, the risk of harm for participating in this research study is no more than you would experience in everyday life. You may feel discomfort when asked questions about your past relationship or sexuality. Any risk of someone finding out your answers outside of the study is mitigated by the way data is stored confidentially. If you feel you have been harmed in this study, please contact the Faculty Advisor at 828-773-6534. If you are experiencing serious anxiety, sadness, or other distress that relates to relationship troubles or other issues, we encourage you to use resources on campus for your mental health:

The Counseling Center includes resources on individual and group counseling, couples counseling, and self-help resources free to students.

https://counseling.appstate.edu/

1st Floor, Miles Annas Building

614 Howard Street

Boone, NC 28608

(828) 262-3182

ASU Psychology Clinic offers psychotherapy for anxiety, stress, depression, and interpersonal relationships.

https://psychclinic.appstate.edu/

400 University Hall Drive

Boone, NC 28608

(828) 262-6639 (Clinic Office)

Wellness and Prevention Services offers support for emotional and social health.

https://wellness.appstate.edu/

Miles Annas Student Services Building

614 Howard Street

Boone, NC 28608

(828) 262-3148

What are the possible benefits of this research?

There may be no personal benefit from your participation, but the information gained by doing this research may help others in the future by adding to lacking literature on gender effects in romantic relationships in young adults with ADHD symptomatology.

Will I be paid for taking part in the research?

We will not pay you for the time you volunteer while being in this study.

How will you keep my private information confidential?

We will make every effort to prevent anyone who is not on the research team or anyone else who will see the data (e.g., the principal investigator from knowing that you gave us information or what that information is). Your data will be kept anonymous by having your data de-identified through SONA and by keeping participant names, email, and phone numbers separate from that information. Identifying information cannot be linked to any particular survey that gets taken. Responses will be kept indefinitely. Your information collected as part of the research will not be distributed for future research studies.

Who can I contact if I have questions?

The people conducting this study will be available to answer any questions concerning this research, now or in the future. You may contact the Faculty Advisor at 828-773-6534. If you have questions about your rights as someone taking part in research, contact the Appalachian Institutional Review Board Administrator at 828-262-4060, through email at irb@appstate.edu or at Appalachian State University, Office of Research and Sponsored Programs, IRB Administrator, Boone, NC 28608.

Do I have to participate? What else should I know?

Your participation in this research is completely voluntary. If you choose not to volunteer, there will be no penalty and you will not lose any benefits or rights you would normally have. If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. There will be no penalty and no loss of benefits or rights if you decide at any time to stop participating in the study. If you decide to participate in this study, please continue to the survey.

Appendix C

Infidelity Questionnaire

Have you ever had thoughts of creating a deep emotional relationship with someone you were attracted to who wasn't your partner?
- Yes
- Maybe
- Probably not
- Definitely not
- Prefer not to say

Have you ever had a deep emotional relationship with someone you were attracted to who wasn't your partner?
- Yes
- Maybe
- Probably not
- Definitely not
- Prefer not to say

Have you ever been afraid of your partner having a deep emotional relationship with someone else than yourself?
- Yes
- Maybe
- No
- Prefer not to say

Have you ever had thought of engaging in physically romantic behavior with someone other than your partner?
- Yes
- Maybe
- Probably not
- Definitely not
- Prefer not to say

Have you ever engaged in physically romantic behavior with someone who wasn't your partner?
- Yes
- Maybe
- Probably not
- Definitely not
- Prefer not to say

Have you ever been afraid of your partner engaging in physically romantic behavior with someone else other than yourself?
- Yes
- Maybe
- No
- Prefer not to say

Have you ever had sex with someone who wasn't the partner you were currently dating?
- Yes
- Maybe
- Probably not
- No
- Prefer not to say

Have you ever gone out on a date with someone else who wasn't the partner you were currently dating?
- Yes
- Maybe
- Probably not
- No
- Prefer not to say

Appendix D

Communication Questionnaire

How often do you and your partner resolve conflicts?

- o Always
- o Most of the time
- o About half the time
- o Sometimes
- o Never

How easy is it for you to resolve conflicts?

- o Extremely easy
- o Somewhat easy
- o Neither easy nor difficult
- o Somewhat difficult
- o Extremely difficult

Agree or disagree: My partner and I have great conflict-resolution skills together

- o Agree
- o Neutral
- o Disagree

Agree or disagree: My partner and I have great communication skills together

- o Agree
- o Neutral
- o Disagree